

C. E. MILLS* describes

Timber Treating Operations at United Verde

The advantages of timber preservatives for permanent work in mining operations are well established but it is often difficult to prove the economics or limits to which treated timber should be used.

The United Verde mine is well ventilated and no excessive timber decay is experienced in the main gangways or sill workings. At present the 500 level main service tunnel is being retimbered for the first time since 1919 and most of the decay is at the framed joints.

In pillar mining, particularly in removing floor pillars, a period as long as five to ten years sometimes elapses before a stope is completed. In the past rotted flooring has often given trouble when coming up underneath the waste-filled stopes above.

Stringers supporting chutes and manways in the stopes are difficult to replace and treated timber is particularly desirable where the silling is started on the fourth floor or 24 feet above the level. Permanent chute pockets, such as waste transfer raises or shaft transfer raises unless constructed of steel and concrete should be built of treated timber.

It is also desirable to treat shaft guides—particularly the bolt holes before the guides are installed. In mining operations of any size there are innumerable jobs where treated timber should be used and this need had been felt at the United Verde for several years prior to the actual construction of a timber treating plant.

Selection of Treatment Method

Although the open tank method of impregnating timber is advantageous in small operations, it is impossible to secure a satisfactory penetration particularly with green timber. In designing a plant at the United Verde the amount of timber used justified the necessary expenditure to construct a treater of the pressure type.

Several preservatives were considered including Wolman Salts, Ac-Zol and zinc chloride. Zinc chloride was chosen because of its lower cost and because very few places in the mine are sufficiently wet to wash out the soluble zinc salts. Ac-Zol, however, is used for painting framed ends of timber when necessary to shorten posts in placing gangway sets. It has also been used on shaft guides particularly on the framed joints and countersunk bolt holes.

Description of Plant

The plant, at the United Verde, was completed in May, 1929, at a total cost of \$12,184. It was designed and constructed by the mechanical department for the purpose of treating 1,000,000 board feet of mine timber annually by the zinc chloride pressure method.

The retort is 5 feet 6 inches inside diameter by 32 feet long, and was furnished by the J. P. Devine Co., of Buffalo, N. Y. The vacuum pump is an Ingersoll-Rand 10 inches by 5 inches, Imperial Type 15, vertical, double acting, belt driven unit, provided with moisture trap. A small 5 1/4 by 3 1/2 by 5 inch air operated duplex pump is used to maintain 175 pounds pressure in the retort and

It is estimated that for every dollar spent for lumber, there must be added from one to ten dollars for labor of installation. Therefore, it is the cost of maintenance which must form the basis for comparison between untreated and treated lumber.

handle the solutions from the mixing tank to the storage tank.

The operating crew consists of one operator and two laborers who load and unload the timber and help in charging the retort. The average charge is 3,700 board feet, loaded on specially designed cars, and handled from the storage yard to the treater by a storage battery locomotive, which also serves the lumber yard.

The fused zinc chloride is received in 1,100-pound drums, broken up and made into a 50 per cent solution in a concrete vat 4 by 5 by 3 feet deep. From here it is delivered by an air injector to a mixing tank 8 feet in diameter by 6 feet in height, where it is diluted to a 3 per cent solution. A system of valves permits the duplex pump to deliver the 3 per cent solution to the main storage tank as needed. The 5,000-gallon storage tank is 11 feet in diameter by 9 feet high, and is elevated 12 feet to allow a gravity feed to the retort. The measuring tank is 4 feet 6 inches in diameter and has a capacity of 1,200 gallons. The top is open and the volume used indicated by a float and scale.

The operation varies little from the usual methods. After the timber trucks are loaded, a tabulation is filled in showing the various classes of timber, the total

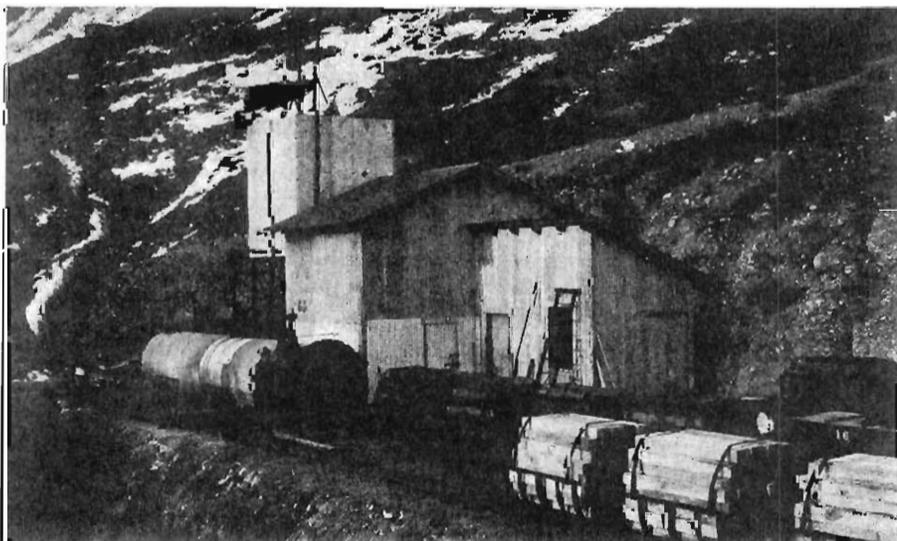
board feet, and gallons of solution calculated to give a 3/4-inch penetration on heavy timbers and 1/2 inch on mine lagging and flooring. The charge is then subjected to a 30-minute vacuum period, and the solution then run in from the elevated storage tank, making use of the vacuum and gravity feed. The measuring tank is also filled by gravity and the pump started, drawing from the measuring tank and maintaining a pressure between 160 and 180 pounds in the retort by use of an automatic air control valve on the pump. The retort is equipped with 320 linear feet of 2-inch steam line, and the solution heated by low pressure steam from the mine shop's heating plant.

The pressure period is maintained until the required number of gallons are injected into the timber, providing this volume is taken up within a 3-hour period. The pressure period is limited to three hours, even though the desired penetration is not secured. The total gallons used from the measuring tank is then recorded and the retort emptied back into the storage tank by compressed air. A 30-minute vacuum period is then applied, and the kick-back pumped back into the measuring tank by the duplex pump.

Under ordinary conditions one charge is handled in an 8-hour shift, although it is possible to put through three charges in two days by one man working overtime.

Data on the costs and operation over a six-months period is given in the following tabulation:

Averaged bd. ft. treated per month	96,440
ZnCl ₂ per bd. ft.	0.0508 lbs.
Operating costs per M bd. ft.:	
Labor	\$3.980
Power	0.020
Steam	1.349
ZnCl ₂ (\$5.34 per cwt) ..	2.710
Miscellaneous supplies ..	0.394
Repairs	0.547
Total	\$9.000



The pressure type treater erected at United Verde Copper Company, Jerome, Arizona. It is designed for the treating of 1,000,000 board feet of mine timber annually by the zinc chloride pressure method.

*Mine Superintendent, United Verde Copper Company, Jerome, Arizona. Published by courtesy of The Mining Congress Journal.

7-1534
7-15
7-30-34

Use of Timber

During 1929 the timber consumption at the United Verde totaled 8,700,000 board feet, the greater portion being used in the underground mining operations. Of this 882,600 board feet were treated.

The total timber used was roughly divided as follows:

- 47.3% Lagging 2 inches, 3 inches and 4 inches ranging from 5 feet 4 inches to 10 feet 8 inches in length used as flooring, fencing and chute lining. Practically all of this was native pine although a small amount of Oregon pine flooring was tried.
- 20.9% Native pine square sets for square set stoping.
- 24.1% Oregon pine 3 inches by 10 inches up to 12 inches by 12 inches used for all gangway timbers, bulkheads, chute pockets, etc.
- 7.2% Native pine cribbing for ore passes and manways.
- 0.5% Cedar for special work.

Treated Timber

The following regulations pertained to the use of treated timber during 1929 and 1930 and its use will be resumed at such a time as underground mining operations are again started.

1. All fencing, including 6 inches by 8 inches by 8 feet posts and 7 feet 2 inches fence lagging.
2. All stope floors laid on ore in place that will be mined out at some future time. This includes 4 inches by 12 inch sills, 10 feet 8 inches lagging and some 5 feet 4 inches lagging.
3. Stringers over chute raises for starting of post or cribbed chutes.
4. Cribbing in any raise which is to be used as a permanent manway and not stripped.
5. Gangway timbers in poorly ventilated or hot drifts.
6. Chute pockets in poorly ventilated openings—such as dead end drifts—shaft and waste transfer pockets.
7. All framed sets in main haulage ways or adits that have an expected life of five years or more.

Results of Using Treated Timber

During 1929 and 1930 approximately 1,300,000 board feet of timber was treated for underground use. Off hand it would appear that this amount of treated timber would offer conclusive proof and innumerable examples of the merits of treated timber over untreated. About 65 per cent of this treated timber has been used in fencing vertical pillars and flooring on ore remaining in sill pillars. The value of treated timbers for this particular use will not be apparent for several years or until these pillars are mined.

With good ventilation there are few places in the mine where untreated timber does not last 5 to 10 years so that in main passage ways—the treated timber has not been in sufficient length of time to give any direct comparisons.

In one inclined timbered manway from the 1,000 to the 500 level, located at a distance from the main orebody the air was humid, the volume inadequate. Native pine cribbing lasted three years. The upper section was particularly bad and the fungus growth quite rapid. This upper portion of the raise was replaced with cedar in 1926 and now shows decay to a depth of one-quarter to one-half inch. The lower section was replaced in 1929 with treated native pine and at present shows no sign of deterioration. Oregon pine stringers and chute pockets in this development raise also required replacing every four to five years. Treated Oregon

pine replacements have showed no signs of decay in the past four years.

Conclusions

The cost of treating with zinc chloride adds approximately 30 per cent to the cost of the timber so that a good deal of supervision is required to insure the use of treated timber only where it is necessary and to see that raw timber is not used where conditions require the use of treated timber.

In main openings, such as timbered gangways, winzes or shafts there is no question about the economy of using treated timber. On the other hand a large portion of the treated timber used in 1929 and 1930 was in places where conclusive proof of its merits will not be available for several years. Whether or not the United Verde has gone too far in the use of treated timber is still an open question.

MIAMI COPPER REOPENS MINE; NEW CORNELIA ON PRODUCTION

On July 1, Miami Copper Company, Miami, Arizona, resumed operations with a crew of approximately 250 men, all former employees. The mine had been closed down since May 15, 1932. In making the announcement, F. W. MacLennan, general manager, stated that operations would be resumed on the reduced scale permitted under the copper code.

Miami Copper Company has an annual capacity rated at 36,000 tons of copper, but production will be at the rate of 828 tons monthly, this being the amount of Miami's sales allocation in the United States under the code.

Miami is the second major copper company to resume production. The New Cornelia Branch, Phelps Dodge Corporation, Ajo, began the mining and milling of ore on July 1, after three months of preparatory work. The crew totals about 750 men, with three shifts employed.

The preparatory work included the removing of the overburden at the mine pit; changing 10 of the 12 steam shovels to caterpillar traction (the railroad tracks being removed); laying of railroad track needed elsewhere for ore bins; building new flume for the discharge from the flotation mill; overhauling and putting in shape all machinery at the mine and mill, and re-installing or replacing many feet of belting. Many improvements and alterations were made on residences on the townsite.

TWIN LAKE PROJECT SETS NEW WORLD DRIVING RECORD

The Twin Lakes tunnel at Independence Pass, Colorado, is progressing at a highly satisfactory rate, according to Platt Rogers, who is personally supervising the work. The total distance driven as of June 1 was 4,361 feet on the east portal and 3,434 feet on the west portal.

This is the first trans-mountain water diversion project in the west. The elevation of the tunnel is 9,050 feet and when completed the tunnel will be 3.7 miles long. It is being driven to provide irrigation water for the farm lands at Ordway, Colorado. The diameter of the tunnel is nine feet and two inches, and it will bring in approximately 60,000 acre feet of water per year.

A world record for tunnel driving in a single heading in one day of 24 hours was 48 feet. The average footage per 24-hour day in the east portal is 34.2 feet. Sullivan Machinery Company three-drum scraper hoists and O'Rourke switches are being used for mucking.

EXPERIENCE WITH SIX-HOUR SHIFT SHOWS GOOD RESULTS

As the demand for a six-hour shift and a five-day week in the mining industry grows, it is interesting to note that this has actually been done at the Asarco Mining Company, Ground Hog Unit, Vanadium, New Mexico, under the direction of C. S. Elayer, mine superintendent.

Regarding the advantages and disadvantages as determined by their experience, Mr. Elayer writes:

"On the first of February, 1932, the six-hour day for underground mining was inaugurated at the Ground Hog Mine at Vanadium, New Mexico, and has been maintained to date. During this time there have been approximately 50,000 man shifts worked on this six hour per day and five day per week basis.

"The mine works two shifts per day with two hours between shifts. The six hour shift is figured at the working place, ten minutes extra being taken at each end of the shift for hoisting and lowering men, and getting to and from working faces. Example: day shift starts lowering men at 7:20 A. M. and starts hoisting men at 1:40 P. M. No lunches are allowed underground and blasting during shift is not allowed except for an occasional hole that seems to be absolutely necessary.

"The five-day week is adhered to as closely as possible, but occasionally the mine works six days per week for two or sometimes three weeks in succession, but this is done to keep the average to five days and is compensated by holiday or breakdown layoffs of more than the usual week-end two-day layoff.

"At the time the six-hour day was started no reduction in daily wages was made, the men receiving the same daily wage for the six hours which they had received for eight.

"Some of the advantages of the six-hour day which we have proved are:

1. Marked reduction in lost time accidents.
2. Increased efficiency of the men, shown by tonnage per man and footage figures.
3. Seemingly better health of the men.
4. Lower power costs, due to 4 hours per day less compressor operation.
5. Extra daylight leisure for men.

Disadvantages

1. Better and handier distribution of steel, machines and supplies needed to prevent loss of time hunting for same.
2. Inaccurate reports of condition of each working place by previous shift to allow planning of distribution of men before going on shift.
3. Odd hours for meal times which at first seemed to cause some inconvenience, but has caused no comment by the men since they have seen the offsetting advantages.

"On the whole, after a trial of two years and five months of the six-hour day in underground mine work we feel that the advantages are decidedly in its favor, and can freely recommend a fair trial of it to anyone engaged in underground mining.

"Contrary to expectation of some of its advocates it does not provide employment for more men to accomplish the same results, but on the contrary increases the efficiency of the same number of men."

D. Q. PARKS* gives

A Bird's Eye View of The Mining Show

The steady, conscientious effort, expended during the last five months by the directing organization, will result in the Mining Show's being the outstanding attraction of Los Angeles Market Week, which opens in Los Angeles on July 30. This Market Week program, being sponsored by the Chamber of Commerce, includes eight expositions, a gayly decorated city, and six days of various kinds of festivities in which all visitors may participate.

Yet the Mining Show, with the Machinery and Equipment Exposition, is destined to stand out head and shoulders above all other events. It is the only industrial show and, coming at this opportune time when all branches of industry are uniting in bringing good old American prosperity back to our people, it becomes of vital interest to all of us.

Arrangements are being made to begin this event with a mammoth parade that will proceed through the business section of Los Angeles and terminate at the Exposition Hall. The outstanding features of this parade will be a band dressed in very picturesque costumes, an old-time prospector plodding along with his two burros and pack saddles, a covered wagon drawn by a team of burros and many trucks carrying displays similar to those on exhibit at the Show.

The Shrine Civic Auditorium, one of the most magnificent structures of its type in the great Southwest, is the setting chosen. From twenty to thirty thousand people may attend daily and with complete comfort to all.

Upon entering the Exposition Hall one's eye will be greeted by acres of exhibits, all decorated with a colorful splendor. The decoration and lighting appointments alone represent a huge investment—and a sight never to be forgotten.

As one looks down the long aisles of displays he will see, to the right, a page out of the past in the form of an old time bar of the day of the 49'er. Thanks to the New Deal, all who wish to can walk right up, plank a foot on the old brass rail and partake of a cool, refreshing beverage. To the old timer, this should bring back fond memories.

At the west end of the building is a unique and beautiful stage upon which will appear, each evening, various features of entertainment of interest and amusement to all. The silver dome effect in the background is a work of art and will lend color to the features staged before it. This stage is also outfitted with a loud speaker system which will carry the entertainment program to every corner of the building.

The following are a few of the many dozens of interesting and educational displays.

The Minerals Engineering Company's exhibit will consist of a complete miniature testing laboratory. All the steps in assaying will be shown in detail and the laboratory equipment of miniature machines for testing ores for flotation, cyanidation, amalgamation and gravity concentration.

The correct methods of sampling for accurate test work will be shown also.

*Los Angeles, California

Leading manufacturers of mining equipment are preparing to present the greatest Mining Exposition ever held in the West. The dates—July 30, to August 4. The place—Los Angeles, California.

The Standard Oil Co. of California is entering a Giant Robot display that is unusual. The Robot will answer questions on lubrication problems that are of interest to everyone. In addition there will be a complete display showing the latest developments in oils and greases for the correct lubrication of all types of industrial machinery.

U. S. Electrical Manufacturing Company, 200 East Slauson Avenue, Los Angeles, will exhibit a complete line of electric motors, and will demonstrate and explain the present day up-to-date construction of electric motors.

Attention will be focused on the U. S. Varidrive motor, which offers any and all speeds of a wide range at the will of the operator, and is especially suited to any mining operations.

The Los Angeles Steel Castings Company will have a splendid exhibit displaying mill liners, stamp mill shoes and dies, and a general line of steel castings and parts. They will also have a very interesting display of test bars and samples of various abrasive resisting steels.

The Madsen Iron Works at 5631 Bickett Street, Huntington Park, are manufacturers of various types of ball mills and will be glad to explain the features of each to all mining men. Their display will include a very complete showing of cast iron and alloy castings, white iron liners, and other products they manufacture for the mining industry.

The Western Enterprise Engine Company, 1000 Alhambra Avenue, Los Angeles, will have a Diesel power display that will be of real interest to the mining man who is in need of reliable and economical power equipment. It will also demonstrate its gas and distillate engines and mining and contractors' hoists.

The Harris Dry Concentrator Co. of Saugus, California, will display its dry concentrator which is one of the most unique of its kind. Its weight is only 40 pounds and therefore portable to even the remotest locations. It is highly recommended for its consistently efficient recovery of gold values.

On the demonstration ground may be seen many different types of operating machinery in actual use. From the study of the performance of each type one may easily determine that which is best adapted to his particular needs and will show the greatest production with the lowest possible cost.

A prospector's camp, of the days of '49, is being set up on the outside dis-

play ground. The white haired prospector with that ever hopeful, far away gaze, his two burros, camping and prospecting utensils, will all be there. The burros, Pinky and Lavender, are a great pair of showmen and will certainly be strutting their stuff to the amusement of all.

On the mezzanine floor there will be a model 1934 mine. A tunnel, over 30 feet long, has been built with full size timbering and covered in a manner that gives the appearance of being driven into natural rock. It is planned to have a mine locomotive in actual operation, pulling cars loaded with ore.

The use of modern, efficient rock drills, compressors, stopers, etc., will be illustrated. A modern assaying and engineering office will be set up—thus giving a complete picture of mining as it is conducted today.

The Alaska Yukon Society is now assembling materials for a display that will picture the great Alaskan gold rush. They also plan to hold a banquet on Alaska Day which opens the Show. The Mineralogical Society of Southern California, and the Los Angeles Mineralogical Society will also have displays depicting the activities of their organizations. Approximately 1,500 members of these three societies plan to attend.

A part of the mezzanine floor is being equipped for several luncheon meetings to be held by such groups as the Mining Association of the Southwest, the American Institute of Mining and Metallurgical Engineers, the American Mining Congress, the Associated General Contractors, American Association of Petroleum Geologists, and the Purchasing Agents Association.

Plans are going forward to bring a trade tour of mining and industrial people up from Mexico. In connection with this, a Fiesta is to be held on Mexico Day, the third day of the Show. The Chamber of Mines and the Confederated Chambers of Commerce of Mexico are also expected to enter splendid exhibits portraying the industries of Mexico.

Each day of the Show has been dedicated to one of the major mining sectors of the West:

- July 30 is Alaska Day.
- July 31 is Nevada Day.
- August 1 is Mexico Day.
- August 2 is Arizona Day.
- August 3 is Mother Lode Day.
- August 4 is Southern California Day.

The California State Bureau of Mines and the California State Chamber of Commerce are giving the Show splendid support. Several mines intend to close down so that their entire personnel may attend. The Mining Association of the Southwest plans to have a "get together" of mining men each day. Several of the nation's greatest mining authorities will address these groups and impart a wealth of up-to-the-minute information on all phases of mining.

Every mining man in the eleven western states is invited to attend and because of the scores of educational and entertainment features incorporated in the six-day program, many thousands are certain to be there. Free tickets can be secured from any Los Angeles exhibitor, and special rates, by boat or train, are offered for Los Angeles Market Week.

“MINING ON PARADE”

AT
THE



MINING SHOW

AND

MACHINERY & EQUIPMENT EXPOSITION

SHRINE AUDITORIUM

LOS ANGELES — CALIFORNIA

JULY 30th To AUGUST 4th

The Greatest Array Of Mining Displays Ever Assembled

You will see a million dollar display of time-saving, cost-cutting machinery and equipment covering every phase of the Mining Industry. You will learn new methods, make new friends, and gain a wealth of information that will pay you real dividends in the future.

Mining is staging a mighty comeback—prepare yourself and your operating methods to realize the greatest possible returns on this opportunity. You will find the answers here to many problems that have puzzled you in the past.

You'll enjoy yourself as you never have before. Starting with the 49'r and his burros you will be brought right down the years to a model 1934 mine which is an education in itself.

Special entertainment features will be presented every evening—without charge—and right at the Exposition Hall. Plan now to be there every day. Your Los Angeles exhibitor has FREE tickets for you. So come by railway, steamship or auto—but COME.

MAKE YOUR VISIT TO LOS ANGELES THOROUGHLY ENJOYABLE AT THE



HILTON HOTEL

535 S. Grand Rates from \$2.50
Los Angeles Newest Downtown Hotel

EXPOSITION OFFICES
613 Chamber of Commerce Bldg., Los Angeles

THE WEST'S GREAT MINING SHOW OF 1934.

order made possible the payment of \$193,964 to Cochise county, on an assessment of \$629,865, while Greenlee county receives \$37,765, while the assessment was \$283,525.

Operators of the **Big Jim** mine at Oatman, Arizona, are completing preparations for the retimbering of the main shaft from the 600 to 725 level. Drifts will be carried out to meet the winze sunk from the 660 level of the mine. Enough ore is being mined to keep the mill in operation. The mill is handling about 100 tons daily, half of which comes from lessees, and the balance from the Big Jim mine proper. Rae Johnston is directing the work.

It is reported that the **Chloride Consolidated Mines Company**, Chloride, Arizona, is preparing to resume development of its holdings in the near future. Horace Armishaw is general manager.

CALIFORNIA

Tom Finnerty, mine superintendent for the **International Mining and Milling Company** at Randsburg, California, reports the discovery of ore assaying \$142 in the Gold Bug mine. The strike was made in virgin ground on the 200-foot level.

The Greenhorn mine in Shasta county, California, 25 miles north of the town Redding, is being reopened by the **Atlas Consolidated Mining Company**. The property was once operated as a copper mine, but will now be operated for its gold value. No production has been made since the price of copper fell too low to permit making a profit on the ore. For several years prior to that time it was operated by the **Greenhorn Mining Company**, of which Frank H. Proctor, Tribune Tower, Oakland, is president, and Albert Hanford, Room 209, 24 California Street, San Francisco, general manager. Engineering reports estimate a million dollars worth of gold, found in gossan formation, and contained at the average of \$5 a ton. The Atlas Consolidated is a new company with 1,500,000 shares of \$1 par value. Of the stock issue, 625,000 shares are to be distributed to the Greenhorn company on a consolidation set-up and 150,000 shares are to be sold at \$1.25 a share, under permit provisions.

At a meeting on April 26 the stockholders of the **Bullion Gold and Silver Mining Company** approved the proposal of the directors to make the stock non-assessable. At the same meeting, Francis Upton, 1062 Russ Building, San Francisco, was re-elected president; John E. Case, vice-president; Ronald Tilton, treasurer; Myron Grotzjohn, secretary, and Robert Beale, additional director.

The 10-stamp mill on the **O. K.** mine east of Georgetown, California, is being repaired for immediate operation. The property is being operated under lease by Otto C. Radley of Auburn and Ward Wilson.

The **Atascadero Mining Company**, a new corporation, has taken over the operation of the Vanderbilt mines at Ivanpah, California. J. E. Chilberg is at the mine as superintendent of operations. Production figures for April and May are available and show a total of \$9,195.40. In all ten carloads of ore were shipped. Starting August 1, the company plans to sink a two-compartment shaft to a depth of 500 feet.

A. C. Hahn is in charge of reopening the **Classic Hill** mine at Happy Camp, California, lately purchased by Wason & Riley of Seattle, Washington, from C. Scott Greening. The mine was once one of the noted producers of the district, but has been idle 30 years. It is a hydrau-

lic proposition. The lower ditch is about three and a half miles long and has 14 short flumes which are being constructed at the present time. The upper ditch, at about 500-foot elevation, is five miles long and will soon be cleaned out for operation. All necessary lumber is being purchased from local mills.

The **Edgehill Mining and Milling Company**, for some time operating the Hughes mine at Downieville, California, has added the Sacred Mount and the Butte-Saddle mines near Sierra City to its domain. The two newly acquired mines were purchased from Mrs. Marie Phelan of Nevada City, California. According to M. E. Pope, in charge of operations, active mining will begin at once. A 100-ton mill has been installed at the Sacred Mount and a 100-horsepower Diesel engine and compressor are to be purchased to drive a 1,200-foot crosscut from the Sacred Mount to the Butte Saddle workings.

According to present indications, production is not far off for the **City of Six Mining Company** at Downieville, California. Equipment is coming in from the Straub Engineering Company at Oakland and includes a 35-ton Rib Cone mill, rock crusher and large concentrating table. Concrete foundations have been poured and are ready to receive the equipment. Sometime this fall a building, planned for 26x70 feet, will be erected around the machinery, but for the present every effort will be diverted to production. Considerable ore has been placed on the dump ready for treatment. Mining has been done by gasoline power. D. E. Hunter, 735 Pacific Mutual Building, Los Angeles, is president; A. E. Hodgkinson, 303 Lane Mortgage Building, Los Angeles, is manager, and W. O. Traves is superintendent of operations at the mine.

E. M. Woodman of Sonora, California, has equipped the **Golden Eagle** mine, 15 miles north of town, with a five-stamp mill and is running the plant on stock-piled ore while developing reserves through a new shaft now down about 100 feet. The main vein varies in width from 18 inches to four feet and the ore is said to average around \$17 a ton.

The **Carson Hill Gold Mining Corporation** is unwatering the main Carson Hill shaft at Melones, California. According to C. H. Segerstrom of Sonora, California, president and general manager, the development of known ore bodies on the 2,700 and 3,000 levels will follow immediately. Present mining and development activities are being carried on in levels from the 300 to the 1,600, inclusive, and in two open pits, using a power shovel in one of the latter. Approximately 20,000 tons of ore is being milled each month and additions are being made to the mill and cyanide plant to increase capacity to about 30,000 tons. Production on the increased scale is expected to begin about the close of the year. The force at the present time is about 150 men.

The rehabilitation of the **Malvina** mine at Coulterville, California, under the direction of Ed. F. McMahon, is progressing at a satisfactory pace. The 2,600-foot tunnel has been cleaned out and repaired and work is proceeding on the 1,000-foot shaft sunk from it. An electric power line has been completed and an electric hoist will be installed. The project is financed chiefly by New York investors.

A. E. Lyons, A. J. Lyons, G. B. Washburn, C. A. Weichers and Bernard Lackey are leasing on the **Lone Pine** mine on Diamond Mountain, near Susanville, Cali-

fornia. The property is owned by S. D. Ridenour and 35 years ago high-grade ore was coming from the shaft. The lessees are putting in a small mill.

Report is made of a \$50,000 deal at Grizzly Flats, Eldorado county, California, involving the **Middle End Mines**. By the agreement, control of the property passes from the Sciaroni Bros., well known in that part of the country, to Roy J. Hill, mining engineer, Mills Building, San Francisco, and others of that city. Preliminary work has been started and it is stated that a rather comprehensive program of operations is being planned.

Myron H. Vaughn and James D. Brengman have leased the **Pine Tree** mine, four miles southwest of Tehachapi, Kern County, California, from C. M. Farrar. Repairs have been made on the road and equipment is being moved to a nearby spring for a small mill.

Gravel Mines, Ltd., incorporated by C. C. Broadwater and J. C. Moulton, has purchased and equipped the Lewis property, a few miles up the Klamath River from Happy Camp, California, with ditch, flume and pipe. The water system is designed to bring in 1,000 miner's inches from China Creek under a 175-foot head. Broadwater is president. Moulton is in charge of operations and may be reached through the Seiad Valley postoffice.

John T. Thorndyke of Hughes Lake, California, has completed the construction of a modern plant for the **Western Graphite Company**, a California corporation. Coulter W. Jones, president of the company, is the owner of the patents for the extraction of bromine and iodine from sea water under which the Dow Chemical Company operates. Thorndyke has been retained as construction and consulting engineer, partially on account of his experience in the operation of the old plant of the California Graphite Company. Somewhat of a record of construction was established as the piers for the mill building were poured on May 14. The deposit to be mined is some three miles in length and is considered one of the richest of crystalline flake graphite in the United States. Mill heads average 28 per cent carbon. Products will be high-grade flake, foundry facing, core wash and specialties. They will be marketed under the "Lake Flake Brand."

H. E. Cary and associates are reported to be sinking an inside shaft from the 400-foot tunnel in the **McRae Ridge** mine at Johnsville, California, with the object of developing the main channel. Ed Petry is superintendent of operations. The channel has yielded large amounts of rich gravel in adjacent properties and is to be vigorously developed as soon as the new shaft reaches its objective. Plans for this summer include the installation of considerable equipment and the construction of buildings.

The **Empire-Star Mining Company, Ltd.**, which is the California subsidiary of the Newmont Mining Corporation, increased wages 10 per cent effective June 16. The announcement follows by only a few days a similar announcement by the Idaho Maryland Mines Company. Most of the Empire-Star workers are now receiving \$5.28 a day. The **Zeibright** at Bear Valley, east of Nevada City, one of the company's properties, has started rather extensive development work. The program is said to include the construction of a 500-ton mill. Grading on the millsite has been started and the Nevada County Lumber Company has been given a rush order for two cars of lumber.

The old Indian Valley gold mine at Greenville, California, is being reopened under the direction of the Hammon Engineering Company, Balfour Building, San Francisco, for John W. Prentiss of New York, the owner. George I. Barnett, formerly superintendent for the Treadwell-Yukon Company, Ltd., at Tybo, Nevada, is engineer in charge of the Indian Valley and other lode mines, including the Banner and Buffalo mines at Oroville, for the Hammon Engineering Company. The Indian Valley mine has a past production of approximately \$1,800,000. The mine is being reopened and future work will depend on the outcome of the preliminary work. H. J. Tamke, 2430 Presidio Drive, San Diego, is the western representative for Mr. Prentiss.

The Trinity Goldbar Mining Company, O. B. Lefurgey, general manager, 381 Bush Street, San Francisco, has purchased a half interest in the mineral rights of the Scott gravel channel in the Oregon House district, Yuba county, California. The newly acquired property includes 300 acres. In little more than a month a gasoline shovel has been taken in, 2,500 feet of water pipe laid, a dam built for storing water to maintain operations and the construction of sluice boxes partially completed. The crew at the present time is directing its attention to completing the unfinished projects.

L. R. Menzies has purchased the Davenport mine at Auburn, California, from N. E. Davenport, and will operate as the Menzies Consolidated Gold Mine. The mine is opened by a 300-foot tunnel. It is planned to place the mill in operation soon on several hundred tons of rich gold ore mined from a deposit near the 200-foot mark in the tunnel. Some of the ore is said to run \$200 a ton in gold.

The Best and Belcher Gold and Silver Mining Company has levied a 3-cent assessment. This is the sixth assessment levied. According to W. H. Clary, superintendent of their Commodore mine west of San Andreas, California, the crosscut at the 200 level has reached the objective lode. The ledge is typical Mother Lode quartz, he reports, against a black slate hanging wall. The quartz is said to be well mineralized and full of sulphides.

Charles B. Smith of Santa Barbara and associates who took over the Geraldine quartz mine at Confidence, in Tuolumne county, California, a few weeks ago, have incorporated as the Apex Mining Company. They have unwatered the 150-foot shaft, repaired the collar and have started development work. Two feet of ore is said to be available on the 65-foot level and on the 100 level eight feet of milling ore is exposed. Plans are to replace the one-stamp pilot mill with larger equipment.

The report for May of the Natomas Company, operating gold dredges in Sacramento county, California, shows a net profit of \$71,879, or 7 cents a share. The profit for April was \$79,481. The profits are recorded after all charges, including federal income tax provision of \$8,826. The company's operations include mining, land rentals and water operations. During May one of its six dredges was shut down for repairs. R. G. Smith of Natoma, California, is chief engineer.

The Mountain Spring Canyon Mining Company has been reorganized under the name, Inyo-Argus Mines, Inc., and Leo M. Baughman, 1017 Roosevelt Building, Los Angeles, is its president. Ten men are working in Spring Canyon and the 25-ton ball mill was placed in operation June 1.

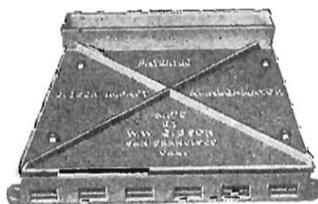
By the middle of June they shipped four tons of concentrates, with some high-grade ore, to Selby and got a net return of \$95 a ton. Recovery of the gold is being made by amalgamation followed by flotation. A second shipment of 10 tons was made on June 22. The 135-foot shaft level has been driven to a length of 550 feet. At the 400-foot point a winze is being sunk in high-grade sulphide ore and was still in ore at 32 feet when this report was made the middle of June. The vein has been proven for 350 feet and is from one to three feet thick.

Phil B. Dolan is sinking a two compartment shaft at the old Oyler mine at Bear Valley, near Mariposa, California. The bottom is below 150 feet and drifting will be started at the 250-foot level. The mine is now being operated as the Alice Bartlett.

W. L. Harvey, mining man of Jackson, California, reports good progress from his Telegraph Hill mine, eight miles northeast of Sutter Creek. The property covers a lava-capped channel and has been under development for four months. Four men are employed.

Only 150 feet from the scene of the big discovery of last March, the Carson Hill Gold Mining Corporation at Melones, California, is reported to have blasted into another section of "jewelry" rock. The strike would seem to indicate that the ledge is fairly uniform in values. At a recent meeting, Charles H. Segerstrom was re-elected as president, general manager and treasurer; Lawrence Monte Verda, vice-president; C. F. Anderson, secretary; and H. W. Klipstein, Frank Helm and W. A. Southerland, additional directors.

The Gibson Impact Amalgamator

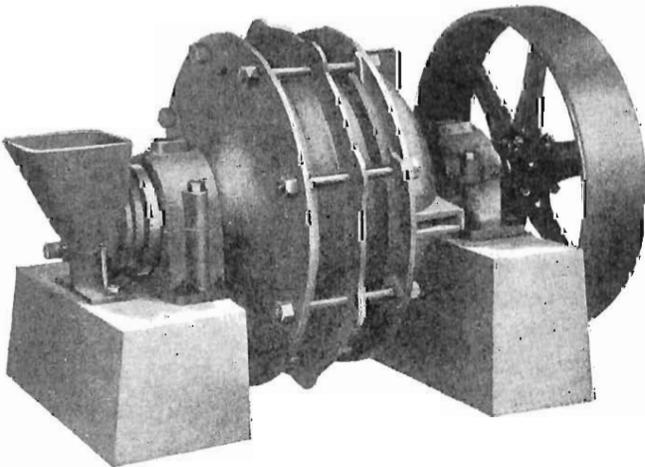


Built in sizes from 25 tons to 2000 tons capacity

Repeat orders coming in from all parts of the world are positive proof of the efficiency of the Gibson Impact Amalgamator in saving the fine gold, amalgam and mercury that escape from the other amalgamating devices.

The Gibson Prospectors' Friend Elliptic Roll Mill

A combination crusher, grinder and amalgamator, and will handle the hardest kind of quartz four inches in diameter without a rock breaker. The Elliptic Roll strikes one hundred blows per minute and handles four inch material reducing it to any desired mesh. For finer grinding than eighty mesh, can be converted into a ball mill. The mill is built entirely of heat treated chrome steel and is unbreakable. Built for mule back transportation in capacities of five and ten ton.



We allow full purchase price on the Prospectors' Friend any time inside of a year in exchange for a larger production mill.

Testimonials from operators furnished upon request.

5 ton mill sells for \$500 and 10 ton mill for \$950.

Write for catalogue of Gibson Counter Balanced Ball and Rod Mills, Flotation Cells, Concentrators, Rock Breakers, Mercury Feeders, and other mining equipment.

W. W. GIBSON

112 Market Street

San Francisco, California

Heat Treated
Chrome
Molybdenum Steel

DUROLOID LINERS

Resist Abrasion!

● Ask for
recommendations backed
by thirty-two years' ex-
perience.

Los Angeles Steel
Castings Co., Ltd.

2444 So. Alameda St.
LOS ANGELES, CALIF.

SANTA RITA HOTEL

TUCSON - ARIZONA



The best of service at moderate prices—at the home-like Santa Rita Hotel — which mining men have made their Tucson headquarters for many years.

SANTA RITA HOTEL

TUCSON - ARIZONA

...MINE
EQUIPMENT



THE WELLMAN ENGINEERING CO.
7000 Central Ave., Cleveland, Ohio.

Car Dumpers
Tipples
Hoists
Sheaves
Cages

Ore Handling
Bridges
Blaisdell
Circular Vat
Excavator

C. L. "Brizz" Putnam and associates of San Francisco are reported to have purchased the Up-to-Date mine in Spanish Dry Diggings, near Greenwood, California. The property adjoins the Sliger, one of the best producers in Eldorado county, and has been opened principally by a 300-foot shaft and a 500-foot tunnel. A small crew has started work and the report is that the tunnel will be driven farther and the shaft sunk deeper.

A. E. Place, consulting mining engineer, 530 Bartlett Building, Los Angeles, California, has optioned 10 acres of placer ground in Butte county. The location is near the junction of Middle & Little Butte Creeks. Plans are to operate by the open cut method using a plow and scraper operated by a tractor. The dirt will be delivered to the sluice boxes after screening through a one-inch grizzly.

The Iowa Hill Gold Mining Company has completed financing and expects to start construction of a milling plant at its property nine miles east of Colfax, California, by July 1. Plans are being drawn for a mill that can take up to 500 tons of ore in 24 hours, according to A. F. Muter, their consulting engineer, 303 Fidelity Building, Los Angeles. Muter has just returned from a trip to the mine. He reports that two miles of road has been completed connecting the portal of the tunnel and the millsite with the main highway. The channel has been prospected by a 1,200-foot tunnel and a 68-foot upraise, and it is reported to be 358 feet wide. Twenty tons of new rail has been purchased and is being laid, after which the tunnel will be driven the entire length of the channel, estimated at 5,000 feet.

The Keeler Gold Mines, Inc., of Keeler, California, has taken over the former Kreuger mine, and is completing installation of a compressor, hoist and gallows frame. A power line has already been built, and the 100-foot shaft is being re-timbered and enlarged to two compartments. Sinking will, according to present plans, be continued to 250 feet. The ore runs \$15 to \$20 in gold and silver and, pending results of development work, a mill may be built. Thomas L. Chapman is in charge of operations.

The Chapman-Eckloff lease on the Cerro Gordo mine at Keeler, California, continues to make regular shipments of lead and zinc ores to the smelter on the west coast, according to H. L. Echloff of the lease. A small crew is being employed steadily.

The Morning Star mine at Keeler, California, continues to ship gold-silver ore to the Selby smelter twice a month. The property is owned by the Estelle Mines Corporation, R. C. Troeger, president and general manager, 49 South Olive Street, Los Angeles, and is being operated under lease.

COLORADO

Some mining and development work is being done on the Mackey mine at Apex, in Gilpin county, Colorado, and a few days ago a carload of ore was marketed at Colorado Springs. M. M. Barber and associates are working the mine.

Samuel H. Alexander, president of the King Solomon Mining Company, 526 Mining Exchange Building, Denver, has been in Leadville, Colorado, in connection with resuming work at its mining property there. The property is located in the Ten Mile district and is one of the most extensive holdings. It has been developed rather extensively, principally through a 6,000-foot tunnel from a point a mile above Frisco, and which is said to have

intersected some 14 veins carrying lead-silver-gold ore.

A rich gold discovery is reported from the Monitor Mining Corporation property in Galena Gulch, near Breckenridge, Colorado. The strike was made while exploring low-grade deposits in porphyry and is reported as a three-inch vein of limonite carrying over 5.75 ounces gold and 32 ounces silver. Another vein of medium arsenate of iron is carrying .63 ounce gold and 7 ounces silver. The company is operated by W. A. Van Wert, 1282 South Vine Street, Denver, and associates. They control lode and placer ground, aggregating 280 acres, and have opened up approximately 900 feet of old workings. Plans are being made for the construction of a pilot mill.

Will W. Camplin has returned to Idaho Springs, Colorado, and is opening the Indicator mine on Santa Fe Mountain. The property embraces 19 claims. Gold ore carrying up to 1.5 ounces is reported.

A compressor has been installed and wire is being strung for electricity at the Specie Payment mine at Lawson, Colorado, being operated by Don Hall and associates of Houston, Texas. Hall has moved to the Hot Springs Hotel at Idaho Springs, Colorado, as manager of operations.

A carload shipment is being made from the E. G. Cookerly lease on the Hidalgo Gold Mines, Inc., property at Cripple Creek, Colorado. The strike is believed to be the intersection of the El Paso middle vein and a phonolite dyke, a location which his father confidently expected would some day be opened and yield rich ore. Chunks of the rock are said to assay 8 to as high as 12 ounces gold. Cookerly returned to Cripple Creek three months ago from Seattle, Washington, where he had been for the last 10 years.

The Salida Fluorspar Company has purchased a compressor, hoist, crusher and washer for its property in Brown's Canon, near Salida, Colorado. F. A. Mansheim, Box 574, Salida, is general manager of operations.

The Monitor Gold Mining Company has announced the program for the development of its Ridgway mine at Silverton, Colorado. It includes the construction of a power line from Middleton to the Cascade tunnel, the installation of mining machinery, driving the tunnel to the Ridgway vein and to continue a winze below the working level of the Ridgway. The company's property at Lake City, Colorado, is also scheduled for operation this summer. A. B. Brown, president, 904 First National Bank Building, Dallas, Texas, and his associates have lately visited the mine to arrange for the work.

The Banner American Mining Company at Ouray, Colorado, is concerned with increasing the recovery in its mill. The work is under the direction of J. T. Shimmmin, metallurgist, and for the last few months in charge of operations for the San Juan Metals, Inc., at Telluride. It will include the installation of some new machinery, including a duplex classifier and additional tables. Milling was resumed a few weeks ago at the rate of 30 to 40 tons a day. They plan to use a second shift after the new installations have been made. G. A. Franz of Ouray is president and general manager.

A gold strike has been reported from the No. 1 claim of the Red Arrow Gold Corporation, operated by C. H. Starr and George W. Gilmore of Mancos, Colorado. The strike is a mile southwest of the original Red Arrow tunnel. The report

JOHN F. DULING* discusses

Gold Mining Failures, Their Cause and Prevention

Among my friends I have one particular client who seems to make money from every investment he touches—mining or otherwise. I remarked upon this one day and he replied, "I don't think it is a matter of super-intelligence, but only one of common horse-sense." In other words, if we are to succeed in any business we must utilize the rules of ordinary business sense.

Previous to the nineties it seemed to be quite common practice for an eastern mining investor, on purchasing a mine, to send forth a wayward son to take charge. The son, having failed at everything else and being unqualified by training or experience for the mining business, naturally made a failure of mining. It has also been quite common practice to put in charge of operations practical miners who, while they had ample experience in the detailed operation of mining, had no executive ability, nor were they experienced in the handling of large sums of money. The result of such practice was that mining investments came into disrepute.

During and following the nineties the technically trained engineer came more and more into demand, until today every large successful mining operation is conducted by a staff of such trained experts. This has resulted in tremendous strides in the technique of mining and in the enlarging and improving of the treatment of ores in the metallurgical field, with greater safety and a renewed confidence in mining investments. Mineral deposits formerly considered too low in grade, or too complex in chemical composition to be exploited profitably, are now operated at a very satisfactory profit on the investment required for their development.

It has been said that every mining property must go through three stages of development before it becomes a mine.

First Stage: The prospector stage in which the lonely prospector, formerly with his burro or today with his "tin Lizzie," after spending months or perhaps years in the field, has located a favorable prospect and opened it up to the point where he must have more funds than he alone is capable of commanding with which to continue its development.

Second Stage: The promotion stage in which the prospector contacts the promoter, who in turn raises a nominal amount of capital which is expended, in many cases indifferently, and the project fails.

Third Stage: The experienced operator, with his engineers, appears upon the scene and finds that the work done by the promoter and the prospector has sufficiently developed the property to make it a very promising prospect. He takes over the property, refinances and, by the use of competent technical supervision and the following out of successful business principles, brings the property into production as a paying mine.

The capital invested at the second stage in this case was probably nearly all a total loss. It seems that often the business man who has been successful in other lines when he enters mining throws all

At this time, when the demand for gold has greatly stimulated this industry in all mining countries, it would be well to take stock of past experiences in the business of gold mining and profit by them.

his hard earned business principles to the wind, shuts his eyes and trusts to luck. He might better remember the old western proverb, "The Lord looks after those who look after their own."

A few examples from actual experiences may serve better to illustrate the wild abandon with which money is often spent in mining.

A gold property at an old ghost town, Camp Quigley, in western Montana, consisted of a prominent vein of honeycomb quartz, developed by a series of five tunnels. The property was examined for the purchaser by a prominent mining engineer, thoroughly sampled and reported to have a large tonnage of ore, averaging some \$17 per ton, blocked out.

Without further engineering check-up the property was incorporated for two million dollars and \$250,000 raised by stock sales. A 50-stamp mill was erected some eight miles from the mine to be driven by an over shot water wheel with water brought in by a large flume five miles in length. A town housing several hundred people was built. The construction of an eight-mile light railway to the mine was well under way when someone thought of re-sampling the mine. The ore, instead of averaging \$17, was found to average less than \$2 per ton, or less than one-half the estimated operating cost. The project was abandoned.

It developed that the first engineer's samples had been salted during a night in camp by the adding of a suitable amount of similar looking high-grade ore from a nearby mine. The investment was a total loss.

Ex-President Grover Cleveland, along with many other prominent men of that day, was said to have lost a large amount of money in this fiasco. This was a simple case of fraud and could have been discovered if a second check sampling had been carried out before equipping the property, as is usual with experienced operators of today.

In Boulder County, Colorado, after developing a gold property to a depth of some 200 feet a mill was erected at an expense of some \$50,000. The mill ran 30 days and closed down for lack of ore. This ore deposit, while of high enough grade, was too small to be of commercial importance. An investigation by a competent mining engineer would have determined this without the wasting of \$50,000 in plant erection.

This is probably one of the most common mistakes in mining, that of erecting

a milling plant before such a plant is justified by the ore reserves—in fact the west is dotted with such "dead horses,"—monuments to failure. Yet under competent technical advice and management these failures are not only avoidable but inexcusable.

An example in California. Some 10 years ago I examined and thoroughly sampled a gold prospect on the west slope of "Old Baldy" in Los Angeles County for a large western operator. The result of the sampling was that the mineralized portion of the vein averaged less than \$1 per ton. The property was rejected as non-commercial. In spite of this the same owner, since my investigation, has succeeded in getting two separate groups of investors to erect two different type mills upon the property to recover the gold that wasn't there. Their money was lost before they started, and had they sought competent technical advice it would not have been so lost.

In another well-known western fiasco of a few years ago a company was incorporated to develop a prospect in southern Nevada and all of the stock contracted for by the broker organizer at 15 cents per share. It was put on the market as personal stock at \$1.50 per share and run up through high pressure advertising to over \$3 per share, out of which 15 cents per share went into the development of the property and the balance passed into the pockets of the brokers.

What business is there in the world that can pay out with only 3-1/3 to 10 per cent of capital investment going into the legitimate development and equipment of the property? Failure in such cases is a foregone conclusion. The broker in this case is as guilty of robbery as the man who holds you up with a blackjack in the dark of the night.

There are three fundamentals that go into the making of a mine: First. Securing a prospect with geological conditions favorable to the formation of commercial ore bodies. Second. Securing sufficient capital to develop and equip the property up to the point of self-support. Third. Competent, efficient management. The failure to attain any one of these three essentials means the failure of property.

Likewise, in a well managed property in which we have attained the above fundamentals, there are three classes of risk for the capital invested. They may be enumerated as follows:

1. The prospect stage, in which a reasonable amount of money must be expended in underground development to prove up the possibilities of developing a commercial ore body. This is of necessity the most speculative stage of mining, but under competent technical engineering management the speculative risk is held to a minimum. Capital invested at this stage of development is entitled to a high rate of return to compensate for the risk involved.

2. The development stage, in which the semi-developed mine has enough ore in sight to protect the additional capital expenditure necessary in its full development

*Mining Engineer, Los Angeles

7-30-34

and equipment for production on a commercial scale. Capital invested at this stage is practically a protected investment with very attractive speculative features, for it is yet to be determined whether one has a large, long-lived, or a small property.

3. The operating or producing stage, at which period the prospect has been developed into a mine in the true sense of the word. Ore reserves are developed in the property sufficiently large to insure a life of several years with an additional prospective life in sight. The mine is paying fairly uniform annual dividends. At this period the mine has ceased to be a speculative investment. It is comparable with a manufacturing business with a large supply of raw material and a steady market. The earnings on the capital invested at this stage are on a par with those to be had in similarly safe industrial investments.

In order to develop a mine we must first finance it through the prospect stage. Fortunately many investors prefer to use a portion of their funds in speculative development with its added opportunity for high returns. Many mining companies prefer to spread their investment over several such properties, thus writing off any loss in one against the gain in others. In this respect our former president, Herbert Hoover, says in his "Principles of Mining,"

"If investment in mines be spread over ten cases, similarly valued as to minimum extension, the risk has been virtually eliminated. The industry, if reduced to the above basis for financial guidance, is a more profitable business and is one of less hazard than competitive forms of commercial enterprises."

For his own protection the investor and the operator must be brought to realize the necessity of applying sound business principles to the mining industry. If he bought a department store in the city of Los Angeles he would not hire a blacksmith or an inexperienced clerk to manage it. Yet the indiscretions committed in mine management are often comparable to this example. There are today ample engineers with a thorough technical training, rounded off by years of practical mining experience, available for such executive positions. It is not to be inferred that these men never make mistakes, but at least they will keep costly mistakes down to a minimum.

This all seems quite academic, yet within the last year a mill has been erected in western Nevada, for which a so-called practical mill man (apologies to the honest millwright) was hired for the job. Without testing the ore, or determining a suitable process of treatment, or preparing any working plans, a number of miscellaneous pieces of second-hand machinery were purchased and shipped to the property. A heavy Diesel engine set in place was found to be in the wrong position; the foundation blasted out again and reset; likewise a heavy ball mill and every other piece of machinery was set up, torn down two to three times, winding up with the main drive shaft running down the hill at right angles to its normal position.

Result: A hopeless monstrosity, and a fired mill man going merrily on his way. Months of time were wasted and enough money expended to build two new plants under suitable technical supervision. "What fools we mortals be."

Is it any wonder that the investor considers mining a gamble when such raw stunts are pulled year after year. A large percentage of mine failures are not due to the inherent risk in the mining business

(Continued on Page 26)

HUGE HOIST BEGINS WORK AT NIAGARA MINE, BINGHAM

Expressing confidence in the Bingham mining district and in the future of the mining industry generally, the United States Smelting, Refining and Mining company has just completed installation of a new underground hoisting plant at its Bingham properties. Construction called for is in excess of \$100,000.

The new electrically driven hoist, capable of developing 700 horsepower has been put into operation, making the largest underground installation of this type ever undertaken by a mining company in the United States, and ranking second in size to the one recently set up at the collar of the new Ross shaft at the Homestake mine in South Dakota. Work was started September 5, last, and has been completed under the direction of E. A. Hamilton, general manager of the smelting company; T. P. Billings, manager of mines, and L. A. Walker, superintendent of the Bingham property.

The new equipment is now serving the Niagara unit of the smelting company's mine which is one of the country's largest producers of silver-lead-gold ores. The hoist is housed in a steel and concrete chamber situated 6,300 feet from the portal of the Niagara tunnel, and about 600 feet vertically below the surface. A huge underground station has been cut 35 by 66 feet with 75 feet of auxiliary space for transformers, etc. Four thousand bags of cement and 25 cars of steel and equipment were used in building the station.

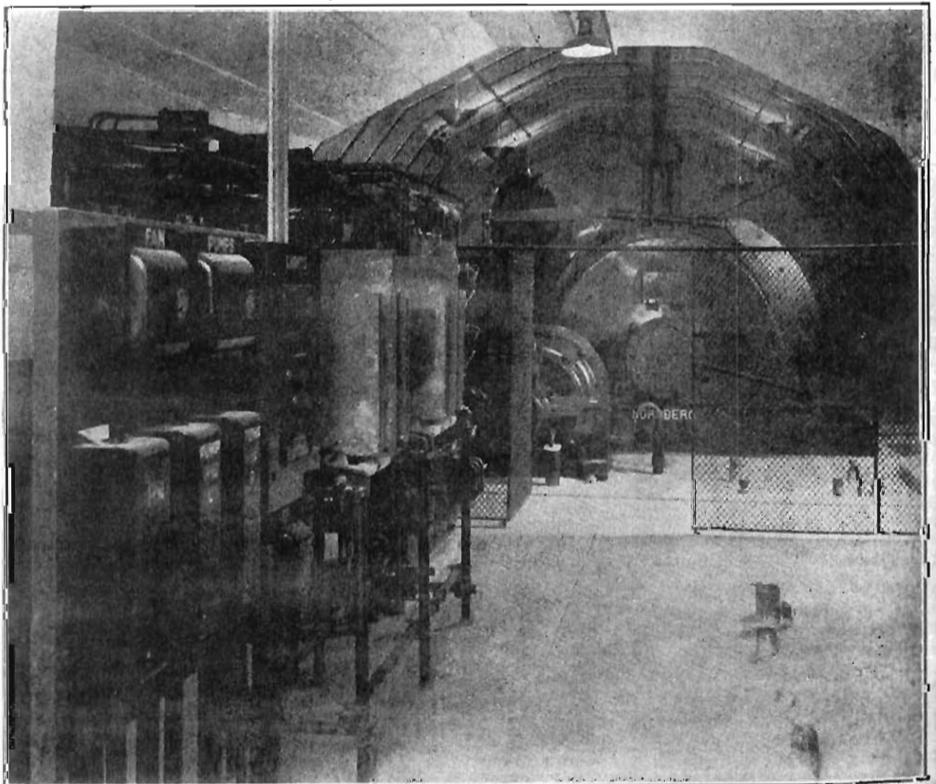
The hoist itself was built by the Nordberg Manufacturing Company of Milwaukee. It has two drums, eight feet in diameter with nine-foot faces and holds two layers of 1½ inch cable on each drum. The hoist is capable of operating with a capacity load down to a depth of 4,000 feet.

From this new station, the triple-compartment Niagara shaft is being operated, through which hundreds of tons of silver-lead-gold ore are being moved daily in addition to several hundred men who are taken to and from their work. The shaft has been sunk to a depth of 2,000 feet below the tunnel level and 10 of the 11 levels which are 200 feet apart are now in operation. Approximately 600 tons of ore are now being produced daily.

The hoist is equipped with the latest safety devices and has three variable speeds. A Lilly control so regulates the electrical current that accidents are virtually prohibited. In event overwinding of the cable occurs the current is transposed so that further movement of the hoist would be away from the point of danger. In hoisting men or ore the hoist is automatically set to a pre-determined point and breaks automatically in case of accident within the machinery or with the hoisting engineer. The Lilly control is also arranged to give audible indication when it is approaching a pre-determined destination.

Throughout the depression the policy of the United States Smelting company in this territory has been one of expansion. In the last four years the company has added materially to its substantial holdings in the Bingham district, until it is now the largest operator in the district with the exception of the Utah Copper company. During this period, the company kept its mines in operation with employment and mine production virtually on a normal basis.

In addition, the company completed and put into operation last October, the first lead refinery to be built within the state and the largest between Omaha and the Pacific coast. The refinery is located adjacent to the company's smelter at Midvale and represents an investment of approximately \$500,000.



The \$100,000 underground station of United States Smelting, Refining and Mining Company at Bingham, Utah.

COMPTON I. WHITE* protests

Capital Stock Tax on Idle Mines

The rulings of the Capital Stock Tax Division of the Internal Revenue Bureau have worked a distinct hardship on mining companies who have had to suspend operations, causing this protest to be sent to Commissioner Guy T. Helvering.

The issues involved in the Capital Stock Tax for mining companies who have suspended operation are far reaching and of vital importance to one of our basic industries—mining, and deserve the most careful consideration.

The very nature of mining and prospecting and the peculiar conditions affecting the prosecution of the development of the industry requires special consideration in formulating and applying rules and regulations governing the levying of the corporation tax as applied to companies engaged in this industry.

The business of mining and prospecting has a degree of uncertainty that is inherent with the deposition of ore bodies. If our government is to continue its policy of fostering mining activity and the promotion of the development of its mining resources, hazardous and uncertain as the investment of capital and labor in search for and in the development of ore bodies has proved to be, I submit that a liberal construction of the law must be applied in dealing with the mining industry.

The mining regions of the West abound with mining properties where men of enterprise and courage have and are making ceaseless effort to discover and develop mines. To do this organized effort is necessary—companies have been formed, capital raised and expended. In many cases, after heavy outlays, spent in doing what has proved unproductive work, the finances of the company have become exhausted, causing a forced period of inactivity.

To resume, new capital must be raised and a new beginning in a development program started. The perseverance of some of the companies and its investors may, and has in certain instances, brought success in uncovering ore in paying quantities. As a result the fortunate company entered a period of production by "doing business" in extracting and processing the ore from its property. Other companies not so fortunate must continue their periodic efforts digging for hidden wealth that may, or may not, exist.

In this uncertain struggle where every dollar raised by the owners of the mining property is to be expended in its further development, it is unthinkable that our government, or its departments, would impose a condition on these investors that would wreck their organization and force

a sacrifice of their holdings in many cases developed by the slow and tedious effort and put an end to their prospects of future success, by placing an erroneous construction on the provisions of a law designed to raise revenue without destroying the business organization looked to in order to produce this revenue.

Returning to the case under discussion and the issue so clearly outlined in your statement—"The only question at issue is whether or not the company is 'doing business' within the meaning of that term, as used in Section 215 of the National Recovery Act." From the facts revealed in the statements made in the application of the company for an exemption from the capital stock tax, it is clear that under the rules applied on this very question the company is not "doing business" within the meaning of the Act.

Due to market and business conditions, it had been forced to "cease and desist" and had stopped "doing business" as completely and absolutely as if the workings had been closed and its doors padlocked under abatement proceedings of the Federal Courts. When such proceedings are had and business is effectually and absolutely stopped for a period of one year, the owner does not have to dispose of his property to be effectually stopped from "doing business" in the eyes of the law. Under a stop order of the Federal Trade Commission, the owner is not forced to divest himself of his property to be effectually prevented from "doing business."

Under the regulations of that judicial body, in view of the circumstances affecting this case in particular, and the usual conditions affecting the mining business in general, I submit that where no production is had and no business has been transacted, other than that necessary to the preservation of the property and its equipment and the owners' interest therein, the rulings and regulations of your Bureau in construing what constitutes "doing business" should be modified and corporations in like situations be exempt from paying the capital stock tax.

ALASKA JUNEAU MAKES PROSPEROUS ANNOUNCEMENTS

The Alaska Juneau Gold Mining Company will pay both the customary extra dividend of 15 cents a share and the regular quarterly payment of 15 cents a share on August 1.

The company reported an operating profit of \$205,500 for June from 360,170 tons of ore milled. For the month of May the company reported a profit of \$180,500 from 367,870 tons of ore milled. Both figures are based on the present price for gold.

Since June 1, employes have been receiving an increase in wages of 50 cents a day, or a daily average of \$5.72. In 1931 the daily wage, all bonuses and contract payments included, amounted to \$5.62. The new scale is the highest in the history of the company in the Juneau, Alaska, district. It is to apply for one year, unless that in the meantime the price of gold falls below \$27 an ounce. Approximately 700 men are on the company's payroll.

GOVERNMENT AID TO MINES IS AVAILABLE

Under the Emergency Loan Bill, recently signed by President Roosevelt, the government now has available \$100,000,000 for loans to western mining companies able to qualify, which money may be used to develop and operate their properties. The aid to mining was included in an amendment successfully sponsored by Representative James Scrugham of Nevada.

Scrugham has returned to the west to assist in putting the loans into operation after having spent some time in Washington with RFC officials on the regulations and restrictions governing mining loans and to get them to appreciate that loans to the mining industry and the manufacturing industry had to be different in detail even though the same in principle.

Immediately following his return west, Scrugham had a conference with Charles H. Segerstrom, vice-president of the Gold Association of America. "On the basis of the conditions made public by the RFC for granting loans to industry," Mr. Segerstrom said, following his meeting with Scrugham, "it is obvious that these new lending powers of the federal organization will not be used for the indiscriminate pumping out of money. The requirements are so rigid that it is doubted if a great volume of loans to industrial projects will be made.

"However," Segerstrom continued, "Congress Scrugham has been able to collaborate with RFC officials upon a more liberal interpretation of these restrictions, which if adopted, will ease the present strict limitations whenever mining loans are considered."

First, according to the Scrugham limitations governing loans and tentatively accepted by the RFC, the potential borrower must be a "recognized and established" corporation, partnership or individual. That is, the applicant must have been established in business prior to January 1, 1934, and must be solvent and recognized as to business ability and character. A close adherence to this rule discourages applications from "wildcat" promoters.

Existing RFC regulations provide that all loans will be granted for five years only, although Scrugham has recommended that at the discretion of the RFC board longer terms may be accepted. Loans will be made to provide working capital, and this money may not be applied to fixed capital, nor to pay any existing indebtedness.

No loan will be granted for strictly "promotional" purposes, nor to pay back taxes, delinquent salaries, or to finance primary developments. "Adequate security" will be demanded for all loans, but the Scrugham amendment makes it lawful for the RFC to loan on mineral acreage of proven value. This includes properties having sufficient ore reserves, proven as to quantity and grade. It will also include mineral acreage on which an adequate amount of development and a partial blocking out of ore has been completed.

Government engineers, according to Scrugham's plans, will carefully examine all properties offered as collateral, and, unless there is a further liberalization in policy, valuations will be sufficiently conservative to afford real protection to the government for the loan. Properties being operated on a royalty basis will be eligible for loans, although it is understood that very strict provisions will be made regard-

(Continued on Page 26)

*Representative in Congress,
Clark Fork, Idaho

Angustias, Dolores y Anexas, S. A., died in Mexico City on June 29, at the age of 67.

William T. O'Donnell, who for many years was connected with El Oro mines, died suddenly of heart failure in his room at Hotel Bucareli, Mexico City, on July 4. O'Donnell was 65 years old and had spent the last 35 years in Mexico.

G. J. Lomen, colorful Alaskan figure, died recently in Seattle, Washington. His activity goes back to the famed Nome gold rush, in 1900. He was chief counsel for the Pioneer Mining Company at Nome and later became a federal judge in Alaska.

The death of Joe Rice, Arizona representative for the Hercules Powder Company, occurred at Kingman, Arizona, on July 10, following a brief attack from pneumonia. For many years Rice has made Tucson, Arizona, his home, but his work carried him to all sections of the state. He was probably the best known traveling man in Arizona. His body was shipped to Cincinnati, Ohio, his birthplace, for burial.

Frank E. Mariner, until a few months ago representative of the Great Western Electro-Chemical Company, died in Seattle, Washington, July 6. Mr. Mariner had been with the company since it first entered the field of mining chemicals ten years ago, resigning only a short time ago. He traveled the entire western territory from Washington to Arizona and by his jovial personality and good fellowship made friends wherever he went.

Raymond N. Priest, chief engineer for the United States Government on the all-American canal irrigation project, died unexpectedly from a heart attack, while in Phoenix, Arizona, to confer with Dr. Elwood Mead, U. S. commissioner of reclamation, and R. F. Walter of Denver. Mr. Priest was born at Tombstone, Arizona, in 1883, but has been a resident of Yuma, Arizona, most of his life. He became superintendent of construction of the Yuma project in 1909, a position he held until 1928, when he was named to the position of reclamation secretary. He assumed his present duties in November, 1933.

FRANK L. BUCHANAN

Frank L. Buchanan of Los Angeles, California, widely known in mining circles, passed away July 14. The vacancy created by his death is one which cannot soon be filled.

For fifty-seven years, Mr. Buchanan's activities in Colorado, Missouri, Arkansas, California, and other mineral states turned apparent failures to noteworthy success and made him famous. The accuracy of his ore tests convinced the most skeptical of his superior knowledge of both metallic and non-metallic products; his judgment concerning the best ways and means to make mines pay was seldom questioned. His inventions of milling and value saving machinery have permitted the reopening of many an abandoned mine and bid fair to perpetuate his name in a splendid way.

MINING MEN MEET AT BISHOP, CALIFORNIA

Third regional mining conference of the California State Chamber of Commerce was held at the American Legion Hall in Bishop, July 27. B. W. Holeman was chairman on arrangements and had a number of very interesting exhibits. The meeting was well attended.

MEXICAN SILVER MINERS TO HONOR SENATOR PITTMAN

A Silver Fiesta, by which Mexican miners will honor Senator Key Pittman of Nevada in recognition of his splendid work in behalf of silver, is scheduled for August 18, 19, and 20, at Nogales, Arizona, and Nogales, Sonora. The movement for the celebration is sponsored by the Nogales, Sonora, Chamber of Commerce of which Sr. Ignacio Soto of the Banco de Nogales, is president.

The outstanding feature of the fiesta will be the presentation to Senator Pittman of an Aztec calendar, made from silver taken from Mexican mines. The calendar is being carved by one of the finest artisans in Mexico.

Senator Pittman will arrive in Tucson, Arizona, on the morning of August 18, where he will be received by a motorcade that will take him to his quarters in the Montezuma Hotel in Nogales, Arizona. At one o'clock that same day the presentation of the silver Aztec calendar will be made by Governor Rodolfo Elias Calles, of Sonora, from a specially constructed platform on the international boundary line. This ceremony will be followed by a luncheon at the Cavern Cafe, in Nogales, Sonora, and by a grand ball at the Aztec Club at eight in the evening.

The following day, the nineteenth, there will be a barbecue luncheon at the Aztec Club, followed by an informal afternoon during which miners and business men will have ample opportunity to meet and converse with Senator Pittman.

On Monday, the twentieth, Senator Pittman and his wife will be accompanied by a motorcade to Magdalena, Sonora, where they will be entertained at an informal luncheon, and from where they will en train to Mexico City.

Extensive plans are being made for the entertainment of mining men from all sections of Mexico and the west, and especially from the bordering states of Arizona and Sonora. Special representatives are being selected by a number of organiza-



L. C. Woods, managing director of the Mining and Machinery Show, Shrine Auditorium, Los Angeles. The show, which will be held from July 30 to August 4, will demonstrate the extensive nature of the machinery industry in the Los Angeles territory. Mr. Woods took charge of the machinery show when Market Week plans were first formed early in the year.

tions, among whom is Brent N. Rickard, manager of the El Paso Smelting Works, who will represent the American Institute of Mining and Metallurgical Engineers. Special invitations to attend have been extended by Governor Calles to mining men throughout the West and Mexico. The event is of international importance and wide-reaching benefits are expected.

Senator Pittman has been untiring in his efforts to raise the level of the mining industry. He has been one of the principal proponents for the more extensive use of silver in national currency, and for the remonetization of silver throughout the world. It was directly due to his efforts that the silver agreement was accepted by the International Economic Conference at London last year.

BRADSHAW, INC., TO WORK MILLERS TAILINGS

Bradshaw, Inc., headed by Mark G. Bradshaw of Tonopah, will undertake the treatment of more than two million tons of tailings accumulated at Millers, 15 miles west of Tonopah, Nevada, when the Tonopah Mining Company was milling ore there. The tailings contain more silver than gold and values will be recovered by a process similar to that being used by Bradshaw on the Goldfield tailings ponds, but the sands and slimes will be treated in separate departments of the plant now under construction.

Construction relative to the new tailings plant is expected to occupy the greater portion of the next three months, and will involve an expenditure of some \$75,000. Part of the equipment, including tanks, motors, pumps and some accessories, is already at the site. Plans are to operate the slimes plant, handling the larger tonnage, about nine months of the year; but the sand division can operate through the winter as this material will be dry and will require only still leaching.

The tailings carry 2.6 to 3 ounces silver, and an additional small value in gold. The sands will be subjected to regrinding in Hardinge ball mills. The slimes, handled separately, will pass through the standard cyanide process, including agitation. Disposal of the reject to waste will be by means of long movable launders and waste water. The water supply at Millers is inexhaustible, coming from shallow wells in the flat.

INTENSE INTEREST MANIFEST IN LOS ANGELES MINING SHOW

As The Mining Journal goes to press a swarm of workers are busy installing the scores of displays that will make up the greatest Mining Show in the history of the Southwest. This Mining Show, a part of Los Angeles Market Week, opens on July 30, at the Shrine Auditorium, and will continue throughout the week, closing August 4.

The entire mining industry of the southwest is making plans for a week's vacation so as to be on hand at the big get-together. Some members are going for the purpose of selecting new machinery; some to secure up-to-the-minute information on all the new phases of mining, and others to meet and talk with old friends.

Red shirts and miners' caps will be in vogue throughout the week. Scores of relics of gold rushes, some of them dating back to the forty-niner, are being brought in from old mine camps and ghost towns and will be on display. The entrance to the Exposition Hall is being done over so that all visitors will pass through a steel mine portal.

Mill Heads from Western States

Brief items covering the mining industry in the Western United States and Northern Mexico.

ARIZONA

The mine of Magma Copper Company, Superior, Arizona, ceased operations on July 10. At that time the permissible hours that could be worked under the copper code, averaged over a three-month period, had been worked and operations were suspended. The mine will resume work on August 13. The smelter shut down on July 18. During the period of shutdown the necessary repair work will be done, and production at the smelter will be resumed on September 1. According to William Koerner, general manager, the company will not receive custom ore until smelting is started the first of September.

The Molybdenum Gold Mining Company, the operating subsidiary of Molybdenum Corporation of America, is employing approximately 60 men in its exploration work at Mammoth, Arizona. Two properties, the Mohawk and the New Year mines, are held under lease and option and are being actively explored to determine the molybdenum content of the underground veins. Both mines have been known for years as gold producers. Several carloads of ore are awaiting shipment to the corporation's refinery in Washington, Pennsylvania. Fred N. Marston is in charge of the work at Mammoth.

A bond and lease has been acquired on the old Yarnell gold mine at Yarnell, Arizona, by a group of Whittier and Pasadena, California, men. According to C. T. Vincent, attorney of 607 South Hill Street, Los Angeles, who heads the group, active development of the property will be undertaken and a 50-ton mill erected. It is said that the mine has been opened by three shafts and 4,000 feet of tunnels, with a large tonnage of tailings and low-grade ore on the dumps.

It is reported that the Monte Cristo Gold Silver Company, Constellation, Arizona, has worked out the flowsheet for its permanent mill, following several months of experimental operation with the pilot mill. Construction of the plant, of 100 tons' daily capacity, is to start at once. In the mine, two new major ore bodies are said to have been opened. The new veins are at right angles to the main Monte Cristo vein and were opened on the 300 level west of the deposit that won the mine its fame. One carries silver and the other gold and copper. H. B. Browning is superintendent.

Magma Copper Company, Superior, Arizona, reports for the quarter ended June 30, 1934, a profit of \$231,734, based on a net average sales price of 7.80 cents per pound of copper, and after expenses and depreciation, but disregarding federal taxes. In the preceding quarter profit was \$231,575 based on a net average sales price of 7.80 cents per pound copper. This gives a total profit for the first six months months of 1934 of \$463,309 before federal taxes.

Employees of Phelps Dodge Corporation, Bisbee, Arizona, went on record in favor of collective bargaining through employees' representation rather than the miners' union. The employees' representation plan was adopted by the close vote of 449 to 419, the election being conducted by the Los Angeles regional labor board at the request of the miners' union.

During June the copper production of United Verde Extension Mining Company, Jerome, Arizona, totaled 2,441,058 pounds, compared with 1,206,538 pounds in May, and 2,674,000 in June, 1933.

A test shipment of ore from the Illinois Mining Corporation, Congress Junction, Arizona, is said to have run \$118 in gold and silver, principally gold. A small shipment of a little over a ton of mine-run ore is said to have returned \$49.31 to the ton. Jay Burns, president of the company and directing the work, recently made a trip to Denver on company business.

C. H. Smith, one of the lessees at the Belmont Copper Mining Company, Superior, Arizona, has been making regular shipments of silver-gold ore to the Magma smelter. After sinking a winze from a sub-level 85 feet, Smith has drifted about 50 feet in ore. The ore appears to be about 20 feet in width and has three to four feet of high grade contained in it. Miners are now stoping up in this ore and are extracting about 20 tons a day. Not enough work has been done on this new level to determine the extent of the ore body, or its value, but samples indicate that it is of good shipping grade.

Judge Richard Lamson of the Yavapai superior court has ordered judgment in favor of United Verde Extension Mining Company, Jerome, Arizona, in its suit to recover \$26,878.91 alleged over payment of 1933 taxes and six per cent interest on that amount from September 14, 1933. The court held that \$1,600,000 valuation placed on the United Verde Extension's mining claims by the Arizona tax commission was \$800,000 too high. The company had claimed \$600,000 was the proper valuation, and paid both installments of its 1933 taxes under protest.

The Sunrise Gold Mine, 19 miles west of Wickenburg, Arizona, has under construction a 50-ton milling plant. For several months the Sunrise has been shipping a carload of ore to the smelter each week, this ore said to run from \$17 to \$25 per ton in gold. C. W. Mitchell is manager of the property.

The Eagle-Picher Lead Company is sampling the Austerlitz mine, two miles west of Ruby, Arizona. This mine was first operated by the Jesuits from Tumacacori Mission and produced a large amount of high-grade ore from shallow workings, but no attempt was made to work at depth. The Eagle-Picher is operating the Montama mine, in the same district, and has a large force of men employed there under the superintendency of Grover J. Duff.

Preliminary arrangements have been made for the construction of a 15-mile power transmission line from Kingman, Arizona, to the Katherine district on the Colorado River where mining and milling properties are operated by the Gold Standard Mines Corporation. It is understood that the actual construction of the line will be started within a few days, and completed within 60 days. The line will be an extension of the Public Utilities Consolidated Corporation of Kingman. Gold Standard Mines Corporation, Box 632, Kingman, Arizona, Earl F. Nieman, general manager, is operating the Arabian

and Roadside mines, and the Katherine mill.

Development of the Tintic mine at Chlo-ride, Arizona, has been started by Rae L. Johnston and associates of Oatman, Arizona. The first work is said to be the sinking of a vertical shaft to cut the vein several hundred feet below the present shaft level.

CALIFORNIA

The work of driving a tunnel to the main ledge in the Young America mine, on upper Sardine Lake, near Sierra City, California, has been contracted to Fred Yocum and associates. The tunnel has been cleared ready for actual drilling. H. R. Plate, consulting engineer, with headquarters at the Bret Harte Inn at Grass Valley, is operating the property. N. L. Wimmeler, Box 139, Sierra City, is engineer at the mine.

Announcement is made of two gold strikes in Eldorado county, California. One at the Alhambra mine, yielded \$14,000 from a small pocket; and the other, in the Timm mine, is said to be worth \$10,000. The Alhambra mine has been operated since last fall by Robert Santini of Georgetown, J. L. Baird and associates of Lincoln, California. It was formerly known as the Bob Redd mine, getting that name from its discoverer. High-grade ore was found less than 15 feet from the place where drifting ceased many years ago. The Timm mine is owned by Wilbur Timm and is being operated under lease by Jensen & Schneider.

Construction of the new \$250,000 mill for the Cardinal Mining Company at Bishop, California, is being rushed to completion by the Eastern Iron & Metal Company, 634 South Fourth West, Salt Lake City, Utah. More than 70 tons of lumber have been shipped in for construction of the steel and wooden building.

The Kelly Gold and Silver Mines, Inc., has a payroll of 75 men, or approximately \$10,000 a month at the Kelly mine at Randsburg, California. Recent operations have centered mainly on lowering the water level and all levels down to the nineteenth are clear of water. Mining is now in progress from the fifth to the twelfth levels. The work is, however, concentrated mainly on the twelfth level, from where an average of 175 tons of a good grade gold and silver ore is being moved to the mill. Frank W. Rorer, Hollingsworth Building, Los Angeles, is vice-president and general manager.

The International Mining and Milling Company plans to have its 20 stamps being installed at the Mc. Gaines property at Hornitos, California, ready for crushing ore in August. All necessary equipment, including pipe, electric supplies, elevators, welding equipment, shafting and pumps, is on the ground. William Corwin is in charge of construction. At Lonely Camp, in eastern Kern county, the International people are crosscutting from the 275-foot level of the Gold Bug shaft to explore a virgin area between that shaft and the St. Lawrence Rand mine. A 60-foot width of ore is reported to have been passed through, from which samples run \$8 to \$10 in gold. The Gold Bug is owned by Anthony DeMayo. Both the Gold Bug and St. Lawrence Rand are being operated by International. A. G. Hanson, 183 North Martel Street, Los Angeles, is president and general manager. Tom Finerty of Randsburg, California, is general superintendent.

John C. McGarry and associates have installed a 310-foot Ingersoll-Rand compressor at the **Cranberry** mines at Incline, California. The crew has been increased on exploration and development work and tests are being made to determine the best method of crushing and recovering the gold from the ore. The same interests are working the Rutherford mine.

Under the management of A. D. Hadsel, the old shaft in the **Doss** mine at Hornitos, California, has been reopened to 200 feet and the vein is being examined. At 100 feet it averaged 20 feet in width and the entire run of the vein was milled at profit. The average of the total was about .5 ounce gold to the ton. The mill is of the Hadsel type and can take 65 tons of ore in 24 hours. It has been operating almost a year and bullion is being shipped to San Francisco every five or six days. Old records indicate that 700 feet of drifting has been done at the 200 level and that the ore has not been touched. Should this be proven it is probable that the capacity of the present 65-ton plant will be increased to take 200 tons of ore a day. Associated in the project are R. G. Clifford, Robert Plagaman and Mrs. Leonard Youdall of San Francisco, and Harlow Hardinge of York, Pennsylvania. Twenty-five to 30 men are employed.

The **Lava Cap Gold Mining Corporation** at Grass Valley, California, is running an average of 125 tons of ore a day through its 250-ton mill. The ore is coming from both the **Banner** and **Central** shafts. Underground work is on a two-shift basis and requiring more than 80 men. The sinking of the **Central** shaft to 1,200 feet, one of the major development projects, is about completed. C. E. Schiffner is engineer in charge.

G. Weisbaum, 165 Main Street, San Francisco, California, is reported to have leased the **Snowden Hill** mine, nine miles north of Camptonville, California, and to be making arrangements to operate the mine. This is a drift proposition, with much virgin area yet available, and during the last few years has been worked by various managements.

The **Spring Hill Gold Mines, Inc.**, one of the H. R. Plate operations at Grass Valley, California, has acquired a lease and option on the **Golden Gate** property, between the **Spring Hill** and the **Idaho-Maryland** mines. A tunnel is being driven on the 500 level to connect with the **Golden Gate** shaft. Three shifts, in all 12 men, are employed.

The **Mattie Gold Mining Company** at Grass Valley, California, reports striking a five-foot ledge of ore at the bottom of its new shaft at a point 40 feet below the 600 station. The vein is a massive white quartz, carrying a large percentage of sulphides of good grade, and may be either the top of a new shoot or the south extension of the rich oneshoots formerly worked in the upper levels during the **George W. Root** regime. The company, since its organization in the spring of 1931, has been doing nothing but straight development work with depth as its objective.

H. E. Cary and New York associates are sinking an inside shaft from the 400-foot tunnel in the **McRae Ridge** mine at Johnsville, California. The shaft will be sunk to the main channel, which has yielded large amounts of rich gold-bearing gravel in adjacent properties. Vigorous development will be undertaken as soon as the objective depth is reached. Plans for this summer include the installation of

considerable equipment and the construction of buildings.

W. H. Butler, mining engineer, 1027 Manzanita Street, Los Angeles, has acquired under lease and bond the **Brooklyn-Los Angeles** mine in the Dale mining district, Riverside county, California. Present work is confined to leaching the tailings, which have an average value of \$11 a ton, and it is estimated that 2,500 tons of material is immediately available for treatment. Butler has installed four 5x14-foot tanks for cyaniding. His first runs gave a recovery of 80 per cent. Water is being pumped from a well six miles away. Six men are employed. After the **Brooklyn** tailings have been run, the **Los Angeles** mine will be operated.

Preliminary work done by E. C. Coates of the **Coates Construction Company** of Sacramento, on the **Plumas Eureka** mine at Johnsville, California, is reported to have turned out satisfactorily. Accordingly, complete gold-saving machinery will be installed to recover both the fine gold values and the sulphides. Coates used a one and a half yard shovel to load the gravel to five five-ton trucks, which conveyed it to a revolving screen. After the boulders were removed, the fines were passed to a gravity system of riffles.

The **Carnation Gold Mining Company**, N. Srdanovich, superintendent, Johnsville, California, is building a boarding house to replace the one that burned. The property is equipped with electric energy, generated upon the company's holdings, and supplied from a water source from **Grass Lake**. The supply is said to be sufficient for future demands. Ore has been proven over a width of five feet.

John Wilson and associates of Reno, Nevada, are reported to have leased the **Beaver and Holloway** mines on **Washington Creek**, Plumas county, California, and to be installing a 10-ton crusher. Enlargements are proposed as development work progresses.

The **Draper Vein Syndicate** placed its 50-ton cyanide plant near **Soulsbyville**, California, in operation on old mill tailings from that property and the nearby **Black Oak** and **Soulsby**, noted former producers of the district. It is reported they are already considering plans for enlarging the plant to treat the large tonnage of tailings available. Frank Mitchell of Columbia, California, has charge of operations.

The **Grizzly Creek Mining Company** expects to start washing gravel in a few days when it will have completed a 900-foot drain tunnel. Its holdings cover three miles of gravel beds along **Little Grizzly Creek**, near **Walkermine**, Plumas county, California. The stock has recently been approved and is trading on the **San Francisco Mining Exchange**. Capitalization is 300,000 shares of 25-cent par. The officers are W. T. Young, 693 Sutter Street, San Francisco, president; D. W. Cooke, 56 Post Street, San Francisco, vice-president; and Howard E. Gawthorp, **Walkermine**, secretary-treasurer. The company has an office in the **Russ Building**, also in **San Francisco**.

K. C. Schweglar, mining engineer, Financial Center Building, San Francisco, has taken over the **Heslep** mine at **Quartz**, Tuolumne county, California, from the **Sonora Abstract and Title Company**. The mine is one of the **Dutch-App** group. The Schweglar lease covers the **Heslep** vein from the surface down to 800 feet and will not interfere with operations through

the **Dutch** shaft, which is 2,350 feet deep. Preliminary work on the lease has been contracted to J. A. Keyes of **Jamestown**, California. Location is to be selected for sinking a shaft and machinery for development work and mining of ore installed.

P. B. Russell, in charge of operations at **Sheepranch**, California, for the **Mar. John Mines Company**, has placed development work and the mining of ore on a full 24-hour schedule. The additional effort is being put forth to keep the ore supply well ahead of mill requirements. The rehabilitation of the 25-ton pilot mill is nearly completed, flotation machines increasing capacity to probably 200 tons a day. The company has an office at 1511 Third Avenue, Seattle, Washington. J. T. Martin of San Francisco, the president, is spending most of time at **Sheepranch** at present.

William Teepell is reported to have taken over the **Dreisam** property in the **Arastraville** district, near **Tuolumne**, California, from Mrs. Mary Conde, and plans to begin development work soon. The old workings include a 500-foot shaft, through which a substantial production has come from the **Yellow Jacket** and **Ophir** veins.

The **Russell Gold Mining Company** is putting up a sampling plant at the **Vista** mine at **Angels Camp**, California. Milling ore has been developed at the 200-foot level and shows a substantial increase in size over the vein opened on the level 100 feet above. The gold content run \$6 to \$18.50 a ton. Meanwhile, the shaft is being continued down to 300 feet. Operations are under the engineering of J. J. Murray, Box 1058, **Angels Camp**.

J. C. McDonald of **Mokelumne Hill**, California, is putting a 15-ton pilot mill on the **Kaiser William** mine, three miles south of **Glencoe** on the **Calaveras River**. The set-up includes a crusher, ball mill, concentrating table, amalgamation plates and a compressor. McDonald has had the mine under option since May 1, last. It is a quartz proposition, with two levels aggregating 600 feet of tunnel. Four men are employed.

J. P. McCormick, Box 135, **Sonora**, California, is unwatering the **Angels Deep** mine at **Angels Camp**, California, to the 225-foot level. The work is being done under contract.

William T. Hart is reported to have secured a lease and bond on the **Green** and **Mt. Moriah** patented lode claims, two miles northwest of **Confidence**, California, from the **Green Consolidated Gold Mining Company**. The property has been idle for some time. It was once operated as a high-grade gold producer.

E. T. Prather has started running one through his new 50-ton mill on the **Look-out Mountain** mine at **Mokelumne Hill**, California. Water for milling is furnished by gravity by a water right dating back to 1876 and which was acquired by **Henry Spinola**. Seven men are employed, and provisions are being made to employ others.

The **Ida-Leona Mining and Milling Company**, which 18 months ago took over 300 acres in the old **El Sobrante** mining district in California, including the **Gavilan** mine, is milling from the dump ore. Values run \$8 to \$10 a ton in gold. **Frank Nelson**, 1340 North Berendo Street, **Los Angeles**, is manager of operations. They have rehabilitated the upper workings, installed a 50-ton ball mill, classifier, amalgamation unit, concentration tables and cyanide plant. They claim a gold recovery of 95 per cent.

A group of Oakland men, organized as **The Golden State Mining Company, Ltd.**, is reported to have taken over mining property on Horse Creek, a tributary of the Klamath River, and near Yreka, California. The property includes Barton's Gearhart, the Avery & Tebbe, Weaver and the Doolittle, all placer claims. John Lindsay, Bernard Hotel, San Francisco, California, is secretary to the company. Plans call for immediate operations and for the installation of considerable machinery. It is understood that 10,000 feet of lumber have been ordered.

Preliminary work has been started on the **Kanaka Hill** hydraulic mine, four miles southwest of Happy Camp, California, which a few weeks ago came under the control of D. A. Rizer and R. S. Goff of Los Angeles. The deal included water rights, ditch and flumes. Plans are to bring in water from Wilson and Kanaka Creeks through a mile and a half of pipe, and to divert it from a reservoir to two giants. Preliminary work, it is said, may call for the expenditure of as much as \$25,000 in rehabilitating the old equipment and for new structures. The property had been controlled by Steve S. Green of Happy Camp.

It is reported that the **American Bar Quartz Mining Company**, headed by W. H. Duffey, 1068 Mills Building, San Francisco, has 22 men working at Volcanoville, California. Development work has been steady since the mine was reopened last fall. A new mill with 25 stamps, etc., was installed this spring, and is operated by water power.

Thomas D. Campbell has acquired the **Borgard and Crain** placers at Solyer on the Trinity River, near Weaverville, California, and is installing equipment. It includes a pumping plant and pipe line which conveys water from the river to the deposits. The mines are in a field long noted for its yield of placer gold. They will be worked by hydraulic monitors and sluices.

The **North Star Mining and Development Company**, of Arizona, has acquired the Cincinnati and Jacobsen gold properties in the Garden Valley district of California. Operations are about to start under the direction of George Morgan. The work has been carefully mapped out. Both of these mines have been opened enough to prove the existence of strong, productive ledges. M. J. Kiely, 747½ South Spring Street, Los Angeles, is president of the North Star.

McFall & Becker, P. O. Box 18, Altaville, California, are working steadily on the Virginia property. Their shaft is down 112 feet, with a crosscut at the 100-foot level, and a 60-foot drift going north is being reconditioned.

The **Hammon Engineering Company**, Balfour Building, San Francisco, is building an electric transmission line for use in the exploration and development of the **Buffalo and Cambra** gold quartz lodes near Oroville, California. Initial work is being carried on in the Buffalo mine and includes repair work on 450 feet of incline shaft. George I. Barnett, formerly superintendent for the Bradleys at Tybo, Nevada, is engineer in charge. His address is Greenville, California, where the same company is directing the reopening of the Indian Valley mine.

President R. F. Hafteneffer of the **Utah Apex Mining Company** has returned to Bristol, Rhode Island, from the company's gold mine at Placerville, California. He reports that during the present

fiscal year, which began September 1, 1933, the shaft in the Montezuma mine has been sunk from the 1,100 to the 1,300-foot level, and a new ore body containing higher gold values has been found in the south end of the 1,200-foot level. The daily tonnage has been increased from approximately 98 tons to around 170 tons at the present time.

The **Gold Crown Mining Company, Ltd.**, is putting its new plant in the Dale mining district, San Bernardino county, California, into operation. It has been changed somewhat in design from the original intention, according to George A. Novell, president, inasmuch as an all slime system has been decided upon. The company has been adequately financed. Headquarters is 730 Petroleum Securities Building, Los Angeles.

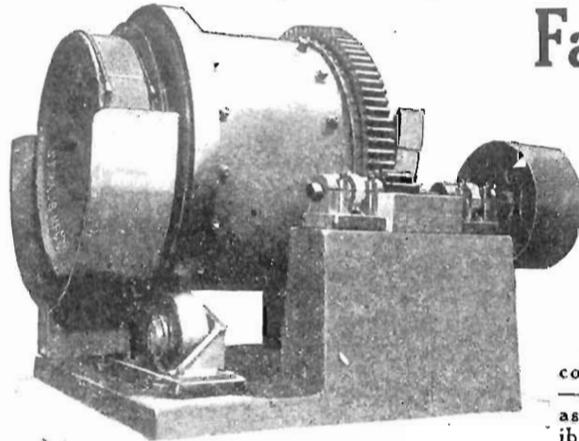
COLORADO

Charles L. Fulton, 233 Fourteenth Street, Denver, has located a new mining property near Saguache, Colorado, and is planning immediate development. The ore is said to contain both gold and silver values.

The high-grade streak encountered at the **Lucky Discovery** property, Durango, Colorado, is reported widening as the stope is projected upward. After the boarding and bunk houses, now under construction, are complete, a machinery and assay office will be built. Assay equipment has already been purchased. The aerial tramway is expected to be completed before next winter, according to C. R. McKay, of Durango, manager.

Surveys in the Horseshoe district on Mosquito Range, southwest of Fairplay,

Save Money—Buy Direct from the Factory!

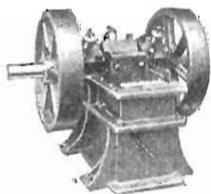


Every purchaser of Straub equipment enjoys the low factory prices, the lowest transportation costs by rail or water to nearest shipping point and easy transportation to the mine. Straub first cost is less!

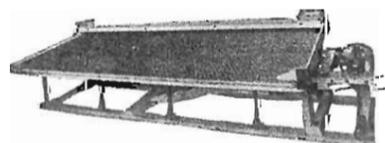
A popular size of Rib-cone Ball Mill is illustrated—25-35 ton capacity, shown as screen type but convertible to screenless. Other sizes, 2 to 250 tons, \$220 and up.

Save Gold—Save Operating Expense —Use Straub Equipment

Straub economy doesn't end with its first cost. All Straub equipment costs less to operate (using less power and water) and it saves all the gold possible.



The hardest ores give in to Straub heavy-duty force feed crushers. They supply a perfect mill feed. \$175.00 and up.



Overstrom Universal Concentrating Tables are as simple as a gold pan in the hands of an old timer—and far more efficient.

Rib-cone mills grind quickly—discharge the finished product as soon as made and regrind only the oversize. The construction is all steel (NOT cast iron.) No internal moving parts except the balls. In design, in construction, and in service, these mills have won the hearts of practical mining men. Don't you want to know all about them? Write, wire, or come to—

Ore Tests OUR SERVICE TO MINES IS COMPLETE Assays
STRAUB MFG. CO.
 505 Chestnut St. Oakland, Calif.

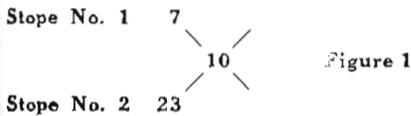
DAVID C. MINTON, JR.,* discusses

Sweetening Ores to a Desired Grade

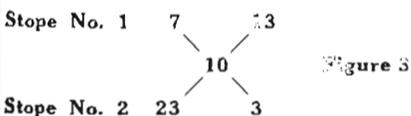
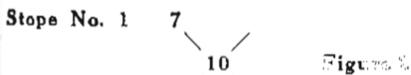
The author presents a short, diagrammatic method of calculation for sweetening ores to a desired grade, a method which he has found quite useful in small-scale gold mining.

In small-scale mining it is often desirable to sweeten a low-grade ore to a constant desired grade and at the same time to conserve the small stopes of high-grade ore. In sweetening low-grade ores a basic rule of mining should be remembered, viz.: ore of such a grade that cannot be profitably mined and treated by itself should not be mined and sweetened as such a process would profit less than the mining and treating the high-grade ore by itself. This short method of calculation accurately gives the proportion by weight of high and low-grade ores to be mixed to obtain a product of desired grade for milling or shipping.

For example: Assume the problem of sweetening an ore of \$7 per ton from Stope No. 1 with an ore of \$23 per ton from Stope No. 2 to obtain a constant mill-head of \$10 per ton. Set up this data in diagrammatic form as in Figure 1.



Subtract the value of the low-grade ore from the value of the desired grade as in Figure 2, then subtract the value of the desired grade ore from the value of the high-grade ore as in Figure 3.



By the above calculations, the proportion necessary in mixing to obtain the desired grade of \$10 per ton is 13 tons of the \$7 ore and 3 tons of the \$23 ore. The above diagrammatic solution obviates and is proven by the following algebraic solution:

Let x = number of tons of \$7 ore.
 y = number of tons of \$23 ore.
 z = total tonnage.

Required: Proportion of x and y to be mixed to obtain a product of \$10 per ton.

$$\begin{aligned} x + y &= z \\ 7x + 23y &= 10z \\ 7x + 23y &= 10(x+y) = 10x + 10y \\ 23y - 10y &= 10x - 7x \\ 13y &= 3x \\ x &= 13 \\ y &= 3 \end{aligned}$$

*Mining Engineer, Tucson, Arizona.

Therefore, 13 tons of \$7 ore must be mixed with 3 tons of \$23 ore to obtain the desired grade of \$10 per ton.

The above method as solved diagrammatically may be stated in formula form as follows:

$$\begin{aligned} \text{DESIRED GRADE} - \text{LOW-GRADE} &= \text{TONS HIGH-GRADE.} \\ \text{HIGH-GRADE} - \text{DESIRED GRADE} &= \text{TONS LOW-GRADE.} \end{aligned}$$

The grade may be expressed in terms of percents or ounces per ton as well as in dollars per ton. If the specific gravities of the high and low-grade ores are about the same, as in quartz-gold ores, and the cars are of uniform capacity; the number of cars may be substituted for the number of tons.

BULLETIN ON CENTRAL IDAHO GEOLOGY IS AVAILABLE

Extensive deposits of gold-bearing gravel in north central Idaho hold commercial possibilities for large scale placer operations, according to the latest bulletin issued by the Idaho Bureau of Mines and Geology.

This publication, No. 40, "Gold-bearing Gravel of the Nezperce National Forest," is a 26-page preliminary pamphlet intended to help prospectors recognize the ancient "high basin" and later gravel deposits found in the region. It was published in cooperation with the U. S. Geological survey as a report on field work and mapping begun in 1931. Its author is Dr. John C. Reed, a government geologist.

The area covered by the report lies almost entirely within the Nezperce national forest east and southeast of Grangeville in Idaho county. It includes the Buffalo Hump, Elk City, Newsome, and Castle Creek mining districts. The Florence and Dixie districts, although adjacent to the area, are not included.

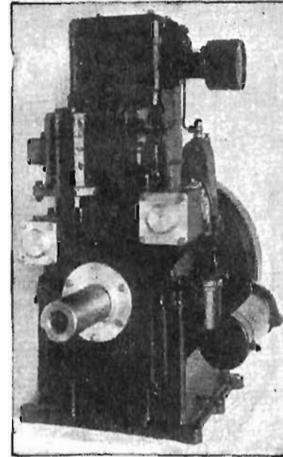
MINING GROUPS TO HOLD JOINT MEETING DURING MINING SHOW

At the July meeting of the Mining Association of the Southwest, Charles S. Knight, director of the industrial department of the California State Chamber of Commerce, was the guest speaker. He urged all present to attend the Bishop regional meeting which was held July 27, sponsored by the State Chamber, so that mining men of the cities might mingle with the miners of the Sierras.

A short, practical address on recent developments in flotation practice was given by Thomas Oxnam. He stressed the need for proper testing of the ore before construction of a mill.

Announcement was made by President Julian Boyd that the next meeting of the organization would be held jointly with the American Mining Congress, the American Institute of Mining and Metallurgical Engineers, Los Angeles Mineralogical Society, the Mineral Committee of the State Chamber, in conjunction with the Mining Show at the Shrine Auditorium, Los Angeles, on Thursday, August 2, at noon. A large group of representative mining men is expected to attend.

Built for Miners



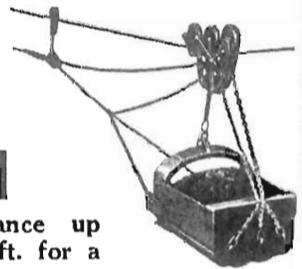
- 10 to 60 hp.
- 4 1/4 x 6"
- Full Diesel
- 4" Diam. Shaft
- 6 Ring Piston
- Removable Liner
- Bosch Injection
- Starter & Generator
- Completely Equipped
- Weights: 800 to 1650 Lbs.

For Pumping, Ball Mills, Crushers, etc.

Mason Diesel Engine Co.

3865 Santa Fe Los Angeles

Dig and Haul



any distance up to 1500 ft. for a few cents per ton.

Sauerman Slackline Cableways —the world's best for digging from rivers or wet pits.

Crescent Dragline Scrapers —supreme for mining bank deposits, for stripping, for stock-piling, for reclaiming.

Sauerman Bros., Inc.

436 S. Clinton St., Chicago



Complete Equipment For Mine and Mill

Flotation Chemicals Assay Supplies, etc.

Goddard-Jackson Co.

1400 Santa Fe Avenue Los Angeles, Calif.

Classified Advertising

5¢ per word for the first insertion and 4¢ per word for subsequent insertions, minimum price \$1.00. Box number counts for 10 words to cover cost of forwarding replies. If desired in larger type and displayed, \$2.50 per inch per insertion.

POSITION OPEN

Position open in Pacific Northwest for ASSAYER and METALLURGIST familiar with dental alloys and experienced in marketing. Address Box M-22, The Mining Journal, Phoenix, Arizona. 7-30

POSITION WANTED

MINE SURVEYOR. Spanish. 31 years of age. Married. Now working in Latin America with an American company. Desires change. For South America or the Philippines. Good references. Address Box P-5, The Mining Journal, Phoenix, Arizona. 8-15

EQUIPMENT FOR SALE

FOR SALE. New, 300-ft., 2300-volt, three conductor, rubber clad, electric cable No. 4 wire. Address F. C. Robinson, 403 Baker Bldg., Walla Walla, Washington. 8-30

I will sell for a low price a Sullivan diamond core drill. Used but thirty days. B. L. Brennan, 1526 1/2 No. Hudson Ave., Los Angeles, Calif. 8-15

FOR SALE OR LEASE

FOR SALE. Quicksilver property, partially developed; 257 acres patented. Ten miles to railroad, seven miles paved. Considerable equipment. Electric power. Satisfactory working conditions all year. For further information address Box B-14, The Mining Journal, Phoenix, Arizona. 8-15

MINE FINANCING

CAPITAL WANTED to develop valuable quicksilver property in Terlingua District, Texas. No free options, Agents, Brokers or Promoters. Frank Duncan, Terlingua, Texas. 8-15

POSITIONS OPEN

R-4432-S MILL SUPERINTENDENT, technical graduate, preferably not over 40 years old, thoroughly experienced in gold milling, to build and operate a 300-ton cyanide mill. Salary depends upon the man. Two-year contract. Apply by letter. Location, Philippines.

R-4433-S MINING ENGINEER, 35-45 yrs. old, with special experience in the examination and engineering of placer mines. For such a man who would be willing to locate in Manila, P. I., a very attractive proposition paying a salary and bonus is open. Apply by letter.

R-4423-S ASSISTANT MILL SUPERINTENDENT or FLOTATION FOREMAN (2 positions open) at large mill in Mexico. Must be technical graduate with several years practical experience in the preferential separation of gold-silver-copper-lead-iron-zinc ores. A permanent Mexican passport is essential. Permanent. Opportunity. Salary open. Apply by letter.

ENGINEERING SOCIETIES EMPLOYMENT SERVICE

Newton D. Cook, Mgr.
57 Post Street San Francisco, Calif.

Buy Your
TECHNICAL BOOKS
From
THE MINING JOURNAL
Phoenix Arizona

THE TONOPAH MINING COMPANY OF NEVADA

Exploration Department
PROSPECTS OF MERIT FINANCED

Write Either
H. A. JOHNSON Or Main Office
Supt. of Operations 570 Bullitt Bldg.
Tonopah, Nevada Philadelphia, Pa.

UNITED VERDE MINERS HONORED BY HOLMES SAFETY ASSOCIATION

At a meeting of the United Verde bossing organization and workmen's committee, held Saturday, July 14, Benjamin F. Major and David H. Jones were presented with Joseph A. Holmes "Gold Awards" for outstanding bravery in saving the life of a fellow employe in an accident that occurred in the shovel department.

The citation follows:

"Thursday, May 4, (1933), at 12:30 P.M., two men were injured by a premature shot on No. 10 1/2 bench of the stripping operation. Some 60 to 70 boulders had been drilled and loaded, about 15 men were on the muckpile spitting fuse. Shortly after starting to light same one shot went off injuring one man severely. Another was pinned down by a large rock that became dislodged and rolled a short distance. All of the men left at once to seek shelter except two: Benjamin F. Major and David H. Jones.

"These two men realized that John Stout, who was pinned under the rock, faced certain death. Fuse were burning directly in front of him and on both sides of him. There was not much time left. It was a matter of perhaps a minute. Nevertheless these two men stayed and pulled these burning fuse out of the holes nearest Stout. This in itself is a most dangerous thing to do. They did not have time to pull all the lighted fuse, but they kept at it until the shots began to go off. Jones was thrown down by the force of one shot, but was uninjured. He lay there while some 12 to 15 shots went off around him. Ben Major went to Stout's assistance and was trying to free him while these shots were exploding. Neither of these men was injured. Stout was finally released with only bad bruises to show for his harrowing experience.

"Without a shadow of a doubt Stout's life was saved only because of the cool nerves and great courage possessed by Major and Jones who, in the face of almost certain death, stayed to do all they could to protect and save a fellow miner. Only their bravery saved a life."

The Joseph A. Holmes Safety Association is a national society, its president being Scott Turner. Its object is to sponsor safety in mines and industries, to broaden the knowledge of the proper use of explosives, safer mechanical and electrical equipment; or a bureau working towards safety and efficiency in mining and allied industries. Special achievement in safe operating records is awarded by Holmes certificates and outstanding heroism in saving lives of fellow workmen is honored with bronze, silver or gold medals.

It is of interest to know that these two men received certificates and gold medals, or the highest awards presented by this safety organization.

R. E. Tally, president of the United Verde, made the presentation of the awards. Short talks were given by C. R. Kuzell, general superintendent; Dr. A. C. Carlson, chief surgeon; John Riordan, safety engineer, and Paul Keefe. C. E. Mills, mine superintendent, acted as chairman.

COLUMBIA CHAPTER INVITES A.I.M.E. FOR SEPTEMBER

September 28 and 29 are the dates set for the Spokane regional meeting of the A. I. M. E. Columbia members will be hosts and have prepared a special program of events. Guests will include members from all sections.

CALIFORNIA ASKS FOR SEPARATE MINE DEPT.

The Sacramento Chamber of Commerce and various local organizations have started a concerted movement to establish a more adequate department to serve its mine and mining problems. At the present time the mining department is included in the department of natural resources and there is but a small allowance of not more than \$75 a month for traveling expenses. The result is that about the only field work that can be done is when some private individual is sufficiently interested to provide the transportation to the mine on which he wishes to secure information.

The mining department of the Sacramento chamber, headed by Wilbur H. Haines, has worked out a plan calling for an increased budget of \$150,000 for necessary field work and for \$10,000 for printing valuable mining reports. Many valuable reports are said to be lying in the office of the state mineralogist, Walter W. Bradley, because there is no money to print them. A new geological map of the state is in demand also.

At Chico, the Mining and Oil Exchange, led by Capt. John D. Hubbard has gotten as far as drawing up resolutions. The salient points brought out are that the governor-elect be requested to establish a separate department of mines, under a capable director; elimination of the political angle in the compensation insurance rate and a lower rate, consequently offering an inducement to outside capital to enter the state; strict rules regarding safety in mines and more power in enforcing them, favorable legislation for miners regarding water, timber and roads; a reasonable tax on gold bullion produced to apply only to the expense of the department of mines in the state; and the acquisition of all remaining railroad lands in the state by the federal government, to be thrown open for prospecting.

EMINENT MEN AID IN RECOVERY PLAN

Dr. Francis A. Thomson, president of the Montana School of Mines, and director of the State Bureau of Mines and Geology, is chairman of the mineral resources committee, designed to aid in the planning of a program for industrial recovery.

Other members of the committee are: Samuel Barker, Jr., chairman of the Montana section of the A. I. M. E., at Butte; Carl J. Trauerman, president of the State Mining Association, Butte; George B. Conway, a mining man from Helena; E. B. Coolidge, oil operator of Great Falls; I. B. DeSchon, who edits the Montana Oil & Mining Journal at Great Falls; A. V. Gilles, geologist of the Northern Pacific Railway Company, Billings; Sidney M. Logan, president of the Nugget Placer Mining Company, Kalispell; and J. D. MacKenzie, manager of the American Smelting & Refining Company, East Helena, Montana.

The plan is to obtain private capital for the development of natural resources of the state of Montana, according to L. A. Campbell, manager of the Montana, Inc., and to secure a federal grant of \$50,000. This money, if granted, will be used in making an inventory of the metallic and non-metallic mineral resources of Montana, under the supervision of the State Bureau of Mines and Geology, and in cooperation with the U. S. Geological Survey and the U. S. Bureau of Mines. A directory of all the mining companies operating in the state will be the next step.

The Manufacturers Tell Us

A New Blanket Vanner—The demand for improved milling equipment along practical lines has resulted in the blanket vanner perfected by A. J. Miller, 708 Lankershim Building, Los Angeles, and W. P. Cottrell, president of the Cottrell Engineering Company, 107 Mesnager Street, Los Angeles, California.

The trend of thought in present day milling is almost exclusively concentrated on machinery that will increase the recovery of gold and silver values in every kind of ore and among the unique developments of the last two years is the English made gold corduroy cloth.

Like many ideas that time eventually proves worthwhile, this cloth has returned the operator to the simplest form of recovering free gold in oxidized ore.

Following the discovery of gold in stream placers, the source of the gold was generally found to occur in quartz veins in a free state. The first appliances generally adopted for the recovery of free milling ore were the well-known stamp mill and different forms of amalgamation. In an effort to increase recovery from stamp mills the blanket table, made of various types of material, was evolved. Later the cyanide process was developed, and within recent years, flotation entered the field of milling and is now being applied to many refractory ores.

More recently large English groups engaged in treating immense tonnages of ore in South Africa started to experiment with a new type of gold-sifting corduroy blanket. So successful have their efforts been that amalgamation in many plants in South Africa, parts of Canada, Australia and recently in the United States, has been replaced by the English-manufactured gold saving corduroy blanket stationary table.

The use of the blankets in this manner necessitated repeated washing by hand, accomplished only by removing the blanket from the table and submitting the corduroy top to a hand washing or action of spray water under pressure.

Realizing that this method of hand washing was both expensive and inefficient, A. J. Miller and W. P. Cottrell have joined forces and are developing the gold corduroy cloth vanner that performs the function of the amalgamation plate and corduroy table. They claim this new blanket vanner can be built to efficiently handle as much as 300 tons of material in 24 hours, and is so constructed that any speed of travel or any inclination of the vanner may be obtained.

Parker Tube Couplings—Bulletin No. 37, covering the Parker Tube Couplings and Associated Equipment, has been published by The Parker Appliance Company, 10320 Berea Road, Cleveland, Ohio. This bulletin includes the prices which became effective July 1, 1934.

A similar bulletin covering Parker valves is now in preparation and will be available within the month. Copies will be supplied upon request.

Blasting Machines—A very complete discussion of the characteristics and advantages of blasting machines is contained in a 24-page booklet issued by Hercules Powder Company, Wilmington, Delaware.

Hercules blasting machines are made in three sizes, the 1-to-50 cap, 30-cap, and 10 cap, designed to meet different service requirements. The 30-cap machine has been on the market but a short time (1934). The booklet gives complete descriptions of the machines and general and

detailed information for the correct use and testing of Hercules blasting machines.

A New Light-Weight Drifter—A new drifter, weighing 126 pounds, has been added to the drill line of Gardner-Denver Company, Quincy, Illinois. This drifter, which can be equipped with spring handles for use as a sinker, is known as D-79.

Among the special features claimed for the drifter are an automatic valve which gives high speed with low air consumption; special long-wearing bronze removable front cylinder liner; direct center exhaust; three-point cross-head support. An integral lubricator supplies lubricant to all parts of the machine, a chamber surrounding the front cylinder bushing being used as a reservoir from which the lubricant is fed to all parts of the drill. The machine is said to be remarkably free from vibration and light in weight for easy handling.

Belt Conveyor Idlers—A 12-page bulletin has been issued by C. O. Bartlett & Snow Company, 6200 Harvard Avenue, Cleveland, Ohio, covering the most popular types of Bartlett and Snow belt idlers. The various types of idlers are described, tables of dimensions and prices given, and special engineering data relative to proper spacing, capacities, angles of incline, etc.

Wagner RD Motors—Direct-Current Motors is the subject of two new Wagner loose-leaf bulletin sheets, known as "Bulletin 167, Part 8." These are profusely illustrated, and all motor design and construction details are fully described. Copies may be secured from Wagner Electric Corporation, 6400 Plymouth Avenue, St. Louis.

A New Bearing Bronze—A new form of bearing bronze of particular interest to maintenance engineers is the semi-finish (outside and inside) Magnolia bearing bronze bar stock, made by the Magnolia Metal Company of Elizabeth, New Jersey. Most bar stock is semi-finish on the outside only. Magnolia adds the important feature of having the inside surface semi-finish as well as the outside. This is said to assure the user that no loss of time or material will be incurred by the user from having hidden blow holes, sand spots or cracks show up on the inside of the bushing when it is being machined to exact shape and dimensions in the user's own shop.

Magnolia bronze is furnished in standard lengths, 12, 13, and 14 inch, from one-half inch solid up to five inch outside diameter; cored up to 2½ inch inside diameter.

LOS ANGELES CHAMBER ISSUES MINING MACHINERY DIRECTORY

The Domestic Trade Department of the Los Angeles Chamber of Commerce has issued a new pamphlet, "The Western Mining Machinery Market," that should be of much interest to mine owners and operators who do business through that trading center.

The booklet lists, properly classified, the firms in Los Angeles who are in position to supply mining machinery, supplies and equipment. Fifty-eight classifications are given.

This publication, which will be sent free of charge to those interested and applying to the Chamber of Commerce, points out the advantages in dealing through the Los Angeles market which has become a very important center for the distribution of mining equipment. The effort is to make it easy to do business in Los Angeles and to show that it is not necessary to go elsewhere to supply mining requirements.

THE MARKET PLACE

GOLD

MILLING EQUIPMENT

We are in a position to furnish complete mills, items rebuilt, and at prices in keeping with present conditions. A few of the many items on hand are listed below.

- 1—Crusher, Wheeling, All Steel, 5½"x15"
- 1—Crusher, Sturtevant, All Steel, 8"x24"
- 1—Ball Mill, 54"x63"
- 1—Rod Mill, Marcy, 4'x10'
- 1—Classifier, Dorr Duplex, 4'6"x18'
- 1—Classifier, Dorr Simplex, 8'x18'
- 1—Thickener, Dorr for 20'x8' Tank
- 2—Agitators, Dorr for 14'x14' Tanks
- 1—Filter, Oliver, 8'x8' Complete

Belt Feeders, Grizzlies, Conveyors, Pumps Pipe—We have recently acquired approximately 15 miles of good pipe and tubing, size 2" up—exceptionally low prices on quantity lots—large stock of cyanide pipe fittings. Write for information.

Manufacturers of—

Thickeners, Agitators, Mine Hoists, V-Belt Drives, Conveyors, Elevators and Screens. Write for our stock bulletin. We welcome an opportunity to supply more complete information and submit quotations which we are sure you will find attractive.

HIRSCH BROS. MACHINERY CO.

P. O. Box 226
Office and Works 1801 Bassett Ave.
EL PASO, TEXAS

Railway & Mining Supply Co.

U. S. National Bank Bldg.
Denver

Complete Equipment For 50 Ton Mill

New and second-hand cars and Locomotives.

Second-hand rail and pipe.

Write Us First For Estimates.

An Investment in PATRICK CARBON

(for Diamond Core Drilling)
Is an Investment in Reliability

write or wire

R.S. PATRICK

Sellwood Bldg., Duluth, Minn., U.S.A.
Cable Address "Exploring Duluth"

8-15-34
 "CORDELL HULL,
 "Secretary of State."

JOHN VAN NOSTRAND DORR HONORED BY ASSOCIATES

Engineers from far and near — consultants, mining operators and technical editors — gathered at Westport, Connecticut, on July 17, to do honor to John Van Nostrand Dorr, whose laboratory and experimental plant is located in Westport, and to commemorate the Thirtieth Anniversary of the invention of the Dorr classifier, which was the first of a long line of inventions upon which his company's international engineering business is based.

The events of the day consisted of a picnic at the Westport Mill, laboratory of The Dorr Company, attended by about 175 persons, a golf tournament in the afternoon at the Long Shore Country Club where 25 competed for a prize offered by Mr. Dorr, and a testimonial dinner in the evening at the Red Barn on Wilton Road, attended by a small group of 50 senior members of the Dorr staff and old friends of Mr. Dorr's who were associated with him in the early gold mining days at the turn of the century.

The scene of Mr. Dorr's first invention was the Lundberg, Dorr & Wilson gold mill in the Black Hills of South Dakota, of which Mr. Dorr was managing director. The mill had been built on a shoe-string with the three partners pooling all their resources and borrowing to the limit from the local prospectors and even from the local mining union. Starting up early in 1904 in the midst of a Black Hills winter, with the thermometer standing at 20 below zero, trouble immediately developed through faulty classification of the coarse and fine gold bearing ore—the "sands" and "slimes." The mill lost money steadily and would surely have been a complete failure had not Mr. Dorr, at the psychological moment, early in July, 1904, conceived the idea which, when applied in practice, turned a steady loss into a profit. Thus the Dorr classifier was born.

The story of the invention rapidly spread throughout the mining section of the west and the use of the classifier grew rapidly from then on. Two years later, in 1906, Dorr was called upon to redesign and rebuild the gold mill of the Mogul Mining Company at Pluma, South Dakota. In the course of the reconstruction and redesigning he conceived his second basic new idea and from that grew the Dorr continuous thickener which has become as widely used in its field as its predecessor, the Dorr classifier.

Dr. Dorr, to use a title to which he is entitled but which he rarely uses, has received due recognition for his many technical accomplishments at the hands of his professional colleagues. In 1916 he was the recipient of the John Scott Medal of the Franklin Institute—in 1927 of the Honorary Degree of Doctor of Science by Rutgers University—in 1930 the James Douglas Medal of the American Institute of Mining & Metallurgical Engineers—and in 1931 held the presidency of the American Institute of Chemical Engineers.

Prior to the significant invention which led to the Dorr Company of today, Dorr worked as a laboratory assistant with Thomas A. Edison, attended Rutgers University, New Brunswick, New Jersey, and acted as chemist, assayer and operator of

a number of prominent gold mining properties in South Dakota, Colorado, and elsewhere. The use of his invention has spread from gold mining through the entire range of other metallurgical operations and, in recent years, has included most phases of chemical and industrial engineering, sewage treatment and water purification as well. From a one-man office in Denver, Colorado, in 1908, the organization has grown to one having offices in most of the prominent cities of the United States with associated companies in England, France, Germany and Holland, and agencies in South Africa, Australia and Japan.

The feature of the ceremonies at the Westport Mill was the christening, by Mr. Dorr, of a scale model of his first Dorr classifier of 30 years ago, built in Westport by Wilbur Johnson who was born in the Black Hills of South Dakota and whose father, A. E. Johnson, also of Westport, worked with Mr. Dorr at the Lundberg, Dorr & Wilson Mill and helped to build the original machine. Another member of the Dorr staff recently visited the site of the original invention at Terry, S. D., and brought back to Westport for display some of the original parts of the first machine.

Among the old friends of Mr. Dorr who attended the celebration were: Alec Brigham, general manager of the Hollinger Consolidated Gold Mines of Timmons, Ontario, a former Edison associate; A. N. Tweedy, general manager of the South American Development Co.; C. V. Drew, vice-president of the Cerro de Pasco Copper Company of Peru, a friend of long standing; L. H. Higgins, superintendent of Braden Copper Company, Sewell, Chile; Noel Cunningham, consulting mining engineer, and early associated with Mr. Dorr; Marsh Pennington, consulting mining engineer who helped operate Mr. Dorr's initial gold mill; Marshall S. Walker, assayer and refiner, who prepared the drawings of the first classifier; Harlow W. Har-



John Van Nostrand Dorr, inventor of the Dorr Classifier and numerous other devices, who was the honor guest at a recent celebration, commemorating the Thirtieth Anniversary of the invention of the Dorr Classifier.

dinge, mining engineer and president of the Hardinge Company; Charles Fuhrmeister, engineer, Oliver United Filters, Inc.; Jack Church, Jr., consulting engineer, New York; Bennett R. Bates, mining engineer; A. B. Parsons, secretary of American Institute of Mining & Metallurgical Engineers, New York; E. H. Robie, editor of Mining & Metallurgy, New York; H. C. Parmelee, editor of Engineering & Mining Journal, New York; S. D. Kirkpatrick, editor of Chemical & Metallurgical Engineering, New York.

The arrangements for the ceremonies were in charge of a committee headed by Anthony Anable of The Dorr Company, Henry Haws of New York City, treasurer of The Dorr Company, acted as toastmaster at the dinner at the Red Barn.

INCREASED RECEIPTS ARE REPORTED AT DENVER MINT

Receipts of the two money metals at the Denver mint show a marked increase during recent months. For first seven months of 1934 the amount of gold, expressed in troy ounces, received at the mint totaled 769,157 ounces, as compared with 448,441 ounces for corresponding months of previous year. At \$35 per ounce total value of gold for the seven months of this year was \$26,920,495. Deposits of silver from January 1, 1934, to August 1 totaled 1,083,934 ounces, as compared with 147,520 ounces for same period of 1933. These figures were furnished by Mark A. Skinner, superintendent of mint.

The Denver mint district proper embraces ten states—Colorado, Nebraska, Iowa, Kansas, Minnesota, New Mexico, South Dakota, North Dakota, Utah and Wyoming—but bullion and coins are received occasionally from foreign countries, notably, from Mexico. The Denver mint began operating in its present building in September, 1905. Since its establishment its gold deposits in the form of bullion, coins and jewelry have reached total value of approximately \$700,000,000.

MINING LOAN APPLICATIONS MUST BE MADE TO WASHINGTON

Further details regarding mining loans are that all applications must be made direct to the Reconstruction Finance Corporation, 1825 H Street, Washington, D. C., and upon application forms obtained from that office.

Such loans will be made to recognized and established corporations, individuals and partnerships, engaged in the business of mining, milling and smelting ore, but adequate security must be provided, says circular No. 14 of the Reconstruction Finance Corporation, "Information Regarding Mining Loans."

The terms and conditions are: Loans ordinarily up to five years, maybe longer. Interest not to exceed 6 per cent. Made for working capital, and fixed capital such as construction, improvement, repair, equipment and other purposes, provided there are sufficient ore reserves to justify capital investment. No loans to pay indebtedness, but such indebtedness may be deferred and subordinated provided there is adequate security for the proposed loan. Only an incidental portion of the loan may be used for taxes. No loans can be made for purely prospective or promotional purposes or on properties in which ore of sufficient value to insure repayment of the loan has not been blocked out at least partially. Coal and non-metallics do not come under the law.

There must be a reasonable amount of development, at least a partial blocking out of ore, and a first mortgage, including plant, equipment and water rights will be required, or a first lien on assets of sound marketable value.

Each applicant must execute a certificate to comply with the NRA code. Bonuses, fees or commissions are prohibited in securing the loan, and such fees as are necessary must be disclosed. Salaries and dividends will be under the supervision of the RFC.

An independent audit and an appraisal of the property involved by a "reputable mining engineer, both satisfactory to this corporation," not more than six months prior to the filing of the application, are required. Upon request of the corporation, applicant will be required to make a deposit to cover the cost of field work which may be necessary in connection with the examination of the property.

**CONSTRUCTION PROGRAM
AT SUMMITVILLE, COLORADO**

A 100-ton daily capacity milling plant is being constructed for the Summitville Gold Mines, Inc., Summitville, Colorado, by E. L. Sweeney, P. O. Box 5312 Terminal Station, Denver. Sweeney says the mill is to consist of the usual crushing section with ball mill and classifier in closed circuit following. A Canadian type gold trap will provide for the removal of coarse gold from the grinding circuit.

The flotation concentrates are to be thickened and filtered in the usual way, and the flotation tails will be cyanided after they are thickened and filtered, with agitators, thickeners, and a final filter and Merrill-Crowe precipitation plant. The ore is complex and therefore, even with this flow sheet, it is necessary to grind to 75 per cent minus 200 mesh.

The Public Service Company of Colorado is running a power line into the property from Del Norte, 26 miles away. The usual camp and mining equipment is being installed by the Summitville company, and the whole construction program is expected to be completed by October 1. George H. Garrey, who maintains offices in the Bullitt Building, Philadelphia, is vice-president and general manager of the company at Summitville, via Del Norte, Colorado.

**HARTFORD MINING COMPANY
OPERATING NEW 50-75-TON MILL**

On August 1 the new 50-75-ton cyanide plant of the Hartford Mining Company, located between Virginia City and Silver City, Nevada, was put into production to handle a large body of proven ore.

The mill was completely furnished and installed under contract by the Western Machinery Company whose head office is at 760 Folsom Street, San Francisco, California, with branch offices and warehouses at Sacramento, Los Angeles, Phoenix and Salt Lake City.

The Hartford Mining Company is a Nevada corporation; George Drysdale, of Virginia City, is general manager, and his associates are Edward Gunderson and Harold Hansen of San Francisco.

The mill consists of primary and secondary grinding units, agitators, thickeners, filters, all electrically and individually driven, and is regarded as one of the most up-to-date and efficient plants of its size in the country.

Roy Marcellus, noted engineer, is plant designer and construction engineer for the Western Machinery Company.

UNITED STATES BUREAU OF MINES reports on
Copper Statistics for 1932 and 1933

Smelter production of copper from domestic ores in 1933 declined 17 per cent from output in 1932, which, in turn, was little more than one-half that in 1931. The output in 1933 amounted to only 33 per cent of the average for the 5-year period, 1928-32. Production of copper by mines in 1933 decreased about the same percentage as smelter output, but refinery production from domestic ores showed an increase of 8 per cent. The average price of copper delivered in 1933 was slightly above that for 1932, which was the lowest price ever recorded.

After several years of rapidly increasing stocks of copper, producers were successful in reducing stocks of refined and unrefined copper in 1933. Total stocks of copper at smelters, in transit to refineries and at refineries were 13 per cent below those on hand at the end of 1932; they were, however, 19 per cent above the average for the 5-year period, 1928-32.

Imports of unmanufactured copper in 1933 were 26 per cent lower than those in 1932, continuing the decline begun in 1930 from the record imports of 1929. In 1933 they amounted to only 41 per cent of the average for the 5-year period, 1928-32. Exports of metallic copper increased slightly in 1933 but they amounted to only 41 per cent of the average for the 5-year period, 1928-32.

The quantity of new copper indicated as withdrawn from supply for domestic consumption was 31 per cent higher in 1933 than in 1932, but was only 56 per cent of the average for the 5-year period, 1928-32.

More complete information and statistics on activity at copper mines and smelters in 1933 are given in the chapter on "Copper" in the "Minerals Yearbook 1934," about to be issued by the United States Bureau of Mines, and which may be purchased about August 20 from the Superintendent of Documents, Washington, D. C.

Summary of Features of The Copper Industry In The United States in 1932 and 1933

	1932	1933
Production of copper:		
Smelter output, pounds.....	544,009,948	449,999,143
Mine production, pounds	476,221,076	392,380,000
Refinery production of new copper:		
Electrolytic, pounds	373,492,550	421,318,802
Lake, pounds	53,815,281	59,497,370
Casting, pounds	17,770,043	521,859
Total domestic, pounds	445,077,874	481,338,031
Total domestic and foreign, pounds	680,867,734	741,578,552
Total new and old copper, pounds	1,177,000,000	1,418,000,000
Average price per pound, cents	6.3	6.4
Imports (unmanufactured) pounds	391,991,342	291,170,946
Exports of metallic copper, pounds.....	295,356,719	303,825,790
Withdrawn from total supply on domestic account:		
Total new copper, pounds	519,202,768	678,699,324
Total new and old copper, pounds	1,016,000,000	1,355,000,000
Stocks of refined copper, pounds	1,004,000,000	813,000,000
Stocks of blister and materials in solution,	378,000,000	383,000,000
Value of smelter production from domestic ores	\$ 34,273,000	\$ 28,800,000

¹Preliminary figures. ²Some Michigan copper was electrolytically refined at an eastern refinery and is included under electrolytic copper. ³Total exports of copper, exclusive of ore, concentrates, composition metal, and unrefined material. ⁴At the end of the year.

Smelter Production

The smelter production of primary copper from domestic sources during 1933 amounted to 449,999,143 pounds, a decrease of approximately 17 per cent. The value of smelter production decreased approximately 16 per cent in 1933. The average price of copper delivered during the year, as reported to the Bureau of Mines by selling agencies, was 6.4 cents a pound, f.o.b. refinery.

In the following table the production is apportioned to the States in which the copper was mined. The figures represent the content of fine copper in the blister produced and the smelter output of ingot copper from Michigan.

(Continued on Page 25)

T. E. Duncan, experienced Colorado mining man, and member of the board of directors of the Santiago Metals Corporation, has been made assistant superintendent at the mine, where he expects to push development work. The property is being operated by Joseph Campbell of Georgetown, Colorado, and associates. Ore is being shipped to the Watrous mill of the Consolidated Smelting & Metals Corporation and to the Leadville smelter of the American Smelting & Refining Company.

J. E. Warber is president of the newly organized Vance Consolidated Mines and Power Company of New York, which is operating the Western Mines property at Cooke City, near Red Lodge, Montana. Warber is also president of the Hydrogenation Company of New York. Other Vance Consolidated officials are reported as follows: Major William G. Vance, first vice-president; A. C. Colby of New York, secretary; and Carmen A. Newcomb, St. Louis, Missouri, former judge of the United States district court, treasurer.

P. G. Spilsbury, consulting and research engineer for Anaconda Copper Mining Company, American Brass Company, and Inspiration Consolidated Copper Company, has returned to the west after spending the last six months in Washington, D. C. He has been engaged in research and development work in increasing the consumption of copper and in promoting the many new uses which have been found for copper. After a short visit in Arizona and California, he will leave for a trip over the country with this object in view.

An unusual expression of confidence and appreciation was extended to **Paul B. Russell**, operating engineer of Mar-John Mines Company at Sheep Ranch, California, by various shareholders in the company. This was in the form of a letter from the shareholders, each signer enclosing a dollar bill. The letter expressed appreciation for his loyalty to the company in remaining on the job at a personal sacrifice, and directed that he use the funds provided to attend the Mining Show at Los Angeles to gather such information as would be beneficial to the company.

Deceased

Cornelius A. Jones, one of the pioneer mining engineers of Elk City, Idaho, died in Spokane, Washington, at the age of 53.

Thomas A. Rendle, 62, who had been active in the mining area of Victor, Cripple Creek, and parts of Arizona, some years ago, and was now retired, died in his home at Denver.

P. J. Hickey, Sr., who for a number of years was active in the Globe, Arizona, district with Arizona Globe Copper Company, died in a hospital in San Francisco in July. Death was caused by pneumonia.

Joseph Clinton Pyle, 69, one-time head engineer for the W. A. Clark interests in Butte, Montana, died at Santa Barbara, California. Among other things, Mr. Pyle supervised the construction of the Timber Butte mill in Butte.

Charles E. Hudson, president of the San Francisco Mining Exchange, died July 12 at the home of his son, Arthur, in Hope Valley, north of San Francisco. He had gone there for a brief vacation and shortly after his arrival was stricken with a violent heart attack. Death came within a few minutes.

Joseph Platt, veteran Nevada mining man, died at the Battle Mountain general hospital, at the age of 73. Death followed several months' illness from miner's

tuberculosis. Mr. Platt was born in Michigan and came west when a young man. He is probably best known as a member of the Big Four Lease at Rochester, which took over property in Copper Canyon almost thirty years ago. Within the same week, death claimed another of Nevada's mining veterans—**Jason A. Ballinger**. Mr. Ballinger had been in failing health for some time and had left the Battle Mountain hospital only a few weeks ago for his home. Death was due, however, to severe burns when he was preparing for a trip and had placed oil for his car on the stove to heat and in the meantime poured kerosene into the stove to light the fire.

NEVADA-MASSACHUSETTS HAS TUNGSTEN MACHINE

A machine to identify and make qualitative analysis of tungsten has been designed by the General Electric Company as a result of an endowment furnished by the Nevada-Massachusetts Company. During a recent demonstration at Lovelock, Nevada, by O. F. Heizer, Mill City, general manager of the Nevada-Massachusetts Company, the machine was turned on in the dark. It throws out light rays by means of a spark vibrating through an arc. The light ray is absorbed by the metal which throws back light, giving a purple effect in the case of tungsten.

Those who have seen such an exhibit say the color is not to be duplicated by paint, and is indescribable. Specimens of New Jersey zinc showed a canary yellow, and some ores gave forth a rosy glow. After the machine is turned off the ores continue to reflect light in much the same way that phosphorus does.

A portable outfit has been built for the Nevada-Massachusetts Company and requires two operators. The estimated cost of such equipment is placed at \$300. By using this machine on the tailings at the company's mill, officials can easily and quickly ascertain values. Heretofore, chemical analysis was used, the process requiring approximately 30 hours.

WESTERN DIVISION WORKING FOR SUCCESSFUL CONVENTION

San Francisco will again justify its claim of being the mining center of the west when the Western Division of the American Mining Congress holds its annual convention in that city, September 24-29. The Western Division of the American Mining Congress is in reality the metal group, and includes the producers of copper, lead, zinc, silver, iron, gold and miscellaneous minerals from the 13 western mineral producing states.

W. S. Boyd, vice-president, Utah Copper Company and Nevada Consolidated Copper Corporation, is the national chairman of the division, and is assisted in plans for the convention by a strong board of governors from the various states. **W. Mont Ferry**, vice-president of Silver King Coalition Mining Company, Salt Lake City, Utah, is national chairman of the program committee which is developing an outstanding program for the convention.

In conjunction with the convention and supplementing it is the Exposition of Mining Machinery and Supplies. This is the second exposition ever to be staged by this group, the first being at the previous California meeting in 1924. It will be held at the Palace Hotel, in rooms immediately adjoining the meeting room. Space has already been allotted to a number of well-known firms, important in the mining field, nationally and internationally.



Denver Thickeners

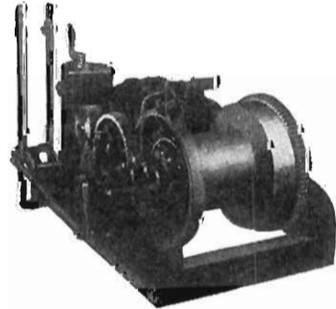
A marked economy can be effected by installing the proper thickener to dewater products prior to filtering or cyanidation of concentrates. Denver Thickeners are built in any size desired, and the ten foot and smaller sizes have a completely enclosed vertical gear reducer drive, both dust and splash proof, which can be economically direct connected to a motor. Heavy construction and patented curved rakes will withstand severest overloads.

Write for Bulletin 3413.

DENVER EQUIPMENT CO.
1419 17th Street - Denver, Colorado.



HOISTS



Type MS

Friction Drum Electric Hoist

Frames of Hoist are fabricated Steel, strongly riveted and rigidly braced, practically indestructible; lighter than cast iron.

Sizes, loads 4,000 to 6,000 pounds. Drum diameters up to 30".

In these Hoists is incorporated, the best in engineering practice.

Electric or gasoline powered.

Bulletins upon request.

English Bros. Machinery Co.

KANSAS CITY, MO.



We Look

Inside

The Earth

With our

Diamond

Core Drills

We Test Ore Lands and Specialize in Foundation Test Borings for Bridges, Dams, Buildings

PENNSYLVANIA DRILLING CO.

1201-1215 Chartiers Ave., Pittsburgh, Pa.

8-15-34

SAN JUAN COUNTY REPORTS GENERAL MINING REVIVAL

Typical of all other counties in Colorado producing base and money metals, San Juan county is now reflecting a renewal of general mining operations, chiefly confined to zones with outstanding production records. The territorial area comprising the county has been pretty thoroughly prospected since the first discovery of gold-silver ores 61 years ago on the towering mountain peaks encircling Baker basin and tributary gulches.

The value of mineral output for 1873 was only \$13,000, rapidly increasing during 12 subsequent years, reaching \$1,006,500 for 1885. The peak value production of \$3,617,422 was recorded in 1920.

Three years prior to 1885 a 45-mile branch of the Denver & Rio Grande railroad reached Silverton from Durango, giving local mining a potent impetus, reflected by numerous new development projects and erection of several concentrating plants, ore samplers and two small capacity smelters. The latter ran for a few years before final abandonment, shut downs having been effected by the larger and better equipped smelters at Durango. Spur rail lines were run from Silverton to Eureka, 9 miles; to head of Cement creek, 7 miles, and 10 miles to Red Mountain mines. With these added transportation facilities for incoming and outgoing shipments the era of mining expansion continued, with few setbacks, for a score of years, resulting in Silverton reaching a population of 4,000 that has, since the depression, declined to around 1,200.

Tabulation of the mineral output of San Juan county and its divisional value follows: Gold, \$27,140,318; lead, 447,690,095 pounds, \$24,333,193; silver, 35,847,148 ounces, \$24,175,337; zinc, 205,387,684 pounds, \$14,118,831; copper, 67,187,018 pounds, \$9,852,291. Total value, \$99,619,970. These figures represent the record check-up of the U. S. Bureau of Mines, Colorado Bureau of Mines, Denver Mint and reporting smelters; hence are as nearly accurate as it is possible to obtain.

While production figures of major mines are not officially obtainable, it is, nevertheless, generally recognized that the four ranking mines are the Sunnyside, Silver Lake, Iowa and Gold King; those of lesser production including the North Star, Champion, Little Dora, Pride of the West, Silver Ledge, Old Hundred, Green Mountain, Grand Mogul, Highland Mary, Buffalo Boy, Lackawanna, Little Nation, Kittimac, and numerous others with record of periodic production of varying importance. The net earning of any San Juan county mine is information that has never been made available to the public; hence the profit column is left to the brevity or length of purely speculative imagination. However, a 20 per cent profit of total output of approximately \$100,000,000 gross is the estimate of some local statisticians.

Mayflower the Major Producer

The Mayflower mine, and certain abutting properties at the head of Arrastra gulch, was acquired by the Shenandoah Dives Mining Company early in 1926, the organization having been effected by Chas. A. Chase, well-known Colorado operator, James W. Oldham and associates of Kansas City, Missouri. Under personal management of Mr. Chase systematic development has been continuously pushed, with satisfactory results as to increasing commercial ore tonnage. The selective flota-

tion mill, equipped by the Stearns-Roger Mfg. Co. of Denver, began treating ore in February, 1930, since which time capacity has been increased from 300 to 600 tons daily, the concentrate product carrying values in gold, silver, copper and lead. The main vein traverses the company's acreage for 8,050 feet, with average width of 10 feet and can be mined by drift tunneling to extreme vertical depth of 2,000 feet. With the shut down of the great Sunnyside in October, 1930, the Mayflower became the major producing mine of the county, employing an average of 200 men, including mill operatives and other surface workers.

While local report is to effect that the Sunnyside company, subsidiary of U. S. Smelting, "is soon to reopen" its mine at Eureka, official confirmation is lacking. Both mine and mill payroll at date of close down numbered 385 men, a number that had been maintained for several years. The concentrates from the Sunnyside run about three-fifths zinc and two-fifths lead, carrying associate values in gold, silver and copper.

Reopening Pioneer Mines

A. W. Harrison, veteran mining engineer, is reopening the Pride of the West near the head of Cunningham gulch. At the same time he is developing his own group of adjoining claims, having disclosed what gives promise of being a large deposit of high-grade galena that carries heavy silver values. The Little Nation at foot of same gulch is being operated, the 50-ton mill, employing straight flotation process, having been revamped. Joe Bradley is putting the Highland Mary and an adjacent developed claim in condition for regular production. In the early days the Highland Mary was famous for its output of bonanza silver ore. The mine has mill equipment.

The North Star, at the south edge of Silverton, is being reopened and re-equipped by the Mystery Gold Mining Company, headed by Warren C. Prosser of Denver. Abutting acreage, owned by the company, is being explored with reported ore disclosures carrying comparatively high gold values.

Eighteen months ago the Gold Hub Mines Company took over the Ariadne-Yukon mine in Cement gulch and adjoining claims, the holdings embracing 47 claims, occupying a central position in a rich mineral zone lying contiguous to the Gold King mine. The 2,800-foot Yukon tunnel is being extended 200 feet to tap

the Uncle Sam gold vein at a depth of approximately 1,500 feet. The tunnel has penetrated two fair sized lodes and several stringer veins, all these carrying commercial values. This project has the earmarks of major productive possibilities beyond any question of doubt. The company is officered by Chas. S. Downing, president; Chas. J. Cooper, secretary-treasurer; Geo. A. Kennedy, general manager, who is directing operations. H. L. Tedrow, now manager of the London mine in the Alma district, is also a member of the directorate. Company office is in Denman Building, Denver.

CODE AUTHORITY APPOINTED FOR MANGANESE MINING INDUSTRY

The Code Authority for the Manganese Industry has been recognized by the National Recovery Administration. The membership consists of the following:

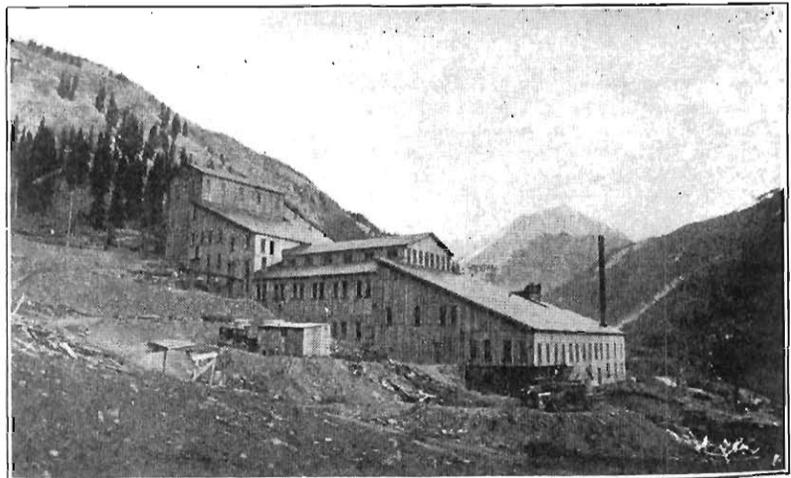
J. Carson, Adkerson, Washington, D. C.; H. A. Pumpelly, Domestic Manganese & Development Company, Oswego, New York; James W. Gerard, New York City; A. J. Seligman, Butte Copper & Zinc Company, New York City; D. H. McCloskey, New York City; W. B. Daly, Anaconda Mining Company, Butte, Montana; L. L. Savage, U. S. Mining and Development Company, New York City, and John Rickey, Moorlight Mining Company, Phillipsburg, Montana.

INTERNATIONAL PLACES ANOTHER MINE ON PRODUCTION

The International Mining and Milling Company plans to have its first 10 stamps being installed at the Mt. Gaines property at Hornitos, California, ready for crushing ore in August. All necessary equipment, including pipe, electric supplies, elevators, welding equipment, shafting and pumps is on the ground. John W. Corwin is in charge of construction.

At Randsburg, in eastern Kern county, California, the International people are crosscutting from the 275-foot level of the Gold Bug shaft to explore a virgin area between the shaft and the St. Lawrence Rand mine. A 65-foot width of ore is reported to have been passed through, from which samples run \$8 to \$10 in gold.

Both the Gold Bug and the St. Lawrence are being operated by International. A. G. Hseng, 183 North Martel Avenue, Los Angeles, is president and general manager. Tom Finnerty of Randsburg is general superintendent.



The selective flotation mill at the Shenandoah Dives Mining Company.

Concentrates from the Western States

Some high spots of the mining industry in the Western United States and Mexico.

ARIZONA

It is reported that a cyanide test plant, capable of handling two tons daily, is being erected beside the **United Verde Extension Mining Company's** smelter at Clemenceau, Arizona. The decision to erect the plant follows the discovery of a lens of gold-bearing ore which extends from the 950 to the 1050-foot level, where it is definitely bottomed. Development work indicates that it has a length of more than 200 feet, with an average width of approximately ten feet. The ore is a difficult one to treat, but if a successful method is worked out, it is understood that permanent equipment will be ordered, probably, with a daily capacity of 50 tons. George Kingdon, Jerome, Arizona, is general manager of the company.

Increasing values in gold are reported from the shaft sinking in progress at the **Princess Gold Mines, Inc.**, Kingman, Arizona. The last 40 feet are said to be in ore well above the milling grade. P. L. Mullen of Kingman is president and general manager of the company. E. H. McMurray, formerly of Tonopah, Nevada, was recently elected a vice-president of the company and has gone to Kingman to assist in the development program. J. K. Russell, of Los Angeles, was elected secretary-treasurer.

The mill erected a year ago by **Best Bet Mining Company** on the Colorado river, near Yucca, Arizona, is being dismantled and will soon be erected at the **Pilgrim** mine at Chloride. A pipeline is being laid from the old Mud Springs to supply water for mill and domestic purposes.

United Verde Copper Company has filed a suit in the U. S. court for an injunction to restrain state and county authorities from collecting alleged "excessive taxes." The company alleges that the entire value of all its property does not exceed the sum of \$8,900,000 and that the full cash value on January 1, 1933, of its non-producing mining claims did not exceed \$4,377,043; and that the state tax commission has placed an assessment of \$22,161,000. The company asks the right to go before the court and prove the value of its property and asks the court to fix the value. The amount of taxes involved is about \$400,000.

A lease on the **Storm Cloud** mine is being operated by Louis Milner, Prescott-Groom Creek Route, Prescott, Arizona. Mr. Milner is both mining and milling ore.

Tom Reed Gold Mines Company, Oatman, Arizona, is reported to have received \$26,070 from the bullion shipment made to the San Francisco mint on July 13. This represented returns for a period of approximately six weeks. Principal production is coming from leasers who are steadily increasing their output. Development work on the recent strike made by Ira Eyster and William James is said to indicate an ore shoot 165 feet long, 200 feet deep and with an average width of five feet, assaying about \$20 in gold and silver. Jack Zwinge is mine superintendent, and Paris Brough, mill superintendent.

A small gold property, a few miles southwest of Arivaca, Arizona, has been

taken over by J. B. Tenney, geologist and mining engineer of 1070 Mountain Avenue, Tucson, Arizona. He has already made a shipment of three-ounce ore and is continuing development.

The claims of the **Tri-Bullion Smelting and Development Company**, located in the Stanley Butte mining district of Graham county, Arizona, were examined the last of July by Harry A. Shipman and W. E. Kearney, mining engineers, 2213 Ramsey Tower, Oklahoma City, Oklahoma. The examination was made to determine the advisability of again putting this property into operation. The claims are owned by J. F. Long, 2709 N.W. Twenty-Second Street, Oklahoma City, and associates.

The **United Verde Extension Mining Company** at Jerome, Arizona, has a total of 124,200 tons ore left in its mine, and expects to be worked out in nine months. This statement was made by Howard Cornick, Prescott, Arizona, attorney, before the state board of equalization when presenting the company's claim for a reduction in the valuation of its ore body from \$600,000 to \$500,000. "Even if we find 15 per cent more ore," Mr. Cornick said, "we are done in nine months."

During the three months, ended June 30, 1934, **Magma Copper Company** of Superior, Arizona, shipped to the refinery blister copper from which 8,918,817 pounds of refined copper were produced. The cost of refined copper was 5.32 cents a pound after gold and silver credits, and including depreciation and all fixed and general charges, but exclusive of federal income tax. Magma's profits for the quarter, based on a net average sales price of 7.80 cents per pound of copper, amounted to \$231,734.

At a special meeting in Phoenix, Arizona, stockholders of the **Big Jim Mines, Inc.**, voted to change the company name to **American Mines and Metals Corporation**, and par value of stock from 10 cents to \$1 per share, capitalization remaining the same, namely, \$500,000. There are 345,000 shares outstanding. The acquisition of new properties in California was approved and the report of President A. G. Keating accepted. Big Jim owns the **Big Jim** mine at Oatman, Arizona, which is being operated under contract; properties in southern Arizona, and the recently acquired California mines.

The mill at the **Hadsell-Branch** gold mine, Ajo, Arizona, has been completed and placed in operation. The mill was constructed by Wm. V. Thorpe, 322 Oakland Street, Phoenix, Arizona, who holds a bond and lease on the group of claims. It is reported that the mill is making a 92 per cent recovery, producing 700 pounds of concentrates daily.

M. B. Dudley of Kingman, who recently acquired the **Adams** mine, is said to be operating with a full crew. The Adams is located some distance northeast of the old Katherine, and covers the territory between the Sunbeam and Katherine Extension. It was developed and operated by the **Adams Gold Mining Company**, and later sold to Katherine Midway Mining Company, of which Oliver C. Edwards, Jr., 617 North June Street, Los Angeles, was president.

CALIFORNIA

A new type power boring machine for shaft excavation is being installed by **Idaho Maryland Mines Co.**, Errol MacBoyle, general manager, Grass Valley, California. It is reported that it will bore a hole five feet in diameter and up to 15 feet in depth. The rock is then removed to the surface in the same manner as in a core drill and the process repeated. If the machine proves satisfactory, it is planned to sink to a depth of 1,000 feet.

Two gravel properties in Corral Flat, Mokelumne Hill, California, have been acquired by the **Amity Mining Company** of Hollywood. The first, a tunnel property, involves 250 acres of lava capped channel, and is said to have been purchased for \$50,000. The second is in East Corral Flat, and is being operated under bond and lease. New electrical equipment, consisting of a 50-ton gravel mill, hoist and electric blower ventilation system, has been installed. Eighteen men have been employed since the middle of July when the first gravel was hoisted. The management of the property consists of A. J. Guerin, manager; Frederick Reel, superintendent; Otto Becker, assistant superintendent, and Leon de Beaulieu, master mechanic.

The **Menzies Consolidated Gold Mine** at Auburn, California, is in receipt of miscellaneous equipment which is to be installed immediately at its Davenport mine. A 500-ton ore bin has just been completed and the 100-ton mill, in course of construction, is scheduled for completion August 15. L. R. Menzies is the operator.

The **True Grit** mine, Camptonville, California, has made applications for a total of 32.5 c.f.s. from tributaries of the Middle Yuba for hydraulic purposes. This project is directed by George M. Bowles, Room 409, 454 California Street, San Francisco.

H. E. Loufek, 233 East Plaza Street, Reno, Nevada, in association with J. E. Johnson, has leased the **Victory** mine, four miles east of Colfax, California, from the owner, Andrew Jensen. Mr. Loufek expects to begin operations soon.

The **Remington** mine, Columbia, California, has been cleaned out to the 250-foot level and work is going forward steadily on that level. The five-stamp mill has been running for the last three months on ore left in the old workings by former operators and no stoping has been done. Flotation equipment may be installed to assist in recoveries. The Remington is operated by D. F. Thompson, and F. B. Kollberg, Box 361, Sonora, California.

The **Alabama California Gold Mines Company**, Auburn, California, is working three shifts at its 25-ton mill, and two shifts in underground exploration. The south drift is being run on four and one-half feet of \$33 ore. The company is managed by William Anderson, owner of phosphate deposits at Garrison, Montana, but who became interested in the Alabama mine early this year.

The 150-ton mill at the **Pyramid** mine, at Shingle Springs, operated by **Gold Reserve Mines Company**, is being run under capacity, under the supervision of A. E. Vandercook, 1014 Eighth Street, Sacramento, California. It is planned to increase the mill capacity to 150 tons when development warrants. The process, which used mercuric cyanide, is said to handle sulphide ore without difficulty and to have treated ore of less than \$6 value during the last nine months.

A 10-stamp mill is being constructed for the **Kenton** mine, Alleghany, Califor-

nia, owned by George E. Gamble. Other improvements include a blacksmith shop, change room, bunk house for 20 men, and a 100-horsepower compressor. The strike, recently reported, was made in a drift at a vertical depth of over 200 feet below the old levels. It was estimated to be worth \$40,000 at \$35 gold. W. V. Wilson is mine superintendent.

The Gold Exploration Mining Company, Smartville, California, Milton D. Paine, superintendent, has resumed mining at the Blue Point gravel mine following a shut-down caused when the flumes were destroyed by a brush fire a short time ago. The necessary repairs have been made and drifting north and south from the 300-foot level of the incline shaft is in progress.

John Burmeister of Tuolumne, California, and a former mine operator of the Beatty district in Nevada, has, with a Michigan capitalist, launched another mining project in Tuolumne county, California. On a 226-acre tract of land bordering the old Dead Horse mine he has installed machinery, all electrically operated, and is sinking a shaft. Exploration and development will center on a lode which, in the adjacent ground, has produced nearly \$2,000,000. As now planned, sinking will continue to 500 feet before doing any great amount of lateral work except cross-cutting. Three shifts, in all 20 or more men, will be used from the start. Highly encouraging values near the surface across 15 feet are reported. According to reports, the Dead Horse was worked to the very edge of the property. Burmeister and his associates are also developing the Paragon and Comer groups, 17 claims in all, located several miles southeast of town and have 15 men employed.

The west crosscut from the 100-foot level of the old workings of the Jumper mine at Jamestown, California, has revealed a 14-foot vein of high grade and mill ore. The strike was made when the face was out 90 feet and a good quality of milling ore is reported across the entire width. The ledge is known as the middle vein and is said to be the one from which production came several years ago. Drifts are being advanced in both directions from the point of intersection and the ore taken out is being milled in the 10 stamps at the Mazepa mine, adjoining, and which is also under the management of J. W. Mullin of Jamestown. E. H. Loose, 3615 Avalon Boulevard, Los Angeles, is associated with Mullins in the project.

While retimbering the Gavlin shaft in the El Sobrante mining district of California, the Ida-Leona Mining and Milling Company found four feet of rich ore, said to sample 22.66 ounces gold to the ton. The ore is about 40 feet down the shaft and is believed to be a continuation of the vein that yielded so prolifically in by-gone days. The main shaft is 485 feet deep, but more than 400 feet of water is standing in it. According to Frank Nelson, 1340 North Berendo Street, Los Angeles, manager of operations, the water table will be lowered as soon as machinery is installed. The equipment has been ordered from Los Angeles and is said to be powerful enough to lift 120,000 gallons an hour.

The Goldfields American Development Company has started lifting water from the Union mine three miles from Eldorado, California. Completion of the task will probably require several months. Power is being supplied over a line just completed by the P. G. & E. Co., from its Diamond sub-station four or five miles

from the mine. J. T. Boyd is representative of the company and Leonard Wills is mine superintendent. Thirty-one men are employed and the work goes on 24 hours a day. The shaft is 1,670 feet deep.

The Walker Mining Company is reported to be making preparations to resume the operation of its copper-gold mines at Walkermine, California. When work was suspended three years ago, the management reported extensive reserves of ore in sight, and the existing price of gold has materially increased the value of the deposit. H. A. Geisendorfer, 810 Kearns Building, Salt Lake City, Utah, is general manager.

The Natomas Company reports a net income of \$82,945 for the month of June, after deductions had been made for depletion, depreciation, land sale cancellations, prospecting charges and income taxes. This is equivalent to 8 cents a share. During the preceding month a net profit of \$71,879 was reported. The profit for June brought the total for the first half of the current year to \$454,871, or approximately 46 cents a share. Thomas McCormack, Forum Building, Sacramento, is president. R. G. Smith of Natoma is chief engineer.

The Rymal and Harc mines, between Garden Valley and Georgetown, California, and adjacent acreage on the strike of the ore bodies contained in these mines has passed to a strong corporation, according to E. Martin Thorniley, consulting mining engineer of Garden Valley. He has just completed a geological and physical examination of these properties and says that the new interests are making plans for extensive operations. Major points in the operating program planned are the installation of a 600-foot compressor; sinking the 200-foot shaft to 500 feet, with laterals as the work progresses; and stepping up the present mill to 100 tons' capacity, including ball mill and flotation installations. The mine is fully equipped, electrically, with all modern conveniences for economical production.

The Kennedy Mining and Milling Company at Jackson, California, has started construction of a 1,000-ton cyanide plant. More than a million tons of tailings have been impounded over a period of years. Edward C. Hutchinson, 302 Clunie Building, San Francisco, is president of the company. Webb Smith is general superintendent at Jackson. The Kennedy workings extend to a depth of a mile.

Eastern interests are considering the financing and installation of a 100-ton reduction plant at the Beauty Mountain mines, owned by C. O. Carlson of Winchester, California, and partners. While the mine is a large low-grade deposit, some high values have been opened recently that make an attractive proposition. This is a gold mine, also with values in silver and tungsten. Water for milling has been located and can be brought in by gravity. Eight men are employed at present, according to Carlson.

With a new hoist and 310-foot compressor installed, development of the Cranberry-Rutherford mines at Incline, California, will proceed in a business-like manner, according to John C. McGarry, the operator. Plans for underground call for the sinking the shaft 500 feet, with levels every hundred feet, and for a larger operating crew when they are ready for lateral development. When the shaft has reached its objective depth, they plan driving the 500-foot tunnel, started from a point just above the river

bed, to the ore body. This will call for probably 900 feet of tunnel, additional, but will greatly lower the cost of production. The property has been reported on favorably by Adolph Foss, mining engineer and geologist, now directing mining operations on the Mother Lode in California.

A 50-ton mill is under construction near Goodyears Bar, California, for the Blue Jay Mining Corporation. It was designed and is being built by William Holland, well known mining man of Nevada City. The company was formed by R. E. and O. F. Huggins and Otto A. Strand, of Goodyear Bar. Surface buildings and a headframe are to be built soon.

San Francisco people have taken over the Docile mine near Alleghany, California, and will operate under the corporate name, Docile Gold Mines Consolidated. The property was formerly owned by Pete Flowers, mining man of Alleghany, and is located about 1,000 feet to the east of the Tightner-Sixteen-to-One mines. It is developed principally by a 1,700-foot tunnel and a new and lower tunnel has been driven 88 feet on the Dreadnaught claim, one of the group. Seven men are already at work, under the direction of B. C. Austin, mining engineer of Mills Building, San Francisco, and who is the president of the company. T. A. Blakely is vice-president, Francis D. Kesselring, Jr., is secretary, and Ted LeMaire, additional director. Construction of a line connecting with the P. G. & E. lines has been started.

The P. G. & E. Company is installing three large transformers, supplementing the electric power now supplied the Grass Valley Bullion Mines, Inc., at Grass Valley, California, and stepping the load to 600 horsepower. This is sufficient to operate the double-drum hoist, auxiliary hoist and underground pumps. A few days ago, Superintendent C. A. Brockington started lifting ore from the 800 level and placing it in bins. It will be trucked to the Idaho-Maryland mill, operating east of town, for test purposes.

The Phoenix Syndicate, of San Francisco, has acquired from James Penrose of Nevada City a lease and option on the Lacine mine, embracing 420 acres adjoining the Idaho-Maryland mine at Grass Valley, California. The Syndicate is also developing the Phoenix mine, situated three miles south of Grass Valley. Thomas S. Davey is superintendent at Grass Valley. Robert Hawxhurst, Jr., Crocker First National Bank Building, San Francisco, is consulting engineer and geologist.

Reconstruction of the mill of the Cardinal Gold Mining Company at Bishop, California, which began June 1 has been completed and the plant placed in operation, according to W. V. DeCamp, general manager. The Eastern Iron & Metal Company, of Salt Lake City, had the contract for the work. The mill is of 150-ton capacity and designed to treat by straight flotation with provision for recovering a small amount of free gold. The rock is a hard quartzite. Ratio of concentration will be about 33 to one, with a concentrate varying from 12 to 17 ounces. Concentrates will go to either Salt Lake or Selly. The Cardinal Mining Company is owned and controlled by Ben Smith of New York and Sam Harris and associates.

The Big Horn Mining Company expects to have its property on North Baldy Mountain, Los Angeles county, California, in production in about a month, according to David D. Baker of Valyermo, California. Mill construction is being rushed to com-

ation. The company has an eastern office at 610 Brisbane Building, Buffalo, New York.

The old Lone Willow mine in the Pioneer mining district of Amador county, California, has been equipped with a four-drill compressor and two of the drills have been placed in operation. Power is coming from the P. G. & E. lines. The main tunnel has been cleaned out and re-ripped and the face, at 450 feet in, is reported in a good grade of ore. The property is being operated by E. T. Chase, Security Building, Los Angeles, who is also operating the Mary Len Extension near Auburn. Underground work will be started soon, depending upon the results of surface prospecting going on at the present time. Chase reports that they are stripping the vein outcrop at the Mary Len to an average thickness of 18 inches, assays ranging from \$6.50 to as high as \$37.40.

The Auburn-Chicago Company at Penryn, California, is reported to be running its 50-ton rod mill on development rock and to be getting 11 ounces of gold a day. Arthur N. Sweet is manager of operations.

According to reliable information, the Silver Queen mine near Mojave, California, has shipped 40 carloads of high-grade ore and is still shipping. Leases are being operated by George Holmes, Kenneth Holmes, E. A. Nicholson, and others.

Los Angeles and Long Beach men have taken a lease and option on the Belleview mine near Sonora, California, and are having it unwatered for examination and sampling. There is an 800-foot shaft, and from five of its seven levels considerable ore was stoped during its productive period more than 30 years ago. A substantial body of ore, in which no stoping has been done, is said to show in the drift on the bottom level, 800 feet in length. Preparatory work is in charge of L. S. Overpeck, P. O. Box 478, Sonora.

The Warner Bros. and George Krieg, owners of the Alice mine, six miles south of Vidal, California, expects to be on production early in August. They have built a good road to the mine, established a mill that can treat 50 tons of ore a day at the edge of town and have bought a 7½-ton truck to transport ore and supplies. A carload of ore shipped to Salt Lake recently from the Alice mine averaged 2 ounces gold and 9 per cent copper to the ton.

COLORADO

The Ruby Chief Mining Company, with gold-silver property at Crested Butte, Gunnison county, Colorado, is cleaning out old workings and getting the mine in shape for development. R. E. Simpson of Grand Junction, president and general manager, reports. The property consists of 17 old developed claims with tunnels, shafts, and open cuts of various depths and lengths, the greatest depth being 417 feet. There are about 500,000 tons of ore on dumps which the company expects to mill. The mine is being leased from W. S. Seagle of Alton, Iowa. Officials expect to install a compressor, jack hammers, hoist, and in the spring a 50-ton mill. Electric power will be used. Thomas Palmer is the superintendent and eight men are employed.

Development work and complete rehabilitation will be started on 18 old freehold mining properties on Tennessee Pass, near Leadville, Colorado. Edward Schust of Saginaw, Michigan, is reported to have purchased the property from Roy Pray, Canon City, Colorado. The price

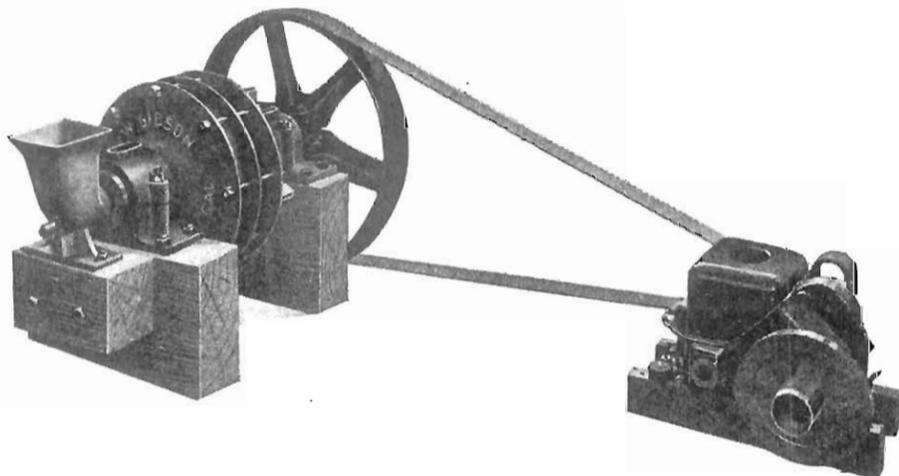
was not revealed and Pray retains an interest in the mines. Charles H. Swanson, mining engineer of Canon City, handled the deal and is in complete charge of the development work. Timbering the old mines is under way, and cabins, mine offices, and water and lighting systems will be constructed. A large tonnage mill is included in the plans.

A washer and sorting plant is being constructed at the Amalgam Gold Mines, Inc., property west of Trimble Springs, near Durango, Colorado. The tunnel which is being driven to undercut an ore shoot encountered in the upper workings is being continued, but no ore will be taken out until the washer and sorting plant are completed. W. Goff Black, P. O. Box 614, Durango, is president and general manager.

Judge James Owen and J. Churchill Owen, both with offices in the First National Bank Building, Denver, and J. H. Kolb, Jr., 1670 Steele Street, Denver, have a lease on the seventh level of the C. O. D. mine in Poverty Gulch, Cripple Creek. The property is owned by the Consolidated Extension Mines Company. Oscar Sims of Cripple Creek is in charge of the work on this lease, as well as having a lease of his own in the mine.

Values great enough to indicate operation on a profitable basis were returned from the smelter to the Southern Colorado Gold Mining Company, W. B. Morgan, president and general manager, announced. The ore carried \$53.95 a ton, the bulk being in silver with only a trace of gold, and was taken from the Little Mat mine on the property at Aguilar, Colorado.

Announcing The Gibson Pocket Hunter



Never before has such value been offered to the mining public. The Pocket Hunter will crush two-inch material, grind and amalgamate in one pass. Built entirely of heat-treated chrome steel and guaranteed unbreakable. Will be taken back in exchange for 10-ton mill any time inside of one year. Heaviest part 85 pounds. Capacity 2 tons to 30 mesh. Price \$185.00. Price with belting and 1½ H.P. engine \$250.00.

The Gibson Impact Amalgamator



Built in sizes from 25 tons to 2000 tons capacity

Repeat orders coming in from all parts of the world are positive proof of the efficiency of the Gibson Impact Amalgamator in saving the fine gold, amalgam and mercury that escape from the other amalgamating devices.

Write for catalogue describing Gibson Counter Balanced Rod and Ball Mills, Prospectors' Friend Mills, Flotation Cells, Amalgamators, Concentrators, Rock Breakers, Ore Feeders, Mercury Feeders, Oil Feeders, Retorts, etc.

W. W. GIBSON

112 Market Street

San Francisco, California

COPPER STATISTICS FOR 1932 AND 1933

(Continued from Page 5)

**Copper Produced in The United States from Domestic Ores, 1932-1933
(Smelter Output, in Pounds Fine)**

State	1932	1933
Alaska	13,297,443	1,575,936
Arizona	201,136,276	122,697,035
California	5,514,045	632,049
Colorado	8,976,169	8,882,397
Idaho	662,957	2,183,284
Michigan	63,898,656	72,340,852
Missouri		181,703
Montana	97,918,141	94,262,651
Nevada	32,616,050	42,507,400
New Mexico	32,914,883	24,948,272
North Carolina	(¹)	(¹)
Oregon	36,890	9,301
Pennsylvania	(¹)	(¹)
South Carolina		408
Tennessee	(¹)	(¹)
Texas	8,588	2,137
Utah	76,402,502	65,655,914
Washington	2,521	87,199
Wyoming	607	46
Undistributed	10,624,220	14,032,559
	544,009,948	449,999,143

(¹) Included under undistributed. Bureau not at liberty to publish.

Refined Copper

The total production of new refined copper in 1933 was 742,000,000 pounds, an increase of 61,000,000 pounds from that in 1932.

Primary and Secondary Copper Produced by Regular Refining Plants and Imported, 1932-1933, in Pounds

	1932	1933
Primary:		
Domestic: ¹		
Electrolytic	² 373,492,550	² 421,318,802
Lake	² 53,815,281	² 59,497,370
Casting	17,770,043	521,859
	445,077,874	481,338,031
Foreign: ¹		
Electrolytic	235,240,651	260,048,594
Casting	549,209	191,927
Refinery production of new copper	680,867,734	741,578,552
Imports of refined copper	167,793,988	10,863,358
Total new refined copper made available	848,661,722	752,441,910
Secondary:		
Electrolytic	120,397,873	170,878,078
Casting	56,654	160,214
	120,454,527	171,038,292
	969,116,249	923,480,202

(¹) The separation of refined copper into metal of domestic and foreign origin is only approximate, as an accurate separation of the amounts at this stage of manufacture is not possible.

(²) Some copper from Michigan was electrolytically refined at an eastern refinery and is included as electrolytic copper.

In addition to their output of metallic copper the regular refining companies produced bluestone (hydrous copper sulphate) having a copper content of 6,479,000 pounds, as compared with 6,345,000 pounds in 1932.

1902

LINERS
—that resist abrasion!

DUROLOID
Heat Treated, Chrome Molybdenum Steel Liners are the result of 32 years' experience.

Los Angeles Steel Castings Co., Ltd.
2444 So. Alameda St.
LOS ANGELES, CALIF.

1934

DEW-R-LITE Carbide Lamps

For All
MINE
PURPOSES



Made in
ALL BRASS
and in
DOUBLE
TINNED
STEEL
Catalog
on request

The only self-regulating carbide lamp that will give you the steady, even flame you require underground without shaking or raking.

Entirely automatic—
All parts accessible.

Dewar Manufacturing Co.
18—35th St. Brooklyn, N. Y.

Air Compressor's
PORTABLE, VERTICAL
and
STATIONARY
Complete for the Mine

The Rix Company, Inc.
400 Fourth St. San Francisco

KALOY IRON and STEEL CASTINGS

Replacement parts for maximum resistance to abrasion-impact-shock. Correct composition, physical characteristics and heat treatment for each individual application.

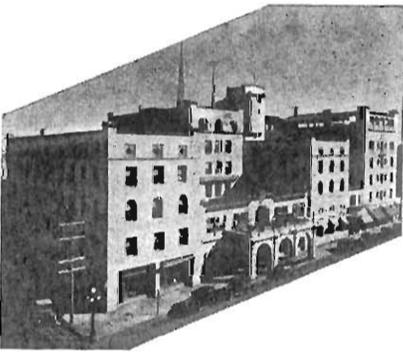
Mill Liners and Hammers—
Crusher Dies — Check Plates
—Toggles—Stamp Mill Dies,
Shoes, Cams and Stems—Roll
Shells—Concaves—Mantels.

**KAY-BRUNNER
STEEL PRODUCTS, INC.**

P. O. Box 235
Los Angeles California

SANTA RITA HOTEL

TUCSON - ARIZONA



The best of service at moderate prices—at the home-like Santa Rita Hotel — which mining men have made their Tucson headquarters for many years.

SANTA RITA HOTEL

TUCSON - ARIZONA

MINE EQUIPMENT

THE WELLMAN ENGINEERING CO.
7000 Central Ave., Cleveland, Ohio.

Car Dumpers
Tipples
Hoists
Sheaves
Cages

Ore Handling
Bridges
Blaisdell
Circular Vat
Excavator

Consumption

The new refined copper withdrawn from the total year's supply on domestic account in the United States in 1933 and the method employed in determining it are shown in the following table, which does not include stocks of copper held by consumers.

New Refined Copper Withdrawn From Total Year's Supply on Domestic Account, 1932-1933, in Pounds

	1932	1933
Total supply of new copper	848,661,722	752,441,910
Stock at beginning of year	924,600,000	1,004,000,000
Total available supply	1,773,261,722	1,756,441,910
Copper exported ¹	250,058,954	264,742,586
Stock at end of the year	1,004,000,000	813,000,000
	<u>1,254,058,954</u>	<u>1,077,742,586</u>
Withdrawn on domestic account	519,202,768	678,699,324

(¹) Includes refined copper in ingots, bars, rods, or other forms.

Stocks

Stocks of Copper January 1, 1930, 1931, 1932, 1933, and 1934, in Pounds

Year	Refined copper	Blister and material in process of refining ¹
1930	306,000,000	500,000,000
1931	615,000,000	450,000,000
1932	924,600,000	348,000,000
1933	1,004,000,000	378,000,000
1934	813,000,000	388,000,000

(¹) The amounts stated in the last column in the table above do not include copper in stock at foreign smelters or in transit from foreign smelters to refineries in the United States.

Imports and Exports

The figures of imports and exports of copper reported by the Bureau of Foreign and Domestic Commerce are shown in the following tables:

Copper Imported Into the United States in 1933, in Pounds

Country	Ore (Copper content)	Concentrates (Copper content)	Regulus black or coarse copper (Copper content)	Unrefined black blister and converter, in pigs or converter bars	Refined in ingots, plates, or bars	Old and clippings for re-manufacture
Africa:						
Union of South Mozambique				3,000,450		
Australia	216,496	141,740	6,940	28,017,994		
Canada	1,208,574	11,165,887	1,532,151	19,961,695		258,865
Chile	9,786,234	8,598,268	101,593	26,917,241	10,860,910	
Cuba	120,264	16,704,320				
France	4,208		176,146			
Germany			159,189			
Mexico	143,368	98,907		87,675,601		
Peru	450,232	45,182	62,838	52,800,175		
Spain			161,283			
United Kingdom			177,212	8,043	2,448	250
Jugoslavia				8,928,630		
Other Countries	521,730	1,078,617	66,125	9,160		1,730
	<u>12,451,306</u>	<u>37,832,921</u>	<u>2,443,477</u>	<u>227,318,989</u>	<u>10,863,358</u>	<u>260,895</u>

Copper Exported From The United States, 1933, in Pounds

Country	Ore, concentrates composition metal and unrefined copper. (Copper content)	Refined		Old and scrap	Pipes and tubes	Plates & sheets	Wire (except insulated)	Insulated wire and cable
		Bars ingots, or other forms	Rods					
Belgium	15,193,774	14,481,572	1,615,264	1,786,589				30,730
Canada		91,930	158,449	668	200,871	70,084	32,358	175,739
China		4,070,869		2,078	2,820	1,333	1,078,504	258,547
Denmark		2,267,366	336,114					5,573
France	24,671,911	72,855,294	1,591,336	4,608,009	3,335	23,016		29,407
Germany	47,317	34,762,322	6	8,927,880		29,261		7,795
India (British)		352,431	1,344,681	72,586	4,657	174		199,555
Italy		30,037,514	56,000	113,005				14,229
Japan		28,158,249		7,399,436	194	1,203	56,208	18,319
Netherlands	2,276,343	9,140,107	2,579,896	1,297,029	3,862		22,714	24,373
Norway		1,001,984	1,709,716				9,947	3,928
Russia in Europe					68			16
Spain				2,060,461	1,499		21,126	43,940
Sweden		12,195,775	1,167					11,540
United Kingdom	124,497	26,596,672	13,914	2,006,237	3,436	407,452		7,794
Other Countries	3,114,084	13,151,421	6,172,537	163,159	580,910	600,718	1,850,048	5,308,784
	45,427,926	249,163,506	15,579,080	28,437,137	801,652	1,133,241	2,570,905	6,140,269

HEAVY WATER FLOW AT POTRERO SHAFT, COLORADO AQUEDUCT

Tunneling operations at the Potrero shaft of the new Colorado River aqueduct near Beaumont, California, were abruptly stopped the first part of July. The builders, cutting through a hard cap rock, apparently penetrated an underground lake, which quickly flooded the tunnel and part of the Potrero shaft. The pressure of the water in contact with the rock drills was so great that water was forced back through the holes in the drills and broke the air lines.

For the purpose of de-watering the tunnel so that operations could be resumed, the Metropolitan Water District officials placed rush orders with the Byron Jackson Company and the U. S. Electrical Mfg. Company of Los Angeles for two de-watering pumps and direct-connected motors.

By operating three shifts, the equipment was shipped to the Potrero shaft within four days from receipt of order and the pumps were placed in operation on July 15. The pumps are suspended in the Potrero shaft on cables and are operated by two 300 horsepower vertical, hollow-shaft U. S. motors. The tunnel is being de-watered at the rate of 1000 gallons per minute against a head of 800 feet. The pumps are operated at 1800 revolutions per minute. An idea of the ruggedness of the installation is indicated by the thrust capacity, which is 14,000 pounds.

The pumps at this writing are operating day and night and as soon as the water level has receded so that engineers can enter the tunnel decision will be made as to the best means of sealing off the invading water vein.

TRINITY GOLD ERECTING MODERN MILLING PLANT

Trinity Gold Mines, operating the Golden Jubilee mine at Carrville, California, about 65 miles southwest of Yreka, is completely rebuilding and modernizing its 100-ton milling plant. Contract for the work was let to W. F. Downie of the Chico office of Downie-Wright Manufacturing Company, and the work is well underway.

The latest type ore pulverizer and balanced vibrating screens are being installed.

From there the material is conveyed into the cyanide plant for further treatment. The mine is equipped with a compressor plant, an assay office, blacksmith shop and an up-to-date camp, well lighted and with ample domestic water supply under pressure and for fire protection.

The property consists of 10 mining claims, on which there are approximately 7,000 feet of underground workings on seven levels. The company owns its water power plant, water being conveyed through a pipe line some 6,000 feet in length, to

the water wheel where it has a total head of 385 feet and generates some 150 horsepower. A generator is being installed for lights and part of the machinery is motor driven. There is a large amount of ore already blocked out in the Golden Jubilee, ready for mining and milling. Ore mined in the past is said to have shown values from \$16 to \$28 per ton, while some shipping ores have run \$262 per ton. The vein is from two to eight feet wide.

Trinity Gold Mines is a recently organized corporation, composed mainly of Seattle capital.

AVERAGE PRICES OF METALS (Figures by American Metal Market)

	Copper Per Lb. Conn Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.622	69.065
1926	13.795	8.417	7.337	62.107
1927	12.920	6.755	6.242	56.370
1928	14.570	6.805	6.027	58.176
1929	16.107	6.333	6.512	52.993
1930	12.982	6.517	4.556	38.754
1931	8.369	4.244	3.638	28.701
1932	5.792	3.181	2.851	27.892
1933	7.276	3.870	4.031	34.728
1932				
Jan.	7.000	3.750	2.900	29.750
Feb.	6.260	3.717	2.828	30.186
Mar.	5.994	3.150	2.791	29.810
Apr.	5.789	3.000	2.785	28.298
May	5.605	3.000	2.529	27.765
June	6.389	2.996	2.798	27.466
July	5.284	2.760	2.546	26.700
Aug.	5.486	3.235	2.761	27.986
Sept.	6.208	3.462	3.304	27.870
Oct.	5.975	3.046	3.046	27.195
Nov.	5.809	3.050	3.098	26.698
Dec.	5.036	3.000	3.125	25.010
Ave. 1932..	5.792	3.181	2.881	27.892
1933				
Jan.	5.000	3.000	3.015	25.400
Feb.	5.000	3.000	2.671	26.085
Mar.	5.256	3.148	2.997	27.928
Apr.	5.684	3.260	3.861	30.730
May	6.932	3.654	3.805	34.072
June	8.000	4.178	4.347	35.663
July	8.909	4.452	4.896	37.830
Aug.	9.000	4.500	4.909	39.074
Sept.	9.000	4.500	4.702	38.440
Oct.	8.263	4.316	4.744	38.190
Nov.	8.156	4.294	4.521	42.974
Dec.	8.125	4.142	4.470	48.550
Ave. 1933..	7.276	3.870	4.031	34.728
1934				
Jan.	8.185	4.000	4.275	44.187
Feb.	8.000	4.000	4.452	45.233
Mar.	8.000	4.000	4.370	45.875
Apr.	8.393	4.184	4.371	45.180
May	8.500	4.1404	4.855	44.226
June	8.849	3.975	4.238	45.173
July	9.000	3.770	4.318	46.310

NEVADA CONSOLIDATED REVAMPING SMELTER

Complete remodeling of the smelter, which is being undertaken by the Nevada Consolidated Copper Corporation at McGill, Nevada, is progressing nicely. Twelve hundred men returned to work in the mines and reduction plant and smelting was resumed the latter part of July for 54 days. At the end of that time there will be another lay-off during which the major changes in the smelter will be made.

Plans call for the use of 1,000 tons of structural steel, all of which will be fabricated at McGill by the company. A series of concrete bins with a total capacity of 20,000 tons will be the central receiving point for storing ores, concentrates, fluxes, and fuel. These materials will be distributed to the point of use by conveyor belts.

Two steel bins with a capacity of 350 tons each will be constructed adjacent to each of the two reverberatory furnaces and will contain materials to be smelted, providing a 24-hour supply. Coal pulverizing mills will also be set along side the furnace, thus eliminating the air transportation of the pulverized coal through steel pipes, as is the present practice.

The converter building and equipment is to be moved from its present location to a point adjoining the reverberatory plant, and all materials will be handled by over-head cranes.

This remodeling scheme is expected to be completed by the end of the year and all departments of the smelter will be coordinated under one roof. J. C. Kinnear is general manager for the Nevada Consolidated company and is overseeing the work at McGill.

8-15-34

Classified Advertising

5¢ per word for the first insertion and 4¢ per word for subsequent insertions, minimum price \$1.00. Box number counts for 10 words to cover cost of forwarding replies. If desired in larger type and displayed, \$2.50 per inch per insertion.

POSITION OPEN**DESIGNING ENGINEERS WANTED**

1 CHIEF ENGINEER of design on placer gold dredges, familiar with all branches and able to take charge.

1 Mechanical, 1 Hydraulic, and 1 Electrical engineer, to handle these fields.

10 Draftsmen on above work.

All applicants should submit complete record of experience, dates, references, and compensation. Field experience held very valuable to us. Submit samples of work if possible. Address Box S-26, The Mining Journal, Phoenix, Arizona. 8-15

POSITION WANTED

MINE SUPERINTENDENT. Development-Operating. 25 years Michigan, Montana, Arizona experience: mining engineer, development and operating supervision, examinations; iron, manganese, silver and other ores. S., 746 East Fifth, Tucson, Arizona. 8-15

MINE SURVEYOR. Spanish. 31 years of age. Married. Now working in Latin America with an American company. Desires change. For South America or the Philippines. Good references. Address Box P-5, The Mining Journal, Phoenix, Arizona. 8-15

EQUIPMENT FOR SALE

FOR SALE. New, 300-ft., 2300-volt, three conductor, rubber clad, electric cable No. 4 wire. Address F. C. Robinson, 408 Baker Bldg., Walla Walla, Washington. 8-30

I will sell for a low price a Sullivan diamond core drill. Used but thirty days. B. L. Brennan, 1526 1/2 No. Hudson Ave., Los Angeles, Calif. 8-15

OPPORTUNITIES

GET DETAILS. Requires \$5,000 and your service. Not a gamble. Address Box G-11, The Mining Journal, Phoenix, Arizona. 8-15

FOR SALE OR LEASE

FOR SALE. Quicksilver property, partially developed; 257 acres patented. Ten miles to railroad, seven miles paved. Considerable equipment. Electric power. Satisfactory working conditions all year. For further information address Box B-14, The Mining Journal, Phoenix, Arizona. 8-15

MINE FINANCING

CAPITAL WANTED to develop valuable quicksilver property in Terlingua District, Texas. No free options. Agents, Brokers or Promoters. Frank Duncan, Terlingua, Texas. 8-15

Gold Mines Wanted

—FOR EASTERN BUYERS
—PROVEN ORE REQUIRED
—INQUIRIES SOLICITED

PAGE & COMPANY

405 — 14th St. Oakland, Calif.

WANTED

**Tungsten, Molybdenum & Vanadium
Ores and Concentrates.**

ORE, METAL & ENGINEERING CORP.
138 West 6th Street, Tucson, Arizona
P. O. Box 2349

Write Us.

**THE TONOPAH MINING
COMPANY OF NEVADA**

Exploration Department
PROSPECTS OF MERIT FINANCED

Write Either

H. A. JOHNSON Or Main Office
Supt. of Operations 570 Bullitt Bldg.
Tonopah, Nevada Philadelphia, Pa.

**YUBA CONSOLIDATED PLACES
NEW DREDGE ON PRODUCTION**

The Yuba Consolidated Gold Fields has placed in operation its new gold dredge near Hammonton, in Yuba county, California. This is one of the largest dredges in the world, having a capacity of 350,000 cubic yards per month, operating to a depth of 110 feet below the water line, or 140 feet below the bank where it is stationed.

This dredge, No. 17, has a total floating weight of 3500 tons. The hull is 233 feet nine inches long, 68 feet wide and 11 feet 6 inches deep. All equipment is electrically operated, the motors developing a total energy of 1,300 horsepower. The digging ladder carries 126 two and one half ton buckets, each bucket having a capacity of 18 cubic feet.

The gold-bearing material raised by the buckets from the channel is conveyed to rotating screens for removal of boulders and gravel. The fine product is distributed by gravity to the concentrating tables, where the gold is recovered by amalgamation.

As the buckets gnaw away the ground in front and tailings are stacked behind, the dredger is moved ahead by its own power and again anchored by its two 50-ton steel spuds. Tailings are deposited 250 feet back of the gold boat as operations progress.

The company is working a large belt of virgin ground, but will later re-dredge a vast area where deep-seated deposits escaped the earlier operations.

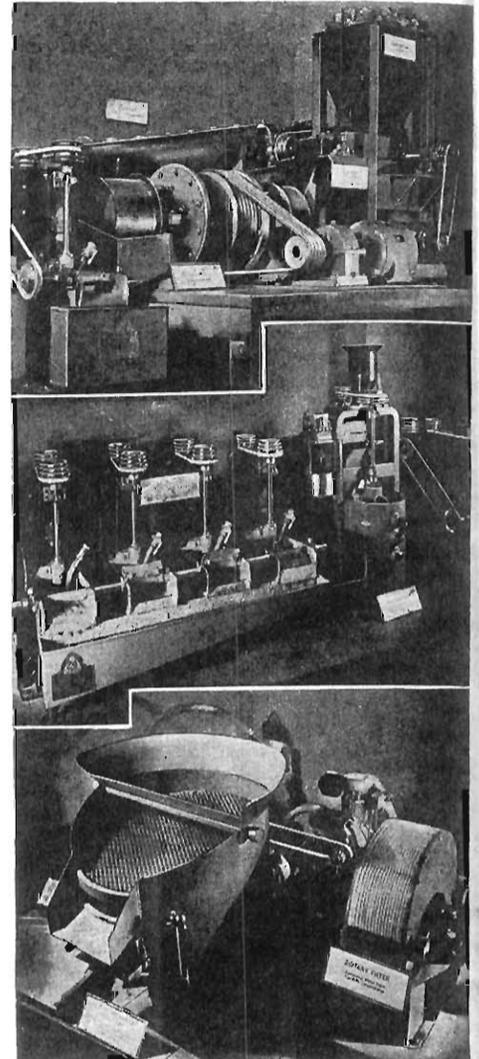
**FLOTATION MILLING PLANT
AGAIN SHOWN AT WORLD'S FAIR**

The International World's Fair—A Century of Progress—has again opened its gates to even greater crowds than last year. There are a large number of important new buildings, numerous new exhibits and many old displays which have been remodeled.

Of particular interest to the mining man is the exhibit of the Denver Equipment Company which demonstrates the flotation process of mineral recovery. This presentation is one of three basic scientific exhibits in the central group of the Hall of Science, and is located in the center of the main floor but a few feet from the famous Piccard Stratosphere Gondola.

Within a space of only 40 feet, is this complete miniature flotation milling plant which recovers gold, lead and zinc. Duplicates of commercial machines are used, and although very small in size the results are similar to the largest milling plants. The flowsheet is as follows: Ore previously crushed to 1/4" is fed from the bin by a conveyor feeder to the ball mill for grinding. Prior to classification, a new development is shown—the discharge from the ball mill flows directly into a Denver Unit flotation cell, where the free gold is immediately removed. The discharge from the unit cell then passes to the classifier, the overflow from the classifier passing to a Denver conditioner where the pulp is agitated and mixed with the proper reagents to recover the lead in the following four cell Denver "Sub A" (Fahrenwald) flotation machine; this flotation step is again repeated and the zinc recovered. A Wilfley concentrating table is used as a pilot table, with the final tailing being cut by an automatic sample cutter. The method of dewatering the flotation concentrates is demonstrated by a small Denver rotary filter.

Since practically everyone is interested in the romance of panning gold, a Denver mechanical gold pan is also in action



Top: Grinding section, showing ore bin, feeder, ball mill, unit flotation cell for recovering gold, and classifier.

Center: Denver "Sub-A" flotation cells and, at the right, a conditioner for mixing the reagents fed from the feeders.

Bottom: At the extreme right is the filter for dewatering concentrates. The Denver mechanical gold pan is clearly shown at the left.

to show the latest mechanical method of recovering gold from placer sands. The life-size illustrations of the old prospector shown placer mining have often revived the glamour of the Old West in the hearts of many visitors.

It is interesting to note that this is one of the few exhibits in the Hall of Science which has been in continuous operation throughout the Fair, running 12 hours straight every day for more than 180 days to date; there are 35 SKF bearings, 28 Texrope drives and an equal number of Century motors. A folder describing the flotation exhibit is available. Send request to Denver Equipment Company, Denver, Colorado.

ATTENTION GOLD MINERS

PRIME VIRGIN QUICKSILVER

packed 1, 5 and 10 lb. containers, also standard 76-lb. iron flasks.

Write for latest delivered price f.o.b. your mine.

COAST CHEMICAL DISTRIBUTORS

55 New Montgomery St., San Francisco, Cal.

ology, asking the Securities & Exchange Commission to further modify its requirements so primary mining companies can register to sell stock, and a resolution was passed thanking the officers of the association for their work.

Nominations committee consisted of August Grunert, Helena; C. R. Teter, mine operator of Butte and Radersburg; Milton R. Wise, mine owner of Lewistown; L. O. Thomas of the Phoenix Gold Mining Company, Butte; and C. M. Roos of Sheridan. Upon the invitation of T. L. Castle, publisher of the Madisonian, Virginia City, it was voted to hold the next annual meeting at Virginia City, county seat of the far-famed mining county of Madison and 14 miles from the railroad. Virginia City is the home of the Vigilantes and one time territorial capitol of Montana. It is rich in gold production and historic lore.

The Butte meeting wound up with a dinner-dance at the Rocky Mountain Night Club, Meaderville, under the auspices of Gabriel (Teddy) Traparish. The winter meeting of the Association will be held in Helena, during the January-February session of the Montana legislature, the committee of arrangements being George Conway, Charles E. Pew, Lars Carlson, Charles Brazier, and John D. MacKenzie.

ANACONDA COPPER EMPLOYEES APPROVE INSURANCE PLAN

More than 90 per cent of the eligible employes of the Anaconda Copper Mining Company have signified their approval of the plan adopted by the company July 6 concerning group life insurance for employes of the company and its subsidiaries in the United States and Canada. The plan required that at least 75 per cent of the eligible employes approve it before August 1.

With the consent of a large majority of the employes, the plan went into effect on that date. The risk is being assumed by the Prudential Insurance Company of America.

During the period of submission of the plan to employes, temporary protection was afforded at the sole expense of the company to approximately 28,000 employes for a total of around \$40,000,000 of insurance. During this period several thousands of dollars were paid to beneficiaries on account of deaths of employes.

The plan of insurance is based upon the normal average earnings of the employes and death benefits range from \$1,250 to \$10,000. The cost of the insurance to employes will be at the rate of 60 cents a month per thousand of insurance, and the balance will be paid by the company.

CALIFORNIA HAS NEW LAW COVERING MINING LOCATIONS

A new state law, sponsored by Senator A. L. Pierovich of Jackson, California, covering mineral locations in California, became effective July 1. Under the new law, every new location must be marked by a stone monument at least 18 inches high, or a post not less than four inches in diameter. Within 90 days of location, the locator must sink a discovery shaft to a depth of at least 10 feet, or drive a tunnel, adit or open cut to at least 10 feet below the surface. On placer locations containing more than 20 acres, the locator shall, within 90 days, perform at least one dollar's worth of work for each acre.

The new law refers only to new locations and does not affect present owners of lode and placer claims.

Ellis Mills

Are the Most Efficient Grinders

- The Best Re-Grinding Classifiers by overflow.
- The Best Amalgamating Pan to any mesh size.
- The Only Mill that will work Clay (pipe).
- The Only Mill that will work Mica (sheet).
- The Only Mill that will work Asbestos and not ruin the fibre, or Emery and not ruin the mill. And many others.

The Ellis Mill will grind anything that can be ground or pulverized, wet or dry, to a definite mesh in one operation, using only 1/4 to 1/10 the power others use. No gears, no grease, no bearings, no friction.

EXCERPT FROM LETTER RECEIVED REGARDING IMITATION ELLIS MILLS
In reply to your favor of April 17th which has just reached my hands, will say that we purchased two alleged mills from..... used them a short time and found they were unfit for our purpose, in fact we are not satisfied same would be fit for any milling purpose. We are not using them and never intend to use them. Your mills may be very good. I have no way of passing judgment.—I am unable to give you the address of..... other than Los Angeles, California. You need not spend anything to enjoin us from using these mills for we have not used them for about two years and wish they were off our property.

Very respectfully yours,

(Original on file for inspection.)

ELLIS MILLS MFG. COMPANY

(A Voluntary Trust)
510 Brannan, Near Fourth Street
SAN FRANCISCO CALIFORNIA

Phelps Dodge Corporation is Modernizing its Ajo Plant

with

Southwestern Air (Matless Cell) Flotation Machines

Unexcelled metallurgy in the treatment of all floatable ore; gold, silver, lead, copper, zinc, graphite, molybdenum and non-metallics.

SOUTHWESTERN ENGINEERING CO.

4800 Santa Fe Ave.,
LOS ANGELES, CALIF.

tough!

DIAMOND BRAND grinding balls are die forged from special alloyed steels which give them a toughness and a higher resistance against wear than can be expected in ordinary forged steel balls.

Due to the fact DIAMOND BRAND balls are naturally air hardened you are assured against loss due to fractures and breakage.

Let us show you how you can reduce your grinding cost 15 to 20%.
Write for booklet—S-10

WILBUR-ELLIS CO.

1206 So. Maple Ave.,
Los Angeles, Calif.

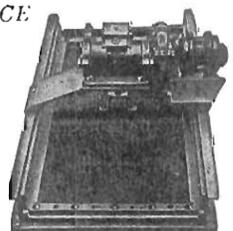
THE Leahy
HEAVY DUTY
VIBRATING
SCREEN

GUARANTEED SCREENING SERVICE

The DEISTER
CONCENTRATOR
COMPANY

THE ORIGINAL DEISTER COMPANY

Incorporated 1906
925 Glasgow Ave., Ft. Wayne, Indiana



G. L. PRICE* states

Mining Benefits From Growth of New Industry

The reconditioning of used pipe, which is essentially a Southwestern enterprise, is saving mine developers and operators from 25 per cent to 30 per cent on the cost of water and air lines, without, it is said, any impairment of efficiency or safety.

While practiced to some extent since 1898 by one large California company, the reconditioning of used pipe did not become recognized as a major industry until around 1917, when the greatly enhanced demand for all manner of metal products for military use and in construction incident to military activities resulted in a serious shortage of new pipe.

Two Ends Dove-Tail

Coincident with this pipe shortage came a general dismantling of old-type though relatively new power plants and railway locomotives to make way for equipment showing greater efficiency and fuel economy. Tubes from tubular boilers in particular, because of frequent replacement, often were as good as new, and in these little used boiler tubes of various sizes, reconditioners of used pipe found an ideal source of supply.

In general, because of the heavier demands made on them, boiler tubes are fashioned from finer metals and to withstand higher pressures than are ordinary grades of pipe. Used boiler tubes were found available in appropriate lengths and sizes. Reconditioning was all they required to fit them for a new career of usefulness. They won immediate acceptance from pipe-users, because reconditioned boiler tubing was found to have the advantage of being lighter to transport and to handle than ordinary pipe of equal strength.

Compares with New Pipe

Going about their business methodically, and thoroughly conscious of the possibilities in an area consuming as much pipe as does the Southwest, the reconditioners installed modern machinery and adopted modern methods comparable to those employed in the production of new pipe, to strengthen, clean, thread, and test this used pipe. The finished product came out, it is said, capable of competing with new pipe, as to service, but at a saving of 25 per cent to 30 per cent in cost.

Power plant progress of the last decade has been particularly kind to Southwestern users of pipe. Turbines and electricity have very generally supplanted old-time tubular boilers in the Middle West and East. Temporary water lines and construction jobs have also contributed generously to the many tons of little-used pipe which, by the shipload and carload, has found its way westward, where, after thorough cleaning, straightening, testing, and threading or cutting, it has been sold as high-grade reconditioned pipe.

Easy and Economical to Install

Unusual care with threads and couplings is said to make this reconditioned pipe as easy and economical to install as new pipe. Precision equipment is used to produce threads that are clean and smooth and of the right pitch and taper. For welded lines or plain-end pipe, cutting is done in a fast, modern machines to insure a per-

Los Angeles, California

Pipe reconditioning is an enterprise peculiar to the southwest and is an indirect outgrowth of the World War. It is estimated that mine operators are saving from 25 to 30 per cent in the cost of water and air lines by the use of reconditioned pipe.

fect union. Automatic equipment makes used pipe or tubing commercially straight and uniform in a single, continuous operation. Huge revolving drums or rattles remove all rust and scale, both inside and out, preparing the pipe for use with any fluid, with gas, with air, or for the reception of a protective coating where corrosive or other adverse chemical conditions make this treatment desirable.

Extreme precautions to insure strength and safety are taken in testing, cold water, which is incompressible, being used. Each length of pipe is individually tested to not less than 200 pounds hydrostatic pressure, or more if desired. The same care is employed in reconditioning valves and fittings. Fittings are thoroughly cleaned and the threads closely checked. Valves are taken apart, seats and discs are re-ground, worn parts are replaced, and, after reassembling, all valves are given an exacting water test.

Dipped and Wrapped When Desired

While such protection is not in general demand, where underground or surface conditions require it, reconditioned pipe is

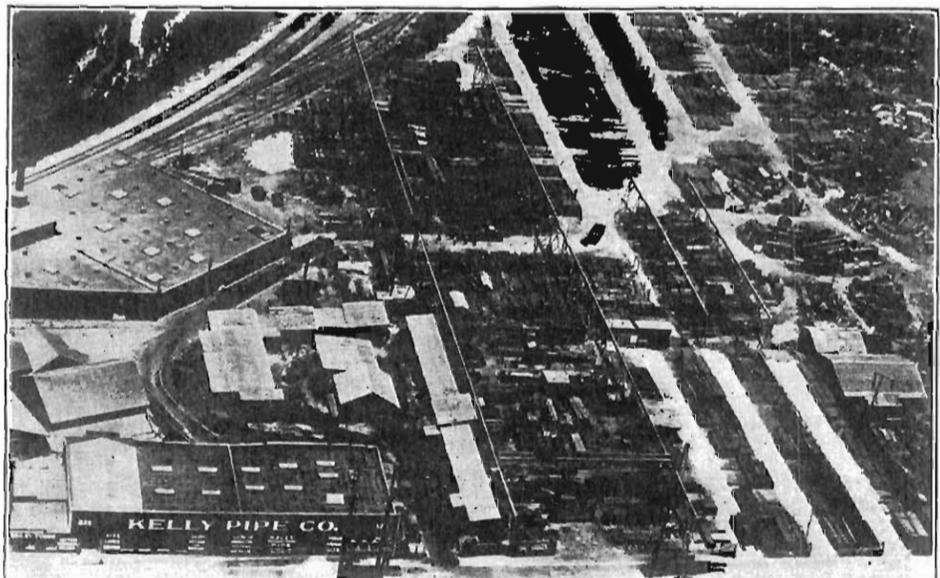
dipped in hot petrolastic asphaltum at 350 degrees, to guard against corrosive agents. This dip is odorless and tasteless, and pipe so treated is much used for water supply systems, both public and private. Where additional protection is required, the pipe is wrapped with a mica-coated, asphaltum-saturated, felt-base, non-corrosive wrapping. This is spirally wound under tension, while a stream of hot asphaltum flows between pipe and wrapping, to form a perfect bond between pipe and fabric.

Reconditioned pipe is now in general use for the de-watering of mines, for mine and mining camp water supply services, for air-lines, for mill and smelter service, and, in the larger sizes, in placer operations. Because it is absolutely oil-free, it is safely used in milling and recovery operations where any suggestion of grease would hamper amalgamation. The use of reconditioned pipe for domestic water supply and sanitary systems has the sanction of numerous western municipalities. Contractors for the Metropolitan Water District are using large quantities of reconditioned pipe in de-watering the tunnels for the new Southern California aqueduct and also for compressor lines.

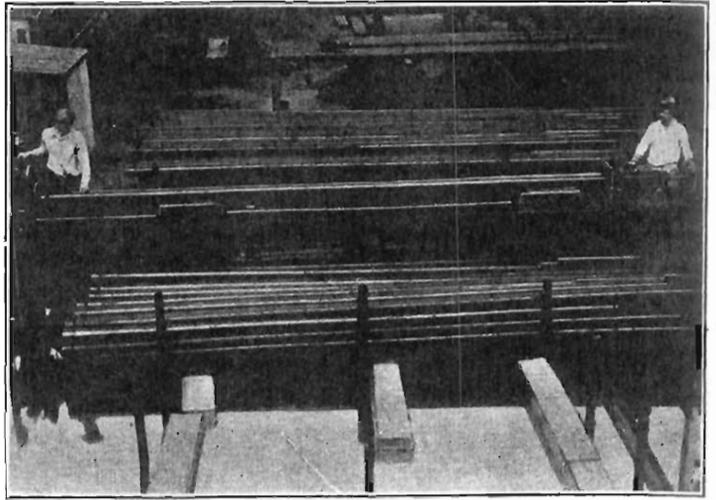
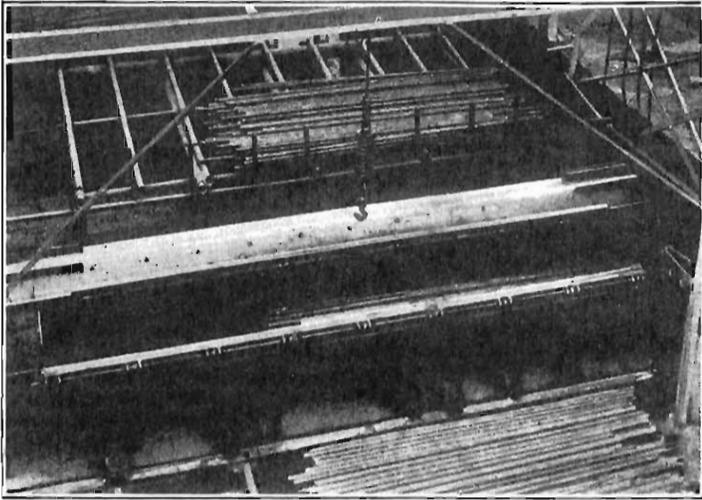
Arizona Important User

Oil producers are large users of reconditioned pipe, and it is said to have shown them splendid economies. One of the largest orders placed in recent years is for an important Arizona gas line. The same reconditioner is now installing a large-size water line for a well-known Arizona mining corporation. Reconditioners as a rule offer complete installation service where it is desired.

While economy rather than permanency is often a consideration with the mine developer or operator who buys reconditioned pipe, it is pointed out that recon-



In 1898 this enterprise started out as a little boiler shop, buying, reconditioning, or dismantling used boilers. Today it employs six acres of space and thousands of dollars worth of special machinery in restoring used pipe and boiler tubing which is supplied to the entire Southwest. (Photo by courtesy of Kelly Pipe Co., Los Angeles.)



(Left) The huge revolving drum or rattle which removes all rust and scale from used pipe or boiler tubing, from both interior and exterior surfaces. The pipe is then ready for the next step in reconditioning. (Right) The hydraulic testing machine of same type used in mills for testing of new pipes. By cold water, reconditioned pipe is tested length by length to a hydrostatic pressure of up to 1000 pounds. (Photos by courtesy of Kelly Pipe Co., Los Angeles.)

ditioned pipe of the same grade as now being installed by southwestern mines has been in use by various municipalities under concrete or asphalt pavements for the last 10 to 15 years, with satisfactory results. As a matter of fact, dry, light southwestern soils are so generally kind to metals that instances are on record where even a light-weight rivetted pipe has served successfully for 48 years. On this basis, reconditioners believe a good quality reconditioned tubing should give up to 75 years' service, under average conditions.

Large Stocks on Hand

Fortunately for the rapid expansion of the mining industry, large stocks of reconditioned pipe ranging in size from 1½ inches to 6 inches and larger are already on hand in centers strategic to points of greatest mining activity. Service is prompt and transportation costs low; hence, even though irrigation, oil, industry, and federal state, county and municipal boards have become heavy users of this product, present supplies are likely to prove equal to the occasion.

HOMESTAKE MAKES SECOND PAYMENT AT INCREASED RATE

On August 25 the Homestake Mining Company of Lead, South Dakota, made the payment of its regular monthly dividend of \$1 per share, plus an extra dividend of \$2 per share. This duplicated the dividend of July, at which time payments were increased from the previous rate of \$1 regular and \$1 extra. There are 251,160 shares of Homestake stock outstanding, making the monthly dividend total \$753,480.

Early in August the company started excavation for its newest building project—a new steam-electric station which will replace the present substation on which earth subsidence, caused by mining operations, is encroaching. The estimated cost of the new power station will be \$1,000,000.

Work on the new Ross 5,000-foot shaft is making splendid progress. The pilot raise at the present time is down to the 3,200-foot level and by the end of the current month the steel sets which line the shaft will be completed to the 2,900-foot level. It is expected that hoisting of ore at the Ross shaft will be started late in October or early in November, approximately six months ahead of schedule.

SILVER MOVE IS NOT TO USE INFLATIONARY POSSIBILITIES

The Treasury Department officials are making every effort to allay any feeling that the nationalization of silver in a move towards inflation. They state very positively that the certificates will only be issued against 62,000,000 ounces of silver at the full statutory price of \$1.29. This was the amount of "free" silver in the treasury.

On all silver bought under the Silver Purchase Act, it is the present intention to issue silver certificates only for the actual cost of the silver. It is currently understood, however, that it is the plan to print certificates for the entire amount and hold them in the Treasury and on the books, but not to put them into circulation.

The Treasury Department is scheduled to buy ultimately about one billion ounces of silver to bring about the 25-75 ratio decreed by the Silver Purchase Act. This would bring about a currency inflation of better than a billion dollars if fully carried out to the extent permitted under the law.

The insistence of the Treasury as to its policy was caused by the drop in the price of government bonds and the fact that some extensive refinancing has to be done this fall which, with inflation at this time, would greatly affect the price that could be secured and the interest rate. The Treasury Department is apparently holding up the government bond market by purchasing.

Another feature of the silver purchase that is little understood is that the government is limited in price to 50 cents per ounce only for the domestic stocks of silver existing in this country as of May 1, 1934. Those are the stocks which have been called in, but the Silver Purchase Act places no such price limitation on silver bought abroad and brought into this country.

As stated before in these columns, the nationalization of silver has no direct effect upon the mining industry, not even upon the mining of silver. It is, however, a process which will hasten the complete absorption of the surplus silver of the world and as this is absorbed, the world price of silver will probably increase. It is opening the way for a gradual approach towards world-wide free coinage at the ratio which exists in the United States.

There is nothing in the proclamation which prohibits the shipment of foreign silver into this country or prevents such newly imported stocks from being traded in on commodity markets. It is probable that the Treasury Department will buy some of this foreign silver in order to give some semblance of price control.

It is estimated that the amount of silver which will be turned into the government as a result of the nationalization order will be about 250,000,000 ounces, or about one-quarter the amount which it will be necessary to purchase to bring the ratio up to the amount authorized. The balance of the purchase will have to come out of new silver as it is mined or from foreign stocks.

The silver nationalization move was nothing more or less than the decision of the government to do, in one fell swoop, that which they had already started to do, buy up all the silver in the United States. Inasmuch as the price limit for domestic silver had been set by Congress at 50 cents and the silver price was rising rapidly and bid fair to pass the 50 cent mark, it was necessary to move suddenly, which was done.

There is little reason to expect, however, that the silver price in this country will advance beyond the 64½ cents per ounce now being paid for the newly-mined product.

ARGONAUT RAISES WAGES DOUBLES DIVIDEND PAYMENT

The Argonaut Mining Company, Ltd., Jackson, California, has doubled its quarterly dividend rate by the disbursement of 50 cents a share on August 23. Previous dividends of 25 cents a share were paid in February and May of this year.

The company reported a profit of \$49,172 for June, compared with \$17,849 for May, and a monthly average of \$15,605 throughout 1933. For the first six months of 1934 the earnings, after all charges except taxes, amounted to a net profit of \$169,685, or 85 cents a share profit on the 200,000 shares outstanding. For the entire year of 1933 profits amounted to 93 cents a share.

Effective August 15 the daily wage of its 240 employes was increased 50 cents per day, restoring wages to the prosperity scheduled of 1929, \$4 to \$4.50 a day.

off of rains during the wet season is creating a serious problem for both miners and cattle men throughout the district, although there is much dry washing by the natives in progress.

Albert S. Konselman, mining engineer with offices in the Bank of Arizona Building, Prescott, Arizona, has just returned from the Joe Dandy mine of the New Zealand Gold Mines, Inc., at Cripple Creek, where he is consulting engineer. In referring to the recent strike at the property, Konselman says that while no crosscuts have been made as yet, blasting for a chute shows the new ore body to be in excess of ten feet. The main point of encouragement, aside from the ore, he says, is that the strike was made in virgin ground, a condition rather unusual in that district.

E. L. Sweeney, metallurgical engineer, is back in the southwest from his Denver, Colorado, headquarters to start construction of a 75-ton flotation mill at the Octave mine at Octave, Arizona, for the American Smelting and Refining Company. Among other mills which Sweeney has under construction at the present are the one for Summitville Consolidated Mines, Inc., at Summitville, via del Norte, Colorado, and one for Boulder Mines, Inc., at Boulder, Colorado. He maintains headquarters in the Title and Trust Building, Phoenix, Arizona, and Box 5312 Terminal Station, Denver.

Deceased

Harry S. Chapman, 63, well known mining engineer, died on July 27 at a hospital in Coarse Gold, California.

Miguel Bustamante, age 60, prominent mining engineer, died at his home in Mexico City. He had figured in the development of some of the principal mines of Mexico.

Charles H. Munro, mining engineer, graduate of the University of California, class of 1898, died at his home in Berkeley, California, the last of June. He had been active in many of the gold dredging, hydraulicking and placer mining ventures in the United States, Alaska, and South America. For a number of years he had maintained offices in San Francisco, engaged in consulting practice. The last project on which he was engaged was an hydraulic proposition near Nevada City, California, which was rapidly nearing an interesting stage when his death occurred.

BOYD TO TEACH GOLD MINING AND MINE ADMINISTRATION

Major Julian Boyd, Los Angeles consulting mining engineer and president of the Mining Association of the Southwest, is to head two courses in mining at University College, adult evening division of the University of Southern California, during the fall quarter which opens September 24.

Mine administration, a non-technical course designed for those desiring an understanding of the principles underlying the valuation, organization, and management of mining enterprises, is to be conducted by Major Boyd on Monday evenings from 7 to 9:20 o'clock in Bridge hall on the U.S.C. campus.

A course in elementary gold mining also is to be headed by Major Boyd. The class will meet in Bridge hall from 7 to 9:20 p.m. each Tuesday evening for 12 weeks.

Fifteen engineering courses are among the 295 classes in 50 departments of university study to be given during the fall quarter of the U.S.C. evening extension division.

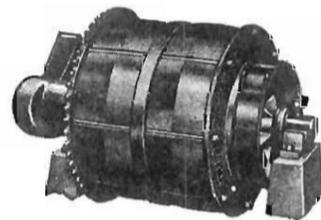


2 to 4 Ton Capacity

\$220

← THIS Rib-cone Mill is easily converted

into THIS →



4 to 8 Ton Capacity

\$375

— by simply adding extra parts

Here's another example of Straub adaptability. The 2 to 4 ton Prospector Mill, illustrated above, weighs 850 pounds and requires only 1½ horsepower. At any time it can be converted into the 4 to 8 ton Super-Prospector Mill by adding the extra parts at \$155. Or, you can buy the Super-Prospector at first. Either size is ideal for the mine in a remote region; the heaviest piece weighs only 285 pounds, making it easily transported by mule.

Send for Bulletin No. 115

It gives illustrations and descriptions of these and larger Rib-cone Ball Mills, as well as of crushers, Overstrom Universal Concentrators, sectionalized boilers, gas and Diesel engines, flotation machines, and water wheels. Write for Bulletin No. 115 and tell us your special requirements. No obligation!

SAVE THE GOLD!

Don't lose the gold you mine. Use Straub equipment and save it!

Ore Tests OUR SERVICE TO MINES IS COMPLETE Assays

505 Chestnut St.

Oakland, Calif.

J. K. SMIT & SONS, INC.

157 Chambers St.,

New York, N. Y.

DIAMONDS FOR CORE DRILLING

FINEHARD'S

CARBON

IAMHARD'S

REPRESENTATIVE FOR THE REPUBLIC OF MEXICO

P. MARTIN, Apartado Num. 544
Mexico City, Mexico

PITTMAN RECEIVES GIFTS FROM MEXICAN SILVER MINERS

Senator Key Pittman of Nevada was tendered two beautiful testimonials by Governor Rodolfo Elias Calles of Sonora, Mexico, in behalf of the silver miners of Mexico, when he visited Nogales, Sonora, on August 18. The Silver Fiesta was arranged by the Mexican silver interests.

The gifts are a reproduction in silver of the famous Aztec calendar, and a silver testimonial plaque. Fifteen kilograms (a kilogram is 2.2046 pounds) of the white metal were used in making the calendar which is circular and has a diameter of 55 centimeters. The plaque bears the legend:

"Homage to the Apostle of Silver, Hon. Key Pittman, Senator of the United States of America. Tendered by Senor Rodolfo Elias Calles, Governor of the State of Sonora in representation of the miners of Mexico. Nogales, Sonora, Mexico, August 18, 1934."

TAX EXPERT NOW HANDLING U. S. MINE LOAN APPLICATIONS

William Henry Harrison, Denrike Bldg., Washington, D. C., consulting engineer and a frequent contributor to the columns of The Mining Journal on federal tax matters, is now devoting his attention to representing and counseling mine operators who desire to secure federal loans for proven gold and silver mines.

These loans are not being made to prospects, but only to proven properties requiring additional finances to get into production. As the regulations now stand, the examination of the properties by the government is done at the expense of the mine owner, although there is some possibility of a change in this if the U. S. Bureau of Mines or some other organization can be prevailed upon to take over the examination work.

It is understood, however, that the government organizations who have engineers available, such as the Bureau of Mines, the Geological Survey and the Bureau of Foreign and Domestic Commerce, have not yet been enthusiastic about the idea of making such examinations at the expense of the government as is done in connection with farm loans.

GOVERNOR MERRIAM APPOINTS CALIFORNIA MINING BOARD

Governor Frank Merriam of California has restored to activity the California State Mining Board, created by legislative enactment in 1929, but which has not functioned in recent years. The Governor appointed the following personnel to constitute the membership of the board:

Erroll MacBoyle, president of Idaho-Maryland Mines Company, who will serve as chairman; Charles H. Segerstrom, president of Carson Hills Gold Mining Corporation; Edward M. Smith, president of Emsco Asbestos Company; Charles G. Johnson, state treasurer of California; and Robert A. Kinzie, consulting mining engineer.

The board will function in an advisory capacity in connection with the general policies of the California State Division of Mines. Governor Merriam has requested the board to keep him advised as to policies which, in the opinion of the board, would prove of benefit to the industry.

After its first meeting the following statement was issued:

"The governor informed the board that he considered the immediate problem was to effect reductions in operating costs

and to otherwise stimulate the mining industry, thereby spreading the individual tax burden to the aggregate income of the State of California and its citizens. The board proposes to give every assistance in the furthering of mining in California, to which end it will call a meeting of the representatives of the mining industry, including metallics and non-metallics, with the exception of oil, for the purpose of obtaining suggestions and first class advice for the further guidance of the board."

WASHINGTON ASSOCIATION HOLDS MIDSUMMER MEETING

The midsummer meeting of the Washington Natural Resources Association was held August 16 and 17 in Bellingham, Washington. Meetings of the association were combined with those of the Northwest Mining Association, West Coast Mineral Association, and the Northwest Oil and Gas Association.

The mining section of the meeting was represented by Milnor Roberts, dean of the Washington college of mines, who spoke on the occurrence and uses of non-metals; Hewitt Wilson, of the same institution, who gave a talk on the ceramic possibilities in Washington; Charles C. Berg, engineer for the Natural Hard Metals Company of America, Inc., who talked on amphiite and demonstrated its manufacture at the company's Bellingham smelter; and Carl F. Floe, assistant professor in the school of mines at Pullman, whose address was entitled "Electrometallurgical Possibilities in Washington."

J. D. Hull, supervisor of the state mineral survey, spoke on a movement for "mine to market" roads as a principal factor in the development of the state's mineral resources. Registration for the meetings was declared to be 330, 86 of the delegates coming from points outside Whatcom county.

NEW PROCESS SUCCESSFUL ON OLD LYNCH TAILINGS

P. R. Bradley, Jr., his brother Henry H. Bradley, and W. Church Holmes in their operations at Virginia City, Nevada, are revolutionizing the metallurgical process as usually employed in the recovery of gold and silver from the tailings of old dumps. Test work on this project was done by the Pan American Engineering Corporation, 1076 Mills Building, San Francisco, with the result that a flotation plant, located at Virginia City, Nevada, is now recovering values from the old Lynch tailings, impounded during the late 60's and early 70's and amounting to about 30,000 tons. This new method is said to cut operating costs to one-third of the former expense.

Flotation was found by Bradley and his associates to be the only method whereby the gold and silver can be freed. Due to the chemicals used in the old Pan amalgamation process, cyanide was killed, and when that chemical action was overcome the amount of clay hindered the penetration of the cyanide.

The tailings are hydraulicked to the mill, the pulp produced by the hydraulic operations flowing to an agitator tank, and are then pumped up to a conditioner tank. A small Hendy ball mill is being installed to completely disintegrate the hydraulic product before going to the flotation plant.

From there they pass through a bank of four of the latest improved flotation cells, which extract the gold and silver missed in the original milling. A large amount of

quicksilver, left from the old amalgamating process, is also recovered. The concentrates pass through a cleaner cell to remove the sand, are dried, retorted to extract the quicksilver, and shipped to the smelter at Selby, California. The daily run of 125 tons of heads produces about three-quarters of a ton of concentrates.

The plant is electrically operated and is running three shifts a day. Its ultimate capacity is rated at 150 tons per day. In conjunction with the mill, there is an assay office equipped for flotation test work and other metallurgical testing. During June and July over 5,500 tons of tailings have been run through this plant.

Bradley and his associates have also acquired the Barret tailings in Six Mile Canyon, to which they plan to move the plant when the Lynch tailings have been exhausted.

NATOMAS COMPANY ENTERS NEW GOLD DREDGING FIELDS

The Natomas Company, for many years a leader among gold dredgers in Sacramento county, California, is expanding its operations into other gold producing regions of the west. The company, and a few officials, hold a 50 per cent interest in the newly organized Merced Dredging Company, which plans to engage in dredging on the Merced River of Merced county, California. Options have also been signed covering the Cole-Kirchen and Donald placers in Manhattan Gulch, Nevada.

A 50 per cent interest in the Merced company is held by La Grange Gold Dredging Company, which has been operating on the Tuolumne river for the past 25 years. The Merced Dredging Company has taken over the Natomas Company Dredge No. 2 in the Folsom field and is dismantling in preparation for rebuilding on the Merced property.

G. J. Hanlon, field representative of the Natomas Company, has announced that work at the Nevada placers will start at once. This will consist of drilling and prospecting the gravel to define the pay channel, and if results justify the construction of a dredge will follow. These placers were prospected in 1928 by the Hammon Engineering Company, and in 1931 by G. H. Peake Engineering Company. While results were said to have been favorable, the necessary capital for placing the property on production was not available.

To support its expansion program, the Natomas company reported, on June 30, current assets of \$1,390,679, of which \$1,061,680 was in cash. Current liabilities totaled \$87,281. The company's cash position is being further strengthened by earnings well in excess of dividend disbursements at the annual rate of 60 cents a share.

For the month of June a net income of \$82,945 was reported. The profit for that month brought the total of the first half of the current year to \$454,871, or approximately 46 cents a share.

Several years ago the Natomas Company was following a program of liquidation. When the upturn in gold prices arrived the management dropped this plan and decided to engage in an expansion program instead. New leases were acquired and additional dredges placed in operation in Sacramento county, with the result that the company's earnings have consistently increased.

Thomas McCormack, Forum Building, Sacramento, California, is president of the company. R. G. Smith of Natoma, California, is manager of the gold dredging department.

NEW TYPE PLACER MACHINE OPERATING SUCCESSFULLY

The 1,000-ton dredge on the Rogue River, near Gold Beach, Oregon, constructed by the Consolidated Mine Operators, is one of the most important activities on the lower portion of the river. The new type of hydraulic lift dredging unit was designed under the direction of James E. Sellers, 234½ San Francisco Street, Pomona, California, who is consulting engineer for the company.

Sellers and his associates have been experimenting at their laboratory in Pomona on both the mechanical and chemical processes for obtaining the gold and platinum values contained in the black sands on the beach. A shipment of three tons of the sand concentrates is reported to have yielded a successful recovery. The group is operating a sub-lease of about 3,000 acres along the river belonging to the Macleay estate.

The Mining Research Bureau reports that practically all other operations on the Rogue River have ceased for the summer due to lack of water, which especially handicapped operations in and around Grants Pass. However, several large operators have been investigating the river and beach during the summer and renewed activity is expected this fall.

Harry Hickok, field engineer for the Mining Research Bureau, reports very satisfactory results from the Oregon gold placers, but states that persons expecting to make free recoveries will meet with disaster. The gold and platinum require a combination mechanical and metallurgical process for profitable recovery, and the cost of such equipment will necessarily be much higher than the ordinary machinery.

WESTERN MINING LEADERS TO GATHER IN SAN FRANCISCO

Leaders in the copper, lead, zinc, gold, silver and other mineral industries of the thirteen western mineral producing states will congregate at the Palace Hotel, San Francisco, California, during the week of September 24, to discuss their common problems, and to develop a plan of united cooperation in the rehabilitation of the western mining industry.

It is expected that more than two thousand operators representing California, Nevada, Utah, Arizona, Colorado, Montana, the Coeur d'Alene District, New Mexico, and the Tri-State lead and zinc district will attend. The program will enlist the cooperation of such national mining leaders as W. S. Boyd, vice-president, Utah Copper Company and Nevada Consolidated Copper Corporation; W. Mont Ferry, vice-president, Silver King Coalition Mines Company; Robert E. Tally, vice-president, United Verde Copper Company, Howard I. Young, president, American Zinc, Lead and Smelting Co.; Stanly Easton, president, Bunker Hill & Sullivan Mining Co.; D. D. Moffat, vice-president, Utah Copper Company; R. B. Tempest, general manager, Chino Mines, Nevada Consolidated Copper Corporation; J. C. Kinnear, general manager, Nevada Consolidated Copper Corporation; Chas. A. Chase, general manager, Shenandoah-Dives Mining Company; Chas. H. Segerstrom, president, Carson Hills Mining Company; William Daly, assistant manager of mines, Anaconda Copper Mining Company; Brent N. Rickard, manager, El Paso Smelting Works, American Smelting & Refining Company, and many others.

Topics selected by the program committee, which is headed by W. Mont Ferry, Silver King Coalition Mines Company, in-

clude: Rehabilitation of Non-Ferrous Metals; Administration of Silver Bill; Trends of the Times; Western Mineral Industry and Distribution and Utilization of Power from Federal Projects; Government Policy Toward Western Mineral States; Taxation of Mines and the Law of Diminishing Returns; The Problems Presented by the New Revenue Law and Tariff and the Metal Industries.

In conjunction with the convention an exposition of mining machinery and supplies will be presented, with such nationally known manufacturers participating as General Electric Company; General Cable Company, Caterpillar Tractor Company, American Rubber Company, National Carbon Company, Timken Roller Bearing Company, Jeffrey Manufacturing Company, and others well known to the mining industry.

There also will be presented, by the 13-western mineral producing states, a special exhibit which will show through graphic charts and figures for each of the states, and collectively, the number of mines; number of men employed; annual payroll; annual tax—state and national number of communities dependent upon the mines, and number of industries dependent upon mine products for existence.

Local San Francisco mining men are planning a special welcome for the visiting guests, and two days of the convention will be spent visiting the revived gold mining camps of California, and inspecting points of interest, including San Francisco's new bridge.

September 24—29 seems to be a most important date insofar as the mining industry is concerned, and San Francisco will be the busiest mining center in the United States at that time.

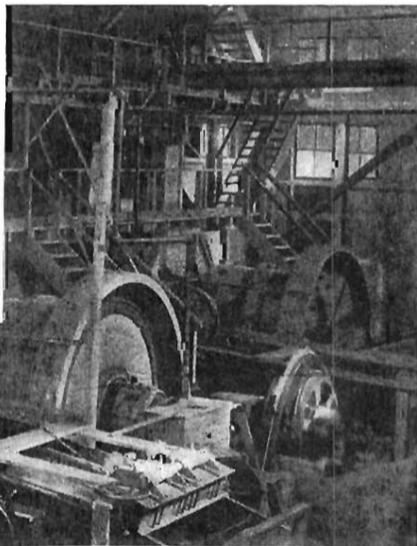
COMPLETE MILLS • 25 TONS & UP

THESE DAYS The Mine and Smelter Supply Co. is giving valuable cooperation to engineers engaged in building new ore milling plants and to many others who are modernizing old plants.

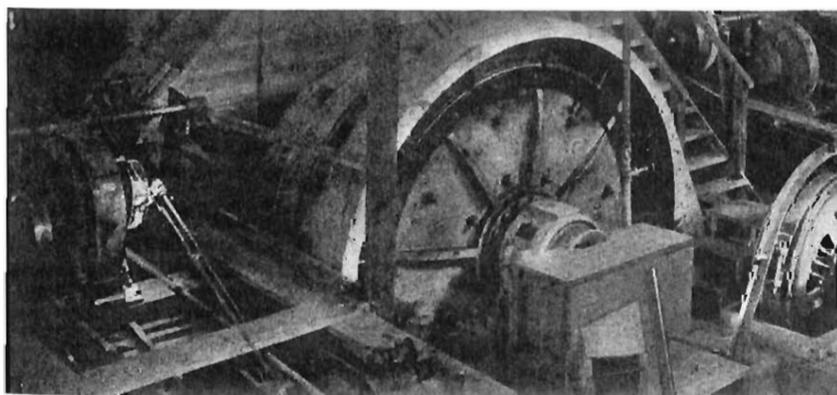
Whether your requirements are one Marcy Mill, one or two Wilfley Tables or all the machinery and equipment for a complete plant, "Mine and Smelter" is good counsel

to seek before you place your order for it.

"Mine and Smelter" has been identified with the mining industry nearly half a century. The company's experience in the problem of ore treatment reaches out to every important metal mining camp in the world where Marcy Ball and Rod Mills and Wilfley Concentrating Tables have set standards of efficiency.



• WRITE, TELEGRAPH OR CABLE FOR QUOTATIONS.



Marcy Ball and Rod Mills
Wilfley Concentrating Tables
Adams Reagent Feeders
Laboratory Equipment and Supplies

The MINE and SMELTER SUPPLY COMPANY

Main Office: DENVER, COLO., U. S. A.
Salt Lake City El Paso
1775 Broadway, New York City

Nuggets from the Western States

Some high spots of the mining industry in the Western United States and Mexico.

ARIZONA

The **Lost Basin Mining District Agency** expects to resume its work along the Colorado river, in Mohave county, Arizona, late in September, reports Frank P. Baldi, 509 Western Mutual Life Building, Los Angeles, California, engineer and manager. The crew was laid off during July, due to the excessive heat. Baldi has just returned to his offices from the property where he made some final checks on values. He states that one test of 21 pans gave values of \$1.05 per yards, not counting the small nuggets recovered.

For the six months ended June 30, 1934, **Phelps Dodge Corporation** reports a net income of \$2,067,793 after taxes, depreciation, but before depletion. In the first half of 1933 the company reported a net loss of \$711,160.

According to Herman Hertz, general manager, the **United Vanadium Corporation** has contracted for the entire output of its mines in the Drippings Springs district of Arizona to British and Swiss interests, and at the same time arranged for the financing of a large development program. He estimates that more than \$250,000 will be spent in taking in electric power from Coolidge dam and in the installation of equipment so that 10 tons of concentrates per day can be reduced to pure ferro-vanadium. Reduction of the concentrates will require a high-power electric furnace, it is understood. Production from the mines so far has been shipped in the form of concentrates, but the reduction to a pure metallic form would greatly lessen shipping charges. Gaetana Naddeo, 140 South Deveraux, Globe, Arizona, is mine superintendent. The company maintains offices at 1225 Washington Building, Los Angeles, California.

The **Bed Rock** mine in the Weaver mining district of Yavapai county, Arizona, has been acquired by Jay Burns of the **Illinois Mining Corporation** at Congress, Arizona. A large crew is already engaged in development work and production. Values at the Bed Rock are principally gold.

The **Comstock-Dexter Mines, Inc.**, Hillside, Arizona, is working a crew of 25 men, three shifts, in the development of its property. It is estimated that it will be about four months before the sinking of the main shaft to the 400 level is completed, making possible development on three levels. The company has recently installed two 125-horsepower Diesel electric plants, furnishing power for hoisting and the compressor. Plans call for construction of a 50-ton selective flotation mill when shaft work is completed. T. E. M. FitzGerald is president and general manager of the company, which is registered with the Securities Division, Federal Trade Commission.

Regular shipments are again going forward from the **Tombstone Extension Mining Company**, Tombstone, Arizona, under the management of W. E. Holt. The mine was closed for a month late in the spring when American Smelting and Refining Company relinquished its lease.

According to Adolph Royeski, manager, the **Gold Bell Mining Company, Ltd.**, Red Rock, Arizona, will resume work very

soon, following a temporary shutdown of several months. He plans to sink the 200-foot shaft an additional 200 feet.

The **West** mining claims in the Green Valley mining district, near Payson, Arizona, have been sold to the F. G. Wright interest of New York City for a reported price of \$125,000. The deal was negotiated by J. N. Shiner, Box 56, Globe, Arizona, who will act as general manager for the new owners. Mr. Shiner describes the ore body as averaging 50 feet in width and 750 feet in depth, with values of from \$8 to \$12 per ton, carried in a free gold porphyry-quartzite. He proposes for the present to mine by open cut work of the drag line type. A 30-ton mill will be erected to treat the ore, the method selected being the mercuric-cyanide continuous decantation process designed by Mr. Shiner. The claims have been held by the West family for over 40 years and were located by the father of the men who made the sale—Al and Tom West, who reside at Central Heights, via Globe, Arizona.

Production of copper by **United Verde Extension Mining Company**, Jerome, Arizona, for July totaled 2,574,468 pounds. This compares with production in June of 2,441,058 pounds and 2,745,556 pounds in July of last year.

CALIFORNIA

Atolia Rand Placers, Inc., H. H. Morse, general manager, Randsburg, California, is erecting a recovery plant with a daily capacity of 1,200 yards. For several months the company has been operating its 100-yard pilot plant and has marketed gold and scheelite to a value of over \$4,000. It is reported that the new work is being largely financed by Molybdenum Corporation of America, which company has contracted to purchase the entire output of scheelite. Recoveries in the test plant were reported as: gold, 0.73 cents; scheelite, 0.65 cents, with 0.59 cents left in the tailings, a large portion of which is expected to be recovered in the new plant. Water for gravel treatment is pumped through seven miles of four-inch pipe. The deposit has been prospected by test holes 150 feet apart and is said to show a tremendous yardage of pay gravel available. Company offices are maintained at 506 Chester Williams Building, Los Angeles, California.

Crosscutting continues at the **Eagle Bird** mine, Washington, California, and it is expected that the main ledge will be picked up in a short time. In recent sinking operations, the shaft was sunk outside the ledge formation. In the present work 12 men are employed under the direction of J. W. Still.

The 10-stamp mill of the **Zeibright** mine, Nevada City, California, is being enlarged and remodeled for greater milling capacity. As soon as mine and mill are in condition, it is planned to increase the operating force. The Zeibright is operated by the Newmont interests, with E. R. Bennett in charge.

Eighty tons of ore per day are being mined and milled from the **Spanish** mine, Washington, California. The ore is coming from a winze sunk to the 400 level in the upper workings. Bert Harding is mill superintendent; Jack Bradley, mine superintendent.

L. L. Huelsdonk and E. C. Montgomery, engineer and superintendent, respectively, are adding a five-stamp mill to the two-stamp mill at the **Ruby** mine, near Allaghamy, California. This plant will be used as a pilot plant, to work out values and processes. The operators hope to be in position to install a 100-ton plant in the spring. Montgomery is living at the mine, while Huelsdonk is located at the Blight Apts., Grass Valley, California.

The **Scales Placer Mining Company** at Marysville, California, expects to have the preliminary work at its property completed by October 15. Since work was started about three months ago, under the superintendence of T. J. Anderson, some 25 men have been employed on its own work. The firm which holds the ditch contract is employing 50 men, and 14 others are engaged in construction of a sawmill with a capacity of 10,000 feet daily, to be used to prepare mine timbers and other materials. Various buildings to house employees and mine equipment are being completed and the digging of the eight-mile ditch is well underway. G. H. Flynn, president, has recently been at the Scales diggings, returning by air plane the first of August to his home in New York City.

Splendid progress in the installation of machinery is being made at the **Carson Hill Gold Mining Corporation**, according to Charles H. Segerstrom of Sonora, California, president. The new equipment will increase the plant's present capacity to 1,000 tons daily. Production for some time has been at the rate of 20,000 tons monthly, and the mine is being opened to greater depth.

S. S. and B. E. Fluhart of Wasco, California, have secured a lease on the famous old Warrington mine at Havilah, and are making plans to resume production. The mine, now known as the **Breckenridge**, is to be equipped with a 10-stamp and a 20-ton ball mill, screens and Gibson type amalgamator and complete cyanide equipment. The development on the old producer consists of six levels, the greatest depth attained being about 700 feet. The present work consists of mining a block of ore, said to run about 4,000 tons in one block, from a surface drift into the hill. Fluhart brothers have been testing and sampling the mine for several months, and expect to have it on production at an early date.

Arthur N. Sweet of Penryn, California, general manager of **Auburn-Chicago Company**, has leased the **Bright Hope** mine at Georgetown for his company. The survey crew has completed surface and underground mapping, and a compressor and other machinery are being installed to make possible the extension of the main tunnel, now in 800 feet, an additional 200 feet. Six men are working with Al Olmstead in charge. During recent months the mine was prepared for machinery installation by David Barnes, Al Olmstead and Ward Wilson.

The **Big Wedge Gold Mining Company**, Lone Pine, California, has completed erection of its 150-ton flotation mill, and started the treatment of ore. The contract for construction was handled by Southwestern Engineering Corporation. E. J. Harrison is in charge of the mining company operations.

Early resumption of development work at the **South Rand** mine, Randsburg, California, is planned by Austin Landes, president, **Austin Landes Mining Corporation**, Palos Verdes Hotel, San Pedro, California. When under development a number of years ago, the shaft was sunk to a depth of 75 feet. The first work by the new

operators will be to deepen this shaft to the 110 level, and crosscut at that depth.

The **Mountain Copper Company**, William F. Kett, general manager, 112 Market Street, San Francisco, has started construction of an earth-filled storage dam to impound water for operation of its Big Canyon mine, near Shingle Springs, El-dorado county. The dam will be 425 feet long and 60 feet high, designed to store 200 acre feet of water. It will provide sufficient water during the dry season for operation of the ore reduction plant. The Big Canyon mine was optioned early this spring and has been extensively drill sampled. New buildings were constructed and development work has been underway for about three months. It is probable that the recovery plant, to be installed, will utilize the flotation treatment, with subsequent cyanidation of the concentrates.

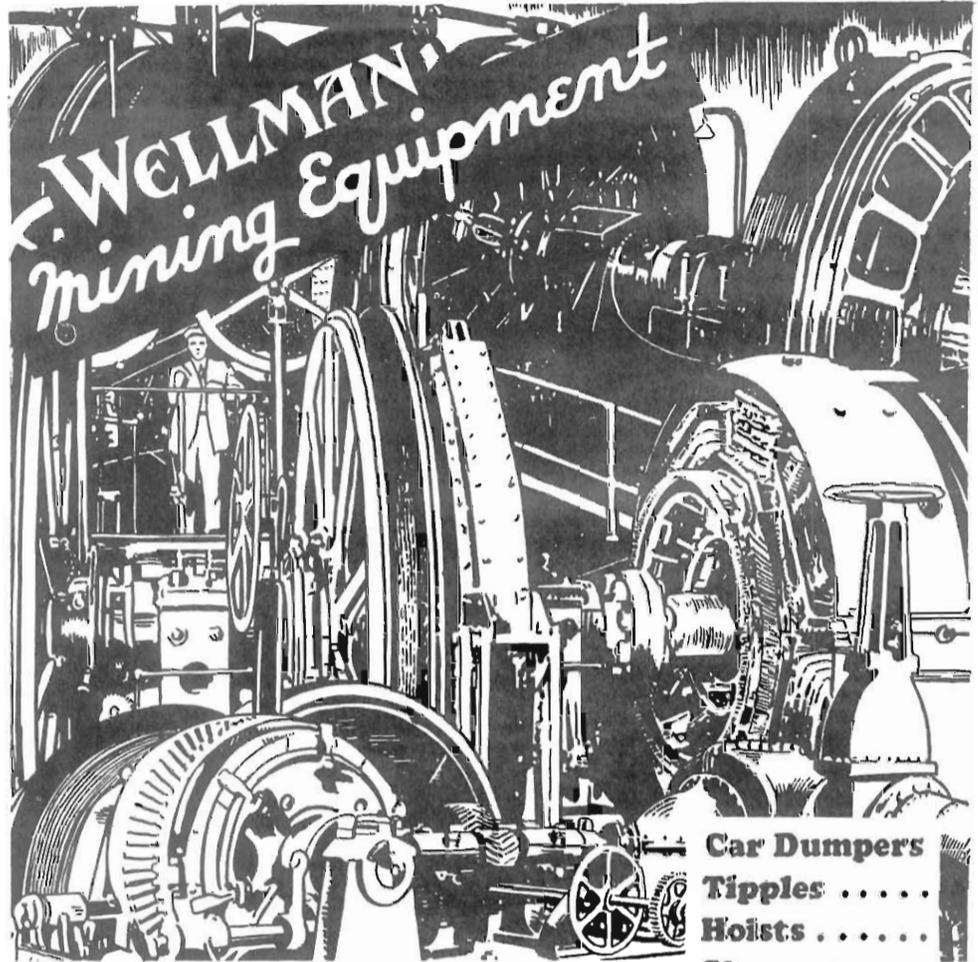
The **Siskiyou Exploration Company** has practically completed preliminary preparations for large scale mining of its placer holdings on the Klamath river, near Happy Camp, California. E. M. Elliott, 22 North Euclid Avenue, Pasadena, California, is president of the company, and directing the work.

The **Beauty Mines Consolidated, Ltd.**, has announced its plans for placing the Beauty mine, 20 miles north of Forest Hill, California, on production within the month. Buildings to be constructed at the mine include a bunk house for 40 men, blacksmith shop, garage, dwellings for married men, a hoist and Diesel plant. The mine is equipped with a stamp mill capable of handling 35 tons a day, and it is planned to install a ball mill and oil flotation system to increase the capacity to 150 tons. The firm controls over 800 acres of ground, a consolidation of the old Beauty, Prairie Flower, New Discovery, Crescent and other mines. Although in a district heavily covered with snow during the winter, it is planned to operate continuously. Archie E. Webb, 720 Cordova Avenue, Glendale, California, is president of the company.

The **Leviathan Sulphur Company** has completed installation of its experimental plant at Markleeville, California, and is shipping refined sulphur to the California markets. The new plant is said to be demonstrating the efficiency of a simple and economical method, and that the management is planning for the eventual erection of a larger plant. The present plant will treat four tons of sulphur ore in one hour 40 minutes. H. Kenyon Burch, 1010 Richfield Building, Los Angeles, California, is president of the company.

The **Hayden Hill Consolidated Mines, Inc.**, Adin, California, is continuing the development of commercial ore at several points in the old Blue Bell mine. The new shaft has reached a depth of 250 feet, and new territory is being opened steadily. In the meanwhile extensive tests are being made as to the best method for recovery of values from the ore. It is indicated that flotation, followed by cyanidation, will be the process selected. William P. White, supervising engineer, is directing the work.

The **Liberty Bell mine** at Forbestown, Butte County, California, has been acquired by P. S. Montserrat of San Francisco, and T. Valls of Forest Hill, New York. A 100-foot shaft is being sunk on the vein which is said to average two feet, with galena sulphides predominating. C. H. Weldon is superintendent in charge of operations.



- Car Dumpers**
- Tipplcs**
- Hoists**
- Sheaves**
- Cages**
- Ore Handling Bridges**
- Blaisdell Circular Vat Excavator**

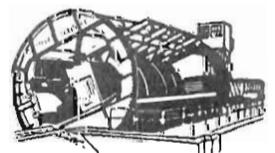
MANY of the largest direct drive electric hoists—single reduction geared hoists—flat rope hoists, that operate in the United States, are Wellman-built.

Like other mining equipment of Wellman design and construction, they have long maintained a high position in the opinion of those responsible for output schedules and costs.

Let Wellman Engineering help put your production on a more profitable basis.

THE WELLMAN ENGINEERING CO.
7000 Central Ave., Cleveland, Ohio

Birmingham New York Mexico City



For Flotation

HERCULES YARMOR F

STEAM-DISTILLED PINE OIL

Write for Booklet

HERCULES NAVAL STORES

HERCULES POWDER, COMPANY

INCORPORATED

996 MARKET STREET • WILMINGTON, DELAWARE




The **McCrea Ridge Mining Company**, Johnsville, California, has recently been equipped with a new 75-horsepower Waukesha Diesel engine, turning a Gardner-Denver four-cylinder V-type compressor. The incline shaft is being pushed with all possible speed, following the lava capping down to the river bottom. This is an inside shaft being sunk from the 400-foot tunnel. The work is being done by H. E. Cary and New York associates.

The **Mutual Gold Corporation** is employing day and night shifts in advancing its drainage tunnel, which at 1,200 feet will be 300 feet below the collar of the present 175-foot shaft. Equipment includes a 50-ton stamp mill with Diesel engine power. W. I. Nelson, Leevining, California, is engineer in charge. Russell F. Collins, 322 Fernwell Building, Spokane, Washington, is president of the company.

The **Calavada Mining Company** of Nevada is laying plans to resume work at the South Yuba placer claims this fall. Work was abandoned last year when forest fires destroyed mine buildings and equipment. A new road has been surveyed, preparatory to the taking in of new equipment. A two-yard dragline will be used to strip the overburden, which averages 15 feet in depth. Recovery will be by means of trommel screen and 400 feet of steel boxes, equipped with 150 feet of one-inch mesh copper grill. A new 120-Ingersoll-Rand compressor and two jackhammers will be used in sinking the prospect hole which is now down but 40 feet. Robert Spencer, mining engineer, 2290 Francisco Street, San Francisco, is in charge.

On the 1,000-foot level of the Great Northern mine the **Hoge Development Company** reports the discovery of rich ore, both north and south of the main shaft. The mine is located three miles from Nevada City, California, and is managed by A. W. Hoge. About 20 men are employed. At its Omega hydraulic mine, preparations are being made to shut down for the season after a successful run.

Stratton and Associates, represented by J. F. Stratton, 662 Russ Building, San Francisco, have further extended their California holdings by the purchase of additional properties. Among the recent purchases is the Monarch mine at Sierra City, California, acquired from J. H. Lee. This is a quartz property for which a large development program has been outlined. H. C. Crofoot of Marysville, California, has been sent to direct operations at the mine. A second purchase is the Eastbrook mine, an hydraulic proposition at Trinity Center, in Trinity county, which was purchased through the bankruptcy court, the price being \$14,500. Other properties which these interests are operating are: Cory Mines Company, Ltd., at Magalia; The Belmont in Shasta county, where a cyanide plant is to be installed; the Golden Blanket at French Gulch; the Oakes placer proposition near Redding, and the Igo hydraulic holdings.

The **International Mining and Milling Company**, Randsburg, California, reports that bullion recovery at the King Solomon mill during the past four months was \$34,000, exclusive of concentrates valued at \$12,000. The mill operates on ores from the King Solomon, Gold Bug, Windy and Rand mines. Capacity of the mill has been increased to 65 tons daily by the addition of a ball mill.

The **Indian Valley mine**, Greenville, California, George I. Barnett, engineer in charge, is employing three shifts in the mine. The Indian Valley Light and Power

Company has completed the power line, making possible an increased scale of work.

Construction of a 10-stamp mill is to start at once at the **Black Wonder Gold Mines Company**, operating the Hardway mine, Pine Grove, California. Under the direction of F. D. Garbarini, superintendent, drifting on the lower levels is underway, electric power installed, and the mill site being prepared. Headquarters of the company are 921 Stock Exchange Building, Los Angeles.

After a three-week suspension, operations have been resumed at the **Murrallite Mining Company**, Confidence, California, Paul C. Murray, manager. An electric power line has been constructed and a new Sterling pump installed. Mr. Murray expects to place his two-stamp mill on production this month. Seven men, on two shifts, are employed.

The **Golden Blossom mine** at Grass Valley, California, has been leased from Carroll Thomas and associates by George Tchernoglasoff, Box 83, Trona, California. The original shaft has been cleaned out and development work has reached a depth of 160 feet. A tent colony for 12 miners has been established. Power is supplied by gasoline engines.

Charles Mason and associates, operating the **Golden Triangle Mining Company** at Graniteville, California, are clearing land for a mill site. The mill plan contemplates a stamp outfit with flotation recovery.

Flotation equipment is being installed at the **Black Hawk mine**, Auburn, California, operated by B. F. Wyatt and associates. The milling unit has a capacity of 30 tons daily. Otto C. Radley, Box 84, Auburn, California, is in charge of the metallurgical work.

Installation of a 150-ton sluicing plant has been authorized for the **Gold Exploration Company**, a subsidiary of the Tintic Standard Mining Company. The announcement was made by James W. Wade, manager of Tintic Standard, 1111 Walker Building, Salt Lake City, Utah. The Gold Exploration property is located at Smartville, California. Since taken over a year ago more than 800 feet of old workings have been opened and a new 440-foot double-compartment incline shaft sunk on the gravel to bedrock, proving the extension of the channel 200 feet beyond the old workings, known as the Wheaton & Dunn, and said to average \$6 per yard. The sluicing plant will be installed by Milton D. Payne, engineer in charge, and will cost approximately \$25,000.

Between 15 and 20 men are employed by the **Graniteville Gold Mining Company** at Graniteville, California, opening the Rocky Glen mine. Fred Searles, Jr., is president of the company. Victor Bongard is superintendent at the property and is directing the actual work, which largely consists of driving a long tunnel to cut the oreshoot at depth.

The **Beebe Gold Mining Company**, Georgetown, California, has let the contract for 200 feet of tunnel work at the Veerkamp mine to Tom Carrigan. It is reported that previous development has opened ore and that this work is to determine the extent. Byron E. Rowe is general superintendent of the company's operations.

The **Oriental Gold Star Mines, Inc.**, operating the Oriental mine at Alleghany, California, is preparing for an enlarged development program for the mine, to determine the extent of a large deposit of low-grade ore in the lower levels. Engineers of the company estimate that the ore

present will aggregate several millions of tons which can be worked profitably on an extensive scale. The company has installed a large new compressor and has purchased 5,000 feet of air pipe for use in this development. W. A. Hooten is mine superintendent, residing at the property.

After being tuned up by grinding material from old dumps, the mill at the **Big Blue mine**, Kernville, California, is now operating on ore from the underground workings at the mine. The mill is handling about 130 tons of ore daily, the ore reported to range from \$11 to \$20 per ton. The Big Blue is held under option by A. V. Udell, 1022 Crocker Building, San Francisco, and associates. The active management of the property is directed by Udell, assisted by H. L. Burmeister, engineer, and Jack Davis, mine foreman.

James Spiers, general manager of the **Central Eureka Mining Company**, Sutter Creek, California, reports that the Eureka shaft in its Hetty Green mine has been cleared to the 2,500-foot station and that rapid progress is being made in extending the lateral workings. Forty stamps are dropping in the mill, the plant treating in excess of 800 tons of ore weekly.

As soon as the stoping area is opened, the operators of the **Omar mine** at Auburn, California, plan for installation of a 25-ton mill. A shaft has been sunk to a depth of 95 feet, opening a two to four-foot quartz ledge, with pyrite, showing values of from \$8 to \$25 per ton. The project is backed by James W. Neill, 430 West Colorado Street, Pasadena, California, and his associates, J. S. Lutes and Sons, also of Pasadena, C. H. Brown is in charge at the mine.

The **Eagle Shawmut Mining Company**, a closed corporation headed by A. E. Ellis of Long Beach, California, has started preliminary work on the Eagle-Shawmut mine, Chinese Camp, California. The new operators are installing a 300-ton Buchanan mill to handle the low-grade rock which could not be milled at a profit when the mine was operated a number of years ago. Extensive development from the 1,200-foot shaft has been started. The Eagle Shawmut has an important production record for the years from 1896 to 1925, when the mine was closed.

The **California Treasure Box**, has resumed work at its placer holdings this month. Operations are directed by W. L. Leland, Chico, California, general manager, and R. W. Lawton, superintendent. The corporation controls an extensive acreage of virgin ground and plans the driving of a long tunnel to develop areas believed to contain the continuations of the main pay channel.

The **Amador Mother Lode Mining Company** has been organized under the laws of Nevada to operate the California group of 17 mining claims at Jackson, California. The company's main project is the development of 4,000 feet of ground on the Mother Lode, and a crew is already engaged in opening the ore body. Officers of the company include: O. E. Chaney of Reno, president; E. A. Stent, managing director of the Argonaut mine at Jackson, California, vice-president; Thomas Hedgepath of the Amador County Bank, treasurer, and F. W. McKechnie, Jr., president and publisher of the Nevada State Journal, secretary. Directors are: M. M. O'Shaughnessy, city engineer of San Francisco; M. D. Lack head of the tax department of Pacific Gas and Electric, and O. M. Renfro of Reno. Norman C. Stines, Russ Building, San Francisco, will serve as consulting engineer.

Extensive development of the **Kentucky Ridge** mine, in the Newtown district, near Grass Valley, is to take place, following the acquisition of the mine by Ellsworth Wood and associates, it is reported. Harry D. Quinby, mining engineer, 122 Guerrero Street, San Francisco, has been retained as manager. Equipment, including rails, car and building materials, is being delivered to the mine, and it is proposed to install a mill of the Muller type, fabricated at Placerville. The mill will be designed as a pilot plant, with a capacity of 12 tons per eight-hour shift. Original development was by tunnels, and the main adit, 470 feet long, has been cleared and drifting is in progress.

The **Sierra Vista** mine, near Laws, California, is operated under bond and option by Harry Clemmer and associates of Los Angeles. The old mill has been remodeled to handle 50 tons daily, through ball mill, two concentrators and oil flotation cells. The ore is said to run about \$10 per ton. J. J. MacDonald, 528 North Heliotrope Drive, Los Angeles, is the consulting engineer.

Announcement has been made by the **Middle Fork Mining Company** of the purchase of the South Sliger gold mine in the Spanish Dry Diggings, near Greenwood, California. The corporation has operated the property under bond and lease for the last five years and is now preparing for more extensive operations. It is planned to erect a 100-ton daily capacity ball mill, and undertake deeper mining. About 50 men are employed. C. W. Plumb, 3405 T Street, Sacramento, California, is superintendent.

The **Milkmaid** mill, near French Gulch, California, is being partly rebuilt by the J. H. Scott Company, Merchants Exchange

Building, San Francisco. J. H. Scott is in French Gulch, in charge of the work. A new concrete foundation has been placed under the battery of ten 1,150-pound stamps, foundations and roof of the building have been repaired, and new bins and unloading platforms are nearing completion. The mill also contains amalgamating plates and two Johnson vanners. Equipment yet to be added includes four Kraut flotation cells, a five-foot Huntington mill, 16-foot thickener, and an Oliver filter. All machinery will be electrically driven. At the mine the crew consists of 22 men who have been working for several months, cleaning out old workings, retimbering where necessary, and running new cross-cuts.

The **Gold Bar Dredging Corporation**, Floyd R. Marsh, president, 1725 Yeon Building, Portland, Oregon, is running its dredge three shifts daily, employing a crew of 22 men. The dredge is located on the Trinity river, near Lewiston, California, and was rebuilt a year ago following damages by fire. It is of the stacker type and carries a line of 45 buckets of seven cubic feet capacity each, and digs to a maximum depth of 31 feet. Herbert Olson is superintendent.

The **Iowa Hills Gold Mining Company**, Colfax, California, has been receiving bids for a washing plant, and construction is to start during the month of August. The new pumping plant on Indian Creek has been completed and is said to be delivering an abundance of water. In the mine the main entry tunnel has been widened where necessary and re-tracked. The main south drift has been advanced 400 feet south of the ore body and 100 feet north, both faces said to be showing good values. Ben Kagan, general manager, has been on

the ground for the last 60 days, and reports that the mine improves with every foot of development. A. F. Muter, 200 Lankershim Building, Los Angeles, is consulting engineer.

The necessary mining equipment for the reopening of the **Ophir** mine, Logtown mining district, Eldorado, California, is to be installed at an early date by the owners, J. R. Long, 2709 Northwest Twenty-Second Street, Oklahoma City, Oklahoma, and associates. Mr. Long has just completed an examination of the property. The mine has been closed since February 1934. Harry A. Shipman, 2213 Ramsey Tower, Oklahoma City, is consulting engineer.

The **Ready Bullion Mining Company**, Blairsden, California, H. W. Webber, president and general manager, expects to have its mine and mill in operation about the first of September. For a number of months the present operators of this property have been engaged in an extensive development and construction program. The middle of July the first unit of the Diesel plant, an 80-horsepower Fairbanks-Morse engine, was completed; a second unit is nearly ready, and the third of 150-horsepower, will be installed later. A structural steel building, 35x77 feet, will house the power plant, a 30-horsepower hoist, 12x12x7½x12 Ingersoll-Rand compressor, and miscellaneous machinery. Above the power plant a 70,000-gallon storage tank has been erected for the storage of Diesel fuel sufficient for seven months' requirements. The present mill, with a capacity of 125 tons daily, is supplied by a three-ton skip, operating in the inclined shaft. After coarse and fine crushing the ore is passed to a hydraulic gold-separating classifier designed by Web-

Ellis Mills

Are the Most Efficient Grinders

- The Best Re-Grinding Classifiers by overflow.
- The Best Amalgamating Pan to any mesh size.
- The Only Mill that will work Clay (pipe).
- The Only Mill that will work Mica (sheet).
- The Only Mill that will work Asbestos and not ruin the fibre, or Emery and not ruin the mill.
- And many others.

The Ellis Mill will grind anything that can be ground or pulverized, wet or dry, to a definite mesh in one operation, using only ¼ to 1/10 the power others use. No gears, no grease, no bearings, no friction.

"ELLIS" Mills are sold on the following guarantee: In case you DO NOT get tonnage promised we agree to send one of our own men to GET it. In case HE FAILS, we agree to INSTALL such other mill as is needed to do the work, WITHOUT FURTHER COST TO YOU.

The above guarantee on following specifications, Mill and Feeder MUST BE GENUINE "ELLIS", set up as per OUR specifications (blue prints furnished) 40 mesh screens ("REK-TANG") mill fed ½-inch opening. This guarantee applies to minimum capacity of ALL "ELLIS" MILLS.

C. A. ACKERMAN, Manager.

ELLIS MILLS MFG. CO.

(A Voluntary Trust)

510 Brannan, Near 4th St.
SAN FRANCISCO CALIFORNIA

IMPROVE MINE VENTILATION

WITH

COPPUS BLOWERS

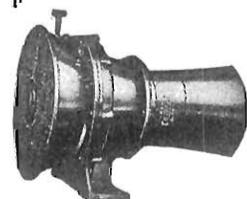
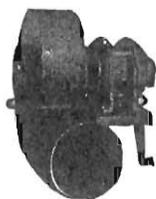
VANO OR VENTAIR

They are light weight, portable, low in cost, and cannot be damaged by overload. And yet they deliver more air for their size and power consumption than any other unit on the market.

Send for Bulletins No. 121-2 and No. 122-2

Coppus Engineering Corporation

356 Park Avenue
Worcester, Mass.



REGISTERED
COPPUS
US PAT. OFFICE

ber, then to a 16x48-inch Dorr classifier and to amalgamation plates, then to a six-cell Minerals Separation flotation unit. A Monarch, Wilfley type, concentrating table completes the processing, and the tailings are sent through a 850-foot flume to be impounded. During the construction period as many as 38 men were employed. T. A. Wilson, formerly general manager of Ray Hercules Copper Company, Ray, Arizona, is superintendent. Company offices are maintained at 1802 M. Street, Sacramento.

Pumping, hydraulic, elevating and other machinery has been installed by The Golden State Mining Co., Ltd., Yreka, California, and mining operations started. The mine, known as the Gearhardt placers on Horse Creek, a tributary of the Klamath, is being operated by J. H. Kann, 2624 Grove St., Oakland, California. Mr. Kann has also taken options on a number of other claims along the Klamath, until his holdings now extend for a length of approximately two miles.

As soon as the pending federal permit is granted, the Black Rock Placer Mining district expects to start construction of its dam on the South Yuba river, to impound hydraulic tailings from the Relief Hill Mining Company and the Omega Development Company. This is the first district to be formed under the act introduced by Senator J. L. Seawell and passed by the 1933 legislature. The various legal steps necessary to form the district have been taken and the organization, headed by the following men, formed: William H. Taylor, 605 Russ Building, San Francisco, president; Arthur W. Hoge, Nevada City, vice-president; Albert Lachman, C. E. Clark, and Frank C. Hoge, directors. At present the preliminary work of constructing flumes and repairing old ditches is underway. Both the mines mentioned have been closed down for the season. The Relief Hill company is managed by C. E. Clark of North Bloomfield, and the Omega by A. W. Hoge, Nevada City.

A new Joshua Hendy ball mill, crushing and concentrating equipment and new ore bins and head frames are being installed by the Soulsby-Belle Mining Company, Soulsbyville, California. All construction work is being executed while the old mill and mine operations continue, and will necessitate only a one-day shutdown for the change over to the new plant. O. J. Scherer, consulting mechanical and construction engineer of Angels Camp is in charge of design and erection. The mine is operated by Bahl, Bacon & Henry, 1921 East Tenth Street, Kansas City, Missouri, with John Kelly and John Brunton, manager and superintendent, respectively.

Approximately 110 tons of ore a day are being handled in the 120-ton ball mill and flotation plant of the Pacific Mines Company. The ore is coming from development work in Josephine and Pine Tree mines in Bear Valley, near Bagby, California. Production is running around \$20,000 gold per month. The work is directed by A. V. Udell, president and general manager, 1022 Crocker Building, San Francisco.

Milling has been resumed by the Union Consolidated Mining Company, Murphy, California, after several months of underground development in its Oro Plata mine. The ball mill and flotation plant is capable of treating 75 tons a day. It is testing ore taken from a new vein opened in the shaft which is being sunk in a virgin sec-

tion of the property. J. C. Scholes is in charge of operations. J. H. Weston, 155 Montgomery Street, San Francisco, California, is president of the company.

COLORADO

The Raven Hill Gold Mining Company, Georgetown, Colorado, is planning to install a compressor, air lines, and other mine machinery, as well as to rebuild the mill now on the property, according to G. R. Chase, consulting and mine engineer. At present the company is cleaning out and retimbering the old Iris tunnel. A test shipment of 10 tons from the property, which was formerly known as the Lebanon Everett, and is being leased from the Royal Consolidated Mines, brought \$300 net. The ore bears silver, gold, lead, zinc, and copper values. J. W. Bueard, 1517 Yates Street, Denver, is president, and R. L. Craft of Georgetown is general manager. The company's home office is 415 Cooper Building, Denver. Five men are employed in the mine.

The Neglected group of mines, belonging to the Colorado-Juneau Mines, Inc., is being prepared to resume production, Richard Florian, president, reported. Fifteen men are at work cleaning up the old workings, which are reported to be filled with water. J. C. Ort of Durango is secretary and manager for the company. The property is located in the Junction Creek district near Durango, Colorado. Roy L. Cornell, vice-president of the California Testing Laboratories, 1429 Santa Fe, Los Angeles, is in charge of the work. Test runs are now being made to determine the proper flow sheet and type of equipment for treatment of ore. A 50 or 65-ton plant will form the first unit of the mill. It has not as yet been decided whether power will be brought in by a power line, or Diesel engines will be used. Approximately \$15,000 will be spent for the construction of buildings. The engineer's report shows 92,000 tons of ore in the mine and available for milling. In connection with the mill a complete laboratory and assay office will be built.

New machinery is being planned for the old Corsair mine at Creede, Colorado. The old machinery is said to be unsuitable for economical development. Colorado men, believed to be headed by Ben A. Birdsey of Creede, have been unwatering the Corsair and the Alpha mine in the same district, and putting both properties in shape for production.

The Paris mine of the Alma Gold Corporation at Alma, Colorado, will be reopened soon, according to Tom McGuire under whose management the property is operated. The mine is fully equipped with a compressor, air drills, and an aerial tram to the mill.

The JVL Mining Company, Cripple Creek, Colorado, started to clean up old dumps and old workings, but new ore was reported found leading off at right angles to the old stope and in virgin territory. The company, which is operating the old Elkton mine, is sponsored and controlled by two men from Cushing, Oklahoma, and Denver, respectively. Considerable work has been done in overhauling plant equipment and workings, cleaning up shafts and laying track and air lines. A five-drill air compressor has been installed and a development program outlined by Horace F. Lunt, 507 Boston Building, Denver, who is the company's consulting engineer. Officials expect to make daily shipments to the Golden Cycle mill before long.

The shaft at the Nightingale, one of the mines of the Stratton Estate at Cripple Creek, Colorado, will be put in condition to its full depth of 500 feet, according to Forest M. McConochie of Cripple Creek, who has leased the property for ten years. A crosscut is planned to tap an ore system said by engineers to extend from the Cresson through the Nightingale and the John A. Logan mines and on into the War Eagle. Work will be started as soon as equipment can be placed on the ground. McConochie is also supervising operations at the War Eagle nearby, which is being leased by the Lone Eagle Gold Company.

A flat fault occurring in the ore body recently encountered at the North Gould mine in Colorado prevented the tunnel from picking up the vein at the expected point. The 50-foot vein, reported to be high grade, has not been thoroughly explored, according to H. O. Batzer of Great Falls, Montana, president of the company, and additional work must be done in order to have all the facts. The ore was discovered in a winze, and it was near the bottom of the winze that the tunnel finally cut the vein.

The Chain O' Mines, Inc., whose property consists of several hundred mines, has sold part of its holdings to the Central City Gold Mines, Inc. The Chain O' Mines are represented by the Chain Syndicate, William Mark Muchow, president, with head offices at 5 South Wabash, Chicago. The company has a western office in the Boston Building, Denver, and the mine offices are in the Rocky Mountain National Bank Building, Central City, Colorado. At present the company is milling 600 tons of ore daily, and will return to normal handling of 2,000 tons a day as soon as equipment for tailing-disposal can be installed. Custom ore is being received. The milling and sampling plant is just being completed and is described as very flexible, able to deal with half a ton, or larger lots. T. K. Scott, mining engineer, is the superintendent in charge. Scott's mailing address is 921 Spruce Street, Boulder, Colorado.

The installation of a steam engine and smelter furnace is expected soon at the Christy-Williams Milling and Refining Company at Mancos, Colorado. This customs mill is designed for prospectors and small-time miners, and is to be fully equipped. The first run will be made soon on the Fall Creek ore from the Amalgam mine west of Trimble Springs. John Christy at Mancos, Colorado, is one of the owners of the mill.

Preliminary construction of the first unit for the projected concentrator of the London Mountain Gold Mining Company is going on at the portal of the Oliver Twist tunnel, Alma, Colorado. The work is being done so that it can be readily adapted to a capacity ranging from 50 to 150 tons a day, Robert D. Elder, president, says. Elder's offices are in the Continental Oil Building, Denver.

Construction work including timbering, building ore bins, etc., is completed at the American Eagle Gold Mining Company, C. W. Light, president, reports. Ore is being broken in the Gold Bug, where the grassroot strike was made recently. The Diamond Joe property adjoining the Gold Bug is expected to start producing soon. The mines are located in upper Virginia canyon near Idaho Springs, Colorado.

A regular dividend of 40 cents on capital stock was declared by the Golden Cycle Corporation. The dividend, totaling

WESTERN MINING MEN to gather for

Annual Convention, American Mining Congress

California has again been selected for the annual meeting of the Western Division of the American Mining Congress. This large group held one of its most successful meetings at Sacramento, California, in 1924, and has long been anxious to return to the "Gold State." This year, because of the revival of gold mining within the state, San Francisco was selected, and it is anticipated that the meeting will be a repetition of the 1924 success.

The so-called "Western Division" of the American Mining Congress is in reality its metals group, and includes the producers of copper, lead, zinc, silver, iron, gold, and miscellaneous minerals and non-metals. It represents a very large percentage of the total metal production of the United States, with chapters and affiliated organizations in each of the 12 western mineral producing states.

The purpose of the division is to act as a clearing house of information upon all those problems affecting the industries, which are of common origin, and to develop a unity of thought and action upon issues demanding the attention of the group.

W. S. Boyd, vice-president of Utah Copper Company and Nevada Consolidated Copper Corporation, is the national chairman of the division and is ably assisted by a board of governors representing each of the states.

The program committee is headed by W. Mont Ferry, vice-president, Silver King Coalition Mining Company, Salt Lake City, Utah. Mr. Ferry is nationally known among mining men, and is actively associated with and interested in the silver situation. His committee has been at work since the first of June, and has developed a program that will be of interest to every operator in the mining industries. Many of the leading men from the east will be present and participate in the discussions.

The convention opens on Monday, September 24. Following registration, and official inspection of exhibits, a luncheon meeting will be held, introducing: Howard I. Young, president of The American Mining Congress; W. S. Boyd, chairman of the Western Division; W. Mont Ferry, chairman, program committee, and J. F. Callbreath, secretary, The American Mining Congress.

Mr. Boyd will preside over the first session which will feature addresses by Mr. Ferry, on "Rehabilitation of Non-Ferrous Metals"; by Senator Key Pittman on "Administration of Silver Bill"; and by Howard I. Young, on "Trends of the Times."

J. F. McCarthy, president of Hecla Mining Company, will preside over the second session, which is to be given over to a discussion of miners' rights to subsurface waters encountered during mining operations. This will be followed by a round-table discussion on "Trends in Social Legislation."

On Tuesday papers will be presented by Dr. F. A. Thomson, president, Montana School of Mines, on "Benefits to Mining Industry by U. S. Bureau of Mines Experiment Stations"; by Edward Snyder, of W. F. Snyder and Sons, on "Distribution and Utilization of Power from Federal Projects"; by Charles H. Seger-

FEATURES OF THE MEETING

San Francisco, California
September 24-29, 1934

An outstanding program, presenting vitally important subjects, by the leading mining men and government officials.

An exposition of mining machinery and supplies.

A program of entertainment, including two days of special trips to points of interest.

stom, president, Carson Hill Gold Mining Co., on "The Problems of the Gold Mining Industry."

The sessions on the third day will be devoted to operating problems of the gold, lead-silver, and copper producers, and to taxation and problems presented by the new revenue law. Later meetings will take up such questions as the tariff on metals, the metal industries and the New Deal, the practical application of the codes, the responsibility of industry regarding prosperity, and the great need for centralized co-operative action.

Included in the program of topics for the third convention day is a talk on the good and bad points of the National Labor Board. Col. Daniel C. Jackling of San Francisco will lead in the discussion of this topic.

William B. Daly of the Anaconda Copper Company and six other delegates are to discuss unemployment insurance and workingmen's compensation. A. W. Dickenson, tax expert for the mining industry, will speak on the subject of federal revenue laws and their effect on the mining industry. Former U. S. Senator Tasker L. Oddie of Nevada is to address the meeting on "Gold and National Prosperity."

Paul Shoup, vice chairman of the Southern Pacific Railway Company, has been given the assignment to speak on "Industry's Responsibilities," and Dr. John Wellington Finch of Boise, Idaho, recently appointed to the post of director of the United States Bureau of Mines, is to speak on the work being done by the bureau now under this jurisdiction and its plans for the future.

In conjunction with the convention and supplementing it is the exposition of mining machinery and supplies. This is the second exposition ever to be staged by this group, the first being at the previous California meeting. It will be held in the Palace Hotel, in rooms immediately adjoining the meeting room.

An interesting feature of the exhibit is that sponsored by the states represented in the Western Division. Approximately 1,200 square feet of floor space will be

used to present through graphic charts and otherwise complete information on: (1) Number of mines in state represented; (2) Number of men employed; (3) Annual payroll; (4) Annual state and national tax paid; (5) Number of communities dependent upon mining for existence; (6) Industries dependent upon products of the mines; (7) Amount spent for equipment and supplies, and such other information as will give the public a true picture of the magnitude and importance of the industry.

Special trips to points of interest are being arranged for September 28-29, and will probably include a trip to the Mother Lode territory, early gold mining district, where a revival of mining activity is in full swing.

The dates are: September 24-29, inclusive. The place: Palace Hotel, San Francisco.

BORING MACHINE TO CONTINUE SINKING IDAHO-MARYLAND SHAFT

The shaft-boring machine, which was installed at the Idaho-Maryland Mines Company, Grass Valley, California, has been reconditioned and realigned by the inventor, B. Newson, and has again started on the grinding process. This machine has as its objective a five-foot circular shaft to the 1,000-foot level, the shaft being sunk on the ridge between the Maryland and Brunswick mines.

The boring machine was placed in operation at a depth of 45 feet, where fairly solid rock was encountered, and sunk the shaft to an 85-foot depth, extracting some huge cores which lie on the waste dump. Some of the latest cores removed were five to six feet in length. The rock cores, released by wedges at the bottom of the shaft, are hoisted to the surface by a tripod arrangement, with cable and power hoist.

MONTANA GOLD PRODUCER READY FOR OPERATION

Operations have been resumed at the Spring Hill mine, principal producer of the Montana Consolidated Mines Corporation, near Helena, Montana. Following completion of the new mill building, equipment was installed, the conveyor structure rebuilt and the entire plant reconditioned. The operating crew is expected to number 75.

The new mill has a capacity of 250 tons daily. Crushed ore is transported by a 780-foot belt conveyor to the 500-ton ore bin. The first grinding at the mill will be done in two seven-foot by 36-inch Hardinge conical ball mills. Final grinding will be done in an eight-foot by 48-inch Hardinge conical ball mill, with a 24-foot by six-foot Dorr duplex classifier. In addition to the direct and V-belt drives of the ball mills and the flotation machines, the new mill will have individual motor drives on the various auxiliary units.

Spring Hill has been one of the most important gold producers in Montana, having a production record of 34,000 ounces of gold from 1923 to 1931, under operation by the present company. C. D. Wason, Burke Building, Seattle, Washington, is president, and Gust Carlson of Helena is vice-president and general manager.

dertaken and this is usually found in the difficulty of doing business with the owner on terms which will permit a new operator to feel that he is taking a reasonable business chance in spending his money for development or in gambling with it,—if you please,—for a fair speculative return.

If these claims could be optioned or purchased for anything like their assessed value the situation would be entirely different, but in my experience such is very rarely the case. Generally, when an approach looking toward a lease or purchase is made, the value placed upon the property by the owner is simply astounding and the deal falls through before it is really under way.

There are mines which have been idle for 30 years, but which cannot be examined or sampled unless an advance fee of \$500 to \$1,000 is first paid for the privilege and the purchase price asked by the owners runs up to \$100,000, or even more. There are other properties on which no lease will be granted, but merely a period for examination before purchase at equally high prices and there are others which can be leased, but only on payment of a royalty of 20 to 40 per cent of gross or net returns.

Now, I strongly maintain that it is every man's privilege to do what he will with his own, to sell or lease for whatever price he can obtain, or to refuse to sell or lease, but it is also reasonable that such privileges should be paid for on a tax basis which will compare with the payments which are made by owners of other classes of property of similar value.

When it comes to assessing real estate, buildings, ranches, cattle, timber or operating mines we have certain standards of comparative value which can be and actually are applied, but none of these are used in the case of idle mining property. However, it is quite inconceivable that the owner of a ranch or building worth, say, \$100,000 would be allowed to pay his taxes on an assessed value of \$500, or that the owner of any such property which was actually assessed at only \$500 would refuse to sell it for less than \$100,000.

As a matter of fact, much of the other real property in Arizona could readily be bought today for its assessed valuation, but even in normal times it is a general principle that the assessed value and the selling value should bear some definite relation to each other. No such rule seems to apply in the case of mining claims.

Therefore, I propose that there be a complete reassessment of all the patented mining claims of the state based, in so far as possible, on the value at which they are held by their owner or the bona-fide offers which have been made by other parties to purchase them. I predict that such a survey and revaluation would result in multiplying by at least ten the assessed value of these idle claims and increasing the tax returns in like proportion.

A further method of stimulating mining activity exists through progressively increasing the rate of taxation of claims which remain idle for long periods of time. Leaving aside the mineralized lands which are very properly held as a reserve by large mining companies and for which special exception should be made, there is no good reason why a company or individual should hold any claim without working it over an indefinite period of years.

True it is that such temporary conditions as applied in 1893, in 1907 and now since

1930, may make it impossible to work mines which in better times would be profitable producers, but during the last 20 years there have been periods of exceptionally high prices for practically every major metal found in Arizona. Yet these favorable conditions have failed to result in any active work on many of the claims to which I refer and no change in the situation is yet in sight although gold is now selling at \$35 per ounce and silver is well valued at 64.5 cents.

Of course, there are few owners who will admit that their property has no value, but it is highly illogical that any one should deprive himself of a fine income and continue to pay even a small amount of taxes if he really believes that he has the makings of a profitable operation and has the money to bring his property to that condition. We who are familiar with the mining property of this state, are well acquainted with many idle claims belonging to wealthy individuals or companies who have not spent a cent on them for some decades, but have the nerve to offer them to others at prices that run well into five or six figures.

Of course, a tax on this basis would also have to be applied to claims which are owned by those who could not afford to develop and work them. This might seem to work a hardship on many deserving prospectors and others who have toiled hard to secure title to their property and who are even now only able to hold on with difficulty, always hoping that sooner or later they will find a purchaser or partner who will meet their terms and enable them to cash in on the fruits of their labors.

Doubtless, there would be a strong sentiment against increasing the tax burden in cases of this nature, but as a matter of cold blooded fact, it might be the kindest thing that could be done and help to provide a substantial income for many an old miner who will otherwise die owning claims for which he has consistently asked 20 to 50 times the price that any responsible purchaser or leaser could consider.

Again, I say that there is no equity in permitting any miner, no matter how deserving, to pay taxes on an assessment of only a hundredth part of the value of his property while the rancher or house-holder is assessed at practically full value. If the claim-owner really values his property at say \$500 then there would be no increase in his present taxes, at least for the next five years, during which time he would have every incentive to try to arrange for active development and to make the claim more valuable both to himself and to the community.

We are all anxious to stimulate private industry, especially such an industry as gold mining in which, under present conditions, there can be no over-production, but during the recent past years we have seen our mining industry stagnate,—except in a few favored localities, while new districts and new camps have been opened up every year in Canada, Australia, and South Africa where there is still much government land which may be had for the staking.

In my humble opinion, this is not because the mineral resources of the U. S. are exhausted, but it is due in large measure to the fact that the most promising locations in almost every United States mining district between the Rockies and the Pacific were taken up between 1850 and 1910 and in great measure are still held by the original owners or by parties

into whose possession they passed many years ago.

It is a poor reward for a hard prospecting trip over the mountains or desert to discover a fine outcrop only to learn that your stakes are actually planted on one of the 30 claims of the John Smith Estate, administered by a bank in New York which will only consider selling the entire holdings in block and for some absurdly high figure.

It is a thankless job for a mining engineer to thoroughly examine and sample a promising prospect only to find that old Tom Jones, its owner, is living in the Pioneers Home (and may continue to live for another decade) and will only talk a cash payment of \$25,000 before any option can be signed or any development undertaken to determine whether the said prospect has the makings of a real mine or will turn out to be just another "hole in the ground."

I contend that there should be a radical change in our federal and state mining laws and tax methods relating to mining claims so that,—

(1) No claim could be held unpatented for more than 10 years and no re-location by the same or associated parties would be permitted.

(2) All patented mining claims should be assessed as nearly as possible at their fair sale and purchase value and on a similar basis with other classes of real property.

(3) A special penalty tax should be applied in the case of all claims idle for more than five years and increased progressively at the end of each subsequent five-year period of continued inactivity. And I claim that the main result of these measures would be as follows:

- They would stimulate prospecting, mine investigation, development and operation with all the attendant benefits of increasing employment and revenue that accrue with the revival of any important industry.
- They would materially increase the tax revenues of the state from sources which have not to date borne their fair share of taxation and which today are by far our most favored class of taxpayers.

ARGONAUT MINING REPORTS INCREASED INCOME IN JULY

A profit of \$60,068 for July was reported by the Argonaut Mining Company, Ltd., of Jackson, California. This figure was obtained after all charges except income taxes, and compares with a profit of \$49,772 in June. The July profit brings the total for the first seven months of 1934 to \$229,783, compared with a net profit for the full year of 1933 of \$187,252.

The company mined and milled 7,200 tons of ore during July, from which it obtained a gross income of \$106,642, or an average of \$14.81 a ton. Operating profit averaged \$6.49 per ton.

Argonaut charges depletion out of capital surplus at the rate of 15 per cent of gross production, with the provision that the amount so charged for depletion is not to exceed 50 per cent of net income from the mine. This depletion policy has been approved for income tax purposes, and on this scale the company's net profit for the first seven months of this year ran at approximately \$219,626, or \$1.10 a share on 200,000 shares of capital stock outstanding.

9-15-34

Mining Men and Their Activities

About men who are well known and prominent in the mining circles of the western states.



THE OLD PEST IN A NEW DISGUISE

SILVER TIP SAYS:
THE ACTION OF A
SHORT SIGHTED TAX
BOARD FREQUENTLY
MEANS METAL MINE
SUSPENSION AND
INACTON FOR
SCORES OF MINERS



I SIMPLY ADORE YOU
HE-MEN MINERS, ALFY.
YOU'RE REALLY SO
PICTURESQUE AND
SAY SUCH CUTE
THINGS

US HARD ROCKS
ARE THE RUMBLE
IN THE BOWELS
-OF MOTHER
EARTH, I MEAN



GO EASY ON
THE ICE WATER
WHEN YOU ARE
OVER-HEATED



Carl R. Young is operating a lease at Columbia, California, going there from Lebec.

Glenn E. Fassler, Box 35, Sierra City, California, is superintendent of the Sierra Buttes mine.

H. F. Yoder is employed as assayer and chemist by Montana Mine Operations at Ruby, Arizona.

C. F. Cole of Denver has announced that he intends to open an assay office in Georgetown, Colorado, immediately.

E. Harris of San Antonio, Texas, has recently completed an examination of properties in the El Plomo district of Sonora, Mexico.

Arthur J. Maese, chief geologist for The Fresnillo Company, has returned to Fresnillo, Zacatecas, after spending a vacation at El Paso, Texas.

Scott Jameson, Tonopah mining engineer, has recently been at Susanville, California, looking over mining properties on Diamond mountain.

A. J. Murray is supervising engineer for a group of Southern California interests who are reopening the Dragone mine, Murphys, California.

R. A. Bates is managing installation of a custom mill in the Chuckawalla Mountains of Riverside county, California. He is located at 4439 Nellie Street, Arlington, California.

F. L. Wingfield, geologist with Cia. Minera de Penoles, S. A., until recently working in Coahuila, has been transferred to company headquarters, Monterrey, Nuevo Leon, Mexico.

Joseph Egle, president of the Gilpin Eureka Consolidated Mines, Inc., has moved from Boulder, Colorado, where he had offices in the First National Bank Building, to Central City.

John Lea, mining engineer, 1205 Pacific National Building, Los Angeles, has just returned from a two months' trip to the northern part of Alaska, where he examined several gold properties.

Duncan L. Edwards, Jr., formerly of Montana, is prospecting near Yreka, California, with the idea of possibly hydraulicking a piece of the old channel on the Shasta river.

Thomas Crowe, who has been directing the work for Consolidated Placers, Inc., Silver City, New Mexico, is returning to Pinos Altos to resume operations on his properties there.

E. E. Reyer, mine superintendent for the Dolores Mines of A. S. & R. at Matehuala, San Luis Potosi, has been transferred to the company's operations at Ocotlan, Oaxaca.

J. Ralph McInerney, manager of the Battle Mountain Corporation, Ltd., has left for a business trip in the east. It is understood that the purpose of the trip has to do with company matters.

A. F. Hallett is resident manager and general superintendent of the Hesperus Mining Company at Mancos, Colorado. W. L. Kepner of Mancos was formerly in charge of the Hesperus operations.

P. H. McKenzie, superintendent of the Oxford Quartz Mining Company at Downieville, California, is recovering from severe injuries suffered when the compressor unit backfired when he was cranking it.

HEIM JOINS MILLING FORCE OF BIG WEDGE GOLD COMPANY



Walter J. Heim

Walter J. Heim has been appointed shift foreman in the new milling plant just completed by the Big Wedge Gold Mining Company at Lone Pine, California. The plant with a capacity of 150 tons was constructed during June and July of this year, the contract for its erection being handled by Southwestern Engineering Company of Los Angeles.

Heim, a graduate of the Lane Technical School of Chicago, brings to his new duties a great variety of experience gained in many of the mining camps of Arizona, Mexico, and California. His first position was with the Mexico Consolidated Mining and Milling Company at Guanaquevi, Durango, later transferring to San Luis Potosi. In 1912 he was mill foreman for El Tajo Mining Company in Jalisco. In 1917 he joined the staff of the American Smelting and Refining Company as chief assayer at the Hayden Smelter. Leaving Hayden the following year he was employed as copper chemist with Phelps Dodge Corporation at Douglas. In 1919 he returned to Mexico where he served as chief assayer and later mill superintendent, Cia. Minera del Monte at La Quemada, Jalisco; as cyanide plant shift boss for the Veta Grande Unit of American Smelter and Refining Company at Parral, and precipitation department foreman for the Loreto mill of Cia. de Real del Monte y Pachuca.

For a short period he left the operating branch of the mining industry and was employed as assistant purchasing agent by Southwestern Engineering Corporation. Since then he has been engaged in milling projects in Nevada, Mexico, and California.

Heim has specialized on cyanidation and flotation problems and has done considerable experimental work in the field of hydrometallurgy. He is also something of a linguist, having command of the Spanish, French and German languages.

Heim's home address is 1420 1/2 South Mariposa Avenue, Los Angeles.

Capt. E. D. Adams, formerly of San Francisco, is with the Yukon Border Placers, scouting for dredging ground in the Yukon Territory. The staff for this expedition is traveling exclusively by air plane.

B. J. Tiedemann, has resigned from his position as mill superintendent at the Boston mine at Mokelumne Hill, California. He will leave shortly to engage in independent operations in Nevada and Sierra counties.

James E. Harding, consulting mining engineer of 149 Broadway, New York City, is spending about six months examining mining properties in Mexico. He is associated with the firm of J. K. Wallace and Company.

Nuggets from the Western States

Some high spots of the mining industry in the Western United States and Mexico.

ARIZONA

The **Magma Copper Company** of Superior, Arizona, has taken an option on a group of claims, including the **Jupiter** group, south of Tucson. A camp has been established and an engine and compressor plant erected. Development work to prospect the ground has been started. According to Wm. Koerner, general manager, approximately 1,500 feet of tunnel work will be done.

Wm. D. Grannis, president of **Grannis Mines Company**, is planning on installing a compressor and small milling plant on his **Lost Cabin Mine**, in the Cedar Valley district, near Kingman, Arizona. The property, a producer of rich silver ore before 1893, now consists of seven claims covering two parallel ledges, varying in width from 4 to 12 feet, and traceable for a length of over a mile. Development consists of about 300 feet of shaft, tunnel and open cuts. Mr. Grannis is now making his headquarters in Phoenix, Arizona, instead of Southern California where he has been living for many years. His address is Route 5, Box 312.

Placer holdings of the **Lost Basin Mining District Agency** are being sampled by C. T. Gregg of Fillmore, California, who is contemplating taking a lease and bond on a portion of the ground. This property is located along the Colorado River, near Pierce's Ferry in Mohave county, Arizona. Terms of the proposed lease and bond call for the first payment of \$10,000 at the end of one year, with a 12½ per cent royalty payable during that year, not applicable on purchase, and a 15 per cent royalty thereafter applicable on the purchase price, which is said to be \$30,000. Frank P. Baldi, 321 West Third Street, Room 509, is engineer and manager for the **Lost Basin Company**.

Consolidated Gold Mining Company, Oatman, Arizona, is repairing the shaft house at the **Western Apex** mine and will put the shaft in condition to the 850-foot level. The company plans to sink to greater depth, and in the meantime to mine the known ore from the 500 level. A large tonnage of dump ore has already been delivered to the **Tom Reed** mill. Thomas A. Wood, 453 South Spring Street, Los Angeles, is president of the company.

Consolidated Gold Mines Company at Dos Cabezas, Arizona, is running its mill two shifts (16 hours) daily on ore coming from the **East Emma** vein. Mill heads are averaging about \$15 per ton. Several shipments of concentrates have been made to the **El Paso** smelter. In the mine an adit, now in 1,900 feet, is being driven to cut the No. 7 vein. Since leaving the No. 6 vein the adit has passed through 200 feet of mineralized porphyry, containing some gold values. A 100-foot winze with sump has been sunk on the **West Dives** vein and a station cut. Drifting to pick up the **Dives** vein on that level has started. A raise is also being put in from the **West Emma** to the **Dives** upper tunnel workings. A crew of 30 men is employed under the direction of A. B. Wadleigh, general superintendent. C. W. Gabrielson, Box 279, Bisbee, Arizona, is president.

A deep test well for gold has been started by the **Kirkland Gold Placers Company**, Kirkland, Arizona. According to C.

W. Barrett, president of the company, dirt from shallow wells drilled in the past few months has averaged \$1 per yard. Among directors of the new company are William G. Lee, owner of the **China Times** and president of the **Chinese-American Alliance** at San Francisco; J. R. Daley, also of San Francisco, and E. G. Sharpneck, Kirkland, Arizona, vice-president and treasurer of the company. Approximately \$40,000 has already been spent in prospecting the field.

Forty-five tons of gold-silver ore are being treated daily in the flotation mill of **Arizona Consolidated Mining Company**, Humboldt, Arizona, operating the **Union-Jessie** mines. The plant is operating 24 hours a day. At the mine, all workings on the three levels of the **Union** have been opened up, and the **Jessie** opened to a depth of 200 feet. Sinking of the shaft at the **Jessie** to the 300 level is in progress. All mine and mill equipment has been repaired, water plant reconditioned, a number of chutes constructed, and stoping is going on in seven stopes. The company is endeavoring to develop additional water, and if successful plans for construction of a 150-ton mill. Operations are directed by F. A. Reid, president and general manager. George Peters is mill superintendent, Joe Martigene, mine superintendent, and Charles Davis, mechanical engineer. A crew of 27 men is employed.

It is understood that the capacity of the **Katherine** mill, operated by **Gold Standard Mines Corporation**, Earl F. Nieman, general manager, Box 632, Kingman, Arizona, has been stepped up to 300 tons daily. Ore is secured from the **Tyro**, **Roadside** and **Arabian** mines. The **Tyro** will ship approximately 125 tons daily, and the balance will come from the other two. An ore bin of large size has been erected at the mill, to permit storage of ores. The power line, constructed by the **Kingman Public Utilities Corporation**, is nearing completion and will make possible operating the mines and mill at the increased rate.

The **Ray Southern Mines**, consisting of 12 claims one and one-half miles south of Ray, Arizona, has been taken over by Max Vogel, 601 Parkview Avenue, Los Angeles, California, and associates. The sinking of a new shaft is to be started immediately. At the surface the vein was two feet wide, but at a depth of 76 feet has expanded to nine feet, with an average value of \$22.60 in gold. F. A. Kaufman, consulting engineer, Financial Center Building, Los Angeles, will be in charge of operations.

The **International Mining and Milling Company**, developing the **Golden Hawk** mine at Salome, Arizona, is installing the surface equipment necessary for shaft sinking. The equipment consists of hoisting unit, compressors, Diesel engine, blacksmith shop and assay office. While the new equipment is being placed a crosscut is being driven at water level to determine the width of the main vein which yielded high-grade ore at the surface. A. G. Ilse, 183 North Martel, Los Angeles, is president of the **International** company which is also operating in Nevada and in California. W. H. Swift is foreman in charge of the work at the **Golden Hawk**.

The **Golden Turkey Mining Co., Inc.**, Cordes, Arizona, has completed its 60-ton flotation plant, and is making regular shipments of concentrates and high grade to the **El Paso** smelter. Additional water for the mill was obtained by the sinking of a new well. In order to provide for any future emergency, however, a pipe line has been laid to the adjoining property, the **Golden Belt** mine, to carry a reserve supply of water to the **Golden Turkey** mill. This is not required at present as the mine and well have supplied ample water for 24-hour operation. Production of gold-silver-lead concentrates will approximate 100 tons per month.

A 50-ton selective flotation plant is being installed at the **Keystone** mine near Chloride, Arizona, and is scheduled for completion within the next 30 days. Assisting in the construction of the mill is A. C. Dundas, c/o **Keystone**, Kingman, Arizona, who will take charge of mill operation when the plant is completed. Dundas comes to the **Keystone** from the **Peru Mining Company** at Deming, New Mexico, where he has been employed as flotation mill man for the last five years.

Eastern interests who recently purchased the West mining claims in the **Payson**, Arizona, district have also contracted for the purchase of the **Columbia** gold mine in the same district. This announcement was made by J. M. Shiner, Box 56, Globe, Arizona, who represented the purchasers and who will direct the work at both properties. The sale is said to involve the sum of \$100,000, with small payment down, 10 per cent royalties, and semi-annual payments. The former owners of the **Columbia** were: William Thompson of **Payson**; Fred Whitford, shift boss at **Magma Copper Company**, Superior; and Richard Anglin, former assistant superintendent of **Old Dominion Company**, Globe, Arizona. Mr. Shiner plans for the immediate construction of a modern mining camp at the **Columbia**, and the erection of a 30-ton mill at the West.

CALIFORNIA

The **Empire-Star Mines Co., Ltd.**, Grass Valley, California, has started rehabilitation of the **Prescott Hill** mine, near the **Empire**. A 100-foot headframe and ore bins at the mouth of the shaft are being repaired. The shaft, which has been idle for over 25 years, is said to have caved badly near the surface. It has a depth of over 1,400 feet on the incline. Surveys for a power line for the property are being made. The company has also completed the purchase of the **Sultana** group, east of the **Empire**, and started the re-opening of the mine. William C. Jeffrey, superintendent of the company's **Pennsylvania** mine, will direct the work.

Sinking of a 100-foot shaft at the **Heslep** mine on Quartz mountain, near Jamestown, California, has been started. This will be followed by driving between 300 and 400 feet of drifts and crosscuts to explore the ore bodies. This property was recently acquired by a group of investors, headed by K. C. Schweglar, mining engineer, Financial Center Building, San Francisco. Preliminary work has been contracted to J. A. Keyes of Jamestown.

A very heavy flow of water has been struck at a depth of 80 feet in the **Liberty Bell** mine at Forbestown, Butte County, California, and a noticeable increase in size of the vein is reported. According to C. H. Weldon, superintendent, heavier pumping equipment is necessary. The **Liberty Bell** was recently acquired by

P. L. Montserrat of San Francisco, and F. Valls of Forest Hill, New York.

A 25-ton pilot mill is being erected by G. G. Chisholm at the Mitchell, Dane and Blakley Homestead claims at Pine Grove, California, to work out ore treatment methods. Development ore, at the rate of about 40 tons per day, is being milled at the old Haverly mill, while old workings are being reconditioned. These three properties are being worked as one development, and large bodies of better than usual grade ore are reported to be blocked out or indicated. Application is being made for a Nevada charter for a company of 3,000,000 shares. Future financing will be through eastern Canada and English interests.

The Klau Mining Company, Inc., recently incorporated, has started work at holdings near Adelaida, California. The mine is being leased from E. L. Carson. In addition to mine development and preparations for mining ore, a 3 by 40 Gould rotary furnace is being installed. This quicksilver property has been developed by shaft, tunnel and open pit, with 300 feet as the greatest depth attained. A Diesel plant provides 80 horsepower. The Klau company is headed by H. W. Gould, president, Mills Building, San Francisco. G. I. Gould is general manager, located at Adelaida.

Installation of an ore-treatment plant of 25 to 30-ton capacity will be completed this month at the Duleeke mine at Groveland, California, which has been rehabilitated by Duleeke, Inc. The plant consists of an all-steel 8x12 jaw crusher, a Marcy type ball mill, 60-horsepower Holt engine, Dorr classifier, amalgamation table and two Kraut flotation cells, and a 50-ton ore bin. The machinery was purchased from the Wheeler Manufacturing Company, Los Angeles. Equipment previously purchased includes a hoist, Myers pump, Rix compressor and Coihse drills. The mine is opened by a two-compartment shaft, nearly 200 feet deep, with levels at 50, 75, 100 and 165 feet. Some new development has been done in the mine since taken over this year by new interests, headed by F. W. McRae, 323 Fidelity Building, 548 South Spring Street, Los Angeles. Edgar W. Smith is mine superintendent.

The Palermo Dredging Company has been formed for the purpose of developing mining properties in the vicinity of Oroville, California. Directors of the new corporation, capitalized at \$75,000, are J. D. Landes, Box 114, Palermo, who also maintains offices at 5001 Bond, Oakland; B. L. Bennett and Ed J. Hecking of Palermo.

Work has been started by the Lava Cap Gold Mining Corporation, Grass Valley, California, on the mile-long underground drift which will connect the Central and Banner shafts of the mine. The project will be one of the largest undertaken in the Grass Valley region for several years. The passage, as well as serving as an exit from either shaft, will facilitate ventilation and make possible easier transfer of ore from the Banner mine to the mill at the Central mine. The drift starts from the adit or first level of the Central and should arrive at about the 650-foot level in the Banner, and will make possible thorough exploration of the territory between the two mines. Lava Cap completed construction of its 300-ton flotation plant last December, and since the first of January has been treating about 100 tons of ore daily. Recently, production has been

stepped up to about 150 tons daily. O. E. Schiffner is general manager, in direct charge of mine operations.

Surface improvements and equipment to cost approximately \$10,000 are to be made by the Austin Landes Mining Corporation, at the South Rand mine, near Randsburg, California. Surveyors have completed staking the sites for foundations for a Diesel plant, compressors, blacksmith shop, bunk and boarding house and office building. Austin Landes, president, Palos Verdes Hotel, San Pedro, California, is directing the work.

The Edgehill Mining and Milling Company, Downieville, California, has placed two of its three properties on production and is engaged in a development program at the third. Forty tons of ore daily are being milled at the Hughes mine, and a crew is engaged in stoping ore. At the Sacred Mount property, near Sierra City, the 10-stamp mill began ore treatment the last of August. Power is supplied by a Holt tractor, but a Diesel engine is to be installed as soon as possible. At the Butte Saddle mine, in the same locality, a contract has been let for 500 feet of tunnel work. M. E. Pope of Downieville is mine superintendent for all three operations.

The Dulassen Diatom Products Co., Ltd., a Nevada corporation, has acquired all the assets of the Solvang Development Company. Officers of the Dulassen Diatom are: Paul H. Lassen, president; Paul W. Fricke, vice-president, and Jay Dutter, secretary-treasurer. Lassen and Dutter were both officers of the old Solvang company. Foundations of the company's new plant are completed, and the floor laid. Erection of the factory and warehouse has begun, and machinery will be ordered at once. The company hopes to be in operation within six weeks. It is estimated that the deposit at Solvang contains over

12 million tons of high-grade diatomaceous earth, with no intrusion of foreign matter. The deposit is reached over a new road connecting with a nearby highway. Main offices are maintained at Room 343 C. of C. Building, Los Angeles.

The California Standard Gold Mines Corporation, Jamestown, California, reports that ore has been struck on the Knox and Boyle vein on the 200-foot level, about 100 feet south of where it was cut on the 100-foot level of the incline shaft. The full width of the vein has not been disclosed, but on the upper level the vein was said to be 13 feet wide and to sample \$13.30 per ton in gold. A. F. Muter, president, 200 Lankershim Building, Los Angeles, California, announces that the company has qualified under the Federal Securities Act to do business. Stephen Rowe, Jr., is in charge of the work at the mine.

International Mining and Milling Company has placed in operation the first 10-stamp unit of its mill at the Mt. Gains property at Hornitos, California. The mill is working 24 hours daily, handling 65 tons of dump ore daily, the ore averaging from \$4 to \$8 per ton. Operations are directed by J. Lloyd White, mining engineer. Al Clemens is mill superintendent. A. G. Iseng, 183 North Martel Avenue, Los Angeles, is president and general manager.

The 100-ton concentrating plant at the Colosseum Mining and Smelting Corporation is being operated on ore taken out during development and regular shipments are being made to Salt Lake City smelters. Plans are being made to increase the capacity of the concentrator very soon. During the last four years development work has been conducted at the property and drifting on the 420-foot level is said to be advancing with a 12-foot face of shipping ore. Raises are being driven to connect the first and second and the second and third levels. C. H. Gowman, manager of the company, 621 Taft Building, Hollywood, California, reports that the ore body for a width of 450 feet averages close to \$5 in gold, while 40 and 60-foot widths segregated average \$12 gold with some silver and copper. A long transportation tunnel, to reach the ore body at a depth of 2,400 feet is in prospect for the near future. The Colosseum property is located in the Clark mining district of San Bernardino, California, near the California-Nevada line. A good truck road connects the mine with the Union Pacific at Roach, Nevada. C. H. Gowman, Jr., is mine superintendent.

A net income of \$73,300 after depreciation, depletion and provision for income taxes, equal to 7 cents a share on the 995,820 shares outstanding, is reported for the month of July by Natoma Company, Natoma, California. The income for June totaled \$82,945, or 8 cents a share. The July profit brought the total for the first seven months of 1934 to \$528,081, equal to 53 cents a share.

The 900-foot tunnel at the Table Rock California Consolidated mine has been rehabilitated and is now being extended north under Table Rock Ridge to intersect the Table Rock gravel channel. The work is being done by the California and Arizona Mining Company under the direction of Donald D. Smythe, mine superintendent, La Porte, California. It is planned to extend the tunnel to a total length of 2,500 feet where it is expected to intersect the channel. For the last two months 15 men have been employed driving the tunnel and repairing surface structures.

AVERAGE PRICES OF METALS (Figures by American Metal Market)

	Copper Per Lb. Conn Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.622	69.065
1926	13.795	8.417	7.337	62.107
1927	12.920	6.755	6.242	56.370
1928	14.578	6.305	6.027	68.176
1929	13.167	6.833	6.512	62.993
1930	12.932	5.517	4.556	38.154
1931	3.369	4.244	3.638	28.701
1932	5.792	3.182	2.881	27.892
1933	7.276	3.879	4.081	34.728
1932				
Jan.	7.000	3.750	2.900	29.750
Feb.	6.250	3.717	2.828	30.186
Mar.	5.994	3.150	2.791	29.810
Apr.	5.789	3.000	2.735	28.298
May	5.508	3.000	2.629	27.755
June	5.333	2.996	2.793	27.466
July	5.284	2.760	2.546	26.700
Aug.	5.435	3.235	2.761	27.986
Sept.	6.298	3.462	3.304	27.870
Oct.	5.975	3.046	3.046	27.195
Nov.	5.304	3.050	3.098	26.698
Dec.	5.036	3.000	3.125	25.010
Ave. 1932	5.792	3.182	2.881	27.892
1933				
Jan.	5.000	3.000	3.015	25.400
Feb.	5.000	3.000	2.671	26.085
Mar.	5.256	3.148	2.997	27.928
Apr.	5.634	3.260	3.361	30.730
May	5.932	3.654	3.805	34.072
June	3.000	4.173	4.347	35.663
July	3.999	4.452	4.886	37.630
Aug.	3.000	4.500	4.909	36.074
Sept.	3.000	4.500	4.702	38.440
Oct.	3.253	4.316	4.744	38.190
Nov.	3.153	4.294	4.521	42.974
Dec.	3.125	4.142	4.470	43.550
Ave. 1933	7.276	8.370	4.031	34.728
1934				
Jan.	3.181	4.000	4.275	44.187
Feb.	3.000	4.000	4.452	45.233
Mar.	3.000	4.000	4.370	45.875
Apr.	3.291	1.184	4.371	45.180
May	3.500	4.1404	4.855	44.226
June	3.849	3.975	4.238	45.173
July	3.600	3.770	4.318	46.310
Aug.	3.000	3.7463	4.280	48.986

The partnership, composed of Winfield Woodbury, John Cigarni, Howard Williamson and George New, all of Stockton, has decided to prepare its **Blue Lead** mine at Crescent City, California, for production. According to E. J. Bickford, superintendent, a tramway and steam shovel will augment a sluice system now under construction. A 4,000-foot canal, four feet deep by 10 feet wide, is being surveyed. Full operations are scheduled for October. With Bickford at the mine is J. C. McCabe, engineer.

Ore, said to assay more than \$50 a ton, has been opened at the **Gamblin Mine**, Plymouth, California. The vein was cut at a depth of nearly 500 feet. A larger Diesel electric power plant is to be installed to increase capacity of the mill, to which the flotation process will be added. Controlling interest in the Gamblin was acquired early this year by Roy R. Fisher of the Fisher Industries, Inc., Detroit, Michigan. Joseph Lopez is mine superintendent.

The **Russell Gold Mining Company**, Angels Camp, California, expects to go on production within the next month, according to J. A. Phelps of Santa Barbara, president of the company. The shaft has been completed to a depth of 345 feet, while crosscuts have been driven at the 100 and 207-foot levels, and ore pockets are now being installed at the 307-foot level, where another crosscut to the main ledge is planned. Installation of the new headframe and five-stamp mill is rapidly nearing completion. Seventeen men make up the mine crew, under the direction of J. W. Bandbauer. J. J. Murray, Box 1058, Angels Camp, is company engineer.

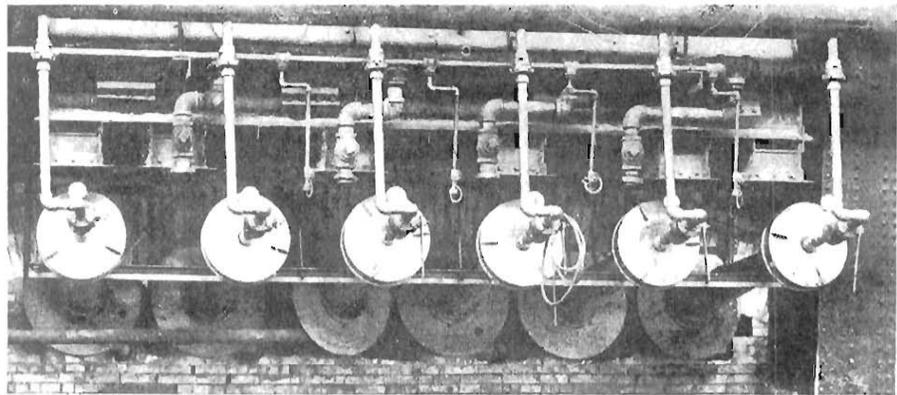
A motor generator set, supplying power for pumps and compressor and lights for the camp, has been installed at the **Peter Buck Gold Mining Company**, Railroad Flat, California. Frank West is superintendent.

Installation of the 100-horsepower Diesel engine plant and generator has been completed by the **Mountaineer Mining Company** at Vidal, California. Two shifts of men are working seven days a week. Future plans are said to include installation of a milling plant. It is reported that more than \$20,000 has been expended in the mine improvements since the property was taken over under lease by H. E. Olund, mining engineer, 1117 Citizens National Bank Building, Los Angeles.

E. T. Chase, Security Building, Los Angeles, has taken a bond and lease on the **Manzanita quartz claim** at Pine Grove, Amador county, California. Development work has been started by Chase, and will be extended as results justify. A small mill on the property has a capacity, with some necessary additions, of 10 tons a day. No decision as to milling arrangements has been made. From the 500 feet of development at the Manzanita, engineers estimate 3,000 tons of \$20 rock in sight.

Under the direction of C. S. Columbus, president, the **Jim Consolidated Mines, Ltd.**, is preparing to reopen its property at Graniteville, California. New equipment being installed includes: 150 cubic inch air compressor, operated by Diesel power; electric lighting plant, machine shop, boarding houses and office buildings. The mine, a number of years ago, was opened by a 200-foot shaft.

The **West Mines Corporation** has started the stoping of ore at the **Hussey mine**, at Nevada City, California, sending it to the **Queen Lil mine** for treatment. Orlando McCraney, president, states that while the mill is only operating one shift at present, it is to go to two shifts

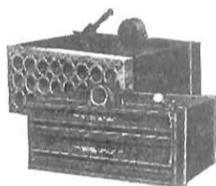


DFC Inspirator Burners . . . bringing new efficiency to one phase of the Mining Industry.

DFC meets every burner requirement for the Mining Industry

From small oil burners for assay furnaces, to giant batteries with a capacity of 150,000 cu. ft. of gas per hour—regardless of draft conditions, gas pressures, or other installation requirements—there is a DFC burner which will solve your problem with maximum efficiency.

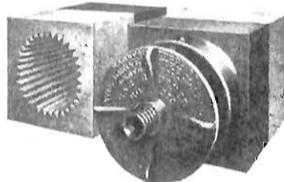
Our combustion engineers want to work with you on any gas or oil firing requirement.



Gas Boiler Burner, data in Bulletin 306.



Low Pressure Oil Burner, data in Bulletin 301.



Atmospheric Type Gas Burner, data in Bulletin 305A



Inspirator Type Gas Burner, data in Bulletin 307.

THE DENVER FIRE CLAY COMPANY

DENVER  COLO. U.S.A.

BRANCHES AT SALT LAKE CITY, EL PASO, AND NEW YORK

DRY

AIREO - VANNERS
Concentrate your placer gravel, mill sand, slimed values, separate, or classify your clay and non-metallics.
Cut your production charge. **NO TOY SIZES.**
Increase your recoveries.

Dust condensers protect your labor from all dust.

WILLIAM H. SWETT, Designing Engineer

36 W. 8 St.

RENO, NEVADA

WESTERN ORE CONCENTRATORS AND JIGS

Make low-grade ore pay for the large and small mine operator. Mine and mill dumps, saving 98% to 100%, of placer gold, platinum, mercury, black sands. Low cost operation.

LAMLEY BROS. COMPANY

2443 East Slauson Ave.

Huntington Park, California

shortly in order to handle the extra ore being mined.

The **Empress Mining Company**, Grass Valley, California, L. R. Robins, manager, expects to have its 300-ton flotation mill completed and in operation in about a month. The new surface building has been completed and the flotation units in the old mill are being moved to the new location. Heavy machinery for the mill is arriving from Denver and will soon be in place. In the mine, an additional shift will be employed very shortly.

A hoist, Curtis compressor and pump have been installed at the mine on **Nigger Billy Hill**, near Jamestown, California, operated by Manly and Thoburn, Box 148, Carmel, California. A 75-foot shaft has been sunk in the slate vein on the hanging wall and, following some crosscutting at that level, will be carried 50 feet deeper.

Ten tons of gold ore are being handled daily at the 30-ton mill of the **Indian Valley Mining Company**, Greenville, California. The plant is not operating at capacity at present due to water shortage. According to G. L. Johnson, general manager, an 800-foot tunnel has recently been driven to tap the vein 210 feet below the upper workings. The mine is being operated under lease from Frank Standart and is employing 22 men in mine and mill. In addition to General Manager Johnson, other officials include Robert Harding, chief electrician, and Bill Cox, safety inspector.

River Placers, Ltd., operating on the Middle Yuba River in California, has been taken over by American Zinc, Lead and Smelting Company, with main offices at 943 Paul Brown Building, St. Louis, Missouri, H. I. Young, president. The company has been conducting some extensive development of the holdings, and is practically ready for production. It is planned to handle 600 yards of gravel daily by sluicing methods. A 600-foot hard rock tunnel will permit the diversion of the river so that an electrically operated dragline can remove the gravel. A. D. Hughes of Nevada City, California, is general superintendent. D. I. Hayes of 943 Paul Brown Building, St. Louis, Missouri, is chief engineer.

A 50-ton ball mill is being added to the **Furton Brothers** custom mill in the Tropic Hill district, Rosamond, California, as more ore is coming in than the present 50-ton mill can handle. Two new trucks have been added to the fleet already operated and a half-dozen new tanks constructed. **Burton Brothers** are also con-

tinuing the development of their Tropic mine, and are said to have developed a six-foot vein of ore that assays \$17.50 a ton. H. Clifford Burton is directing the work.

H. Z. Peters, general manager of the **Gold Ledge Mining Company**, 869 Russ Building, San Francisco, reports that the new tunnel at the company's Feliciano mine at Midpines, has been driven 463 feet since the first of June, and now has a total length of 1,186 feet. The last few feet of work is said to have disclosed gold-bearing formations for the first time since the tunnel project started with the view of cutting the downward extension of the Feliciano ore bodies. The full face of the tunnel is sampling between \$6 and \$8 per ton.

The **New Era Mining Company**, Chico, California, Reddington & Garrett, operators, reports the opening of an extensive gold channel at the mine. Thirty men are employed in construction of living quarters, office and mill buildings.

COLORADO

A new vein running parallel to the Black Diamond has been opened at the third level below the Sangre de Cristo tunnel at the **Isis Gold Mining Company**, Cripple Creek, Colorado. The trial shipments, shipped as mine-run product, showed 1.06 and 1.20 ounces gold to the ton, and values have been improving as development progresses, it is said. The new vein is very similar in character to the Black Diamond, according to Rudolph Julien of Denver, general manager, and eventually the two veins are expected to come together. The property was recently taken over by Robert E. Hibbert, 4050 Mountainview Boulevard, Denver.

A new 75-ton capacity ball mill is being added to the equipment at the **Commonwealth Gold, Inc.**, property at Georgetown, Colorado. A trestle from the tunnel portal to the mill is being completed, and a 500-ton ore bin has just been finished. The mill is being enlarged, so that the Commonwealth company can step up production. Wellington C. Symes of Victor is president and general manager.

Machinery and drill equipment will be installed by Dr. Edwin Davis of Omaha, Nebraska, on his property on the **Champion** lode in the Blackhawk district of Colorado, according to report. A mine and geological report was made for Dr. Davis by the firm of Weston and Vanderveer of Victor, Colorado. Ore shipments from the property are said to show a good grade of lead-silver ore.

The main shaft of the **Mary B** mine at Victor, Colorado, is being sunk 100 feet in order to open up a new level below. It is going down in ore and all indications are toward encountering a large orebody immediately upon drifting. The company plans to build three additional ore bins and upon their completion to operate two shifts daily. H. J. Vanderveer is general manager and G. J. Allen is superintendent, both of Victor.

Final approval has been given to the **Hidalgo Gold Mines, Inc.**, by the national securities commission at Washington, D. C., and the company is now in a position to raise money for the erection of a mill at the El Paso property. Most of the arrangements have been made, and work on the project is expected to go forward rapidly. The company is reported to be shipping 12 to 15 cars a week from its other properties, and to have opened up new and rich ore in the second level of the Hull City. Al Osberg of Cripple Creek is president of the company, which also controls the Victor, a steady shipper.

The **Telluride Mining and Milling Company** has announced the resumption of full operations at the Smuggler-Union property at Telluride, Colorado. All equipment has been installed and the major changes completed. This improvement program was made necessary by a fire which swept the plant last winter. Machinery includes a motor generator set, new crusher, and addition of a flotation unit in the new mill. Approximately 85 men are at work on the premises, excluding the leasers at the Bullion, who number between 15 and 20. S. M. Kobey, Box 1721, Telluride, is manager.

Ore assaying 22.86 ounces gold and 56.3 ounces silver to the ton is reported to be uncovered in the **Becker-Bates** mine at Central City, Colorado. The mine, which has been idle since 1893 and was originally owned by Theodore Becker, is being operated by the **Gregory-Bates Mining Company**. This company also owns the **Hunter Bates** and the **Gaston** mines in Colorado, and has controlling interest in the **Fifty Gold Mines Company**, which is under the Kingdom of Gilpin Mines, Inc., organized for the purpose of taking over the property.

Spoken of as the most productive single tungsten lease in Boulder county, the **McKenzie, Walsh & Henderson** on the Mammoth on Beaver Creek, owned by Wallace Tanner of Boulder, shipped ten tons during July. These shipments are said to have averaged 55 per cent and be worth about \$6,500. Between August 5 and 15

TIMKEN ROCK BITS

Are doing their stuff for large and small mining operators and many contractors in Arizona.

Greater footage and increased drilling speed, plus the numerous advantages of detachability, mean lower drilling costs.

These users of Timken Bits are getting these results. Why not you?

Complete information and latest price list yours for the asking.

PRATT-GILBERT HARDWARE COMPANY

Exclusive Distributor — State of Arizona

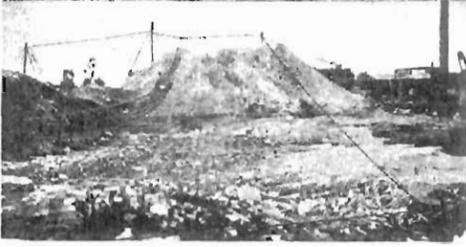
701 South 7th St.

Phoenix

Phone 3-5145

9-15-34

CRESCENT SCRAPER

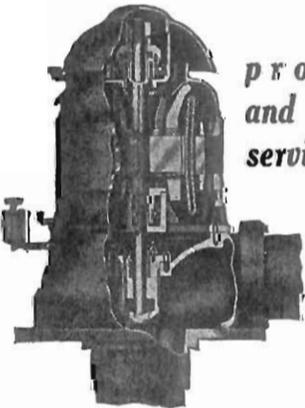


This is the world's most economical excavator and conveyor. It will dig any material that will yield to a plow and it will haul the material any distance up to 1,000 ft. at the rate of 20 to 30 loads per hour. Write for Catalog No. 16.

SAUERMAN BROS., Inc.

436 S. Clinton St.

Chicago



... for
production
and dewatering
service

LAYNE & BOWLER PUMPS

Utmost dependability, high efficiency and lower operating and maintenance costs are reported by scores of mine operators, who rely on Layne & Bowler Pumps for production and dewatering service. Combine these facts with their many exclusive features in design, and it is apparent why Layne & Bowler Pumps are the recognized standard of fine turbine pumps.

Ask for Literature

LAYNE & BOWLER CORP.

900 Santa Fe Ave., Los Angeles, Calif.

WORLD'S LARGEST WATER DEVELOPERS

Complete Equipment For Mine and Mill

Flotation Chemicals
Assay Supplies, etc.

Goddard-Jackson Co.

1400 Santa Fe Avenue
Los Angeles, Calif.

placer machine with a capacity of about a yard an hour has been handling the gravel from the pits, but company officials expect to put a large dredge on the job. The Wyoming Exploration engineers have been investigating both placer and lode properties in the Atlantic and South Pass districts as well as that on Strawberry Creek. W. T. Nightingale, Box 787, Rock Springs, Wyoming, is president.

"MAJORITY" TO SERVE AS AGENCY FOR COLLECTIVE BARGAINING

The National Labor Relations Board has now answered the much-disputed question of interpretation of Section 7-A of the National Industrial Recovery Act. It has ruled that representatives of the majority shall constitute the exclusive agency for collective bargaining.

The question has been one of trade unionism vs. company unions, industry claiming that in case of the two existing, it was necessary to collectively bargain with each one as it was not possible to force either minority group into the other organization, nor was it feasible to have the minority group represented by people not of their own choosing.

The ruling will apply to every code so far promulgated by government agencies and as new cases arise will be applied as a yardstick in adjusting all industrial disputes.

The interpretation was made in the case of the Houde Engineering Corporation of Buffalo and the United Automobile Workers Federal Labor Union No. 18,839.

The board sustained the union's complaint that although it had been chosen as the collective bargaining agency by a majority of the company's employees at an election conducted by the Labor Board, the company declined to recognize the union as the bargaining agency. The company contended that under Section 7-A of NIRA it was obligated to bargain collectively, not merely with the union but also with the organization voted for by the minority of employees.

VERMICULITE PRODUCTS COMPANY IN FREMONT COUNTY, COLO.

One of the mining projects that is attracting considerable attention is that of the Vermiculite Products Company, Inc., operating in the southern part of Fremont county, Colorado. The company has upwards of 1,000 acres that have been prospected by numerous trenches and borings. The depth of the overburden on the ground ranges from two to six feet.

Professor W. J. Martine, E. M., the company's geologist and technical advisor, has completed a survey of the geology and related stratification. By this survey and the exploration, a large deposit of comparatively high-grade vermiculite, with content averaging around 50 per cent, is said to be proven.

Carload shipments are going to a reduction plant at Omaha, Nebraska, the nearest railroad being at Hillside, three miles from the mine. Executive officials of the company are arranging for the early installation of a concentration plant on the property. Later it is expected to add equipment for steam shovel operations.

The Vermiculite company's head office is at 882 South York Street, Denver, John Flinham serving as secretary-treasurer. State Senator Charles F. Wheeler and David Howe are members of the directors.

LARGEST PORTABLE DREDGE WORKING ON JEWEL PLACERS

The largest portable dredge ever built is said to be the one erected by the Jewel Placers Company, Inc., for use on the 26 acres leased from the Fortunate Tarryall ground near Como in Park county, Colorado. A. H. McDougall, who is vice-president of the firm, designed the machine, and describes it as a complete dredge boat on caterpillars.

The machine weighs approximately 37 tons and uses a 30-foot trunnion screen, one-half inch plate, and Hungarian riffles. It is a duplicate of the floating type dredge and has a capacity of 120 yards per hour, with approximately 600 square feet of riffle space, and a swinging 40-foot conveyor with a 30-inch belt to dispose of the tailings. A single Hillscott power unit operates the dredge, which is fed with a yard and a quarter shovel.

A test run was made September 2. During the first eight hours of operation, the dredge handled approximately 1,200 yards.

Ray W. Jewel is president of the Jewel Placers, which is closed corporation. G. L. Jewel is secretary-treasurer. Company offices are at Pueblo, Colorado.

ARIZONA GOLD LODE MINES COVERED IN NEW BULLETIN

The third of a series of three bulletins on gold mining in Arizona has just been published by the Arizona Bureau of Mines, University of Arizona, Tucson. It is entitled "Arizona Lode Gold Mines and Gold Mining." The publication is the result of months of work surveying the field and compiling the material. The authors are: Eldred D. Wilson, geologist with the bureau; J. B. Cunningham, professor of mining and metallurgy, and Dean G. M. Butler, head of the College of Mines and Engineering.

The booklet states that in four years Arizona lode gold mining increased from 39 to 74 working claims. Dean Butler estimates that 2,600 persons are prospecting for lode and placer deposits of gold, compared with only 400 in 1929.

Chapters are devoted to the geologic settings and types of lode deposits and to each of the gold mining districts. Other chapters are devoted to the operation of small gold mines, to the laws regulating locations, and hints on prospecting for gold.

The other booklets in the series are "Treating Gold Ores," and "Arizona Gold Placers and Placering."

CALIFORNIA ISSUES NEW BULLETIN ON PLACER MINING

The April and July, 1934, quarterly chapters of the State Mineralogist's Report XXX have been combined in a single issue and are ready for distribution. According to Walter W. Bradley, state mineralogist, this is really a revision, enlarged and brought up-to-date, of the placer bulletin issued in April, 1932.

The booklet gives information on the types of placer deposits and on simple placer equipment and methods, something of the mining laws, a discussion of the placer mining areas, and concludes with a selected bibliography on milling and placer mining. The bulletin covers nearly 200 pages, is well illustrated with both photographs and drawings. It is on sale for 80 cents a copy, plus 10 cents for shipping charges, and may be purchased from the State Division of Mines, Ferry Building, San Francisco.

Classified Advertising

5¢ per word for the first insertion and 4¢ per word for subsequent insertions, minimum price \$1.00. Box number counts for 10 words to cover cost of forwarding replies. If desired in larger type and displayed, \$2.50 per inch per insertion.

POSITION WANTED

DIESEL ENGINEER. Accept any Diesel Job. Address Box S-27, The Mining Journal, Phoenix, Arizona. 9-15

EQUIPMENT FOR SALE

SMALL AINLAY Placer Outfit. Complete 12-inch bowl machine with screen, pump, gas engine, etc. Capacity 3 yds. per hour. Unexcelled for testing. Fine condition. \$275 cash f.o.b. Duncan Edwards, Yreka, California.

MINES FOR SALE

GOLD MINES bought, leased, sold. Proven minerals required. Our service includes organizing mining properties, securing associates and partners, providing equipment. Page Company, 405 Fourteenth St., Oakland, Calif. 9-15

16 MINING CLAIMS—Gold, Silver, Lead. Some copper. Can locate 30 more. Timber and water power. Best in New Mexico. See them at once. (Don't write.) Joe Cannard, Red River, New Mexico. 9-15

SILVER MINE FOR SALE. Situated in the Wallapai Mining District, Kingman, Arizona. Property of a San Francisco Bank. Inspection and offer invited. For information write to R. H. Bosse, 112 Market St., Room 825, San Francisco, Calif. 9-30

FOR SALE. El Oro Mines. Also Mogollon Consolidated. At right prices. Dallas Big Board, 1405 Allen Bldg., Dallas, Texas. 9-15

FOR SALE OR LEASE

FOR SALE. Quicksilver property, partially developed; 267 acres patented. Ten miles to railroad, seven miles paved. Considerable equipment. Electric power. Satisfactory working conditions all year. For further information address Box B-14, The Mining Journal, Phoenix, Arizona. 9-15

POSITIONS OPEN

R-4423-S FLOTATION PLANT FOREMAN, at large mill in Mexico. Must be technical graduate with several years practical experience in the preferential separation of gold-silver-copper-lead-iron-zinc ores. A permanent Mexican passport is essential. Permanent. Opportunity. Salary open. Apply by letter with photo.

R-4469-S MINE SURVEYOR, experienced, to work for established company. Must speak Spanish and have a permanent Mexican passport. Salary \$175 U. S. Cy. per month. Apply by letter. Location, Mexico.

W-6650-S(K-471) MINING ENGINEERS, who have had experience in Mexico within the past 5 or 8 yrs., and who would be available for employment with large operating company now taking applications. Apply by letter with statement of experience, etc. Also state if in possession of an active passport for Mexico.

ENGINEERING SOCIETIES EMPLOYMENT SERVICE

Newton D. Cook, Mgr.

57 Post Street San Francisco, Calif.

WANTED

Tungsten, Molybdenum & Vanadium Ores and Concentrates.

ORE, METAL & ENGINEERING CORP.
138 West 6th Street, Tucson, Arizona
P. O. Box 2349
Write Us.

THE TONOPAH MINING COMPANY OF NEVADA

Exploration Department
PROSPECTS OF MERIT FINANCED

Write Either
H. A. JOHNSON Or Main Office
Supt. of Operations 570 Bullitt Bldg.
Tonopah, Nevada Philadelphia, Pa.

NEW INTERESTS PURCHASE CONSOLIDATED PLACERS PLANT

The plant and equipment of Consolidated Placers, Inc., which has been operating a gold placer plant near Silver City, New Mexico, has been sold to the Cibola Placer Mining Company. L. M. Kniffin of Silver City is manager of the new enterprise.

The plant consists of a power shovel used for excavating the gravel and discharging it to a field trommel, where the first screening is conducted dry. The fine material is then hauled to a fixed treating plant.

The treating plant is equipped with standard machinery for recovering the black sands and placer gold. The trucks discharge the fine material onto a conveyor belt by which it is elevated to a storage bin. From the bin the gravel is fed to a second trommel where it is mixed with water. The oversize is discarded onto a belt conveyor and stacked. The undersize is treated in a Woodbury Jig where the coarse gold is recovered and the undersize is conditioned for treatment on Deister concentrating tables. The middling is re-treated on a Wilfley table.

The water is recovered from the tailings by a Dorr classifier and the nearly dry gravel is stacked with a belt conveyor. The plant is able to operate on a very small amount of water at low cost, and it is thought that this method of treatment will have applications to other placer deposits having a limited water supply.

BLUE RIVER MINES PREPARING LUCKY BOY FOR PRODUCTION

A new 40-ton ball type mill and flotation units will be used in the treatment of ore from the Lucky Boy mine at Galice, Oregon. While the initial capacity will be 40 tons, the mill is planned so that an increase up to 100 tons can be made, according to Ralph R. Osborn, who is in charge of operations, and whose address is 164 West Eighteenth Avenue, Eugene.

Power for the mill will be furnished by a Diesel plant of two units, 40-horsepower each. A generator is included in the new equipment to furnish electric lights for the mill and camp buildings. The old Lucky Boy company, during the height of its prosperity as a high-grade gold producer, erected a large hydro-electric plant on the McKenzie River just above Blue River, and furnished both lights for the mines and power for the machinery.

Installation of the machinery is not easy at the Lucky Boy, there being hardly a level spot on the entire property. The mill will be on what was a sheer slope of the mountain, near the mouth of the main tunnel, minimizing labor and expense in delivering the ore to the bins. When the old Lucky Boy company's 40-stamp mill was in operation the ore was conveyed from the mouth of this tunnel by an aerial cable, electrically operated. The present system will be worked by gravity, with no power necessary in taking the ore from mine to mill.

The main tunnel of the mine is in over 1,000 feet, and ore is being extracted and dumped, awaiting the completion of the mill. There are 21 men at work.

Another innovation made by the Blue River Mines, Inc., the present operating company, is the establishment of an assaying plant on the ground. Forest H. Majors is in charge of this office. Recent reports show gold values as high as \$40 a ton, but the average is \$9, it is estimated. Considerable quantities of silver, lead and zinc appear in the ore, but as yet only the gold value is being accounted for.

A report made by W. B. Hancock 1930 credits this property with a production record of \$197,795.43.

BAY STATE-AMADOR STAR UNDER WEST AMERICAN MANAGEMENT

An extensive development program being conducted by the West American Consolidated Gold Mines, Inc., of Pomona, California, at its two properties, the Amador Star and the Bay State. A 11-horsepower Diesel engine has been installed at the Bay State, the collar of the 1,065-foot shaft repaired and the shaft being unwatered, a task which is scheduled for completion within the next 30 days. As engineering reports indicate that the mines is ready for stopping, once it is unwatered, the company is making plans for a tramway for transportation of ore to the Amador Star mill.

The Amador Star is fully equipped with hoist, machine shop, saw mill, blacksmith and electrical shop, lumber yard, office building, assay office, powder magazine, storehouse and hoist house. There is also a 75-ton flotation mill which was used to solve metallurgical problems and determine mine costs. Within 90 days this plant will be enlarged to 300 tons capacity.

When taken over by the present interests the shaft at the Amador Star has reached a depth of 500 feet. It is now being carried to the 1,000 level. Ore has been developed on the 500 and 300 level and a station is being cut at the 650-foot level.

Ore bodies now being opened on the 500-foot level north have consistently averaged better than \$11 per ton for the past month, and a pocket of extremely high-grade ore was also uncovered. The 500 level is being driven to connect with the Bay State, a distance of 3,700 feet.

The geological indications, as well as the geophysical survey, are said to show that there are three large bodies of ore between the Amador Star shaft and the Bay State shaft on the footwall vein. A detailed geophysical survey has just been completed by Dr. Gustave Gossman of San Francisco.

Reports on the Bay State show over 200,000 tons of ore averaging \$5.85 at the old price of gold. The management states that this value is very satisfactory, inasmuch as for the past two years the 75-ton flotation plant has been operating for testing purposes, and has determined the cost of mining and milling as under \$8 per ton.

West American Consolidated Gold Mines, Inc., is a California corporation, headed by Arthur Hamburger, president, a practical mine developer with many years of experience. Other officers and directors include: D. A. Hamburger, vice-president, for many years executive head of the West's largest department store; Andrew Steel, secretary-treasurer, who has had many years practical experience as a mine executive; Senator Andrew Pierovich, for many years a state senator from Amador county, specializing in mining legislation, and Frederick Bryan, an attorney of Los Angeles.

At the mine, President Hamburger is assisted by E. F. Waldner, superintendent, a graduate from McGill University, who has had practical experience in Alaska, South America, Mexico and Rhodesia, as well as in this country. He was formerly in charge of research at the Trail Smelter in British Columbia, and directed underground work at the Argonaut and Plymouth mines on the California Mother Lode.

THE WORLD'S LARGEST

Deep Well Turbine Pump Conquering Flood

The world's largest deep well turbine pump ever built has been installed in the Potrero shaft of the San Jacinto tunnel on the Colorado River Aqueduct of the Metropolitan Water District of Southern California, by the contractors, Wenzel & Henoch Construction Company. It is making rapid progress in dewatering the 796-foot shaft and the 380 linear feet of 16-foot diameter tunnel driven from the bottom of the shaft which were flooded nearly three months ago.

Faced with a serious and most unusual problem as the water rapidly filled the deep shaft the contractors installed two 1200 gallon per minute deep well pumps in an effort to control it, but these were inadequate to cope with the continuing heavy inflow. Equipment of greater capacity was necessary, but the character of the job was such that it had to be built to order. Engineers of the Peerless Pump Division of the Food Machinery Corporation at Los Angeles were called in and in cooperation with the engineers of the Metropolitan Water District and the contractors, Wenzel and Henoch, designed and built a unit capable of delivering 2,600 g.p.m. against a total lift of 850 feet. This unit consisted of a 700 horsepower vertical hollow shaft General Electric motor mounted and installed on a unit drive type of Peerless HUII heavy duty pump head. This head used two large radial bearings to sustain the side thrust of the rotor and one large 12-inch Kingsbury plate bearing having a thrust capacity of 30,000 pounds, which would handle the tremendous thrust load of water operated at this excessive lift. Peerless Pump Division, to meet the emergency, guaranteed delivery of the pump unit two days after receipt of the motor and this delivery was fulfilled.

The pumping element, ordinarily constructed of cast iron, was of a special

A giant pumping unit is dewatering the aqueduct shaft and tunnel on the Colorado River Aqueduct of the Metropolitan Water District of Southern California. This unit is capable of delivering 2,600 gallons per minute against a total lift of 850 feet.

design, using steel bowl assembly. The total unit was installed on August 12 and lowered into the Potrero shaft a few feet above the water level, which at that time was 500 ft. below the surface of the ground. Some conception of the difficulties involved can be had when it is stated that this total pumping assembly weighed approximately 100,000 pounds, and was all suspended from the surface of the shaft. The equipment was placed in operation at 2:00 o'clock Monday morning, August 13. The 700 horsepower motor, the pumping element and induction pipe, all hanging in the air, started in motion and ran as smoothly as smaller equipment of only a few horsepower. A virtual river of water was discharged at the surface of the shaft and the contractors began to see rapid progress as the water in the shaft receded.

Operating at a lift of 600 feet the giant Peerless pumping unit discharged as much as 3920 gallons per minute. At the bottom of the shaft, with an 800-foot lift, its capacity will be ample to control the inflow. The pump is lowered in the shaft about 20 feet at a time as the water recedes. While this is being done the two smaller pumps continue in operation, the big pump controlling the inflow while they are being lowered. When the tunnel is finally drained the Peerless unit will be set in a permanent position to meet any emergency which may arise in the future from the inflow of water.

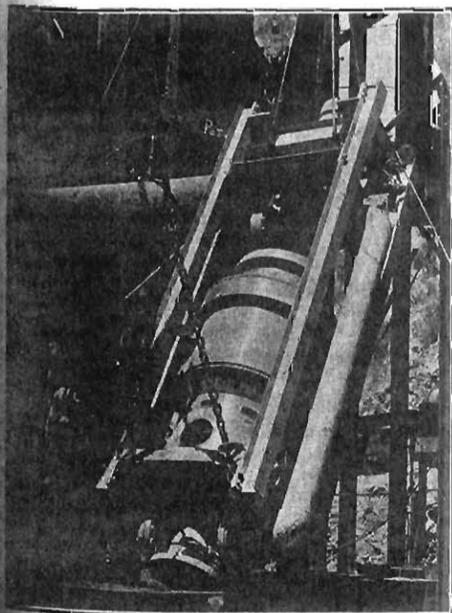
When pumping was started on July 11 with two deep well turbines, water had risen in the shaft to a height of 647 feet and was practically stationary indicating that was the head of the underground accumulation of water which had been tapped by the drills. These two pumps, with a capacity of 1200 gallons per minute each, had lowered the water to a level of about 300 feet when the giant Peerless deep well turbine pump, with a capacity of 2600 gallons per minute on a lift of 850 feet was installed on August 13. Since that time the water has been lowered at the rate of about 20 feet per day and on the morning of August 24 it stood at 130 feet in the shaft. The initial inflow was estimated at 7600 gallons per minute and it rose over 550 feet in the shaft in a single day. At the present time the inflow is estimated at about 2200 gallons per minute indicating that the head of water in the underground res-

ervoir has been materially reduced and that it is being steadily drained

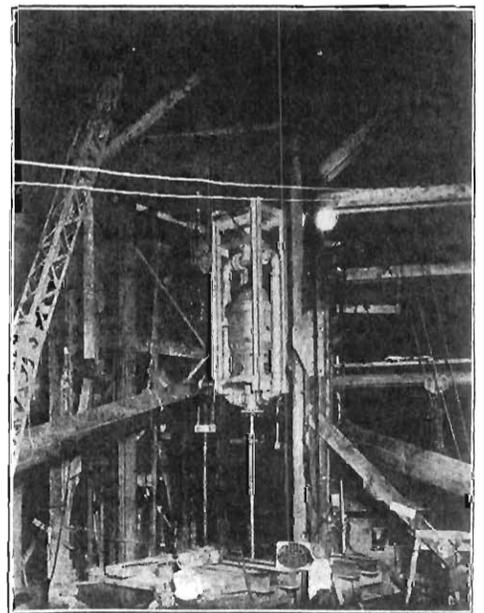
Since pumping began the volume of water taken from the shaft has approximated about 360 acre feet, sufficient to fill a 36-acre reservoir to a depth of 10 feet. At the present time the amount of water pumped approximates 8 to 10 acre feet per day. All the water has been wasted into Potrero creek, flowing into the Cienega reservoir southwest of San Jacinto mountain where it is being used for irrigation on the Wolfskill ranch.

So far as known none of the water which flooded the tunnel comes from any used source of water supply and it is believed to have been an accumulation over a long period of water seeping into cracks and crevices of the rock in the mountain. Some seepage was encountered in sinking the shaft, but not more than 350 gallons per minute was pumped out at any time. The shaft is a circular one, 15-feet in diameter, and lined with concrete, the lining being placed as the shaft was excavated.

When the first heavy inrush of water flooded the tunnel at Potrero shaft the big bore had been driven 160 feet in the east heading and 225 feet in the west heading. Excavation had not progressed far enough to permit the bringing in of much construction equipment, that in use being limited to a small mucking machine, drilling equipment and sump pumps which were taking care of the seepage at that time. Operations had been suspended for several days in the east heading as the water was spurting in streams from the drill holes, apparently under considerable pressure.



The 700-horsepower Peerless deep well pumping unit being swung into place in the Potrero shaft.



Showing the giant Peerless pump head, column and bowl sections being lowered into Potrero shaft. The unit, weighing 100,000 pounds is operated suspended in the shaft, being lowered by 20-foot stages as the water recedes.

9-30-34

The heavy inrush came suddenly about 3 a. m., July 1. There was no one in the east heading at the time but a crew was working in the west heading and the men were forced to the surface, when the station pumps at the bottom of the shaft were unable to keep the water down.

How the water came to be released in such great volume will not be revealed until an inspection can be made. If possible the walls of the tunnel will be sealed to shut out or at least reduce the inflow of water sufficiently to permit the pumps to handle it while work proceeds.

San Jacinto tunnel will be 67,416 feet in length and excavation has been started at the west portal, from which 8722 feet will be driven; from Potrero shaft from which 6712 feet will be driven west and 20,589 feet east, and from Cabazon shaft and drift, from which 22,839 feet will be driven west and 8,553 feet east.

The time limit on the job is 69 months, this long period being allowed because the major portion of the tunnel, or a little over eight miles can be driven only from two headings.

ANACONDA OFFERS SETTLEMENT SATISFACTORY TO MINE WORKERS

Settlement of the strike among the Anaconda miners, smeltersmen, engineers, and allied craftsmen was announced September 17, 1934, by Thomas Brown, president of the International Mine, Mill and Smelter Workers Union. A two-to-one acceptance of the compromise settlement by these groups marked the end of Montana's 135-day copper workers' strike, with the miners returning to work September 20.

Terms offered by the Anaconda Copper Mining Company provided for a minimum daily wage of \$4.75 (formerly \$4.25), guaranteed for six months; a 40-hour week (formerly 48, until the adoption of the NRA copper code); union recognition and a closed shop; an industrial relations board to mediate future disputes; and provision for the further wage increase of 25 cents each time the price of copper rises one and a half cents above 11½ cents.

Demands of the strikers included a \$7.20 minimum daily wage; a 30-hour week; abolition of the contract and one-man drill system; and closed shop and union recognition. The one demand of the workers not mentioned in the settlement offered by the Anaconda company is concerning the contract and one-man drill system.

In the future disputes will be referred to a special grievance committee of the miners' union for submission to the company, and if not settled will go to a newly formed industrial relations committee.

TRAVELING LABORATORY COMES TO NEVADA MINERS

The "traveling laboratory" is again on its way in Nevada. The winter school for prospectors was opened September 17, 1934, at Sparks under the direction of Fred D. Gibson. The Department of Vocational Training of the Nevada State Department of Education, Donald C. Cameron of Carson City, director, offers a three-weeks course to miners and prospectors throughout the state.

A complete testing laboratory is carried to the different towns on a state-owned truck by Fred Gibson, and kept in each community three weeks. Last year the prospectors' course was given to something more than 800 miners, and a much larger attendance is anticipated this year. The venture completed its initial year last spring, and was pronounced a success by both students and instructors.

WILLIAM HENRY HARRISON* *comments on*

Federal Mine Loans

Western mining men probably are wondering how they may benefit under Sec. 14, Public Act No. 417, which refers to loans to the metal mining industry, and authorizes the RFC to make said loans. The section in question is quoted:

"The Reconstruction Finance Corporation is authorized and empowered to make loans, upon adequate security, based on mineral acreage, to recognized and established incorporated agencies, individuals, and partnerships engaged in the business of mining, milling or smelting of ores."

This section is administered under the Circular 14, which is the preliminary regulations laid down by the RFC. The application form with the contract, and exhibits that are required to be filled out, tell quite as much or more than Circular 14 as to the severe requirements made of the metal mining industry. Indeed it might be said with some truth that the form exceeds the requirements of the statute as to the many details requested in the contract and exhibits. Yet the administrative features of the RFC Act are elsewhere in the said Act, and not wholly defined in such a situation as a mining loan, leaving as always administrative discretion as to the procedure to be followed.

The matter of interest rate is left open, but is not to exceed 6 per cent, and is probably to be adjusted according to loans on farms, and other real estate in the Federal Land Banks. The net result will perhaps be an interest rate in accord with the said institutions, but I hardly think any less. The risk is largely eliminated by the restrictions placed on the demonstrated worth of the property for which a loan is sought, which are certainly enough as demonstrated by the application itself.

It is thought that it will require common action among the mine owners' associations, trade boards, and other commercial units if the beneficial effect of the Act is to be obtained, if at all, since the plain purpose of the section was to afford any mine owner with a demonstrated commercially important property to obtain a loan with the least restrictions as to NRA, PWA, and other emergency organizations.

It is not shown where the act requires that the equity held by other creditors is to be wholly subordinate to a RFC loan, if the equity above that held by the said creditors is sufficient in itself to satisfy the RFC loan, yet the contract makes no distinction. It is a severe contract without question, and there is not much chance for the RFC to lose anything thereunder, which is of course right, but within proper limits.

It is not within the terms of the Act to have the construction, development, and machinery orders placed within a straight jacket and operated as is done at Moscow, or Berlin, yet these matters are restricted to approval at Washington. The Federal Land Banks have not been made to follow this procedure in their dealings with the farmers; then why should the RFC exact more from the miner, who of all industries has a chance to pay back what he borrows, in short, is self-supporting, and possesses integrity and responsibility?

We should not be severe in criticising restrictions on Federal Loans, and that is

*Consulting Engineer, Denrike Bldg., Washington, D. C.

not our purpose. It is to see that the administration of the Sec. 14 is made reasonable, and workable, and in conformity with the intent of the Act. The important thing is the commercial importance of the property, and thereafter the incumbrances, if any, which must be considered in the definition of the commercial importance of the property for the purpose of a loan, somewhat after the experience in the War Minerals Relief Administration, with which the writer was connected.

There is an excellent opportunity for constructive effort under the RFC loans, and it should be the endeavor of the administration to make the Act work, and work quick, not to arouse the antipathy of the miner towards any Federal cooperation in the thoroughly constructive effort he is carrying forward. He is a more constructive force than any emergency organization created by the administration.

He creates something that is useful now, not 40 years hence, and if his venture is commercially important he can liquidate with more assurance the said loans than any bank, or farm. These loans are provided to be self-liquidating. They are not to be spread out on work similar to the CWA, which one of the Utah senators wants to have returned, and thereby lost to the country as to any permanent benefits, since CWA had in very few cases any permanent benefits, or public benefits of any kind that were lasting.

The writer believes it would be better to see the prospector using the RFC loans than to see them loaned to the Relief Administrator in Washington. The prospector is at least trying to find additional wealth, whereas the administrator of relief is only trying to keep the individual alive.

As to whether the Security act is to be preferred to the RFC loans in finding means of financing a mine, must await the near term developments under the RFC administration of mining loans. There has been more experience in the former, while in the latter experience is nil as yet.

SUGAR PINE REBUILDS ITS MINING AND MILLING PLANT

The Sugar Pine Mining Company, which lost its surface plant at Sugar Pine, Tuolumne county, several weeks ago by a forest fire, has partially re-equipped the property and resumed operations. Timbers in the shaft which were destroyed for 50 feet below the collar, have been replaced, and the necessary mine buildings are being erected.

A compressor has been installed and pumps are in place to remove nearly 200 feet of water now in the shaft. It is reported that a larger and more complete mill than the three-stamp plant destroyed will be installed.

According to Allison J. Gunn, 543 East Anaheim Street, Long Beach, California, president of the company, when fire destroyed the plant the contact with the vein was only 20 feet from the breast of the drift. On the level 80 feet above he reports that the vein assayed \$69.65 per ton.

WESTERN LEADERS

Discuss Problems of the Mining Industry

The annual meeting of the Western Division of the American Mining Congress convened at noon on September 24 at the Palace Hotel in San Francisco, with delegates from all western metal mining states and from Minnesota, Michigan and Missouri in attendance. During the noon luncheon Howard I. Young, president of the American Mining Congress, W. S. Boyd, chairman of the Western Division, W. Mont Ferry, chairman of the program committee, and J. F. Callbreath, secretary of the American Mining Congress, were introduced.

Criticism of the New Deal was indicated in the opening gun of the convention at the first noonday luncheon when James F. Callbreath, secretary of the American Mining Congress, spoke on certain provisions of the NRA code, and pleaded for the re-establishment of private business on a normal basis and the curtailment of high taxes and public debts.

"This convention," he said in part, "is the rallying point of the Western Division of the American Mining Congress, and is an effort to bring about sound thinking and union of action on the grave problems facing the nation now. We want an active campaign looking to re-establishment of integrity in the high places of official and political life in order that private business may be resumed on a normal basis, public debts curtailed, tax burdens reduced and normal employment conditions restored.

"In the past the great business machines grew with world requirements to meet the needs of all individuals. When the NRA undertook to replace these marvelously complicated devices through newly developed plans formulated by a few individuals, when a few men assumed to do what the brains of thousands of trained individuals had been taxed to accomplish, it undertook an impossibility.

"The new deal must relinquish its apparent motto that the end justifies the means. No end, no matter how meritorious, can be justified if it breaks down personal and property rights."

Mr. Callbreath maintained that section 7-A of the NRA code calls for collective extortion. He stated: "The most radical change has been the installation of organized labor as a substantial, if not the controlling force, in management."

"Investment is never made except for profit," he said, and indicated that competition will take care of excess profits and profiteering, opposing government fixing of either maximum or minimum prices.

"In certain cases limited profits should apply to utilities," he continued. "Whenever an industry is a necessary monopoly it should be controlled by the state. The price, however, should be limited to a fair one for the benefit of the consumers. By necessary monopolies I mean water systems, street cars, and similar utilities. The NRA is blocking the return of prosperity through the meddlesome interference of theorists who know little or nothing about business."

W. S. Boyd, vice-president of the Utah Copper Company and of the Nevada Consolidated Copper Corporation, was chair-

The convention of the Western Division of the American Mining Congress is described as "a rallying point in an effort to bring about sound thinking and united action upon the grave problems facing the nation today, which involve not only mining but all of our industries."

man of the business session which commenced at 2 p.m. W. Mont Ferry, vice-president of the Silver King Coalition Mines Company, Salt Lake City, Utah, was the first speaker on the afternoon program.

Ferry pointed out the importance of the mining industry to the western states, calling particular attention to a survey made in Utah which showed that 47 per cent of the people of that state were directly dependent upon the mining industry for their livelihood and further showed that the mining industry directly supported a person for each \$203.06 of its metal production.

He further showed that the mining industry paid in Federal taxes about \$16,000,000 and received from the government federal benefits of about \$3,000,000 through the United States Bureau of Mines. Agriculture, on the other hand, pays \$28,000,000 in Federal taxes and is receiving a direct government benefit of \$136,000,000. The paper of Mr. Ferry was an opening gun to show the necessity of more equitable treatment and recognition of the mining industry from Washington.

The second speaker was United States Senator Key Pittman of Nevada. He spoke for more than an hour, devoting the entire time to his advocacy of remonetization of silver. He impressed upon his audience, which filled the spacious hall in the Palace Hotel, the great benefits which will come to the mining industry of the United States if silver is made a basis for money of the United States, and further maintained and gave his reasons for the position taken that remonetization of silver here and a higher price paid for the metal will not injure our export trade.

He cited the fact that at present many nations of the world are wholly on a silver basis without suffering injury to their economic situations. Senator Pittman told the audience of the five sessions the silver bloc in Congress had with President Roosevelt to bring about the action taken by the President in the interest of silver and silver mine operators.

Senator Pittman predicted that the price of silver will reach \$1.29 an ounce "sometime within two years." He praised President Roosevelt's "cautious" administration of the silver act of 1934, which

authorizes the purchase of silver at a price not to exceed \$1.29.

"At the time the President signed the bill, he declared he would carry out the spirit of the act, but that he would not bring about any sudden or extreme rise in the price of silver," said Senator Pittman. "To do so would have disarranged world exchange values, and would have compelled him to pay the foreign holders of silver the profits that otherwise will go to the United States treasury.

"If the President can obtain silver at any average price of, say 89 cents, between now and the time the price reaches \$1.29, the treasury will have a substantial profit."

At the close of the first business session of the convention the following Committee on Resolutions was named:

D. A. Callahan of Wallace, Idaho, chairman, Callahan Zinc-Lead Company; T. H. O'Brien of Inspiration, Arizona, Inspiration Consolidated Copper Company; F. C. Van Deine of San Francisco, California, Yuba Consolidated Gold Fields; J. C. Kinnear of McGill, Nevada, Nevada Consolidated Copper Corporation; J. O. Elton of Salt Lake City, Utah, International Smelting Company; Brent N. Rickard of El Paso, Texas, American Smelting and Refining Company; Robert M. Betts of Blackbutte, Oregon, Quicksilver Syndicate; Eugene McAuliffe of Omaha, Nebraska, representing Wyoming, Union Pacific Coal Company; R. B. Tempest of Santa Rita, New Mexico, Nevada Consolidated Copper Corporation; George H. Rupp of Denver, Colorado, Colorado Fuel and Iron Company; B. C. Yates of Deadwood, South Dakota, Homestake Mining Company; William B. Daly of Butte, Montana, Anaconda Copper Mining Company.

Members at large are: R. A. Kinzie of San Francisco; R. C. Allen of Cleveland, Ohio, Oglebay, Norton & Company; A. G. Mackenzie of Salt Lake City, Utah, secretary Utah Chapter American Mining Congress; Henry M. Rives of Reno, Nevada, Nevada Mine Operators' Association.

M. D. Harbaugh, Miami, Oklahoma, Tri-State Zinc and Lead Ore Producers' Association, represents Michigan, Minnesota and Missouri on the Committee on Resolutions.

Booths containing exhibits of metal-bearing ore, gold nuggets, rich quartz samples bearing gold, silver and copper, machinery and other equipment for lode and placer mining, machinery and equipment for electric power service, replicas in miniature of the early gold-rush days of California, the days of the stage lines and of the pony express, cover an area of approximately 10,000 square feet on the ground floor of the Palace Hotel.

The exposition was thrown open to convention delegates and the general public Monday morning and a constant throng inspected the display throughout the day. Every western metal mining state is represented, and states as far east as Ohio, Pennsylvania and New Jersey are represented by exhibits of mining machinery and other equipment. Walter Bradley, chief of the California State Bureau of Mines, loaned many priceless exhibits for display in this exposition.

NATIONALIZATION OF MINING INDUSTRY STARTED IN MEXICO

What is officially described as the "first step toward nationalization" of the Mexican mining industry, which supplies nearly two-thirds of the world's total silver production annually, 5 per cent of the gold and an important percentage of copper and other minerals, has been taken by the Secretary of National Economy in a decree revising and adding to the mining law of August 2, 1930.

The decree also is designed to "prevent foreign companies from continuing to monopolize mineral deposits" and thus is aimed at concerns in which about \$500,000,000 of American capital and a large amount of British money is invested.

Exportation of concentrated minerals also will be eliminated under the revised law, both by means of increasing export duties and by encouraging the development of the metallurgical industry and the establishment of refining and smelting plants owned by Mexicans.

Under the reformed law protection and aid will be given to small co-operatives composed of Mexicans and to individual placer miners and prospectors who discover mineral deposits which later are exploited on a large scale. An organization to be called the Commission of Mineral Development will be formed by the government to supply economic aid and technical advice.

Small refining plants will be required, up to 20 per cent of their total capacity, to treat metals brought to them by the public, thereby giving the small scale miner an opportunity to market his production. When the concession for a refining plant is rescinded, the government is emp-

owered to take possession and continue operating it through the Commission of Mineral Development, after indemnifying the concessionaire, thus laying the foundation for a nationally owned refining industry.

All placer deposits will be added to the national reserves "with the object of putting them at the disposal of the greatest number of persons" and placer miners will be protected from having these deposits taken over by large concessionaires. At the same time, efforts will be made to prevent smuggling of gold and other metals into the United States.

Like other recent laws and decrees affecting the country's important industries, the reform of the mining law is based on nationalistic and socialistic considerations. It was inspired by the six-year-plan of the National Revolutionary (government) party, which set forth that it is the duty of the state to regulate the development and exploitation of natural resources.

NRA RECOGNIZES AUTHORITY FOR QUICKSILVER INDUSTRY

The National Recovery Administration has recognized the following as members of the Code Authority for the Quicksilver Industry:

Members selected from the Executive Committee, National Quicksilver Producers Association—all of San Francisco.

H. W. Klipstein, vice-president, Anglo-American Mining Corporation, Ltd., Mills Building; W. R. Moorehead, general manager, Indria Quicksilver Mines, Inc., Merchants Exchange Building; F. A. Hammersmith, secretary-treasurer, Treadwell Yukon Company, Ltd., 920 Crocker Building; H. W. Gould, H. W. Gould and Co.,

Mills Building; Irving Ballard, secretary, National Quicksilver Producers Association, 560 Sacramento St., and C. N. Schuette, consulting engineer, 306 Call Building.

Members of industry (non-members of executive committee) Noel H. Stearn, president, Southwestern Quicksilver Company, 1226 Olive St., St. Louis, Missouri, and H. E. Loufek, general manager, Castle Peak Quicksilver Company, 233 East Plaza St., Reno, Nevada.

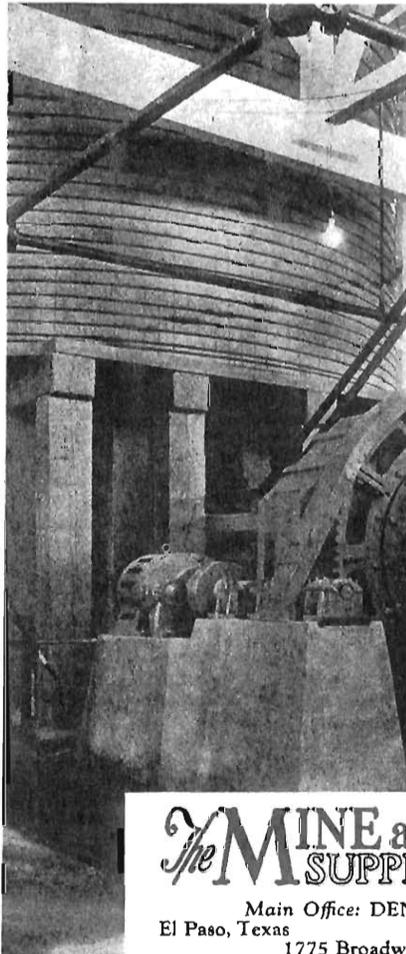
Non-association member: Howard E. Perry, president, Chicos Mining Company, 52 Exchange St., Portland, Maine.

EL DORADO COUNTY WORKING FOR ADEQUATE WATER SUPPLY

The El Dorado County Chamber of Commerce, at Placerville, California, is seeking to enlist federal aid in immediate development of the Diamond Ridge Ditch System, for the purpose of procuring water for mining operations in the western end of El Dorado County.

The land-planning committee, recently surveyed the situation and has made definite recommendation on the projects. Under the plan outlined by the committee, it is necessary to take over the Diamond Ridge Ditch Company's ditches and distribution system under public ownership since the federal aid sought is not available for private enterprise. The system comprises about 40 miles of distributing ditch system, as well as small reservoirs and storage sites.

Development of more water immediately is vital if the mining operations under way in the western end of the county served by the Diamond Ridge system, are to be permitted to continue.



Complete Ore Milling Plants

25 Tons and Upward

Whether your requirements are for a complete ore milling plant or for certain specified units of milling machinery, consult with "Mine & Smelter" before you place your order.

Experience That Cuts Costs

When an ore milling plant is to be built, the counsel of old heads in the machinery end may save many thousands of dollars, not only in original cost but also in efficiency when the power circuit is closed. In the last half century

"Mine & Smelter" has deserved and won the respect of mining engineers and mining management throuthout the world. The products of "Mine & Smelter" are in operation in every important mining camp on the globe.

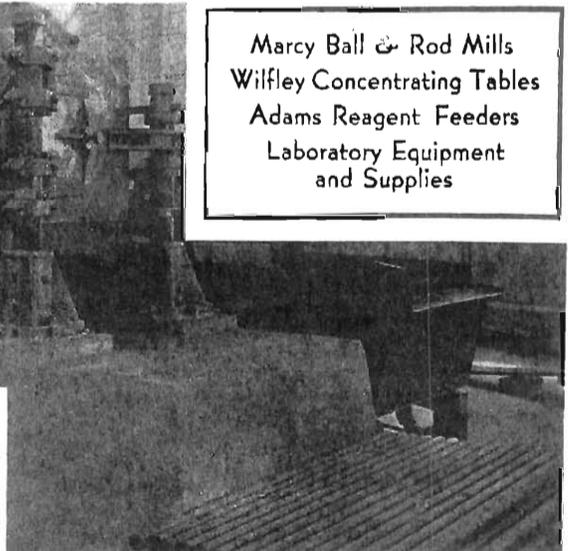
Conservative Modern Milling

While old in the business, as business lifetimes go, "Mine & Smelter" has kept pace with recent progress in mining engineering practice. Here you find a staff that knows mining and milling--and which is capable of giving your own engineers fullest cooperation.

- Marcy Ball & Rod Mills
- Wilfley Concentrating Tables
- Adams Reagent Feeders
- Laboratory Equipment and Supplies

The MINE and SMELTER SUPPLY COMPANY

Main Office: DENVER, COLO., U. S. A.
 El Paso, Texas Salt Lake City, Utah
 1775 Broadway, New York City



Mill Heads from Western States

Brief items covering the mining industry in the Western United States and Northern Mexico.

ARIZONA

Mammoth-St. Anthony, Ltd., is making preparations for the active operation of its property at Mammoth, Arizona. The management is investigating cost figures relative to Diesel installation or the running of a power line to the mine, as equipping the mine with electric power is to be one of the first phases of the development program. Foster S. Naething is vice-president and managing director of the company, and has recently established his headquarters at the Pioneer Hotel, Tucson, Arizona.

The Arivaca Gold Mining and Milling Company at Arivaca, Arizona, is installing a 10-stamp mill, with concentrating table and flotation unit. The mill will be in operation early in October and will be run to capacity with three shifts. According to J. D. Murphy, manager, there is considerable activity in the Arivaca district. Several shipments of ore, including two carload lots, have been made to the El Paso Smelter which gave good returns in gold and silver.

Jack Crist and F. C. Hoxie, Box 1, Wickenburg, Arizona, and associates, operating as the H. N. Mining Company, have taken a lease on the Cosmopolitan Syndicate group of claims owned by A. J. Kellis, also of Wickenburg. They have just completed assembling a 10 to 15-ton ball mill and test run is said to have been most satisfactory. A well drilled at the mill site is providing ample water. They plan to continue mine development and at the same time operate the mill at capacity. They will cyanide their own concentrates in small lots.

The Monte Christo Gold Silver Company, Constellation, Arizona, has received the last shipment of mill machinery and is rushing plant construction to completion. The new 100-ton mill is patterned after the pilot mill constructed earlier in the year and from which 95 per cent recoveries are said to have been obtained. The mine has been unwatered to the 700 level, workings above that depth rehabilitated, heavy-duty pumping equipment, new compressors, rails and assay equipment installed. H. B. Browning is mine superintendent.

Preparatory work for the reopening of the famous Goldroads mine at Oatman, Arizona, has been started by the United States Smelting, Refining and Mining Company, owners of the mine. L. H. Duriez, formerly manager of the Sunnyside Mining and Milling Company, Eureka, Colorado, has been selected as resident engineer and manager. The installation of hoist and compressor has been started and retimbering of the old No. 1 shaft will begin at once. The shaft will have to be retimbered to the 700 level. The entire mine is under water and it will take several weeks of constant pumping before the old workings can be sampled and rechecked. Any decision as to mill erection will await the completion of this preliminary work. E. A. Hamilton, Newhouse Building, Salt Lake City, Utah, is vice-president of the company in charge of intermountain operations.

Lessees of the Ruth-Rattan mine at Oatman, Arizona, have made a shipment of 130 tons of ore to the Tom Reed mill.

This is their first shipment since work was resumed several weeks ago, and is reported to assay better than \$20 per ton. Regular shipments are scheduled to follow as most of the preliminary has been completed. The lease is operated by N. R. Dunton, Ross Barclay and Jim Negro.

The Mineral Park Gold Mining Company, which has quietly been developing its property near Willcox, Arizona, for the last year, is making plans to further extend the main tunnel and to place its 50-ton mill on production. F. A. Bennet, vice-president, is directing the work. Wm. H. Hoople of Tiffin, Ohio, president, and eastern associates have made a thorough inspection of the property this month. The survey indicates that the main vein will be cut at a depth of 600 feet, within about 200 feet from the present face of the quarter-mile tunnel.

One hundred tons of molybdenum ore, running 1.5 per cent, are being treated every 24 hours by the Arizona Molybdenum Corporation at Copper Creek, Arizona. The mill, which has been rebuilt and flotation machines installed, is said to be turning out 97 per cent concentrates which are shipped direct to Japan and Europe. Operations are directed by H. Hendrickson, who is employing 100 men in development, mining and milling.

Gold Standard Mines Company, Earl F. Nieman, manager, Box 632, Kingman, Arizona, is making plans for the rebuilding of its milling plant, destroyed by fire on September 13. The mill, precipitation plant, sampler, loading platforms and power house are a complete loss. Fire also spread to the shaft of the Katherine mine and destroyed the gallows frame. A considerable loss will also be experienced by the Public Utilities Corporation with the burning of three large transformers, a 44,000-volt oil circuit breaker and switching equipment. The loss of \$150,000 is partially covered by \$40,000 insurance, and it is expected that between \$50,000 and \$60,000 worth of equipment may be salvaged. Mr. Nieman plans to start rebuilding as soon as the insurance is adjusted, and to have the new plant in operation by the first of the year.

An early increase in activities is scheduled for the Sunrise Gold Mines, located 19 miles west of Wickenburg, Arizona, and being operated by C. W. Mitchell. This property has been consistently shipping about a carload a week of high-grade gold ore for a long time and, in so doing, has accumulated considerable quantities of ore of milling grade averaging about \$15.00 per ton. Plans are now being made for water development preliminary to the construction of a milling plant of from 60 to 70 tons daily capacity. The mine is now opened to 350-foot level and sinking is to be continued. The vein varies from 10 to 20 feet in width with the high-grade ore coming from a pay streak in the hanging wall, although the whole vein consistently shows a good milling average. Twenty-one men are now employed. Arrangements have been made for additional financing of the property for mill building with New York City capital.

United Verde Extension Mining Company, Jerome, Arizona, reports a production of 2,640,900 pounds of copper during August, as compared with 2,574,468

pounds in July and 2,610,580 pounds in August, 1933.

Jack McIver has secured a lease on the United Eastern ground at Oatman, Arizona, and is making plans to have the property on a production basis very shortly. He plans not only the mining of the old pillars, but to open the lower levels of the mine for production. Mr. McIver, it will be remembered, was one of the original owners of the United Eastern and active in the development of the No. 1 shaft when it reached the large vein at the 300 level.

Harry A. Shipman and associates, 2213 Ramsey Tower, Oklahoma City, Oklahoma, have taken over the claims of the Tri-Bullion Smelting and Development Company and will soon start active work. These claims are located in the Stanley Butte mining district of Graham county, Arizona, and were owned by J. Francis Long, 2709 Northwest Twenty-Second Street, Oklahoma City.

Following the installation of flotation equipment and extensive changes in the crushing plant, Montana Mine Operations, Ruby, Arizona, is once more producing, and has made its first shipment of concentrates in almost four years. Grover J. Duff is mine superintendent.

CALIFORNIA

A lease and option on the Grass Valley Extension, consisting of 800 acres adjoining the Empress mine, and extending for one and one-half miles toward the Idaho Maryland, has been taken by the Collins Pacific Company, Glendale A. Collins, president, 1305 Balfour Building, San Francisco, California. It is the intention of the Collins Pacific Company to develop this property in the near future by sinking a 500-foot shaft and other underground work. The vein across the property is well defined, and said to average two to seven feet in width. A 280-foot shaft was sunk on the vein in the early 80's.

The new triple-compartment shaft at the Mattie Gold Mining Company, Grass Valley, California, is nearing the 800-foot level, on its way to a depth of 1,000 feet. Exploration work is in progress on the 730 and 600-foot levels, where a five-foot vein of quartz was encountered last July. M. J. McQuire is mine superintendent.

A second concentrating table is being installed at the 10-stamp mill at the Shanghai mine, Columbia, California, and the mill is operated one shift daily. Drifting in virgin ground north of the shaft on the 200 level is proceeding, and according to Ray V. Donders, superintendent, the shaft and drift are in mill ore five to six feet in width. The new incline shaft has reached a depth of 225 feet, and within the next 50 feet will pass the level of the deepest of the early-day workings which produced over \$150,000. Sinking is to be continued below the old openings to develop one or more new levels on the old ore bodies. The development of the Shanghai is sponsored by Thomas A. Piper of Columbia. Al Ogle is mill superintendent.

Ore shipped by the Silver Queen mine of Mojave, California, during its first year of operation is reported to have given returns amounting to \$36,400. During the month of August a 50-ton car of ore was shipped each day. Under the supervision of M. A. Holmes, manager, and George Holmes, superintendent, nearly 1,000 feet of cutting have been done in shafts and drifts. Now a contract for running a crosscut tunnel, 239 feet, to connect with the 200-foot north drift, has been let to

Harvey Hammond of Mojave. Also, P. L. Drew, former mill superintendent for the Grand Union Mining Company at Chinese Camp, has been employed to work out the metallurgical process suitable for the treatment of the ore in the company's own reduction plant, to be decided upon at a later date. With the installation of a new fan for the air line, lessees Kenneth Holmes and George Nicholson are sinking a winze north of the 200-foot north drift, using an air tugger for the work. A seven-inch air line was installed. The opening of a 40-foot ore body, running \$35 a ton, was recently reported by the Silver Queen.

The **Bullion Gold and Silver Mining Company**, Grass Valley, California, A. E. Jutila, superintendent, has leased the mill of the Hoge Development Company for two months, in order to make test runs for the flotation method. Four men will be employed to operate the mill, in addition to the 30 employed at the mine. Hal W. Lewers will be in charge of the ore testing.

Development has been resumed at the **Densmore** mine at Columbia, California, following two months of rehabilitation work which included the cleaning out and retimbering of the main 800-foot tunnel. According to B. A. Ogden, manager and veteran mine operator, the tunnel has already opened a shoot of ore 200 feet long and four to five feet wide. The tunnel will be extended to reach another ore body a short distance ahead.

Three shifts of men are at work driving on the new 2,500-foot level of the **Central Eureka** mine at Sutter Creek, California, in order to speed development of the mine. It is expected that the ore shoot will be cut at a distance of approximately 280 feet from the shaft which was recently deepened. This drift is more than half completed. During the week ended September 15 the Central Eureka mill, operating 30 stamps, treated 673 tons of ore. James Spiers is general manager, employing approximately 150 men.

The **Davenport** mine is being developed by Russell J. and Edwin W. Wilson of Garden Valley, California. They report that they have been successful in developing a considerable tonnage of low grade ore, and are at the present time considering the erection of a mill. Wilson brothers are also operating the **Black Oak** mine, reopened about a year ago. Since December 21 operations have been continuous, with values at times running up to \$5,000 per ton.

The mill at the **Black Bear** mine, Grass Valley, California, is being put in working condition to treat ore mined by lessees. The **Black Bear**, in the Rough and Ready district, has not been active for several months, but will soon go on the list of producers, following the letting of underground leases. The mine is owned by Cooley Butler, 745 Rowan Building, Los Angeles.

Seventy-five men are employed at the **Golden Center** mine at Grass Valley, California, working two shifts underground in drifting operations. The mill, a 20-stamp plant, is running three shifts daily. L. S. Wincapaw is superintendent.

The **Lukens** custom mill, near Auburn, California, has been taken over by Robert M. Burnette who is operating under the name of **Ophir Milling Company**. To date the mill has been running one shift daily, but Mr. Burnette expects to soon go on a three-shift basis.

The **Redding Custom Ore Mill**, the only custom plant in that section of Northern

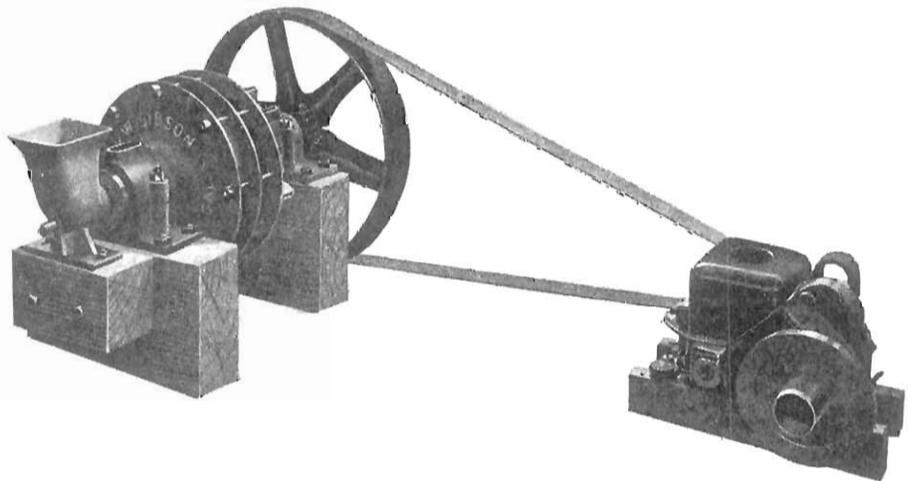
California, has been placed in operation after several weeks of preparatory work. The plant consists of a 100-ton crusher and complete flotation equipment, all electrically operated. According to Oscar Fry, manager, Box 227, Redding, California, the mill is prepared to handle gold, silver and lead ores. Three small mines in the district have contracted with Fry for treatment of their ores. These include: The **Big Dyke**, near Igo, operated by Patrick McFadden and Frank Hopkins; **Yankoe John** mine, operated by Ed Hill; and the **Black Diamond**, owned by G. E. Oakes and Oscar Fry.

The **Gold Ball Mining Company**, Sawyers Bar, California, is operating with a crew of 12 men, milling about 25 tons of ore daily. Both amalgamation and flotation process are employed. Power is pro-

vided by a 100-horsepower Diesel. F. A. Gowing is manager and engineer in charge.

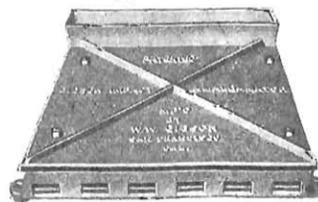
The **German Bar Mines, Inc.**, North Bloomfield, California, has placed an order for a ball mill, three-drill compressor, and lumber for mill building. The mill will have a daily capacity of about 35 tons and will be electrically operated. The German Bar property was reopened in the fall of 1933 by a group headed by Col. Charles R. Blood, Forum Building, Sacramento, and since that time preliminary work has been conducted. Electric power and water lines were taken in, permanent buildings erected, and three tunnels advanced over 600 feet on the main vein. An incline from the lower tunnel has been sunk on the vein for 60 feet and is said to be producing free milling ore running \$100 a ton.

Announcing The Gibson Pocket Hunter



Never before has such value been offered to the mining public. The **Pocket Hunter** will crush two-inch material, grind and amalgamate in one pass. Built entirely of heat-treated chrome steel and guaranteed unbreakable. Will be taken back in exchange for 10-ton mill any time inside of one year. Heaviest part 35 pounds. Capacity 2 tons to 30 mesh. Price \$185.00. Price with belting and 1½ H.P. engine \$250.00.

The Gibson Impact Amalgamator



Built in sizes from 25 tons to 2000 tons capacity

Repeat orders coming in from all parts of the world are positive proof of the efficiency of the **Gibson Impact Amalgamator** in saving the fine gold, amalgam and mercury that escape from the other amalgamating devices.

Write for catalogue describing Gibson Counter Balanced Rod and Ball Mills, Prospectors' Friend Mills, Flotation Cells, Amalgamators, Concentrators, Rack Breakers, Ore Feeders, Mercury Feeders, Oil Feeders, Retorts, etc.

W. W. GIBSON

112 Market Street

San Francisco, California

The electric power line to the **Oriental Gold Star Mines, Inc.**, Alleghany, California, is practically completed, and three large transformers have been installed. Installation of a large air compressor, driven by a 100-horsepower motor, has made possible more rapid development of the main workings where milling ore has been uncovered. Test drilling of a large deposit in the lower levels is in progress. W. A. Hooten is mine superintendent, directing the work.

Pumping and underground operations are being conducted at the Phoenix mine of the **Phoenix Syndicate**, Grass Valley, California, pending the completion of plans for the construction of a new 2,000-foot capacity headframe and hoist. T. S. Davey, mine superintendent, has just returned to the mine from San Francisco where backers are making final arrangements for the new construction. The new headframe will be placed near the corner line of the Riley-Hurley properties, where the upraise from the 400 level was cut through to the surface. The first goal of the management in this new work will be to attain the 1,000 level. Milling equipment will be secondary to that achievement. Robert Hawxhurst, Jr., Crocker First National Bank Building, San Francisco, is consulting engineer.

At the **Spring Hill Gold Mines, Inc.**, under development by H. R. Plate, Bret Harte Inn, Grass Valley, California, the Martin shaft at the Golden Gate has been tapped and dewatered at its extreme depth of 400 feet through the 500-foot east crosscut of the Spring Hill. Similar tactics are being pursued in connection with the 1,000-foot main Golden Gate shaft. At the end of the 900-foot Spring Hill eastern crosscut, diamond drillers are searching for the Golden Gate shaft through the footwall. Immediately after the finding of the water, the Golden Gate shaft will be unwatered through the Spring Hill, and the lower levels of the Golden Gate explored.

The **B. C. M. Mining Syndicate, Inc.**, operating the Ramsden mine at Mariposa, California, reports that the U. S. mint returns from the initial mill run of 54 tons of ore amounted to \$2640, exclusive of concentrates valued at \$373 per ton awaiting shipment to the smelters. E. G. Barrett, general manager, reports that the double compartment shaft has been sunk 115 feet, with some lateral work at that depth exposing milling grade of ore. Main offices of the syndicate are at 539 Roosevelt Building, Los Angeles.

Six men have been employed by the **Relief Hill Mining Company**, North Bloomfield, California, preparing the property for hydraulicking with the arrival of the wet season. Two monitors were used last year and a satisfactory clean-up reported. According to C. E. Clark, superintendent, it will be necessary to build new flumes for this season's work.

A depth of 100 feet has been reached with the new shaft being sunk at the **Mariposa Commercial and Mining Company's** property, Mariposa, California. The shaft is about 200 feet east of the old Mariposa mine shaft which is credited with a production of more than a million dollars. A 600-foot compressor has been installed to expedite development work. The Mariposa was taken over under lease early this summer by George Williams of San Francisco and associates. Claud Beagle is in charge of the work at the mine, employing a crew of 10 men which is expected to be increased shortly.

A five-stamp mill has been installed at the French mine, two miles above Bagby, California, under lease to the **Pacific Mines Company**. Ten men, all members of a co-operative organization, are employed in the work at the mine, under the management of Charles Sommers. The ore being mined runs about \$20 per ton. Pacific Mines Corporation, also operating the Josephine and Pine Tree mines, is headed by A. V. Udell, president and general manager, 1022 Crocker Building, San Francisco.

A 215-foot shaft has been sunk and more than 200 feet of drifts run at the Oyley mine, operated by Phillips B. Dolman, consulting engineering and geologist, Bear Valley, Mariposa county, California. A five-foot vein is said to have been cut which averages \$3 per ton, with some sections running higher grade.

The **Madrona dredge** and nine miles of dredging ground along the Trinity River, near Junction City, California, have been acquired by Harvey L. Sorensen, manager of United Groceries, Inc., 200 Mission St., San Francisco. A part of this property was formerly dredged by **Madrona Dredging Company**. Drilling operations have been started and will continue for four months. At an early date the new operators will receive bids for the reconstruction of the dredge at present on the property.

At its **Amador Star unit, West American Consolidated Gold Mines, Inc.**, Plymouth, California, has opened a four and one-half foot ledge of ore, said to assay \$56 a ton. The strike was made on the 500-level, north of the main shaft where development work is underway. The main shaft is being sunk to the 1,000 level. According to Arthur Hamburger, president, the present 75-ton flotation mill is planned to be enlarged to 300 tons capacity within the next 90 days.

The **Apex Mining Company, Confidence, California**, is making plans for the sinking of the main shaft at its Geraldine mine from the 150-foot to the 300-foot level, work to start within the next 30 days. At that time the mining crew will be increased from two to three shifts. In addition to shaft sinking and drifting on the 150 level, mill tests are to be made in the one-stamp pilot mill now on the property, and a crosscut driven toward the Plow Boy vein, a parallel ledge 100 feet from the main lode worked to the water level in early days. The Apex company is headed by Charles B. Smith, 1244 University Avenue, San Diego, California.

The **Poverty Hill hydraulic mine**, near La Porte, California, from which about \$2,000,000 in gold was taken before the anti-debris law was passed in the 1880's, is expected to be operated soon. The way way for this is said to have been cleared by a decision in the Sierra county superior court in favor of R. H. Kingdon, mining man of Oroville, and holder of an interest in the mine. Kingdon had brought suit to have Max A. Pokorney evicted from the property on the ground he had defaulted in an option agreement on the mine.

Yuba Consolidated Gold Fields is moving machinery from an old gold dredge at Fairplay, Colorado, and will use the reclaimed parts in construction of a dredge at Biggs, Butte county, California. George Hampshire, one of the head dredger men, and Tom Thompson, diver for the company, have charge of the removal. Parts from the old No. 4 dredger of the Hamonton fleet will also be sent to Biggs,

where the pit has already been prepared for the proposed boat. John R. Bubb will have charge of the construction. Main offices for Yuba Consolidated are located at 351 California Street, San Francisco.

New development plans have been put into effect by the **Beebe Gold Mining Company**, Georgetown, California, under the direction of C. N. Schuette, acting superintendent. The development work is being carried on in the Beebe from the 250-foot winze on the Eureka vein and a crosscut will be run to the Beebe shaft. When this work is completed the Beebe shaft will be deepened from the 250-foot to the 500-foot level. Joe Kiviaho, foreman, is directing the actual work. At the Alpine mine, Georgetown, also owned by the Beebe company, development work has started on the 400 level. Fifty-eight men are employed on the combined properties. Byron E. Rowe, who has been superintendent of the Beebe, has been named general superintendent for the Pacific Mining Company, which is the holding company for all of the California operations of the Bradleys and which includes the Beebe property.

The **Natomas Company** has declared the regular quarterly dividend of 15 cents a share, payable October 1. In March of this year stockholders approved a ten-for-one split-up of stock, so the current 15-cent quarter dividend is equivalent to a \$6 annual basis on the old stock, and compares with the \$5 paid annually before the change in stock set-up.

The **Mammoth Gold Dredging and Mining Company** is expecting to start development work on the Narrows on the Yuba River at Smartsville, California, during this month. Machinery and mining equipment are being received on the property. B. M. Sites is in charge of the work. Officers of the company are: P. J. Williams, Joseph Brass and E. F. Smith.

A 25-ton cyanide plant for working tailings of the old **Confidence** mine at Confidence, California, will be completed this month by Z. Melcon and S. V. Melcon, formerly of Los Angeles. The tailings will be run through a line of sluices and re-ground in a ball mill before cyanidation. Quicksilver and amalgam in the tailings will be recovered in a vibrating amalgamator of their own construction and placed ahead of the cyanide equipment.

Twenty-six men are now employed at the **Springfield gravel mine**, near Columbia, California, and satisfactory production results are reported. This operation has been growing gradually since reopened several months ago under the management of Joseph S. Cademartori. Operations are through a 200-foot shaft in the northern part of the property. Better ventilation for the workings has just been provided by means of three or four holes drilled into the mine openings from the surface with a Keystone drill.

The **California Standard Gold Mines Corporation**, Jamestown, California, is planning for the erection of a 100-ton flotation mill, according to A. F. Muter, consulting engineer, 200 Lankershim Building, Los Angeles. Muter is also president of the company. He recently visited the mine in company with Kenneth B. Little, vice-president, 208 South La Salle Street, Chicago, vice-president.

Three carloads of ore have been shipped to the smelter from the **Victory mine** six miles east of Colfax, California, since the mine was taken over by Nevada interests. The first carload, of 62 tons, netted \$1616. Returns from the other shipments have not been received. Former opera-

tors are said to have worked the mine to the bottom of the oxidized zone and left, in the bottom of the working tunnel, the apex of a shoot of sulphide ore from which these shipments have been made. Under the direction of J. E. Johnson, superintendent, the new operators installed a compressor, pump, hoist and miscellaneous equipment and commenced the sinking of a winze on the ore. The vein has gradually increased in size until there is now a width of four feet, two of which are reported to assay \$58 per ton. Interested in the project are H. H. Loufek, 233 East Plaza Street, Reno, Nevada; Harry E. Springer, who is directing the development program, and associates.

Large scale operations are said to be in prospect for the Gladstone mine at French Gulch, California, as the result of negotiations being conducted by George H. Proctor, New York financier, and associates. These same interests, organized as the Abacada Mining Corporation, recently acquired the American mine at French Gulch and have constructed and placed in operation a 60-ton flotation mill, and launched an extensive development program. Construction of a special telephone line, to connect the American and Gladstone, has been ordered. N. D. Bertam is general superintendent for the Abacada corporation.

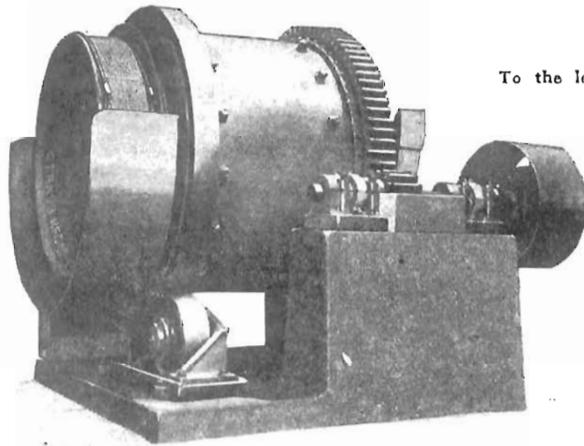
Mokelumne Mines, Ltd., has acquired the Buffalo mine at Mokelumne Hill, California, and is making preparations to de-water and retimber the old Landers shaft. This is a 600-acre lava-capped channel property which has been idle for 30 years. Rehabilitation of the mine has been started with Steve Hughes in charge.

The Amity Mining Company, Box 118, Mokelumne Hill, California, has retimbered the old raise that had caved, closing the footwall in the No. 2 tunnel property, and is now laying rails and timbering at the 600 foot mark. Frederick Reel, superintendent, reports that he has abandoned all thought of opening up the old workings and will run a new incline tapping the channel 150 feet south of the previous workings. At its second property 50 tons of ore are being produced daily, according to report.

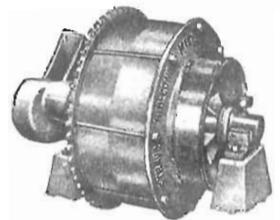
A six-cell flotation plant has been installed at the Easy Bird mine, operated by the Lucky Joe Gold Mining Company, six miles north of Jackson, California. Thirty-five men are employed, with the mill running three shifts and the mine one shift daily. Among recently installed equipment is a centrifugal pump of 175 gallons per minute capacity. A. C. Barke, Box 292, Jackson, is engineer in charge, while Otto Brown is directing flotation operations.

Ore development on the 400 and 500 levels of the Columbus mine at Tuolumne, California, have been so satisfactory that the Columbus Gold Mining Company is laying plans for the installation of a 100-ton milling plant early next year to replace the present 10-stamp mill, which is running night and day. The mine is operated under lease and option from the Sylvania Mines, Inc. W. A. Hayes is vice-president and general manager of the company, with J. B. Sivori, Box 544, Tuolumne, acting as mine superintendent. Head office for the company is located in the Crocker First National Bank Building, San Francisco.

Washing of gold bearing materials by the Trinity Goldbar Mining Company working the Scott gravel channel in Yuba county, California, is awaiting only the coming of rains. The Trinity holdings



To the left: A 25-35-ton Rib-cone Ball Mill with screen classifier. Easily converted in a few minutes to screenless type.



Below: A 2-4-ton Rib-cone Ball Mill. Portable and very efficient. \$220. Capacity increased to 4-8 tons by adding extra parts at \$155.

BOTH are Rib-cone Ball Mills

No matter what your capacity requirements . . . YOU may enjoy their speed, efficiency, and economy.

From 2-ton capacity up to 250 tons—Every Rib-cone Ball Mill saves MORE gold at the LOWEST milling cost. All-steel, they are lighter in weight than cast iron, and yet much stronger and more durable. Use less power, less water, and less space. Rapid discharge prevents sliming and permits inside amalgamation on most ores. Whenever efficient milling is desired, depend on Rib-cone—no matter what your capacity requirement.

Straub efficiency and economy is also yours in crushers, Overstrom Universal concentrators, flotation and cyanide machines, water wheels, plates, steel tank and pipe lines. Send for free Bulletin No. 115, giving details and prices.

Ore Tests OUR SERVICE TO MINES IS COMPLETE Assays
STRAUB MFG. CO.
 505 Chestnut St. Oakland, Calif.

LEACH BROS. BALL MFG. COMPANY

Manufacturers of

HIGH CARBON MANGANESE FORGED STEEL GRINDING BALLS

All sizes from 7/8" to 6"

1823 East Washington Boulevard,
 Los Angeles, California

Telephone—Prospect 3712

consists of a 50 per cent interest in the 300 acres of ground, which are fully equipped for production. The gold content of gravel already worked is reported to have been \$2.50 per cubic yard. O. B. Lefurgey, 381 Bush Street, San Francisco, California, is general manager.

Hoisting apparatus and sluice boxes have been installed and gold recovery started by the **Grizzly Creek Mining Company**, four miles below Walkermine, California, Clyde Smith, superintendent. A 750-foot drain tunnel has been completed, and considerable progress made in the cross tunnel. This tunnel when completed will not exceed 100 feet in length, extending from the main shaft to the outer edge of the gravel deposit. Workings are entering the main channel and some fairly heavy gold is being taken out.

The old Tioga mine in Mono county, California, is being worked by the **Tioga Mining Company**, a New York company of which Hulbert A. Yerkes is president. The property, located in 1878, was being developed by crosscut tunnel when closed down during the panic of 1884. Owned by Antonette S. Swift, an heir to the original owners who were also founders of the Swift Packing Company, the property has been idle for 49 years. Two shifts are extending an 1,800-foot tunnel to crosscut the ledge at a point which will give 1,000 to 1,200 feet of backs. This tunnel was abandoned when within 200 feet of the objective. W. R. Palmer is general manager at the mine, which is reached through the post office at Lee Vining, California, the supply point.

The **Pennsylvania Mining and Investment Company** has let the contract for deepening of the old 150-foot shaft at the Pennsylvania mine, Browns Valley California. The necessary surface equipment has been provided. Albert Burch of Medford, Oregon, is vice-president and engineer for the company, with Herbert W. Whiting, mine superintendent.

The **Lucky Thirteen Mining Company**, Downieville, California, is engaged in the development of two properties in that section, one a gravel and the other a quartz proposition. During recent weeks a nine-room headquarters building and large bunk house were erected, two compressors installed and active development started. Power is provided by Pacific Gas and Electric Co. The Lucky Thirteen, formerly owned by Dan Coughlin of Nevada City, has been dormant for nearly 30 years, although worked by former operators to a tunnel depth of about 1,500 feet. The quartz property, the Wild Yankee, is said to be showing good milling values. The present operators and owners state that they expect to be in a position to justify installation of mill and auxiliary equipment before the first of the year. B. F. McNaught is mine superintendent, employing 15 men in the current work.

About 25 men are employed at the **Telegraph Mine**, Downieville, California, under the direction of John M. Sheedy. A 150-horsepower Diesel engine and fuel oil storage tanks are being installed and housing facilities prepared in anticipation of winter conditions.

COLORADO

Progress in the tunnel work at the **Doctor Gold and Silver Syndicate** is reported, the present aim of the company being a point below the Pink No. 1 shaft. A. J. Ahlberg of Georgetown is in charge of the work. H. H. Elder of Denver is secretary-treasurer for the company. The

property consists of seven claims, tunnel and mill site, and is above Clear Creek between Dumont and Empire.

A small but rich shipment of high-grade ore from the **Jerry Johnson Gold, Inc.**, is said to have returned 145 ounces in gold recently. The management of the Jerry Johnson Gold is expected to announce its fourth dividend soon. Al Osberg of Cripple Creek is president of the company.

The **Polar Star** group of mines on New York Mountain, near Eagle, Colorado, is reported to be under bond and lease to Paul Hahnwald, who is said to have gone to Denver to complete financial arrangements. Included in the same deal are a number of other claims, but the Polar Star will be the first property to be cleaned out and put into operation. Tentative plans for the future are believed to include the construction of a mill. George Grant of Eagle has been looking after the property, which has been idle since 1924. The old mill on the ground is out of date.

Operations will begin some time next spring at the **Daisy** lode up Buckskin Gulch near the Red Lion claim, out of Alma, Colorado, according to Ben Solomon, 1641 Curtis, Denver, who controls the property. A large crew of men will be employed clearing the workings and erecting buildings.

Claims Nos. 1, 2, 3, 4, and 5 of the **Red Star** group have been leased to the **War Dance Mines, Inc.**, of Idaho Springs, Colorado, it is said. The claims are in La Plata Canyon near Durango. It is understood that development will start soon, and will follow the general plan of work in use at the other claims of the Red Star group, that of crosscutting the claims in an endeavor to find an extension of some of the famous veins in the district. Thomas G. McGrath of Idaho Springs, is president of the War Dance company.

The main operating shaft being sunk on the **Dutch Park** group of claims is now down 65 feet. The new shaft house is completed and a gasoline driven compressor installed, temporarily, officials planning for a larger compressor plant capable of running six or more drills. The property is located out from Boulder, Colorado, and is being operated by C. M. Coleman and associates who are leasing the property from William T. Todd of Nederland. At present Coleman and associates are in Chicago and the mine closed down. It is the intention of the officials to build a ten-stamp mill to treat their own ore.

The **United States Vanadium Corporation** is employing a small crew of men on work preliminary to construction of a new plant near Paradox, Colorado. Blair Burwell, general superintendent, says that the work of actual construction is being considered leisurely and will depend largely on future market conditions. Burwell is located at 1105 North Street, Grand Junction, Colorado.

A new development campaign and the installation of additional machinery is expected to be under way within the next two months at the **Bay City Gold Mines, Inc.**, if company plans are carried through. Ore is reported to be widening and values increasing in the lower development tunnel, and it is believed that this tunnel will intersect the Bay City vein at depth. This vein is one of the few in the district that has produced crystal gold. Lafe Cason and his son Vernon are operating the property for George Gilmore and Charles Starr, the owners. The Denver Brokerage Company, R. P. Adams, president, is said

to be financing the work and handling the stock issue.

A 30-ton flotation mill at the old **Monarch** property in Burnt Timber Gulch, La Plata county, Colorado, will be put into operation at once. This property, which includes the Capitan, Chandler, Laffence, Platora, Tip Top, Hidden Treasure, Sunshine, and Eclipse lode claims, is being operated by the **La Plata Gold Placers Company** of Durango. The group was reported to have been purchased by this organization recently for a consideration of \$100,000 from the **Monarch Mining Company**. An exploration and transportation tunnel is being driven to cut a strong fissure vein 300 feet from the portal. Ten men are employed under the direction of Irvin Walker of Durango, who is manager. This work is being carried on in addition to the development work on the Kaibab property nearby which is controlled by the same company.

Six new tables will be added to increase the capacity of the flotation plant at the **Golden Cycle** mill at Colorado Springs, Colorado. Other changes in the flotation plant are also being made, and are expected to increase the capacity of the mill about 200 tons per day. The Golden Cycle power plant, under construction for the past six months, is completed and while some adjustments may be necessary, it is expected to be running steadily before October first. The Golden Cycle treated better than 40,000 tons of ore in August. L. G. Carlton of Colorado Springs is president and general manager.

The **Humphreys Gold Corporation** of Denver, Colorado, which has been testing placer ground on Clear Creek in Grant county, west of Baker, has stopped work for the present. This company recently tested land on Burnt River and Pine Creek southwest of Baker, including the Trail Creek placers. Payments are said to have been made on the purchase price. Company offices are in the First National Bank Building of Denver, with A. E. and I. B. Humphreys in charge.

The **Gold Dust** is the name given by Charles L. Fulton, 233 Fourteenth Street, Denver, to the old prospect mine which he located in the San Juan district. He plans to clean out the old shaft, retimber, and explore the vein at depth. The workings are those of the former owner, an old prospector named Spencer, who was apparently unaware of the possibilities of the property. Fulton also reports rich ore in dumps. S. B. Collins has been engaged to survey the property.

The **War Eagle Gold Mines Company** with property in the Perigo district of north Gilpin county, Colorado, is planning to retimber the shaft on the Ezra White claim and to extend the laterals in proven ore zones. The shaft is down about 250 feet and is altogether in ore. The main working tunnel of this claim is in 600 feet and will be driven to intersect the workings of the shaft. A crosscut from the tunnel will also be driven to cut two known veins on the ground, the Benton and the Detroit lodes. It is believed that the Perigo vein is extended through the War Eagle claims, but where it is located cannot be determined until after more exploratory work is done. John Hgaulas, 1646 York Street, Denver, is connected with the company, whose headquarters are in the Patterson Building, Denver.

The **Southern Colorado Gold Mining, Milling & Development Company**, is said to have leased 100 acres adjoining the Basick mine on Tyndall Mountain in Custer county, Colorado. An ore body running

MINING LEADERS express criticism of

The New Deal In Relation To Mining Industry

Delegates to the convention of the Western Division, American Mining Congress, in San Francisco, declared with an almost unanimous voice against certain courses of American economic thought and policy, and for a return to fundamental principles of the American business system. Animated discussion of the National Administration, especially concerning labor, revealed a clearly defined sentiment against many of the practices.

James F. Callbreath, secretary of the American Mining Congress, declared, "We are not fighting the administration, we are just fighting acts retarding recovery and proposals which are antagonistic to the mining industry."

One of the most outspoken critics of the New Deal was Frank H. Probert, dean of the College of Mines, University of California. In regard to the widely publicized section 7-A of the National Industrial Recovery Act, he said, "Labor rides in the saddle today; it has a tight grip on the reins of government. With the burdens imposed upon capital, the attitude of labor should be cooperative and adaptive. Wages should represent money earned, not money demanded or legislated." In later utterances Dean Probert somewhat softened his attitude toward labor with a plea to assembled employers to make an honest effort to understand the problems of workmen. He, however, was adamant in his criticism of some of the policies of the national administration.

"The mining industry had corrected the principal labor abuses long before the NRA went into effect. The industry is now faced with serious and distressing problems, and is menaced by insidious influences.

"At no time in the history of our country have our government policies been so unsound, our principles so distorted, or our practices so flagrantly questionable as to invite destruction.

"We sense a growing tendency to challenge the right of men—particularly those gifted with knowledge and initiative—to direct enterprise. There is disrespect for authority; the masses must rule."

In this connection, the educator pointed out:

"The spectre of State control and Federal competition has raised its sinister head, to the consternation of legitimate, long established operations.

"Interference of this kind strikes at the vitals of American industry. It saps its power to meet its own problems. Yet we are compelled to pay for the torture out of our pockets by taxes."

The speaker forecast a decline in the demand for common metals, pointing out half of virgin base metals produced is consumed in construction industries, which in part explains the subnormal demand for copper, lead and zinc.

He said: "The New Deal is dangerous and unsound and the United States is drifting toward dictatorship." In a barbed retort regarding "brain trusters" he said that there are many misgivings as to the competency and experience of the bureaucrats, particularly those attracted from academic cloisters by the limelight of public office.

The Western Division, American Mining Congress, at its convention in San Francisco, expressed itself unequivocally upon such matters as the balancing of the national budget, the necessity of a fixed and understood monetary objective, use of taxation for revenue only, freedom of industry from government competition, and an adjustment of the policies of the National Labor Board.

"Washington has become a research laboratory wherein all manner of hypotheses are advanced, theories projected and experiments planned. The technique is new; the results uncertain," he said.

"Some day, someone must pay the piper," he added, after citing the size of the national debt.

To gold-mining men Dean Probert issued a particular warning.

"We must not let enthusiasm run riot. Cost of supplies and labor are going up, money spent in exploration does not bring immediate return, currency has been devalued, profits are not what they appear to be."

W. Mont Ferry, vice-president, Silver King Coalition Mines Company, speaking on "Rehabilitation of Nonferrous Metals," advocated that the mining industry unite for unified action. He said:

"The factors which cramp and threaten the industry are an abnormally low market, a too large surplus of metals, increasing costs and restrictive regulations. These factors must be analyzed and effort made to correct present conditions if the industry is to contribute its potential influence toward national economic recovery."

The mining industry, he continued, is second only to agriculture in economic importance, yet it receives from the government the treatment accorded "the proverbial stepchild." He advocated more federal benefits.

On the subject of inflation controlled by a metallic base, he said "perhaps more important than anything else that could be done to revive business would be the development of the use of silver as a basic money so that the entire commodity price level be raised and stabilized at a point where productive endeavor is again profitable."

United States Senator Key Pittman of Nevada outlined the administration of the silver bill, of which he was a staunch backer, and told what might be expected from it so far as the future of silver mining is concerned. Senator Pittman

praised the "cautious" administration of the silver act of 1934, and forecast the price of silver will reach \$1.29 per ounce "some time within two years."

A. W. Dickinson, chief legislative representative of the American Mining Congress, feels that the shift in the NRA to a tripartite form of administration, based on the legislative, judicial and executive form of the national government, indicates more than any other factor the Administration's design for permanence of the NRA.

"What is likely, think many well-informed observers, is that the price-fixing will be dropped, along with many other restrictive NRA code practices. Industry itself has found NRA helpful in many instances. But the labor angle will have to be cleared up."

Contending that the National Labor Relations Board, in its decisions so far, has interpreted the famous section 7a in a manner that "has sent industry up in arms" and in one instance resulted in open defiance against a ruling, Dickinson opined that the Administration realizes that "clarification of the labor situation is needed."

However, the administration was not without its supporters. The attitude of the gold and silver producers was one of leniency, with the principal criticism coming from the copper, lead and zinc interests.

The New Deal also found a defender in William B. Daly, manager of mines, Anaconda Copper Company at Butte, Montana, who said he could not speak too favorably of the assistance and understanding of the two government representatives sent to assist in settlement of the Anaconda strike, which lasted from May to the middle of September.

"And the terms by which the strike finally was settled are entirely satisfactory to Anaconda," he said, "although I find many of the delegates here expressing keen displeasure at our complete capitulation to the demand of labor. We, with the assistance of the government men, who at all times were very willing to cooperate with both sides in all mediation, came to terms with the unions to our own satisfaction. We have contracts with workers for a long period and we anticipate many years of amiable and cooperative and constructive association with our employes in Montana."

Robert E. Tally, president of United Verde Copper Company, said he thought the only practical solution to the serious permanent problem of the mineral industry of this country was "permanent regulation of production to demand."

"The people as a whole look to President Roosevelt and to his Administration," he said, "as well as to the leaders in finance and industry, to develop a simple, equitable, and effective recovery plan. During the present crisis there has been no really constructive or sound leadership on the part of business and finance. Political leadership in itself cannot succeed, and recovery demands the most wholehearted and unselfish cooperation of the most broad-minded leaders in business, finance and government."

lated. Uncertainty of governmental policies retard the long term investments necessary to recovery in the capital goods industry. Until that uncertainty is removed, the mining industry must stand by, a sufferer, because of policies not clearly defined. It is imperative that doubt shall be removed, and definite policies be formulated and announced. Until that has been done, no adequate market for the products of our mines can be expected.

"The labor policy of the government, beginning with the enactment of 7A of the NIRA, has not only added to the cost of production of metals, but likewise has added to the cost of production of machinery and supplies and has created a feeling of uncertainty which militates against future commitments and undertakings.

"We believe that labor is entitled to the highest wage this industry can pay. But we believe that the establishment of wage levels by legislation or fiat governmental authority is contrary to sound economic principle and is opposed to economic recovery. Wages are paid from income and income is not created by law, but only through production of goods.

"Uncertainty as to the future monetary policy of our government has contributed to delay in full recovery. This conference feels that a definite announcement of our national monetary policy should be made and that in the formulation of such policy due consideration should be given to the restoration, establishment and maintenance of silver as primary money in accordance with the authority given the president under existing legislation."

The platform of the convention follows:

"First: We adhere to and believe in the traditional form of constitutional representative government established by the founders of this republic, and we demand that the next Congress reassert and re-assume its traditional function as a coordinate branch of the government.

"Second: We demand that the budget be balanced without delay, and that the government relief be placed on a permanent basis of law, and that it be removed from partisan politics.

"Third: We demand stabilization of monetary policies and definite assurance that taxation shall be used only as a means of securing necessary revenue and not as a means of distribution of wealth, and that there shall be no inflation of the currency.

"Fourth: We demand that government shall retire from business in competition with its citizens and that it shall refrain from interference in the conduct of business except insofar as may be necessary to protect the rights of all citizens.

"Fifth: We demand that labor be given the right to representation in collective bargaining by those of its own selection; that the plan of proportionate representation of labor in any industry shall be recognized and that the right of the individual, not a member of a labor organization, to conduct bargaining by means of his own choice, shall not be restricted or abridged. We condemn any policy which shall constitute any labor organization, national or international, the sole representative of all those employed within an industry. We recognize the right of men employed in the mining industry to join or refuse to join any labor organization, and we condemn coercion by employers, labor officials or any other agency which shall interfere or limit such right.

(Continued on page 28)

ERNEST F. CARPENTIER* discusses

Power Elevation In Placer Mining

Power elevation is one of the innovations in placer mining which is making possible the recovery of gold from many acres of ground left by the old timers because water could not be had to work the gravel.

The current interest in placer mining, stimulated by the high price for newly mined gold, has brought forth many schemes and new methods for use in recovery of the metal. Many acres of placer ground were left by the old timers because they had no means of securing the water necessary for recovery operations. Today, power elevation is providing this means.

Ground which in a creek bottom can be fitted up into sluice boxes only by elevation, if one wishes to move the yardage. To reach bedrock, when the ground is in a creek bottom, operations must be below the creek's water level. As water cannot be had via ditches, artificial power must be used for driving head and elevator lift. Electric power is the best of this kind of work.

To operate successfully under an ordinary set-up, there must be enough water in the creek to feed a 10-inch single-stage centrifugal pump at the rate of 3,300 gallons a minute. In other words, about 500 inches of water would be ample. A 100-horsepower motor is sufficient for this pump.

Experienced operators claim that one pump and motor of the size mentioned is about right for a good driving head of water through a two-inch nozzle and the lift head through a three and one-inch nozzle for the elevator. Also by using one pump a feeder line can be brought from the pump house and then a Y can be put in, thus feeding the driver and the lifter.

Electric power may be estimated at the usual rate of one cent per horsepower hour. For example: a 100-horsepower motor running for one hour would figure \$1. Therefore, there is \$1 an hour to pay for every hour the motor is run. Another feature of this installation to bear in mind is that a 100-horsepower synchronous motor is the most efficient because it improves the efficiency of the power system, and is often the means of getting a cheaper rate.

The rate of horsepower mentioned may be estimated up or down the scale: a 25-horsepower motor would cost 25 cents per hours, etc.

The usual cost of the power company's sub-station set-up is about \$2,000. This covers complete cost of material, labor, etc. The motors, pumps, pipes for water, and other mining equipment can be purchased by the mine operators. Another thousand dollars would be ample for equipment with which to start operations.

*Pioneerville, Idaho

However, it must be borne in mind that the cost of power and equipment as stated is approximately estimated.

Operating expenses for a month will run something like the following.

Wages, four men	\$600
Electricity (20 hours per day) 600	
Miscellaneous Expenses	50
Total	\$1,250

Using 15 cents a yard as a basis of gold value, it is found that 275 yards of gravel must be moved by the two shifts, each working day of 20 hours, in order to meet the monthly operating expenses, which run approximately \$1,250. It is safe to say that, for profitable operation with a set-up of this kind, ground should go at least 25 cents per yard.

In elevation, the yardage put through the elevator decides the profit or loss. A two-inch nozzle will drive plenty of muck to the elevator. Experienced miners state that an 11-inch elevator pipe is correct and will take the muck.

A 10 or 11-inch pipe may be used for the feeder pipe from the pump house, and then cut down to 7 inch at the Y for other distribution.

NATOMAS COMPANY INCREASES GOLD DREDGING CAPACITY

The net profit for August, reported by Natomas Company, amounted to \$82,593 after depreciation and provision for income taxes. The July profit was \$73,300 and the June profit \$82,945, similarly figured. The August profit brought the total for the first eight months of 1934 to \$610,947, or equivalent to 61 cents a share. The stock is on a 60-cent a share yearly dividend basis.

Natomas operates six dredges in Sacramento county, California, and recently acquired a substantial interest in a property in Merced county where a dredge is to be constructed. In addition the company has under construction a new and larger dredge to operate in Sacramento county, which is expected to increase dredging capacity 4,000,000 yards yearly. In 1933 the company handled about 18,000,000 yards of gold-bearing gravel.

Natomas is also reported to have near completion a transaction for purchase of the Cole-Kirchen and Donald placer mines, near Manhattan, Nevada.

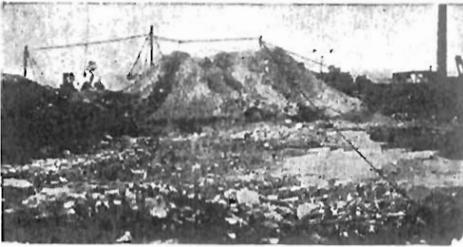
Whereas most mining enterprises have found operating expenses rising, in line with the general upward trend of labor and material costs, Natomas' costs have continued at relatively low levels. Dredging operations require a minimum of manpower, a principal expense being electric power, the cost of which may even be reduced through lower rates or decreased consumption, resulting from mechanical improvements.

During recent years, the company's costs per yard of earth handled have steadily declined, the average of 4.37 cents a yard for 1933 being 1.24 cents under the 1930 average of 5.61 cents. This factor, in connection with the increased price paid for gold, makes it possible to dredge lands which could not be worked profitably at previous levels of costs and return.

R. G. Smith of Natoma, California, is manager of the gold dredging department.

10-15-34

CRESCENT SCRAPER



Here's the world's most economical excavator and conveyor. It will dig any material that will yield to a plow and it will haul the material any distance up to 1,000 ft. at the rate of 20 to 30 loads per hour. Bucket sizes range from 1/3 to 15 cu. yd.

Write for Catalog.

SAUERMAN BROS., Inc.

436 S. Clinton St.

Chicago



... for
production
and dewatering
service

LAYNE & BOWLER PUMPS

Utmost dependability, high efficiency and lower operating and maintenance costs are reported by scores of mine operators, who rely on Layne & Bowler Pumps for production and dewatering service. Combine these facts with their many exclusive features in design, and it is apparent why Layne & Bowler Pumps are the recognized standard of fine turbine pumps.

Ask for Literature

LAYNE & BOWLER CORP.

900 Santa Fe Ave., Los Angeles, Calif.

WORLD'S LARGEST WATER DEVELOPERS



We Look
Inside
The Earth
With our
**Diamond
Core Drills**

We Test Ore Lands and Specialize in Foundation Test Borings for Bridges, Dams, Buildings

**PENNSYLVANIA
DRILLING CO.**

1201-1215 Chartiers Ave., Pittsburgh, Pa.

FINCH STATES GOVERNMENT NOT NEGLECTING METAL MINING

In his address to the convention of the Western Division of the American Mining Congress, Dr. John Wellington Finch, director of the United States Bureau of Mines, denied the claim of some delegates to the convention that the federal government is neglecting the metal mining industry. He cited the most exhaustive survey of the mining industry ever made by the government, now being conducted by the Federal Bureau of Mines, the Department of Commerce, and the United States Geological Survey. He said that these powerful agencies are conducting this activity "to help the mining industry to help itself."

Dr. Finch spoke extemporaneously as follows, in part:

"The mining industry of the United States should rest assured that President Roosevelt wants to do everything possible for its recovery. I have found a rapidly growing friendly sentiment toward the administration by many mining men.

"It is the feeling of the administration that the gold mining industry has been started on the road to recovery, and now can take care of itself to a large degree. The boost in the price of silver will help the gold mining industry to some extent. Now we are tackling the most weighty of problems—what to do for the lead, copper, zinc, coal and non-metal mineral producers.

"We have found that the mining industry knows comparatively little about itself. Today the industry finds itself unable to take advantage of the New Deal because concerted action of the mining operators is lacking. Incidentally, I hope that this meeting of the American Mining Congress will result in a closer cooperation of the members of the mining industry.

"The studies being made by the three federal agencies will give mining operators something definite to work upon. We are correlating production and consumption. We are trying to figure out new markets. We are conducting extensive and elaborate experiments on new uses of mineral products. In a brief time we hope to have ready for distribution literature to help the small gold mine operator. This will be of particular interest to California, in which a heavy percentage of gold production comes from small mines. We

have found that in many instances, either because of lack of money or lack of experience, small operators are wasting their resources, are obtaining only a small percentage of what they should win from their mines.

"The RFC is lending money to small operators who need machinery and need facilities for development of their properties. Through our new literature and our personal assistance we hope to give every small operator the benefit of the larger operators' experience.

"Secretary of the Interior Ickes has a strongly sympathetic understanding of the mining industry's problems. Such sympathy is noticeable throughout the personnel of the administration.

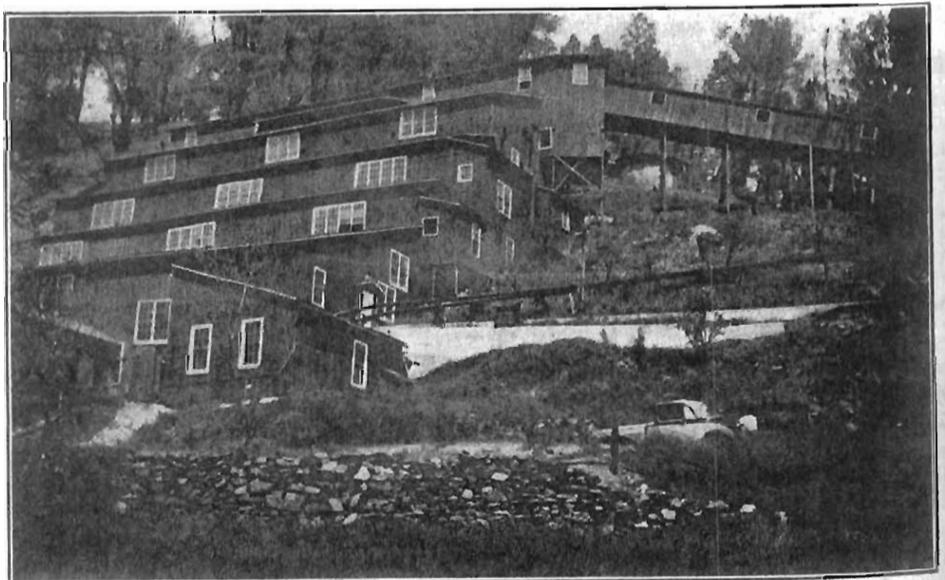
"Another thing the President is doing without any fanfare is the working out of a plan for the international exchange of metals. The United States has a surplus of lead and copper. We need tin. It might be possible to formulate a satisfactory basis for exchange of these materials."

Dr. Finch said it has been found necessary to economize in the Federal Bureau of Mines, but denied that this can be construed that the government is forgetting the mining men and their important industry.

CARSON HILL GOLD COMPLETES ADDITIONS TO RECOVERY PLANT

The Carson Hill Gold Mining Corporation at Melones, Calaveras county, California, expects to increase production during October to 1,000 tons daily, following the addition of new units to its mill. Before the addition of these units, the daily output was approximately 700 tons. New equipment installed included a Symons cone crusher, another Hardinge mill, and Deister concentrating tables. In the cyanide plant four additional sand tanks, three slime tanks, three agitators and an Oliver filter were installed.

In the mine development of new territory is proceeding at several points. New and more powerful mining machinery has been installed and reopening of the workings to a depth of 3,000 feet is progressing. This work will be followed by driving of crosscuts and drifts to pick up downward extensions of the veins opened in



Milling plant of Carson Hill Gold Mining Corporation at Melones, California.

the main levels. Present mining and development activities are being carried on in levels from the 300 to the 1,600, inclusive, and in two open pits.

C. H. Segerstrom of Sonora, California, is president and general manager; Lawrence Monte Verda of Angel Camp is superintendent.

MANY APPLICATIONS FOR FEDERAL MINE LOANS MADE

According to a report from John E. Norton, chief of the mining division of the RFC, there have been over 4,000 preliminary applications for loans of which 500 stated that they could qualify. But 60 of this number, according to Norton, have completed their formal applications. No loans had been made at the time of the report.

Loans will be made for working capital, construction, improvement, repair, purchase of improvements and other fixed capital purposes, provided the enterprise applying for the loan has sufficient reserves of undeveloped ore to justify the expenditure.

Loans will not be made to retire existing indebtedness, nor for purely prospective or promotional purposes, nor on properties on which ore of sufficient value to insure repayment has not been blocked out at least partially. An incidental portion of the loans can be used for payment of taxes under certain circumstances.

Tasker L. Oddie, former Nevada senator and head of the Gold Mining Association of America, has been designated as western advisor of the corporation to make certain investigations in connection with the applications received from miners. He has an office at 381 Bush Street,

in San Francisco. In the detail of handling the work Oddie will be assisted by J. C. Kemp van Ee, secretary of the Gold Mining Association.

SUB-LEASERS READY TO PRODUCE FROM REOPENED BELMONT MINE

Actual mining operations have commenced on what is known as the Belmont Lease, with over 60 men sub-leasing on a royalty basis. The Belmont Lease is an association for the purpose of operating the Belmont mine of the Tonopah Belmont Development Company in Tonopah, Nevada. The owners of the lease are F. C. Ninnis, West End Consolidated Mines Corporation, and H. D. Budelman, who is in charge of the property.

The Belmont mine is one of the oldest, and in the past one of the most profitable mines in the district. It has a production record of around \$50,000,000, of which about \$12,000,000 has been paid to stockholders in dividends.

The mine has been closed down since October 1932 because of the low price of metals. However, with the increase in prices, it is believed that much of the lower grade ore left in the mine by former operators is now payable grade. The values are in gold and silver, with a rather constant ratio of 1 ounce gold to 100 ounces silver.

The property is operated through the Belmont shaft, a vertical three compartment shaft 1,800 feet deep. The levels below the 1,300-foot are inaccessible on account of water. In the approximate 40 miles of underground workings there are said to be many veins, some of the narrow high-grade variety, making an ideal condition for leasing.

LONDON MOUNTAIN GOLD TO HAVE NEW 150-TON FLOTATION MILL

After conducting a three-year development program before deciding upon the proper type of mill equipment, the London Mountain Gold Mining Company now has a crew of men erecting a mill building. The concrete foundations have been laid and work on the super-structure is progressing. The building is expected to be finished late in October, and flotation machinery installed. A test run of ore will be made about the middle of November, if present plans carry through.

The plant, estimated to cost between \$60,000 and \$70,000, is being located near the portal of the Oliver Twist tunnel at Alma, Colorado. The ultimate capacity of the mill will be 150 tons per day, although the initial capacity will not reach quite that high.

The Oliver Twist tunnel drains all the mine workings, and with this volume of water and a pipe line to a nearby lake, an abundance of water for mill and other purposes will be furnished. The tunnel itself, including several connecting lateral drives and upraises, totals 9,000 feet of underground exploration. The ore carries values principally in gold, silver, and lead. Recent diamond drilling tapped a high-grade ore deposit 400 feet below the Oliver Twist tunnel level, giving a total vertical depth of nearly 1,000 feet from the vein outcrop.

Robert D. Elder of Leadville is president of the company and has been in active charge since its organization in 1931. His main offices are in the Continental Oil Building, Denver. William White is mine superintendent at Alma.

The Ballistic Mortar stands guard over Hercules Quality

All Hercules explosives are carefully made of the most suitable ingredients, and are tested at every stage of manufacture. The ballistic mortar, however, provides a final formula check by comparing the strength of a measured charge of dynamite against a known standard. This assures you that when you buy Hercules explosives of a certain strength, you get that strength. And blasting results are better when dynamite is so dependable and uniform.

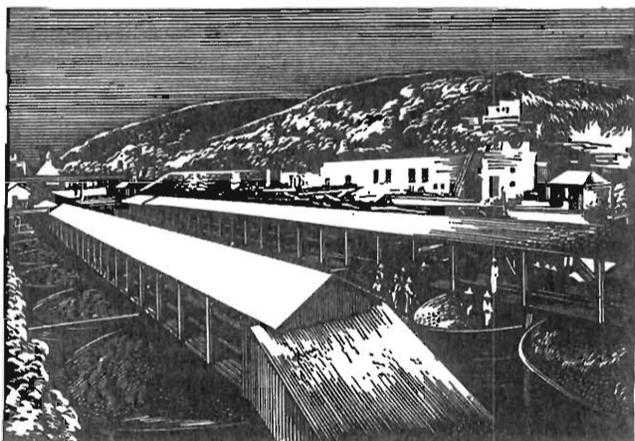


HERCULES POWDER COMPANY

INCORPORATED

990 King Street, Wilmington, Delaware

A-41-R



Guanajuato, Mexico, where Cyanamid Reagents facilitate silver recoveries.

You get "Over-the-counter" Service from Cyanamid

This means . . . prompt delivery of one or many chemicals for cyanidation, flotation or a combination of these processes from nearby warehouse stocks at Azusa . . . also the assistance of practical metallurgists and the benefit of Cyanamid's experience with problems and practice in many mining fields.



American Cyanamid Sales Company

AZUSA, CALIFORNIA

30 Rockefeller Plaza, New York, N. Y.

Concentrates from the Western States

Some high spots of the mining industry in the Western United States and Mexico.

ARIZONA

The Oro Flame gold mine, consisting of seven patented and 12 unpatented claims, six miles south of Prescott, Arizona, has been sold by H. K. Grove, N. V. C. Putnam and the Oro Grande Mining Company to Wayne Heffner, 315 Professional Building, Phoenix, Arizona; Howard H. Fields, 444 Park Avenue, Prescott, and R. S. Witcher of the Big Jim Operating Company at Oatman and associates. The purchase was made following two and one-half months of examination during which the Big Bug was unwatered to the 300 level for the first time in 30 years. This made possible examination of both the Big Bug and American Eagle workings. A 50-ton mill was erected at the mine by the Oro Grande company about a year ago. The new operators plan to revamp the plant and place it on capacity operation at an early date. Mining operations will be directed by John L. Alexander, 1005 North Ninth Street, Phoenix, Arizona. Howard Fields, who is directing the work at the McCabe and Gladstone mines at Humboldt, will be consulting engineer.

A group of 10 claims, eight miles east of Salome, Arizona, and two miles north-east of the old Socorro mine, has been acquired under lease and bond by Ralph W. Ross of Los Angeles. The total price is reported as \$30,000, with \$4,500 cash payment, and the balance on 10 per cent royalty. The claims, known as the Morning Star, Sunny Slope, Harley View and Best Bet, are owned by Martin Webber. Preliminary work has consisted of surface prospecting, said to show a vein from 18 inches to three feet in width, with values better than \$20 a ton. A development shaft will be sunk under the superintendence of Frank P. Baldi, consulting engineer, Room 509, 321 West Third Street, Los Angeles.

Twenty additional miners have been employed by the Monte Cristo Gold Silver Company in its development work at the Monte Cristo mine at Constellation, Arizona. The mine is now working on a 24-hour basis, according to H. B. Browning, superintendent, and development will be carried on simultaneously on the two main parallel veins. The East vein is said to contain high-grade silver ore, while the West vein runs higher in gold. The management is planning to drive a crosscut at a depth of 400 feet to cut six other veins which have been developed to the sulphide zone.

The Keystone mine at Mineral Park, via Kingman, Arizona, expects to have its 50-ton selective flotation plant on production by the middle of this month. Mill construction is being handled by A. C. Dundas, who will remain with the company as mill superintendent. J. B. Goodwin is general superintendent in charge of operations, assisted by M. R. McIntire, in charge of underground work. As soon as the mill is on production the management expects to start sinking to prove the present ore shoots at greater depth. Lester L. Robinson, 215 West Seventh, Los Angeles, is president of the company.

The Giacoma bond and lease on the Dry Hill and Contact claims of the Tombstone Development Company estate, Tombstone, Arizona, has been taken over by the Three Rs Mining Company, and an energetic de-

velopment campaign is being planned. The Dry Hill has been operated for several months by John Giacoma, Tombstone mining man who has made several ore shipments. The principals in the Three Rs company include Robert L. Davis, Robert T. Joughin and Robert E. Carter, investors of Tampa, Florida. Giacoma will remain with the new company as superintendent. At the Dry Hill the force has already been increased to three shifts, and at the Contact machinery is being moved to the old shaft which will be cleaned out and underground exploration undertaken.

Tungsten Production Co., Inc., is shipping to Arizona a complete tungsten concentration plant. The mill is one of several acquired by the company through purchase and consolidation of several mining properties in Colorado. It will have a daily capacity of 50 tons and will be completed within 60 days. Since electricity is not available in the district it will be operated by oil or gasoline power. The mill is being constructed in Carr Canyon, a central point for delivery of ores from the various properties located in the Huachuca mountains of Cochise County. R. L. Alexander, who has been in charge of milling operations for Tungsten Production Company in Colorado, is supervising construction of the mill and will be in charge of the properties. The ore from these mines is said to yield a higher average of tungsten than those of the Colorado properties. J. G. Clark, Box 296, Boulder, Colorado, is president and general manager of the company.

Magma Copper Company of Superior, Arizona, has declared a dividend of 50 cents a share, the same as declared three months ago. The board of directors, however, has requested that the distribution be regarded simply as a return out of earned surplus and not the establishment of a dividend basis or policy for the future, as it does not believe such should be attempted at this time.

Operations are running smoothly at the New Cornelia Branch, Phelps Dodge Corporation, Ajo, Arizona, with the mill handling between 10,000 and 12,000 tons of 1.25 per cent copper ore daily. Production during July, the month when mining and milling were resumed, amounted to about 5,300,000 pounds of copper, which will be about the average monthly rate of production hereafter. The operating crew, under the direction of M. Curley, manager, totals approximately 900 men, employed five days a week. Among the major equipment changes has been the converting of eight of the 10 steam shovels to caterpillar traction. All production from the New Cornelia Branch is being shipped abroad.

Contract for the erection of six new five-room houses at Ajo, Arizona, has been let by the New Cornelia Branch, Phelps Dodge Corporation to G. F. Williams of Phoenix, Arizona. The houses are of frame construction, with insulated ceiling, exterior wall celotex insulated, and with all plumbing and window and porch screen of copper. Three will have copper roofs and three asbestos shingles. The contract calls for completion in 60 working days.

United Verde Extension Mining Company, Jerome, Arizona, has announced a

dividend of 25 cents a share, payable November 1, 1934. This dividend for the third quarter duplicates those paid earlier in the year.

Stoney and Crane, working a lease on the Tom Reed Gold Mines Company, Oatman, Arizona, have erected a new 60-foot headframe, installed a hoisting engine and miscellaneous equipment. Compressed air for the machinery is supplied by the company. The Tom Reed mill is handling nearly 300 tons of ore daily, most of which is coming from the various leases. Jack Zwinge is mine superintendent and Paris Brough, mill superintendent.

CALIFORNIA

In its initial report to stockholders the Oriental Gold Star Mines, Inc., operating at Alleghany, Sierra county, California, states that receipts of the company from sale of gold bullion during the first six months of the current year amounted to \$50,279.97. The balance sheet of the company, as of June 30, 1934, showed an increase from \$767.80 to \$34,482.63 in the cash condition for the six-months period. Total assets are placed at \$603,318.58. William A. Hooten, mine superintendent, reports that 20 men are regularly employed and that the mill is running on ore mined on the 1,200-foot level and from development faces. Operations are being carried on in the high-grade vein mid-way between the 1,200 and 1,300-foot levels. Testing of the low-grade ore body, termed the Granite Dike, is said to be progressing as rapidly as conditions permit.

Newmont Mining Company has declared a dividend of 50 cents payable October 31 to stock of record October 16. In April of this year a similar disbursement was made. In making the announcement the company issued the following statement: "The board of directors request that this distribution be regarded simply as a return out of earned surplus and not the establishment of a dividend basis or policy for the future, formulation of which should not in the opinion of the board be attempted at this time." H. S. Munroe has been elected a director to fill a vacancy occasioned by the resignation of Mrs. A. H. Drexel Biddle, Jr., who has been living abroad for the past three years. A. J. McNab was elected a member of the executive committee which was increased to six members from five.

J. W. Killinger of Jackson, California, is preparing to open the old Sunset mine at Martel, near Jackson. First work will be the unwatering of the 750-foot shaft, after which underground development will be undertaken. The Sunset was reopened several years ago, after an idleness of 50 years, by John Ratto of Sutter Creek, and later worked by Sierra Metals Corporation.

The Manzanita claims in the Pine Grove district of Amador county have been placed on production by E. T. Chase, Security Building, Los Angeles, who recently took a bond and lease on the property. The ore, all high grade, is handled in a three stamp mill. It is reported that negotiations are in progress for taking over of adjoining property.

The Black Wonder Gold Mines Company, Pine Grove, California, has optioned the Climax mine, and will start work on its newly acquired property shortly. The Climax has been idle for a number of years. At the Hardway mine, recently acquired by Black Wonder, the 10-stamp mill has been completed and milling of ore will soon be started. Preparations are being made to sink the main shaft 75 feet deep.

cr. F. D. Garbarini is superintendent of the company, which maintains headquarters at 921 Stock Exchange Building, Los Angeles.

The Atascadero Mining Company, operating the Vanderbilt mines at Ivanpah, California, is running its 50-ton mill two shifts daily on the lower grade ore, on which a satisfactory recovery is said to be made. Since the mines were reopened a few months ago 18 carloads of ore have been shipped, this ore reported to have netted the company approximately \$1,000 per car. Ore is being extracted from the 200 level, and drifting is being done on the 350 level. Operations are directed by J. E. Chilberg, superintendent.

The Empire Star Mines Company, Ltd., Nevada City, California, expects to start the sinking of its main 1,600-foot shaft at the Murchie mine an additional 550 feet this month. This will be the first development at greater depth undertaken at the Murchie since its acquisition from the American Foundation Company January 1, 1932. G. A. Kervin is general manager of the Empire Star.

The California American Mining Company, working three miles north of Hornbrook, Siskiyou county, California, is installing a 25-ton ball mill. This company has been developing its property for the last year and is said to have opened a ledge of ore which will assay about \$25 a ton and which has been checked along a 1,000-foot front. Plans are being made to mine the ore by steam shovel.

Wilson Brothers are making preparations for placer operations this winter on the Weaver Bar, six miles north of Yreka, California, on the Shasta river. Water for hydraulicking will be pumped by Diesel power from the river. The high channels, 175 feet above the present river level, will be worked with a two-stage pressure pump. The lower channel will not require the additional pressure and a single-stage pump will be used. They expect to be able to begin work in November.

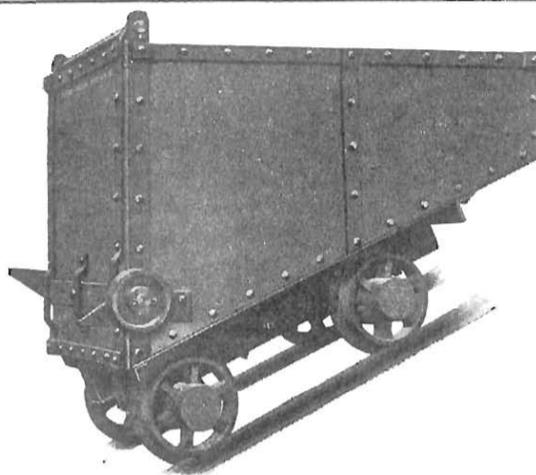
The main two-compartment shaft at the Redding gravel mine, near Altaville, California, is being deepened an additional 20 feet. This was made necessary by the heavy flow of water encountered when cutting a sump at the 240-foot level. Crosscutting under the channel is to start as soon as the shaft is completed. The work is directed by T. VanDervoort, Jr., of Vallicita, California.

Jess Knight, manager of the Grey Eagle-Elephant mines at Mojave, California, reports that the high-grade streak, which had been lost, has been located again after several months of work. Recent operations uncovered the 5-inch vein in the old workings on the lower level. This rich seam which is reported to carry values of \$1 per pound, runs through the center of a three-foot vein, averaging \$25 for the entire width. The ore will be handled in the electric-powered gyratory mill, the same two-stamp plant which recovered the gold from the same streak earlier in the year. Approximately 20 sets of lessees are now operating on the property, with the company depending on royalties and milling of lessees' ore for income.

Fire at the Golden Bear Mine, Downieville, California, has destroyed the hoisting works and the mill. The mine was being operated by Jack Thomas, with a crew of about 20 men.

The Kelsey Mining Company, Placerville, California, is contemplating new construction which will increase the present

CARD CARS



All through mining's UPS and DOWNS

... it pays to stick to the brand of mine haulage equipment that keeps the UPS out and puts the DOWNS in your cost sheets. For more than 42 years, CARD CARS have proved their ability to do this.

Built to specifications as well as in many successful standard types—one car or a thousand.

Write for Catalog PJ

C.S. Card Iron Works Co.
Denver, Colorado.



SERVICE TO SHIPPERS

We have sample watchers at the smelters and mills that check your weights, watch sampling, check assays, and see that your shipment is properly handled.

We take care of shipping from loaded cars to the final settlement check, and act as shippers' agents.

We handle small lots of high grade Silver and Gold Ores, Concentrates, and Precipitates. We make a specialty of Geology—Mine Examination—Ore Testing—Flow Sheet—Mill Designing, Construction and Operation.

Give us your problems to solve.

MINES SERVICE COMPANY

R. P. Atkins
Designing Engineer

Jack Coolbaugh
Assayer & Chemist

2301 Fifteenth Street
DENVER, COLORADO
Alfred Tellam, Metallurgical Engineer,
President

EDWARD L. SWEENEY

COMPLETE CONTRACTS FOR CONSTRUCTION AND DESIGN OF MILLING, MINING AND POWER PLANTS FOR MINES.

With a long record of successful work done, at lowest possible costs.

537 U. S. Nat'l Bank Bldg.
DENVER, COLORADO

602 Title & Trust Bldg.
PHOENIX, ARIZONA

milling capacity from 100 to 300 tons daily. C. T. Palladine is superintendent of the company.

A 65-foot crosscut has been driven from the bottom of the 105-foot shaft at the Mack Mines, Ltd., Nevada City, California. A heavy flow of water has been encountered. The present work is directed by Bruce Wallace, superintendent.

Six feet of ore is said to be showing in the face of the tunnel at the Soledad Extension mine, Mojave, California. The ore, which will average from \$17 to \$20 per ton, will be treated in the Burton Brothers custom mill, near Rosamond. H. Clifford Burton is directing both the mine development and mill operation.

J. B. Truitt of Nevada City, California, in association with C. E. Clendenney, is reopening the Salmon mine. A complete sampling outfit, compressor and hoist have been installed and sampling of the property will be undertaken at once. The Led-better shaft is down 160 feet, and the Salmon shaft 120 feet. Important production is said to have been made by the upper levels of the mine. The property has been idle since 1929.

The Auburn-Chicago Company of Penryn, California, is treating 25 tons of gold ore daily, the ore coming from development work. Preparations are being made to sink the shaft to the 450-foot level. Arthur N. Sweet, manager, is employing a crew of 35 men.

A placer plant, consisting of a revolving mill for disintegrating the cemented gravel, two sizing trommels and a concentrator, is in course of construction at the Sledge mine at Confidence, California. This property has been developed during the past two years by Thomas C. Neumann, 715 East Elm Street, Compton, California.

Two shifts, under the direction of William Crosby, are employed at the Descanso mine, Descanso, California. The 250-foot shaft has been retimbered, the power plant has been overhauled, and new equipment placed in the mill. At present a gas engine is lifting ten stamps, crushing two tons of \$30 ore per hour. A third shift will be added as soon as sufficient water is obtained for mill operation.

Operators of the Ready Relief-North Hubbard mines in the Julian district of San Diego county, California, are milling about 30 tons of ore weekly. E. P. Barclay, mining engineer of Julian, is directing the work and employing about 25 men.

The Los Angeles group, headed by George L. Reed, is making plans for the erection of a mill in the near future on the Yellowstone claim, near Bear Valley, Mariposa county, California. These interests are employing 19 men in the development of the Juniper, Patricia, and Yellowstone claims, and will transport ore from the former groups to the Yellowstone for treatment. At the Juniper the tunnel is in over 400 feet, following an ore shoot 140 feet wide, and from one to four feet in thickness. It is believed this ore shoot will average \$10 per ton. At the Patricia a tunnel is being driven toward the old shaft and has been advanced 61 feet. Electric power drills are used and the work is conducted on a three-shift basis. Warren Dutton is superintendent at Bear Valley.

Ore averaging better than \$20 per ton is being mined by Union Consolidated Mining Company from a new section of the Oro Plata mine, Murphys, California. The ore is coming from a vein found recently at a depth of 40 feet in the new shaft.

The ore is being treated in the company's own ball and flotation mill which has a daily capacity of 75 tons. J. C. Scoles is in charge of operations.

A small crew of men is driving a tunnel at the Foss gravel mine at Lowell Hill, Nevada City, California. The tunnel has been advanced a distance of 1,100 feet and is said to be producing good values. James Allen of Nevada City is manager of the mine.

Two draglines are being employed on the river bed of the Middle Yuba River, where River Placers Ltd., has diverted the course of the river for 2,000 feet by means of a 600-foot hard rock tunnel. The company is equipped to handle 600 yards of gravel daily by sluicing methods. A. D. Hughes of Nevada City, California, is general superintendent, employing a crew of 35 men.

The Argonaut Mining Company, Jackson, California, in its report for August shows an operating profit before fixed charges and other income, of \$47,044, equivalent to approximately 25 cents per share on the outstanding stock. In July earnings totaled 30 cents per share. Officials of the company, in a preliminary statement, point out that, should other income and other charges for August show but little variation over the preceding months, net profits for the eight months of 1934 will reach a total of \$276,827, or \$1.38 per share. For the full year of 1933 the earnings totaled \$187,252, or 94 cents per share. E. A. Stent is vice-president.

O. E. Schiffner, superintendent of the Lava Cap Gold Mining Corporation, Grass Valley, California, reports the discovery of some exceptional ore. Some samples of

the quartz assay as high as 60 ounces in silver and 5 ounces gold, the presence of the silver constituting the unusual feature. He has also encountered specimen gold ore, part of which is being reserved for exhibition purposes. Mr. Schiffner also estimated that the Lava Cap has sufficient ore developed in the mine to keep the mill running for at least one year. Production has been stepped up in recent weeks to 150 tons daily, and work started on a mile-long underground drift which will connect the Central and Banner shafts.

Construction work on the final unit of the ore crushing plant at the Idaho-Maryland Mines Company, Grass Valley, California, is being prosecuted with a crew of 25 men. This ore crusher will replace the old-time stamp mill and will be equipped with an ore bin with 1,000-ton capacity. It is being placed adjacent to the new 300-ton mill, recently completed. Robert Hathaway, Grass Valley millwright, is in charge of the construction. Errol MacBoyle is general manager of the company.

At the Mexican mine, near San Andreas, California, the operators plan to start production by the middle of October. A stamp mill has been erected and tested, tunnels cleared and track laid. The project is backed by a group of Livermore men, with Joseph Weber in charge at the mine.

The name of the Mammoth Magalia Mining Company has been changed to the Mammoth Channel Mining Company Limited, Inc. This company is managed by I. N. Dally, P. O. Box 247, Chico, California, who reports that the total length of the drainage tunnel has reached 4,300 feet. At present the tunnel is being continued toward the churn drill holes on Middle Butte Creek. A raise was put up at a point 4,200 feet from the portal of the tunnel where the Mammoth Channel gravel was found. However, the gravel only carried low gold values and what gold was recovered was characteristic rim gold. The elevation of the gravel was 70 feet higher than churn drill hole on Middle Butte creek indicated. The No. 5 raise, at the 4,200-foot point, hit the gravels 131 feet vertically above the tunnel. The work of the Mammoth Channel company will open a new and undeveloped section of the Mammoth and Magalia channels.

A 25-ton mill is being installed at the Jenkin Hill mine, Mariposa, California. The mine is located near the Yosemite Portland Cement quarry on the Merced river. Considerable development work has been done during recent months by Weaver, Smith and Herrick.

It is reported that new machinery is to be installed at an early date at the Gold Dollar mine, southwest of Vidal, California. The mine is operated by Cyrus F. Weeks, Box 257, Kingman, Arizona, who is planning for production in the near future.

Fourteen men are employed in development work at the Pennsylvania Mining and Investment Company's Pennsylvania mine, Browns Valley, California. At present the main shaft, a 40 per cent incline, is down 265 feet. According to Herbert W. Whiting, mine superintendent, \$12 gold ore was recently discovered, about the 200 level. Higher values are expected to be encountered in another vein at the 500 level.

The Blue Gravel mine, owned by the city of Redding, California, is being operated under lease by Holton Cochrane. He reports that he is making arrangements for

AVERAGE PRICES OF METALS
(Figures by American Metal Market)

	Copper Per Lb. Conn Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.622	69.065
1926	13.795	8.417	7.337	62.107
1927	12.920	6.755	6.242	56.370
1928	14.570	6.305	6.027	58.176
1929	13.107	6.833	6.512	52.998
1930	12.982	5.517	4.556	38.154
1931	8.369	4.244	3.638	28.701
1932	5.792	3.181	2.881	27.892
1933	7.276	3.870	4.031	34.728
1932				
Jan.	7.000	3.750	2.900	29.750
Feb.	6.250	3.717	2.828	30.136
Mar.	5.994	3.150	2.791	29.810
Apr.	5.739	3.000	2.735	28.298
May	5.506	3.000	2.529	27.755
June	5.339	2.996	2.793	27.466
July	5.234	2.760	2.546	26.700
Aug.	5.435	3.235	2.761	27.938
Sept.	6.208	3.462	3.304	27.870
Oct.	5.975	3.043	3.046	27.195
Nov.	5.809	3.050	3.096	26.698
Dec.	5.026	3.000	3.125	25.010
Ave. 1932..	5.792	3.181	2.881	27.892
1933				
Jan.	5.000	3.000	3.015	25.400
Feb.	5.000	3.000	2.671	26.085
Mar.	5.256	3.143	2.997	27.928
Apr.	5.634	3.260	3.861	30.730
May	6.932	3.354	3.805	34.072
June	8.000	4.173	4.347	35.663
July	8.909	4.452	4.886	37.630
Aug.	9.000	4.500	4.909	36.074
Sept.	9.000	4.500	4.702	38.440
Oct.	8.253	4.318	4.744	38.190
Nov.	8.156	4.294	4.521	42.974
Dec.	8.125	4.142	4.470	43.550
Ave. 1933..	7.276	3.870	4.031	34.728
1934				
Jan.	8.185	4.000	4.275	44.187
Feb.	8.000	4.000	4.452	45.233
Mar.	8.000	4.000	4.370	45.375
Apr.	8.393	4.184	4.371	45.130
May	8.500	4.1404	4.355	44.226
June	8.349	3.975	4.238	45.173
July	9.000	3.770	4.318	46.310
Aug.	9.000	3.7468	4.280	43.986
Sept.	9.000	3.679	4.057	49.484

working the gravel on a large scale, using a gasoline shovel for mining. Very little work has been done during recent weeks, due to the shortage of water, but Cochrane plans to have his shovel in operation by the time the fall rains start.

It is reported that the Canyon Placers, Inc., which has been closed for several weeks, is laying plans to resume hydraulic operation at its placer properties near Dedrick, California. During the winter and spring seasons the company employed about 100 men, and was the largest hydraulic proposition in the state. H. G. Kenworthy is general manager, and George Bergin, superintendent, both of Weaverville, California.

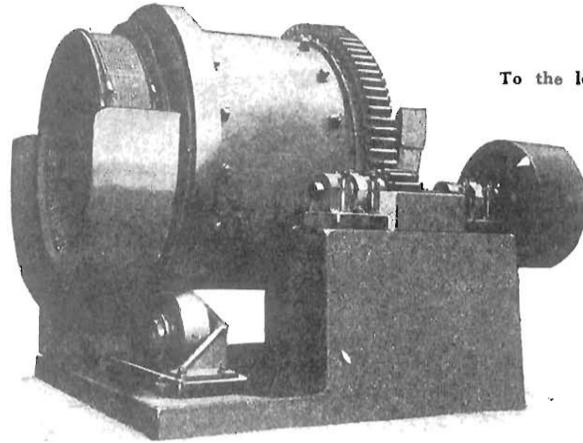
The Best and Belcher Gold and Silver Mining Company, working the Commodore mine at San Andreas, California, is pushing to completion the crosscut to the west vein on the 300 level. The east vein, at that depth is said to have been opened for a distance of 250 yards. W. H. Clary, superintendent, reports that his company is making plans for mill construction as the result of the development work accomplished this year. Four men are employed.

According to a report by S. M. Pike, president, the ore being milled in the 25-ton mill of the Belmont Metals Corporation is returning \$20 a ton. The ore is developed at the Gabriel mine on the Mother Lode by a 500-foot tunnel, exposing a 200-foot ore shoot ranging in width from four to seven feet. The mill is running on a continuous schedule and it is proposed to double the capacity. At the Big Ravine mine, in Placer county, the vein is reported to have been opened up for 125 feet with the payshoot averaging \$40 to \$50. H. R. Lawson is manager at Midpines, California.

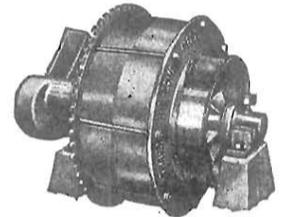
The 50-ton milling plant, under construction by Castle Mining Corporation, 12 miles northeast of Amboy, California, is nearing completion and should be in operation during October. This gold property is located at an elevation of 3,200 feet, and has been developed by shaft and open pit, with 250 feet the greatest depth attained. It is equipped with Diesel power. The operating officials at the mine include A. H. Brunner, general manager; Ray Bennett, assistant general manager; W. A. Kunkle, mill superintendent. S. E. Chiapella, of 2233 Wellington Road, Los Angeles, is consulting engineer.

The Gold Lode Mines, Inc., has acquired and will further develop the Burcham group of mines in the Calico Mountains, near Barstow, California, as soon as financing is completed. The property was taken over on bond and lease from the owner, Mrs. Rose Burcham, widow of Colonel Burcham of Yellow Aster fame. The mine has been developed by 3,519 feet of drifts, 1,381 feet of crosscuts, and 1,850 feet of shafts, winzes and raises. The company reports that sufficient ore has been developed to justify the erection of a 50-ton mill which is to be erected in the early future. A. F. Muter, 200 Lankershim Building, Los Angeles, has been retained as consulting engineer. E. K. Davis, also vice-president, located at 2818 South Normandie, Los Angeles, is mine manager. Other officials include: W. D. Moriarty, president; Harry E. Hopper, treasurer, and F. M. McDonnel, secretary.

The Plumbago-Eldorado Gold Mining Company at Alleghany, California, is dropping 10 of the 20 stamps in its Plumbago mill, and is dewatering the main shaft. A 500-foot raise to the surface is being run



To the left: A 25-35-ton Rib-cone Ball Mill with screen classifier. Easily converted in a few minutes to screenless type.



Below: A 2-4-ton Rib-cone Ball Mill. Portable and very efficient. \$220. Capacity increased to 4-8 tons by adding extra parts at \$155.

BOTH are Rib-cone Ball Mills

No matter what your capacity requirements . . . YOU may enjoy their speed, efficiency, and economy.

From 2-ton capacity up to 250 tons—Every Rib-cone Ball Mill saves MORE gold at the LOWEST milling cost. All-steel, they are lighter in weight than cast iron, and yet much stronger and more durable. Use less power, less water, and less space. Rapid discharge prevents sliming and permits inside amalgamation on most ores. Whenever efficient milling is desired, depend on Rib-cone—no matter what your capacity requirement.

Straub efficiency and economy is also yours in crushers, Overstrom Universal concentrators, flotation and cyanide machines, water wheels, plates, steel tank and pipe lines. Send for free Bulletin No. 115, giving details and prices.

Ore Tests **STRAUB MFG. CO.** Assays
OUR SERVICE TO MINES IS COMPLETE
505 Chestnut St. Oakland, Calif.

LEACH BROS. BALL MFG. COMPANY

Manufacturers of

HIGH CARBON MANGANESE FORGED STEEL GRINDING BALLS

All sizes from 7/8" to 6"

1823 East Washington Boulevard,
Los Angeles, California

Telephone—Prospect 3712

from the operating tunnel at the El Dorado mine, which is being worked in conjunction with the Plumbago.

California Sierra Gold Mines, Inc., a California corporation, has been organized to take over the assets and liabilities of **West Mines Corporation**, operating the Hussey, Canada Hill and Ragon mine and the Queen Lil mill, all of Nevada City, California. The personnel and management of the new company will be identical with that in the past. Orlando McCraney of Nevada City, is president and manager; Gordon Bettles, also of Nevada City, is vice-president and engineer; H. J. Richardson, electrical engineer of Oakland, secretary-treasurer. The California commission is said to have granted the company permission to issue 500,000 shares of stock at \$1 par value and to exchange 123,000 shares for properties of the West Mines Corporation. Proceeds from stock sale will be used for further development of its properties. The Hussey mine has been producing gold at a moderate profit for the past year, the ore being treated in the Queen Lil mill, but the Canada Hill mine is still to be developed.

COLORADO

Bunk and boarding house, compressor plant, and other essentials for operations are to be installed by the **Mancos Gold Mining Company** at the Mills group of four claims, adjacent to the Red Arrow mine, in the East Mancos district of Colorado. Herbert L. Whipple of Mancos, president of the company, is in personal charge, and reports the Shubert tunnel to be in 265 feet. At 400 feet it is expected to reach the orebody which is the objective, at an approximate depth of 150 feet.

An extensive development plan, including deep exploration work, mill erection, and the construction of a power plant, is included in the program of the **Golden Bell, Inc.**, of Colorado and Nebraska, operating the **Poorman Relief** and **Ganghis Kahn** mines. The property consists of 14 claims, covering the entire summit of Poorman Hill, an area of about 90 acres. Several well-defined lodes and a network of feeders and stringers are expected to provide some high-grade, along with a quantity of medium and low-grade ore. R. P. Joseph, who has been testing the property for some time, will be in charge of the work.

The old **Silver Queen** mine, 20 miles west of Shawnee, Park county, Colorado, is being reopened, according to reports. J. F. Kimberley and J. L. Henritz are the operators. A tunnel was run on a

four to six-foot vein containing gold and silver-lead values, with a six-inch seam of silver. Some of the high-grade silver ore was sacked and consigned to the Leadville smelter. Further work is expected to develop additional mill ore sufficient to warrant installation of a medium capacity concentrator within the next 12 or 18 months.

The **Boulder County** mines, owned by the **Tungsten Production Company, Inc.**, J. G. Clark of Boulder, president and general manager, are reported sold to a group from Oakland, California. The consideration is quoted as \$100,000. Announcement of the deal was made by Scott Hendricks, Brown Palace Hotel, Denver, who conducted the negotiations. The Boulder County holdings consist of about 15 claims, sometimes known as the Fairview group. Leasers on the mine will not be disturbed by the transaction. The new operators are planning construction of a new 300-ton flotation mill on the ground and extensive development in new territory.

Unwatering of the **Emancipation** mine near Salina, Colorado, is already in progress, with some machinery installed and the installation of more planned. The property, purchased from the Golden Egle Corporation about a year or more ago by Carl Kurz, Frank Allseit, and associates from Chicago, has again changed hands. Hayes A. Scruggs and associates have leased it from the Chicago group for 10 years. A hoist and compressor equipment have been moved from the Victoria mine, and plans for unwatering are eventually to include the bottom or 500-foot level. For the immediate present, however, the main workings are to be dewatered down to the 400-foot level and reconditioned that far as rapidly as possible. There is a possibility of connecting the main shaft with the Little Johnny tunnel on adjoining ground at the 400-foot level. This would permanently lower the mine water level, as well as provide ventilation and facilitate transportation, should the latter be needed. The Emancipation dump was not included in the deal, and it is believed that the owners will make some arrangement with a custom mill for handling it. Recent samples were reported to be encouraging.

Marshall Long and associates are reported to be reopening the **Ben C. Lowell** mine in the Magnolia district of Colorado. The property comprises seven claims and is developed by a main shaft over 300 feet deep, badly caved and under water at present. Construction of a shaft house and installation of hoisting, pumping, and compressor equipment will be undertaken

at once, it is understood. The 150-level will be opened first, with other levels being put into production gradually. The mine is the property of Charles H. Cheney of Boulder.

The **Great Republic** mine, operated by the **St. Joe Mining and Milling Company**, continues to be the heaviest shipper in Boulder county, it is reported, sending out 100 tons of ore daily. The property was purchased last spring from the Gold, Silver, and Tungsten, Inc. A. A. Zangara and R. A. Quayle of Boulder, Colorado, control the St. Joe company. Ore from the St. Joe properties is treated in the company's mill in Left Hand Canyon.

Changes in the flow sheet and equipment of the **Little Johnny** mill are being made under the direction of Arthur Sory, who is resident manager for the **McAnally Mining Company** of Tulsa, Oklahoma, the operating company. K. F. Fulton, 326 Pearl Street, Boulder, mill superintendent of the Black Cloud Milling Company, and a flotation expert, is said to be acting in an advisory capacity. A large body of low-grade ore has been opened in the Little Johnny recently during the active development work going on there.

The **Wahl** mine on Cross Mountain near Gunnison, Colorado, is showing promising indications, according to current report. The property, operated by John McCormick some 30 years ago, is now owned by his son, Eugene McCormick, and is under lease to Herman Clark and Peter Johnson, who are taking out ore, and hope to have a carload before snow flies. A new ore shoot was recently discovered on an undeveloped part of the old vein, and a foot of ore running as high as 9 ounces in gold was opened up.

Equipment to take care of sinking operations to a depth of 2,450 feet is being installed at the **Ajax** property of the **Colorado International Mining Company**. Besides new machinery, the old hoist is being remodeled to include new air brakes, drums, clutches, and a 250-horsepower motor. The Mohican and New Market veins on the Ajax ground are said to be producing 2-ounce gold ore. Operations are being directed by C. W. Van Law, Victor, Colorado, who is the company's western representative.

Rehabilitation and reopening of the **Little Nellie** mine and the resumption of operations on the **Depression** lode will be undertaken by the newly organized **Noble Mining Company**. Hoist, pumping equipment, and an electric plant are being installed and the drifts and shaft wired throughout. Ventilation will be supplied

TIMKEN ROCK BITS

Are doing their stuff for large and small mining operators and many contractors in Arizona.

Greater footage and increased drilling speed, plus the numerous advantages of detachability, mean lower drilling costs.

These users of Timken Bits are getting these results. Why not you?

Complete information and latest price list yours for the asking.

PRATT-GILBERT HARDWARE COMPANY

Exclusive Distributor — State of Arizona

701 South 7th St.

Phoenix

Phone 3-5145

OSCAR A. GLAESER* suggests methods for

Preventing Accidents In Gold Mines



Oscar A. Glaeser

Accident prevention work in both the metal and coal mines of the United States has advanced rapidly in the past 10 years. Many enviable safety records have been established and much has been written concerning the science of this phase of human engineering.

Strange as it may seem no two companies have followed similar plans in their campaign against accidents. Standardization has been the order of the times, within limits, in practically every phase of mine operation except in safety. It may be assumed that this is a natural condition because the human equation is one of the factors in accident prevention which has never been completely understood.

Each company has worked out its own theories and principles of safety in its mines and plants based upon the management's ideas on how best to induce labor to accept the tenets of "Safety First."

Two basic facts are universally conceded among the large operators of mines. First: That safety is management's responsibility and, second: that correct supervision is necessary to produce the desired results. The mining companies that have accepted these two fundamentals and built their programs upon them have been singularly successful.

The mining world is gold conscious. It is, therefore, entirely fitting that we pause and reflect upon the safety needs of the re-energized gold mining industry.

With very few exceptions the gold mines of this country have a safety problem peculiar to themselves and vastly different from our large tonnage base metal mines. This discussion will deal with the many underground mines and prospects where no well defined safety program or policy has been established and will exclude the extremely small number of mines with well-developed safety organizations.

The mad scramble and search for the yellow metal is on. In California alone there are approximately 8,000 men gainfully employed in its gold mines, large and small. There must be between eight and ten thousand more men, women, and children in the hills of California along the rivers, ravines, creeks, and gulches snipping their way to an independent living. Here I beg the indulgence of the reader while I pay tribute to those sturdy 19th-century pioneers who have been referred to as "economic refugees." We find them everywhere looking for gold with the pan, rocker or sluice box. There is another but a smaller group who, individually, or in small copartnerships, delve

The numerous small gold properties, now listed among the producing mines, present new problems in accident prevention. However, the fundamentals of safety apply, regardless of the size of operation. A safety movement to be successful must begin with the management at the top and percolate downward through the entire organization.

underground for the precious stuff. This group work for themselves and employ no help.

Many men now in search for gold have not always been miners and are not now miners. Many of them were high in professional and business life before the depression. Druggists, doctors, dentists, real estate men, office managers, clerks, business men and laborers, and I have even met a pearl diver (not of the kitchen variety) trying to find gold in the deeper streams. Many of the professional and business men would be quick to ridicule the idea of a miner or engineer venturing into their lines of business but in turn they have shown no hesitancy to plunge into gold mining. They are their own examining engineers, their own superintendents, and mine foremen although many of them have never previously been in a mine or handled a stick of dynamite. Still other mines are worked according to well-developed plans. They are equipped with modern mining machinery and headed by men with many years of mining experience.

With this picture as our background, where shall we start in a discussion of applied accident prevention? It may be well to first inquire into the distribution of accidents. Do they all happen in the mines operated by inexperienced men? No, not at all. Practically all mines, large and small, are quite uniformly represented in a tabulation of accidents. The accident rate, based upon hours of exposure, is of course less in the larger mines and decreases very rapidly in mines where accident prevention receives due thought.

Fundamentals generally hold for all conditions and so in the business of mining the fundamentals of safety apply regardless of the size of the operation or the kind of material mined.

Should management assume the responsibility of accident prevention in its plants? Or in other words, should management be responsible for the safety of its employees? There are three answers. Efficiency is based upon precise planning. Accidents are unplanned happenings that interrupt the planned processes causing loss of time, loss of manpower and frequently also loss of materials and damage

to equipment. Another answer is: Leadership imposes a number of moral obligations. One of the most important of these is the well-being of the followers. Another answer is: In the interest of economy management should assume this responsibility because industry pays the bill.

A mine manager cannot afford to disregard these three statements. It makes little difference whether three or three thousand men are employed if the management honestly believes that the miners should wear goggles while performing certain duties so as to prevent eye injuries from flying chips of rock, etc. Men should be prevailed upon to wear them. The protection afforded by goggles is just as effective in the smallest mine as it is in the largest. I am frequently told that the employes have been given goggles and have been told to wear them, "but they won't use them and, of course, I can't fire a man just because he won't wear the goggles I have given him." Does that sound like a decision coming from a clear-thinking mining and business man? Suppose the matter concerned company property instead of workmen's eyes? Would the action still be as indecisive? Workmen are generally willing to follow orders, provided, of course, they understand them as such and not as apologies. Goggles are an effective preventive to eye injuries in most mines and their use is recommended particularly when collaring and blowing out drill holes, when breaking rock with a hammer, when moiling or picking hitches and cutting samples, and at any other time when the eyes are endangered by flying particles.

The mine manager or superintendent should post common sense safety rules and insist upon their observance. It has been said that the authority to give orders carries with it the responsibility of seeing these orders properly executed. Safety orders, whether printed or typed, should never be just posted or handed out. Employees should be told of their purpose. It should be pointed out that they are not so-called nuisance rules but rather warning signs along life's industrial highway telling tersely of dangers that have been only too thoroughly demonstrated by thousands of unfortunate men who did not heed.

While on the subject of safety rules, I might suggest that mine operators and those contemplating mine operation, acquaint themselves with the established state laws and orders concerning mining. These are generally quite complete and go a long ways toward safety in mining if observed. I will cite one example, many more could be produced. Two men, neither of them miners, started to reopen an old mine. The shaft had to be pumped out so a small gasoline engine-driven pump was obtained. It was set up underground and started. One of the partners climbed down the shaft and was overcome by gas. The other one went down to see what was wrong. Both were brought out dead. The State Safety Orders specifically prohibit the use of gasoline engines underground.

Mine supervision is at best a serious problem. When the boss leaves the working face he loses sight of the men work-

*Safety Engineer, California State Compensation Insurance Fund, Berkeley, California. Paper presented before the Annual Meeting, American Mining Congress, San Francisco, California, September 26, 1934.

10-30-34

ing there. In a shop a foreman can generally see 75 per cent of his people by merely looking around. Not so in a mine as we well know. Even in small mines a boss is rarely with each man more than 10 minutes of the work day. In that 10 minutes he must leave enough of himself in the mind of the man to carry that miner and his work successfully through the entire day. It has been said that a supervisor should be chosen for his super-vision. Responsible employers have adopted this policy.

In the smaller mines we are faced with a more difficult situation. Ninety per cent of the gold mining ventures never get beyond the one man supervisory stage. His position in the company varies. He may be the president, or a stockholder, or a partner, or a consulting engineer. In any event he is the manager, superintendent, the mine and mill foreman, and the mine and mill shiftboss. He is the geologist, the purchasing agent and the bookkeeper. If the cook runs short of butter, or if a special gasket or bolt is needed in the mill, he goes to town for it. If the mine is operated more than one shift, the superintendent, if at all conscientious, goes underground with the afternoon shift and sees it off to a good start, leaving it to its own good judgment to carry on throughout the shift. Should a trip to town be necessary, the superintendent may or may not go underground first thing in the morning. The mine trip at best is hurried. He then goes, leaving the mine without anyone in responsible charge.

Intelligent, resourceful and constant supervision is vital to the safety of the men and the success of any venture.

To prevent accidents one must of necessity have some knowledge of how accidents happen. Past records give us an excellent understanding of accidents. The following conditions with a brief discussion for each will give causes and remedies for the more serious types of accidents.

Blasting	Gas	
Falls of rock	Handling	Material
Cave-ins	Machinery	
Falls of persons	Fires	

Explosives should always be handled with great respect. They never should be allowed to stand in the direct rays of the sun. They should never be stored together with detonators. The magazine should be bullet proof and as fireproof as it can be made. It is advisable to use electric detonators in sinking and in wet ground. When fuse is used, same should be of ample length. It is difficult, if not unwise, to recommend a standard length of fuse for all mines. Where small rounds are the practice, I have recommended a minimum length of five feet and as much longer as safe practice may require.

I do not approve of a practice quite general in the smaller mines, that of letting each miner cap his own fuse. I am reminded of several mines where missed holes run upwards of 10 per cent of all holes blasted. Obviously there is something decidedly wrong. When missed shots occur with frequent regularity, an investigation should be made as to the methods of making primers, water at the face, and age of detonators and fuse. Superintendents or foremen can well afford to be particular in this matter, for blasting accidents generally result in deaths and permanent disabilities. Twenty-five per cent of all mine accidents in

California in 1932 were the result of blasting accidents.

Falls of rock are frequent. Accidents from this cause vary in severity. This cause can be eliminated through proper supervision. Barring down is a laborious task and miners must as a consequence be constantly urged to do a thorough job of it. It is the boss' duty to see that the working place is barred down.

Cave-ins are not so common, but when they occur they usually result in fatalities. Cave-ins are generally the result of misjudgment of ground, the lack of, or an insufficient amount of timber and too much open ground. Experienced supervision, good judgment and an ample supply of timber will prevent cave-ins.

Falls of persons is the cause of many accidents. Many of these falls are directly due to poor housekeeping; a few to employes' carelessness. The fatal falls, as in shafts or down raises, etc., are generally due to lack of guards. Again supervision can do much toward the elimination of accidents from this cause.

Natural gases can and do occur in metal mines and gas explosions have occurred. Nitrogen and carbon dioxide gas feeders have been found in metal mines and hydrogen sulphide is known to occur. Where the presence of gas is suspected it is advisable to proceed very cautiously. The U. S. Bureau of Mines is equipped to give competent advice and its aid should be sought.

There are other sources of gas that should also be given due consideration. Recently a mine was unwatered. Methane gas was found several days later, distributed quite uniformly, along the entire length of the main drift. The mine had been thoroughly timbered and had been flooded for years. When the water was pumped out the water soaked timber gave off the methane gas. When re-opening such a mine the air inside is frequently found to be deficient in oxygen. Under such conditions the carbide lamp burns only with a reddish flame or is extinguished. A failing carbide light should be accepted as a warning of an unsafe atmosphere and ventilation should be provided.

The gasoline engine has been as helpful to the miner as to many other industries. However, the possibility of the deadly exhaust gases getting into the mine and contaminating the mine atmosphere should at all times receive due thought. A typical case presents itself. A gas engine-driven compressor was set up adjacent to the portal of a drift mine. A low shed roof covered the equipment. The exhaust from the gasoline engine was directed upward through a short piece of 2½-inch pipe but ended beneath the roof. The compressor picked up the fumes and sent them to the face through the air line.

Handling materials is a prolific source of accidents. In severity these vary from numerous minor injuries to occasional permanent disabilities and fatalities. The minor injuries consisting of bruises, lacerations, and possibly fractured toes and fingers are, as a rule, the result of careless habits of individuals. Major accidents usually happen while moving heavy objects such as large timbers and machinery. When heavy objects must be moved the mine superintendent should see that the equipment necessary to move them, such as slings, ropes or cables, and timber, etc., is in good condition. Next he should put a competent man in charge who

will see that all efforts are synchronized and that every man is in his proper place.

Machinery in motion is the cause of many accidents most of which are severe. I am frequently told by superintendents and managers, when investigating a severe accident, that the accident happened because the man went where he had no business going. In many instances that is a true statement of fact, but that is not the only fact upon which a verdict of responsibility is placed. Someone installed that machinery and someone is responsible for its operation. The vagaries of human nature must be taken into consideration. A man may have no business stepping through a belt drive but we all know if the opportunity to do so is presented, someone sooner or later will do so. Guards are required by law. They are also a moral responsibility irrespective of where a workman may or may not go.

Fires may start where ever inflammable materials accumulate or are gathered together. Fires have occurred in large and small mines. In the type of mines under discussion the fire hazards most generally consist of oil and grease accumulations in timbered areas, the carbide lamp, and poor electrical wiring. In surface structures, gasoline storage, stoves, oil soaked rags, overheated machinery and gasoline engines may be added as causes of fires.

Recently, two new mills were consumed by fire. One fire was caused by the electric wiring on a gasoline engine. The gasoline supply tank exploded and instantly the entire mill was engulfed in flames. The other fire was caused by the careless use of welding equipment. No men were injured in these fires, but they are accidents nevertheless and were very costly.

A few years ago a surface structure near the entrance of a mine burned. Five men were in the mine. They could see daylight but were driven back by the smoke which finally killed them. The surface plant at a mine should be so laid out that inflammable structures are a safe distance from the mine entrance. Where such location is impossible because of the contour of the ground, the structures should be of fireproof construction.

Protective clothing such as safety type hats and shoes are important adjuncts to any plan of accident prevention.

The new safety type hat is light, well-ventilated and comfortable. It has prevented many bad accidents and should be a part of every miner's personal equipment. I am reminded of two miraculous escapes from certain death. In the one case a man fell down a raise head first for a considerable distance. His hard hat was crushed. His only injury was a slight stiffness of the neck. He was back to work two days after the accident. In the other case a man was hit a glancing blow on the head by a rock that weighed about two hundred pounds. Again the hard hat was crushed. The wearer suffered a bad laceration and bruise on his left shoulder. The safety hat certainly prevented a fractured skull.

Similarly, safety type or hardtoe shoes have prevented many mangled and fractured toes. A young man had passed the entrance examinations to Annapolis. He worked in a boilershop during his summer vacation. There was a rule that all shopmen wear safety type shoes. He was helping on the fabrication of structural iron when a piece weighing about five hundred pounds fell on his foot. The hardtoe cap was dented but his toes were

uninjured. An ordinary shoe would undoubtedly have resulted in the loss of his toes. In this case safety type shoes saved a young man's career. Safety type shoes give excellent protection to feet and toes and are a definite protection against all kinds of toe accidents.

A knowledge of first aid is absolutely essential in mining for we are far removed from that desirable goal of no accidents. So long as accidents occur, mines should be equipped to render first aid.

The U. S. Bureau of Mines employs competent instructors in first aid. Their services are free for the asking. The Bureau also publishes a handbook on first aid to the injured. Mining companies should avail themselves of this indispensable service.

In this brief review of causes of accidents it is apparent that we must look to the mine operator to do his full share of accident prevention work, before we can hope to get very far, and even then he is not through. There still remain those accidents more or less strictly attributable to carelessness, but which in reality are the result of unaccountable pranks of human behavior. Who but the employer or his bosses is there to try and outguess the next outburst of misdirected action. How can we curb these freakish acts of otherwise sober men? There is but one answer—by education; by educating ourselves and our employes.

We have learned much about accidents and their prevention but we have not learned fast enough nor have our lessons always been as lasting as they should have been, but we are encouraged by the fact that the trend is in the right direction. We still have a long way to go. I have discussed accident prevention with hundreds of gold mine operators. The spirit of cooperation is there and a better safety record is in the making.

RFC LOAN TO SUTRO TUNNEL MEANS NEW MILLING PLANT

The first RFC loan to a mining enterprise has been approved for the Sutro Tunnel Coalition, Inc., a subsidiary organization of the Comstock Tunnel and Drainage Company, 25 Broad Street, New York City. The amount to be loaned to the company by the federal government is \$160,000, and it is understood that this money will be used to carry out two improvement projects which officials have been trying to effect for some time.

Since a large portion of the Crown Point ore body belonging to the Sutro Tunnel company lies beneath the tracks of the Virginia and Truckee Railroad, the tracks will be taken up, the wooden trestle removed, and the railroad will follow a new alignment. The Crown Point ore body as been only partially developed, with its full extent not even determined. However, over 150,000 tons of ore have been locked out, and it is reported to have a value of over \$2,500,000. The Crown Point was one of the bonanza mines of the Comstock district, boasting a known production of \$34,000,000.

The second use to which this federal loan will be put is the financing of a milling plant. The first unit of this mill to be of 100 tons daily capacity. The process used will be a combination flotation and cyanide treatment.

James M. Leonard of Virginia City, Nevada, is superintendent of the Nevada interests of the company. Franklin Leonard and associates of New York own the controlling interest.

OUR WASHINGTON, D. C., CORRESPONDENT

Speaking Off the Record

After being overlooked for a considerable time, there is no doubt that the interests of the mining industry are now receiving a larger amount of attention in Washington. Naturally, the plight of thousands of unemployed miners in the copper towns of Michigan, Montana, and Arizona, on the Mesabi iron range, in the coal fields of West Virginia and Kentucky, has been a major problem for the Relief Administrator.

It has led to a lot of investigation and field reports being made by special groups assigned to the job and information of really practical value on the various local situations has been gathered. This information isn't pigeon holed in a filing cabinet—it is passed along to all the department heads of NRA and RFC for each to use in making his division function more effectively. * * *

As illustrating the sort of information that comes in, and the determination to get to the heart of the matter, take for example the report turned in on the advisability of the Federal government's grub-staking gold miners. There was a tremendous amount of well-intentioned, but generally misleading propaganda put out on this subject early in the year; it made good newspaper copy and some pretty prominent people gave it support.

It would have been easy to have written from an office chair some theoretical discourse on the merits and demerits of the plan and dismissed it. Instead, a trip that lasted six weeks was made in the field; 32 localities were visited, and 200 interviews obtained with men connected either with relief problems or mining in those communities which had had actual experience with the plan by having tried it out locally. It was found that it had little support. But the point is that the report when submitted gave not one man's opinion but the generalized conclusions of many and consequently had much broader significance. * * *

The newly-formed Mining Loan Division of RFC is functioning with some level-headed and competent engineers in charge. A considerable number of applications has been received to date, but obviously sufficient time has not elapsed to permit them to be finally approved as yet and still comply with the stringent provisions of the Act.

The impression has spread, erroneously stated in the press, that loans wouldn't be made unless it could be shown that a loan could not be obtained through the regular commercial channels. This is not so, and no proof need be offered that application for funds had been made elsewhere and denied. However, any ambitious individual who expects to get a slice of government money for his financing has his work cut out for him. Anyone who questions this had better look through the 17 pages of the questionnaire and digest what is required to satisfy the 13 separate technical, legal and financial exhibits before consideration can be given to entertaining any application.

Probably it is a good thing from the standpoint of safeguarding the public money, but it certainly will not result in any sudden inflow of new capital from Washington into the mining field. * * *

Another thing that has caused some criticism of the Mining Loan Act is the distinct limitation of loans to companies or individuals engaged in mining metallic ores. Thus coal, salt, and other non-metallics would not come under the provisions of the Act and operators engaged in mining or quarrying non-metallic minerals would be excluded from obtaining loans.

This discrimination might easily lead to some confusion in interpretation. Apparently it would shut the door against making loans to companies mining such useful minerals as fire-clays, borax, gypsum, etc., where certainly the statistical position is far sounder today than with the non-ferrous metals and less concern need be felt that their operations would add to the burden of existing stocks. * * *

It is a satisfaction to realize that practical men are in charge of the new division, men who speak the mining man's language, know his difficulties, and have a sympathetic understanding of his problems. There will undoubtedly be time-consuming delays before getting definite action on any case, but before damning the red-tape of the government, some comparison should be made with the difficulty of getting some of the big mining corporations to pass on a property that has been submitted for consideration.

However, a lot of grief might be saved if intending applicants would acquaint themselves with the circular, entitled "Information Regarding Mining Loans," which can be obtained from RFC in Washington, instead of relying on published accounts. This circular is written in plain understandable language and anyone can get the facts without wading through technicalities that clutter up so many government documents. * * *

Silver is still in the spotlight in Washington and you can get almost any opinion of what will ultimately happen to it. Developments over the last few months, since the Administration took steps to nationalize the metal, have made a lot of noisy advocates of silver look rather silly. One of the favorite arguments for a higher silver price was that it would help trade with the Orient by giving a larger purchasing power to China and India and so be of immense benefit to those countries by increasing the value of their money.

Now comes the Chinese Ambassador in Washington who holds heated debate with Secretary Hull in protest against this very policy of raising the silver price. Evidently our Chinese friends don't know when they are well off. The Secretary is reported to have said in defense that his hands are tied by the provisions of the silver-purchase bill, but he will endeavor to make it as little embarrassing to China as possible. Which is a long, long way from the enthusiasm that was expected to arise from China as the price of silver mounted upwards. * * *

On the other hand, those opponents of silver who used to claim that the bill was passed solely for the benefit of the silver miners in the west are naturally chagrined to learn that increased output of silver in this country has been practically negligible thus far, and they have considerable

(Continued on page 26)

LOS ANGELES



Convenience
Comfort & Hospitality

You will appreciate the excellent service and moderate rates. The city's most centrally located hotel. One block from Pershing Square—convenient to all leading shops, theatres, financial institutions and electric depots for all resorts. Starting point for parlor car tours. Complete ticket service for resorts and places of amusement. Garage adjoining.

All Outside Rooms—Each With Bath
One Person - \$2.50, \$3
Two Persons - \$3.50, \$4

Unexcelled Food—Friendly Prices

FRANK SIMPSON, JR., Director

Hotel Savoy
Sixth & Grand

KNOW

Where To Dig By Having A True Picture Of Your Sub-Surface Conditions.

GEOPHYSICAL SURVEYS

made by a pioneer organization using patented equipment—an experienced personnel under the technical direction of Dr. J. J. Jakosky, with over 200 successful surveys extending from northern Canada to Mexico.

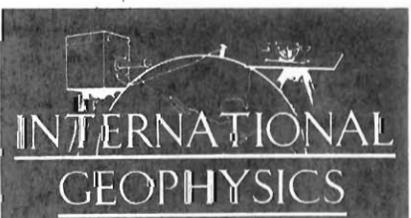
LODE, PLACER, OIL & DAM SITE PROBLEMS

Rapid and proven methods for determining main zones of mineralization, thickness of overburden and gravels, bedrock contours and rock conditions; at less than one-tenth the cost of direct exploration methods.

COMPLETE ELECTRIC, SEISMIC AND MAGNETIC EQUIPMENT

Correspondence regarding development problems cordially invited.

P. O. Box 144—Palms Station
LOS ANGELES, CALIF.



QUICKSILVER FOR GOLD MINING

Packed in 1-lb., 5-lb., 10-lb. Bottles and 76-lb. Flasks.

Write us for a delivered price on the above quantities to any mine in the West.

QUICKSILVER PRODUCERS ASSOCIATION
580 Sacramento St., San Francisco, Calif.

ROYAL DUNCAN GARDNER U. S. APPRAISAL ENGINEER

Royal Duncan Gardner, consulting engineer of Salt Lake City, is now in Washington, D. C., having received an appointment as appraisal engineer for the mining loan section of the Reconstruction Finance Corporation.

Gardner was born in West Jordan, Utah, and received his education in the Utah schools, gaining his B.S. degree in mining engineering from the University of Utah in 1912. He did graduate work at the same institution under the Colonel E. A. Wall fellowship during the next year.

Since 1913 Gardner has been retained by some of the largest companies in Utah, Idaho, and Montana, as consulting engineer. His private practice took him into almost every mining state in the west, giving him a personal knowledge of individual peculiarities of different sections and an insight into the problems confronting large and small mining companies.

NORTON BRINGS WIDE RANGE OF EXPERIENCE TO RFC POSITION

John E. Norton, who was recently appointed to the position of mining engineer in the self-liquidating division of the Reconstruction Finance Corporation at Washington, D. C., knows western mining both from the point of view of the miner and of the engineer.

Norton was born in Salt Lake City, but was reared in Butte, Montana, and entered the Montana School of Mines in 1913, taking his degree in mining engineering in 1917. Before entering college he worked in the Anaconda mines at Butte as a miner. Afterwards he was employed as stationary engineer for the Davis Daly Copper Company, and as a miner for both the Davis and the Anaconda companies, rising to the position of shift boss in 1917.

The next year Norton was an instructor in mineralogy and chemistry at the school of mines in the University of Montana at

Butte, and at the close of the year received the Marcus Daly scholarship at Columbia. This scholarship is offered by James W. Gerard of New York City in honor of his father-in-law, the late Marcus Daly of Butte. After receiving an E.M. degree from the Columbia School of Mines in 1921, Norton returned to Butte where he was mine foreman at the Anaconda Copper Mining Company. Ten years later he was a sales engineer for the Ingersoll-Rand Company of South Africa, going into the Belgian Congo and the Rhodesias.

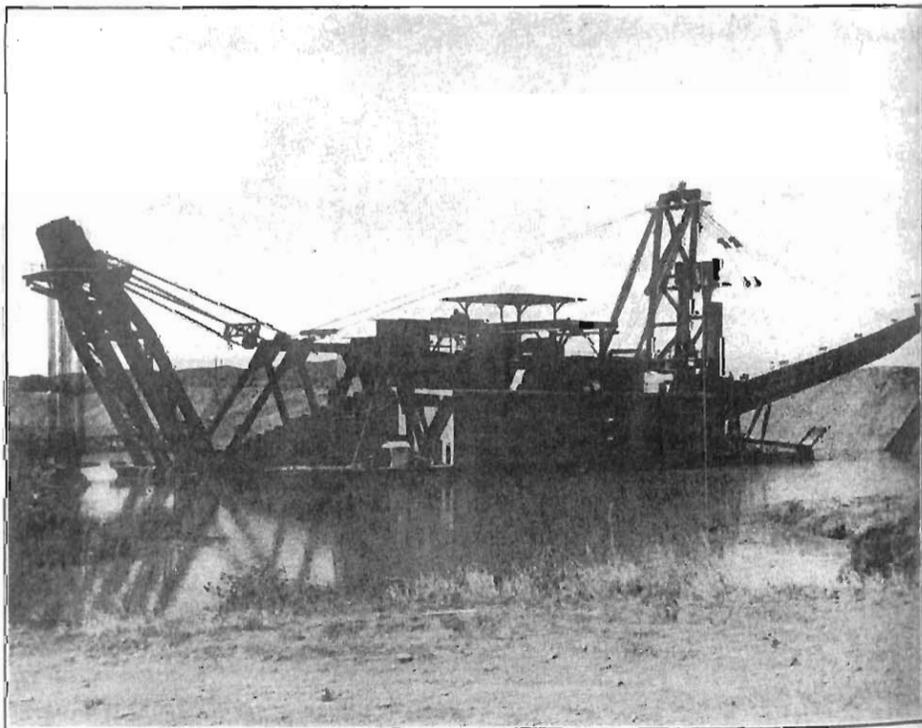
Such experiences necessarily give a wide knowledge of mines, mine equipment, and mining men. It is just such a well-rounded viewpoint that the western mining world has been needing, and which will be of infinite value in the position Norton holds as head of the mining loan branch of the RFC.

U. S. FUNDS FOR GEOPHYSICAL SURVEYS ADVOCATED BY FULTON

In discussing the needs of the mining industry, John Fulton, director of the MacKay School of Mines at the University of Nevada, made the following statement during the San Francisco convention of the American Mining Congress:

"One of the greatest steps the federal government could take to aid the gold mining industry would be to set aside additional funds for the United States Bureau of Mines and for the United States Geological Survey, these funds to be expended in extensive geophysical surveys.

"Geological reports on many mineralized sections of this country have either never been made, or are sadly out of date. When geophysical work once establishes a given area as offering gold-producing possibilities capital will be available for development of such areas and its properties. This would mean not only more gold for the use of the government, but also the opening up of a great deal of new territory for gold mining."



The huge dredge constructed during recent months by Yuiba Consolidated Gold Fields, near Hamonton, California. This dredge, the largest in the world, has a monthly capacity of 350,000 cubic yards per month. The company is now installing another dredge, near Biggs, California.

Nuggets from the Western States

Some high spots of the mining industry in the Western United States and Mexico.

ARIZONA

The **New Comstock Mining Corporation** has leased its grounds, located in Mohave county, Arizona, to the **Gold Standard Mines Corporation**, Earl F. Nieman, general manager, Box 632, Kingman, Arizona. The lease was given on a royalty basis. Since the death of his brother, Charles Sutro, E. Sutro, 407 Montgomery Street, San Francisco, has assumed the presidency of the New Comstock Mining Corporation and negotiated the lease. The Gold Standard is rebuilding its milling plant, destroyed in September by fire, and expects to have it in operation in November. The new plant will have a daily capacity of 500 tons.

Ray Howland, Box 81, Mesa, Arizona, is employing a crew of four miners in exploration of the **Lost Padre** mine in the Estrella Mountains. First activity will be directed toward a 30-inch ledge on the 75-foot level, said to run \$128 in gold a ton. The shaft was unwatered by Howland last spring and the old workings sampled. Old stone buildings and relics indicate that the mine must have been operated by the Spaniards in the early days.

A. B. Richmond, chief field engineer, is directing the exploration work which **Magma Copper Company of Superior, Arizona**, is conducting at the Jupiter group, south of Tucson, Arizona. Twelve men are employed in drifting and tunnel work. A camp has been established and miscellaneous mining equipment installed. The Jupiter claims were recently optioned, and will be explored by about 1,500 feet of underground work.

A depth of 65 feet has been reached by the shaft which the **Princess Gold Mines, Inc.**, is sinking at the **Black Dyke** mine. P. L. Mullen, president, Kingman, Arizona, reports that excellent ore showings have been discovered. Work at the mine has necessarily been slow for all hoisting is done by windlass.

Louis Schrade of Crown King, Arizona, is running a crosscut tunnel in the **Blue Bird** mine. It is indicated that the tunnel will intersect the vein at about 200 feet in depth.

In a report to stockholders, C. W. Gabrielson, president, **Consolidated Gold Mines, Ltd.**, states that the development drift in the East Emma ore body has been advanced 125 feet, with the entire width of the drift, six feet, in ore. The ore is taken to the mill as mined, and during the last fifteen days of September average values were \$24.87, this representing a total of 300 tons taken from the drift during that period. Test holes drilled into the north wall of the East Emma ore body indicate the existence of another parallel ore body, only a short distance away. This development is taking place at a depth of 500 feet from the surface. At present work is being concentrated on the adit level of the East Emma, and on the winze in the West Dives on the 600-foot level to make possible the mining of ore from both veins and to develop additional water so that the mill can be operated three shifts, instead of two, as at present. Improvements planned for the mine include the installing of a pipe line and pumping station for mill water at supply about 4,000 feet distant from the mill; purchase

of additional air drills and miscellaneous equipment, enlargement of milling plant, and purchase of storage battery locomotives and heavier rails and cars for ore transportation. Gabrielson maintains his headquarters at P. O. Box 279, Bisbee, while A. B. Wadleigh is general superintendent at the property, Dos Cabezas, Arizona.

September production by **United Verde Extension Mining Company, Jerome, Arizona**, amounted to 2,499,782 pounds of copper, compared with 2,640,900 pounds in August.

Engineers from Pratt-Gilbert Company in Phoenix, Arizona, are planning the mill for the **Sunrise Gold Mine**, near Wickenburg, Arizona. John W. Hildred of the Pratt-Gilbert company is in charge of mill design and is being assisted by Edwin K. Pryor, metallurgist. The plant will consist of ball mill, flotation units and oil engine. The Sunrise mine has recently encountered some spectacular picture rock on the 300 level, the ore running over \$2,000 per ton, and one assay going \$14,000. Some sulphides are coming in and one bunch showed \$1,685 per ton. The company is expecting the milling grade of ore to run about \$25 per ton. The picture rock will be shipped direct to the smelter.

By the first of November the **John's Gold Mining Syndicate**, three miles from Winkelman, Arizona, expects to be making regular weekly shipments of ore to the **Magma Copper Company's** smelter at Superior. Recent assays, according to John Papassimakes, owner, taken from the three shafts gave values of 0.54 to 0.80 ounces of gold in the oxidized ore, while a three-ton test of the sulphide ore ran 0.58 ounce gold and 1.10 in silver.

The **Old Timer Mines, Inc.**, Kirkland, Arizona, is employing a crew of 10 in the development of its gold-silver property. During the last month 120 feet of crosscut have been driven to the rhyolite dike. The mine has been developed to a depth of 123 feet and by 328 feet of tunnel. Equipment includes a 10-ton amalgamation mill, powered by oil engines. William J. Hubbard, president of the company, resides at Kirkland. Dick Bunker is mine superintendent. Harold W. Yost, 1338 West Roosevelt St., Phoenix, Arizona, is chief mine engineer.

The 75-foot shaft at the **Tintic** mine at Chloride, Arizona, has been retimbered and sinking to greater depth is to be started at once. The mill, purchased from the **North Star's** mine in Santa Cruz county, is at the Chloride depot, ready for trucking to the mill site. Tintic is being developed by Rae L. Johnston of Oatman, Arizona, and associates.

CALIFORNIA

At the **Piute Mining Company, Cantil, California**, development of the 500 level is continuing, with the south tunnel in 330 feet and the north tunnel 120 feet. William J. Quackenbush is general manager of the company.

The **Mountain Copper Company**, at Shingle Springs, California, expects to have its **Big Canyon** mine and mill in shape for production by the first of January. At the present time all efforts are being

directed toward the erection of a 300-ton flotation mill, crushing plant, hoisting, compressor and change house, laboratory, storage and office buildings. The earth-filled storage dam, which will impound more than 200 acre feet of water, is nearing completion. The three-compartment shaft has been concreted at the collar and a steel headframe erected. The **Big Canyon** mine was optioned early last spring and during the intervening period has been extensively drill sampled. The exploration and construction programs are directed by William F. Kett, general manager, 112 Market Street, San Francisco, California.

A body of high-grade ore is reported to have been exposed in the 500-foot level winze of the **Draper** mine, Soulsbyville, California, being opened by the **Draper Vein Syndicate**. How extensive the body of ore is will probably not be determined until the old workings have been rehabilitated and actual mining operations started. It is expected to have the property, whose shaft is 600 feet deep, dewatered before the first of November. During the summer the company, under the superintendence of Frank L. Mitchell, placed in operation a 50-ton cyanide plant on the old mill tailings, and plans have more recently been made to increase the plant capacity to 180 tons daily.

The **Montezuma Dredging Company**, a new organization, is reported to have acquired the **Hosig Placers** at Jamestown, California. Activities have started with two shifts employed, according to John J. Hastings, vice-president and general manager, and a third crew will be added by the end of the month, when 15 men will be employed. The property is equipped with a dry-land dredge, with a daily capacity of 1,500 yards. The project was launched last April by Hastings.

A 10-ton Lloyd mill, together with crusher and concentrator, has been purchased by J. C. McKenzie of Mariposa, California, for the **Orange Blossom** mine. During the last two years the mine has produced about \$18,000 in direct shipping ore, and is reported to have a considerable tonnage of milling ore mined.

The **Oroville Gold Dredging Company**, Oroville Inn Building, Oroville, California, is planning for the construction of a second dredge in the near future, it is reported. The new dredge would be similar in type to the one now working on the Feather River, in the Rio Bonito district. It has a capacity of 150,000 cubic yards a month and employs an average of 20 men. The Oroville Gold Dredging is the successor to **Shasta-Butte Gold Dredging Company**, W. S. Davis, president, Box 86, Oroville, California.

Yuba Manufacturing Company is employing from 25 to 30 men in the construction crew engaged in erecting the new dredger for **Yuba Consolidated Gold Fields**, near Biggs, California. A pit 200 feet by 200 feet and from 10 to 15 feet deep has been dug, and hoisting equipment for moving heavy machinery is being erected. Parts from the old dredge at Fairplay, Colorado, and from the old No. 4 at Hammonton, Colorado, are being utilized for this dredge. John B. Bubb is in charge of construction.

The **Burn-Ball Mining Company**, Tuolumne, California, is working three shifts in the development of the **Dead Horse** mine. The double-compartment shaft has been sunk to the 100-foot level, new electric equipment, consisting of hoist, and compressor, installed and hoist building and headframe erected. These same interests are also developing the **Paragon**

Unocal Corp
ordered an
C399N

11-30-32

and Comer groups. Jno. Burmeister, for many years a resident of Beatty, Nevada, is manager of the project, which is being financed by a Michigan capitalist.

The **Golden Bear** mine, near Downieville, is rebuilding its mining plant which was destroyed by fire the last of September. Both shaft house and hoist were burned. The Golden Bear is a quartz property, operated by Jack Thomas, who has been employing 20 men.

The **Golden Key Mining Company** has undertaken the development of the Golden Key group of claims, formerly known as the Austin group, six miles northwest of Mariposa, California. The property is equipped for mining and milling, buildings include a residence, assay office, blacksmith shop, and supply room. The mill, which has a capacity of 30 tons daily, is electrically operated and is equipped with 10 stamps, a rockbreaker, plates and concentrating table. The company expects to install flotation equipment to improve recoveries. An extensive examination and sampling of the mine was conducted by James W. Warford, consulting engineer of Mariposa, before the Golden Key Mining Company started work. The Golden Key also owns the Golden Key Consolidated near Chinese Camp, and the Bessler mine at Downieville.

The five-stamp mill of the **Russell Gold Mining Company**, Angels Camp, California, has gone on production. The ore is being mined on the 200 level, with development work being continued on the 300 level. J. J. Murray, Box 1058, Angels Camp, company engineer, expects to soon place the mill on two shifts daily. J. A. Phelps of Santa Barbara is president and active manager of the company.

The **Glory and Tintic** groups, covering 120 acres in the heart of **Foster Mines**, in the Shadow Mountain region of San Bernardino county, California, have been taken over by John B. Marston, engineer of 2511 West 23rd Street, Chicago, and will be operated under a pure trust to be known as **Security Gold Mines**, with Marston as sole trustee. The property has been developed by a 120-foot shaft and a 54-foot crosscut said to be in gold ore of an average value of \$6. Marston is reported to have let a contract for 1,500 feet of development work to further explore the holdings. If the deposit proves out as indicated he plans for the erection of a large plant. E. D. Foster, trustee for Foster Mines, 2687 Moss Avenue, Los Angeles, and who has directed the development of the property, negotiated the lease. It is said that the lease carries a purchase clause permitting the 12 per cent gross royalty to be applied on a price of \$300,000.

Charles G. Frisbie, consulting engineer, 1201 Continental Building, Los Angeles, reports that the 10-stamp mill of the **Glen Olive** mine at Bodfish, Kern county, California, has been remodeled and is handling sample runs from various parts of the workings. Milling and mining costs are reported to be less than \$2.50 per ton. This sampling plan is being carried out to check the recommendations and samplings of E. D. Foster, consulting engineer of 2687 Moss Avenue, Los Angeles, who spent several weeks at the mine last year, making extensive geological studies. The Glen Olive is credited by the state division of mines with a production of half a million dollars, prior to 1915. C. A. Burns is in charge of the work at the mine.

Development work on the **Bright Hope** mine, Georgetown, California, is making

splendid progress. Working one shift a day, six men under the direction of Al Olmstead extended the main tunnel through hard rock 123 feet in 30 days. This gives the tunnel a total length of 1,023 feet. The **Bright Hope**, which was leased by Arthur N. Sweet of Penryn, California, is being operated under the name of Don P. Smith, Trustee, and is financed by Chicago capital.

The **Kelsey Mining Company**, Placerville, California, is working two shifts in the mine and three in the mill, employing a total of 35 men. Considerable new machinery has been installed, including a large compressor, drill sharpener and a three-ton locomotive. This electric tram will haul a train of 10 one-ton cars and is said to be the only one in El Dorado county. The pilot plant, consisting of a 10-stamp mill, ball mill for secondary crushing and five flotation cells, is handling 100 tons of ore daily. Plans have been made for erection of the first unit of a larger mill, which will have a daily capacity of 600 tons when completed. A number of mine buildings have been built during recent months. The operating personnel at the mine includes: C. T. Palladine, mine superintendent; Jack Crossland, mill superintendent; Stevens S. Dettman, mine, engineer, and J. A. Church, mine foreman.

Unwatering of the 280-foot shaft at the **Lamphear** mine at Mokelumne Hill, California, has been started by a group of New York men, with Roscoe N. Smith, Box 101, San Andreas, acting as superintendent. The mine, first worked in the '60s and one of the first in Calaveras county, has been idle for the last two years, the last operator being the **Mother Lode Central Gold Mines Company**.

A second shift will be put on this month to speed up development work at the **Sunset Mine**, two miles from Jackson, California. The **Sunset** was recently reopened by a group of eastern capitalists, and up-to-date equipment installed. The work is directed by J. W. Killinger, mining engineer, National Hotel, Jackson, California, who is vice-president and general manager of the operating syndicate. The mine was first located and worked only for pockets some 30 years ago. In 1923 it was taken over by **Sierra Metals Corporation** which worked the mine until 1927 when it was forced to close down for lack of capital. During this period the mine produced some \$75,000 from development work. The **Sunset**, on the **Mother Lode** slate-greenstone contact, is opened to a depth of 750 feet, with drifts on most of the 100-foot levels, and is electrically equipped.

At present the **Empire Star Mining Company, Ltd.**, Nevada City, California, is raising a new vertical shaft from a hanging wall crosscut on the 1,600-foot level of its **Murchie** mine. This shaft will be raised 100 feet, after which the company will sink the new shaft from the 1,600 to the 2,050 level, plus the additional footage necessary for a loading pocket. Since the **Murchie** mine was taken over from the **American Foundation Company** January 1, 1932, the main shaft has been sunk 350 feet plus a 50-foot sump. G. A. Kervin is general manager of the **Empire Star**.

The **Jewell Mining and Milling Company**, Inyokern, California, expects to be milling ore in its new amalgamation and concentration mill this month. The initial output of the mine is set at 50 tons daily, according to Wayne Jewell, president of the company. As soon as the present mill unit is completed, work is scheduled to

start on another unit for flotation and cyaniding. G. C. Greene, consulting engineer of Los Angeles, has recently been retained by the company. Electric power is used. The company is also building a office, and dwellings for workmen.

A new and larger compressor is being installed by the **Alabama California Gold Mines Company** at its mine at Penryn, California. It is also reported that preparations are being made to double the capacity of the mill which has been handling about 30 tons daily. A crew of 18 to 20 men is employed under the direction of William Anderson, president and general manager, Auburn, California.

Mammoth Mines Corporation, with holdings at Mammoth Lakes, California, is making preparations to resume work. The management is planning for additional equipment to cost approximately \$50,000 and the driving of a 500-foot tunnel. A. G. Mahan, 224 Board of Trade Building, Los Angeles, is president of the company. C. R. Johnson is engineer. Present equipment consists of a Diesel plant, electric light plant and a 50-ton ball mill.

Although official figures are not yet available, it is estimated that September profits will set a new high monthly record for **Argonaut Mining Co., Ltd.**, Jackson, California. The previous high month was July, with a profit of approximately \$60,000 after all charges except income taxes. The **Argonaut** mine has been closed since October 2, following strike threats by miners.

A crew of men, directed by A. T. Lee, is engaged in cleaning up the old tunnel workings at the **Hines-Gilbert Gold Mining Company**, Greenwood, California, operated under lease.

The **Lady Bedford Mine**, three miles from Plymouth, California, is being opened by a group of Stockton and Lodi men. The shaft, 280 feet deep, is being cleaned out and retimbered, after which sinking to greater depth will be undertaken. It is said that the heavy inflow of water caused the original operators to abandon the mine. A 25-ton mill test of the ore, said to be in the bottom of the shaft, will be made as soon as possible. Among the owners of the mine is Judge M. J. Steele of Lodi.

The **Black Hills Mining Company**, a recent organization, has purchased the Italian claims, located one mile from Drytown, Amador county, California. The mine has been developed through a 400-foot tunnel, said to expose a quartz ledge 121 feet wide. The new owners, headed by William Tam, are said to plan for immediate work. Improvements planned include the addition of 15 stamps to the present five-stamp mill, and the bringing in of electric power.

Unwatering of the 800-foot shaft at **Belleview** mine, near Sonora, California, has progressed below the 700 level and as soon as the bottom drift is cleared, sampling of the mine will be undertaken. According to L. S. Overpeck, manager, enough new galvanized iron and pipe has recently been delivered to construct a ventilation line to the end of the long drift on the 800 level. If sampling results are up to expectations considerable new machinery will be required.

George Holmes, superintendent of the **Silver Queen** mine at Mojave, California, has announced the purchase of a 100-ton sliming mill. The next step in development at the mine will be electrification of the entire plant through facilities of the **Southern California Edison Company**. Four

more miners have been added, bringing the total payroll at the Silver Queen to 46.

At the Alaska mine at Pike, Sierra County, California, the main shaft is being unwatered after an idleness of 18 years. A new headframe has been constructed, the shaft retimbered to the 120-foot level, and the drain tunnel opened to the 120 level. The work is being financed by New York capital with E. C. Eisenhauer directing the work as consulting engineer. James Trembath is superintendent.

J. E. King, Box 64, San Andreas, California, has secured a lease and option on the Quail mine, a former producer situated 1 1/2 miles southwest of Coulterville, Mariposa county, and is getting the property in readiness for active mining operations. He has constructed a road to the mine and is erecting a boarding house, bunk house and compressor building. He expects to start mining by the end of November with a force of eight to ten men. The Quail was last actively operated about 34 years ago and is credited with important gold production. The vein is said to be three to four feet wide, with an average value of \$25 per ton. The new work planned is the extension of a tunnel now in 750 feet, to give 1,400 feet of backs along the vein.

Duleek, Inc., Groveland, California, has placed its new 25-30 ton mill on production. This mill consists of a primary crusher, 8 by 12, with a capacity of 50 tons in eight hours to half-inch size; a 3 by 4-foot Marcy mill coupled to a 27-inch by 16-foot Dorr classifier, followed by two Kraut flotation cells. At the mine development consists of a 200-foot shaft with levels at 50, 75, 100 and 165 feet. On the 50-foot level a drift has been run 125 feet east, and stoping to the surface is going on. At the 165 level, the 120-foot drift is said to be entering good milling ore. There are between 1,000 and 1,500 tons of milling ore already on the surface, according to F. W. McRae, president, 323 Fidelity Building, Los Angeles. Edgar A. Smith is mine superintendent.

P. S. Alexander, formerly of Oakland, California, is reported to have bonded the Turlock mine on Albany Flats from Mrs. Lila Bisbee of Angels Camp, California. According to Mrs. Bisbee, Alexander plans to start development work in the near future. This work will call for the repairing of the 800-foot shaft, and installation of a new hoist.

Four hundred feet of tunnel have been driven by the Bon Ton Mining Company in the development of its mine at Sheep-ranch, California. The mine was reopened early this summer by a group of Glendale men who bonded the mine from George Taylor of Murphy.

Mining operations have been started at the Porto Fino mine at Tuolumne, California, where rehabilitation work has been in progress for several weeks. Ore is being stoped from the 200 to 135-foot level, and plans formulated for sinking to greater depth. Russell Ball and Albert Ehle of Modesto, California, are in charge of the work, with five men employed.

Northern California Mines Company has recently completed a suspension bridge across the Trinity river, just below Junction City, California, to support a 34-inch water line and a 28-inch line to its hydraulic pits. The two pipes carry water at different pressures for working gravel terraces at two elevations. Northern California Mines, headed by W. C. Antwerp, 156 Montgomery Street, San Francisco, controls a strip of land along the river, about

two miles long and three-quarters of a mile wide. The property was formerly known as the Red Hills mine and the Jacobs estate. As soon as winter storms bring an adequate water supply the company will put six giants in operation, three in each pit. At present a crew of 40 men is busy on construction work, and it is estimated that about the same number will be required to operate the six giants three shifts per day. The company plans on handling approximately 7,500 cubic yards of gravel per day when working at capacity. J. A. Gilzean is in charge of operations at Junction City.

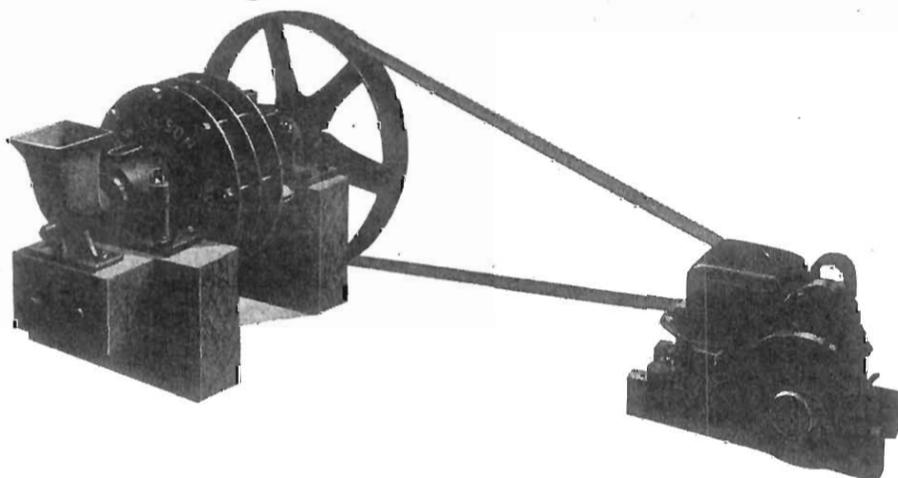
The Empress Mining Company of Grass Valley, California, has received the final shipment of machinery for its 300-ton daily capacity mill, and work of assembling the plant has been resumed. R. L. Hathaway, millwright of Grass Valley, has a crew of carpenters at work and intends

to have the mill in operation within 30 days. L. R. Robins has been acting superintendent at the Empress during the absence of E. C. Jacobs, manager.

COLORADO

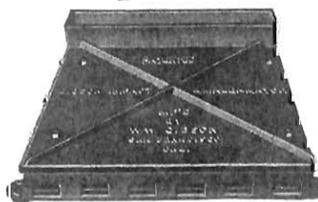
The Little Fanny and Philadelphia mines were recently leased to John Gilhane of Silverton, Colorado, who plans to carry on extensive development work. The silver claims are owned by the estate of E. B. Chapman, and were operated a few years ago by the J. C. D. Mining Company. The Philadelphia was a high-grade silver producer years ago, and since then attempts have been made to locate the continuation of the orebody, but operators were handicapped by lack of money. Gilhane plans to do as much work as possible while the weather permits, as there is not sufficient time to prepare for all-winter operations.

Announcing The Gibson Pocket Hunter



Never before has such value been offered to the mining public. The Pocket Hunter will crush two-inch material, grind and amalgamate in one pass. Built entirely of heat-treated chrome steel and guaranteed unbreakable. Will be taken back in exchange for 10-ton mill any time inside of one year. Heaviest part 85 pounds. Capacity 2 tons to 30 mesh. Price \$185.00. Price with belting and 1 1/2 H.P. engine \$250.00.

The Gibson Impact Amalgamator



Built in sizes from 25 tons to 2000 tons capacity

Repeat orders coming in from all parts of the world are positive proof of the efficiency of the Gibson Impact Amalgamator in saving the fine gold, amalgam and mercury that escape from the other amalgamating devices.

Write for catalogue describing Gibson Counter Balanced Rod and Ball Mills, Prospectors' Friend Mills, Flotation Cells, Amalgamators, Concentrators, Rock Breakers, Ore Feeders, Mercury Feeders, Oil Feeders, Retorts, etc.

W. W. GIBSON

112 Market Street

San Francisco, California

operations will continue. Louis Flader, South Pass City, Wyoming, reports that an additional shaft has recently been completed, and that ore is being taken out from three levels by tram lines. More than 3,000 tons of valuable ore have been stoped out in a cross-section of the mine where a vein running high in gold was developed recently. Summer shipments did not include any of this new ore, except for sample shipments. Indications are reported as most encouraging. Company equipment makes it possible to treat ore worth as low as \$4 at a profit.

The E. T. Fisher Company at Atlantic City, Wyoming, plans to continue operations with three-hour shifts as long as the weather permits. After freezing weather halts the washing process, the company plans to keep machinery stripping the surface upstream on the company lands. It has been estimated that the amount of gold recovered this year showed an increase of 25 per cent over last year's recovery. A. F. Baumhoff, Warren, Idaho, is general manager of the E. T. Fisher interests.

PROGRESS BEING MADE IN THE REOPENING OF PLUMBAGO MINE

Ten of the 20 stamps are dropping at the Plumbago mill of the Plumbago-Eldorado Gold Mining Company at Alleghany, California. The ore being handled is coming from the workings above the drain tunnel. In the meantime unwatering of the old workings is being pushed, and a depth of over 100 feet below the tunnel has been reached.

The Plumbago is located on the ridge between Kanaka Creek, near Alleghany, and the Middle Yuba River. It was worked continuously for 25 years until closed down in 1918. Since then it has been operated intermittently. The present operators, known as the Plumbago-Eldorado Gold Mining Company, have put the property in first class condition, extending a new power line to connect with the Pacific Gas and Electric Company's line. A large compressor from the old power house has been moved to the drain tunnel which has been cleaned out and retimbered from its portal to the shaft.

The Plumbago is credited with an output of between two and one-half to three million dollars, all from above the 1,000-foot level.

The mine was recently visited by E. H. Hobbs, president of the operating company, and F. J. K. Parker who is financially interested in the project. These two are also active in the development of the El Dorado property where work is in progress at the present time. Robert H. Bedford is in charge of operations at both properties.

MUGE CORE TAKEN FROM IDAHO MARYLAND CIRCULAR SHAFT

Ten tons of solid rock were taken out in a single core from the vertical shaft which is being sunk by the Idaho-Maryland Mines Company, Grass Valley, California. The core is seven feet high, five feet in diameter and estimated to weigh 10 1/2 tons.

The shaft is being sunk with the shaft-sinking machine, the invention of B. Newcomb, and is to be drilled to a depth of 1,000 feet. It will be used as an emergency exit and for ventilation. The machine is driven by a 40-horsepower motor, and uses hardened steel shot for the cutting. The cores are released by wedges at the bottom of the shaft and are hoisted to the surface by a tripod arrangement, with cable and power hoist.

MILL CONSTRUCTION STARTED AT GERMAN BAR GOLD MINES

The German Bar Gold Mines, Inc., North Bloomfield, Nevada county, California, has completed its two-year development program, and is now arranging for production by the installation of a ball mill. The new mill will have a capacity of 35 tons daily, and is to be in operation by January, 1935. The plant will be electrically operated.

The German Bar was the first quartz mine to be opened in the Alleghany district, and according to a recent publication by the U. S. Geological Survey, "Quartz Veins of the Alleghany District," its former production was over \$200,000 with an average of \$80 per foot of development work done for the 2,000 feet of drifts and tunnels. This production was all taken out of high-grade shoots, and broken up in a hand mortar, the milling ore being left on the dumps.

There are three tunnels on the vein, all in over 600 feet with 525 feet of backs. The vein runs from a foot to over eight feet in width and produces ore of about \$10 a ton milling grade. Enrichments which are a peculiarity of the district, are found from time to time in the course of development work. These run from a few thousand to as high as \$732,000, which was taken out in a chamber 14 by 22 feet in the Oriental mine across the river from the German Bar. The Sixteen to One, Tightner, Rainbow, Ireland, Gold Canyon and Plumbago are on the same vein system as the German Bar.

An incline in Tunnel No. 4 has been sunk for a distance of 70 feet and ore running as high as \$100 a ton has been taken from this winze. A pump is being installed there and the winze will be continued to greater depth. A three-drill compressor is being placed at the middle tunnel, the old one being moved up the hill to Tunnel No. 2.

The German Bar has been closed for over 30 years, but during the last two years has been under development by a group of engineers, headed by Colonel Chas. R. Blood and Thomas E. Stephens. The old tunnels have been cleaned out and driven ahead, water and electric power brought in, permanent buildings erected, and the mine is ready for production as soon as the mill is completed.

The German Bar Gold Mines, Inc., is a California company with Chas. R. Blood, president, and Thomas E. Stephens, acting as superintendent and consulting engineer.

DR. FINCH DIRECTING INQUIRY INTO ECONOMICS OF MINING

Dr. John Wallington Finch, director of the United States Bureau of Mines, and one of the principal speakers at the convention of the American Mining Congress, said:

"At the time of my appointment to the office I now hold, objection to me was voiced because it had been reported that I would interest myself in the problems of the economics of the mining industry instead of confining my activities strictly to production problems. And that is exactly what I intend to do.

"The federal government is conducting an exhaustive analysis of the production and sales records of the metal industry in order to ascertain what influences are holding down the prices of minerals. This work, at the behest of President Roosevelt, is being done by the United States Bureau of Mines, the Geological Survey, the Census Bureau, and the Minerals Division of the Department of Foreign and Domestic Commerce."

Send Your Orders
for **WIRE ROPE** to
The Central Mine Supply Co.
Mt. Vernon, Illinois

Manufacturers and distributors of mine supplies.—New and used machinery of every description.

William Henry Harrison
CONSULTANT

Mine Examinations, Valuations, and Depreciation Surveys; Also Representation Before Government Bureaus In Taxation, Registration of Securities, and Mine Loans.

Denrike Bldg., 1010 Vermont Ave., Washington, D. C.



We Look
Inside
The Earth
With our
**Diamond
Core Drills**

We Test Ore Lands and Specialize in Foundation Test Borings for Bridges, Dams, Buildings

PENNSYLVANIA DRILLING CO.

1201-1215 Chartiers Ave., Pittsburgh, Pa.

**Complete Equipment
For
Mine and Mill**

Flotation Chemicals
Assay Supplies, etc.

Goddard-Jackson Co.

1400 Santa Fe Avenue
Los Angeles, Calif.

ATTENTION GOLD MINERS

PRIME VIRGIN QUICKSILVER
packed 1, 5 and 10 lb. containers, also standard 76-lb. iron flasks.

Write for latest delivered prices f.o.b. your mine.

COAST CHEMICAL DISTRIBUTORS

55 New Montgomery St., San Francisco, Cal

warhoop that could be heard for miles around. He hit the ground running and the last seen of Bobtailed Coyote he was going over a hump in the prairie, picking 'em up and putting 'em down, about as fast as any buck Indian had ever done, before or since.

Clark continued to work the mine and sent several shipments of high-grade ore to St. Louis. He had about 40 tons of ore on the dump that averaged \$2,000 per ton in gold and silver in 1861 when the civil war broke out and the soldiers were withdrawn from Arizona. The Apaches again started their raids and the mines were forced to close. Clark threw the 40 tons of \$2,000 ore back into the shaft and pulled the timbers out around the top allowing the shaft to cave in.

Clark died before the Apaches were subdued and the \$80,000 worth of high-grade ore is still at the bottom of the old shaft.

ST. LOUIS DRUMLUMMON MINES, INC., ORGANIZE TO WORK OLD PROPERTY

A deed was recorded October 1, 1934, making final the transfer of all interests of the St. Louis Mining and Milling Company to the St. Louis Drumlummon Mines, Inc. The latter was incorporated on May 4, 1933, for that purpose, and represents a reorganization of the interests and liquidation of all bonded and other indebtedness of the old company. The new company starts out with a clean slate.

An examination of the mines, physical property, and tailings is being carried on under the direction of S. A. Brown of Marysville, Montana, manager. Reports and recommendations will be submitted to company officials with a view to starting the work of rehabilitation early next year.

The properties involved are the Drumlummon mine, which came into the hands of the St. Louis Mining and Milling Company, after protracted law suits terminating in 1910. The Blue Bird and Hickey mine group are also included, and were a part of the original property of the St. Louis Mining and Milling Company, and approximately 500 acres of patented quartz claims, mill sites, and placer ground extending for three miles down Silver Creek where the tailings are stored at various places. Approximately 1,000,000 tons of tailings have accumulated along the gulch, it is stated.

The Drumlummon mine, sold by Thomas Cruse in 1881 to the Montana Mines, Ltd., of London, England, was worked by the latter up to the termination of the law suit in 1910, having produced approximately \$23,000,000 from the initial treatment of the ore, by amalgamation and on Frue vanners. Over \$5,000,000 was recovered from the cyanidation of 825,000 tons of reclaimed tailings up to 1910. Loaded by teams and slips into narrow gauge railway cars, the tailings were reclaimed from five dams, treated and stored in a single dump. This dump is of interest at the present time. Reports justifying, a 500-ton, or possibly a 1,000-ton, cyanide tailing plant will be built, and at the same time work of unwatering and reopening the mines will be commenced.

HIGH RATE FOR COMPENSATION INSURANCE IN CALIFORNIA MINES

The compensation insurance situation in California, especially as applied to the mining industry of the state, is a very serious one, according to G. Chester Brown, secretary-treasurer, California

Metal and Minerals Producers' Association. The base rate for underground employes is \$11 per \$100 payroll, the highest rate of any of the metal mining states, says Mr. Brown.

In discussing the matter at greater length he pointed out that, as a result of the excessive cost of compensation insurance for mines, many companies have had difficulties in obtaining capital, as investors object to paying these rates when the cost of the same insurance in Colorado is less than \$5.

"The high cost of compensation insurance in California," said Mr. Brown, "is due to the liberal provisions of the compensation act, and also to the loading expense of 40.6 per cent which is added to the pure premium in determining rates. In addition, mines in isolated sections of California are penalized for distances from medical services and as a result of this condition some mine owners are paying a rate of \$14. In California unlimited medical service is allowed, and this is at least three times as great as the allowance in Colorado. The volume of payroll and of accident experience is nearly the same as that of California, relative to mining, so these two states in this respect are well fitted for comparison.

"In California a very high rating is given to employes for partial and permanent disabilities, which is not the case in Colorado.

"It is interesting to note that the mine compensation insurance rate in California has been increased more than 100 per cent in 10 years, yet the accident frequency shows no increase, and today conditions as regards safety are far in advance of conditions existing in 1924."

Ellis Mills

Are the Most Efficient Grinders

- The Best Re-Grinding Classifiers by overflow.
- The Best Amalgamating Pan to any mesh size.
- The Only Mill that will work Clay (pipe).
- The Only Mill that will work Mica (sheet).
- The Only Mill that will work Asbestos and not ruin the fibre, or Emery and not ruin the mill.
- And many others.

The Ellis Mill will grind anything that can be ground or pulverized, wet or dry, to a definite mesh in one operation, using only 1/4 to 1/10 the power others use. No gears, no grease, no bearings, no friction.

"ELLIS" Mills are sold on the following guarantee: In case you DO NOT get tonnage promised we agree to send one of our own men to GET it. In case HE FAILS, we agree to INSTALL such other mill as is needed to do the work, WITHOUT FURTHER COST TO YOU.

The above guarantee on following specifications, Mill and Feeder MUST BE GENUINE "ELLIS", set up as per OUR specifications (blue prints furnished) 40 mesh screens ("REK-TANG") mill fed 1/2-inch opening. This guarantee applies to minimum cap. of ALL "ELLIS" MILLS.

C. A. ACKERMAN, Manager.

ELLIS MILLS MFG. CO.

(A Voluntary Trust)

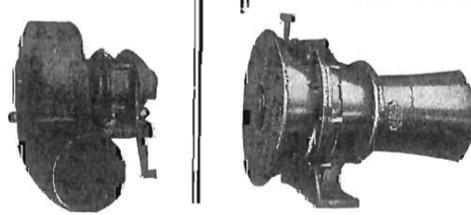
510 Brannan, Near 4th St.
SAN FRANCISCO CALIFORNIA

IMPROVE MINE VENTILATION WITH COPPUS BLOWERS VANO OR VENTAIR

They are light weight, portable, low in cost, and cannot be damaged by overload. And yet they deliver more air for their size and power consumption than any other unit on the market.

Send for Bulletins No. 121-2 and No. 122-2

Coppus Engineering Corporation
356 Park Avenue
Worcester, Mass.



REGISTERED
COPPUS
US PAT OFFICE

SPEAKING OFF THE RECORD

(Continued from Page 5)

difficulty in pointing out that there was a favored group who benefited largely by the purchase plan. The people really hurt are saying little about it; these are the miners of straight lead ores, without silver content, who see lead production stimulated unduly through mining of silver-lead ores and are unhappy over steadily mounting stocks and 3.65 cent price for lead.

In fact, it is perfectly plain that in the main the benefit that both gold and silver miners have obtained from the Administration has not been because the Administration particularly favored them, but because they were lucky enough to be engaged in mining the two metals that have the largest monetary significance, and which were affected favorably by the broad fiscal policies that the Administration adopted. To think otherwise would be to believe that the tail wagged the dog. * * *

It is probably just as well for the immediate good of the mining industry, insofar as it can be helped or hindered by the Administration, that the Washington press paid very little attention editorially or in the news accounts to what took place at the Mining Congress at San Francisco. This is not to indicate that the Administration depends on the local press to keep it informed of what the country is thinking. It maintains a remarkably complete clipping service of its own, in which pungent paragraphs, laudatory and otherwise, from the nation's press are presented daily for the edification or mortification of the New Dealers.

No doubt the caustic comments of the secretary of the Congress against the policies of the Administration were noted, but at least they were passed by with scant notice by the eastern press. Which appears to be a matter of congratulation. Giving vent to conservative platitudes may be soul-satisfying, but is not calculated to win the highest degree of favor from a liberal Administration for the industry that does the attacking. * * *

Certainly it is evident that the mining industry will need plenty of help if it is to escape unscathed in the next Congress. The copper tariff expires by limitation next year and the possibility that it might not be renewed is surely not a pleasant one for that depressed industry to face. It will be strange indeed if some proposal is not made for placing an excess profits tax on the gold mines along the same general lines that Canada and South Africa have done.

No doubt the gold miners will call to high Heaven to witness the iniquity of such a measure, but their oratory availed them little in the Dominion. A conciliatory attitude, instead of a frontal attack on the honesty of purpose of the Administration, would seem the wiser course for the self-styled spokesmen of the mining industry to adopt. * * *

Take for example the United States Bureau of Mines. It is a matter of common knowledge that for the last two years the bureau has received little attention; that its personnel has been decimated, its appropriation butchered, its activities limited by lack of funds. The reason? Largely because of a lack of rapprochement between those dictating the New Deal policies and the Bureau.

Only recently has a new director of the bureau been appointed. Dr. Finch comes in under new and favorable auspices. He has made an excellent initial impression and there are good grounds to believe that more cordial relations will exist in the future between the Administration and the bureau. It should be possible for the bureau to exert a larger influence in Washington official life. It represents a vast industry, basic in the country's well-being and vital in any awakening of prosperity. * * *

NEW MILL PLANNED FOR COPPER CANYON PROPERTY

Machinery is being purchased for a 50-ton milling plant for the property of the Copper Canyon Mining Company, Camp Verde, Arizona, according to a report from L. C. Tillotson, finance manager. S. F. Lyon is in charge of operations at the mine.

This company owns two properties. The one on which the mill is to be located consists of 8 claims in the Chasm Creek district and shows good silver values. Although the greatest depth attained as yet is but 50 feet, there has been much surface development which indicates extensive ore bodies. The vein is shown to be 22 feet in width with 4 feet of high grade. It can be traced for over 4,500 feet, and on the surface shows widths up to 40 feet.

Tests and assays on the mill ore have been made at Clarkdale, Arizona, and show a ratio of concentration of 50 to 1 and reports show a concentrate can be made which runs 350 ounces in silver and 40 per cent lead. The mill flow sheet is being planned in conformity with these tests.

The other property owned by this company is 10 claims in Copper Canyon carrying copper, gold and silver values and has had considerable development although no great depth has been reached. Construction work on the mill is to start shortly.

NEVADA CONSOLIDATED CLOSES CHINO MINES IN NEW MEXICO

Mining and milling operations at the Nevada Consolidated Copper Corporation, Chino Mines, have been suspended for an indefinite period, according to an announcement by R. B. Tempest, general manager. The official statement follows:

"The market demand for and consumption of copper has declined sharply during the last three months, and sales by Nevada Consolidated Copper Corporation have been much less than production. Under these conditions it becomes imperative that this company reduce output until market demand undergoes substantial improvement. It is impractical to continue producing unsalable copper and thus add to the already large surplus stocks of the metal. Because of this emergency Chino Mines will not resume operations at this time."

Since 1932 the mines and mill had been working from 15 to 18 days a month. However, more than 500 employees are affected by the shutdown. A skeleton crew of approximately 50 men will be maintained at Santa Rita and at Hurley to care for the mining and milling property. Mobile equipment, including steam and electric shovels, has been moved out of the big pit at Santa Rita. The power plant at Hurley will be kept running, to supply electricity for the two camps.

As a direct result of the closing of the Chino Mines, the copper division of the El Paso smelter of American Smelting and

Refining Company suspend operations early in November. However, this will not be an indefinite shutdown of copper smelting operations at El Paso, for copper ores will be received and purchased regularly as in the past, and smelted at such times as accumulated tonnages will permit.

The other departments of the El Paso Smelter, including the lead department, the ore purchasing department, sampling mills, etc., will continue to operate as heretofore. It is believed that the ore supply will be sufficient to start up the copper furnace sometime early in the coming year.

SAN FRANCISCO MINT RECEIPTS CONTINUE ON LARGE SCALE

The report of Superintendent Peter Haggerty of the San Francisco mint covering the month of September states that, while about \$300,000,000 in gold bars is shipped weekly to the mint in Denver, during that month 1,016,936 ounces of gold, valued at \$35,593,460, were received at the San Francisco mint. A vast quantity of this gold came from California mines. The Philippine Islands contributed 75,000 ounces. In addition, a large quantity of silver was purchased by the mint.

STATEMENT
of the Ownership, Management, Circulation, Etc.,
Required by the Act of Congress of
August 24, 1912, of
The Mining Journal
Published semi-monthly at Phoenix, Arizona, for
October 1, 1934.

STATE OF ARIZONA,
COUNTY OF MARICOPA } ss.
Before me, a Notary Public in and for the State and county aforesaid, personally appeared Charles F. Willis, who, having been duly sworn according to law, deposes and says that he is the Publisher of The Mining Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher—Charles F. Willis, 528 Title and Trust Bldg., Phoenix, Arizona.

Editor—Same.

Business Manager—E. Smith, 528 Title and Trust Bldg., Phoenix, Arizona.

2. That the owner is (if owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)—Trade Journal Publishing Company, a corporation of which the stockholders are Charles F. Willis and Helen H. Willis.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)—None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

CHARLES F. WILLIS, Publisher.
Sworn to and subscribed before me this 8th day of October, 1934.

(Seal)
ESTELLA COMBS,
Notary Public.
(My commission expires June 18, 1937.)

The Manufacturers Tell Us

Ohio Brass General Catalog Out—It is an event among those interested in electrical transmission equipment when a general catalog is issued by the Ohio Brass Company, Mansfield, Ohio. The New No. 21 General Catalog has just been made available and it lives up to its record of being the most complete directory of high-class electrical equipment that can be imagined.

Its 422 pages are filled with descriptions and tables of thousands of electrical accessories from Adaptors to Yokes and there is probably no more important book published for the library of the man who has electrical transmission or haulage under his direction.

Of particular importance and interest is a section covering a complete new line of Ohio Brass motor starters. These devices represent an entirely new development insofar as motor starting equipment is concerned.

The book also has a novel index feature which makes it easy to use and it is a volume which will find a very constant use. The tables included are also invaluable to electrical men in all branches of the industry.

A New Insulation—Laytex is the name given to a new insulation developed by the United States Rubber Company, 1790 Broadway, New York, and which is predicted to revolutionize the electrical industry in that it has properties which are infinitely superior to the ordinary flexible insulation as to flexibility, tensile strength, resistance to compression, dielectric strength and insulation resistance.

It is peculiarly adaptable to mining for insulation of underground telephone wire, non-metallic underground cables, shot firing wires, etc. Its superior properties make possible thinner and lighter conductors and in some applications it is possible to secure a reduction of 25 per cent in outside diameter and 50 per cent in weight.

Atlas Engines Installed—Mining machinery houses are reporting a substantial movement of new equipment to mine operations. The Atlas Imperial Diesel Engine Company, Oakland, California, has recently sold two 200-horsepower 9" x 10 1/2" Atlas Imperial Stationary Diesel engines, together with Crocker Wheeler alternators, to the Ohio Mines, Goldpoint, Nevada. Incidentally these two units, weighing 30 tons, were delivered over the road on a new 25-ton Sterling tractor with semi-trailer, the tractor having a capacity of 12 1/2 tons and the trailer with like capacity, the truck being purchased by the company from the Federal Knuckey Truck Company, 1475 Market Street, San Francisco, California.

Other recent Diesel engine deliveries have been, two 120-horsepower portable power units to the Oregon King mine, Madras, Oregon, which is being developed by the Alaska Juneau interests, and a 150-horsepower 9" x 10 1/2" stationary Diesel engine to the Scientific Minerals Recovery Corporation, Michigan Bar, Jack-son, California.

New Air Clutch—The National Machinery Company, Tiffin, Ohio, has announced a new air operated friction clutch for starting machines, which provides a quick-acting, smooth and quiet driving mechanism, and eliminates all noise and shock.

The new air clutch is available as alternate equipment for the regular quadruple abutment starting and stopping clutch.

New Prospecting Drill—Bucyrus-Erie Company of South Milwaukee, Wisconsin, announces the introduction of its new Model 26-P and Model 33-P prospecting drills. Either model is equipped with a 20-horsepower, four-cylinder, heavy duty gasoline or a 25-horsepower oil engine, with power-take-off shaft mounted in ball bearings.

The Model 26-P has caterpillar type mounting while the model 33-P has steel wheel mounting and both models are furnished with telescopic derrick for convenience in moving. If interested Bucyrus-Erie Company will gladly send a catalog describing and illustrating these new prospecting drills.

The Irving G. King Company, 767 Stanford Avenue, Los Angeles, California, has been appointed by Bucyrus-Erie as Load-master distributor for the Los Angeles territory.

A Wheelbarrow Tire—One of the newest and most novel uses for pneumatic tires is reported by The B. F. Goodrich Company, Akron, Ohio, in announcing one of its latest products, the single tube wheelbarrow tire.

Goodrich engineers say that many contractors throughout the country are using only wheelbarrows equipped with pneumatic tires in their work on roofing jobs. The cushioned wheelbarrow is able to haul its loads without the risk of damage to the roof present when barrows with the old type wheels are used. It is also valuable in hauling loads over sod or soft ground, requiring no planking.

Acquires Forsterite Patents—The Harbison-Walker Refractories Company, Pittsburgh, Pennsylvania, has announced the acquisition of the American rights to the forsterite patents of Goldschmidt and his associates through an exclusive royalty granted by Doctor Victor M. Goldschmidt of Gottingen, Germany. These patents cover refractories made of olivine and of the other magnesium silicates. Included in the group are more than a dozen United States and Canadian patents.

Forsterite has a melting point of 1910° C (3490° F). It is the only magnesium silicate which will remain stable at the temperature at which many industrial furnaces operate. Forsterite has the chemical formula 2 MgO: SiO₂, and is the principal constituent of the more refractory olivines.

CUSTOM MILLING PLANT ESTABLISHED IN LOS ANGELES

A custom milling and demonstrating plant is being established at 2440 East 57th Street, Los Angeles, California, where ore in lots of 500 pounds or more will be treated and tested.

The milling of the ore will be under the direction of B. M. Harmon, a former Utah operator who for several years has been active in various mineral sections of California and Nevada. The concentrating processes will be managed by Lamley Brothers, whose experience in this line extends over a long period of time, qualifying them to give excellent service of this kind.

The need for such service has long been felt by mining men. They will now be able to see a quantity of their own ore milled and the values put into concentrates, banishing much of the uncertainty attending mining ventures.

Classified Advertising

5¢ per word for the first insertion and 4¢ per word for subsequent insertions, minimum price \$1.00. Box number counts for 10 words to cover cost of forwarding replies. If desired in larger type and displayed, \$2.50 per inch per insertion.

POSITIONS OPEN

WANTED: Mine Shift Boss, single, age thirty to forty, for three-year foreign contract. Two hundred dollars per month and traveling expenses.
WANTED: Cyanide Mill Shift Boss, single, for two-year contract. One hundred seventy-five and living.

BUSINESS MEN'S CLEARING HOUSE
Midland Savings Bldg. Denver, Colo. 11-15

EQUIPMENT FOR SALE

30-STAMP MILL. Three ten-stamp units. Complete, including frame timbers, pulleys, etc. First class shape. Sell complete or units. Box G-13, The Mining Journal, Phoenix, Arizona. 11-15

MINES WANTED

GOLD MINES WANTED. Attractive propositions offered mining engineers and brokers who furnish contacts to good mining properties. Inquiries invited. Page Company, Financial Center Building, Oakland, California. 11

WANTED GOLD or SILVER MINES. Proven. Will buy, or finance. W. H. Frederick, 5350 Dupont Avenue South, Minneapolis, Minn. 10-30

MINES FOR SALE OR LEASE

GOLD MINE FOR SALE—In steady producing district of Nevada. Ore in sight justifies small mill. Large past production. Will stand engineer's investigation. Priced right for cash on the line. Address: Box G-14, The Mining Journal, Phoenix, Arizona. 10-30

FOR SALE: About seven hundred acres patented mining ground located on highway, between Miami and Inspiration companies and Magma Copper Company. Several rich copper veins have been developed from which over \$30,000 ore mined and shipped. Geologists state formation indicates gold vein runs through property. Address: S. D. Crenshaw, Richmond, Virginia, or Frederic A. Shaffer, Globe, Arizona. 10-30

FOR SALE. Quicksilver property, partially developed; 267 acres patented. Ten miles to railroad, seven miles paved. Considerable equipment. Electric power. Satisfactory working conditions all year. For further information address Box B-14, The Mining Journal, Phoenix, Arizona. 11

FOR SALE

QUICKSILVER, balances, assayers' supplies. Arizona Assay Office. Phoenix, Arizona. 11-30

CAPITAL AVAILABLE

An experienced group ready and able to act promptly is interested in purchasing all or control of developed or partly developed gold mines where enough work has been done to indicate clearly the presence of commercial ore. The properties are desired for actual mining operations; not for stock promotion.

Kindly submit in strict confidence in your first letter assay maps, engineering reports and terms in sufficient detail to permit an intelligent office study to be made preliminary to an interview. R. Potter Campbell, Inc., 84 Williams Street, New York City. 10-30

WANTED

WILL EXCHANGE ASSAYING for 250 feet of 6-inch used well casing, f. o. b. Phoenix, Arizona. Forman Assay Office, Seventh St. and Glendale Ave., Phoenix, Ariz. 10-30

THE TONOPAH MINING COMPANY OF NEVADA

Exploration Department
PROSPECTS OF MERIT FINANCED

Write Either
H. A. JOHNSON Or Main Office
Supt. of Operations 570 Bullitt Bldg.
Tonopah, Nevada Philadelphia, Pa.

11-1534

The benefits of cooperation have been emphasized with the hope of showing the advantages thereof. Likewise, the result of the alternative theory of "the battle to the strong" has been stressed, together with the difficulties of effective cooperation and the justification for minimum governmental regulation. This latter is unfortunate, but it is by far the lesser of two evils.

The attitude of the government, however, as shown in the interpretation of the National Industrial Recovery Act, is subject to some serious and just criticism. There is no doubt that this attitude is retarding recovery, and that it has contributed to the lack of confidence prevailing among business and financial interests.

It is probable that 90 per cent or more of the American people are not interested in the ways and means for promoting recovery, but they are vitally concerned in the results. Labor wants employment at fair wages and with reasonable standards of living. The farmer wants a market for his crops, with at least some margin of profit, and the business man likewise expects a fair return on his investment.

The people as a whole look to President Roosevelt and to his administration, as well as to the leaders in finance and industry, to develop a simple, equitable, and effective recovery plan. During the present crisis there has been no really constructive or sound leadership on the part of business and finance. Political leadership in itself cannot succeed, and recovery demands the wholehearted and unselfish cooperation of broadminded leaders in business, finance, and government.

Surely there are a few such leaders among these groups, with sufficient breadth of vision and patriotism to efface their own particular interests and who will be content to work for the common good. It is obvious that they will participate in such benefits as will accrue.

The only leadership shown thus far has been by the Administration, which started off admirably and at a time when action was sorely needed. This leadership prevented a probable complete collapse; but it has since become too technical and too extreme, and it now seems doomed to failure unless it can inspire the trust of those able to increase the purchasing power of the nation along sound and practical lines. This cooperation can be secured, but confidence must be its foundation.

The government has flirted with and has been decidedly partial to organized labor in the interpretation of collective bargaining. Business has in the past and will in the future resist these inequities. The confidence and cooperation of business under such conditions is not possible, and a more just attitude on the part of the government in this respect is essential.

Labor should have the right to bargain collectively through representatives of its own choosing, and without interference in any way from its employer; it is entitled to good wages and favorable working conditions, with freedom either to join or not to join unions, as it may see fit. But by the same token there should be no interference or coercion by union organizers or officials, whether on or off duty.

A review of the operations of the Administration's recovery program shows that the government has relaxed in the enforcement of the anti-trust laws to the extent of permitting industry to regulate production to demand, and in some cases to the fixation of prices; while, as heretofore stated, business has increased

wages, spread employment, and agreed to collective bargaining. The government has also, through vast public expenditures, substantially reduced unemployment and increased the purchasing power of the nation. The result has been a larger volume of business at better prices, with conditions showing a material improvement.

Even though a subject of controversy, the NRA has nevertheless been helpful as an emergency measure, and there is one important part of it that should be made permanent: making it permissible and when necessary compulsory to regulate production to demand in the over-developed natural resource industries, thereby preventing the wasting of the nation's natural resources.

In fact, just as soon as inventory adjustments will permit, codes of fair competition should be limited to this provision, with reasonable safeguards for the interests of labor and the public. The prevailing dissatisfaction in the operation of codes is due, first, to the fact that most of the codes are unnecessarily complicated, thereby requiring simplification, and secondly that many industries do not need codes or an understanding of any kind except with regard to labor.

There is a general and growing antagonism to the NRA, which, if not relieved, will jeopardize the future of the entire recovery program. This antagonism in part at least is justified, and is due to the excessive public expenditures and to the unfair attitude of the government with regard to taxes, profits and labor.

However, the results of the Administration's recovery program to date unquestionably warrant its continuance and the cooperation of the entire mineral industry, and as a representative of this industry the American Mining Congress should be ready and willing not only to assist in every way possible but also to submit constructive criticism and suggestions for a more equitable and effective governmental policy.

The following summary outlines the suggestions which, in my opinion, the Mining Congress should make:

1. Simplification of codes of fair competition, by limiting the terms thereof to conform (a) with the law of supply and demand, and (b) with equitable provisions for labor and the public. Price fixing should be prohibited except in industries having excess inventories, and in such cases provisions should be made for the reduction of these inventories to normal within a reasonable period of time.

2. Discontinuation of codes, except in the over-developed natural resource industries, as well as in all others where in the opinion of the industries affected they are not absolutely essential, together with emergency legislation for minimum wages and hours of employment.

3. The appointment of a committee of from three to five men, representing the highest type of American business and financial executives, to cooperate with the Administration in a more equitable and effective recovery program. The work of this committee should have no publicity, except that which may be volunteered by the Administration from time to time.

The American Mining Congress has a record of accomplishment. It represents one group of industries, yet it realizes that these industries will prosper only as the nation prospers. When it exercises its right to criticize it realizes that to be of benefit its criticism must be constructive, not destructive. It is in this spirit that these suggestions are offered.

ARGONAUT MINING COMPANY LOSES GOLD SEIZURE SUIT

In an opinion handed down on October 23, Judge A. F. St. Sure of the Federal District Court of San Francisco dismissed without comment the case of the Argonaut Mining Company vs. United States Government. Although the case was dismissed for technical reasons, authorities said the judge's decision was tantamount to upholding the validity of the gold hoarding act and the President's gold seizure order. As a result the government is expected to take the necessary steps to confiscate the gold in question, amounting to 7,171 ounces.

The Argonaut Mining Company in its complaint maintained that the regulations under government legislation and executive orders placing an embargo on gold hoarding are void because delivery of gold was called for by the government at a price under the market value, and the complaint also maintained that the legislation and executive orders exceeded the powers vested in Congress, the Secretary of the Treasury and the President.

Argonaut protested turning over gold mined during May, June and July of last year, to the government for \$20.67 an ounce when the world price was considerably above that level. After the deadline for turning over all gold to the government, as provided under existing laws, the management of Argonaut decided to test the validity of the law and protect the company as far as possible from prosecution as a hoarder.

Accordingly, the company made application for and was granted a temporary restraining order by Federal Judge Harold Louderback against Henry Morgenthau, secretary of the treasury, and H. H. McPike, United States district attorney of San Francisco, from prosecuting it and from requiring it to surrender 7,171 ounces of gold at \$20.67 per ounce. The current decision set aside the temporary restraining order issued last January and dismissed the suit.

CALIENTE CYANIDING CO. TO HAVE MILL JANUARY 1

Contract for a \$50,000 all-slime, 200-ton cyanide mill at Delamar, Nevada, has been let by the Caliente Cyaniding Company, announced H. L. Hazen, 618 Crocker Building, San Francisco, vice-president and general manager of the company. The plant will be operating by January 1, 1935, providing no unforeseen difficulty arises.

Equipment for the mill includes a 5x5 Allis-Chalmers ball mill, 6x20 Dorr classifier, two 30-foot Dorr thickeners, three 10x12 Devereaux agitators, and one 14x14 Oliver filter. All equipment will be completely housed and power will be furnished by the present power plant and a new 250-horsepower Fairbanks Morse type Y Diesel engine.

Western Machinery Company holds the contract and has placed Roy Marcellus in local charge. The flow sheet is planned for 100 mesh product, agitated, thickened, filtered, and handled as an all-slime cyaniding operation. Tests for demonstrating the most satisfactory method of saving the gold and silver values in the large dumps, said to contain over 2,000,000 tons, were made under the supervision of Hazen.

After the new mill is in operation, it will furnish employment to 14 men. D. Ross Fraser will be the new assistant manager of the Caliente company.

Mill Heads from Western States

Brief items covering the mining industry in the Western United States and Northern Mexico.

ARIZONA

The Monte Cristo Gold Silver Company of Constellation, Arizona, H. B. Browning, superintendent, has placed on production the first 50-ton unit of its milling plant and is now engaged in the installation of a second unit of equal size. When the plant is completed the management expects to obtain 95 per cent recoveries.

In its quarterly report the United Verde Extension Mining Company, Jerome, Arizona, states that while there are no marked changes since the last reports, as no additional ore has been discovered, it is becoming increasingly difficult to mine a good smelting mixture as ore reserves diminish. Copper production for the period is given as: July, 2,574,468 pounds; August, 2,640,900 pounds; September, 2,499,782 pounds. Cash on hand, October 1, 1934, was \$1,750,403.90, with marketable securities listed at \$2,456,327.35. The report was accompanied by the dividend check of 25 cents a share.

The Oatman Associates Mining Company is operating the property of the United Eastern Mining Company at Oatman, Arizona, under lease. The gallows frame has been completed and an electric hoist is being installed. An electrically driven air compressor has been received and will be installed as soon as possible. Seven men are employed in the mine where removal of the pillars on the 300 level will be the first work undertaken. It is also believed that there is a large tonnage of low-grade ore available in the old workings. Oatman Associates company is directed by J. L. McIver, with Robert McIver in charge at the mine.

The Ray Southern Mines Company, Ray, Arizona, is reported to be making plans for the immediate installation of a new hoist, compressors, electric lighting plant, and 50-ton mill. The Ray Southern group was acquired last summer by Max Vogel, 601 Parkview Avenue, Los Angeles, California, and associates, and the deepening of the No. 2 shaft to the 300 level started. From that depth a 450-foot drift will be driven to connect the main workings of the mine. This work is expected to block out approximately 30,000 tons. M. C. Scherer is in charge at the mine. F. A. Kaufman, Financial Center Building, Los Angeles, is consulting engineer.

The Cornucopia and Fenfield mines at Cherry, Arizona, are being operated by Roy Cornett, who recently reported a fairly rich gold discovery. Cornett at present is constructing a winter residence at the mine.

Robert Wombacher of Cottonwood, Arizona, is sinking a new shaft on the Red Horse claim in the Cherry Creek district. He reports that the ore is improving both in width and value as depth is gained.

E. B. Bunker has installed a Layne mill at his claims at Cherry, Arizona. He recently shipped a car of high grade to the Magma smelter, the ore said to surpass any previously shipped from the district.

The Leviathan mine, located at Congress Junction, Arizona, has made a 30-ton shipment of gold ore, averaging \$40 to the ton, to the Magma Copper Company smelter. The ore was mined during development work. The property is said to be

developing beyond the expectation of the management, the gold values having increased from \$9 to \$40 per ton. The present work is confined to the sinking of a shaft on a large fissure, containing 12 feet in thickness of commercial ore. The vein portion of the fissure is six feet wide, and from which the above shipment was made. The shortage of water has caused the operators to defer mill operations until an adequate supply can be developed. Plans call for the repairing of the Upton mill at Stanton, located close to the property, for the reduction of ores until the company's own mill, with a daily capacity of 100 tons, is erected. In the meantime direct shipping ore will be sent to the smelter. William O. Woodbury, mining engineer, is directing the work.

The Big Jim mine at Oatman, Arizona, under lease to Rae L. Johnston and associates, has succeeded in clearing the cave on the 500-foot level, and is able to release a large part of the crew for ore breaking. The mill, which was off production due to a broken part, has been repaired and is again operating at capacity. The principal ore production is coming from the 660-foot level.

The Sterling Gold Mining Corporation, Cordes, Arizona, shipped a carload of ore from its Richinbar mine the last of October. F. H. Lerchen is manager of the company.

The Mayo Engineering Company of 3875 Wilshire Boulevard, Los Angeles, has taken over the management of the Cyclopic Mine at Chloride, Arizona. A new 100-horsepower Diesel engine and some miscellaneous machinery have been installed and the milling plant is handling 100 tons daily. It is planned to increase the capacity of the plant at an early date. The ore is mined by a dragline with a daily capacity of 1,000 tons.

The Three Rs Mining Company of Tombstone, Arizona, has shipped its second carload of ore to the smelter. This is the newest company operating in the Tombstone district, working the Giacoma bond and lease on the Dry Hill claims. John Giacoma is superintendent.

The Golden Door Mines Company at Oatman, Arizona, operated under lease by Virgil Merritt of California, is producing on a 30-ton per day basis. This production will soon be increased to 50 tons daily, according to Keen St. Charles, who has directed the work at the Golden Door for a number of years. Thirty men are employed at present and this number will be doubled when increased production is started. The mine was recently equipped with a 75-ton flotation mill. St. Charles reports that the ore milled so far is running \$23 per ton in gold and silver.

Since the beginning of the current year the Boriana Mining Company, Yucca, Arizona, has shipped nine carloads of high-grade tungsten concentrates, said to run better than 70 per cent tungsten tri-oxide. During the last six months the company has been engaged in an extensive improvement program, in the mine, on the surface and at the mill. This program has been completed and production is going forward with a crew of 75 men. On the fifth level, the main haulage level, 375 feet of drifts have been run and 1,600

feet of 16-pound track laid, replacing the old 12-pound rails. A 20x28x56-foot station was cut and equipped for sinking the No. 20 winze below the fifth level, and sinking is now under way. Several hundred feet of drifting and raising were done on other levels. Surface improvements included an additional 260-horsepower Diesel and generator, a large compressor and an electric hoist, and a number of additions to the mill. A. J. Klant, as general superintendent, has directed the entire program. He has been assisted by Walter Hughes, mine foreman, and W. H. Munds, mill superintendent.

Two cars of high-grade ore have been shipped to the El Paso Smelter and a third will soon be ready for shipment by the Crown King Consolidated Mines, Ltd., Crown King, Arizona. Two shifts are at present employed in the winze from the main tunnel, and as soon as the new electric pump, just purchased, is installed, a third shift will be put to work in the line shaft on the 100 level, drifting north to the Crown King ground. This drift is reported to be in ore of shipping quality. W. W. Edward is general manager, with Charles B. Broan, mine superintendent.

The Castle Rock group of claims at Crown King, Arizona, were visited early in October by A. Dibert of Santa Monica, California, Edward H. Schafer of 604 Board of Trade Building, Los Angeles, and Ted Oehrlin, of Los Angeles.

Some exceptionally high-grade gold ore is being mined from the Towers Mountain group by Collup and Hayes of Crown King, Arizona. The ore is milled on the ground when the water situation will permit. At present they are enclosing the mill in order to continue work through the winter.

CALIFORNIA

Cleaning out and repairing of an 800-foot drift on the 800-foot level of the Belleview mine, L. S. Overpeck, manager, Sonora, California, is proceeding with two shifts and is to be completed about the end of November. Most of the former operations at the property were on the hanging wall vein, and excepting a stoped out area between the 600 and 500 levels, the footwall ledge, said to be from a few feet to 16 feet in width, is assertedly intact. Sampling of the footwall vein on the 600 level is said to have been satisfactory and it is claimed that the bottom drift shows good ore in the same vein for a distance of 400 feet.

Operations at the Enterprise mine, Columbia, California, are in charge of J. E. Wynne. The property has recently been taken over under lease and option by F. A. Beauchamp, 564 Market Street, San Francisco, and S. W. Waterhouse and John C. Waterhouse of Santa Cruz, California. Buildings are being erected, a hoist and compressor installed and a shaft started at the property.

The Oro Placer Company, W. R. Ruess, president, has completed erection of a recovery plant on the Springer-Thomas holdings near Quincy, California, to extract gold from the old Elizabethtown tailings, estimated at 410,000 tons. Fourteen men have been employed for two months in the erection of the plant, which has a capacity of 3,000 tons per day. It resembles a gravel-crushing machine, the gravel being handled on a series of vibrating screens of varying mesh, working on the long tom principle. Each long tom is connected to a riffle box, where the recovery is made.

George M. Icard, Grass Valley, California, is reopening the old Icard properties between the Rough and Ready and the Newtown districts, which were owned by his father, the late John Icard. Development is being carried on in three phases. A prospect shaft near the eastern end of the tract is being sunk in the hope of cutting the Abe Lincoln vein, a gasoline hoist being used in sinking this new shaft. Near the Deer Creek water level a tunnel is being driven westward to cut a vein some 800 or 1,000 feet from the mouth. For this purpose the 300-foot tunnel driven by the old Florida Mining Company some 50 years ago is being extended the necessary distance. At the western end of the tract a new tunnel has been sent in 220 feet from near the bed of Deer Creek. The property is said to have produced rich ore in former days. As soon as operations are well under way, it is understood that Mr. Icard will return to the Philippine Islands, where he owns and operates the Keystone mine near Baguio.

The **Beebe Gold Mining Company**, Georgetown, California, has reduced its force to about 20 men, due to the fact that the mining operations are too far ahead of the milling. The mill will continue to run three shifts a day and development will continue at the Beebe. Mining will be resumed when surplus ore has been milled. L. E. Putnam, recently from Mayo, British Columbia, is now superintendent at the Beebe mine, taking the place of C. N. Schuette, acting superintendent.

An additional five stamp unit has been put into operation at the Diltz mine, E. R. Baker, general manager, Mariposa, California, making a total of 15 stamps now in use. Another improvement planned at the property is the construction of a new boarding house.

The **Fortuna** mine is to be unwatered and reopened under the direction of Captain George A. Nihel, Nevada City, California. The present shaft is down 417 feet. The mine was abandoned a number of years ago, due to the inability of the operators to handle a large flow of water encountered at that level.

L. W. Cheney of San Francisco has taken a bond on the **Gracey**, the **Flat Ledge** and **Flat Ledge Extension**, and the **Glencoe** quartz mines, which are owned by the estate of John Arbogast, the estate of Archibald Nivens, and by R. N. McCormack, county clerk, Nevada City, California. The Pacific Gas and Electric Company has installed transformers and cut in a 150-horsepower current. Active operations, including cleaning out the drain tunnel, are to be started at once. A number of small houses are being erected at the property to be used as living quarters for Mr. Cheney and his associates. The group is located in the Canada Hill mining district, south of Nevada City, California.

The **Blue Eagle** mine near Mojave, California, has been sold by Burton Brothers, Inc., to Joseph Otto and Fred Wright of Los Angeles. Shallow shafts and a 200-foot tunnel have already been driven at the property, said to reveal a five-foot vein of ore. The property is equipped for immediate operations and the new owners will continue development.

A 10-foot vein of ore averaging more than \$14 a ton has been opened on the 500-foot level of the **Amador Mother Lode Mining Company**, Jackson, California, according to E. A. Stent, vice-president and managing director. Development work is being actively pushed. O. E. Chaney, Reno, Nevada, is president of the company.

The **Mountaineer Mining Company**, Vidal, California, is said to be planning immediate erection of a 100-ton mill, following returns in excess of \$30 per ton on gold ore taken from the 230-foot level. The mill is to be located across the canyon from the company's new power house. H. E. Olund, 1117 Citizens National Bank Building, Los Angeles, who is operating the property under lease, has ordered the machinery for the new mill, and Stewart Bryant, mine superintendent, will have charge of the construction work. The Mountaineer recently uncovered a large ore body at the 230-foot level, said to run from 16 to 60 feet in width and to average better than three-fourths of an ounce of gold to the ton. During the past few months more than \$30,000 has been spent for new installations and improvements, including a 100-horsepower Diesel engine and a generator in the power plant, and a number of new jackhammers. A new catwalk across the canyon, connecting the power house with the main shaft, has also been completed.

Eight tons of ore from the 80-foot level of the **Grace Claire** mine are said to have yielded six ounces of gold by amalgamation and 1500 pounds of concentrates carrying values of \$137 a ton. H. L. Loomis, Box 246, Tuolumne, California, is operating the property.

The **Columbus Gold Mining Company**, W. A. Hayes, general manager, Tuolumne, California, recently overhauled the mill after a year's continuous operation. The tailings in the future will be impounded on company ground above the mill and will be forced to the new location by a Wilfley sand pump, now being installed. A Worthington triplex pump which is to be

installed at the mine will more than do the work of the two pumps now in use. Twenty-five men are employed at the property.

H. L. Douglas, who recently purchased the **San Juan** mine near Jamestown, California, has installed a small four-stamp mill and is making tests of ore from several veins. He plans to install a 10-ton Straub mill to operate in conjunction with the present plant, and expects to work the property on a large scale later.

New equipment has been installed and several new buildings constructed at the **Redding Consolidated Mines**, Redding, California, which is under lease and option to Fred Zimmerman.

The 200-foot tunnel at the **Silver Queen** mine, M. A. Holmes, manager, George Holmes, superintendent, Mojave, California, has been completed and a new compressor has been put into service. Ore from the new tunnel is reported to be averaging \$45 per ton. The Silver Queen is continuing to ship 50 tons of ore daily to the Burton mill at Rosamond, and 16 carloads of ore have been shipped to the Selby smelter. On the Holmes-Nicholson lease, Kenneth Holmes and George Nicholson, new machinery includes a pneumatic compressor, ore bins, blacksmith shop and a Diesel power unit for the entire works. Two other sets of lessees, Scroggins and Moreland and the Benson-Pyle-Getti group, are shipping ore from the north end of the mine.

More than 400 feet of galvanized iron snowsheds are being completed at the **Mammoth Mines Corporation** property, Mammoth Lakes, California, to permit operation of the property during the winter. A 400-foot crosscut is being driven from the main working tunnel, which is expected to cut two large veins at a depth of approximately 450 feet. A. G. Mahan, 224 Board of Trade Building, Los Angeles, is president of the company. C. R. Johnson is engineer.

The 50-ton daily capacity mill at the **Spanish** mine, Bert D. Harden, general superintendent, Washington, California, is treating about 70 tons of ore per day. The vein being mined at present is of soft material and the mill is able to handle a greater tonnage. Thirty-six men are employed at the mine. James Huffman is mill superintendent.

The **Mattie Gold Mining Company**, M. J. McGuire, mine superintendent, Grass Valley, California, reports 32 men working three shifts on the property, which is now equipped to work to a depth of 1,000 feet. Electric power is available on the surface and throughout the underground workings; air, water and telephone lines have been installed, equipment includes a double drum hoist, drill sharpener, 750 cubic-foot compressor suitable for 10 to 12 drills, station pump and two Byron Jackson pumps. Buildings consist of new, completely equipped assay office, mine office, storehouses, machine and blacksmith shops.

The **Canyon Creek Dredging Company**, Thomas Nicholls, manager, Georgetown, California, has recently completed the enlargement of its dredge. The bucket line has been extended 14 feet, making it 68 feet, the hull has been extended eight feet on the bow and the bow gantry made six feet higher. After working slowly up Canyon Creek from the Gold Bug property, the company is now dredging on the Blue Rock tailings dump. This dredge has been operating three shifts a day without a shutdown since early in the spring of 1933. Jack Payne is dredge master.

AVERAGE PRICES OF METALS
(Figures by American Metal Market)

	Copper Per Lb.	Lead Per Lb.	Zinc Per Lb.	Silver Per Oz.
	Conn Valley	New York	St. Louis	New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.622	69.065
1926	13.795	8.417	7.837	62.107
1927	12.920	6.765	6.242	56.870
1928	14.570	6.305	6.027	58.176
1929	18.107	6.833	6.512	52.993
1930	12.982	6.517	4.566	38.154
1931	8.869	4.244	3.688	28.701
1932	6.792	3.181	2.881	27.892
1933	7.276	3.870	4.031	34.728
1932				
Jan.	7.000	3.750	2.900	29.750
Feb.	6.250	3.717	2.828	30.186
Mar.	5.994	3.150	2.791	29.810
Apr.	5.789	3.000	2.735	28.298
May	5.606	3.000	2.629	27.755
June	5.889	2.996	2.798	27.466
July	5.284	2.760	2.546	26.700
Aug.	5.435	3.235	2.761	27.988
Sept.	6.208	3.482	3.304	27.870
Oct.	5.975	3.048	3.046	27.195
Nov.	5.809	3.050	3.096	26.698
Dec.	5.036	3.000	3.125	25.010
Ave. 1932..	5.792	3.181	2.881	27.892
1933				
Jan.	5.000	3.000	3.015	25.400
Feb.	5.000	3.000	2.671	26.085
Mar.	5.256	3.148	2.997	27.928
Apr.	5.684	3.260	3.361	30.780
May	6.032	3.664	3.805	34.072
June	8.000	4.173	4.347	35.663
July	8.909	4.462	4.886	37.630
Aug.	9.000	4.500	4.909	38.074
Sept.	9.000	4.500	4.702	38.440
Oct.	8.253	4.316	4.744	38.190
Nov.	8.156	4.294	4.521	42.074
Dec.	8.125	4.142	4.470	43.550
Ave. 1933..	7.276	3.870	4.031	34.728
1934				
Jan.	8.155	4.000	4.275	44.187
Feb.	8.000	4.000	4.462	45.233
Mar.	8.000	4.000	4.370	45.875
Apr.	8.393	4.184	4.371	45.180
May	8.500	4.1404	4.855	44.226
June	8.849	3.975	4.238	45.173
July	9.000	3.770	4.318	46.310
Aug.	9.000	3.7463	4.280	48.988
Sept.	9.000	3.679	4.067	49.484
Oct.	9.000	3.648	3.841	52.375

Three hundred feet of shaft sinking is to be done at the Ruby mine, E. C. Montgomery, general manager, Alleghany, California, during the winter months, in addition to 400 feet of drifting to the gravel channel. A pilot mill has been completed, preliminary to erection of a 100-ton ball mill in the summer of 1935. A 1,000-foot drift on the vein on the main level is also planned. Twenty-eight men are employed at the property. Other officials of the company are Cecil Vivian, mine superintendent, and L. L. Huelsdonk, mill superintendent.

At the Farmers' Hope mine, operated by the Whitlock Mines Corporation, Mariposa, California, 10 men are employed with satisfactory results. A five-foot vein is said to show assays up to \$20 a ton, and the mill is being operated one eight-hour shift, with good returns. M. T. Tresidder is general superintendent.

Production at the Lloyd Placers, San Andreas, California, has been increased from 60 tons to approximately 100 tons daily, according to Charles W. Neilson, who is operating the property in association with Gordon F. Scheckler, 621 West Acacia Street, Stockton, California. Fifteen men are employed.

The Natomas Company, Natoma, California, operating gold dredges in Sacramento county, announces net earnings of \$85,409 for September after all charges, including federal income tax of \$10,782, had been deducted. This is equivalent to 0.083 cents per share on the 995,820 shares outstanding. For the nine months ended September 30, net earnings of the company were \$696,082, or 70 cents per share. The company is on an annual dividend basis of 60 cents per share. Gold dredging operations in September returned a gross of \$179,067 and a net of \$107,010. Rock operations, land rentals, water operations, etc., accounted for the balance of the income, which totaled \$204,293 gross, with total costs of \$108,101, leaving net before federal income tax of \$96,191.

An earned surplus of \$237,683.99 has been accumulated by the Carson Hill Gold Mining Corporation, Melones, Calaveras county, California, and the assets of the company, as of September 30, 1934, amounted to \$8,167,105.55, according to the annual report issued by Charles H. Segerstrom, Sonora, California, president and general manager. Lawrence Monte Verda, Angels Camp, California, is superintendent of the company.

The H. F. Alexander Corporation, 617 South Olive Street, Los Angeles, is reported to be making arrangements for dredging an extensive placer deposit in Death Valley, near Baker, California. The company controls approximately 7,000 acres and is said to have tested the placers with 3,000 drill-holes. The deposit is understood to be 40 feet deep and to average better than 70 cents per cubic yard.

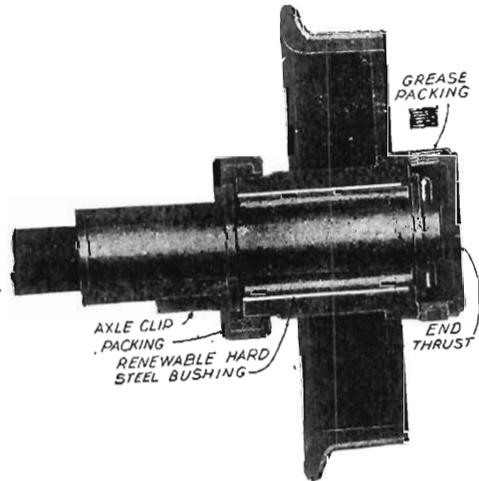
The old headframe at the Prescott Hill mine of the Empire Star Mines Company, Ltd., Grass Valley, California, has been dynamited to remove the danger of its becoming a menace to operations at the collar of the shaft. The 1750-foot incline shaft of the Prescott Hill has been cleared and rehabilitated to a depth of more than 175 feet. So far the condition of the walls and timbering has approximated complete collapse, but firmer ground is expected to be reached soon. G. A. Kerwin is general manager.

The Fort Mountain mine is being reopened by the Fort Mountain Mining Company, Mountain Ranch, Calaveras County,



The wheel that pioneered the solid hubcap

(Cast integral with wheel casting — dirt-proof and proof against grease leakage.)



Both the proved CARD SEMI-STEEL heat-treated wheel and the CARD MOLYCHRO wheel are furnished in our own or any unpatented designs. Trucks can be furnished with either Card Roller Bearing (shown above), Timken Roller Bearing, or plain bearing wheels.

Write for Catalog P J

C.S. Card Iron Works Co.

2501 West 16th Ave
Denver, Colorado.



The IMPROVED!!!

"GOLD KING" PLACER MACHINE

Now Available For Quick Delivery

Four-Yard Capacity

\$650

F.O.B. Los Angeles Plus Sales Tax

SEND FOR DESCRIPTIVE LITERATURE

MINING EQUIPMENT SALES CO.

1716 So. San Pedro St.

Phone PRospect 9020

Los Angeles

California, under the direction of A. Kramer. Installation of a gravel mill and a six-cylinder compressor are nearing completion and production is expected to start at 150 tons daily, to be stepped up to 300 tons later. Nine men are employed at the property. The new company is headed by Dr. G. Galbreath and G. W. O'Neal of Oakland.

The **Jay Mine** at North Bloomfield, California, is being developed under the direction of Chris Peterson. With a crew of five men the main tunnel has been driven 200 feet.

A new two-speed hoist with 10-horsepower gasoline engine is being installed at the **Heslep Mine** on Quartz Mountain, near Jamestown, California. The prospect shaft has been sunk to a depth of 100 feet and a station is being cut and timbered at that level, preparatory to drifting. Between 300 and 400 feet of drifts and crosscuts are to be run. The Heslep Mine, part of the **App** group, was leased this last summer by K. C. Schwegler, mining engineer, Financial Center Building, San Francisco, who contracted the preliminary work to J. A. Keyes of Jamestown.

Engineers employed by Alexander Logie, 230 California Street, San Francisco, California, have been investigating the **Cherokee Drift Gold Mining Company** at Oroville, California, with a view to placing the mine on production. Development and installation of a water system sufficient to handle the gravel is to be started at once, it is reported.

Development work at the **Banner** and **Buffalo** mines, 10 miles from Oroville, California, is continuing under the direction of the **Hammon Engineering Company** with Geo. I. Barnett, mining engineer, in charge. The Oroville office for **Hammon Engineering Company** is located at 2070 Bird Street.

The **Globe Gold Mining Company** at Kelso, California, is completing the hookup of the air line to the face of tunnel extension, preparatory to extending the tunnel at the 300-foot level to contact the vein mined at the surface by the original locator. George H. Thomas, secretary of the company, is at Kelso, directing the work.

The Coates and Radil lease on a portion of the **Plumas Eureka** property at Johnsville, California, is handling about 400 yards of gravel daily. The gravel, the erosion material from the veins which traverse the property, is said to run from 80 cents to \$1 per yard. At the mine proper, held under option to purchase by men connected with the Bradley organization, a complete examination and sampling of the old workings has been conducted.

The preliminary work preparatory to placing the claims of the **Scales Placer Mining Company** on production has been practically completed and the company expects to begin hydraulicking early in December. Debris will be stored behind **Bullard's Bar** dam. The eight-mile ditch has been completed and considerable construction done. S. M. Rutledge, president of the company, and his engineer, A. Hjort, both of New York, recently spent a week at the mine, inspecting the work. T. J. Anderson, Marysville, California, is superintendent of operations.

The fourth carload of gold ore has been shipped from the **Victory Mine** at Colfax, California, operated under bond and lease by H. E. Loufek, J. E. Johnson and Harry E. Springer of Reno, Nevada. The ore is averaging about \$40 per ton. The new operators recently installed a compressor, hoist and pumping plant and are sinking a winze from the old tunnel. The main ore

body, sulphide in character, is four feet wide. Johnson is superintendent at the mine.

The bond and option on the **Davey Mine** at Georgetown, California, has been assigned by Luke Morgan to M. J. Keily and George P. Morgan, who now are developing the mine. This property joins the **Black Cat** mine, one of the best producers in the Garden Valley district. Keily and Morgan are sinking near the property end line and within 120 feet of the **Black Cat** shaft, and expect to cut the vein at a depth of 70 feet. In addition to the high-grade vein, there is another vein 75 feet farther to the east that is reported to assay about \$7 per ton at the surface and to have a width of 12 feet. Keily formerly operated in the Chloride district of Arizona for a number of years; Morgan was with the **Thompson-Dudley Machinery Company**, Kingman, Arizona, for several years.

The **Landecker Mine** at Placerville, California, has been taken over on a lease from Douglas H. Badger and Jack Hibbard by P. B. Butler and his associates, who will operate the property for themselves. A shaft is to be sunk and a 100-ton mill erected.

The **Zeibrigh Mine**, Nevada City, California, has completed the enlargements to its mill and has the 150-ton plant on production. The capacity of the 10-stamp mill was increased through installation of a new seven-foot Hardinge ball mill, **Dorr Model F** classifier, two-compartment jig, an 8x8-foot **Dorr** thickener and a 3x4-foot **Oliver** filter. Thirty men are employed in the mine and mill, with E. R. Bennett in charge.

Eleven men, working three shifts, are employed by the **Nevada Monarch Gold Mining Company** on the **Bald Mountain** gravel property, at Forest, California. A long tunnel—now in 3,300 feet—is being driven to strike an old channel. It is expected to have this completed by the first of the year. Winter quarters have been prepared, the tunnel entrance housed in and a covering built over the dump to keep snow off the tracks. W. Scott of Forest is mine superintendent. F. W. Powers, president and general manager, is located at 253 South Grand Avenue, Los Angeles.

The test run of the recently reconstructed mill at the **Empress Mining Company**, Grass Valley, California, was made

on October 23, with every unit reported to be functioning perfectly. The mill has a capacity of close to 300 tons daily, but will operate on a smaller basis for the present.

H. O. Howard, engineer in charge of reopening the **Round Mountain Champion Mine**, near Nevada City, California, is employing eight men in the work. The old workings are being cleaned out and repaired preparatory to developing underground.

The **Empire Star Mines Co., Ltd.**, Grass Valley, California, is reported to be planning for deeper work at its **North Star** group, including the sinking of the vertical shaft to an approximate depth of 4,000 feet. **Empire-Star** is controlled by the **Newmont Mining Corporation**. G. A. Kervin is general manager.

The **Indian Valley Mining Company**, G. L. Johnson, general manager, Greenville, California, is working three shifts at its 30-ton mill. The 800-foot tunnel has cut the vein, and development along the vein is being carried out. This is the old **Standart** mining group, purchased last spring by the present operators.

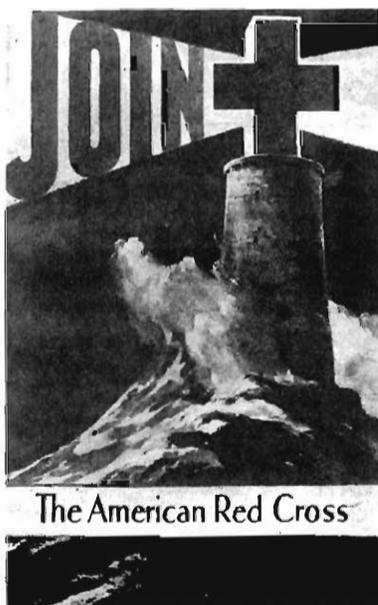
H. Clifford Burton of Rosamond, California, superintendent of the **Solead Extension** mine, is contemplating complete electrification of the workings. A six-foot vein of good milling ore was recently discovered, according to reports. Burton is also the operator of the **Tropico** mill, where a 50-ton ball mill is being added to the equipment now in use. The new tanks for the cyanide processing have been erected and the housing for the mill and shops is almost complete.

A new double-drum 150-horsepower hoist is to be installed at the **Amador Star** mine of the **West American Consolidated Gold Mines, Inc.**, Plymouth, California, according to an announcement by Arthur Hamburger, president and general manager. The **Amador Star** shaft is well below the 800-foot level, and the installation of the new hoist, with capacity of 3,000 feet, will facilitate sinking to the 1,000 level and make possible handling of ore at reduced costs. **West American** is also unwatering the **Bay State** mine, and expects to have it on production before the end of the year.

The **Clayton** group of claims at Bridgeport, California, have been taken over by Thomas Ingersoll. Preliminary work has started and a shipment of high grade made.

The **Cardinal Gold Mining Company**, Bishop, California, which recently completed its 150-ton flotation plant, is shipping from 35 to 45 tons of concentrates each week to the smelter, the value running about 9 ounces gold to the ton. The company is employing 100 men on three shifts. A three-compartment shaft will be sunk from the vertical shaft, starting at a point 90 feet below the surface, and will follow the main vein to the 300 level, at a slight angle. W. V. DeCamp is vice-president and general manager of the **Cardinal Gold**, a company owned and controlled by Ben Smith of New York, Sam Harris and associates.

A 13-ton **Huntington** mill is being installed at the **Diana** group of mines, near Mariposa, California. The **Diana** group consists of 18 claims, some of which have been worked profitably in past years. The present work is directed by H. H. Lonsdale. A large body of ore is reported to have been developed in the No. 5 shaft, 1,000 feet south of the mill. The ore is to be transported to the mill by aerial tramway.



The American Red Cross

The Colorado mine, which was closed several months ago upon failure of John Pes of Modesto to exercise option rights, will be reopened in the near future, according to an announcement by Charles Pesca, Sheepranch, California. The property is owned by Charles and Frank Pesca. The new operator, H. M. Henning of San Francisco, plans to sink the shaft another 100 feet to the 250-foot level before drifting.

The Wyandotte Gold Dredging Company, managed by Harry F. England, Box 3, Oroville, California, is reported to be successfully operating a drag line in the low value gravels. The company is also operating a custom flotation mill.

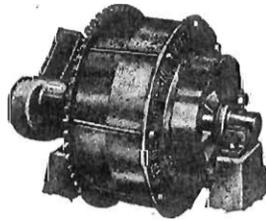
Six miners, working two shifts, are employed by the Mineral Slide Gold Mining Corporation, operating the Mineral Slide property at Magalia, California. The 1,000-foot tunnel and incline has recently broken into the large chamber of the original development work in the Mineral Slide claim. The chamber is 90 by 100 with an eight-foot ceiling and is said to expose gold bearing gravel eight feet thick across a 100-foot breast. The work is directed by R. G. Percy, company engineer.

G. C. McDonald, who has been working a lease on the Mannell property, has taken a lease on the adjoining holdings of the Rivera Mining Company at Fairmont, California. It is said that the vein which McDonald has been working extends into the Rivera property. He will follow it up in the new lease, but will drive new tunnels, instead of extending the old workings. According to Charles Andrews, general manager, this is the tenth lease granted by the Rivera company whose holdings lie to the east of the Rogers-Gentry mine in the Antelope Valley. Approximately 40 men are employed on leases in the area and shipments have been made since mid-summer.

A 60-ton daily capacity roller mill is being installed at the North Star mine by S. L. Elliott of Oroville, California, one of the owners. The mine has been under development for the last four months, and a 40-foot shaft has been sunk. Buildings erected or to be erected include three cottages, blacksmith shop, change house, bunk and boarding house and garage. Ten men are employed at present, and when production starts Elliott expects to increase the crew to 25. Associated with him in the project is L. A. Panecaldo of Gridley.

Development of the Starlight claim at Mojave, California, has been started by C. B. Meskimons, M. McCormick and Ralph S. Baverstock, who hold a lease on the property. A contract has been let to extend a crosscut tunnel through a dyke which on the surface shows several veins of good milling ore. The contract is held by Boering and Hunter who have three men at work. The Starlight claim parallels the Silver Queen. Ralph S. Baverstock maintains his headquarters at 552 South Figueroa Street, Los Angeles.

According to Ben Kagan, president of Iowa Hills Gold Mining Company, Colfax, California, financial arrangements have been made and the company will immediately proceed to build a 300-ton recovery plant at its property, nine miles east of Colfax. W. D. Stewart, engineer, has been superintending experimental tests on the gravel for the last 60 days. A. F. Muter, 200 Lankershim Building, Los Angeles, joined President Kagan at the mine the later part of October and assisted in checking the results of this sampling and in deciding upon the type of plant to be erected.



Illustrated—the 2-4 ton capacity Prospector Rib-cone Ball Mill. Capacity can be doubled by adding extra parts at \$155.

The Prospector

A Real Rib-Cone Mill You Can Pack Anywhere!

Your most remote mine—your newest development starting in a small way—both can have the same high efficiency and low costs for milling as the very largest mine with a railroad on its property! Use this 2-4 ton Rib-cone Mill. Heaviest piece only 285 pounds. Total 850 pounds.

Only \$220

It operates on the same proven principles as the largest Rib-cone Mills (up to 250 tons capacity), has the same high standards of design and construction and, like the large mills, IT GETS THE GOLD and uses only 1½ H.P. and mighty little water. Send for Bulletin No. 115. Learn more about this remarkable Rib-cone Ball Mill and others of larger capacity!

Straub Efficiency Saves You Money

—in crushers, Overstrom Universal concentrators, water wheels, flotation and cyanide machines, amalgamation plates, steel tank and pipe lines. For less money Straub gives you the finest any money can buy. Efficiency does it!

STRAUB



Mfg. Co.

505 Chestnut St.

OAKLAND, CALIF.
U. S. A.

NAME OF NEAREST DISTRIBUTOR ON REQUEST

LEACH BROS. BALL MFG. COMPANY

Manufacturers of

HIGH CARBON MANGANESE FORGED STEEL GRINDING BALLS

All sizes from 7/8" to 6"

1823 East Washington Boulevard,
Los Angeles, California

Telephone—Prospect 3712

Crown Mines, Inc., 1541 Russ Building, San Francisco, reports that its new vertical shaft at the Gold Crown mine, near Sonora, California, is 120 feet deep, with drifting on the vein from the end of a 55-foot crosscut proceeding on that level. The first 10 feet of the drift is said to show three to four feet of ore assaying from \$24 to \$36 per ton. The development program is said to call for between 200 and 300 feet of drifting on the present level and then the blocking out of the ore to the surface. The mine is equipped with a five-stamp plant, with flotation, which is to be used until such time as ore reserves justify larger milling equipment. Approximately 300 tons of ore, mostly from prospect openings at shallow depth, have been milled. The Crown Mines, Inc., organized only a few months ago, is headed by O. V. Wykoff. W. L. Denault, also of San Francisco, is secretary-treasurer. A. W. Purves, Box 625, Sonora, California, is mine superintendent.

A lease and option on the **Rosedale** mine, 12 miles east of Sonora, California, has been secured by D. D. Tracy of San Jose, and E. L. Beck of Sonora. They are further developing the property by extending a tunnel on a body of ore in a four-foot vein of quartz and porphyry. According to Mr. Beck, who is in charge of the work, the lens varies from 12 to 24 inches and assays \$4.90 to \$58, with a general assay showing \$15.08. The remainder of the vein is rated as mill material. It is planned to install a small pilot mill for making tests of the ore as development proceeds.

The **Hazel Mining Company** has resumed development operations at the Big Bob gravel mine, between Confidence and Sonora, California. The mine has been opened by a 186-foot shaft, from which a drift is being driven toward an ancient buried channel whose location was determined by drillings. The channel is to be tapped by a raise from the drift and it is expected that the objective will be reached in a few weeks. James L. Gibbs of Tuolumne, California, is superintendent.

The property of the **Trinity Gold Mines, Inc.**, Carrville, California, has recently been visited by P. C. Stoess, president. On his return to his headquarters at 611 Colman Building, Seattle, Washington, he reported that 15 men are employed in the mine and they expect to soon supply all ore necessary for the mill. Receipts have been received from the first gold bar, and regular gold shipments are to follow. L. Kracke, secretary of the company, is now at the mine and will spend about three weeks there supervising development and mining. Company engineers estimate that 5,200 tons of ore are blocked out, ready to be mined. The company's 100-ton milling plant was completely rebuilt and modernized late in the summer by the Downie-Wright Manufacturing Company of Chico.

The **Lost Camp Mining Company** is preparing for hydraulic mining on 440 acres of patented land at Blue Canyon in Placer county, California. Plans call for the operation of one monitor during the month of November and the addition of three monitors at a later date. George Buel, superintendent, Foresthill, California, has a crew of three men improving the ditch system. The Lost Camp company is headed by J. Oliver Ziegler of Sacramento, president.

COLORADO

The **Archibald Gold Corporation**, F. R. Wolfe, president, 925 U. S. National Bank Building, Denver, is making regular shipments of high-grade gold ore from its

mine on Democrat Mountain, Park county, Colorado. The ore is being taken from the 200-foot level, the vein ranging from four to five feet in width. Recent carload shipments to the Leadville smelter carried gold value of from five to 14 ounces a ton, with the silver content running around ten ounces.

The **Gold King** mine northwest of Silverton, Colorado, is reported to have been taken over by E. J. Holman under a lease with option to purchase from the International Trust Company of Denver. Holman, formerly of Silverton, is now making his residence in Denver at 2201 Dahlia. The Gold King property has been idle for years, but is credited with a production record of approximately \$6,000,000. Eastern capitalists will have a complete examination by engineers made before going any further.

C. Lorimer Colburn, 509 Seventeenth Street, Denver, was one of the incorporators of the **Highland Mary Mines, Inc.**, which was formed to carry on work at the Highland Mary near Howardsville, Colorado. The property was leased by Colburn last spring. Other incorporators are Albert R. Jones, Frank E. Jones, C. W. Trapp, and R. F. Trader. Articles call for capital stock of 3,300 shares preferred, par value \$100 a share, and 20,000 shares common with par value of \$1. Company offices will be maintained in Denver. The property, which includes mine and milling plant, has been tied up in litigation for some time and was never developed to any great depth. Definite plans of the new operators have not been announced.

Cement is being poured for mill foundations at the **Waldorf Gold, Inc.**, near Georgetown, Colorado, of which Joseph P. Ruth, Jr., 341 Continental Oil Building, Denver, is president. Construction work will go forward as fast as possible. Everett Shaw, formerly connected with the Stratton interests at Cripple Creek, is now associated with Waldorf Gold. According to his estimates, the Tobin dumps contain 28,000 tons of \$8 ore. The company is sorting and trucking 1,500 tons of this ore in preparation for milling.

Erection of a mill to handle ore from the **Grand Republic** mine in Boulder county is said to be planned by the operating concern, the **St. Joe Mining and Milling Company**. Ore from the Grand Republic is now going to the St. Joe mill in Left Hand Canyon, and is said to average \$13 a ton. Mining will be continued during the winter and mill construction undertaken in the spring. A. A. Zangara and R. A. Quayle, both of Boulder, control the St. Joe company.

Henry Mace Payne, 546 North Western Avenue, Los Angeles, is consulting engineer for a group of Chicago capitalists who are financing a dredging proposition between Beaver Creek and Platte River, above Fairplay, Colorado. The engineer in charge is S. Standish of Denver. A contract has been let to the Marion Steam Shovel Company for one electrically-operated dredge, with orders for three more to be constructed if further prospecting warrants such action. The tract covers 11,000 acres and bed rock is said to be from 32 to 45 feet down.

New equipment is said to be on location at the **La Plata Deadwood Mines, Inc.**, property which the company recently acquired from Taylor Norton, Walter Odenbaugh, and William Hayes of Mancos, Colorado. The mine, formerly known as the Norton-Hayes property, is just east of Mancos and will be extensively developed

by the present operating company, which is planning to continue work throughout the winter.

Two large ore-shoots bearing gold and silver ore worth \$7,421.90 a ton are said to have been opened in the lower level of the **Bessie G.** mine by the **Champion Gold, Inc.**, which is developing that portion of the property under a sublease. A four-inch core in an 18-inch vein is reported to assay 204.10 ounces in gold and 464 ounces in silver to the ton. The remainder of the ore across the vein assays \$200 a ton, according to announcements by Jessie Simmons, Strater Hotel, Durango, president and general manager. The Bessie G. property, controlled by the Chamber of Commerce Lease, Inc., is under lease to Frank D. Aller of Durango, who has subleased the third level to the Champion Gold organization.

The **Bondholder Gold Mines, Inc.**, A. W. Logan, Sixth and Walnut Streets, Boulder, Colorado, president, is planning to sink the Greenback shaft on the Bondholder property at Ward another 100 feet, install a hoist and compressor, and do some 1,000 feet of drifting during the coming year. The property is at present developed by a 240-foot shaft and approximately 1,200 feet of mine workings. Carl Walters is the mine superintendent in charge and eight men are employed. R. W. Hume, 2118 Thirteenth Street, Boulder, is secretary and general manager. Other officers include A. F. Johnson, Albany Hotel, Boulder, consulting engineer, and A. W. Fitzgerald of Boulder, vice-president.

Dick Hodges and his son, sublessees from the **Orpha May Mining Company**, are credited with a strike of high-grade gold ore in the ninth level of the Orpha Mine. The vein is about six inches wide and reported to assay 28 ounces in gold. This strike was made in the south end of the Hodges property, next to the Specimen, and is in ground which has not been developed.

J. C. Ort of Durango, Colorado, general manager of the **Colorado Juneau Mines, Inc.**, reports that there are 92,000 tons of mill ore at the **Neglected** property in the Junction Creek district near Durango. This ore, which Ort says runs better than \$13 under the old price of gold, will be put through the company mill as soon as it is constructed. Air equipment has been installed and is in use, and the drainage tunnel is about 50 per cent completed. Officials expect to have it entirely finished in another 90 days.

Good ore is said to be continuing on the No. 5 level of the **Santiago** mine near Georgetown, Colorado, Joseph Campbell, manager. The ore body extends the full length of the 60-foot stope and is from two to four feet wide. Campbell and his associates, known as the **Santiago Metals Corporation**, recently announced their intention of building a mill for the Santiago and **East Argentine** claims, with construction starting next spring. The office of the company has been moved from Denver to Georgetown.

The **Charles** mine will resume operations, it is reported, after having been shut down for six years. Mill ore is said to be opened up and will be handled by the mill on the ground. Gerald Charles of Chicago, who formerly operated the property, has returned to Salina, Colorado, to reopen it.

The **Western Mining and Milling Company** has been formed to operate the **Treasure Vault** properties near Idaho Springs, Colorado. The claims were ac-

11-1534

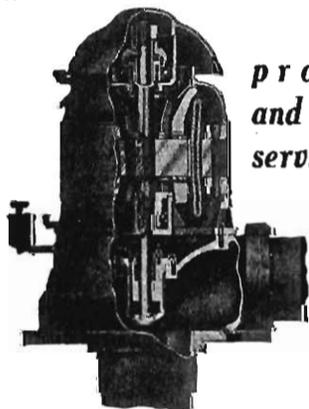


Denver Diaphragm Pump

Stroke can be regulated while operating. Plunger rod moves up and down in practically a vertical plane, eliminating angle flexing of diaphragm. Discharge trough can be set in any ninety degree quadrant. Valves and valve seats of "tread" rubber insure long life. Pumps are made in 2", 3" and 4" sizes with one to four units in same rugged steel frame.

Write for Bulletin 3413-A.

DENVER EQUIPMENT CO.
1419 17th Street - Denver, Colorado.



... for
production
and dewatering
service

LAYNE & BOWLER PUMPS

Utmost dependability, high efficiency and lower operating and maintenance costs are reported by scores of mine operators, who rely on Layne & Bowler Pumps for production and dewatering service. Combine these facts with their many exclusive features in design, and it is apparent why Layne & Bowler Pumps are the recognized standard of fine turbine pumps.

Ask for Literature

LAYNE & BOWLER CORP.

900 Santa Fe Ave., Los Angeles, Calif.
WORLD'S LARGEST WATER DEVELOPERS

Heavy Duty Ball Mills

ENGLISH CORDUROY
TRAVELING
BLANKET VANNERS
for fine gold

BOWL
AMALGAMATORS

Cottrell Engineering Co.

207 Mesnager Street,
Los Angeles, Calif.

The plan as suggested provides for the appropriation by the state legislature of \$12,500 annually for two years to carry on the provisions of the proposed act. The bulletin also considers broadening the scope of the analytical laboratory, which is at present considered to be a great aid to mining men.

UNITED STATES BUREAU OF MINES GIVES DATA ON GOLD IN 1933

The United States Bureau of Mines has released a report of the mineral industry, which supplies the following figures. The total gold production of the United States in 1933 amounted to 2,552,459.85 fine ounces, against 2,513,756.90 fine ounces in 1932, representing an increase in 1933 of 38,702.95 fine ounces.

The smallest increase was registered from 13 western states and Alaska, where the total gold production gained only 0.1 per cent over that of 1932. Output declined in Colorado, Nevada, Texas, Utah, and Washington. Gains were recorded in Alaska, Arizona, California, Idaho, Montana, New Mexico, Oregon, South Dakota, and Wyoming. The causes for increase and decrease follow no formula and changes in output must be considered not only state by state, but also district by district. A quickening in both placer and dry-ore areas was reported from September through December, which has continued and will be reflected in an increase in 1934.

ARGONAUT PROFITS DURING SEPTEMBER SHOW INCREASE

A profit of \$57,584, after depreciation and depletion but before provision for income taxes, is reported by the Argonaut Mining Company for the month of September. This compares with \$46,584 in August. September earnings were a little less than preliminary estimates, but established the second largest monthly profit on record for the company. The previous high record was July of this year when a profit of \$60,068 was reported.

The value of the company's ore averaged \$13.78 a ton during September, as compared with \$14.19 in August and \$14.81 in July. During the first five months this year the value of the ore averaged \$9.07 a ton, and for the first nine months \$11.09. The company's costs declined slightly in September, averaging \$6.97 a ton, against \$7.61 a ton in August.

The Argonaut mine has been closed since October 2, due to labor difficulties.

IDAHO-MARYLAND TO COMPLETE MILL ADDITIONS THIS MONTH

Idaho-Maryland Mines Company at Grass Valley, California, expects to have its enlarged mill completed and in full operation by the middle of November. The unit consists of a 300-ton Marcy mill which was placed adjacent to the recently completed flotation plant. This installation was made necessary by the fact that the mine crews and flotation plant could produce and treat a greater tonnage of ore than could be handled by the crushing facilities.

Another important improvement has been the construction of a 1,000-ton ore bin to which ore from all the company's properties will be taken. For its construction 40 tons of Yuba county 12x14 timbers and many yards of concrete piers, forms and blocks were needed to make the underpinnings.

The mill improvements have been directed by Hal M. Lewers, mine metallurgist. Errol MacBoyle is general manager of the company.

POORMAN MINE IN IDAHO TO BE REOPENED IN 1935

The old Poorman mine, said to have furnished ore that took the gold medal at the World's Fair in Paris in 1896, was recently purchased by the Consolidated Mines and Dredge Company of Boise, Idaho. Earle A. Pack, 1208 Everett Street, Caldwell, Idaho, is president of the organization, which has its principal offices in the Idaho Building in Boise. The deal involved \$125,000, Pack stated, and included tax claims.

The new owners will put in modern mining equipment, powered by electricity, and a mill. By next spring officials hope to have 100 men at work on the new construction program. Clarence L. Bettis is general manager.

Ore from this property was reported to run as high as \$5,000 a ton, and the claims are but slightly developed. Former owners are said to have ceased operations while still in pay ore.

GOLD EXPLORATION ERECTING A GRAVEL WASHING PLANT

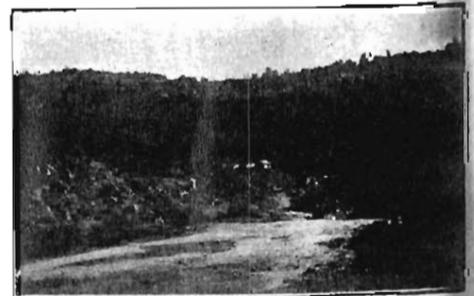
One of the interesting recent developments in the Grass Valley district is the installation of a gravel washing trommel at the property of the Gold Exploration Mining Company. Located 16 miles southeast of Grass Valley, at Smartville, California, the work of constructing foundation and setting up machinery is in progress.

The trommel, 22 feet in length and five feet in diameter, will revolve at 20 revolutions per minute. The lining of angle irons produces a cascading effect to take care of the cemented gravel. With each charge mercury is added, the resulting amalgam discharging through holes spaced at intervals in the cylinder. The fines empty into flumes while coarser material will be disposed of by a stacking conveyor.

The principal feature of the trommel is a scrubbing and amalgamating action which has been successfully in operation at the mine on a smaller scale. The new mill will be capable of washing approximately 100 tons of gravel daily and will handle boulders up to eight-inch maximum size. Hand sorting of the larger boulders is taken care of underground and a grizzly assists in separation.

Smartville and the vicinity is of exceptional interest due to early day operations. Here many of the original steps in hydraulic mining were developed as early as 1851. The adjoining townsites of Sucker Flat and Timbuctoo, combine with Smartville for a known production record exceeding 15 million dollars.

Hand driven tunnels, the longest of which is 2200 feet, through solid bed rock and mountain—attest to the courage and



The camp of the Gold Exploration Mining Company, near Smartville, California. Some of the mine buildings show in the center, the high banks of old hydraulics in the background, and the open cut on the left.

ingenuity of the old timers, most famous of whom was Paddy Campbell.

With the regulations of the anti-debris act major hydraulic work ceased and drifting was commenced. A surprising area was mined in this fashion. Spasmodic attempts at hydraulicicking followed along with intermittent leasing operations.

In later years the property, known as the Blue Point Gravel Mine, was worked by Sydney B. Wood, who retains an interest.

The present company is a subsidiary of the Mantic Standard of Utah, which has been carrying on a prospecting and development program consisting mainly of drifting and crosscutting for the past year.

M. D. Paine is superintendent, and L. J. Sandeen, engineer.

MAGMA PROFIT TOTALS \$506,151 FOR FIRST NINE MONTHS OF YEAR

During the three months ended September 30, 1934, Magma Copper Company of Superior, Arizona, produced 5,313,924 pounds of copper from its mines. This compares with an output of 8,918,817 pounds produced during the second quarter of the year. Cost of producing the copper electrolytic grade, after deducting gold and silver values, was 7.49 cents a pound, before federal taxes and depletion, but after depreciation and all other fixed and general expenses.

In the second quarter, with its greater output, the cost of refined copper was given as 5.32 cents per pound.

For the third quarter the company reported a profit of \$42,842, based on a net average sales price of 7.80 cents a pound of copper and after all expenses and depreciation, but before federal taxes. In the preceding quarter the profit was \$231,-

734, bringing the total for the first nine months of 1934 to \$506,151.

During the third quarter the company's smelter was closed down for six weeks to permit the necessary repair work. Also, during that same period the mines were not on production, as the permissible hours that could be worked under the copper code, averaged over a three-month period, had been worked.

FINAL FIGURES ON MINERAL OUTPUT IN CALIFORNIA IN 1933

Compilation of the final returns from the mineral producers of California for 1933 by the statistical section of the State Division of Mines, under the direction of Walter W. Bradley, state mineralogist, shows the total value for the year to have been \$206,484,671, being an increase of \$7,288,178 from the total of 1932 which was \$199,196,493. There were fifty-five different mineral substances exclusive of a segregation of the various stones grouped under gems; and all the fifty-eight counties of the state contributed to the list.

As revealed by the data following, the salient features of 1933 compared with the previous year were: Practically all of the most important mineral substances showed an increased value, lead by gold, cement, petroleum, salt, soda, potash, borates, diatomite, lime, barytes, pottery clay, dolomite, silica and silver. Those showing a decreased value were brick and hollow-building tile, natural gas, mineral water, copper, lead and quicksilver. Iodine, molybdenite and zinc were again included in the list of producers and wollastonite, a new material, was added to the commercial output.

Of the metals, the gold yield showed an increase from 569,166.99 fine ounces to

613,578.85 fine ounces and in value from \$11,765,726 to \$15,683,075. The gold value for 1933 was calculated at an average weighted price of \$25.56 a fine ounce. Zinc shipments were resumed during the year; silver value increased from \$139,176 to \$140,907 although the amount showed a decrease from 493,533 fine ounces to 402,591 fine ounces. Chromite and tungsten ores also showed an increased output and value; copper, lead and quicksilver decreased in both amount and value from the previous year.

PLACER MINING IN THE WESTERN UNITED STATES

The first of three parts of a comprehensive manuscript entitled "Placer Mining in the Western States" has just been issued by the United States Bureau of Mines, Department of the Interior, as Information Circular 6786, by E. D. Gardner and C. H. Johnson.

This is an outstanding work describing in detail the methods used and costs in placer mining practice and includes many illustrations of equipment for both small and large-scale operations. It will be of assistance to the operators of both large and small placer mines in improving treatment methods and gold recovery, since it sets forth the latest improvement in methods and illustrates their applicability under different mining conditions. The titles to the three parts are:

I. C. 6786, Part I—General Information, Hand-Shoveling and Ground Sluicing.

I. C. 6787, Part II—Hydraulicicking, Treatment of Placer Concentrates and Marketing of Gold.

I. C. 6788, Part III—Dredging and Other Forms of Mechanical Handling of Gravel, and Drift Mining.

Ellis Mills

Are the Most Efficient Grinders

- The Best Re-Grinding Classifiers by overflow.
- The Best Amalgamating Pan to any mesh size.
- The Only Mill that will work Clay (pipe).
- The Only Mill that will work Mica (sheet).
- The Only Mill that will work Asbestos and not ruin the fibre, or Emery and not ruin the mill.
- And many others.

The Ellis Mill will grind anything that can be ground or pulverized, wet or dry, to a definite mesh in one operation, using only 1/4 to 1/10 the power others use. No gears, no grease, no bearings, no friction.

"ELLIS" Mills are sold on the following guarantee: In case you DO NOT get tonnage promised we agree to send one of our own men to GET it. In case HE FAILS, we agree to INSTALL such other mill as is needed to do the work, WITHOUT FURTHER COST TO YOU.

The above guarantee on following specifications, Mill and Feeder MUST BE GENUINE "ELLIS", set up as per OUR specifications (blue prints furnished) 40 mesh screens ("REK-TANG") mill fed 1/2-inch opening. This guarantee applies to minimum capacity of ALL "ELLIS" MILLS.

C. A. ACKERMAN, Manager.

ELLIS MILLS MFG. CO.

(A Voluntary Trust)

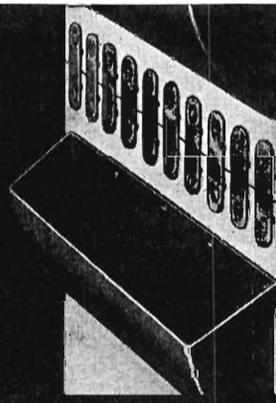
510 Brannan, Near 4th St.
SAN FRANCISCO CALIFORNIA



FLEXCO
HD

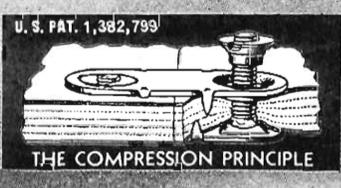
Reg. U. S. Pat. Off.

BELT FASTENERS
for
ELEVATORS and CONVEYORS



COMPRESSION develops the tremendous strength of the FLEXCO HD joint. The recessed plates and teeth embed in the belt, producing a smooth, powerful, tight butt joint of balanced pull. Pliers cannot work against each other and separate in belt ends. Remarkable service records are developed by these fasteners and thousands of plants use nothing else. Made of steel or Monel Metal. Templates, wrenches and punches supplied to facilitate application. Sold by jobbers and belting houses in five sizes. Consulting service given gladly regarding any belt joining.

FLEXIBLE STEEL LACING COMPANY
4661 Lexington Street, Chicago
In England at 135 Finsbury Pavement, London, E. C. 2



U. S. PAT. 1,382,793

THE COMPRESSION PRINCIPLE

600-TON CYANIDE PLANT TO BE CONSTRUCTED BY UNITED VERDE

The United Verde Copper Company at Jerome, Arizona, has decided to augment the machinery of its flotation concentrator with equipment sufficient to permit cyaniding of 600 tons per day of flotation tailings.

Ore of the type formerly providing the feed for this department can no longer be classed as commercial, due to the present and future outlook in domestic and world copper markets, and such reserve has been wiped out as an asset of the mine, very greatly decreasing the magnitude of what was formerly considered to be concentrating ore reserve. Similarly, large quantities of copper bearing sulphides, formerly considered to be direct smelting ore, have been also lost from the point of view of ore reserves.

This situation has made it seem probable that certain dumps of quartz gossan material containing some gold and silver, which formerly was considered to be of some future value as fluxing ore in the converters, will no longer be needed for that purpose, due to the very substantial shrinkage of commercial sulphide ore reserves.

Therefore, in order to liquidate the small values in gold and silver contained in this quartz ore on the dumps, decision has been made by the directors to treat this ore by flotation, followed by cyanidation of the tailings. The installation of additional equipment will be quite limited because the new additional operation will be confined only to finely ground tailings produced by the use of equipment already installed.

The flotation concentrating plant at United Verde has not operated for over four years, and the smelter has been idle for three and one-half years.

Operations at United Verde are directed by Robert E. Tally, president, and C. R. Kuzell, general superintendent.

Deceased

Harry F. Hopkins, 52, for 16 years an auditor for the Colorado Fuel & Iron Company, who retired 18 months ago due to ill health, died in Denver, October 30.

William Darch, mining engineer, was crushed to death at Silver City, Nevada, when his clothing caught in the machinery of an ore crusher. He was an honor graduate of the University of Nevada.

Osborne B. LeFurgey, pioneer mining man of Leadville, Cripple Creek and Goldfield, Colorado, died at his home in San Francisco, November 6. Since his retirement from mining activities, he had been a resident of San Francisco.

William Pugh, foreman at the Rainbow Mine, Alleghany, California, lost his life by asphyxiation October 24. He was well known in the Placerville, California, district and in Mexico, and had been associated with the Rainbow for the past 18 months.

Frank (Shorty) Harris, 74 years of age, dean of the Mojave desert prospectors, died November 9 in his cabin at Big Pine, California. In respect to the old time prospector's wishes, he was interred at the "bottom of Death Valley," beside the grave of his early-day fellow-pro prospector, James Dayton.

James Murray, pioneer mining man of the west, recently passed away at his

home in Los Angeles at the age of 86. Before his retirement Jim Murray had operated in California, Arizona, New Mexico, Colorado, and Nevada mining camps, and was known for his sagacious advice on mining problems and for his winning disposition.

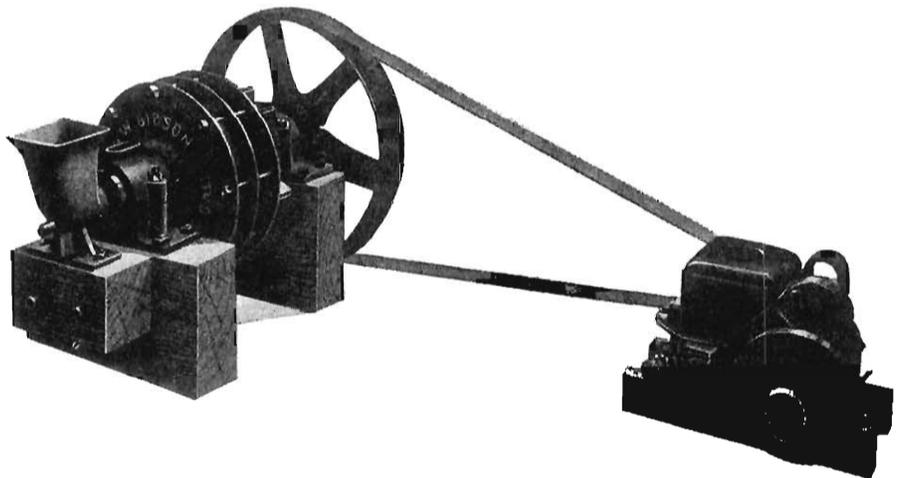
Theodore G. Wetherill, 32, local mine operator, was killed and **Clarence Rayburn**, mining engineer, seriously injured when Wetherill's car left the road while going at a high rate of speed, according to reports. The accident occurred three miles east of Idaho Springs, Colorado, while the two men were on their way to Denver. Rayburn was given emergency treatment and rushed to Denver, where he is reported to be recovering.

The body of **R. I. Ezell**, prominent official of the Arizona Branch, Nevada Consolidated Copper Corporation at Ray, Arizona, was found in his office on Novem-

ber 6, his death caused by a bullet wound said to have been self-inflicted. Ill health is said to have been the only possible motive for suicide. Ezell, who was 53 years of age, had been affiliated with the Nevada Consolidated for 23 years, his offices ranging from cashier to financial agent.

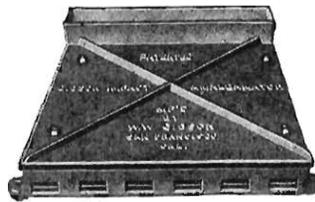
Oscar L. Coffin died at his home, Grass Valley, California, November 2, following a heart attack. He had taken an active part in mining in the Grass Valley district, having been associated at various times with the Blue Lead gravel mine near North Bloomfield; the Central Consolidated mine, now the Lava Cap, where he erected a mill; the Green Mountain, now the Sultana of the Empire Star Mines Company, Ltd.; the Jupiter Consolidated Gold Mining Company; the Golden Center mine, and the Grass Valley Bullion Mines Company.

Announcing The Gibson Pocket Hunter



Never before has such value been offered to the mining public. The Pocket Hunter will crush two-inch material, grind and amalgamate in one pass. Built entirely of heat-treated chrome steel and guaranteed unbreakable. Will be taken back in exchange for 10-ton mill any time inside of one year. Heaviest part 85 pounds. Capacity 2 tons to 30 mesh. Price \$185.00. Price with belting and 1 1/2 H.P. engine \$250.00.

The Gibson Impact Amalgamator



Built in sizes from 25 tons to 2000 tons capacity

Repeat orders coming in from all parts of the world are positive proof of the efficiency of the Gibson Impact Amalgamator in saving the fine gold, amalgam and mercury that escape from the other amalgamating devices.

Write for catalogue describing Gibson Counter Balanced Rod and Ball Mills, Prospectors' Friend Mills, Flotation Cells, Amalgamators, Concentrators, Rock Breakers, Ore Feeders, Mercury Feeders, Oil Feeders, Retorts, etc.

W. W. GIBSON

112 Market Street

San Francisco, California

Concentrates from the Western States

Some high spots of the mining industry in the Western United States and Mexico.

ARIZONA

The 75-ton straight flotation mill at the Octave mine, Octave, Arizona, was placed on a regular production basis on November 7. The Octave mine has been extensively drilled and explored during the last year by the **American Smelting and Refining Company** and the contract for mill construction was let during August to E. L. Sweeney, metallurgist, Title and Trust Building, Phoenix. The mill will have an operating crew of eight men, directed by Bruce Matthews, mill superintendent. The mine has been equipped with a two-ton electric hoist and mining on the 1,100-foot level of the Joker shaft is on a two-shift basis, employing 20 men. The entire camp has been rebuilt and electricity provided for all buildings. The boarding house can accommodate 40 to 50 men. The operations at the Octave are supervised by B. R. Hatcher, division manager of American Smelting and Refining Company, Box 2028, Tucson, Arizona. M. E. Pratt is in direct charge at the mine.

The **Alvarado** gold property at the foot of Yarnell Hill, Congress Junction, Arizona, has been unwatered to the 1,000-foot level, and is being cleaned up for further development. A hoist and compressor have been set up and electric power provided. The work is sponsored by the Liberty Hill Gold Mines, Ltd., of California.

Some new equipment, including a larger filter, is being placed in the 60-ton reduction plant of the **Alaska** gold mine, Salome, Arizona. T. M. Hamilton, mining engineer, 724 Van Nuys Building, Los Angeles, California, recently spent 10 days at the property making mill tests in an effort to improve recoveries. E. I. Mills, 119 West Coronado Road, Phoenix, Arizona, is superintendent at the mine.

The **Stuart Gold Reef Mines Company** is developing the Golden Reef mine, near Cave Creek, Arizona, under bond and lease. The property is equipped with a 10-stamp mill, five stamps of which are being operated one shift daily, treating ores from shallow workings of the mine. The plant is handling a good grade of mill ore and showing a profit, according to C. E. Schure, vice-president, manager and director, 200 East Washington Street, Phoenix, Arizona. The old tramway tunnel has been cleaned out and advanced 200 feet, giving it a total length of 550 feet. The objective of this tunnel is to explore the vein system at a depth of approximately 500 feet. The company is headed by David T. Stuart, president, and Wm. D. Gordon, secretary, both of 280 Madison Avenue, New York City.

The **Red Rover** mine, 54 miles north of Phoenix, Arizona, has been unwatered by **Mine Operators, Inc.**, preparatory to resuming shipments of silver-copper ore to the El Paso smelter. The company was organized by E. M. Moores, P. O. Box 2002, Phoenix, and associates to operate a five-year lease on the mine. A crew of eight men is employed.

Consistent production is reported from the **East Vulture Mining Company**, Wickensburg, Arizona. A. B. Peach, president. The mine is equipped with a 100-ton cyanide mill for treatment of tailings.

Operations are about to start on property of the **Oro Flame Mining Corpora-**

tion, John L. Alexander, superintendent, Box 790, Prescott, Arizona. The property, located near Prescott, was formerly known as the Grove or Jumbo, and is equipped with a small milling plant. The mine has been worked by the Oro Grande Mining Company, a California corporation, and some \$40,000 spent in development and equipment during the last year. Reports were made on the property by Howard Fields, before it was taken over on a bond and lease, and showed 9,468 tons of assured ore running \$12.11 per ton, 87,200 tons of possible ore averaging \$12.59 per ton. The lease requires a minimum of 75 shifts per month and payment of 10 per cent of the net smelter returns. Plans call for immediate revamping of the milling plant and putting it to work on ore now available. The officers of the new company are Wayne Heffner, 315 Professional Building, Phoenix, Arizona, president; Howard H. Fields, secretary-treasurer, and Ray S. Witcher, director.

The **Hillside Mines, Inc.**, Hillside, Arizona, which acquired the Lawler property a year ago, has completed its flotation mill and is on a regular production basis. W. H. Marquette, formerly of Durand, Michigan, is metallurgist. H. L. Williams, Box 1226, Prescott, Arizona, is president and general manager of the company.

October production of **United Verde Extension Mining Company**, Jerome, Arizona, amounted to 1,016,620 pounds. This compares with production of 2,499,782 in September and 2,536,902 pounds in October, 1933.

The Ben Harrison shaft of the **Tom Reed Gold Mines Company**, Oatman, Arizona, is being reconditioned and the shaft collar retimbered. During the repair period hoisting has been temporarily suspended. Mining operations continue as usual in the lower levels, with ore being piled for hoisting as soon as the shaft is ready. Before this work was started Tom Reed was hoisting 1,000 tons a month from its own operations and 500 tons from lessees. All ore is treated in the Reed mill which was enlarged during the past summer to better handle the increasing shipments of ore from various properties in the district. During recent weeks, the mill has been treating approximately 250 tons daily. Paris Brough is mill superintendent, and Jack Zwinge is mine superintendent.

The mill of the **Illinois Mining Company**, Congress Junction, Arizona, Jay Burns, president, is running regularly, and making shipments of gold precipitates to the Selby Smelter.

Directors of **Phelps Dodge Corporation**, Bisbee, Arizona, have ordered a special distribution of 25 cents a share on December 15 to stockholders of record November 30. Similar payments were made on February 1 and July 2 of this year. The payment is in the nature of a special distribution and does not set a regular dividend basis for the company stock.

The **United States Smelting, Refining and Mining Company** has made its first carload shipment from the Toughnut mine of the **Tombstone Development Company** at Tombstone, Arizona. The U. S. Smelting, operating the mine under bond and lease, has been engaged in exploration of the holdings for over six months. R. T. Walker is directing the work at the mine.

The ore discovery made in the **Emy** mine of the **Tombstone Development Company**, Tombstone, Arizona, has proved to be of considerable importance. To the company, under the direction of Holderness, superintendent, has shipped carloads of ore which have netted an average of \$1,000 per car, it is stated. Recently shipments have been going out the rate of a carload every other day.

Sebring and Hayward, operating a cyanide plant on the Head Center claim of the **Tombstone Development Company**, Tombstone, Arizona, report that they have shipped the richest bullion to leave the camp in many years. The bullion was reported to show 0.024 fineness in gold and 0.942 fineness in silver; a total fineness of 0.966.

The **Pope** mine in the Black Range district has been leased and bonded to B. H. Fortner and Peter Ilsson of Oatman, Arizona. The lease was granted by William H. Hall. The lessees have started stopping and drifting and expect to start shipping by the end of November.

Jess Crain of Oatman has taken a lease on a portion of the **Black Eagle** property of the **Tom Reed Gold Mines** at Oatman, Arizona, and is making regular shipments to the Tom Reed mill. The ore mined from a stope above the 950 level. Five men are employed on the lease.

The **Silver Cord Mining Company**, Cleator, Arizona, has joined the shipping mines of the district, sending out a carload of ore to the El Paso Smelting Works. Jimmie Meyer is directing the work.

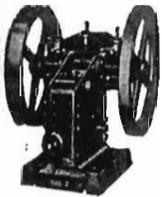
After a shutdown of over four years due to the low price of silver, the **Gold Crown Silver Mining Company**, Cleator, Arizona, has resumed shipments of high grade silver ore from its **Gold Crown** mine, the ore going to the American Smelting and Refining Company at El Paso. The mine was unwatered early in the summer. Richard Kingdon, owner of the property, is in direct charge of the work.

CALIFORNIA

The **Black Hawk** mine, Auburn, California, is operating 10 stamps and employing 20 men, under the direction of W. H. Wyatt, superintendent, and regular gold shipments are being made. Values are recovered by means of flotation equipment. Dr. C. E. Peterson, Vallejo, California, heads the operating company.

The **Big Horn Mining Company**, David D. Baker, mine superintendent, Valyermo, California, is making plans for increasing the capacity of its 50-ton mill to 150 tons daily. It was found that the 50-ton mill, which was completed late last summer, was of insufficient capacity to make operations profitable.

The old **Blue Light** silver and zinc mine in the Santa Rose district near Anaheim, California, has been sold to the **Hughes Mitchell Processing Company**, Torrance, California. The new owners plan to have the property operating about the first of December. Lumber is being hauled in and homes constructed to house families of the more than 100 workers who will be employed at the outset. The mine is opened on six levels, from the 100 to the 700, and the ore below the fault line at the 400-foot level is said to run 20 per cent zinc, 25 ounces silver, 7 per cent lead and approximately \$5 to the ton in gold. The old mill is still standing, the shafts are open and power is available.

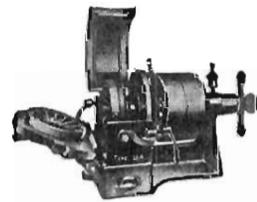


Chipmunk Crusher



Assay Equipment

Chemicals



Braun UA Pulverizer

Braun CRUSHERS and PULVERIZERS Used by over 75% of the Mines of the World

Laboratory Crushers
Laboratory Pulverizers
Assay Furnaces
Electrolytic Apparatus

Clay Crucibles
Clay Muffles
Silcar Muffles
Calmix Cupels

Balances
Weights
Microscopes

Pyrex Glassware
Cooer Porcelain Ware
Whatman, Munktell and
S & S Filter Papers

Sodium Sulphide
Borax Glass

Litharge, Silver Free
Mercury

Cyanide
Zinc Shavings and Dust

CHIPMUNK CRUSHER—A steel frame laboratory crusher, with a jaw movement that insures a large capacity and impels the discharge. Bearings are fitted with split bushings made of special bearing metal. Can be taken up or renewed.

Type VC-14—Jaw Opening 3"x2¼". Shipping weight, 300 lbs.
Price \$125.00 factory Los Angeles.

Type WC-18—Jaw Opening 4"x2½". Shipping weight, 550 lbs.
Price \$225.00 factory Los Angeles.

BRAUN TYPE UA PULVERIZER—For grinding samples from ¼-in. to 100 mesh with one operation; 8-inch grinding plates of special alloy. Straight drive—no gears—replaceable bearings of anti-friction metal. Easily cleaned.

Shipping weight, 275 lbs. Price \$135.00 factory Los Angeles

All process and reagent chemicals

Braun Corporation, Ltd.

2260 East Fifteenth Street

Los Angeles, California

MAGMA COPPER COMPANY

BUYERS OF

COPPER, GOLD

AND SILVER ORES



MINES AND SMELTER AT
SUPERIOR, ARIZONA

Sulphuric Acid

(60° Baume)

Maximum efficiency proven
by years of experience in
Arizona plants.

Prompt shipment is made
from our Douglas
Reduction Works.

ADDRESS

**PHELPS DODGE
CORPORATION**
DOUGLAS, ARIZONA

at the property. O. H. Pember, who was manager of the mine before its shut-down in 1929, will remain as superintendent under the new owners. The Hughes Mitchell organization is completing construction of a \$1,000,000 chemical and paint plant at Torrance.

A depth of more than 60 feet has been reached in the 300-foot shaft being sunk on the quartz at the Ruby mine, Alleghany, California. In addition, 400 feet of drifting to the gravel channel is planned during the winter months. Old timers are said to have taken considerable gold out of the quartz and the present work is to prove or disprove the vein. The pilot mill which was recently completed is operating to determine whether or not the quartz can be worked profitably. Operating officials are E. C. Montgomery, resident manager, and L. L. Huelsdonk, mill superintendent.

The Central Eureka Mining Company, Sutter Creek, California, has notified preferred and common stockholders of an assessment of five cents a share on both classes of stock, payable on or before December 17. Sale date of stock on which assessments are not paid has been set for January 3. The mine has been closed since early in October due to a strike.

The cook house and bunkhouse at the Iowa Hills Gold Mining Company, Colfax, California, have been completed and machinery is arriving at the property for construction of the washing plant, which is expected to be in operation about the first of the year. Ben Kagan, president, 303 Fidelity Building, Los Angeles, and A. F. Muter, consulting engineer, 200 Lankershim Building, Los Angeles, recently returned from a trip to the property.

Following surveys and drill tests, work has been started on the Flume House property three miles southwest of Mokolunne Hill, California, by N. O. Henricks and eastern associates. This district is said to be rich in channel gold, well known channels including the Concentrator, Coral Flats, Chili Gulch, Tunnel Ridge and Old Woman or Blue Lead channel. It is understood that the new operators have located three of these channels and have assembled equipment with which to sink a shaft. They expect to reach the gravel channel by Christmas time. Mr. Henrick's home is at 736 Kingsley Avenue, Pomona, California.

Approximately 150 tons of tailings daily are being run through the mill at the Yellow Aster mine, Randsburg, California. Test work, which was started almost a year ago, is being continued to ascertain whether values will warrant installation of more extensive equipment. At the Big Dyke mine, which adjoins the Yellow Aster, approximately 30 tons of ore per day are being run through the mill. This ore is being taken from the 200-foot level. Two hundred men are employed at the two properties, which are operated by the Anglo-American Mining Corporation, Ltd., 1005 Mills Building, San Francisco, California. A. W. Frolli is in charge of the work at the mines.

More than 260-feet of the main tunnel at the Hines-Gilbert Gold Mining Company property, Greenwood, California, have been cleared and retimbered, under the direction of A. T. Lee, superintendent. Further development is planned upon completion of the recoditioning of the tunnel.

Discovery of ore of high quality is reported near the surface in the footwall structure of the Maryatt mine, near Tut-

tletown, California, which is under lease and option to C. W. Jackman. The ore body has apparently been proved to shallow depth for a length of 100 feet. The property was last actively worked during the '90s and operations are said to have been on the main vein, which is five to six feet wide.

Development work is under way on an eight to 10-foot vein at the Crackerjack mine, near Sonora, California, which is being operated under lease and option by A. N. Mouglin of Beverly Hills, California. Machinery has been installed and a shaft is being sunk.

Duiecke, Inc., Groveland, California, which recently placed its new 25-30 ton mill in operation, plans to go on a two-shift basis shortly, according to Edgar A. Smith, mine superintendent, with a 24-hour schedule planned for the near future. F. W. McRae, 323 Fidelity Building, Los Angeles, is president of the company.

Development work is in progress on the 250-foot level of the Sugar Pine Mining Company property at Sugar Pine, Toulumne county, California, where an east drift 80 feet long is being extended to cut an ore shoot which produced well on the 120 and 200 levels. A new mill is planned for the near future to replace the three-stamp plant destroyed by fire some time ago. Allison J. Gunn, 543 East Anaheim Street, Long Beach, California, is president. William J. Leigh, care Sunshine Camp, Sonora, California, is in charge of operations.

An 80-horsepower Diesel engine has been installed at the Dolman mine in the Bear valley country, about 15 miles north of Mariposa, California. A 200-foot shaft has been sunk on the property and some drifting has been done. Phil B. Dolman, Bear Valley, California, is in charge.

The new mill at the Soulsby-Bell Mining Company, Soulsbyville, California, is handling 10 tons daily, operating on a 10-hour schedule, according to John Kelly, manager. The grinding unit is a Joshua Hendy ball mill and the plant also in-



THE NATION'S STRENGTH IS THE NATION'S HEALTH

The greatest threat to the nation's health is tuberculosis. It is the chief killer of men in industry between the ages of 15 and 45—20,000 men in this group alone die of it every year. No one is safe from the disease until every case has been found and placed under treatment. Help protect yourself and your family by using Christmas Seals on your holiday letters and packages. The funds they provide finance a program of prevention, discovery, and treatment of tuberculosis throughout the entire year.



THE NATIONAL STATE AND LOCAL TUBERCULOSIS ASSOCIATIONS OF THE UNITED STATES

BUY CHRISTMAS SEALS

cludes a Dorr classifier, amalgamatable and Wilfley concentration table. Fred Richards is millman. Drifting is proceeding on the 340 level in a northerly direction, where additional ore bodies are expected to be opened. Four previous unknown veins have been discovered through surface prospecting. These apparently intersect the main Soulsby-Bell ledge not far from the present drift face now 180 feet long. Two of the new veins are from three and one-half to four feet in width and pan free gold near the surface, while the other two are from 12 to 15 feet wide and show some gold value. Fifteen men are employed at the property. John Brunton is superintendent.

The Argonaut Mining Company, Ltd. E. A. Stent, vice-president and general manager, Jackson, California, has announced that owing to the strike of miners in the Jackson district, which has kept the company's mine closed since early October, the officials think it advisable to take no action on the dividend which normally is due at this time. The Argonaut paid 25 cents a share in February, 25 cents in May and 50 cents in August.

A new power plant has been purchased for the Thunderbolt gold mine, operated by William A. Miller, Sonora, California. When this is installed the property will lack nothing in the way of mining equipment, it is said. The mill is shut down for the present, all efforts being turned toward enlarging and timbering an old tunnel 100 feet in length which taps the new two-compartment shaft at a depth of 80 feet.

Daily production at the Lloyd Placers, San Andreas, California, is running approximately 70 tons, according to Charles W. Neilson, who is operating the property in association with Gordon F. Scheckler, 621 West Acacia Street, Stockton, California. The average yield is said to be \$3.50 per ton, with values increasing as the drift is continued north from the 300-foot shaft. Neilson plans to retimber the old 2,400-foot tunnel for a distance of approximately 1,000 feet, and he also plans to drive a new 1,000-foot tunnel south of the present one.

The Schwoerer Brothers gravel property, San Andreas, California, has been taken under lease and option by Robert E. Lowther and associates of Buffalo, New York, and a crew is engaged in preparing the property for production. Electric power has been extended to the property and machinery has been assembled for small scale operations upon completion of gravel tests. More than 100 tons of gold-bearing gravel which were taken from the pit by means of a 75-foot shaft are said to have shown values of \$5 per cubic yard, exclusive of silver, platinum and black sands. Operations will be conducted by means of a sand and gravel pump capable of handling 20 cubic yards an hour. Roscoe N. Smith, mining engineer, P. O. Box 181, San Andreas, California, is directing operations.

Operations are under way at the Rising Star Mining Company property, San Andreas, California, which has been bonded by Charles W. Nielson, San Andreas. The property, last operated four years ago, is equipped with a scouring mill, compressor, pumps and compressor engine. The daily output is to be 100 tons and 15 men are employed.

Averaging \$11 a ton, a 10-foot vein of ore has been opened on the 400-foot level of the Amador Mother Lode Mining Company, Jackson, California. Operations are

in charge of E. A. Stent, vice-president and managing director. The Amador Mother Lode was worked extensively on the surface from 1856 to 1870 when, due to litigation, it was closed down, not being reopened until this year. O. E. Chaney, Reno, Nevada, is president of the company.

During the next year the Mother Lode Central Consolidated Mines, Inc., Angels Camp, California, proposes to spend approximately \$120,000 in preparation for actual production on its Albany Flat property, according to an announcement by Matt Mayer, superintendent. Four men are engaged in sinking a three-compartment shaft, which is to be carried to the 400-foot level before cross-cutting. Following the purchase of additional equipment the number of men employed will be raised to 20.

A group of mining men headed by H. C. Phillips of Sacramento, California, has taken over the Elzie mine under bond, lease and option, from S. W. Collins, owner, Georgetown, California. The new operators are sinking a shaft on the property.

The Muletown California Gold Mining Company, 1411 Fourth Avenue Building, Seattle, Washington, plans to install a 100-ton mill on its property located on Mule Mountain, ten miles west of Redding, California. The company's holdings consist of 13 claims, known as the Stoney Gulch mine, the Wampus mine and the Mockingbird mine. More than 1,000 feet of tunneling has been completed and assays are reported to show values from \$15 to \$35 a ton in gold from sulphide ores.

Fifty-five men are working steadily at the Big Blue mine, Kernville, California, and the mill is treating an average of 125 tons daily. During October millheads averaged \$6.13, according to reports. Concentrates shipped from October 1 to 15 amounted to \$11,479.72 and production for the entire month totaled \$20,500. Enough ore has been blocked out in development to keep from six to seven months ahead of the mill, engineers state. This ore averages \$7, according to mill test reports. Byron E. Rowe is general superintendent.

Underground gravel channels on the 150-foot level of the Alta Hill mine, Golden Center Mines, Inc., Grass Valley, California, are being explored and assayed, following unwatering last summer. The surface plant has been reconditioned preparatory to active development. L. S. Wincapaw is superintendent.

Arthur Hamburger, president of the West American Consolidated Gold Mines, Inc., Plymouth, California, reports that the installation of machinery and equipment to increase production is progressing steadily and that the mill is expected to be handling 125 tons by the first of December. The plant will handle the product of both the Amador Star and Bay State properties. N. P. Nelson, formerly foreman at the Bay State mine, is now connected with the West American.

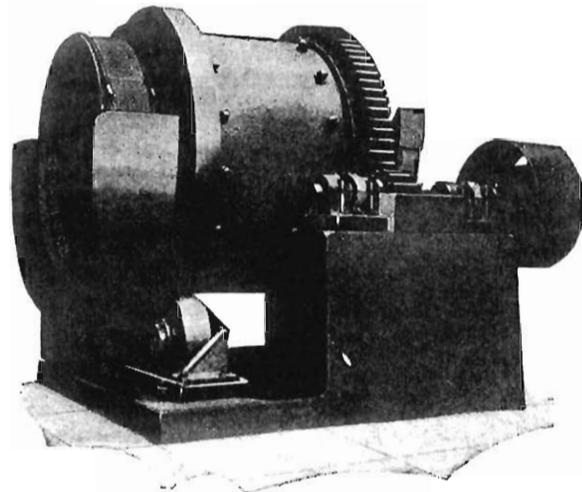
The old Gladstone mine at French Gulch, California, has passed into control of the Abacada Mining Corporation, French Gulch, California. The property is to be rehabilitated and new machinery provided. Strong veins of medium-grade ore are said to have been exposed when operating costs forced former owners to cease activities. The Abacada corporation is operating the adjacent American mine with a full crew and it is understood profitable ore is being taken from wide ledges. The flotation mill is treating 60 tons daily and

sufficient ore is said to be exposed to assure a long period of production. The property is developed by tunnels, winzes and numerous laterals. N. D. Bertram is general superintendent for the Abacada corporation.

John T. Sullivan, Salt Lake City mining engineer, has been appointed manager and consulting metallurgical engineer of the Grey Eagle-Elephant mines at Mojave, California, by Jess Knight, general manager. Chris Anderson is superintendent at the property. With only a small reserve, all of the 15 claims comprising the Grey Eagle-Elephant holdings are being operated by lessees, employing some 40 miners. The 100-ton rod mill is running three shifts daily, and the two-stamp mill, for handling the high-grade ore, is being rehabilitated.

The Empress Gold Mining Company, Grass Valley, California, has placed its new 300-ton mill in operation at its gold properties in the Newtown district. The plant is equipped with rock crushers, a ball mill, classifier and ten flotation units. Mining has been resumed and development of new territory started. The property is developed to a depth of 1,000 feet and large reserves of ore are said to be in sight. E. C. Jacobs is manager.

The Bradley Mining Company is draining the old shaft at the San Juan mine west of North San Juan, California, and is doing some diamond drilling. Twenty men are employed at the property under the direction of C. J. Lyser, superintendent. For the past several months ore shipments have been made to the A. S. and R. smelter at Tacoma, Washington.

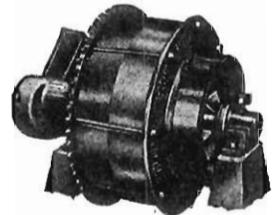


Ball Mills
Crushers
Overstrom Universal
Concentrators
Complete or Partial
Equipment

Illustrated—a screen type Rib-cone Ball Mill, 25-35 ton capacity. Others from 2 to 250 tons, screen or screenless, standard and sectionalized types, from \$220 up.

Recovery Increased to 90% from Only 65%

*Same mine—same ore—but
Straub equipment made the
difference!*



Illustrated—the 2-4 ton capacity Prospector Rib-cone Ball Mill. \$220. Capacity can be doubled by adding extra parts at \$155.

With gold at the present price you can't afford to let it go to the tailings dump! Straub equipment will save it, as it is for many mines who have increased their recovery tremendously. From 65% to more than 90% is not unusual. And it's all done with less power, less water, and with a saving in first costs!

Send for Bulletin No. 115 Giving Illustrations and Prices of Straub Equipment

STRAUB

505 Chestnut St.

OAKLAND, CALIF.
U. S. A.



Mfg. Co.

NAME OF NEAREST
DISTRIBUTOR ON REQUEST

KNOW

Where To Dig By Having A True Picture
Of Your Sub-Surface Conditions.

GEOPHYSICAL SURVEYS

made by a pioneer organization using patented equipment—an experienced personnel under the technical direction of Dr. J. J. Jakosky, with over 200 successful surveys extending from northern Canada to Mexico.

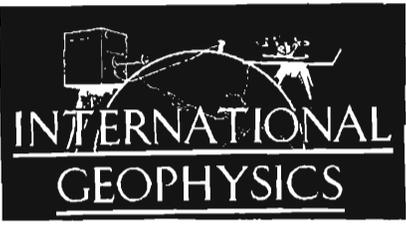
LODE, PLACER, OIL & DAM SITE PROBLEMS

Rapid and proven methods for determining main zones of mineralization, thickness of overburden and gravels, bedrock contours and rock conditions; at less than one-tenth the cost of direct exploration methods.

COMPLETE ELECTRIC, SEISMIC AND MAGNETIC EQUIPMENT

Correspondence regarding development problems cordially invited.

P. O. Box 144—Palms Station
LOS ANGELES, CALIF.



DEW-R-LITE Carbide Lamps

For All
MINE
PURPOSES

Made in
ALL BRASS
and in
DOUBLE
TINNED
STEEL

Catalog
on request



The only self-regulating carbide lamp that will give you the steady, even flame you require underground without shaking or raking.

Entirely automatic—
All parts accessible.

Dewar Manufacturing Co.

18—35th St. Brooklyn, N. Y.

"WELCO" BRAND

(Superior Quality)

DIE FORGED
STEEL
GRINDING BALLS

For information and prices, consult your
dealer or write us direct.

Wilbur - Ellis Co.

655 So. Anderson St.
Los Angeles, Calif.

William R. Boyd, mining engineer of Bridgeport, California, who has a lease on the **Rancheria** placers in Mono county, California, expects to operate the property throughout the winter. Three log cabins have been erected for the crew, 6,000 feet of pipe line have been laid and a new power unit installed. Gravel is now being washed and when the weather becomes too cold the gravel will be placed in a stock pile to be washed in the spring.

The **Mack Mines, Ltd.**, Nevada City, California, has installed a pumping plant at its property in the Canada Hill district and is reported to be preparing for production. Four men are employed under the direction of Bruce Wallace, superintendent.

COLORADO

Unwatering the **Fairfax** mine at Salina, Colorado, and rehabilitating the shaft are reported to be included in the plans of a group of Denver people who are operating the property. Sam Hughes, who is in charge at the mine, is representing the Denver interests, which are planning to put the property in condition for steady operations, it is said. Hughes is also in charge of operations at the **Wano** mine at Jamestown.

The **Last Dollar** mine in San Miguel county, Colorado, was recently taken over by a company bearing the same name. Mine machinery is being installed and a mill building is under construction. The ground holdings consist of four claims, traversed by an 18-inch to four-foot gold-silver vein. The gold content of the ore is reported to range from 0.50 to 1.00 ounce. F. A. McCoy is president and J. S. White is secretary. Company headquarters are at Telluride.

A tentative decision to install a milling plant equipped for flotation has been made by the officers of **Jumbo Properties, Inc.**, W. C. Krape, 708 Colorado Building, Denver. The company has a crew drifting on the **Jumb** vein at a depth of 260 feet. The vein varies in width from eight to 38 feet, carrying values in gold, silver, and copper. Recent work is reported to have disclosed ore running \$108 a ton. The property embraces 120 acres, including a mill site and a considerable area of placer ground, and is located near Breckenridge, Summit county, Colorado. R. E. Myers of Breckenridge is superintendent of the mine.

Berne H. Hopkins, in charge of the **Golden Globe Company's** operations in Cripple Creek, Colorado, is working on some blocks of the Proper claim of the Stratton Estate. It is reported that the core from a recently uncovered vein ran 10 to 12 ounces in gold, and that low-grade ore is being shipped in carload lots. Kansas City capital is said to be backing Golden Globe activities. Air for operations is being furnished by the C.O.D. compressor. Hopkins' offices are at 5 McIntyre Building, Colorado Springs.

W. D. Wade & Company of Victor, Colorado, is reported to be shipping from eight to 10 carloads of 1-ounce gold ore monthly from the lease on the **Gold Coin** of the **Colorado International Mining Company**. W. D. Wade is employing 17 men and running about six machines. The fifth, seventh, and ninth levels of the Gold Coin shaft are being worked intensively. Production is also coming from the Bonanza ground of the **United Gold Mines Company**, L. G. Carlton of Colorado Springs, president, work being done through the Gold Coin shaft.

A mill is planned for the near future by the officials of the **Maryland Mines Company, Inc.**, which has recently acquired the Mammoth group of claims on Bear Creek about two miles from Telluride, Colorado. The deal was completed by J. E. Snider and Louis Muchiando of Telluride, who owned the property. About 15 men are at work at the mine under Snider. Machinery is said to have been ordered and work of grading for a mill site is going on.

New equipment is being installed at the old **Wisconsin** property in the Sugar Loaf district of Boulder county, Colorado, it is reported. Mine buildings, head frame, and shops have been erected and the mine workings are being reconditioned under the direction of James McLaughlin of Boulder. D. W. Schmitt, representing Kansas interests, is reported to have recently taken over the claims.

Ore assaying up to \$100 a ton is reported from the **Texas Chief Mining Company** at Durango, Colorado. The ore is said to have been found in the Pittman tunnel of the Texas Chief and to exist in substantial quantities. The company, which is planning to carry on development work throughout the winter, is at present developing the mine by driving a transportation tunnel. Milton G. DeLuca, P. O. Box 78, Durango, is president and general manager. J. A. Wright, 621 Exchange Building, Denver, is secretary.

The **Colorado Fuel and Iron Company** reports for the first nine months of 1934 earnings of \$195,624, as compared with a loss of \$2,307,273 in the corresponding period of 1933. These amounts are figured after all charges are deducted. The company is operated under the direction of Arthur Roeder, trustee, with offices in the Continental Oil Building, Denver.

The old **Puzzler** mine, located above Empire, Colorado, is keeping a small mill in operation and is sending gold amalgam to Denver. A. H. Swartout of Blackhawk is engineer in charge of the work. The property was worked in the 90's by Canadian capital.

Earl Gandy of Silver Plume, Colorado, and local associates are expecting to have the **Lucky Boy** and **Blue Bird** claims in operation soon. The properties are located in Clear Creek county on Soda Creek.

A total of 14,120 tons of ore and waste were said to have been hoisted during October through the main shaft of the **Cresson Consolidated Gold Mining and Milling Company**. Of this amount 4,410 tons were hoisted for lessees. The shaft is a single compartment one and is located in the Cresson mine. Twenty-nine sets of lessees are working in the property. Company earnings are reported to average around \$15,000 monthly, although no effort is made to maintain a stipulated figure. A. H. Bebee of Cripple Creek is mine superintendent. L. G. Carlton, Colorado Springs, is president and general manager.

A strike of high-grade ore is reported from the **Deadwood** mine of the **Gold Bullion Mines, Inc.**, on Bull Cliff in the Cripple Creek district of Colorado. The company, which is operated by Fred Baker of Cripple Creek and associates, says it is not ready for any announcement until more information concerning the ore is available. The strike was made in the Lillie vein. The company has been doing development work on the Deadwood for over a year and at the same time has

ALLISON STEEL MFG. COMPANY

STEEL FABRICATORS
AND JOBBERS

We carry a large stock of grader blades structural, bands, bars and plates and operate the largest fabricating shops in Arizona.

Your inquiries will be appreciated.

19th Ave. and Harrison,
Phoenix, Arizona

Complete Equipment For Mine and Mill

Flotation Chemicals
Assay Supplies, etc.

Goddard-Jackson Co.

1400 Santa Fe Avenue
Los Angeles, Calif.

HOISTS

Standard and Mining Types
Diesel Engines

30 to 700 Horsepower — 4-Stroke
Cycle—Solid Injection—Heavy Duty

Distillate Engines

We Solicit Your Inquiries

Western Enterprise Eng. Co.

A. C. DENMAN, Receiver
1000 Alhambra Ave.
Los Angeles, California

Air Compressors

PORTABLE, VERTICAL
and
STATIONARY

Complete for the Mine

The Rix Company, Inc.

810 Santa Fe Ave. 400 Fourth St.
Los Angeles San Francisco

QUICKSILVER FOR GOLD MINING

Packed in 1-lb., 5-lb., 10-lb. Bottles and
76-lb. Flasks.

Write us for a delivered price on the above
quantities to any mine in the West.

QUICKSILVER PRODUCERS ASSOCIATION
560 Sacramento St., San Francisco, Calif.

"In extracting nickel and making it an important servant of industry," he writes, "approximately two pounds of copper are recovered for every pound of nickel. This means that copper is now being mined at the rate of more than 200,000,000 pounds per year as the direct result of providing the nickel now required in diversified industrial markets throughout the world.

"To refine its copper to the high degree of purity demanded by modern industry your company participated in the organization of the Ontario Refining Company, Limited, for the construction, as a custom refinery, of a modern electrolytic plant at Copper Cliff, Ontario.

"Your company now owns 90 per cent of the capital stock of the Ontario Refining Company, Limited, and that refinery is now engaged exclusively in the production of 'ORC' brand electrolytic copper from your company's blister copper."

MOJAVE SMELTING COMPANY PLANT NOW OPERATING

The new smelter of the Mojave Smelting Company at Mojave, California, has been completed and is now operating. Features of the plant, which was planned and constructed under the supervision of Thomas Kekish, metallurgist and smelter expert, are a modern automatic sampler and an up-to-date assay office. A preliminary run was made on 300 tons of ore purchased by the company. The plant is equipped to treat ores from the various mining operations in the Mojave district. Frank Cook is chief engineer.

STONE CABIN CONSOLIDATED TO BE ON 300-TON BASIS SOON

The Stone Cabin Consolidated Mines, Inc., has practically completed the program undertaken last spring for the design and construction of a 300-ton flotation mill combined with a cyanide leaching plant. Concrete foundations for the machinery units and large tanks of the leaching plant are being constructed under the direction of William W. Harritt, 112 East Fourth Street, Carson City, Nevada, who is general manager. A force of 40 men is employed.

Further sinking of the main winze from the haulage tunnel has provided a volume of water said to be more than adequate to meet the increase in mill capacity. By early December the company expects to be on a regular daily basis of 300 tons. Shortage of water for milling cut operations at Stone Cabin down to one shift daily during the summer. Company directors at that time decided to proceed at once with the installation of the cyanide plant and at the same time bring the flotation capacity up to 300 tons a day. Provision had been made to impound the flotation tailings for later treatment by cyanidation.

Prior to the shut-down of the mill during the summer, the efficiency of the flow-sheet had been demonstrated. Grinding and cell capacity were shown to be adequate for the proposed 300-ton operation. With the addition of a primary jaw crusher and minor changes in the flow of pulp, the capacity was brought to the required point.

The Stone Cabin property embraces more than 30 lode claims and the mill site and represents the consolidation of three adjoining mines, Pony Meadows, Mount Lincoln, and Stone Cabin. Officers of the company recently gathered at the mine to inspect the new work. W. W. Charles of 510 West Sixth Street, Los Angeles, is president. Company consulting engineer is Frank W. Royer, Hollingsworth Building, Los Angeles.

HOMESTAKE MINING MAKES USUAL DIVIDEND PAYMENT

The Homestake Mining Company of Lead, South Dakota, made its usual dividend payment to stockholders on November 26, to stock of record November 20. The payment amounted to \$3 a share composed of the regular monthly dividend of \$1, together with the usual extra monthly dividend of \$2. The total monthly disbursement of the mine is \$754,480.

CAPACITY OF BURTON BROS. CUSTOM MILL IS INCREASED

With the addition of a new Allison-Chalmers ball mill, the custom mill of Burton Brothers, Rosamond, California, has a capacity of 100 to 125 tons of ore daily, and is being operated on a 24-hour schedule on ore from their Tropic and Soledad Extension properties, together with ores from other mines in the district, including the Rogers-Gentry group, the Silver Queen operators, etc.

Bullion shipments from this mill, thus far this year, exceed \$200,000 it is said, nearly 40 per cent of which was mined from the Tropic properties at Rosamond. The Rogers-Gentry group of leases is reported to have produced \$100,000, of which \$20,000 is from the Brite-Burton Brothers lease.

It is understood that plans are under way to bring the cyanide plant up to the new mill capacity. H. Clifford Burton, Rosamond, is directing operations.

CARSON HILL GOLD CORP. REPORTS PROMISING OUTLOOK

In his annual report to stockholders, Charles H. Segerstrom, president of the Carson Hill Gold Mining Corporation, operating gold properties on the Mother Lode at Melones, Calaveras county, California, stated that the outlook for the company is most promising, and intimated that a conservative distribution of earnings in the form of dividends may be recommended to the board of directors.

More than 5,362 feet of development work has been completed in the Carson Hill and some of the lower levels are being unwatered to make available additional ore for future milling operations. During the past year ore run through the mill came principally from glory hole and steam shovel operations, but it is planned to run a greater percentage of the underground ore through in the future, which, in the management's opinion, should result in higher earnings.

The annual statement shows that the company has accumulated an earned surplus of \$237,683 with assets as of September 30 amounting to \$8,167,105. Current assets of \$109,610, including cash on hand and in banks of \$83,460, compares with current liabilities of \$46,933, of which \$42,706 represents accounts and payrolls payable.

Since March 13, 1933, the company has expended \$56,261 for machinery and other equipment, and at present buildings and their equipment, mining claims and ore reserves, and all other equipment are given an asset value of \$7,747,614. Deferred charges, including development work and shut-down expenses prior to production, total \$229,853.

The company's indebtedness on its properties now totals \$143,415, payable at the rate of 10 per cent of gross production.

The Carson Hill was rehabilitated a little more than a year ago by Mr. Segerstrom and associates, after having been shut down for several years.

Salt Lake from his birthplace, Durand, Illinois, in 1896. Of late years he has been actively engaged in mining, acting as an official in the Commonwealth Lead Mining Company of Montana, and the Shamrock Mining Company of Nevada.

Walter Perkins, 48 years of age, mining engineer, died in Chuquicamata, Chile, from a tropical infection. He was a native of Salt Lake City, Utah, and was formerly connected with the Nevada Consolidated Copper Company. He went to Chile as an employe of the Guggenheim mining interests. When the Anaconda Copper Company acquired the Guggenheim properties in Chile, he was retained by the new owners as a mining expert in charge of operating mines and properties awaiting development.

Thomas Burton Everett, 79, a retired mining man of California and Colorado, died in Sacramento, California, the latter part of November. He was the organizer of the Placer County Miners Association and was instrumental in forming the California Miners Association. He was at one time a leading figure in the fight conducted by the hydraulic mining interests to modify or remove restrictions of the Sawyer decision, which brought an end to widespread hydraulic operations in the Sacramento River watershed.

Robert Mayo Catlin, 81 years of age, died at his home in Oakland, California, November 23. He had been interested in mining for many years, in 1880 having been named superintendent of the Navajo Mining Company, early Nevada mining operators, and in 1896 he was made general manager under John Hays Hammond of mines at Johannesburg, Transvaal, South Africa. He also served as consulting engineer for the Consolidated Gold Fields of South Africa, Ltd., and in more recent years was president of the Mining and Metallurgical Society of America.

PROSPECTOR'S COURSE GIVEN BY H. G. WALTER

H. G. Walter, former graduate student and faculty member of the University of Missouri, department of geology and mineralogy, and now completing his work for a doctor's degree, is in charge of a course for prospectors in Utah. The course will be of three weeks duration, held in various centers throughout the state of Utah. The first of these series of courses is being given at the high school in Tooele. Walter reports that the first two weeks showed a daily attendance of from 55 to 60 members.

The course is as non-technical and practical as possible, yet designed to develop a more scientific attitude toward prospecting, and acquaint the general public with the general and local natural resources. Study includes a discussion of general principles of geology, kinds, origin, and recognition of various types of ore deposits, proper use of maps, legal aspects of mining, and laboratory experience in identification of minerals. Walter is maintaining a permanent address at 576 Eighth Avenue, Salt Lake City.

GEOLOGICAL SURVEY OF JULIAN, CALIF., DISTRICT

A survey of the geological conditions of the Julian mining district, located in San Diego county, 25 miles northeast of Foster, California, has been completed by the state mineralogist's office, San Francisco, California. Copies of the report are now available.

HONORARY MEMBERSHIP VOTED FOR T. A. RICKARD BY AIME BOARD

At the November meeting of the board of directors of the American Institute of Mining and Metallurgical Engineers, T. A. Rickard was unanimously elected to be an honorary member of the Institute. The petition, signed by 159 Institute members, was presented at the October meeting and referred to the committee on honorary membership. A favorable report was submitted by the chairman, William Wraith, and after the election the secretary was directed to arrange for the presentation of the certificate. If Mr. Rickard can be present the award will be made at the Annual Dinner in February, 1935.

The citation reads as follows: "In recognition of his outstanding achievement as a proponent and preceptor of advanced standards in technical concept and writing and his brilliant contributions to the literature of geology, mining and metallurgy, as editor, journalist and author."

A graduate of the University of London, Royal School of Mines, Rickard began his practical career as an assayer at Idaho Springs, Colorado, in 1885. The following year he was assistant manager for California Gold Mining Company; then in 1887 was manager for Union Gold Company in California. The next several years he spent in Australia and in France, returning to Colorado in 1895 as manager of the Enterprise Gold mine. From 1896-1902 he was state geologist for Colorado.

In 1903 he entered the editorial field where he soon attained an outstanding position. He has served as editor of Engineering and Mining Journal, as editor and founder of The Mining Magazine of London, and as editor of Mining and Scientific Press, and since 1922 as contributing editor for Engineering and Mining Journal. His technical writings, covering such subjects as "Stamp Milling of Gold Ores," "The Sampling and Estimation of Ore," "The Flotation Process," and "Technical Writings," are regarded as the authoritative works by the mining industry.

MOUNT TOLMAN GOLD COMPANY DRIVING DEVELOPMENT TUNNEL

The Lincoln tunnel of the Mount Tolman Gold Company is now in about 330 feet from the portal, cutting 27 veins, and will be driven 500 additional feet to open five more veins, according to Alva Snyder, president, Doneen Building, Wenatchee, Washington. The company has 38 claims, comprising around 800 acres, about four miles northwest of Keller in Ferry county, Washington.

Of the ore bodies cut by the tunnel, a nine-foot vein is said to be one of the most promising, with the exception of the two-foot vein near the portal which averages 165 ounces of silver to the ton and about \$3.50 in gold, with 15 to 20 per cent copper, Snyder states. Development of the property consists of approximately 1,700 feet of tunnels and drifts in addition to many open cuts.

The company was organized within the last year by Snyder, C. A. Drinkard, and A. R. Gregory, and later Snyder purchased the interests of his associates. Officers include Frank V. Taylor, vice-president; William S. Kirkendall, treasurer; and Carol C. Snyder, secretary. John C. Hammond is the engineer in charge. Hammond took his first training at the Denver School of Mines, then studied two years at the School of Mines, University of Edinburgh, Scotland, later spending another two years at Londonderry, Ireland, in the Casino University School of Mines.

SONORA CHAMBER OF MINES ORGANIZED AT HERMOSILLO

During the miners convention held at Hermosillo, Sonora, in November, the Camara de Minería de Sonora (Sonora Chamber of Mines) was organized, and the following board of directors elected:

Santiago Soto, mining engineer of Santa Ana, president; W. A. Wasley, manager of El Tigre Mining Company, vice-president; Clyde E. Weed, general manager of Cananea Consolidated Copper Company, treasurer; Ing. R. Luis de la Pena, first secretary; Luis Bernal, second secretary; and H. H. Horton, Ing. Juan Moreno, R. S. Clinch, Jose G. Molina, A. A. Antunez, and Rafael Meneses, directors.

The geographical situation of Sonora places the mining interests of the state at a disadvantage with regard to all other mine operations of the country, states Senor Soto, but the group organizing the Camara de Minería de Sonora believes that the organization will be able to accomplish a great deal in the way of facilitating mining operations and in helping to make them more profitable.

TUBERCULOSIS DEATH RATE HIGHEST AMONG MINERS

By Marie C. Jann, Statistical Service,
National Tuberculosis Association

The tuberculosis situation as it bears on industrial workers has not, up to the present time, received the attention it deserves. This is particularly true in the case of miners. Disregarding the group employed in coal mining, tuberculosis of the respiratory system is the leading cause of death among operatives employed in the extraction of minerals. It is the second highest cause of death among coal miners. The latest occupational figures available reveal a death rate of 130.9 per 100,000 miners (exclusive of coal miners) between the ages of 15 and 64, as against the rate of 87.5 for all industrial workers. The tuberculosis death rate for the group, exclusive of coal miners, is 23 per cent greater than that for coal miners, the rate for the latter group being 106.0 per 100,000.

In the broad age groups, the rates show a great increase with the increase in years. The respiratory tuberculosis rates for miners (again exclusive of coal miners) are 31.0 per 100,000 for those 15 to 24 years of age, 111.9 for those 25 to 44 years of age, and 229.8 for those 45 to 64 years of age.

The other leading causes of death are far below tuberculosis in the toll they take from this particular group. The second ranking cause is heart disease with a rate of 112.1 per 100,000 as compared with the 130.9 for respiratory tuberculosis.

All the more to be regretted is the fact that the leading cause of death in this group is a disease which is far from impossible to control. Increased watchfulness on the tuberculosis front by means of more frequent health examinations, prompt treatment, and more intense health education to help the worker protect himself are the means of cutting down this needlessly high death rate. These things are made possible by the tuberculosis associations all over the country which are supported by the sale of Christmas Seals. In order to slash the tuberculosis death rate of this industrial group, help the tuberculosis associations to continue their work, and then demand from them the service and direction which they are so well equipped to give.

Buy Christmas Seals and prevent tuberculosis!

Nuggets from the Western States

Some high spots of the mining industry in the Western United States and Mexico.

ARIZONA

The **Gold Basis Mines, Inc.**, Prescott, Arizona, reports that it is producing about one ton of concentrates daily and shipping a car a month to the Magma Copper Company at Superior. According to Robert N. O'Brien, vice-president and general manager, the company now has about 7,000 tons of ore blocked out, this ore running \$24 per ton in gold. The concentrates are valued at \$25 to \$40 per ton. The company hopes to continue production at its present plant while building an entirely new plant on a different site on the same property, located in the Groom Creek district, seven and one-half miles from Prescott. The Radium Corporation of Canada, in the Great Bear Lake district, has loaned its engineer, Frank C. Fields, to the Gold Basis company. He is now en route to the mine where he will handle the supervision of all work.

The **Montizona Copper Company**, Casa Grande, Arizona, E. A. Pike, superintendent, is unwatering its mine, preparatory to active development. The mine has been shut down since September 1929, and filled with water to 100 feet from the surface. Considerable re-timbering and reconditioning of the shaft and workings will be necessary before new exploration can be undertaken. M. W. Bacon, 52 Broadway, New York City, president of the company, spent several days at the mine last September, at which time plans for reopening the mine were made.

The **Sterling Gold Mining Corporation**, operating the Richinbar mine at Cordes, Arizona, is employing 35 men in mining and milling. Several shipments of high-grade ore have been made and the mill is operating successfully. It is estimated that 60,000 tons of ore have been developed, and arrangements are being made to sink to greater depth. F. H. Lerchen is mine manager, and George W. Peters, mill superintendent.

Five cars of ore have been shipped from the Money Metals mine, operated by the **Yavapai Gold and Silver Mining Company**, Box 109, Prescott, Arizona. The ore carries gold, silver, lead and copper, and has averaged about \$55 per ton as shown by smelter returns. Six men are employed under the direct supervision of Thomas Turner, president of the company. Work will be continued throughout the winter unless heavy snows prevent ore haulage.

A second shaft is being sunk on the vein at the **Alcorn** mine by J. C. Henson, lessee. It is reported that some high-grade silver ore has been exposed. A second tunnel is being opened and a large ore bin has been completed. Two shifts are employed and all work is confined strictly to development. The Alcorn mine is located close to the Glenn Oak's Service Station, via Prescott, Arizona.

Arrangements have been made by the **Goldroad** mine at Oatman, Arizona, whereby the first ore extracted will be handled by the **Tom Reed Gold Mines Company's** mill. Shipments to the Tom Reed will be continued only until plans can be carried out for installation of a new mill at the Goldroad. About 30 men are em-

ployed at the mine, pumping out the water and retimbering the Glory Hole shaft. It is estimated that there are 18,000 tons of \$16 ore broken and ready for mining on the 500 level. L. H. Duriez, formerly of the Sunnyside Mining and Milling Company, Eureka, Colorado, has been transferred to Oatman, Arizona, Box 405, as resident engineer and manager of operations. He is assisted by Frank Onetto, mine superintendent. The Goldroad mine is owned by **United States Smelting, Refining and Mining Company**, which is conducting the present work.

Tentative plans have been made by **Bunker Hill Arizona Mining Company**, Sombrero Butte, Arizona, for installation of a 100-ton mill in the near future. During the past year extensive improvements have been made at the mine, under the direction of E. R. Anderson, manager. The main two-compartment shaft was dewatered to below the 300-foot level, reconditioned to that depth, and all workings on the 300 level reopened. In addition the company has constructed two small dams, one 12 feet high, and the lower one 31 feet high, said to impound over a million gallons of water. Both reservoirs are now full. A modern 160-horsepower Diesel engine has been installed, and railroad bunkers secured at Winkelman. These bunkers have a capacity for 10 carloads of crude ore or concentrates, and two compartments, holding a carload each, have been made ready for use. Many improvements have been made at the mine camp and in incidental machinery. Mr. Anderson is at present at the company's main office, 867 Empire Building, Seattle, Washington, but expects to return to the mine within a few weeks to personally supervise the installation of milling equipment.

Consolidated Gold Mines Company, working the United Western mine at Oatman, has completed the re-timbering of the main 600-foot shaft to a depth of 250 feet. Water stands in the shaft to a depth of almost 100 feet, and it is planned to dewater and re-timber the entire shaft. George Zapp, formerly superintendent of the Belmont mine at Superior, is mine

foreman, in charge of a crew of 16 men. Earl F. Wood, Box 417, Oatman, Arizona, is general manager of the company.

Arivaca Placers, Ltd., Ruby-Star Route, Tucson, Arizona, expects to resume operations at its placer plant this week. Four 8-yard Mack trucks are used to transport the gravel to the washer. Values obtained from the first incomplete clean-up indicate that the gravel is running about 42 cents a yard. Arivaca Placers has a digging and trucking capacity of approximately 5,000 yards per day, while the washer is designed to handle 6,000 yards. The entire plant was designed and installed by Winfield Covey, engineer of 327 South Rampart Street, Los Angeles, and who remains in direct charge of operations.

A. R. Van Wyke, owner of the **Cherry King** mine, Cherry, Arizona, reports that he has developed a three and one-half foot vein of gold ore which is running about one-half ounce to the ton. He has some 20 tons of this ore on the dump.

The main shaft of the **Lucky Dime** mine is being cleaned out by D. F. McLennan of Cherry, Arizona. McLennan is making definite plans for future development. The Lucky Dime is located near the Logan mine.

Under the direction of Charles Sessions work has been started at the old **Leghorn** mine, Cherry, Arizona. Lumber, roofing and cement are being taken in by truck for the construction of camp buildings. Only two men are employed at present, but it is planned to increase the crew in the near future.

The **Gold Standard Mines Corporation**, Earl F. Nieman, general manager, Box 632, Kingman, Arizona, has made the first run of its reconstructed mill. The plant, formerly known as the Katherine, was destroyed by fire the middle of September, and has been completely rebuilt. It has a grinding capacity of 600 tons daily, with tank capacity of 400 tons. Plans call for installation of an additional tank in the near future, bringing the capacity of the plant to 600 tons daily. Ore supply is obtained principally from the Roadside, Arabian and Tyro mines, although it is expected that the Minnie group, seven miles from the mill, will soon be sending a large tonnage. An electric power line is being extended to the Minnie and new ore bins are being built. Ore is transported by aerial tram from the mine to the truck road.

The **Amulet Operating Company**, Walker, Arizona, is running its 50-ton mill on ore from the old dumps and that being taken out of the mine during re-timbering and cleaning out of the old workings. The Amulet company acquired its property late last spring, reconditioned the shaft, erected a new headframe, and installed the mill and mining equipment. The mine had been under water for at least 25 years. G. O. Smith, Box 936, Prescott, Arizona, is vice-president of the company and in charge of the work.

CALIFORNIA

W. White of Hollywood is reopening the **Mountain View** mine, north of Washington, California. The old tunnel has been cleaned out and development work is under way. Ten men are employed.

C. L. Hibbard, 1210 Western Avenue, Seattle, Washington, president of the **Indian Valley Mining Company**, reports that his company has purchased outright, for a cash consideration, the 10 claims near Greenville, California, which it has been

Buy Christmas Seals



Help Fight Tuberculosis

operating under lease from Frank Standard. The property is equipped with a 10-stamp mill and tram line, both in operation. So far, the ore encountered has been of low grade. The company is capitalized at 2,000 shares with a par value of \$25. Officers of the company, in addition to Mr. Hibbard, are G. L. Johnson, vice-president and general manager, located at Greenville, and H. C. Hibbard, secretary and treasurer.

J. W. Bell has completed a 50-ton mill test of ore taken from a low-grade property on the Yamada ranch, four miles northwest of Auburn, California. The test showed gold values running about \$5 a ton.

Ore taken from the old 16-foot shaft reopened by Claud M. Wolgamott at Garden Valley, California, assayed \$5.60 per ton in gold, with some galena.

Machinery has been installed, a blacksmith shop and change room erected and the old 60-foot shaft cleaned out and re-timbered at the Brown pocket mine near Browns Flat, which is being operated by J. D. Garaventa, Ross Harry and John Keefe, all of Sonora, California. The shaft is to be sunk to a depth of 100 feet and drifting in both directions on the Brown vein is planned at that level.

The tunnel at the old Lone Willow mine in the Pioneer district near Jackson, California, has been advanced to 600 feet with good values reported. The National Exploration Company, E. T. Chase, Security Building, Los Angeles, is operating the property, and is considering the erection of a reduction plant next spring. Exploratory work in the mine will continue throughout the winter.

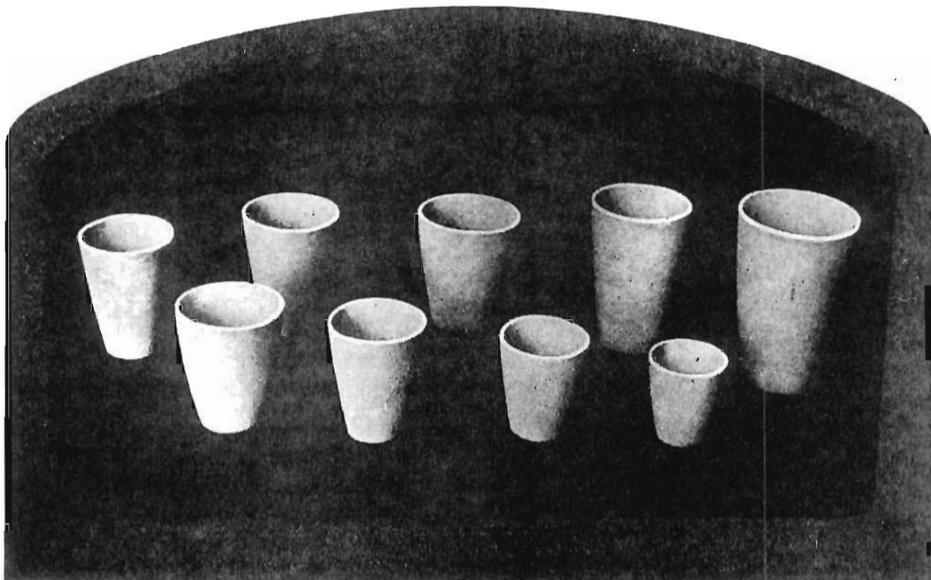
Jess Nimmo is developing a property on the Robinson ranch in the Fort Ann district, near Jackson, California, recently acquired from the Detert estate through a five-year lease and option to purchase. The property is equipped with a five-stamp mill, which is being operated two shifts daily on rock secured from the old dump. Development work is being prosecuted from the 100-foot shaft located on the property, on a contact ledge five feet in width, said to carry \$50 values through its entire width. Mill operations are directed by Frank Denend.

Fourteen men are employed in operations at the Blue Channel Gold Mines Company, Iowa Hill, California. R. C. Schanck of Pittsburgh, Pennsylvania, recently exercised his option on the Blue Channel. Operations are in charge of Lyman Gilmore, part owner of the mine.

The New Year and Phoenix groups of claims have been taken over by W. A. Hayes, 225 Mallorca Way, San Francisco, California, who reports that work on these properties will start soon. The claims are located near Tuolumne, California.

The Idaho Maryland Consolidated Mines, Inc., Grass Valley, California, has declared a regular quarterly dividend of 3 cents a share, payable December 20 to stock of record December 5. This will bring the total for dividends paid this year to 12 cents a share, as compared with the 10 cents a share paid in 1933.

Heavy equipment, including compressor, drifters, track lines and steel, is being installed at the Tahoe Treasure Consolidated Mines. Roads have also been built, an 85-foot tunnel driven, and surface buildings constructed. A power line has also been completed and dynamite is being stored. The property consists of 13 claims and 12 men are employed. Harvey C. Winslow, Bend, Oregon, is president of the company.



Built to one standard UNIFORM DEPENDABILITY

Step by step, from clay mine to finished product, there is just one standard for DFC METALLURGICAL CLAY GOODS. Clays are selected from our own mines — ground, blended, moulded, and fired under expert supervision. Special kilns, under pyrometric control, permit burning to definite temperatures. Rigid inspection is maintained straight through.

The result is, uniform products you can depend on, year in and year out.

The new DFC GENERAL CATALOG No. 12 is just published. Have you your copy? Sent FREE, prepaid, to Assayers, Chemists, Purchasing Agents. Write for yours today.

THE DENVER FIRE CLAY COMPANY

DENVER  COLO. U.S.A.

BRANCHES AT SALT LAKE CITY, EL PASO, AND NEW YORK

DIESEL EMPLOYERS

TRAINED MEN ARE NOW AVAILABLE—when in need of Diesel help, communicate with us—immediate attention will be given your inquiries. Competent, trained Diesel men can be supplied at once.

DIESEL POWER ENGINEERING SCHOOLS

San Francisco
3320—20th St.

Salt Lake City
311 Ness Bldg.

Minneapolis
524 So. 10th St.

12-15-34

Curtis Lindley, mining engineer of San Francisco, has been appointed superintendent at the **Rawhide** mine, Jamestown, California. A new electric hoist and compressor have been installed at the property and the small mill is being rehabilitated. The north shaft has been retimbered to the 200 level, from which point drifting is being done.

The **Silver Lane Gold Mining Company**, Mariposa, California, has completed construction of its mill and now has it in operation. The company is operating in the **Morman Bar** district in the southern extremity of the California Mother Lode and is opening up territory which has not been previously prospected. Ore values are said to run from \$10 to \$100 a ton in gold and silver, principal values being in silver. The new mill is of an unusual type, using a roasting-leaching unit to handle the output of a rod mill. Company engineers claim a 95 per cent recovery. A vein paralleling the Silver Lane is being operated by the Silver Bar Mining Company, Richard E. Jeffrey, manager, Mariposa, California.

Activities at the **Spring Hill Gold Mines, Inc.**, under development by H. R. Plate, Bret Harte Inn, Grass Valley, California, consist of driving raises from the 500 and the 900 levels of the Spring Hill mine, while the main shaft of the adjoining **Golden Gate** mine has been tapped by diamond drill holes and the water is being drained into the 900 level of the Spring Hill before being pumped to the surface. The **Golden Gate** is now unwatered to a depth of about 850 feet. Norman L. Wimmeler, consulting engineer, who directed the Plate Operations at Sierra City during the summer, has returned to his home, 3427 Broderick Street, San Francisco. Clarence J. Harry, who was mine superintendent at the Plate Operations during the summer, has returned to the Spring Hill as mine superintendent.

A gold strike has been made in the **Climax** mine, which is being opened by the **Black Wonder Gold Mines Company**, Pine Grove, California. The vein of high-grade, free-milling ore was struck in a tunnel 10 feet from the point at which former operations were discontinued. The shoot has been opened for 40 feet with values highest along the bottom of the tunnel, and as soon as its length is determined a winze will be sunk on the vein. Mill tests will be made at the 10-stamp mill recently completed at the **Hardway** mine, also operated by the **Black Wonder** company. Frank Garbarini is superintendent of the company, which maintains headquarters at 921 Stock Exchange Building, Los Angeles.

The **Klamath Placer Mining Company** is preparing for operations on the **McConnell Bar** on the Klamath River, 12 miles north of Yreka, California. A steam shovel, sluice boxes and other equipment are being installed and housing arrangements are being completed for the workers. It is estimated that about 700 yards per day will be handled. W. D. Miller, Klamath Falls, Oregon, is president.

Negotiations are under way for control of the **Alpine Gold Mining Company**, located seven miles north of Redding, California, according to J. R. Walker, 20 Post Office Place, Salt Lake City, Utah, president of the Walker Mining Company at Spring Garden, California. The **Alpine** is said to have produced \$400,000 to a depth of 125 feet. It has been inactive for several years.

The crew at the **Lava Cap Gold Mining Corporation** property, Grass Valley, Cali-

fornia, has been increased to 145 men, and the 300-ton mill is treating better than 200 tons of ore daily. The company plans to sink the Central shaft an additional 200 feet, the work to start about December 1. O. E. Schiffner is in charge of operations.

The **Trinity Goldbar Mining Company** has resumed placer mining at the **Scott** gravel mine, Yuba county, recent heavy rains having provided sufficient water for continuous production. A gasoline power shovel is being used to mine the deposit. The work is under the immediate direction of R. N. Scott. O. B. Lefurgey, 381 Bush Street, San Francisco, California, is general manager.

The first test run of the new 50-ton ball mill of the **Jewell Mining and Milling Company** at Inyokern, California, has been successfully completed and the mill is now ready to receive custom shipments. Wayne Jewell is president of the company. G. C. Greene, consulting engineer of Los Angeles, has been retained by the company.

The **Famous Circle Gold Mines Company**, incorporated in August, 1934, is operating the **Old Colony** mine, the **Mountain Con** and the **North Star**, under the direction of Joseph G. Enzensperger, Jr., Forest, California. At the **Old Colony** the operating crew has been producing an average of 100 tons of gravel per day, which is said to average from \$3 to \$4 per yard. Bunk houses and surface equipment have been completed at the **Old Colony** and three shifts are operating. The **North Star** has been equipped for the sinking of a working shaft, and two shifts of seven men are employed. On the **Mountain Con** one shift has been working steadily in preparation for the arrival of equipment,

which has just reached the property. Victor S. Barber, 304 Foothill Boulevard Oakland, California, who investigated and reported on the properties for the company, is acting as consulting engineer. Earl Bradbury is foreman in charge of operations.

The **Apex Mining Company**, which took over the **Geraldine** mine near Twain Harte, California, several months ago, has opened a three-foot ore body on the 140-foot, or bottom level, which it is believed will average nearly \$40 a ton. The shaft is to be sunk to the 300-foot level and it is understood that plans are under consideration for installing a mill of not less than five stamps. Charles B. Smith, 1244 University Avenue, San Diego, California, is president of the company. D. W. Herzog, Box 96, Twain Harte, is mine superintendent.

Operations have been resumed at the **Canyon Placers, Inc.**, near Dedrick, California. Fifteen men are engaged in enlarging the reservoir and laying a pipe line and work on the major project, bringing water out of Canyon Creek to the lower mine, will be started in the spring, as soon as weather conditions permit. The company will operate the lower mine, known as the **Clark-Dannenbrink**, during the winter. H. G. Kenworth, Dedrick, is general manager. George H. Bergin, Dedrick, is superintendent.

E. M. Hotze of San Francisco is reported to be rehabilitating the **Donella** mine, 14 miles east of Sonora, California. The old **Conde** shaft, 126 feet deep, situated 400 feet west of the original workings, is being cleaned out, and sinking an additional 100 feet is said to be planned. The property is credited with having produced \$300,000 down to the depth of 100 feet. A road to the mine has been completed and 5,000 feet of timbers delivered. J. B. Sivori of Tuolumne is to be in charge of operations. Six men are employed.

Dewatering and rehabilitating of the **Draper** mine, **Soulbyville**, California, has been completed by the **Draper Vein Syndicate**, and development work has been started in the ore body exposed in the north drift on the 500-foot level. The shoot of ore is said to have been proved for 80 feet and assays from \$100 to \$490 a ton, with the vein ranging from 12 to 16 inches in width. Work on the 600-foot level is also to start soon. A new air compressor has been added to the equipment at the property and plans have been made for erection of a compressor room, blacksmith shop and change house, the latter to be equipped with 20 lockers and showers. A hoist building has been erected at the property and the headframe and ore bin have been painted with aluminum paint to make them less susceptible to fire. Frank L. Mitchell is superintendent at the property.

The old **Jackass Gulch** placer property near **Volcano**, California, is said to be returning \$5 to \$10 in gold per cubic yard. A new tunnel has been run 450 feet to bedrock and this territory is reported to be richer than that in the main channel, which was worked years ago. A modern gravel washer, capable of handling four to five yards an hour, has been installed, and modern camp accommodations have been provided. The enterprise is running day and night. J. M. Vogeli, Jackson, California, is associated with Jack Harvey and Ray Ingle in operation of the property.

A three-foot ledge of gold-bearing quartz has been uncovered on the 600-

AVERAGE PRICES OF METALS (Figures by American Metal Market)

	Copper Per Lb. Conn Valley	Lead Per Lb. New York	Zinc Per Lb. St. Louis	Silver Per Oz. New York
1924	13.024	8.097	6.344	66.781
1925	14.042	9.020	7.622	68.065
1926	15.795	8.417	7.387	62.107
1927	12.920	7.755	6.242	56.870
1928	14.570	6.805	6.027	68.176
1929	15.107	6.888	6.512	52.993
1930	12.982	5.517	4.556	58.154
1931	8.389	4.244	3.898	28.701
1932	6.792	3.181	2.881	27.892
1933	7.276	3.870	4.031	34.728
1932				
Jan.	7.500	3.750	2.900	29.750
Feb.	6.250	3.717	2.828	30.186
Mar.	5.994	3.150	2.791	29.810
Apr.	5.789	3.000	2.785	28.298
May	5.506	3.000	2.629	27.755
June	5.389	2.998	2.798	27.466
July	5.284	2.780	2.546	26.700
Aug.	5.485	3.285	2.781	27.988
Sept.	3.208	3.462	3.304	27.870
Oct.	5.975	3.046	3.046	27.195
Nov.	5.309	3.050	3.096	26.698
Dec.	5.036	3.000	3.125	26.010
Ave. 1932.	5.792	3.181	2.881	27.892
1933				
Jan.	5.000	3.000	3.015	25.400
Feb.	5.000	3.000	2.671	26.085
Mar.	5.256	3.148	2.997	27.928
Apr.	5.684	3.260	3.361	30.780
May	4.982	3.654	3.805	34.072
June	8.000	4.173	4.847	35.663
July	8.909	4.452	4.896	37.630
Aug.	9.000	4.500	4.909	36.074
Sept.	9.000	4.500	4.702	38.440
Oct.	8.253	4.816	4.744	38.190
Nov.	8.156	4.294	4.521	42.974
Dec.	8.125	4.142	4.470	48.550
Ave. 1933.	7.276	3.870	4.031	34.728
1934				
Jan.	8.185	4.000	4.275	44.187
Feb.	8.000	4.000	4.452	45.283
Mar.	8.000	4.000	4.370	45.875
Apr.	8.398	4.184	4.371	45.180
May	8.500	4.1404	4.355	44.226
June	8.848	3.975	4.288	45.178
July	9.000	3.770	4.318	46.310
Aug.	9.000	3.7488	4.280	48.888
Sept.	9.000	3.679	4.057	49.484
Oct.	9.000	3.648	3.841	52.375
Nov.	9.000	3.667	3.732	54.265

foot level of the old Alcalde mine in the Deadman's Flat district, being operated by the **Mattie Gold Mining Company**, Grass Valley, California. The strike was made in virgin territory, 300 feet from the main shaft, and indications are said to be promising for development of an important vein of ore. Development of mill ore in the main workings also continues. The property is well equipped for operation and 32 men are working three shifts, according to M. J. McGuire, mine superintendent.

Remington Hill Placers, Inc., Frank A. Crampton, general manager, Box 830, Nevada City, California, has overhauled all equipment and improved the camp preparatory to steady winter operations. Work has been handicapped during the summer due to lack of water.

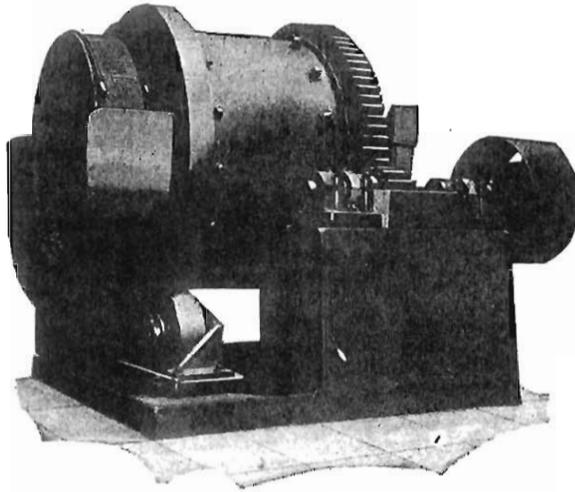
Fred H. Sawday has shipped \$352.33 worth of gold to the mint from his **Pride of the West** mine, located west of Julian, California. The shipment, according to Sawday, was obtained from eight tons of ore. The vein varies from three to 10 inches in width. Miners are working above the 325-foot tunnel and sinking at the end of the tunnel. Mr. Sawday has leased the mine to P. Lomax and Son, who plan to erect a mill if values continue. At present the ore is being reduced at the Dodge mill in Julian.

Five men are reopening a 180-foot shaft at the O'Hara mine, recently taken over by the **Crown Mines, Inc.**, 1541 Russ Building, San Francisco. It is also planned to sink to the 220-foot level and drift both ways on the vein. A. W. Purves, Box 625, Sonora California, is mine superintendent for Crown Mines, Inc.

COLORADO

The 50-ton Boler mill at Blackhawk, Colorado, was purchased by the **Beatrice Gold Mining Company** in order that the company might continue operations while its 100-ton mill is under construction. The Boler mill is being operated on a 24-hour basis. The gasoline power plant in the mill has been discarded and operations with steam are reported to be much more satisfactory. A crew of men are cross-cutting in the Margaret Glennen Mammoth Silver Lode No. 3, one of the Beatrice company's properties, to a junction where large returns are anticipated. The two veins have been sampled and return high assays, Beatrice D. Taylor, Central City, president of the company, reports. William Anfang of Blackhawk is mine superintendent.

In a report of the **Cresson Consolidated Gold Mining & Milling Company** for the quarter ended October 31, 1934, earnings of \$63,828 were announced, compared with \$49,864 earned in the corresponding period of 1933. These figures represent earnings of approximately five cents a share on the 1,222,000 shares outstanding. L. G. Carlton, president and general manager, reports that as of October 31, the company had cash, ore in transit, and bills receivable amounting to \$491,120, or about 40 cents a share on the stock outstanding. The company, which was organized in 1903, is said to have paid more than \$12,500,000 in dividends. A considerable rise in the grade of ore being handled during the past year is reported. In 1933, ore was said to average \$8.15 a ton; in August of 1934 the figure was given as \$12.80 a ton; and the September and October average is reported to have risen to \$13.26. The property of the company is at Cripple Creek, Colorado.

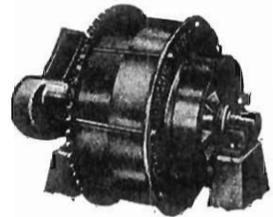


Ball Mills
Crushers
Overstrom Universal
Concentrators
Complete or Partial
Equipment

Illustrated—a screen type Rib-cone Ball Mill, 25-35 ton capacity. Others from 2 to 250 tons, screen or screenless, standard and sectionalized types, from \$220 up.

Recovery Increased to 90% from Only 65%

*Same mine—same ore—but
Straub equipment made the
difference!*



With gold at the present price you can't afford to let it go to the tailings dump! Straub equipment will save it, as it is for many mines who have increased their recovery tremendously. From 65% to more than 90% is not unusual. And it's all done with less power, less water, and with a saving in first costs!

Illustrated—the 2-4 ton capacity Prospector Rib-cone Ball Mill, \$220. Capacity can be doubled by adding extra parts at \$155.

Send for Bulletin No. 115 Giving Illustrations and Prices of Straub Equipment

STRAUB

505 Chestnut St.

OAKLAND, CALIF.
U. S. A.



Mfg. Co.

NAME OF NEAREST
DISTRIBUTOR ON REQUEST

LEACH BROS. BALL MFG. COMPANY

Manufacturers of

HIGH CARBON MANGANESE FORGED STEEL GRINDING BALLS

All sizes from 7/8" to 6"

1823 East Washington Boulevard,
Los Angeles, California

Telephone—Prospect 3712

DEW-R-LITE Carbide Lamps

For All
MINE
PURPOSES



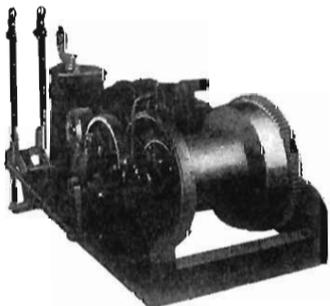
Made in
ALL BRASS
and in
DOUBLE
TINNED
STEEL

Catalog
on request

The only self-regulating carbide lamp that will give you the steady, even flame you require underground without shaking or raking.

Entirely automatic—
All parts accessible.

Dewar Manufacturing Co.
18—35th St. Brooklyn, N. Y.

HOISTS

Type MS

Friction Drum Electric Hoist

Frames of Hoist are fabricated Steel, strongly riveted and rigidly braced, practically indestructible; lighter than cast iron.

Sizes, loads 4,000 to 6,000 pounds. Drum diameters up to 30".

In these Hoists is incorporated, the best in engineering practice.

Electric or gasoline powered. Bulletins upon request.

English Bros. Machinery Co.
KANSAS CITY, MO.

Send Your Orders for
USED WIRE ROPE
All Sizes and Lengths

to

The Central Mine Supply Co.
Mt. Vernon, Illinois

Manufacturers and distributors of mine supplies.—New and used machinery of every description.

**WENATCHEE TUNNEL AT AZURITE
PROGRESSING EIGHT FEET DAILY**

Since the Federal Smelting and Refining Company started development work on the property of the Azurite Gold Mining Company this last summer, the Wenatchee tunnel has been advanced well over 600 feet. From six to eight feet a day is the average rate of progress, and the Azurite lode, objective of the tunnel, is expected to be intersected sometime in February, if progress continues at the same rate of speed. It is a crosscut tunnel and as designed by the Federal is lined to cut the lode at an estimated distance of 1,200 feet from the portal. This work was undertaken in order to demonstrate the continuity of the vein and its ore shoots at a lower level, and thus open up new ore reserves.

Previous to the driving of the Wenatchee tunnel the principal underground development work on the Azurite had been to penetrate the vein horizontally some 1,100 feet by means of the Tinson tunnel. During this stage of development some 400 tons of ore were removed, showing an average gold content of 2.25 ounces a ton, Charles H. Ballard of Twisp, Washington, president of the Azurite, stated. Development at depth is expected to reveal larger quantities of high-grade ore.

The Federal company has leased the Azurite claims, which are located in southeast Whatcom county, Washington, under agreement to develop the property and equip it to produce and mill a minimum of 100 tons a day. H. G. Washburn of Wallace, Idaho, is general manager, and Roy E. Walters is in charge at the mine. The entire expense is to be borne by the leasing company, unless costs exceed \$400,000. In this event the contract calls for repayment of the difference by taking 30 per cent of the net profits, the other 70 per cent to be divided equally between the two companies. If the outlay does not exceed this amount, each company is to receive 50 per cent of the net profits.

The Azurite company did not lease all of its property, but retained what is known as the Seattle group of five claims, two miles down Mill Creek from the Azurite. On these claims there are about 1,000 feet of development. The ore is free milling.

**NEW FIVE-COMPARTMENT SHAFT
FOR WALKER MINING COMPANY**

A new five-compartment shaft is being sunk at the Walker Mining Company property, Walkermine, California, under the direction of the International Smelting Company, which controls the mine. A huge underground station has been cut on the main tunnel level at a point near the center of the five different ore bodies which have been developed. The \$50,000 double-drum electric hoist which was purchased from the Engels Copper Mining Company early this year, has been set up at the collar of the new shaft.

Preparations are being made to carry the shaft to a depth of 2,000 feet if future developments warrant. The various copper ore bodies have been developed only by small winzes, which have been sunk from the main tunnel level.

Only a small crew is engaged in sinking the new shaft and progress will be slow unless conditions develop to warrant speeding up the work. The crew has been maintained at the mine during the past few years primarily for the purpose of keeping the isolated camp in condition for reopening. During this time several improvements have been made at the camp, including rebuilding of the saw mill, build-

ing of roads, and the trenching of a by-pass for the tailings pond. On the underground work the crew is expected to average about 100 feet per month.

While the Walker property is primarily a copper producer, the ores also contain a considerable amount of gold. Prior to 1931 the property was one of the largest copper producers in California.

J. R. Walker, 20 Post Office Place, Salt Lake City, Utah, is president of the Walker Mining Company, and H. A. Geisendorfer, 810 Kearns Building, Salt Lake City, Utah, is general manager.

**HIGH GRADE SHIPPED FROM NEW
STRIKE AT BELMONT COPPER CO.**

At the Belmont Copper Mining Company, Superior, Arizona, commercial ore is being mined at five different leases, and other lessees are working on prospects. This development is taking place in the limestone area and to date 80 carloads of gold-silver ore, with an average gross value of approximately \$19 per dry ton, have been shipped. A 60-ton carload of high-grade ore was recently shipped from a new strike that ran \$86 per ton.

A section of the main shaft is being repaired and retimbered, and when completed, the company plans to start some development work on the first level with a view of developing the downward extension of ore showings near the surface and at a vertical depth of 300 to 400 feet beneath the outcrops. This contemplated work will not interfere with the leasing operations which are all being carried on from surface workings. At the present time all ore is being shipped to the Magma Copper Company smelter at Superior.

Alexander Mackay, president of the company, recently spent a week in Arizona on business and paid a visit to the property.

**OLD WISCONSIN AT BOULDER
PRODUCING AND DEVELOPING**

The old Wisconsin property, consisting of six patented claims in the Sugar Loaf district of Colorado, is being reopened by Missouri and Kansas capital. The ground was optioned last May by James McLaughlin, mining engineer of Boulder, and his associates, Al Logan and M. S. Reflow. This group did considerable work on the claims before they disposed of their option in September to D. W. Schmitt of Boulder, at the same time retaining a part interest. Schmitt contacted the group now financing the work and in approximately six weeks the mine was completely equipped, unwatered, and put into production.

The 250-foot shaft has been retimbered and preparations made to sink it another 100 feet. Chutes were repaired and a complete plant of mining machinery installed. Mining of ore reserves is being carried on and steady production will be maintained on a small scale while further development is in progress.

The enterprise is backed by William E. Hodson, Calvin L. Rieper, N. S. Land, Walker LeBrunerie, T. O. Pierce, all of St. Joseph, Missouri; Ralph Foster, Springfield, Missouri; Roy Hendershot of Garden City, Missouri; W. G. Schreiber, Leavenworth, Kansas; and H. A. Graves of Kansas City, Missouri. With McLaughlin and his associates and D. W. Schmitt, this group has formed a closed corporation. McLaughlin is superintendent in charge of operations.

**CONSOLIDATED GOLD FIELDS
OPTIONS SILVER QUEEN MINE**

The little town of Mojave, Kern county, California, on the edge of the Mojave desert, has been holding the attention of the mining world, both nationally and internationally, during recent weeks. This is the result of the interest being shown in the Silver Queen mine by prominent mining men, particularly of the Consolidated Gold Fields of South Africa, Ltd., which has optioned the property and has a group of engineers on the ground examining and sampling the mine.

The Silver Queen was discovered in September, 1933, by George Holmes, Mojave, California, who, with his father, M. A. Holmes, now controls the property. It consists of one claim, 18 acres, and is situated on the west slope of Soledad Mountain about seven miles south of the town of Mojave. The claim adjoins the famous Queen Esther mine, from which a fortune is said to have been taken in the early days. Holmes developed and brought his find into production on an original capital of \$800.

Up to December 1, 1934, more than 200 carloads of ore, averaging \$23 per ton in gold and \$7 per ton in silver, were shipped to the smelter of the American Smelting and Refining Company, Selby, California. It is estimated that total production has amounted to \$200,000.

The vein occurs in rhyolite porphyry, strikes north 40 degrees west, and dips 80 degrees northeast, varying in width from seven to 40 feet. The vein quartz is mineralized with cerargyrite (horn silver), argentite and gold. The principal values are in gold, with the ratio being about 70 per cent in gold and 30 per cent in silver.

Development consists of two shafts, 45 feet apart, sunk on the vein. The south-east shaft is 100 feet deep and the north-west shaft is 200 feet deep. A drift from the 100-foot shaft runs 100 feet north and 100 feet south. On the 200-foot level of the northwest shaft a drift has been driven northwest 180 feet and a drift southeast 190 feet. All workings are in ore, with neither wall exposed in the drifts. Shipments have been running at the rate of 50 tons daily and the mine crew has numbered 35.

The sampling and examination of the Silver Queen for Consolidated Gold Fields is being directed by Carl Lindberg, mining engineer, 50th Floor, 70 Pine Street, New York City. Associated with him in the examination are W. C. Browning, mining engineer of 1218 Pacific Mutual Building, Los Angeles, former general manager of Magma Copper Company, Superior, Arizona; Hugh Rose and C. W. Vaupel, president and chief geologist, respectively of the Mexican Corporation.

Walter Bradley, California state mineralogist, in commenting on the interest being shown in the Mojave district, states: "The Silver Queen mine may be considered the outstanding new discovery of the last few years."

**GOLDEN FLEECE PROPERTY
OPERATED BY NEW YORK GROUP**

The tunnel in the Golden Fleece Gold and Silver Mining Company and Extension, being operated by James W. Johnson & Co., Inc., consulting engineers of Liberty Street, New York City, has been driven over 700 feet in from the portal. The vein opened by this tunnel has been penetrated over 30 feet and is at milling grade. Its limits have not as yet been defined.

Present work consists of draining an 87-foot incline shaft, which follows a high-grade streak on the footwall. Future development will include sinking to the 100-foot level, drifting on the vein, and cross-cutting to the hanging wall to ascertain the width of the ore body at that point.

Joseph H. Portugal, formerly manager for the Simon I. Patino interests in Bolivia, is engineer in charge of mining operations for the Johnson company and makes his headquarters in Reno, Nevada. William Ball is general foreman and William Hartman, night foreman. The property is located eight miles from Reno in the Peavine range.

**MILL, TUNNEL, SURFACE EQUIPMENT
IN COLORADO JUNEAU PROGRAM**

Colorado Juneau Mines, Inc., operating the Neglected property in the Junction Creek district of the La Plata Quadrangle, near Durango, Colorado, reports good progress in the construction program now being carried on at the mine.

A 100-ton flotation mill is being installed, a seven and one-half mile electric power line is under construction from the mine to connect with the Western Colorado Power Company's highline at Hermosa, an assay and engineering office is practically completed, pipe lines to convey the water for the mill are being laid, and the 8x7 transportation and drainage tunnel which is being driven 1,100 feet to tap the Neglected shaft is now in 500 feet from the portal.

Eighty men are said to be employed, besides the crew working on the power line, under direction of J. C. Ort of Durango, manager and secretary. Completion of this program is expected in another month. Ort reports that there are 92,000 tons of mill ore at the Neglected property running better than \$13 under the old price of gold. This ore will be put through the company's mill as soon as it is completed.

**AN AMENDMENT TO RFC MINE
LOAN APPLICATIONS**

(Continued from Page 4)

amendment on the contract form at the time application is filed, and allowing the RFC to decide whether it should be accepted in the form written or in the form it would prefer to use. The proper time to do this is unquestionably at the time the original application for a loan is filed, or if filed already, by a letter to the RFC, embodying the request.

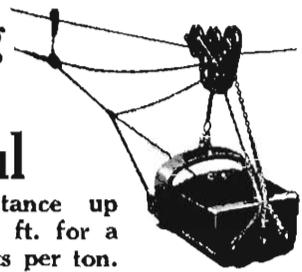
The RFC it appears will make no decision on any questions that are hypothetical, that is without the form itself before it that has been filled out by the applicant.

The suggested plan seems to be a happy solution of this question, and would assure the consideration of the matter when the application was being considered on its merits. In general amendments are not to be indulged in for the sake of expediting the application, but this one seems entirely justifiable, and to be added to Clause 18 of the contract by simply pasting the same on the contract form at said clause, and giving the applicant this right to install second-hand machinery, which it wishes to purchase from the proceeds of the loan.

It will then receive attention, and if any change in the wording is desired by the RFC it will no doubt so advise the applicant.

**Dig
and
Haul**

any distance up
to 1500 ft. for a
few cents per ton.



Sauerman Slackline Cableways

—the world's best for digging from rivers or wet pits.

Crescent Dragline Scrapers

—supreme for mining bank deposits, for stripping, for stock-piling, for reclaiming.

Sauerman Bros., Inc.

436 S. Clinton St.

Chicago



**We Supply TRAINED
DIESEL
ENGINEERS**

**They Are Now Available
Through Our Intensive
Practical Training**

Former Diesel, steam and gas engineers, machinists, shovel and caterpillar operators are now in training. These properly trained Diesel men will make valuable Diesel operators for you. Write, wire or phone your requirements. We have the man you want.

**Hemphill Diesel
Engineering Schools
Employment Service**

2121 San Fernando Road, Los Angeles
P. O. Box 101, Chicago
P. O. Box 892, Oklahoma City
503 Westlake North, Seattle
P. O. Box 148, Denver
643 Roosevelt Avenue, Salt Lake City
1043 Pender Street, Vancouver, B. C.

HOISTS

Standard and Mining Types
Diesel Engines

30 to 700 Horsepower — 4-Stroke
Cycle—Solid Injection—Heavy Duty

Distillate Engines

We Solicit Your inquiries

Western Enterprise Eng. Co.

A. C. DENMAN, Receiver
1000 Alhambra Ave.
Los Angeles, California

and 2 and eight liters to Tests 3 and 4. On May 5, 1931, the ore was drawn from the columns. It was dried, sampled, and analyzed. The ore in each column had settled about two inches since the beginning of the test. The ore was in the columns approximately nine and one-half months.

The analyses of the ore before and after the tests began are given in Table 2.

As shown by Table 2, the percentage of the increase in acid-soluble copper in active finger sample No. 1 was 47, in active finger sample No. 2, 22, in completed finger sample No. 1, 5, and in completed finger sample No. 2, 8.

Discussion

The data in Table 2 show that marked oxidation took place in the two samples of ore from the active finger. The original ore contained 0.172 and 0.188 per cent of acid-soluble copper in the two samples, respectively, and at the end of the test the percentage was 0.25 and 0.225, respectively. In Test No. 1, 10.5 per cent of the total copper was acid-soluble at the beginning, whereas 15.4 per cent was acid-soluble at the end of the test.

The tests on the ore from the completed finger show some oxidation, although not to such a pronounced extent as in the tests on the active ore. Some of the sulphide copper was probably more readily oxidizable than the rest, and was acted upon before this laboratory test was started; the remaining sulphide oxidized more slowly in the column.

The water-soluble copper content of the ore decreased in the tests from the completed finger. In Test No. 3, the original ore contained 21 grams of water-soluble copper and the ore as discharged from the column plus the acid-soluble copper in the crock was 15 grams. Assuming that the acid-soluble copper in the crocks was water-soluble there is still a loss of six

grams of water-soluble copper. The boards of the columns were highly stained with copper salts, indicating that solution containing water-soluble copper had penetrated the voids in the wood and precipitated copper salts upon evaporation. Since acid-soluble copper includes water-soluble copper, any of the latter lost would cause a decrease in the former. Therefore, in all four tests the acid-soluble copper after the completion of the tests was undoubtedly slightly higher than indicated in Table 2.

The tests show that oxidation of copper minerals took place in the columns and since these tests simulate conditions in mines using a caving system of mining, oxidation could be expected in broken ore if the minerals are of the same character and water and air comes in contact with the ore. However, it cannot be safely assumed that the rate of oxidation will be the same under similar conditions at all mines, for as stated before, the physical condition of the minerals seems to have an influence on their susceptibility to oxidation.

It would appear from the tests and from the conditions at the mine where the samples were taken that the percentage of increase of soluble copper in the ore is more rapid when the ore is first broken than later when most of the readily oxidizable sulphide has been acted upon.

CONSOLIDATED GOLDFIELDS HAS NOVEL PLAN OF OPERATION

The Lucky John mine, Paradise, California, expects to go on a regular production basis this month. This property is being operated for its owners, California Goldfields, Ltd., by Collins Pacific Company, 1305 Balfour Building, San Francisco, Glennville A. Collins, president.

The plan of operations is somewhat novel in that the gravel channel is being mined on a room and pillar system and the gravel is washed into sluice boxes within the mine. The sluice discharges into a raise chute and the gravel is drawn off at the bottom of the raise, 90 feet below the channel, then trammed in cars 1,000 feet to the dump. The boulders are held back in the stopes, thereby saving the handling of about 30 per cent of the aggregate and greatly reducing costs.

This system of mining eliminates construction of track grade, hoisting, tramping, mucking and pumping. The pillars left between rooms can be withdrawn or retreating from the operation limits of the drift.

ARIZONA COPPER BELT HAS COMPLETED MILLING PLANT

The Arizona Copper Belt Mining Company at Constellation, Arizona, has completed its new 25 to 35-ton mill, and is ready for production. W. J. Dilthey, president of the company, has been on the ground since the first of September, supervising the installation. The actual construction has been directed by W. J. Thomson, millwright of San Francisco, representative of W. W. Gibson company.

The plant is a complete unit for amalgamation, concentration and flotation, with all new machinery of chrome steel manganese. The mill consists of a Gibson rock crusher with a capacity of 64 tons in 24 hours. The ore, after going over a grizzly goes to a 100-ton bin and is then conveyed to a 25-35 ton counterbalanced rod mill where the ore is ground to 40 mesh. Mercury is fed into the ore at this point and the ground material passes to a Gibson impact amalgamator where the free gold is saved as amalgam.

The ore then goes to a concentrating table which makes a concentrate, middling and tailings product. The concentrates are in finished form, but the middlings go to a two-cell flotation machine after being de-watered. The mill is entirely new and is a very neat plant, electrically driven throughout.

Two vein systems cross the Copper Belt property which consists of 350 acres of patented ground. The copper-silver veins have a strike from southeast to northwest, while the gold veins strike from east to west, forming a junction which will be developed and opened as soon as possible. Recent work has shown gold ore in both the No. 1 vein and Judge Riggs vein.

In mine operation Dilthey is assisted by C. S. Doan, assistant manager, and Lawrence Youngblood, acting foreman.

Table 1.—Data on Oxidation Tests of a Copper Ore

Test	Ore	Weight of ore, pounds	Height of column of ore, feet
1	Active finger sample No. 1.....	161	7¼
2	Active finger sample No. 2.....	148½	7½
3	Completed finger sample No. 1.....	198	9¾
4	Completed finger sample No. 2.....	182½	8¾

Table 2.—Results of Oxidation Tests of a Copper Ore

Sample	Active finger sample No. 1	Active finger sample No. 2	Completed finger sample No. 1	Completed finger sample No. 2
	Original heads:			
Total copper, per cent.....	1.635	1.67	1.36	1.37
Water-soluble copper, per cent.....	.004	.004	.023	.027
Acid-soluble copper, per cent.....	.172	.188	.325	.330
Acid-soluble copper, per cent of total copper.....	10.5	11.3	23.9	24.1
Ore drawn from column:				
Total copper, per cent.....	1.645	1.648	1.358	1.385
Water-soluble copper, per cent.....	.006	.006	.007	.007
Acid-soluble copper, per cent.....	.25	.225	.333	
Weight of total copper, grams.....	1,202	1,111	1,221	1,148
Weight of acid-soluble copper, grams.....	183	152	299	294
Weight of acid-soluble copper in crock, grams.....	2	1	9	7
Weight of total copper in ore and crock, grams.....	1,204	1,112	1,230	1,155
Weight of acid-soluble copper in ore and crock, grams.....	185	153	308	301
Acid-soluble copper, per cent of total copper.....	15.4	13.8	25.0	26.1
Percentage of increase of acid-soluble copper.....	47	22	5	8



Milling plant at the Arizona Copper Belt Mining Company.

12.30.34

Mining Men and Their Activities

About men who are well known and prominent in the mining circles of the western states.

ERNEST W. ELLIS ACCEPTS POSITION WITH EMPRESS GOLD



Ernest W. Ellis

Ernest William Ellis, mining and metallurgical engineer, has accepted the position of mill superintendent at the new 300-ton mill of the Empress Gold Mining Company, Grass Valley, California.

Ernest was born in London, England, June 23, 1889, and received his bachelor's degree in mining engineering from the University of Idaho School of Mines in 1912. He also received his master's degree in metallurgy from the same school in 1925.

From 1912 to 1916 he was assistant testing engineer and foreman at the experimental leaching plant, experimental flotation plant and Washoe concentrator of the Anaconda Copper Mining Company, Anaconda, Montana. From this position he went to the Northern Ore Company, Edwards, New York, as mill superintendent during 1916 and 1917. From 1919 to 1922 he was plant superintendent for the B. and A. Mining Company, Gillham, Arkansas, and was manager and part owner of the Engineer Mines Company, Idaho City, Idaho, in 1923.

In 1923 he returned to the University of Idaho School of Mines as instructor in mining and metallurgy, and also served as metallurgist for the Idaho Bureau of Mines and Geology in 1928.

He resigned these positions in 1929 to become metallurgical expert for the Anaconda Copper Mining Company in connection with the Carson patent suit, and conducted experiments with two smelting furnaces, one utilizing Anaconda's regular smelting methods and the other embodying features of the Carson patent, to obtain data as to the extent of the infringement, to be used as a basis of settlement in the suit.

Upon completion of this work, he became chief engineer and assistant to the manager of the Walker Mining Company, Plumas county, California, later going to the Idaho-Maryland Mines Company, Grass Valley, California, as geologist and chemist. He is a member of the American Institute of Mining and Metallurgical Engineers, and is the author of various geological and metallurgical publications.

Albert Crase, general superintendent of the Idaho-Maryland Mines Company, Grass Valley, California, who was injured by falling rock two months ago, is reported recovering from his injuries.

S. Nixon, Box 154, Phoenix, Arizona, and C. W. Nelson are testing a placer property 23 miles north of Yuma, Arizona, on the California side of the river. During this work Nixon and Nelson are maintaining headquarters at Box 1263, Yuma.

C. H. Spaulding, gold and silver assayer, has changed his mailing address from Lewistown, Montana, to Fort Peck, where he is now making headquarters.

M. H. Kuryla, director of Cia. de Real del Monte y Pachuca, has returned to his headquarters at Pachuca, Hidalgo, after a Mediterranean trip.

Louis S. Cates, president of Phelps Dodge Corporation, is in Arizona, visiting the various units of his company at Douglas, Bisbee, Ajo, Clifton and Morenci.

H. L. Dotson, Jr., of Faywood, New Mexico, is returning to his home following six months spent with Nurupi Kozan Kabushiki, at Taiyudong, Chosen, Japan.

Kyle S. Gladstone, formerly of South Dakota, is the sampler at the Harbud Mines Company at Humboldt, Arizona, operating the McCabe-Gladstone mines.

Mark E. Galusha, superintendent of the Galena Mines Company at Silver Cliff, Colorado, has changed his place of residence to 1433 East Twelfth Street, Pueblo.

John E. Shaw, P. O. Box 42, Cripple Creek, Colorado, has been appointed superintendent of the Sangre de Cristo operations of the Isis Gold Mining Company.

J. L. Jordan, at one time connected with the American Smelting, Refining & Mining Company, and later in the Reno testing bureau, is reported to have opened assay offices in Reno, Nevada.

Howard H. Fields, Box 148, Prescott, Arizona, has returned to his home following a trip to gold properties in the Mogollon district of New Mexico, and to a placer property in Sonora, Mexico.

David Hill of the firm of White & Currie of Seattle, Washington, has been appointed comptroller of the Cornucopia Gold Mines, Inc. Company headquarters are at 1009 Lowman Building, Seattle.

William C. Vanderburg of the bureau of rare and precious metals experiment station of the U. S. Bureau of Mines at Reno, Nevada, recently completed a preliminary reconnaissance in the Pioche district of Nevada.

H. D. Lauderback, Box 147, Pocatello, Idaho, is reported to be making arrangements to dispose of his business in order to be able to give full time to his duties as president of the Gold Hill Mines, Inc.

W. D. O'Brien of the American Milling and Mining Company, Kohl Building, San Francisco, California, was a recent visitor in Reno, Nevada, en route to Lyon county, Nevada, where he plans to examine some mining properties.

Frank C. Mulford, metallurgical engineer, will spend the next two months in Sonora, Mexico, scouting for New York interests. During that period he will maintain his headquarters at El Presidio Hotel, Tucson, Arizona.

W. H. Blackburn, general manager of the Treadwell Yukon Company at Tybo, Nevada, was doing some examination work around the Ashby district in Nevada. Blackburn's offices are at 923 Crocker Building, San Francisco.

Charles D. Stark, Jr., mining engineer and former general manager of the Plumas-Eureka mine at Johnsville, Plumas county, California, is spending the winter season at his home between Grass Valley and Nevada City, California.



SILVER TIP SAYS:

IT DOES YOU GOOD TO MAKE A NEW YEAR RESOLUTION EVEN IF YOU DO BREAK IT ON THE DAY AFTER



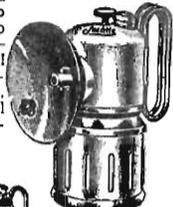
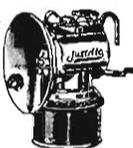
STUCK, ANGEL? THIS OIL WILL HELP YA SLIP THROUGH



FREE TRIAL Offerto Superintendents and
Mine Bosses on Famous**Justrite
Carbide
MINE LAMPS**

Now you can personally test and SEE famous Justrite Carbide Mine Lamps — without obligation to buy. Write for Free Trial Offer! The Justrite is the ONLY lamp on which valve stem can be taken out and cleaned! Light will not go out! No tools needed to adjust. Use fingers only—above and below ground! Always a free flow of water assuring dependable, bright, steady light. Pull shift size. Has wind protector.

NEW PROTECTO GRIP now equipped on dependable Justrite CAP Lamp—protects bottom. Built stronger than ever! Write Today for Free Trial Offer!

No. 50-B Steel
50-C BrassNo. 58-A Steel
56-C BrassSmall
Cap Lamp

JUSTRITE MANUFACTURING CO.
2084 Southport Ave., Chicago, U. S. A.

KNOWWhere To Dig By Having A True Picture
Of Your Sub-Surface Conditions.**GEOPHYSICAL SURVEYS**

made by a pioneer organization using patented equipment—an experienced personnel under the technical direction of Dr. J. J. Jakosky, with over 200 successful surveys extending from northern Canada to Mexico.

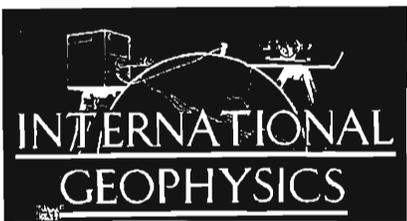
**LODE, PLACER, OIL & DAM SITE
PROBLEMS**

Rapid and proven methods for determining main zones of mineralization, thickness of overburden and gravels, bedrock contours and rock conditions; at less than one-tenth the cost of direct exploration methods.

**COMPLETE ELECTRIC, SEISMIC AND
MAGNETIC EQUIPMENT**

Correspondence regarding development problems cordially invited.

P. O. Box 144—Palms Station
LOS ANGELES, CALIF.

**MERRILL-CROWE
PRECIPITATION
PROCESS**

• Simultaneous
Clarification - Precipitation
Type

The greatest precipitation improvement since the introduction of the Crowe De-aeration Process. Ask for details.



THE MERRILL COMPANY
San Francisco, Calif. U. S. A.

involved. Through the appointment of Mr. Boericke the commission will obtain the benefits of a wide experience and technical knowledge of the costs of mine development and mill construction.

Boericke, born in California, obtained his technical education at Harvard and Columbia University School of Mines. He returned to his native state for his first job—at the North Star mine. Later he spent considerable time in Nevada and other western districts. For 11 years he served on the engineering staff of New Jersey Zinc Company, in charge of examination and development work at mining properties in Wisconsin and Illinois. Subsequently for seven years he was a member of the staff of the American Institution of Mining Engineers.

He has made many contributions to the technical press on subjects concerning mining and metallurgy and is the author of the book, "Prospecting and Operating Small Gold Placers."

**SILVER QUEEN STRIKE DRAWS
MANY PROMINENT MINING MEN**

Interest in the rich strike reported at the Silver Queen mine, Mojave, California, has drawn a number of prominent mining men to the district. The Consolidated Gold Fields of South Africa, which has an option on the Silver Queen, has had a group of engineers examining the mine, among whom are Carl Lindberg, 50th Floor, 70 Pine Street, New York City, who is directing the examination, W. C. Browning, 1214 Pacific Mutual Building, Los Angeles, former general manager of Magma Copper Company at Superior, Arizona, Hugh Rose and C. W. Vaupel, president and chief geologist, respectively, of the Mexican Corporation.

George Wingfield, P. O. Box 2012, Reno, Nevada, and associates, are reported to have taken an option on four claims of the Grey Eagle-Elephant mines, paralleling the Silver Queen. Philip D. Wilson, Chrysler Building, New York City, mining engineer for the Partners Mines Corporation, has been on the ground assisting in examinations, and other engineers who have been engaged in the work are Roy Hardy, Reno, Nevada, Herbert N. Witt, San Francisco, and E. A. Julian, San Francisco.

Walter E. Trent, vice-president of the Trent Process Corporation, Whitehall Building, 17 Battery Place, New York City, has been examining and sampling the Soledad Extension mine, which is held by Burton Brothers, who also operate the Tropic mine and the Burton Brothers mill near Rosamond, California.

Senator Key Pittman of Nevada is reported to be purchasing options over a wide area in the Mojave district. Senator Pittman predicts extensive mining development in the district and adds that it has promises of becoming a new center of western gold and silver ore production.

George B. Kimball, Boston and New York financier, was also a recent visitor in the district, accompanied by George H. Wyman, prominent mining engineer.

In the opinion of P. R. Bradley of San Francisco, president of the Alaska Juneau Gold Mining Company, if subsequent development verifies the early reports of the richness of the ore, it would indicate that a new gold mining district has been created. He added that verification of the wealth of the ore will mark the Silver Queen discovery as the first new deposit found in 50 years, which fact will add materially to gold production and will serve to stimulate investors and the general interest in gold mining.

**LEWIS DOUGLAS IS ELECTED TO
AMERICAN CYANAMID OFFICE**

Lewis W. Douglas has been elected vice-president and director of the American Cyanamid Company, filling the vacancy caused by the recent death of W. R. Collins. Douglas resigned as Director of the Budget in the Roosevelt administration the first of September.

Douglas is a graduate of Amherst College and attended Massachusetts Institute of Technology, where he specialized in metallurgy and geology. He has been actively engaged in mining ventures in Arizona, where his family pioneered the copper mining industry. He is a grandson of Dr. James Douglas, who founded Phelps Dodge Corporation, and is the son of James S. Douglas, president of United Verde Extension Mining Company.

For several years Douglas has been active in political circles, having been Arizona's congressman in the 70th and 71st Congresses, resigning in 1933 to become director of the budget.

**MINING CONGRESS PRESENTS
PLAN FOR AIDING THE INDUSTRY**

A seven-fold plan by which the mining industry may be brought into play as a means of reviving employment has been outlined by a special committee of the American Mining Congress. In a program report, the committee brought current preparation of the federal budget into the picture by stressing the fact that cuts in Bureau of Mines funds are directly preventing the mining industry from contributing its full force to recovery.

"The committee urges advancement of the following activities," the report states, "through sufficient restoration of funds cut during recent years from Bureau of Mines appropriations:

"1. Technological efforts to promote use of domestic deposits of essential minerals which are now imported.

"2. Development of information and technological methods to bring fullest possible production of gold in the U. S.

"3. Provision of a national inventory of known reserves of essential minerals and extension of conservation and economic use of those minerals.

"4. Establishment of the Bureau of Mines as procurer and distributor of all mining information for governmental agencies, including "new deal" units as well as "old line" organizations.

"5. Extension of research and development work relating to minerals essential to national defense.

"6. Expansion of the bureau's ability to aid mining operations by impartial clearance of information to the mining industry and to industries which use minerals as raw materials.

"7. Restoration, to its former extent, of the training of miners in first-aid and mine-rescue methods."

The report cited the fact that only one small federal unit—the Bureau of Mines—is designated by law to aid and coordinate the activities of the mining industry. This bureau, it is stated on the basis of federal figures, is operating during the current fiscal year with appropriations which are 40 per cent lower than the level set by a 10-year average.

Pointing to the fact that most of the bureau's work is of a type which must be undertaken by an impartial and unbiased agency, the report declares directly that radical reduction of the bureau's staff and facilities is having a direct effect upon safety of miners and efficiency and employment-giving potentialities of mining operations.

**ARCHER E. WHEELER
TO DESIGN COMO MILL**

Archer E. Wheeler, prominent metallurgical engineer, is reported to be working on the design for the 500-ton mill proposed by the Como Mines Company of 111 Broadway, New York. Work on the new mill is expected to start in January, Charles Oster of Reno, Nevada, president of the company, announced. Wheeler's permanent address is Room 1904, 25 Broadway, New York, but he plans to be in Dayton, Nevada, during the construction of the plant.

Indications are that the Como company has penetrated the main part of the ore body, several hundred feet below the old workings. A winze has been started from the main tunnel of the North Rapidan mine and sinking will continue from 200 to 300 feet in order to develop a sulphide zone.

**R. S. PALMER ANNOUNCES CHANGE
IN DATE OF JOINT MEETING**

The annual meeting of the Colorado Mining Association and the Colorado chapter of the American Mining Congress will be held in Denver at the Continental Oil Building auditorium on January 14 and 15. These dates were originally issued as January 16 and 17, but Robert S. Palmer, secretary to both organizations, has announced the change.

Notable speakers will include Howard I. Young, president of the American Mining Congress; D. D. Moffat, vice-president; J. F. Callbreath, secretary; Tasker L. Oddie of Nevada; George W. Malone, chairman of the western states silver committee; Dr. John Wellington Finch, director of the United States Bureau of Mines; Charles W. Henderson of Denver, district manager of the bureau; C. F. Coolbaugh,

president of the Colorado School of Mines; E. A. Hamilton, chairman of the western division of the American Mining Congress; and Burt B. Brewster, editor of the Salt Lake Mining and Contracting Review.

The association has selected for the committee on arrangements: Frederick C. Carstarphon; Stephen A. Ionides, and Henry S. Sanderson, all of Denver. Other committees include the legislative committee and the Sowbelly Dinner committee. The Sowbelly Dinner is scheduled for Tuesday evening, January 15, at the Cosmopolitan Hotel. The annual Silver Smoker will be held at the Brown Palace Hotel, January 14. Offices of both associations are at 402 State Office Building, Denver.

**MINING COURSES TO BE GIVEN
BY U.S.C. DURING WINTER QUARTER**

In response to the awakened interest in gold mining the evening division of the University of Southern California, University College, has scheduled two mining courses to be given during the winter quarter, which opens January 7. Major Julian Boyd, who has directed mining operations on four continents, is to conduct a course in mine administration and a non-technical class in elementary gold mining.

Instruction in the valuation, organization and management of mining enterprises is to be given each Monday from 7 to 9:20 p. m. in Bridge Hall on the U. S. C. campus. Meeting each Tuesday evening at the same hour and place, the class in elementary gold mining will study the origin and occurrence of gold, mineralogy and petrology, use of maps, tracing a lode, sampling, staking a claim, developing placer and lode deposits, and treatment of ore.

Fourteen engineering subjects, including fundamentals of metallurgy, air conditioning, and thermodynamics of steam power plants are to be given during the winter quarter by the U. S. C. evening division. Classes during the opening week are open to the public without charge.

**GOLD RECLAMATION
AT BLACKHAWK, COLO.**

W. H. Worthington of Idaho Springs, Colorado, has completed the sampling and testing of the mill tailing beds found below the town of Blackhawk. These tailings are the accumulation from the early milling operations of the 60's to the present time.

The test work was carried on through a small concentrating plant installed for this purpose. It is reported that high-grade tailings were found in the lower strata of these beds. Several hundred thousand tons of tailings are said to be available for reclamation. Worthington states that steps have been taken for the immediate installation of suitable equipment to handle several hundred tons a day.

In conjunction with this operation, the Ralf Mining Company, headed by O. R. Schrem of Minneapolis, Minnesota, and Robert Dunfield of Blackhawk, has installed shovel equipment to recover the placer gold found underlying the tailing beds. The Ralf company will do the excavating and heavy screening for the concentrating plant. The operations of the concentrating plant will be handled by the Mines and Mineral Reclamation, Inc., of which Worthington is president. He is an old-time Arizona mine operator, and was connected with the Calumet & Arizona Mining Company as chief chemist for a number of years.

Ellis Mills

Are the Most Efficient Grinders

- The Best Re-Grinding Classifiers by overflow.
- The Best Amalgamating Pan to any mesh size.
- The Only Mill that will work Clay (pipe).
- The Only Mill that will work Mica (sheet).
- The Only Mill that will work Asbestos and not ruin the fibre, or Emery and not ruin the mill.
- And many others.

The Ellis Mill will grind anything that can be ground or pulverized, wet or dry, to a definite mesh in one operation, using only 1/4 to 1/10 the power others use. No gears, no grease, no bearings, no friction.

"ELLIS" Mills are sold on the following guarantee: In case you DO NOT get tonnage promised we agree to send one of our own men to GET it. In case HE FAILS, we agree to INSTALL such other mill as is needed to do the work, WITHOUT FURTHER COST TO YOU.

The above guarantee on following specifications, Mill and Feeder MUST BE GENUINE "ELLIS", set up as per OUR specifications (blue prints furnished) 40 mesh screens ("REK-TANG") mill fed 1/2-inch opening. This guarantee applies to minimum cap. of ALL "ELLIS" MILLS.

C. A. ACKERMAN, Manager.

ELLIS MILLS MFG. CO.

(A Voluntary Trust)

510 Brannan, Near 4th St.
SAN FRANCISCO CALIFORNIA

**IMPROVE MINE
VENTILATION**

WITH

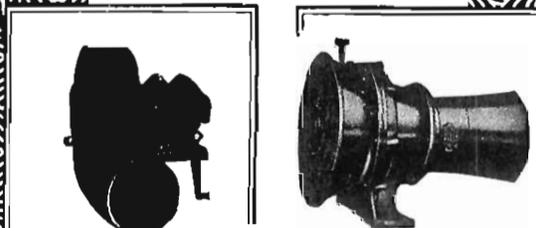
**COPPUS BLOWERS
VANO OR VENTAIR**

They are light weight, portable, low in cost, and cannot be damaged by overload. And yet they deliver more air for their size and power consumption than any other unit on the market.

Send for Bulletins No. 121-2
and No. 122-2

**Coppus Engineering
Corporation**

Worcester, Mass.
356 Park Avenue



REGISTERED
COPPUS
US PAT OFFICE

Mill Heads from Western States

Brief items covering the mining industry in the Western United States and Northern Mexico.

ARIZONA

The **United Verde Extension Mining Company** of Jerome, Arizona, announces that November production amounted to 743,060 pounds of copper. Until the current quarter production has been averaging approximately 2,500,000 pounds monthly.

The contract for installation of a 25-ton Stoneham amalgamator near Phoenix, Arizona, has been given to Charles Stoneham, mining engineer of 610 West Santa Barbara Avenue, Los Angeles, by Moncrieffe Cameron, P. O. Box 1761, Phoenix, Arizona. The mill will be installed at the Patience mine.

Gilbert and Schmidt, together with associates, are making arrangements for installation of a 50-ton mill at Salome, Arizona. The mill will include Stoneham amalgamation plates for the final recovery unit. The property being developed is an extension of the Socorro mine.

The **Wenden Copper Mining Company**, Ned Creighton, president, Box 327, Phoenix, Arizona, in a report to stockholders states that during recent months the company had devoted its efforts to the developing of sufficient water for operation of the **Nellie Meda** mill. The mill was completed last summer and given a two weeks' test run during July, but was forced to close down due to drought conditions. The management now believes that sufficient water has been developed in the No. 3 well, drilled to a depth of 582 feet, to supply current needs. It is therefore planned to begin production as soon as the necessary permanent pumping equipment can be installed. Since the test run of the mill several changes in the plant have been made, a new hoisting unit installed and many miscellaneous improvements made.

The **Akron Gold Mining Company**, Sells-Star Route, Tucson, Arizona, is laying plans for increased activity early in the coming year. The new work will include diamond drilling, shaft work, additions to the machinery and an increase in mill capacity. During a portion of the year the company has been producing approximately 150 tons of gold ore monthly. H. Huntsbery is general manager.

The **Ore, Metal and Engineering Company**, operating the Guijas tungsten mine, west of Arivaca, Arizona, is employing a crew of 25 men. O. C. Lamp is mine superintendent in charge of operations. The ore and concentrate buying division of the company is directed by Walter X. Osborn, P. O. Box 2349, Tucson, Arizona.

According to an Associated Press dispatch from San Antonio, Texas, E. A. "Trapshooter" Reilly, Lamar S. Bolling and H. Rowe Morris were convicted by a federal jury for using the mails to defraud, including conspiracy, in the promotion of the **Trapshooter Reilly Gold Mines** at Venezia, Arizona. Edward L. Tomlinson was found not guilty. Tomlinson served as general manager for the Trapshooter organization. Reilly and Bolling both were sentenced to six years in prison and fined \$11,000.

Plans are being made for the mining of a considerable tonnage of low-grade ore by the **Commonwealth Development**

Company, T. B. Smith, general manager, Pearce, Arizona. A small crew has been employed throughout the year in development work. The small cyanide plant is being reconditioned to handle the mine output.

Preliminary development and installation of air drilling machinery at the **Portland** group of seven mining claims in the Katherine district, near Kingman, Arizona, is being directed by Clyde M. Becker, geologist of 224 South 14th Street, Chickasha, Oklahoma. The mine is owned by W. P. Richards of Boise, Idaho, and is being operated under option to J. A. Woods of Dallas, Texas. The new operators hope to develop a large tonnage of low-grade ore in the section of the mine where the outcrop is exposed for 200 feet. Two smaller veins are said to show over 5,000 tons higher grade ore in sight. Development is to be rushed, looking toward mill installation as soon as possible.

United Verde Extension Mining Company, Jerome, Arizona, has declared a quarterly dividend of 10 cents a share, payable February 1, 1935, to stock of record at the close of business January 3, 1935. This declaration compares with the 25-cent quarterly dividends paid in 1934.

A dividend of 50 cents per share will be paid to shareholders of **Magma Copper Company** on January 15, to stock of record December 28. While similar dividends were paid in each of the three preceding quarters, the board still requests that this distribution be regarded simply as a return out of surplus and not the establishment of a dividend basis or policy for the future. The company's mines are located at Superior, Arizona, with Wm. Koerner, general manager.

The **Midnight** mine, being operated under lease by L. V. Hautier and Harry Waters, Oatman, Arizona, has been retimbered to a depth of 35 feet, to the water's edge, and unwatering of the shaft has started. About 100 tons of ore from the dump have been shipped to the Tom Reed mill, this ore reported to have returned \$15.31 per ton.

It is understood that work is soon to be resumed by the **South Pilgrim Mining Company**, Chloride, Arizona, with Fred W. Koehler, general manager, 1004 Beaux Arts Building, Los Angeles, California. Considerable work was done at the South Pilgrim in the summer of 1933, following an examination of the property and recommendations by Dwight E. Woodbridge, consulting engineer.

The **Sterling Gold Mining Corporation**, operating the Richinbar gold mine at Cordes, Arizona, is installing a 100-ton milling plant, and expects to have it completed within the next 30 days. The mine has been developed by four shafts, totaling 1,500 feet in depth with 3,500 feet of lateral development. This work, according to J. A. Hamilton, president, has blocked out 70,000 tons of ore. During the past year Sterling Gold has retimbered the deepest shaft to 500 feet, reclaimed all levels, put in new ore chutes, erected a 45-foot head frame, and installed a Diesel power plant and compressor. F. H. Lerchen is mine manager and George W. Peters, mill superintendent.

The operating force at the **Leghorn** mine at Cherry, Arizona, has been increased to 10 men. Carpenters are engaged in making the forms for foundations for the new eight-horsepower engine and compressor. This work is under the direction of Charles Sessions.

The **Margarita Gold Mine** at Ruby, Arizona, is milling an average of 1,000 tons of ore per month. Sixteen men are employed in underground operations and ten men in surface work. Mining is by tunnel and small open pit, and the property is equipped with a 100-ton cyanide plant. Fred Daniel of Ruby is mine superintendent.

The **Derrick Mining Company** of Oatman, Arizona, C. E. Durlin, secretary-treasurer, has advanced its main tunnel 813 feet, and is now drifting west to encounter the junction of the Moss vein, a distance of approximately 50 feet. Merle Kinsman is mine superintendent.

A Chicago syndicate is said to have become interested in the **King Tut Placers**, near Kingman, Arizona, and is planning for considerable work during the next few months. Lou D. Miller, who has been sampling the property for several weeks, will direct the new work. The securing of an adequate water supply is one of the first projects to be undertaken, and may involve construction of a six-mile pipe line from the Colorado river. During 1933 considerable work was done in this area by Guy E. Pitts, geologist, Rives Strong Building, Los Angeles, California.

The **Owl Mining Company**, Box 7, Topock, Arizona, has made its third shipment of gold ore within the last four months to the Tom Reed mill. Sinking of a 300-foot shaft has been started, the shaft to follow a vein which is said to show values of \$32.87 at the surface. The work is supervised by Ben. Lorenzen.

CALIFORNIA

The **Alpine** quicksilver mine near Hollister, California, is operating five retorts on ore averaging about 7 per cent mercury. The ore comes from a new vein in the main working tunnel and from open cuts. Seven flasks a month are being shipped. The property is owned by Harry A. Leonard, Hollister, California, and is being operated under lease by Juan Quinonez.

W. E. Woodbury and H. R. Balch are preparing the **Rex** placer mine, near Weaverville, California, for winter operation. The ditches and reservoirs are being enlarged to permit use of larger equipment.

The **Santo Nino Mines Corporation** has engaged the Stoneham Engineering Company, 610 West Santa Barbara Avenue, Los Angeles, California, to design and build two mills on properties in Kern and Eldorado counties. The first is to be a 150-ton plant to be erected on Kane Lake in Kern county, which will be the first unit of a larger plant to be erected later. Tests made through the Stoneham system of amalgamation on ore from this property are reported to have ranged from \$1 to \$4.30 per ton. The second plant is to be of 100-ton capacity and will be erected near Placerville, Eldorado county, California. The complete Stoneham system of amalgamation will be used. Stoneham is being assisted by W. E. Fenwick, mining engineer.

Operations at the **White Bear** mine of the **Maryland Mining Company**, Sawyer's Bar, California, are directed by Arthur J. Theis. The property is equipped with a flotation mill containing crushers, ball

mill, classifier, amalgamation plates and four flotation cells. Power is generated locally with a 50-horsepower semi-Diesel engine. A separate engine runs the air compressor.

H. W. A. Docker, Joseph T. Sugars, Harry Summers and Frank Cantrill, all of Sawyer's Bar, California, who are leasing the Lank Bob and Slim Jim mines, have added flotation equipment to their two-stamp mill. Surface ore is being mined with a power shovel. Two miles of new road have been built to these mines, formerly reached only by trail.

The powder charge set recently at the You Bet Mining Company, Nevada City, California, brought down about 100,000 yards of gravel and three hydraulic monitors were placed in operation immediately. The blast, which was reported to have done considerable damage, actually caused little damage in terms of cost. A power line was broken, a few lines of pipe battered, and some abandoned shacks were wrecked. Ogden C. Chase, 633 Roosevelt Building, Los Angeles, California, is president and general manager of the company. E. A. McGhie is superintendent at the property.

The Christian mine, formerly known as the Avasio, an ancient lava capped river channel, located near Placerville, California, is being developed through a bedrock tunnel, by the Ventura Mine Associates. The tunnel has been driven 750 feet and prospects are said to be encouraging. A gravel mill of 50 yards capacity is being installed. The work is being financed by the George W. McBride Company, 639 South Spring Street, Los Angeles, California.

George William Smith, A. W. McBride, Ralph Peters and Winifred Ottley, owners and operators of the White House mine, located five miles from Orleans, Humboldt county, California, are driving a tunnel to pick up a faulted segment of the vein. This property has been under development for the past four years and a considerable tonnage of gold ore has been partially blocked out. The property is opened up by three tunnels on the vein with a fourth started, which will give a depth of approximately 600 feet on the dip of the vein.

Development work is under way on the ninth and tenth levels of the Morrison-Carlock mine in Quartz Valley, which is being operated by Northern California Gold, Inc., William C. Madge, superintendent, Etna, California. The property is equipped with a 10-stamp mill and a compressor, and power is supplied by the California Oregon Power Company.

Banks and Maginnis, Inc., have taken over the Turk mine in Quartz Valley, near Etna, California. The vein is said to be 20 feet wide, all of which is milling ore. A lower tunnel is being driven on the vein which will give a vertical depth of 240 feet below the outcrop. Milling operations are being carried on with a small ball mill. Twenty-five men are employed in the mine and mill, and an additional 12 men are employed in the construction of a power line from the Morrison-Carlock mine, a distance of 8,000 feet.

George A. Milne and George Noonan, who are operating the Quartz Hill mine, Scott Bar, California, under lease, have just two more giants, making a total of five now in operation. Two of the giants are used for piping the dump and three for cutting bank, The Mill Creek flumes

and ditches have been repaired and a pipe line installed from the Middle Ditch, which gives a head of over 300 feet, or a pressure at the giants of about 125 pounds per square inch.

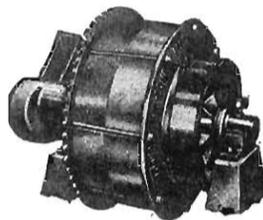
J. C. KempVanEe, 381 Bush Street, San Francisco, California, and associates, are operating the Pino Blanco mine near Coulterville, California, under option. A hoist and miscellaneous equipment are being installed at the property, which has been re-named the Oro Rico.

A recently discovered vein at the Ocean Star quartz mine near Tuolumne, California, has been followed to a depth of 50 feet and is said to yield high-grade ore, which is being milled in a five-ton Ellis ball mill. The vein is three to four and one-half feet in width and is being explored by drifting. R. J. Miller of Tuolumne is operating the property.

Mitchell Bulaich and associates of Fresno, California, are operating the McCabe Flat mine in the Briceburg district, near Mariposa, California. A mill has been installed. The property has been under development since last spring.

A new mining project is to be launched the first of the year on the Gary ranch, located three miles west of Sonora, California. William E. Hornaday of Riverside, California, has acquired the property from George L. Gary of Oakland, owner of the property, under an agreement which calls for work to be carried on with a force of not less than 10 men. Other provisions of the agreement call for the expenditure of \$10,000 for development work during the first year, and development is to proceed, whether or not that amount is sufficient to put the property on a producing basis, until the pro-

The
Prospector



This easily portable 2-4 ton mill at \$220 can be converted to 4-8 tons capacity by ordering extra parts at \$155.

Every Rib-Cone Mill Saves Money..Saves Gold

Small Mills for New Developments . . . Large Mills for the Biggest of Mines . . . All Save Money and Gold

They save money because their first cost is low. That's because Straub efficiency is high — because our selling costs are low.

They save money because their operating costs are low; they use less water, less power.

Rib-cone Mills save gold too! You get higher recovery — less gold goes into the tailings dump.

No matter what your capacity requirements, Rib-cone Ball Mills will save money, save gold.

And so will Straub-built crushers, Overstrom Universal concentrators, flotation and cyanide machines, amalgamation plates, and all other Straub equipment. Efficiency does it!

Send for Big New Bulletin No. 300 (FREE)

24 big pages crammed full of valuable information, interesting pictures on grinding, classifiers, and all other milling problems. It's free to all mining men! Send for Bulletin No. 300 today!

STRAUB

505 Chestnut St.

OAKLAND, CALIF.
U. S. A.



Mfg. Co.

NAME OF NEAREST DISTRIBUTOR ON REQUEST

duction of gold-bearing ore has reached a total of 100 tons a day, at which time proper milling facilities are to be provided.

Work has been resumed by the **Zenda Gold Mining Company** at its property near Yermo, California. This is a silver mine which has been idle for almost 10 years. The mine shaft, which filled with water a few years ago, is being cleared out and electric power is being provided.

The **North Divide Extension Mining Company** of Tonopah, Nevada, has acquired 60 acres lying a short distance northeast of the Silver Queen mine at Mojave, California. Diamond drilling is to be started early in January under the supervision of George Ferrick of Manhattan, Nevada. Bert L. Collins, Chamber of Commerce Building, Los Angeles, California, is president of the company.

Martin Engle and Vern Moore of Cantil, California, are reported to have made a gold discovery in Pine Tree Canyon, 18 miles north of Mojave, California. The vein is said to be of decomposed quartz, from two to six feet wide, with outcroppings for a distance of 1,500 feet. Specimens taken from the vein at the surface for a distance of 300 feet are said to show an average of \$25 per ton.

The **Blakely mine**, located northeast of Jackson, California, being operated by Hendricks and Wilson, is reported to be showing encouraging results. This mine is an extension of the Alta mine, where several millions are said to have been taken out in the early days. The workings are now down 140 feet in a vein seven feet wide, which is said to be running about \$20 to the ton. Mining machinery has been installed at the property and the operators plan to construct a larger mill shortly. There are two tunnels, one 200 feet in length, tapping the shaft at the 100-foot level, and a lower one 175 feet long, which cuts the main vein. The operators plan to sink an additional 200 feet. A shipment of 18½ ounces of gold was made to the mint recently.

H. Z. Peters and E. J. Roberts, Russ Building, San Francisco, have taken a bond on the Gold Bronze claims, four miles east of Ivanpah, San Bernardino county, California, and will turn the property over to the **Imperial Gold Mines Corporation**, in which both men are interested. The Gold Bronze shaft is down 400 feet with various levels opened up, while the Coyote shaft, 1,200 feet distant, is down 175 feet. Between the shafts are a number of veins which have been prospected by shallow workings. A recent shipment taken from the 250-foot level is said to have carried \$48.30 a ton in gold. The Coyote vein is from three and one-half to four feet wide and is said to average \$30. Four men are employed at the mine.

Six to eight men are employed at the **Redding Creek placers** under the direction of David Wallace, superintendent. Fred C. Wilkins, 265 Wawona Street, San Francisco, California, is president and general manager of the organization.

The old 1,200-foot Smith and Watson tunnel at the **Sugarman mine**, two miles north of Sonora, California, is being reopened and retimbered by Robert Nelson and his son, Ralph. The work has progressed approximately 400 feet and faster progress is expected for the remainder of the distance as it is known there are no extensive cave-ins ahead. The senior Nelson has, until recently, been associated

with Ralph Butler and Harry Bowerman in operating in the deeper workings connected with the main shaft of the Sugarman. Under Butler's management, the lower or older shaft is being reopened to provide a second exit from the workings below the Smith and Watson tunnel, and this work, it is understood, is part of a plan for more extensive operations through the present working shaft.

D. Bryce Woodruff, Sonora, California, and associates have spent the past two years in prospecting and developing the **Hamm and Birney mine**, located in the Yankee Hill district, northeast of Columbia, California, which they have under lease for a period of two to five years. The work consisted of cleaning out and retimbering some of the old workings which were opened up over 50 years ago. Extensive bodies of low-grade ore have been located and hundreds of tons have been broken down and stored preparatory to installing a mill in the near future. Several mill runs indicate values averaging \$10 per ton, according to Mr. Woodruff.

According to the annual report of the **Montezuma-Apex Mining Company**, Placerville, California, for the year ending August 31, 1934, approximately 3,057 feet of drifts and raises and 256 feet of shaft sinking were completed. Two ore shoots of good grade were developed on the Montezuma 1,200 level, but the 1,300 has not been productive. The shaft is being sunk to the 1,500 level, however. On the 200 level of the Nashville an ore body was developed with higher grade than the average Montezuma ore. J. A. Norden, Box M, Placerville, California, is in charge of operations.

A hoist and pump are to be installed at the **Poe mine**, Railroad Flat, California, which went into operation early in November. George Buyck is superintendent at the mine.

W. R. McKenzie, H. Bailey and B. C. Lewis are engaged in installing the new mill at the **Black Eagle mine**, located east of Independence, California, and the mill is expected to be completed in the near future. Operators plan to make a three months' test run of the mill and if results continue good, larger equipment will be installed. The mill is equipped to handle 50 tons every 24 hours. A strike of gold ore said to run around \$3,000 per ton was recently reported from the property. The mine is being operated by a New York syndicate, it is understood.

Six carloads of high grade have been shipped from the **Reward mine**, operated by Jim Wightman, Box 33, Lone Pine, California. The high-grade strike is reported to have returned approximately \$16,000 to date. The tram at the property has been improved so that it now will lower 1,000 pounds of ore and return for another load in five minutes. A large bin has been constructed.

George H. Wyman, Jr., 1203 Cordova Street, Glendale, California, and his brother, Ralph Wyman, are reported to have struck a 17-foot vein of ore on their claim located near the Silver Queen mine at Mojave, California.

Byron L. Eastman, mining engineer, and L. A. Smith, both of Nevada City, California, have taken over the **General Grant mine** in the Forest Springs district, southwest of Grass Valley. The 130-foot shaft has been unwatered to the adit level and the property is being sampled

to determine whether values will warrant further development.

The Alpine mine, which is being operated by the **Beebe Gold Mining Company**, Georgetown, California, has resumed production after being closed down for about a month. A crew of eight men is employed and one truck is hauling 45 tons of ore daily to the Beebe mill. The mine was closed down when mining operations were found to be too far ahead of the milling. L. E. Putnam is superintendent.

The **Harmon mine**, Placerville, California, is being operated under bond, lease and option by John D. Snowdon, 2012 East Seventh Street, Long Beach, California. The property is owned by the Placerville Gold Mining Company and is part of the Arthur Baring-Gould estate. Owen W. Terry is superintendent at the property. Mr. Terry was recently rescued after being imprisoned in a mine cave-in for a period of 17 hours.

I. O. Wallberg, manager of the **Wallberg Mining Company**, Challenge, California, is driving a tunnel in an adjoining prospect at a level below that worked by early day miners. The tunnel is now in more than 350 feet with the ledge system believed to lie about 300 feet ahead. Surface explorations on the ledges show a five-foot width of relatively low values, while an intersecting ledge, ranging from 12 to 16 inches in width, is said to carry values ranging from \$35 to \$45 per ton. The property is being developed on a co-partnership basis, with Wallberg as manager.

A building is being erected to house the five-stamp mill at the **Amazon mine** in the Kelsey district near Georgetown, California, which is being operated under lease by the **Mine Properties Corporation of Nevada**. Electric power is being installed and plans have been drawn for a 100-ton ball mill and a flotation plant to be used in addition to the stamp mill. Sixteen men are employed. W. W. Harritt, Carson City, Nevada, is superintendent and R. W. Prince is mining engineer at the property.

The **Rawhide gold mine**, in the Dutch Flat district east of Colfax, California, which is being operated by the **Canyon Mine Corporation**, a New York syndicate, is reported to be working a crew of 25 men. A ball mill has been placed in operation at the mine and 50 tons of ore are being treated daily. The mine is located on the North Fork of the American River. R. K. Browne is superintendent.

The old Big Pine gold mine, now known as the **TWA**, located near Auburn, California, is being operated under lease by a small group who have placed the management of the property in the hands of Arthur N. Sweet, Penryn, California, with Charles Hopper Brown as mine superintendent. The mine has been opened to a depth of 400 feet, with 6,000 tons of blocked and probable ore, said to assay \$20 per ton. Milling equipment is being installed.

The **Northern California Mines Company**, Junction City, California, is operating three shifts with 37 men employed. Three six-inch giants are being used in the John Day pit and sufficient water is available to run 16 hours out of 24. Two six-inch giants are being used on the river pit, operating three full shifts. J. A. Gilzean is superintendent. Ray J. Barber is consulting engineer.

Sale of the **Black Eagle mine**, located east of Independence, California, to a New York syndicate for \$45,000 is re-

ported. A strike of gold ore said to run around \$3,000 to the ton is also reported from this property. The strike is located on a contact vein and varies from one to four feet. The new syndicate is said to be amply financed and new equipment is reported en route to the mill site. Two proposals for bringing the ore to the mill are under consideration, one calling for construction of a road and the other for erection of a tram. Ore has heretofore been brought out on muleback. A two-stamp mill now in operation is securing approximately 18 ounces of amalgam daily.

The new mill at the Keeler Gold Mines, Inc., Keeler, California, has been completed and is ready for operation. George Allan is in charge of both the construction and operation of the mill. The property is being worked under lease by Thomas L. Chapman and H. L. Eckloff.

Eight men are working in two shifts at the old Phoenix mine, in the Hurleton district near Oroville, California, which is being operated by T. H. Hilborn. Ore is being shipped to the smelter and is said to average \$30 to the ton in gold. Hilborn plans to ship approximately 50 tons a month. A 40-inch vein of the \$30 ore was found on the 160-foot level. Instead of hoisting the ore up the 160-foot shaft, a tunnel has been driven to intersect the old Phoenix tunnel, and the ore is run out in dump trucks on an incline. Hilborn was formerly superintendent at the Delhi mine in Nevada county. Miller and Whitney are employing seven men on a property adjoining the Phoenix and are milling their own ore.

M. W. Morrell, Box 371, Barstow, California, is sinking a shaft on a 160-acre lease near Barstow. Ore is said to run approximately \$30 to the ton in gold and Morrell expects to begin shipping to the smelter at an early date.

The old Sidewinder mine, a gold property, near Victorville, California, has been purchased by C. H. Thomson of Massachusetts. Reopening of the mine is under the direction of Al Burk, and shaft construction, surface buildings, etc., are planned for the property.

Considerable activity is reported on the Rogers-Gentry property, located seven miles from Fairmont, California, which is being operated by W. J. Rogers and W. T. Gentry and also by a number of lessees. Among the leasing operations is the Bright, covering 150 feet on the strike of the vein to 100 feet in depth, which is in high-grade ore and which has received \$67,000 in smelter returns. The Myler lease, next to the Bright, is said to be in \$40 ore, but shipments have not yet started. The Williams and Ragan lease, adjoining the Bright and Myler, covers 11 acres and is not yet in production, but development is progressing rapidly. The Reed and Wiley lease has an 85-foot shaft of ore and is ready to ship. The major portion of the adjoining Mannell property, consisting of 80 acres, is also under lease to Williams and Ragan, who have subleased both their Rogers-Gentry lease and their Mannell lease to the Rainbow Mining Syndicate, headed by Edwin H. Bauer, mining engineer. Active development is to be started immediately, according to Bauer, and three tunnels are to be driven acrosscut the known veins. So far there are five known veins in the properties, ranging from 30 inches to four feet in width, with gold values said to assay from \$50 to \$90 per ton.

The old shaft at the San Juan mine, west of North San Juan, California, is



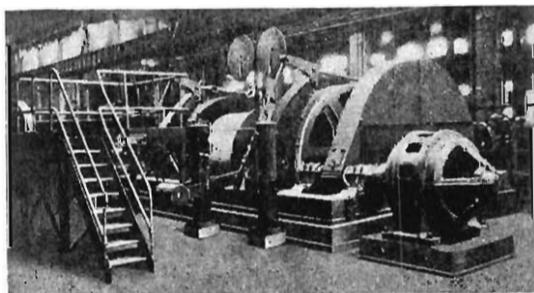
WELLMAN



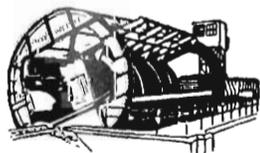
Mining Equipment

**ENGINEERED
AND BUILT
TO CUT COSTS**

You will find the time-tested facilities of this long established organization invaluable in your drive for more efficient production and lower operating costs.



- Car Dumpers Ore Handling**
- Tipples Bridges**
- Hoists Blaisdell**
- Sheaves Circular Vat**
- Cages Excavator**



THE WELLMAN ENGINEERING CO.
7000 Central Ave., Cleveland, Ohio
Birmingham New York Mexico City

J. K. SMIT & SONS, INC.
157 Chambers St., New York, N. Y.

**DIAMONDS
FOR CORE DRILLING**

FINEHARDS

CARBON

IAMHARDS

REPRESENTATIVE FOR THE REPUBLIC OF MEXICO

P. MARTIN, Apartado Num. 544
Mexico City, Mexico

being unwatered and diamond drilling for the testing of ore bodies is making satisfactory progress. Surface trenching is being done on ledge matter to prove width and values. Development of this property is said to be sponsored by the Bradley interests, 1022 Crocker Building, San Francisco, who may consider plans for installation of a mill if sufficient ore is developed.

A 165-foot drift on the 100 level of the Heslep mine on Quartz Mountain, near Jamestown, California, is reported to be in ore of excellent mill grade. A crosscut near the shaft at the north end of the lateral is said to show 15 feet of ore and the shoot is reported much wider at a point near the face of the drift. Operations are conducted on a two-shift basis. It is stated to be the plan eventually to sink a new and larger shaft south of the present one to a depth of 800 or 900 feet, and erection of a mill may also be given consideration in the near future. J. A. Keyes, Jamestown, California, is mine superintendent. The Heslep mine is a part of the App group, which is under lease to K. C. Schweglar, mining engineer, Financial Center Building, San Francisco.

The old Stockton mine, near Sonora, California, is being reopened by B. L. Green and Ed McMahon, Jr., P. O. Box 709, Sonora, California. The shaft is to be sunk beyond the present 150-foot depth. The mine is credited with an output of approximately \$150,000.

The Brum-Ball Mining Company, Tuolumne, California, which is operating the Baker, Paragon and Comer mines, in the Tuolumne district, has acquired 480 acres of land in the Confidence district of Tuolumne county and has started development of the property. Operations are reported to be primarily to locate and develop an extension of the Confidence vein, but it is planned also to explore an ancient river channel which traverses the property. John Burmeister, Tuolumne, California, who is directing the project, reports that sinking of a 200-foot shaft is under way, a hoist, compressor and other equipment are being installed, and electric power is being provided.

Two hydraulic giants are being operated at the 160-acre property of the Klamath Mining Company, situated on the Klamath River about four miles below Happy Camp, Siskiyou county, California. The water supply is being further developed with the object of adding more nozzles later. The project is owned entirely by the following Los Angeles, California, men: T. A. Sheppard, 305 Bradbury Building, D. W. Harkness, R. L. Goff, D. A. Rizer and M. V. Van Fleet.

A group of Seattle men has taken an option on the Ida May and Klamath quartz mines near Sawyers Bar, Siskiyou county, California. Development work is to be carried on throughout the winter, according to Rensselaer H. Toll, mining engineer, 2816 Sunset Place, Los Angeles, California, who controls the properties.

According to Judge F. F. Grant, 510 Bancroft Building, San Diego, California, a gold discovery has been made on some 42 acres of land along the San Diego River in the city of San Diego. Judge Grant reports that tests show that the whole acreage carries values from grass roots to a depth of about 200 feet, and engineers estimate that each cubic yard of the entire acreage will produce from \$1.25 to \$4 in gold. This property is only 12 minutes ride from the center of the city, easily accessible, and has ample water.

The Benson and Pyle lease on 385 feet of the Silver Queen lode, at Mojave, California, is being worked to capacity in order to take out as much ore as possible before the lease expires in October, 1935. William Benson and Edwin Pyle have sunk one shaft and negotiations are being made to sink another to a depth of 200 feet or more.

Sluice boxes, loading bins and a 25,000-gallon water storage tank have been completed at the Burns Channel gravel mine, near Michigan Bluff, California, which is being operated by A. M. Dunlop, mining engineer of Auburn, California, David Young and Jerry Simpson. A gravel bed, 67 feet deep and 72 feet wide, has been located on the property, which has been developed by 1,600 feet of tunnel work. They own more than one and one-half miles of the gravel bed.

At the Banner shaft of the Lava Cap Gold Mining Corporation, Grass Valley, California, a 75-horsepower compressor, a larger hoist, motor and skip are being installed. The transformers are also being enlarged to handle the increased load. O. E. Schiffner is in charge of operations.

A 26-ton test shipment of ore has been made by the Gold Lode Mines, Inc., 705 Oviatt Building, Los Angeles, from its Burcham mine to the Garfield smelter of A. S. and R., which returned a gross average value of \$53.25 per ton, chiefly in gold. The ore was taken from the discovery made in a new crosscut on the main level some 600 feet from the portal. This crosscut exposed some 40 feet of ore, of which 12 feet is high grade. W. D. Moriarty is president of the company. J. E. Little is mine superintendent at the property, which is located near Barstow, California.

COLORADO

The Tonopah Mining Company is reported to have taken five claims covering 100 acres in La Plata county, between Durango and Silverton. This action is said to have come as a result of a significant strike being made at the head of Fall Creek, about nine miles northeast of Durango. Company engineers are in Durango at this time making a thorough examination of the property. It is believed that the company will form a subsidiary organization to take charge of operations, if tests are satisfactory. According to reports, values run as high as 6.12 ounces

of gold to the ton. Thayer Lindsley, Canadian Bank of Commerce, 25 King Street West, Toronto, Canada, is president, and H. A. Johnson of Tonopah is in charge of the work in Nevada.

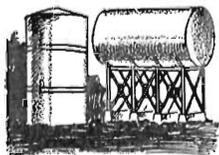
Reports from the New Zealand Gold Mines, Inc., operating the Joe Dandy property on Raven Hill in the Cripple Creek district, Colorado, show that the average value of ore shipped during the month of November, 1934, was approximately \$23.50 a ton. The company is driving south from the Schultz ore shoot on the third level, and at the same time shipping at least a carload of ore a day. C. K. Woods, Box 14, Cripple Creek, is in charge of work on the Joe Dandy. Adjoining this property are the Bonnie Lou claims, owned by the Bonnie Lou Mining Company and being operated by the El Crest Gold Mining Company. The El Crest company is driving north at a slightly greater depth on the 200-foot level of the El Crest shaft. About 600 feet of undeveloped ground lies between the two properties. Hildreth Frost, P. O. Box 36, Colorado Springs, is president and general manager of the Bonnie Lou company whose property the El Crest people are operating, and he is also president of the Joe Dandy Mining Company, owner of the property of that name.

Plans for mill equipment are said to be maturing for the Gold Monument Mining Company, W. J. Cameron, president, 303 Colorado Building, Denver. The company controls a consolidation of 87 claims in the Ohio district of Gunnison county, Colorado. A number of leasers are breaking and shipping high-grade gold-silver ore from some of the upper workings, a recent shipment of four and a half tons returning 7.52 ounces of gold and 10 ounces of silver to the ton. The company's ground is traversed by 20 known veins, ranging from three to seven feet in width.

An important gold strike has been reported from the Sangre de Cristo Mining Company, operating on the Baca Grant, Saguache county, Colorado. The vein is said to be seven feet wide and to average 5.00 ounces of gold to the ton. The rich streak is reported to be 14 inches of quartz, assaying 25.00 ounces in gold. C. O. Parker, 1901-09 Lawrence Street, Denver, is president of the company, and was reported to have taken a blanket lease on the Baca Grant last fall. A wagon road has been built to the property, and ore hauling is getting under way.

I. F. LeBrun of Cripple Creek, Colorado, is reported to have acquired the Pocahontas-Humboldt property near Rosita, Custer county. The claims have been idle for many years, but are credited with a production record of \$2,000,000 in silver. Howard W. M. Gamble of Westcliffe was manager of the Pocahontas-Humboldt Mining, Leasing & Milling Company, which operated the Pocahontas, Humboldt, Jumper, and S. A. K. mines.

Write for
Catalog Today!
Welded Storage Tanks

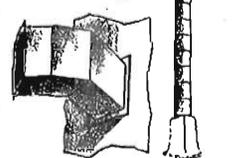


COLUMBIAN Bolted Steel TANKS

YOU'LL save money with these popular tanks because: They are ideal for use down in a mine, inside a mill, or on a mountain side. Serve perfectly for low cost storing of water, oil, cyanide. Splendid for handling ore, cement or other solids. Shipped in sections—K.D. at lowest freight rates. Transfer to location by truck or burros. Furnished in any shape. Can be enlarged or made smaller—or moved. Can be bolted together by your own workmen. Write for further facts on these tanks and other Columbian Products.

COLUMBIAN STEEL TANK CO., Dept. M. J., Kansas City, Mo.

Spokestacks and
Breeching



GRANBY CONSOLIDATED VOTES TO CONTINUE OPERATIONS

Stockholders of Granby Consolidated Mining and Smelting and Power Company have adopted a resolution authorizing the directors of the company to continue the operations of the company at Anyox, British Columbia. The management had called a special meeting to lay the situation before stockholders that the latter might decide for themselves whether or not to continue.

It is estimated that supplies on hand will permit of operation of the Anyox properties for a period of four to six months at a cash outlay of approximately 5 cents a pound of copper produced. On account of the short life of the Anyox mines the company has been operating at capacity, the object being to get all of the copper above ground as soon as practicable at the lowest possible cost.

Granby owes bank loans aggregating \$1,275,000 which are secured by copper. The directors were authorized to borrow additional money if needed.

GOLDEN-GILPEN ORE CUSTOM MILL TO BE OPERATING BY SUMMER

Surveys, plans, and flow sheet are reported to be completed for the new custom mill to be constructed by the Golden-Gilpin Ore Reduction & Refining Company, W. C. Kiter, 1333 Monaco Boulevard, Denver, president. Foundations will be laid as soon as the weather permits, and it is expected to have the plant on a full operating basis before next summer. Equipment is to be entirely new, and officials believe that a 95 per cent recovery can be made. The erection of such a custom mill will allow small producers as well as the larger ones an opportunity to mine and efficiently treat their product locally.

A mill site is reported to have been purchased from the Gold Mines Consolidated, Inc., and represents the larger portion of the old Mead mill site on North Clear Creek at Blackhawk, Colorado. One of the great advantages of this site is the abundance of water for both milling and power purposes.

AMERICAN INSTITUTE ANNOUNCES IMPORTANT PUBLICATIONS

Announcement has been made by the American Institute of Mining and Metallurgical Engineers, 29 W. 39th St., New York, N. Y., of the publication of two bound volumes of papers which are important to the mining engineer.

The first of these is Transactions A. I. M. E., 1934, Metal Mining and Non-Metallic Minerals. The contents consist of 22 papers, generally accompanied by discussion, and 16 comprehensive abstracts of papers presented before the Institute in the period 1933-34. All of the papers abstracted are available in printed form. Several of the complete papers are not available as Institute separates and are published for the first time in this volume; of these, attention is directed especially to that by Ralph D. Parker, on "Ventilation and Safety Practices at the Froid Mine of the International Nickel Co. of Canada, Limited." The net price is \$5.

The second book is Transactions A. I. M. E., 1934, Geophysical Prospecting. With this volume, the third in series, the committee on Geophysical Prospecting, A. I. M. E., transmits the principal papers accepted by the Institute since 1932. Many of them bear on the problems of prospecting in the mining industry. All are of interest to the student of geophysical prospecting. Several are directly applicable in

the petroleum industry. To mining engineers in non-metallics, attention is directed to "Geophysics in the Nonmetallics Field," by C. A. Heiland, a comprehensive paper accompanied by discussion and a 124-item bibliography.

The volume consists of 14 papers on electrical methods, five on magnetic methods, five seismic, and two general. Many of the papers are accompanied by discussion. The net price is \$5.

MOTHER LODE MINES PULL PUMPS AND FLOOD WORKINGS

The owners of the Kennedy, Argonaut and Original Amador gold mines, all located on the Mother Lode, Amador county, California, on December 19 began pulling the pumps from the mines, in accordance with the ultimatum which they had issued a week prior to the striking miners, stating that if the miners did not return to work by December 17, pending arbitration, the mines would be permanently closed. The Central Eureka, also involved in the strike, is still operating its pumps.

The striking miners claim that the pumps were taken out of the Argonaut for replacement with better equipment, and not for the purpose of permanently flooding the mine. However, Alex Ross, superintendent of the Argonaut, is reported as saying: "This is no bluff; we are determined to close down; no pumps will be replaced until the strike is settled."

Webb Smith, superintendent of the Kennedy mine is quoted as saying: "The company removed pumps from the 5,200-foot level 10 days ago. Until the night of December 17 we continued pumping at the upper levels. Today, December 18, all pumps are disconnected and we are allowing the mine to fill."

Mining engineers are of the opinion that the Argonaut mine will be flooded to the 5,500-foot level in three months, closing off drifts which have been yielding the richest ore of the property. If the strike is not settled prior to that period, they say five months will be required to pump out the accumulated water in order to permit resumption of mining activities. If the shafts of the mine are completely filled with water, it is believed that a year or more will be required to clear them.

It is frequently stated that the Kennedy mine will never re-open. In recent months the company has been engaged in the erection of a cyanide plant at a cost of \$85,000, the plant to be in operation early in 1935. The company, it is said will devote the plant to the processing of tailings which have accumulated from this and other mines over a period of years, the value of the tailings being estimated at from \$10,000,000 to \$12,000,000.

Recognition of the miners' union is the chief stumbling block in the settlement of the strike. The operators agreed to deal with their own respective employees, even though union men, but have steadfastly declined to deal directly with the union as a whole. The company attitude is that union recognition means the closed shop, whereby only members of respective unions are allowed to work, and under that condition the employer has no control over his employees and the union dictates hours, wages, and the right of hiring and firing of men.

About 500 miners are involved in the strike at the four companies. Prior to the strike, October 2, workers were receiving \$4.64 for an eight-hour day, six days a week.

LOS ANGELES



*Convenience
Comfort ~ Hospitality*

You will appreciate the excellent service and moderate rates. The city's most centrally located hotel. One block from Pershing Square—convenient to all leading shops, theatres, financial institutions and electric depots for all resorts. Starting point for parlor car tours. Complete ticket service for resorts and places of amusement. Garage adjoining.

All Outside Rooms—Each With Bath
One Person - \$2.50, \$3
Two Persons - \$3.50, \$4

Unexcelled Food—Friendly Prices

FRANK SIMPSON, JR., Director

Hotel Savoy
Sixth & Grand

PULMOSAN RESPIRATORS

Protection against
**DUST
SPRAY MISTS
SANDBLASTING**

for
**EVERY
NEED**

WRITE FOR
DETAILS

PULMOSAN SAFETY EQUIPMENT CORP
176 Johnson St. Brooklyn, N. Y.

H. J. Baron Company
**HELLEFORS
DRILL STEEL**

El Paso, Texas
Phoenix, Arizona, stock with
Allison Steel Mfg. Co.

**QUICKSILVER
FOR GOLD MINING**

Packed in 1-lb., 5-lb., 10-lb. Bottles and
76-lb. Flasks.

Write us for a delivered price on the above
quantities to any mine in the West.

QUICKSILVER PRODUCERS ASSOCIATION
560 Sacramento St., San Francisco, Calif.