

THE MINING AND METALLURGICAL JOURNAL.

Vol. XVIII., No. 2

LOS ANGELES, CAL., October 15, 1897.

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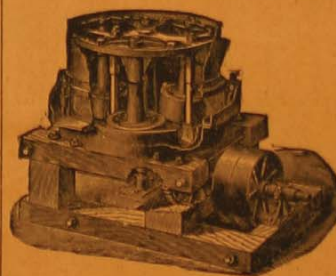
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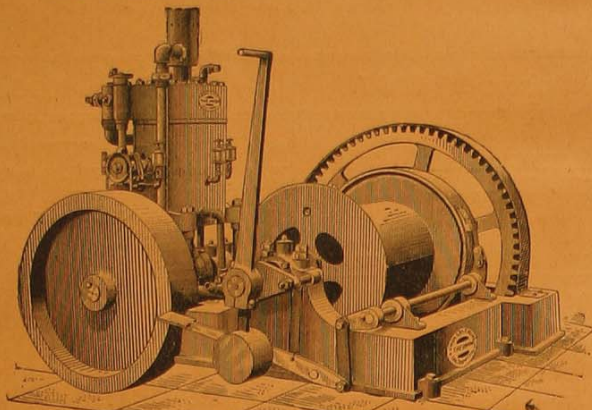
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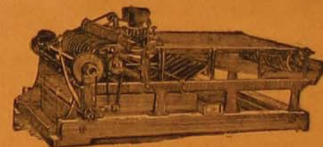
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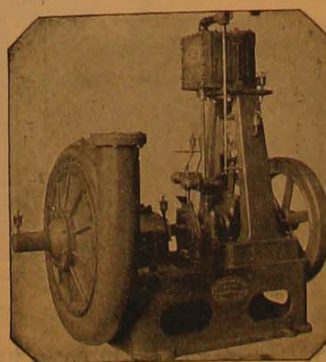
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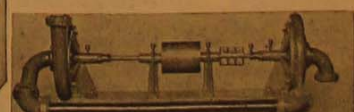
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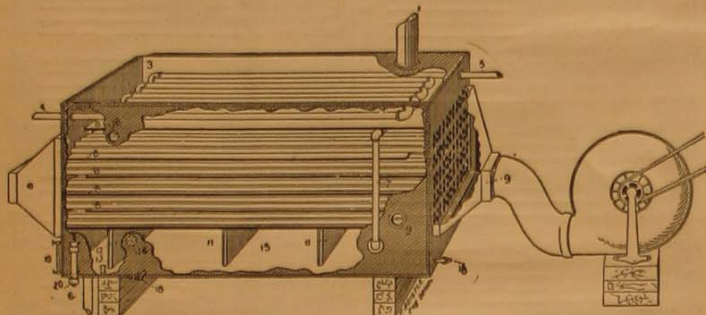
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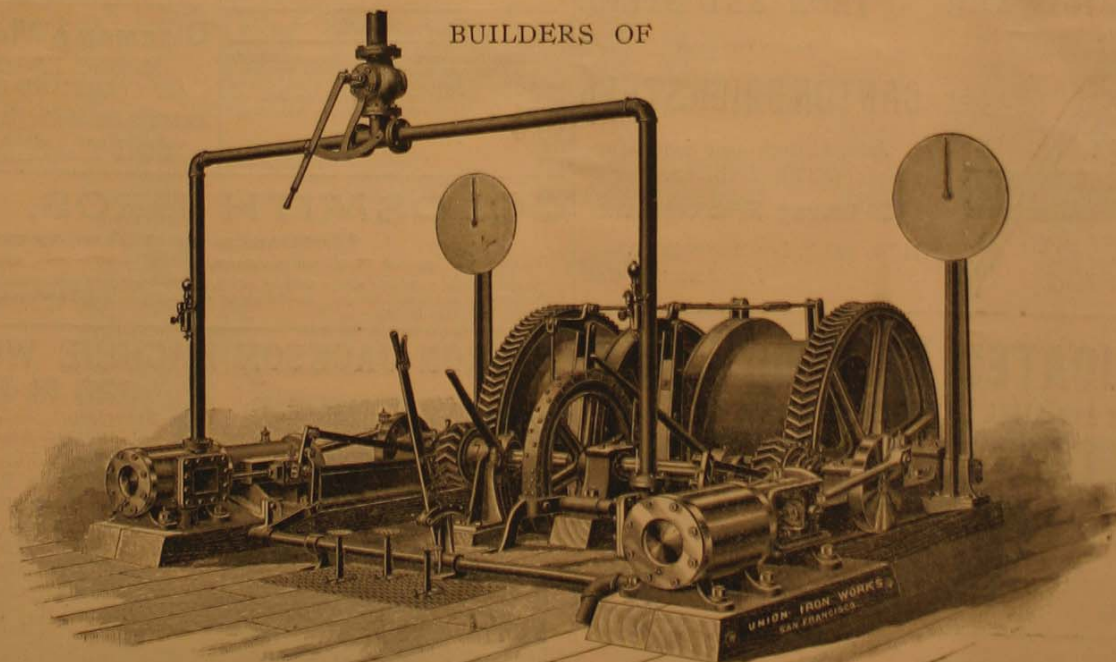
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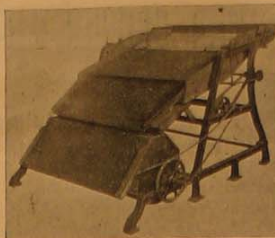
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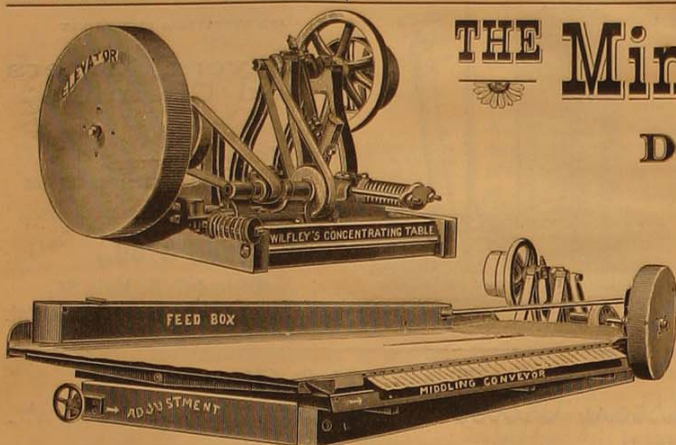
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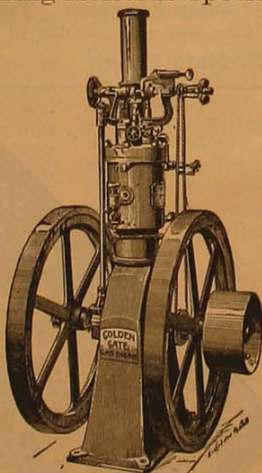
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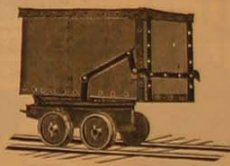
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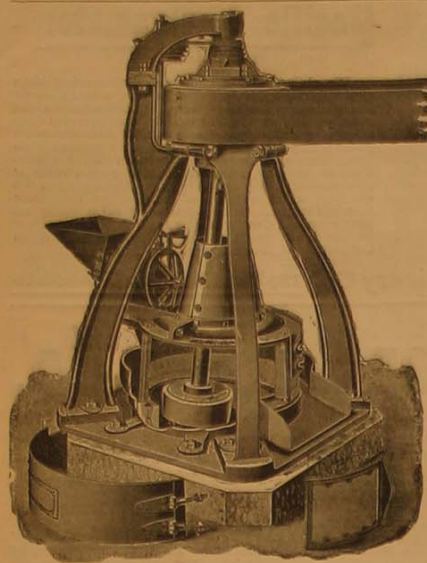
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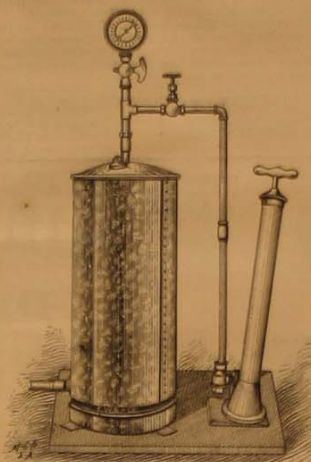
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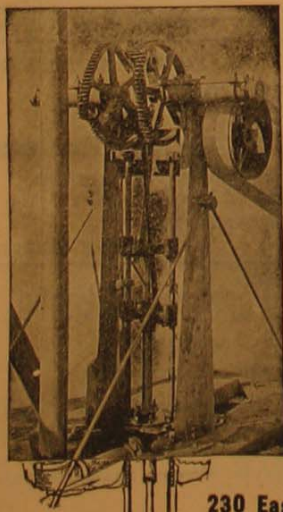
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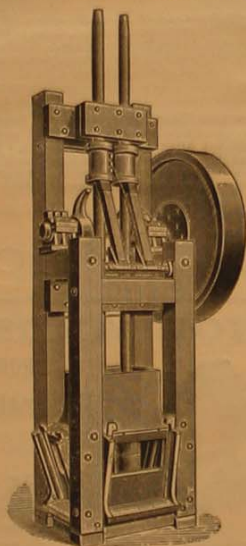
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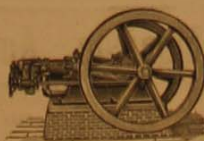
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RECORDING PROGRESS IN MINES.

The mineral wealth of a State is one of the nation's assets, and is worthy of protection and supervision with regard to its use by our successors in years to come. In every mining county there are to be found one or more abandoned mines, and in many cases several mines in a mining district. It matters not from what cause the mine has been closed but trade conditions change or ownership is vested in others than those last operating it and it is desired to reopen the long closed mine. The former manager, foreman and miners are gone from the district and there are no plans to tell how the workings are. In fact, there is a shaft in the ground and the new manager, owner, or the employees have no guide to aid them in the work of entering the now dangerous and unknown workings. They experience much difficulty and run great risks to life in the dangerous operation of entering the old workings. With a plan of the former workings in hand the operation is made more easy and safe, and it is the duty of every mine manager worthy of the name to leave such a record of his work so that his successors may be able to follow his work in years to come. Another case may be mentioned where a fall or cave-in has occurred in a mine and years afterwards under different ownership and management and different trade conditions it is desired to reopen the workings cut off by the fall or caved in ground, but there being no plan of that part of the mine great difficulty and accidents with loss of life are occasioned, where if a plan had been available the operation would have been made less expensive and possibly accident and loss of life avoided. For these and other good reasons it ought to be made compulsory on every prospector, mine owner or manager to place on record each year a correct plan and statement of the mining work done and

timber put in each prospect and mine in the State and deposit for record and safe keeping a copy of such plan and statement with the Recorder of the county and also a similar copy with the State Mining Bureau. Our plans of surface properties are carefully recorded and preserved, but any record of the underground operations in almost all of the States is a matter which is totally neglected. It is against the interests of the whole country to neglect such an important duty as recording the progress in mining development underground. It is a duty we owe to posterity to leave a record of our underground workings for their protection and guidance in years to come. The mine owner who neglects this duty is guilty of a crime, as his carelessness may cause loss of life at a future time. The subject is one which our State Miners' Association can take in hand and obtain the necessary legislation to have the mine plans recorded and the plans of the yearly progress of all prospects and mines hereafter added to these and made a matter of record as before suggested.

THE STATE MINERS' ASSOCIATION.

Before another issue of this journal can reach our subscribers the annual meeting of this association will have been held, as that event commences at San Francisco on the 18th inst. It is the duty of all mine owners managers and others, interested in the mineral development of this State who have the opportunity to do so to attend the annual meeting and give this necessary and worthy institution all the support it requires. Union is strength in the matter of obtaining State and Federal legislation in aid of our diversified mining interests and what benefits one branch in particular must necessarily benefit all indirectly. There is no way in which the Southern part of the State can bring its wants in regard to aids to development and increasing the support required to get aid and capital for the requirements of our Desert districts with regard to new lines of railway, water storage reservoirs in the mountains, water pipe lines to now camps, a smelting works in a central locality such as Los Angeles, and reduced freight rates to and from mines, recording mine plans and annual progress in prospects and mines, are among a few of the immediate requirements of this section. By attending the annual meeting you can further these and other good measures in aid of our local interests, which if neglected on this occasion, will be delayed possibly for another year.

CORRESPONDENCE

CALIFORNIA.

BALLARAT, Oct. 3, 1897.

All is activity in this part of the mining country. Numerous rich strikes have been made lately, none very large, but rich. Mr. King of Ballarat has lately struck a four-inch vein, the ore being rich enough to sit and pound out wages in a mortar. J. Dover and sons are taking out fabulously rich rock in the Gold Note group, some ore going \$50 per sack. R. T. Nevis became disgusted with camp and started out, going across a saddle in the mountains between Pleasant and Happy Canyon; he found a rich ledge, small, but big wages, and is now working the same. The Montgomery's are milling good rock from the

Jim Davis, Golden Star and World Beater mines. They have let a number of contracts to chloriders, and all are doing well. Mr. Stottler's mine, on Mineral Hill, is turning out very rich rock. Mr. Cooper has shipped considerable high grade ore from his mine at Stone Corral. A new strike has just been made by Mills and Vollmer at the head of North Park. The gold stands out like peas on the ore. Garrison and Coulter are taking out good ore in North Park. The property in Taber Canyon bounded by F. B. Peby and Donahan has turned out well and shows a big ledge of good ore at a depth of 145 feet. Considerable No. 1 gold ore is being mined in old Panamint, where years ago they all thought nothing but silver existed. Mr. Martin has just completed a new five-stamp mill at P. O. Springs. Montgomery's five-foot Bryan mill is running steadily in Pleasant Canyon. The five-stamp mill of Mr. Anthony will soon start up. The same has been tied up quite a while on account of lawsuits. Mr. Cooper's two-stamp mill at Stone Corral is running quite steadily. We are having some rain, and the Indians are now gathering piñon nuts, which are very plentiful this year.

TUOLUMNE MINES.

East Belt.

THE RIVERSIDE.

on South Fork of Stanislaus river, have just completed their new 10-stamp water power mill.

THE CONFIDENCE

struck some old-time rich rock the past week. The general average of the ore milled is exceedingly good. The owners are well satisfied with the output.

THE JUNCTION MINE

continues to show rich ore.

THE BLACK OAK.

The new cyanide plant gives great satisfaction. The mine looks as well as ever. This is one of the most valuable mines in the state. The monthly output is very large.

THE GOLD BUG

has erected a 10 horse power hoisting engine, sinking.

THE DRAPER MINE

is sinking a winze on the 300-foot level. The run shows heavy gold, although yet small.

THE ABONA MINE.

Surveyor Hopper has been making surveys the past week, determining boundaries of mine and mill site, also underground works. The vein is large, and may be considered high grade, worth \$14 per ton. Sulphurets are very rich. Main shaft sunk 150 feet; good rock in sight. Work is suspended, as owners are erecting a new hoist. The new 10-stamp mill is shut down, owing to lack of water for power, this being the off season. A large number of other mines are temporarily shut down from same cause—no water.

GAYNERE MINE.

Shaft sunk 300 feet; large ore body. Grading for a 20-stamp mill is in progress; mill will be running on rock in December next; ore dumps are piled up, awaiting mill.

THE PATTERSON MINE.

This old and heavy gold producer is about to be resuscitated; a 40-stamp mill is to replace the old 20; 25 men are employed. This shows confidence—that the owners have faith

that a new mine will be found. Shaft was sunk nearly 800 feet; large ore bodies, low-grade rock.

THE GOLDEN STAR
is running two tunnels on good ore.

THE ALAMEDA
struck rich ore at the 500-foot level, showing free gold all through the rock; vein large.

THE RAPPAHANNOCK.
Rich rock came to grass last week. The find will undoubtedly place this mine on the top list of gold producers in a very short time. This strike was made at the 600-foot level.

The majority of mines are still hung up—i. e., those that depend on water for power. Large retaining reservoirs are being built by the Tuolumne Water Company, so that in another year there will be no scarcity of nature's power. All the mines are guaranteed a full supply all the year round; besides, there will be several large electrical power plants finished this winter, so that mine owners desiring that power can be accommodated with all the power and light needed.

Fifty thousand dollars has just been taken out of the Lewis claim, Bald mountain. It is expected fully five thousand more will be extracted before the pocket will be exhausted, as the gold in sight warrants that statement. This is from the pocket belt.

ARGUS.

ISABELLA, CALIF., Oct. 6, '97.

EDITOR JOURNAL:—Noticing an article in your issue of 15th ult., in regard to Mr. Porter's new method of amalgamating, by the electro-chlorination process, reminds me that Erskine Creek, a short distance south of this place, was the scene of his first experiments in that line. He was baffled in his efforts to use the ordinary cyanide solution, on account of the refractory slimes sometimes encountered in this region; being an untiring student, he turned to electricity.

Mr. Porter has now returned to the scene of his early discomfiture; and I understand he is making a complete success in extracting the bullion from the ores which defied his former treatment. This success means more than the working of a single mine.

Yesterday, I saw Welch & Gilliam laboring with a certain class of their ores which, while it will assay several hundred dollars to the ton, will yield but a very trifling percentage of its assay value to any ordinary milling process; and these gentlemen have come to think that smelting offers the only promising solution in treating their heavy sulphurets. The mine is rich in both gold and silver, and Porter's process may yet add hundreds of thousands to its value.

I understand that the Russian Bear mine at Glen Olive, also south of this place, is at present yielding ore of extraordinary riches; but the express company having withdrawn their service from this route, in retaliation for the robbery of a year ago, men resort to all kinds of expedients to get their bullion to market, and great difficulty is offered in tracing the output of the mines.

The Pioneer mine may be expected to eclipse its previous record.

As a rule, private mining enterprises in this section are meeting with a high percentage of success, while stock companies, as a rule, prove to be either frauds or failures. This seems to be the history of forty-five years of mining here as a rule.

STEPHEN BARTON.

MEXICO.

CIUDAD DE MEXICO, Oct. 6, '97.

EDITOR JOURNAL:—One of the most important mining deals, and probably the largest that has ever been attempted in Mexico, is about to be consummated in the transfer of the extensive copper deposits, known as the Inguaran Copper Mines, to the Rothschild syndicate. The deal involves not only the purchase of these mines, at the enormous sum of \$6,000,000 in gold, but the subsequent construction of a railroad from the mines to the Pacific Coast, a distance of 240 kilometers, at a cost of upwards of eight million dollars, as well as the erection of immense reduction works to treat the vast output that these properties will yield.

These mines are located in the State of Michoacan, whose copper deposits have long been recognized as the largest in the Republic.

The Inguaran mines comprise a mineral extension of 2000 mining claims, with a copper deposit 500 feet in width extending along the entire length of these claims. A prominent French mining expert who reported on these deposits estimated twenty million tons of copper ore in sight that will average 4 per cent copper.

Mr. Carlos Eisenmann, of this city, who is the main promoter of this immense deal, and who sold the famous Boleo copper mines in the northern part of the Republic to the same syndicate, is now at the mines with a corps of mining experts and civil engineers, who are making a thorough and final examination of the properties, as well as a preliminary survey of the projected railroad.

PUENTE.

Miscellaneous Mining News.

ARIZONA

Mr. George T. Hoyt of this city is bobbing about Cochise county, Arizona, backed up, it is said, by a number of local capitalists who think they have several good things thereabouts. He has recently bonded four mines in the Huachuca mountains that are described as excellent prospects, with a good future. The claims are contiguous, being located near the Post Canyon, where there has been considerable activity for some months past. The claims and owners are: Mountain Dew, owned by John Burke and L. Scranton, price \$10,000; Excelsior, owned by John Burke and J. J. Poe, price \$10,000; Miracle, owned by Jerry Sheehy and Patrick McCarty, price \$10,000; Klondyke, owned by John Poe and Robert Downey, price \$10,000.

CALIFORNIA.

KERN COUNTY.

Steve and Robert Price and J. W. Kelly have bought the combination, which is an extension of the Meteor, paying \$2,000 spot cash.

The Little Butte has established a level at the depth of 385 feet, and is now drifting both ways in a vein of good ore. It is expected that the twenty-five horse power gasoline engine will be here within the next two weeks.

A trip up to the Rand group showed much activity; men are working at all points taking out ore and doing development work,

and teams loading ore to take to the mills at Garlock. The old hill seems almost a solid body of ore, much of which is high grade and all of which is easy to mine.

The Minnehaha and Philadelphia are moving along in their accustomed grooves and taking out good ore.

The machinery for the Johannesburg stamp mill is at Kramer and will soon be on the ground. The grading is completed and the work of erecting a large tank is now going on. It is hoped to have the stamps dropping within the next thirty days, though unforeseen delays may slightly prolong the time.

At the dry concentrator all interested parties are smiling and good natured, as well they may be. The dry concentrator is an unqualified success in every way. It comes as near saving everything as anything yet invented in either wet or dry process. If there is gold in the rock, be it ever so small, the little wizard-like machines will find and produce for the use of mankind. It has solved the vexatious problem of the dry reduction, and made the desert mine, heretofore worthless, a possible bonanza.—*Randsburg Miner*.

SAN BERNARDINO COUNTY.

G. H. Harn has purchased the entire interest of T. B. Lyon in Virginia Dale, and has also bonded the O. K. and Bob Ingersol mines. These properties he will commence to work at once, and will erect a mill as soon as he can get it here.—*Free Press*.

SAN DIEGO COUNTY.

The Mountain View Mining Company sent out from San Diego a big load of men, tools and provisions, on the 13th inst., to its property in the Julian district. Work is to be vigorously prosecuted under the superintendence of C. L. Hubbs. The first work will be the taking out of a "mill run" of high grade ore to be treated at the Owens mill at Julian, and immediately following permanent development will have precedence.

On the 16th of the present month several men will leave San Diego to go out and develop the property of the Laguna Mining Company in the Laguna mountains, a lot of "treasure" stock having been sold to provide for the purpose.

Report comes by letter that ruby and horn silver has been struck in the Alpine mine in the Laguna mountains. It has been known that some portions of the vein or ledge were rich in silver and lead.

The famous Bay Horse mine, which is represented in this city, seems to have some annoying litigation ahead of it, says the *Express*. Captain Polhamus of Yuma this week came in to that town from the Mesquite district, where the mine is located, and stated that the property was claimed by him, in that on the 27th of February, 1896, he had filed two claims to the exact territory now worked by the Bay Horse people and had recorded them in San Diego. He claims that he had complied with all of the provisions of the law, and that he has proof and to spare that he made the locations as claimed. He has gone to San Diego to perfect his claim to what is considered one of the most wonderful mining districts in the West, and intends to force the issue.

C. W. Witham & Co. have located some new copper claims joining the old Encinitas copper mines, and have some twenty teams at

work hauling material from San Diego for the purpose of constructing a dam some sixty feet high across a gulch to form a reservoir of sufficient capacity to furnish them with all the water necessary to carry out their scheme. They are trying to purchase about 200 acres of mineral land of the Encinitas grant. They intend to put in a smelter, and have been offered fifteen acres of land by Mr. Reseck in a suitable place to be used for that purpose. Quite a number of loads of cement, lumber and other material for the dam are already on the grounds.

COLORADO.

The San Juan Mining and Development Co., the properties of which are located in the Animas mining district, near Silverton, in San Juan county, Colo., and whose main office is in San Diego, Cal., where the president of the company, Mr. C. L. Warfield, resides, includes a half dozen or more valuable claims on which \$11,000 have been expended in development. The assays of the surface rock give a total of gold, silver and lead of \$49.05 per ton, and still no returns of copper are made.

Another increase has been made in the shipment of manganese iron ore from Leadville, Colo., to the Illinois steel works, and they now amount to nearly 150 tons daily. It is stated by representatives of the steel company that still further increases will be made.

A discovery has been made of nickel in the Cepango district, on the Little South Fork of the Poudre river, in Colorado.

IDAHO.

John W. Eddy, of Helena, was a visitor at Gibbonsville last week, and was looking after his mining interests at that point. The gentleman is one of the owners of the Twin Brothers property, and it is thought that another company will be formed to work several of the valuable properties in the vicinity that are now lying idle.

An important mining deal was consummated at Salmon City last week, when the entire plant and mill of the Italian Gold Mining and Milling Company was transferred from the present owners to William E. Hubbard of Salt Lake City, Utah, the consideration being \$50,000. The mine has been under bond for several months to R. W. McBride, to whom the credit of making the sale is due.

P. L. Gaarden, who, in company with Mr. Gailey of Pittsburg, has an option on the Golden Rule mine, joining the Placer Basin, near Weiser, has struck the ledge he was crosscutting for. It was so small where cut that the miners nearly missed it, but on drifting they proved it to be the edge of what promises to be a very rich chute of ore. Chunks of quartz were taken out in the first few feet that showed lots of free gold and sulphurets.

Walter Paxton, who has been at work in Charlotte Gulch, near Grimes Pass, says John Myer's little three-stamp mill, recently put up on a mine owned by Mr. Myer, Nels Botcher, the Bunch boys and Naz Carpentier, has been crushing good ore. After a three weeks' run something over \$800 was cleaned up. Considering the size of the mill, the clean up was extra good. The stamps weigh only 150 pounds each.

MONTANA.

(Extracts from Western Mining World.)

H. W. Shearman and others have incorporated the South Boulder Mining Company, with a capital stock of \$10,000.

A rich discovery of copper and gold is reported as having been made in Capt. Lyons' mine at Rock Creek, three miles above Quigley.

At the Bob Ingersol mine, up Mill Creek, near Sheridan, the new hoist is now being placed, and every preparation made for active and extensive development.

It is reported here that the parties operating the cable-way placer machine on German bar have taken up their bond on Phil Conrey's ranch, at the mouth of Alder Gulch, preparatory to very extensive operations next year.

The Murray district, which is tributary to the Castle road, is beginning to ship a little copper ore. There are good copper leads in the district, and when the mines are developed, it is expected that a large amount of ore will be shipped from there.

It is reported on good authority that Geo. Hammond has made a rich strike between Georgia and Nugget, in Madison county. A representative of the smelter company was there last week, but no satisfactory deal could be consummated for the ore.

Ore continues to come out of the Little Nell, near Lump City. Dr. Head says the upper levels of the mine are being stoped with profit. The force of men is small, but a carload of high grade ore is going to the East Helena smelter every fortnight.

W. H. Albright, of Great Falls, is arranging for the development of his mining property near Montana City. Mr. Albright has the contract for furnishing the Great Falls smelters with lime, and delivers about 200 tons per day to the Boston and Montana and the silver smelter.

Senator Hoffman's mine, near Iron Rod, Madison county, is getting to be quite a producer, and the ore for the present is being reduced at the Iron Rod mill. As a result of 15 days, Mr. Hoffman brought in about \$5,000 of the yellow metal the other day, and there appears to be lots more where that came from.

NEVADA.

Smelter Blows In.

On the 28th of September, the furnace of the Boston-Nevada Copper Mining Company's smelter was blown in at Yerington, Lyon County. Everything went off like clock-work; not a hitch, not a change in any part of the work. H. A. Keller, a prominent metallurgical and mining engineer of San Francisco, and a man who has had over fifteen years' experience in Leadville and Butte, complimented O. B. Hardy, under whose supervision this smelter was erected, that no change of any kind was necessary at the test. Mr. Keller says that it is very seldom that new works of this kind are started up without a number of changes being necessary before the plant can be successfully operated, and that the successful operation of this smelter is due to the knowledge and management of Mr. Hardy.

The smelter is now running steadily and turning out over eight tons of matte per day.

This will keep teams on the road continuously to Wabuska, where the matte is to be hauled and shipped east.

The plant is a large one, and so constructed that another furnace can be added with but very little expense. If the expectations of the management are realized, another stack will be put up in the early spring. A. Whitman, of Massachusetts, has been installed as assistant superintendent.

Capt. John Fagin last week sold a three-quarter interest in the Ruby copper mine, near Lunning, to Mr. O. B. Hardy of Mason Valley. The consideration named in the deed is \$2,000.

NEW MEXICO.

Output of Hillsboro gold mines for the week ending Thursday, Oct. 7th, 1897, as reported for *The Advocate*:

	Tons
Wicks.....	50
Butler.....	5
Richmond.....	15
Happy Jack.....	10
Snake Group.....	55
Opportunity.....	10
Sherman.....	5
Prosper.....	5
Eighty-five.....	5
Rex (silver-lead).....	5
Total.....	165

Total output since Jan. 1, 1897,—7,239.

The Llewellyn Cyanide Company are employing all the men they can get to work on their leased mines and in construction of the works. A large stock of supplies and provisions has been laid in and is arriving at the headquarters store, on Dutch gulch. Machinery is beginning to arrive and there is every indication that the Company will make rapid development of the Animas Peak district, Hillsboro.

Some samples were recently taken out of the Rebel Chief No. 2 at Elizabethtown in Colfax county that assayed better than \$6,000 to the ton. This, of course, does not represent the ore, but they have considerable ore that will go over \$100 to the ton. Mr. Pat Lynch says the rock bears a great resemblance to Red Bandana ore. Mr. Manning has 28 men at work now and confidently expects to have 100 men at work ere long.

Ore hauling from the Lone Star mine to the mill at Bland has been steady all week. The mill is at present treating this ore and good results are expected. The rich ore body in the Lone Star mine still holds out and the force at work there continues producing large quantities of it.

We are in receipt of a copy of the *North-west Mining Mirror*, a publication recently launched at Tacoma, Washington, which bids fair to rival any other mining journal in the State of Washington. There are twelve pages in all, and it contains a good list of advertisers, accompanied by a creditable selection of mining notes. We wish the new enterprise all the success attainable, and extend our hearty co-operation in every way possible.



VICTORY MINE, GLENDALE, DOUGLAS COUNTY, OREGON

OREGON.

Some Southern Oregon Mines.

There has been, and still is, less mining in Douglas county than in either Josephine or Jackson counties, says the midsummer special edition of the *Oregon Mining Journal*; the county is, however, within the Southern Oregon mineral belt, and the formations are similar to those existing in the other counties named. In early days, considerable gold was obtained in the South Umpqua and Cow Creeks and their tributaries, and both of these streams are still the seat of considerable mining operations.

On Steamboat Creek, in the northwestern part of the county, is the farthest point north where gravel has been worked for gold. This creek is an affluent of the North Umpqua. On all other tributaries of the North Umpqua gold can be found. However, but little mining has been done in this section. Some prospecting has been done there, and some good quartz has been found. The district also contains some copper found in serpentine.

The most noted tributary of the Umpqua is Cow Creek. The gravel of this creek has been worked for over thirty years. The placers are still extensive, and some noted bodies of deep gravel are found. On Tennessee Gulch, some twenty miles up the creek, some good mining ground is also found. Just above the mouth of Tennessee Gulch is the Union quartz mine, which has been extensively worked, producing some very rich ore, treated in an arrastra. The vein is small, however. It was in this vicinity that the "Starve Out Strike," otherwise known as the Green Mountain mine, was discovered some years ago, and is a well-defined ledge, some six feet in width. Another discovery in this creek was an iron mine. There is also found considerable copper.

But the principal enterprise on Cow Creek is the Victory mine, near Glendale, the property of the A. B. C. Company, a corporation whose chief stockholders are residents of Chicago. The president of the company is John

Addison. This property until lately was operated by the Victory Placer Mining Company, of which Col. Taylor was manager and promoter. There are several hundred acres of rich gravel, but the difficulty has heretofore been the insufficiency of water.

To supply this, Col. Taylor undertook to erect large pumps; but, before he could demonstrate his ability to mine profitably by this means, the company became involved in financial difficulties, with the result that the property was sold under a judicial decree, and purchased by Mr. Addison and his associates. To increase the water supply, the new company is now constructing a system of ditches, 25 miles in extent, which will tap several creeks putting into Cow Creek, and which, it is claimed, will furnish ample water for the greater part of the year.

One of the most noted districts in Southern Oregon, and one which is the oldest in the country, is Galice Creek District. It lies about twenty-five miles west of Grant's Pass, in Josephine county, and gets its supplies from the above city. Merlin is the nearest point on the railroad. From there a wagon road runs for six miles to Crow's Ranch, where a trail covers the balance of the distance; but steps have been taken to build a wagon road in lieu of this old trail.

The largest, most prominent, and best-equipped hydraulic mines here are those of Judson Bent and Adin Alexander, both of whom reside in Southern California.

The Alexander and Bent mines are located near the junction of Galice Creek and Rogue River. They consist of 757.89 acres of gold-bearing gravel, covered by United States patent. The ground covers a channel four miles in length, and is divided by the right-hand fork of Galice Creek into two separate mines, each having an independent water supply. The upper property, which is at the head of the channel, is supplied with water by a ditch seven miles in length, from the left fork of Galice Creek. The lower property is supplied by an eight-mile ditch, from the right fork of the creek, and by a $\frac{3}{4}$ mile ditch from Rock Creek.

The lower property is fitted up with all necessary buildings for mining, also a saw mill and fine blacksmith shop. Two giants are run day and night throughout the mining season, that is from seven to nine months in the year.

Just north of Alexander and Bent's mines, in the same old channel, high up above the Rogue River is the Rocky Gulch mine, which is owned and operated by an incorporated company, the chief stockholders of which are L. L. Jewell, J. W. Sherer and S. S. Prentiss, all residents of Grant's Pass. The ground cover 140 acres, and includes five distinct channels, lying along the mountain side, one above the other. This ground has been worked off and on for the past 20 years, with varying success. The present owners have done much to equip the property: a ditch several miles in extent has been built, and a large reservoir constructed.

The other mines in the district are Elwell & Gass, who have only recently partially equipped their property on Straton Creek, and a few others.

The hydraulic mine of Eugene Merrill, an illustration of which we print herewith, is equipped with one giant, and has plenty of water to operate it nearly the whole year round. The gravel banks are not as deep as the Alexander and Bent mines, but it is stated that the gold is more evenly distributed. They have excellent water rights and possess good dump facilities.

The *San Bernardino Free Press* has very kindly placed us on their exchange list. The *Free Press* is a bright, newsy, little weekly, and a strong advocate of the free and unlimited coinage of silver at 16 to 1. It contains considerable first class mining notes.



EUGENE MERRILL MINE, GALICE CREEK, JOSEPHINE COUNTY, OREGON

UTAH

The Mercur Mercury, in its weekly mining review, says:

This week, in the Rosa, on the hillside, facing the Chloride Point, the shaft broke into an ore body running from 60 to 65 per cent. lead and from 150 to 300 ounces silver. This strike was made at a depth of 80 feet, and at the time our information was obtained it was not known whether the ore was in a vein or occurred in a pocket. The Rosa lies between the C. L. C. and Columbia lodes, and is owned by Frailey, Parks and Lambert.

Rumors of an October dividend at the Sacramento are in the air. It is known that the mine and mill are operating very successfully. The Sacramento gets bigger every day, and those who have been holding the stock and backing their faith with their money, are bound to be amply rewarded.

WASHINGTON.

Hydro Smelter at Work.

The works of the Hydro Smelting and Refining Company, at Lake View, were put into operation a few weeks ago. Many people were present to witness a practical demonstration of the merits of the new invention, which combine the requirement of only a few men for operation, cheapness of production of necessary heat, and great saving in the cost of construction, compared with the old method of smelting and refining.

Although the works have a capacity for 80 tons of ore a day, only half a dozen men are necessary to operate with ease, and the entire plant can be manipulated from one stand by one man. It is the hydro-carbon process, regulated by valves, so that the operator can get any temperature he desires at mill.

The company is using mixed ores at present, some of which are very refractory.

The plant is designed to smelt precious metals, wrought, pig and Hemetite iron, and can be adapted to matte furnaces. Some very creditable specimens of wrought and pig iron and steel have been produced by this process, and can be seen at the office of the company. Also some fine specimens of bar bullion, weighing 118 pounds each, which have been produced.

The merits of the invention are utility and economy in operation, and cheapness of construction, the latter permitting the erection of the smelter at the mine, thereby saving the cost of transportation of ore.

The company will run the Lake View smelter commercially, and build plants throughout the western states through their agents. J. R. Bradley, a gentleman of wide experience in mining matters, has been made general agent, and will enter upon his duties at once.

It appears that the Hydro Company has rosy prospects for a large and extensive business in the near future.—*Northwest Mining Mirror.*

In the Brimstone mine, located near Nelson, there are stringers of tellurium, from which assays running as high as \$2,600 have been obtained.

The Golden Fleece Mining Company has begun operations on their placer claims, the Third Chance and Last Chance, near the Republic, and are taking out coarse gold in paying quantities.

The owners of the Belle of Waneta group on Fish Creek, near boundary, are arranging to work and ship ore at an early date. For date. For the present they will ship only that of above 45 per cent lead, 60 ounces silver, 6 per cent copper and about \$5 in gold to the ton.

The Wells Fargo Mining Company has organized, and will start work on the Wells Fargo mine, located on Huckleberry range in the Springdale district. Considerable work has been done on this claim, and the ore is lead carbonates, assaying as high as 75 per cent lead and 30 ounces in silver.

A force of men was put to work this week on the Gentle Annie, owned by the Antle Gold and Silver Mining Company. A cabin has been built and arrangements made to work this property all winter. This is the result of a visit of the company's president, J. W. Douglas, a month ago. Mr. Douglas was much pleased with the showing made and the work will be continued on a much larger scale.

The Copper-Gold Mining Company is now one of the most substantial companies operating on the Colville Indian Reservation. Mr. Baker has returned from the east, where he floated all the stock deemed necessary for the development of the mine, it being 100,000 shares. For the present, there is no more Copper-Gold stock on the market. The company's claims are the Ironsides and Black Bear, located on Toulou Creek, about a mile and a half from the Bossburg and Grand Forks stage road, and less than eight miles from Bossburg. The original owners were John Ranahan, T. B. Mitchell and Chris Ness, and who are principal stockholders of the company, the former being the president and manager. Five assays, from a depth of about 20 feet and less, taken from the main ledge, went \$41.65, \$60.10, \$51, \$48 and \$26.65, making an average of \$45.48 to the ton, principally in gold. Work is now being prosecuted day and night on a tunnel, which will crosscut this ledge at a depth of about 250 feet, and at the present progress the main ore chute will be penetrated inside of 60 days. They are now in 45 feet and are working in heavily mineralized rock.

FOREIGN MINING NEWS

BRITISH COLUMBIA.

(Extracts from the B. C. Mining Record.)

A four-foot ledge of nickel ore has been found in the Trout Lake district, B. C., near Ferguson.

The huge bodies of low grade ore on Jer-vis Inlet are being noticed by capitalists. These mines are but seventy miles from Vancouver.

Of the Channe Mine Company's properties in Kootenay very good reports have been received. The Maple Leaf, situated on Wild Horse Creek, is showing up well, the lead having widened from three and a half to seven feet with good indications. On the Centaur, twenty-five miles from Golden, the outcrops assay from \$16.00 to \$34.00, and on the Book Rest and Golden Hope, at the head of Ice River, the lode, which is three and a half feet wide, assays from \$76.00 to \$194.00.

Members of the Golden Cache Company left for Lillooet last week to be present when the mill is put in operation.

Mr. J. R. Seymour, who visited the Lillooet and Fairview districts last month, gives a very glowing account of both camps. The Excelsior Mine adjoining the Golden Cache, is the talk of the camp. The tunnel was in 100 feet at the time of his visit, and assays taken at eighty-feet from the mouth ran \$79.00, \$40.00, \$32.00 and \$10.00.

There are many mining products produced in Cariboo. Near Quesnelle is found lignite, also on the tributaries of the Upper Horsefly and in a formation similar to that in which occurs the coals of Southern Alberta. (Medicine Hat and Lethbridge.) It is quite probable that where this lignite is found coal exists below.

On the divide between the Clearwater and Quesnelle water systems are huge bodies of galena, which are at present being exploited very quietly. South lie the Micha Mountains, well earning their name from the tremendous beds of mica which they hold. West and northwest are the mountains surrounding Horsefly, Quesnelle and Cariboo Lakes, extending to the Barkerville division in Snowshoe, Yank's Peak, Bula Mountain and Island Mountain, all containing quartz ledges well worth exploiting. At present only Snowshoe and Island Mountain are getting any attention, but they are all worthy of it.

Cariboo has hundreds of thousands of acres of promising but unexploited ground for placers, miles upon miles of quartz reefs, gave British Columbia her first lift towards making her the choicest state in America.

Work on the Blue Jay is rapidly progressing, Mr. Latimer having taken a contract to drive a tunnel some hundred feet in length, and from the continued explosions heard in Vernon that gentleman must be in a hurry to complete his work.

The hundred-foot tunnel on the Denzy has been completed, and Mr. G. Stumps has taken a contract to drive sixty feet farther in, and splendid results are anticipated. The owner, Mr. Kempson, recently arrived at Vernon and expressed himself well satisfied with the appearance of the property.

The Morning Glory Mining Company are now hard at work putting in their stamp mill, which, after much delay, arrived in Vernon from Denver, Colorado, last week, and the owners have every hope of showing that they have not invested their capital for nothing.

Very encouraging reports are brought in to Vernon from the Silver Queen, one of the Silver Star claims, where work is being prosecuted by the energetic prospectors.

The old War Eagle Company will pay its last dividend in a few days. The War Eagle, it will be recalled, sold its mine to a Canadian syndicate and afterward disincorporated. Treasurer Lucas was at work last week calculating the value of the remaining assets, and said there would be about \$22,500 to be divided among the former shareholder. This would give a $4\frac{1}{2}$ per cent dividend.

Since the mine was sold for \$700,000 it has paid a dividend of six cents a share, or \$30,000. There are 500,000 shares of the stock, so that when the final dividend has been paid the owners will have received a trifle more than \$1.50 a share as the proceeds of the sale. Prior to the sale the mine had paid \$187,500 in dividends. So, all told, the War Eagle Mine has returned its owners \$340,000. This, for an expenditure of about \$30,000, is not bad, being a little more than 31 for 1. But the original owners did better than that. The

original War Eagle Company owned the War Eagle, the Iron Mask, the Virginia and the Poorman. The big company was cut up into four companies and the stockholders in the original company received shares in each of the new companies equal in number to their holdings of original War Eagle stock. Thus the owner of 25,000 shares of War Eagle stock received in addition to these shares, 25,000 shares in the Iron Mask, 25,000 in the Virginia and 25,000 in the Poorman. At one time the Iron Mask sold briskly at about 75 cents, and some shares were sold as high as 85 cents. Virginia sold for 20, and Poorman for 12 to 14. So original owners who sold at these figures received more than \$2.50 per share for their original holding. Mining men just down from Rossland report that the War Eagle and the Iron Mask are showing up well under development. It is said the owners of the War Eagle intend to push development work for two years before trying to pay dividends, and that they expect then to enter upon a long period of dividend paying.

The No. 1 furnace of the Hall smelter at Nelson, which has been idle for a time, is to be converted into a lead furnace.

Col. Baker, minister of mines, has bonded a group of six claims on the south fork of St. Mary's river, East Kootenay. The bond for the payment of \$60,000 is in easy installments.

The Iron Cap mine, Kamloops, is now shipping, the ore assaying nine ounces in gold and 18 per cent copper. This is the property Patsy Clark bonded, sunk down on it 50 feet and then threw up his bond.

Although the Cariboo Mining, Milling and Smelting Company suffered a loss of \$12,000 in stolen bullion and legal expenses incurred in connection with the theft, and expended \$6,000 in new machinery, it has paid during the past year \$78,836.84 in dividends, and has \$21,297 in the treasury. To date the company has paid \$156,964.76 in dividends.

A shipment from the Athabasca mine, near Nelson last week, consisting of twenty-nine tons, gave a smelter return of \$97.70 per ton. Twenty-seven men are now employed at the mine, and only a portion of the ore taken out is being shipped. The balance, which is free milling ore, is being put to one side for the mill, which will probably be erected this winter.

Sandon Notes.

It is reported that the Payne has struck a large body of ore in the lower tunnel.

The Last Chance struck ten inches of clean ore and two feet of carbonates in the No. 3 tunnel, when in 240 feet. A rich strike was made on the Hillside claim at White-water. In the incline shaft, being sunk on the vein, at a depth of ten feet, six inches of clean ore and carbonates and two feet of scattered concentrating ore was found on the foot-wall. The ledge, which is eighteen feet wide on the surface, is strong and well defined, and as the ore chute is widening with every foot of depth, great results are expected. The Hillside is one of a group of four claims belonging to the Hillside Silver Mining Company. E. C. Ward and Frank Fortin, who hold interests in the company, are in charge of the development work.

The *B. C. Mining Critic* says: The offer of Mr. W. H. Remington, of Seattle, to provide Vancouver with a smelter of 300 tons daily capacity, in return for a civic bonus of \$100,000, payable at the rate of \$1 a ton on output is, although the bonus asked is larger than at first expected based on the business lines of actual operations and pro rata. The offer is, therefore, well worth full consideration by the City Council. Perhaps it may induce a similar business-like proposal backed also by guarantees of solidity, from the Mr. J. H. Rothschild, of London, England, who has so long been promising great things in regard to smelter working in or near Vancouver. The Coast and Island mines stand in growing need of smelter provision in or about Burrard Inlet.

HONDURAS, C. A.

San Juancito is situated about seven leagues easterly from Tegucigalpa, the capital of Honduras, in a cluster of mountains which rise to an elevation of some 7,500 feet above the sea. The climate is fine, ranging in temperature from 50° to 85°, and with vegetation from palm to oak, while the fruits and vegetables include everything, from the tropic banana to the familiar 'high bush blackberry' of the New England States.

The Rosario mine is the largest enterprise of the kind in Central America. Its mills, and the habitations of its employees, constitute the village of San Juancito, which it owns root and branch, furnishing medical attendance, police, and even school teacher.

The mines of this company have been working for about 17 years. They are opened entirely by adits and tunnels on the vein. The two largest tunnels are each between 4000 and 5000 feet in length. There are at present nearly eight miles of tunnels, in all. The principal entrance to the mine is a little over a mile from, and 1200 feet above, the mill at San Juancito, with which it is connected by a wire rope tramway. An efficient telephone service connects the different departments and the works are lighted by electricity.

The ore carries both silver and gold. The mill has 35 stamps, and is equipped for pan amalgamation and vanner concentration, with roasting furnace for concentrates.

To this date the company has paid over \$800,000 in dividends, of which \$120,000 has been paid since Jan. 1, 1897.

Yours truly, C. W. KEMPTON.

LOWER CALIFORNIA.

The Piedad Group Bonded.

The Piedad mine in the Jacalitos district, together with a number of adjacent properties, and known as the Piedad group, has been bonded to a Los Angeles company, of which ex-Governor Markham of California is a member. Mr. Louis F. Kwiatkowski, who has passed quite a portion of the past year on the Peninsula, is the representative of the company at Ensenada, and he and Mr. W. F. Schroeder of Los Angeles, who is also interested in the mines, were in Ensenada last week, preparing to commence developments.

Considerable work has been done on the Piedad mine in the past few years. The shaft is down 150 feet with quite extensive drifts and cross-cuts, and there is a five-stamp mill on the property. About a year ago there was an attempt at a sale with rather unsavory complications, since which time all work has

been suspended. It is only recently that this unfortunate tangle of affairs has been straightened out, and now that the mine has been secured by a company for the honest purpose of development, some decisive results may be anticipated in that district.

Besides the Piedad mine the company has acquired quite a number of promising prospects in the same vicinity, more or less developed, and Mr. Kwiatkowski states that work will be commenced immediately with a large force of men.—*Lower Californian*.

In the Buena Vista mine at Alamo, Joe Goyotte, the owner, has struck a fine 2½-foot ledge at a depth of 65 feet. Many samples of this ore are full of free gold and the general average is in the neighborhood of \$100 per ton.

Work was commenced last week on the air compressor to run the Rand drills in the Aurora and Moctezuma mines, and as soon as the balance of the machinery arrives in Alamo these properties will start in on a large scale.

The St. David mill, under the superintendence of Mr. Saville, is running day and night, and the supply of ore in that mine seems to be unlimited. At the Aurora, one of Alamo's largest mines, they are still cross-cutting for the ledge on the 140-foot level. The indications are very favorable for them striking the pay-shoot in a short time. The other day they struck a fine body of quartz on the cross-cut on the 180-foot level on the Moctezuma mine. It prospects very fine and at the present writing they have not determined how wide the ledge is. They have gone in three feet, but have not yet struck the foot-wall.

Reports from the Viznaga mine are very encouraging; a four thousand-dollar gold brick was brought to this city the other day. The ledge is holding stronger than usual and the ore is getting richer all the time.

MEXICO

Yaqui Gold Fields.

The first of last week Capt. T. C. Cox, of California, returned from the Bonancito region, in the Yaqui country, where he went to examine the newly discovered placer fields, of which considerable mention has been made of late, but no accurate information has been forthcoming. The gentleman went to examine only the property included within a certain concession, and passed judgment on no other portion of the region visited; but he is profuse in praise of the property he explicated. He says that the ground is very rich and will pay handsomely to work. A concession covering about 150 acres of land, the very pick of the entire ground, had been secured, and Capt. Cox's mission was to examine that in the interest of a syndicate which will take advantage of the opportunity and work on an extensive scale. As soon as the treaty of peace between the Yaqui Indians and the Mexican government was signed at Ortiz, on May last, Mr. P. B. Chisem went immediately into the region, took his pick of the ground and secured the concession. During twenty-five years he had known of the value of the region, but never before could it be prospected. The Yaquis were an effectual obstacle.

Ever with an eye open for good investments, Messrs. Harlow & Gowan, learning that Mr. Chisem had succeeded in heading off

all competitors and had obtained absolute title from the Mexican government to the new El Dorado. Mr. Gowan of the firm immediately proceeded to Guaymas and succeeded in obtaining a bond on the property, the result of which is the forming of a powerful syndicate of capital to handle the proposition. They enlisted men of heavy capital residing in Phoenix, San Francisco and the east, and Capt. Cox, an eminent expert from California, was sent to examine and report.

"El Bonancito" is a rolling valley, about thirty-five by sixty miles in area, and the locality therein visited by Capt. Cox is only thirty-five miles from Ortiz station, on the Sonora railway. The road from the station is good, being almost level the entire distance, but one small canyon to pass through and only two or three low hills to overcome.

The formation is a decomposed granite, the gold is coarse and heavy, and all the water necessary for operation is easily procurable.

Capt. Cox states that in the region are many very valuable quartz ledges upon which

BURNETTIZING.

This process was proposed by Sir W. Burnett in 1838. It has been in constant use in Hanover since 1849 and later has been adopted as a standard method throughout Germany and Austria. It was introduced in the United States in 1850, but has been extensively used only within the past twenty years. This process, so far, is principally in use for the treatment of railroad ties, but there seems to be no reason why it should not be successfully used to prolong the life of timber for mining purposes.

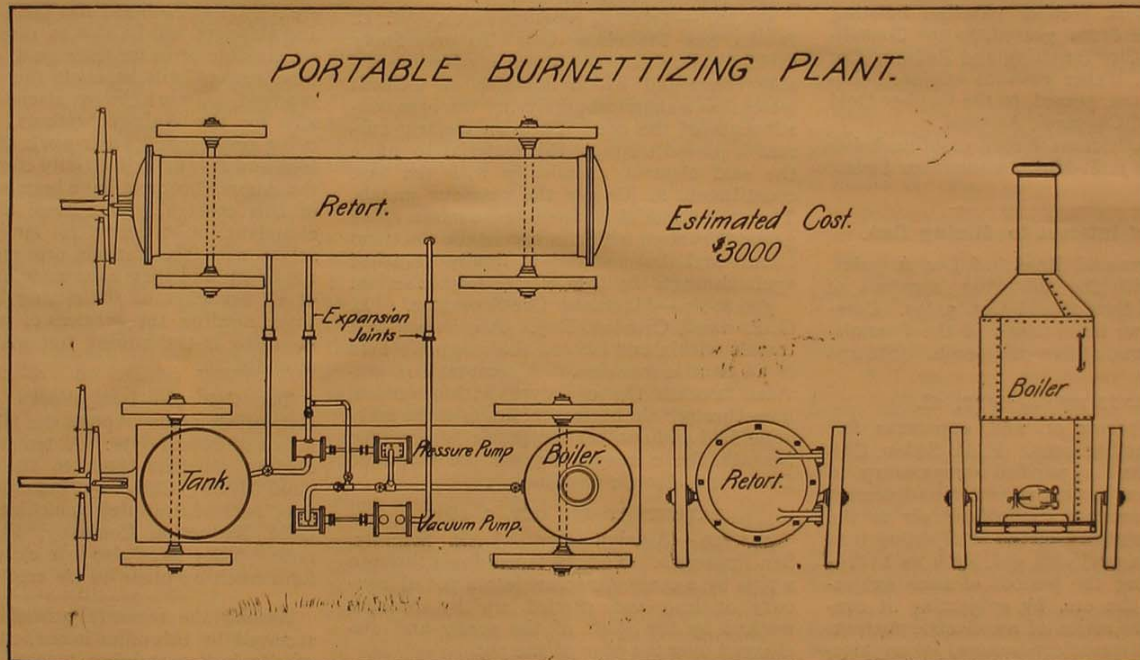
The process of Burnettizing is simple. The timber is dried by steam, and the antiseptic solution then forced in. The theory of the use of chloride of zinc is that this substance is both an antiseptic and a powerful coagulant of albumen.

Chloride of zinc is cheaply and easily made by simply immersing zinc in muriatic acid until the acid is saturated, leaving no free acid to attack the piping, etc. This salt is now largely manufactured, both in the East-

equal to one-half pound of water per cubic foot of timber. The retort is then filled with hot chloride solution, and the required quantity of solution forced into the timber by a pressure pump. The entire process with large retorts holding 18,000' B. M. of timber, usually requires a little less than seven hours' time.

This process renders timbers much less combustible, and is therefore valuable as a fire preventive. All soluble chlorides have a great affinity for moisture. They will cause substances impregnated with them to remain moist, and, therefore, much less inflammable than if untreated. Common salt (sodium chloride) has long been known as a fire preventive for timber.

The Société d'Encouragement de Paris about ten years ago awarded a prize of 2000 francs for a fire proofing solution to be applied to theatrical scenery, woodwork, etc. The principal effective ingredient of this solution was sal ammoniac (ammonium chloride).



some development work has been commenced. The ledges are wide and the ore is free milling gold rock, very rich.

H. T. Collins has returned to Mexico from Sydney, Australia, where he went three years ago in the capacity of a mining engineer. He has returned to take charge of the gold, copper and silver properties of the Chiapas Mining Company. He received word from the London owners to return to Mexico and relieve the parties now in charge of the property. As he has not seen the mines as yet, all he knows is that the mine works about six hundred men, and is reported to be good property that has been operated for five years.

Mr. W. A. Clark has placed an order with the Edward P. Allis Company, of Milwaukee, for a large compound condensing engine for the United Verde mine, at Jerome, Arizona; also an order for a blast furnace for the Butte Reduction Works, with the same company.

ern States and on this coast. Its cost is now about 4½ cents per pound in large quantities.

The apparatus for treatment is simple. It consists of one or more retorts, a boiler, a vacuum pump, a pressure pump, one or more storage tanks and suitable piping. For short timber a plant could easily be arranged to be hauled around on wheels like an ordinary wagon. If steam is otherwise available the boiler can be omitted. With such a plant having a retort say 3½' to 4' in diameter and 16' long, very effective work could be done in preserving timbers to be used in mines.

The process in detail consists of placing the timbers to be treated in a closed retort, introducing live steam at 30 pounds pressure, allowing the mixed sap and condensed water to drain off during this steaming until the liquid shows little or no resinous constituents. Vents are then opened and the steam blown off. A vacuum is then produced by a vacuum pump. This is continued until a condenser shows condensation at a rate per hour

Zinc chloride is extremely hygroscopic, much more so than either salt or sal ammoniac. The affinity for moisture is such that it will keep timber damp in the driest climate.

The net cost of Burnettizing in large quantities is about \$3 per 1000' B. M. for treatment. The estimated cost of a portable Burnettizing plant complete is \$3000.

A new use of aluminum has been discovered in the manufacture of reproducers for talking machines. The reproducer is the apparatus which holds the vibrating diaphragm of glass. Heretofore the recorders and reproducers of talking machines have been made, as a rule, of hard rubber. For hard rubber aluminum has been substituted with what is regarded as much success. It is claimed that the blasting, blaring or "chattering," as it is called in the trade, which is often noticeable in the performance of the talking machine, is almost completely absent when an aluminum reproducer is used.

GENERAL NEWS.

The Weber Gas and Gasoline Engine Co., of 434 S. W. Boulevard, Kansas City, Mo., reports the following recent sales in the mining trade of Weber engines:

Twenty H. P. Weber gasoline engine and pumping plant, to the Texas Gold Mining Co., of Buford, Ga.

Four Weber gasoline engines, including pumping and electric light plant to Squaw Creek mining district, near Phoenix, Arizona, for Mr. Biddle Reeves.

One double drum Weber geared gasoline hoisting engine, 40 h. p., and one single drum Weber gasoline hoisting engine, 10 h. p., to the Guggenheim Smelting Co., Mexico.

One 10 h. p. blowing engine, to Geo. C. Updegraff, Sargent, Col.

Two Weber gasoline heavy engines, to the M. A. Sebring Mining and Milling Co., at Benson, Ariz.

One 40 h. p. Weber gasoline engine, to L. C. Trent & Co., Salt Lake City, Utah.

Two complete placer mining plants, including two Weber gasoline engines, to W. E. Putnam, Nyssa, Oregon.

Two 40 H. B. Weber gasoline hoisting engines, single drum, geared, to the Consolidated Kansas City Smelting and Refining Co.

One 10 h. p. Weber gasoline engine (hoisting) single drum, geared, to the Gopher Gold Mining Co., of Chaparral, Arizona.

One 10 h. p. friction Weber gasoline hoisting engine, to J. T. McLaughlin, San Pedro, N. M.

Patents of Interest to Mining Men.

Messrs. Townsend Bros., of Los Angeles, furnish us with the following synopsis of patents issued Sept 28 and Oct. 5, '97. Complete copies can be obtained of the Commissioner of patents, at five cents each. (Stamps not accepted.)

PATENTS ISSUED SEPT. 28.

590,673.—Process of, and apparatus for, electrically treating ores. F. H. Soden, Chicago, Ill. Ore is purified preparatory to smelting, by subjecting it under confinement against the access of atmospheric air to the action of superheated air and subjecting it to the action of a purifying gas, such as hydrogen, and during the periods of such subjection heating the ore, by subjecting it conductively to the action of an electric current. Unbroken resistance-conductors, in an electric circuit, are imbedded in the ore, to heat it by contact with the electrically heated conductors and by the resistance the ore presents to the current shunted through it. A receptacle is provided with doors, having connected with them hinged sections of a perforated diaphragm, normally forming in the receptacle an upper gas-chamber. A sectional screen-diaphragm in the lower part of the receptacle forms therein a gas chamber. A discharge outlet opens down from the lower gas chamber and a covered inlet pipe leads into the upper gas chamber. A pressure valve is provided for the escape of gases from the receptacle and valve-controlled pipes lead into the lower gas chamber. The conducting rods extend across the receptacle, to be imbedded in the ore.

596,675.—Ore Concentrator. A. R. Wilfley, Denver, Colo. A transversely-inclined movable concentrating table, having a number of longitudinal riffles, extending a portion of the table's length, from the head toward the foot, and being of unequal length, the uppermost being the shortest, while the other riffles

increase in length, from the upper edge to the lower edge of the table. The table has a plain or unriffled portion at the extremities of the riffles, to receive the material caught by the riffles. Means are provided to move the table, so as to carry the material longitudinally toward the tail or foot of the table, where, as it leaves the riffles, it is subjected to the action of the water on the smooth portion of the table, and the final separation from the gangue is effected.

590,739.—Process of Separating Ores. B. F. House, Denver, Colorado. Ammoniated air is admitted below the surface of water or pulp, to precipitate ore held therein. This separates the ore from arsenic.

590,748.—Crusher. M. P. Williams and E. H. Frickey, St. Louis, Mo., assignors, by direct and mesne assignments, to the Williams Patent Crusher and Pulverizer Company, same place. The crusher comprises a casing having a hopper opening, a shaft to rotate in the casing, and with hammer-supports mounted thereon, with hammers pivotally mounted in the supports. The hammers are carried around by the rotary-shaft and operate in conjunction with a barred cage and a dead plate to crush the ore.

590,801.—Treating rebellious ores. W. L. Brown, San Francisco, Cal. To ores finely divided and mixed with water is added a suitable compound which contains an element which has a chemical affinity for the base constituents of the ore. Then an electric current is passed through the material to unite the said element chemically with the base constituents to liberate the precious metals. Then the material is circulated over an amalgamated surface which is not in the electrical circuit and the material is finally returned again through the field of electrolytic action.

590,808-9.—Magnetic Ore-Separator. L. G. Rowand, Camden, N. J. A conveyor-belt travels within and beyond the magnetic field of an electric machine. A receptacle is provided beneath the conveyor within vertical lines through the horizontal limits of the magnetic field and another receptacle is provided beneath the conveyor beyond the magnetic field of the electric machine.

PATENTS ISSUED OCT. 5, 1897.

591,119.—Amalgamator. J. P. Schmitz, San Francisco. The ore is fed down through a pipe by a conveyor-screw into a pot of mercury or lead and carried up by brushes worked by the shaft of the screw and discharged over the edge of the pot.

591,141.—Process and Apparatus; Electrolytic Extraction of Metals from their Solutions. J. W. Richards, Bethlehem, Pa. The solutions are subjected to the electrolytic action of an electric current passing into the solution by a liquid-amalgam anode which is separated from its cathode by a porous partition. A tank contains a liquid-amalgam anode in its bottom region and an electrolyte in the region above the anode; a cathode-plate is arranged in the region of the electrolyte, and a porous partition arranged above the anode divides the region of the electrolyte horizontally into two compartments, and a stand-pipe communicates with the lower compartment so that a body of liquid-electrolyte may be maintained in the lower compartment at a pressure exceeding the pressure of the body of liquid-electrolyte in the upper compartment.

591,335.—Concentrator. H. L. Elton, Philadelphia, Pa. A casing is provided having a water-inlet, an ore-inlet, an outlet at the lower end of the casing, and valves controlling the inlets and outlet, within the cas-

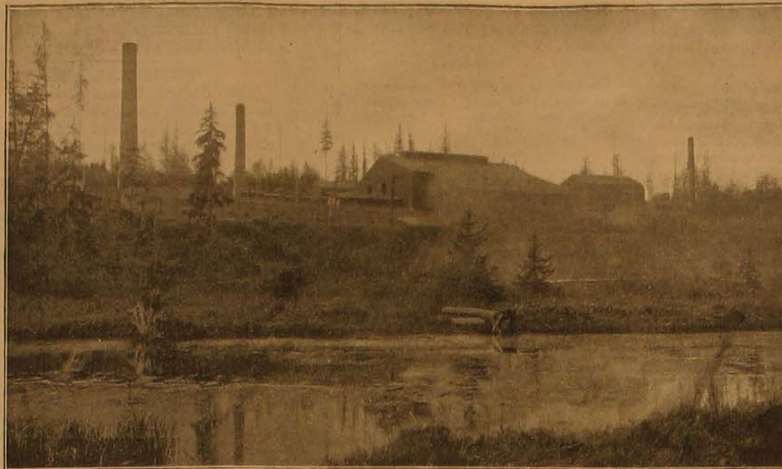
ing a rotatable cylinder provided with an agitator comprising a spirally arranged plate. Openings are provided in the sides of the cylinder between the convolutions of the spiral plate. Suitable chemicals are placed in receptacles in the cylinder which has an outlet at the upper end and has a discharge-outlet at the other end.

Lew E. Aubrey, formerly of Bodie, Tombstone and other coast mining camps, and who for the past few years has had an assay office in San Diego, has concluded to establish an office in Los Angeles at 115 West First street. The San Diego office will be run as a branch office, and will be under the management of M. W. Aubrey, the well-known assayer, of Kaslo, British Columbia, and associated with his brother in mines on the coast for many years. For the past 18 years they have been associated with mines, mills and assay offices at various camps on this coast. Owing to the great amount of outside work, it has been found necessary to also establish an assay office at some central point. Both offices are equipped with the finest balances and other material necessary for good work. A new system of handling bullion, gold dust, etc., by these offices, has been inaugurated, and shippers will be able to receive the highest possible price for their gold. At the same time returns will be made the same day as received, all work being attended to personally by the Aubrey brothers, no students being employed. Their work will be guaranteed and results held strictly confidential. As the Aubrey brothers have been with the mines of this coast all their lives, they have had abundant opportunity to familiarize themselves with the various ores encountered in the West, and they have made a special study of all branches of the mining business. To those needing the services of practical men, anything in the mining line will be promptly attended to.

The Colorado Iron Works Company, of Denver, Colorado, reports the following shipments of recent date: A ten-stamp mill, including crushers, etc., to the Golden Star Gold Mining Company, Baker City, Oregon; two carloads mining machinery to Kilton Gold Reduction Company, Florence, Colorado. They have also just closed a contract for a smelting plant to be erected in Mexico.

Among the recently published pamphlets received by this office is one, entitled "*Laws of Alaska*," pertaining to civil government, mines and land, by Frederick Hall, author of "*Hall's Mexican Law*," etc., etc. Prack & Blech, of 322 S. Main st., are the publishers. It is a very neat pocket edition of 32 pages and cover, printed on heavy book paper. Nearly one half of the space occupied is devoted to the mineral lands and mining resources, chapter six of the Revised Statutes of the United States, sections 2318-2352. The publishers also devote a few pages to "Land for townsites, commercial and manufacturing purposes." In the preface, Mr. Hall furnishes evidence of the richness of American soil in Alaska, and says: If the developments on American lands should prove what is expected of them, it is needless to say that a knowledge of the United States laws pertaining to Alaska will be essential to all who desire to transact business in that Territory.

Five nuggets, valued at a total of \$1300, were brought into Baker City, Or., by a miner last week from the Gimletville placers, in Grant county.



PUGET SOUND REDUCTION WORKS, AT EVERETT, WASH.

Puget Sound Reduction Works.

This immense plant is located at the northern end of the peninsula in the city of Everett.

The site being on the side of a hill is admirably adapted for a smelter of great capacity making the handling of ore comparatively easy and cheap, with good ground for a slag dump that is easily reached.

It is also arranged very conveniently for the treatment of the ore. They are equipped with eight Dodge rock breakers of 125 tons capacity each. The roasting building has been constantly added to, and now contains nine stacks, one of which has a capacity of 160 tons per day, another of 100 tons per day and the balance of them are rated at 60 and 80 tons each. They are treating from 900 to 1000 tons of ore per day and are employing about 200 men. They have no refinery connected with the establishment which is a fact to be regretted. Connecting the roasters with the chimney is a condenser 8x14 feet and about 100 feet in length through which the fumes from the roasters pass and are condensed. There is no perceptible effect of sulphur near the works. In connection with the smelter they have a number of good mines and sixty-two miles of a four and one-half foot railway connecting the mines with the smelter.

At the mines there are three wire rope trams from two to two and one-half miles in length, running from the end of the railroad up the mountain in three different directions to the mines. They also have a milling plant at the mines data of which could not be obtained. This smelter gets its principal ore supply from British Columbia, Alaska, the States of Washington and Oregon, and a general supply is received from all the properties in the northwest. Grass Valley, Cal., sends a small amount to the Everett smelter and Southern California sends a small shipment occasionally.

The coke used comes from Cokedale, Skagit county, Wash., and the limestone from San Juan island, the wood being supplied locally. The monthly consumption of coke is about 9,500 tons, limestone 9,400 tons and 11,800 cords of wood.

A floating paragraph says the Anaconda copper mines give employment underground to 3,000 men, whose wages amount to \$10,500 a day. Six thousand tons of ore are daily handled, yielding at the smelters between 10,000,000 and 12,000,000 pounds of copper monthly.

A. P. Minear of New York says: "Mining on the Pacific Coast is only in its infancy. The surface has only been scratched over. So far as quartz mining is concerned, it will increase for a thousand years, as tin mining has done in Cornwall, England, and this California country will be the great gold mining district of the world, and all in the heart of a rich agricultural country. There is nothing like it anywhere else."

J. W. Haley of Milford, Me., has invented a self-lubricating bearing that it is thought will prove useful. It consists of a compound of metal and graphite made in such a way as to hold the graphite in solution, which is said to have never been accomplished before. All the metals used will fuse at a much lower temperature than will vitrify, glass, which requires 4000 degrees Fahr. These metals are thoroughly mixed while in a powdered form, and combine before the glass becomes liquid. They are then pressed into the journal, and make a hard and self-lubricating bearing, and one which cannot be melted by any friction that could occur as it will stand a red heat. Glass alone makes a journal that will run with less oil than babbitt metal, but it is too brittle. Mr. Haley makes his journal of glass, lead and graphite, which renders it self-lubricating. For light shafting he uses a little antimony; for large shafting with its increased pressure he adds powdered brass and aluminum.

Idaho is the fifth state in the Union in the output in gold and silver, having produced in round numbers \$9,000,000 in the year 1896, says the *Grangeville Press*. California, famed for its mineral wealth, produced only \$16,000,000. The outlook in Idaho gives indication that within the next few years the output of the state will exceed that of California. The interior of the state is just being opened up. The prospector who has for years known of veins, bars and ledges, has at least succeeded in interesting capitalists in the development of these properties. Active mining in the interior of Idaho is as yet in its beginning. Owing to the inaccessible nature of the country, rich ore deposits have been neglected. This year will see a great development of promising properties and it may happen upon some of the famous ledges whose fragments found in placer ground made Idaho so noted as the Golden Golconda in the good old booming times in the early sixties.

PERSONAL NEWS ITEMS

COL. H. L. PICKETT, of Salt Lake City, has been looking over his gold mining interests in the Deer Lodge district of Nevada.

B. E. STAHL, the superintendent of the Alexander & Bent mines on the Galice Creek, near the Rogue River, has left for Boise City, Idaho, for a few weeks' visit to his family.

RALPH NICHOLS, the well-known mining engineer of Colorado, has gone to London, en route to Australia, for a British syndicate.

SR. MANUEL ANGULO, who is the owner of a number of promising prospects in the Jacalitos mining district in Lower California, was up to San Diego last week. He is taking out ore from the Guata mine, and working it in an arrastra, which mills \$350 to the ton.

JAMES MOORE, a mining man from Spokane, has been visiting Butte, Montana, lately.

A. C. WASHINGTON, the president of the Horn Silver Company, of Utah, was in Austin, Nevada, last week.

F. M. BRADSHAW has gone down to Ensenada, Lower California, Mexico, where he is interested in some mines in the Alamo.

FRANK REBER has recently returned to Butte, Montana, from a prospecting trip through Idaho.

PROF. F. W. IINE, an old-time California mining man, but now of Chicago, has recently been inspecting some mining propositions in Mexico, for a German syndicate.

CAPT. T. COX, an old California mining man, recently arrived in Nogales, Arizona, from the Yaqui gold fields in Sonora, Mexico, where he has been examining some claims in the interest of Messrs. Gowan & Harlow and others.

E. P. MORS LEAD, who has been visiting Butte, Montana, has returned to his home in San Francisco.

The *Engineering and Mining Journal*, of New York, says J. C. Yawger, formerly manager of Victor Bishop & Company, has succeeded to the business of that concern as importer and manufacturer of black diamonds and bort, and continues to carry on that business at 21 Maiden Lane, New York City.

A. W. DAVIS, one of the owners of the Viznaga mine, in Mexican Gulch, near Alamo, Lower California, Mexico, was a caller at the *JOURNAL* office today.

J. H. HILL, of Butte Montana, and a prominent mining man, has been visiting in the Greenwood Camp, British Columbia, with a view of purchasing the Snowshoe mine for Butte capitalists.

R. A. F. PENROSE and JOHN BROCKMAN, mining engineers, and owners of the great Pearce mine, at Pearce, Arizona, who was in this city recently, are now in San Francisco.

CAPT. D. F. HUNT, of Santa Barbara, has returned from Mexico, where he went with a party of Santa Barbara men to inspect some mines.

WILLIAM CHURCH, the mining man of Denver, Colo., has been visiting Utah and Montana mining camps, where he is interested in some good properties.

H. A. KELLER, who is the consulting engineer and superintendent of the Siskiyou copper mines, near Grant's Pass, Oregon, went up to Grant's Pass last week.

O. R. YOUNG, a mining engineer of Salt Lake City, Utah, has returned home from a trip east.

A. E. SMITH of San Francisco, Cal., went up to Grant's Pass, Oregon, to work a claim in Sucker Creek this winter.

MAJOR GENERAL WEBBER, of the British Columbia Bullion Extracting Co., has just left for his home in England.

OBITUARY.

It is with the deepest feelings of regret that we have to chronicle the death which occurred on the 6th of September, of MR. ALEXANDER BEGG, late editor and founder of the *British Columbia Mining Record*, of Victoria, B. C. MR. BEGG was a man of extraordinary energy, of indomitable spirit, and it may be said he did not know the meaning of the word "failure." He was, moreover, a man of kindly impulses and generous disposition, much beloved by all who knew him.

The statement of the United States Treasury, on Thursday, September 30, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date last week:

	Sept. 23	Sept. 30
Gold.....	\$146,745,178	\$147,621,953
Silver.....	15,191,305	14,155,727
Legal Tender.....	35,368,871	41,403,141
Treas. not's, etc.	24,103,581	21,822,426

Totals.....\$221,309,138 \$225,004,256
 Treasury deposits with national banks amounted to \$17,392,278 an increase of \$219,563 during the week.

The coinage executed at the Mints of the United States during September and the nine months of 1897 is reported by the Treasury Department as follows:

SEPTEMBER		
Denominations	Pieces	Value
Gold.....	619,241	\$8,762,375.00
Silver.....	4,148,200	1,050,092.50
Minor.....	8,437,400	231,959.00
Totals.....	13,204,841	\$10,044,449.50

NINE MONTHS		
Denominations	Pieces	Value
Gold.....	4,618,209	\$65,012,842.50
Silver.....	33,318,695	12,105,533.50
Minor.....	43,092,374	981,718.98
Totals.....	71,029,281	\$78,100,095.28

The coinage in September was heavier than in August by \$448,753.50.

MINING STOCK MARKETS.

LOS ANGELES, CAL., Oct. 12, 1897.
 The market on the Exchange this past week has been characterized by the rapid advance in Maggnetta, strengthening of Pacific Consolidated, and the better feeling all along the line in all stocks except the Wedge property. This property, an account of whose decline was noted some days ago, is still on the down shoot; prospects are not exceedingly fine for its improvement; reports from the mine are as good as ever but the quotations still hang low. That it will eventually recover to ten or fifteen cents, no one doubts for an instant, but when that better turn will come is the problem that at present confronts most of the brokers on the floor.

Maggnetta is in good ore and looking splendidly; therefore will undoubtedly advance to five cents.

Rumors from Pacific Consolidated company advise that there will be a shipment of ore from this property in the near future, and in fact, many are predicting that this will be the first prop-

erty to be a shipper among all the prospects on the board.

Sales have not been as heavy as was hoped in the new quarters, but still there is good legitimate trading. The new quarters are a pleasure to every one who visits them and the brokers are continuing to be well pleased with the move in every particular. The call room is now fitted up with a ladies' gallery and every facility for trading. As far as convenience, light, air and ventilation goes, there is not a better ventilated hall anywhere in the state, although, of course, for size it does not compare with the big halls at San Francisco.

ROSSLAND, B. C., Oct. 11, 1897.

There are no new features in the mining exchange here. The Monte Cristo, Collona, Iron Horse, Columbia, and Kootenay have closed down. The last named closed pending the completion of the purchase. The last week in August the Columbia and Kootenay shipped 280 tons of ore. The Iron Horse being dependent on the Columbia and Kootenay for their compressed air, had to suspend work. The Collona closed, being dependent similarly on the Monte Cristo.

From January 1st to August 28th inclusive, the shipments of ore from the Le Roi mine amounted to 35,752 tons of ore. The stock has remained strong at \$8 with few shares offered for sale. September 7th, the Le Roi paid a dividend of \$50,000.

The Centre Star and War Eagle are working and have big showings of ore stored in the mines and lying on the dump ready for shipment. The stock has no new features.

The market generally is very dull. Some mining experts have been lately examining the Le Roi property with the view of obtaining an option for a London syndicate. This, it is said, the company will not concede. Be that as it may, it is certain that the Le Roi is employing more men than they ever have done heretofore and forms a very important factor in the pay roll of Rossland.

The Elise share holders have released that property from the debt which has been hanging over it all summer, and will now go ahead with development.

SALT LAKE, Oct. 9, 1897.

The Mining Stock market this week was fairly active, but sales were forced at the expense of falling prices. Ajax was again quiet, very little business being done

in it. Increased working force at the mines. Anchor stock dull, but regular operations continue at the mine. Bullion Beck is not extracting ore but is developing their properties. No expectations of a dividend from these properties now. Buckeye was not very active but prices ruled about the same as last week. The Centennial Eureka remains unchanged. Weekly shipments of high grade ore are made.

Chloride Point was fairly active at unchanged quotations. Both of the Dalys were quiet this week and prices are falling off. Neither company is doing anything. Dexter has let contracts for a new forty stamp mill. The stock is strong and quite active with no special changes in prices. Eagle was not in heavy demand and East Golden Gate was lifeless. Little was done in Four Aces, Geyser-Marion has advanced some.

The properties are looking and doing well. Galena held its own while Grand Central was inactive and weaker. Horn Silver is expected to make a very fine showing its next official report, and the mines are in the best of conditions. No change occurred in Murcer. Offerings were light with no pressure to sell. The properties are in admirable condition.

NEW YORK, Oct. 8th, 1897.

Though the public demand for mining stock is still small, prices in many instances are higher than last week, especially for the dividend paying stocks. The Comstocks, notably those whose properties are on Gold Hill, have moved upward in pricing to favorable reports. The Colorado stocks are steady. The California group is very quiet. Standard Consolidated sold at \$1.80, and is the first 100 share lot that has been sold for a long time. There were several sales of the South Dakota stock, Homestake at \$37.25@39; the latter price is 50c higher than last week. Horn Silver of Utah sold down to \$1.00 this week. There continues to be a fair demand for Fortuna, on the Consolidated Stock and Petroleum Exchange. It has declared another dividend of \$10,000 on its stock, which makes \$90,000 this year and \$130,000 since September, 1896.

A new company has called on the Mining Exchange this week—the Yukon Mining Company. This is an auxiliary to the Rossland Gold Mining Development and Investment Company, Limited, and is under the same management. The company is represented in New York by

members of the Exploration Syndicate, of which Thos. J. Hurley is secretary and treasurer and F. G. Corning is manager. The company was formed to operate in the Klondike region. The stock has been selling at 18@22½c. on the Mining Exchange.

SAN FRANCISCO, Oct. 11, 1897.

Considerable active trading is reported for this week. Crown Point and Belcher stocks are in the lead. A fair degree of activity is reported from the Cumstock, Nev. mines, which caused quite a flurry in the mining share market. Work is also being pushed on the Alta property, and ore improving. In justice they are getting ready for more active exploiting. The assessment levied by Caledonia of ten cents per share will admit of a resumption of work.

There is no change reported on the development work on ore extracted from the Overman. Kentuck, it is stated in official letters has taken up the cross-drift and is running it in its own ground.

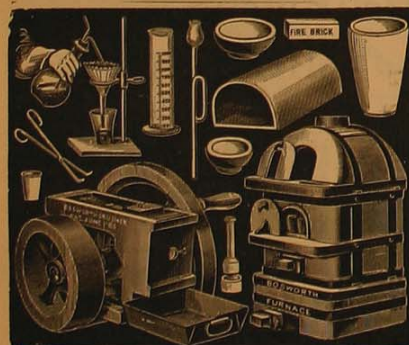
Important development work has been started in the Yellow Jacket. There is nothing new to report from Confidence and Challenge mines. Development work continues steadily. Cross drifting on the surface level in the Consolidation Imperial is being steadily prosecuted. Ore is being extracted from the 500 foot level of the Alpha.

Very favorable reports continue to come in from Bullion. Air connections have been made in Potosi and work is being vigorously prosecuted. The stock has advanced the last week.

Good development work is being made in Chollas and the shares have made a good advance, having nearly doubled in one week.

No work is reported from Hale and Norcross and the stock does not seem to have any demand for it. No change in the work of Savage is reported. This stock is another one of the list that has made a good advance this week. One thousand tons of low grade ore is to be extracted from Gould and Curry. In the Con Virginia active work is being done on the 1550 foot, 1650 foot and 1750 foot level, but no ore is being extracted. In Ophir they are running west on the 1000 foot and Central tunnel levels.

In the Mexican, Union and Sierra Nevada development work still continues but stocks are about the same as last week.



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 Potash, Argol, Borax, Borax Glass
 Iron Sulphides, Litharge, Soda
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Will show what is in your
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 Acids, Blue Vitriol, Copperas, Refined
 Sulphate of Soda, Etc.

MINING STOCK QUOTATIONS

BOSTON			
Aetna Con	5 00	Humboldt	15
Allouez	1 00	Illinois Steel	47 00
Anaconda	—	Kearsarge	21 50
Arnold	3 50	Lake Sup Iron	21 00
Atlantic	24 65	Merced	8 5
Bonanza	—	Napa Cons	7 50
Boston and C C	—	New Idria Mg	7 00
Boston & Mont	145 00	Old Dominion	24 88
Butte & Boston	27 50	Oscoda	38 50
Calumet & Hecla	485 00	Pioneer	6 50
Catalpa	—	Quincy	115 00
Centennial	18 00	Ridge	—
Central	—	San Ysabel	15 25
Dominion Coal	21 50	Tamarack Jr	18 88
Dominion Pref	167 00	Tamarack	140 00
Franklin	21 03	Tecumseh	3 25
Gold Coin	2 50	Wolverine	16 50

NEW YORK.			
Crown Point	19	Sierra Nevada	35
Con. Cal. & Va.	1 80	Standard	1 75
Gould & Curry	30	Union Con	30
Hale & Norcross	80	Iron Silver	40
Homestake	80 50	Quicksilver	3 00
Mexican	30	Quicksilver pfd	17 05
Ontario	10 50	Bulwer	22
Ophir	71	Yellow Jacket	25
Plymouth	20	Deadwood	45

COLORADO SPRINGS STOCKS			
Aetna	005	Ironclad	04
Alamo	03 1/2	Isabella	30
Anaconda	45 1/2	Iowa	05
Argentine Juanita	20	Jack Pot	05
BangkokCora Belle	04 1/2	Jefferson	06 1/2
Bankers	02 1/2	Mollie Gibson	23
Ben Hur	00 1/2	Mount Rosa	09 1/2
C K & N	00 1/2	Pharmacist	70
C C & Manitowish	02	Portland	02 1/2
Creede & C C	03	Peoples	02 1/2
C C Consolidated	10 1/2	Sacramento	02
Garfield Grouse	04	Star of the West	22
Golden Fleece	30	Union Gold	02 1/2
Gold & Globe	03 1/2	Virginia M	05
Gold Standard	300	Work	05
naley	—		

LOS ANGELES, CAL.

Armstrong	23	Mohawk Action	01 1/2
Brown Duke	—	Mojo	01
Cavil	01	Old Dominion	03 1/2
East Armagona	04	Pacific Con	01 1/2
Gold Bug	01	Portland	85
Iron Mt	01 1/2	Rand Mt	01
Ivy Group	15	Sun Dance	05
Little Butte	18 1/2	Sunset	01
Lucky Star	6 00	Val Verde	01
Magganetta	03 1/2	Wedge	02 1/2
Mazourka	07 1/2		

SAN FRANCISCO.

Alpha	21	Eschequer	06
Alta Con	23	Gould & Curry	63
Andes	30	Hale & Norcross	34
Belcher	1 00	Justice	34
Best & Belcher	75	Mexican	58
Bodie	14	Ophir	15
Bullion	51	Potosi	23
Challenge	74	Savage	39
Chollar	14	Sierra Nevada	37
Confidence	55	Union Con	58
Con. Cal. & Va.	1 55	Utah	25
Con New York	06	Yellow Jacket	77
Crown Point	94		

SALT LAKE CITY

Ajax	25	Lower Mam	40
Alliance	—	Lucky Hill	—
Anchor	55	Malverna	—
Bogan	—	Mammoth	1 10
Buckeye	02	Maxfield	—
Bull, Beck	2 50	Mercur	7 65
Cent. Eureka	22 50	Morgan	—
Chloride Point	35	Northern Light	85
Anchor	01	Omaha	—
Daily	1 00	Ontario	3 00
Daily West	2 50	Overland	25
Dalton & Lark	07	Richmond Ana	—
Dexter	1 55	conda	01
Eagle	02 1/2	Rover	20
East Golden Gate	—	Sacramento	20
Eureka Hill	—	Silver King	15 00
Four Aces	02 1/2	Sioux Con	—
Galena	50	Sunbeam	04
Gemini	—	Sunshine	25
Geyser-Marion	1 10	Swansea	1 25
Grand Central	75	So Swansea	1 00
Horn Silver	1 00	Utah	50
Little Pittsburg	02 1/2	Utah Con	—

ROSSLAND, BRITISH COLUMBIA.

Alberta	05	I. X. L.	10
B. C. Gold King	07	Josie	45
Beaver	10	Jumbo	70
Big Three	10	Knight Templar	05
Bluebird	07	Kootenay London	10
Bruce	10	Le Roi	8 00
Butte	03	Lilly May	20
Caledonia Con	05	Mabel	15
California	15	Mayflower	11
Camp Bird	05	Monita	19
Celtic Queen	05	Monte Christo	20
Centre Star	20	Morning Star	08
Colonna	20	Nest Egg	02
Commander	18	Northern Belle	10
Deer Park	12	Novelty	09
Della Colla	03	O. K.	—
Delaware	12	Palo Alto	05
Eastern Star	20	Phoenix	10
Enterprise	20	Postman	10
Eric	03 1/2	R. E. Lee	15
Evening Star	09	Red Mount View	11
Georgia	15	Red Point	10
Gertrude	10	Roseland, Red Mt.	06
Golden Drip	15	St. Elmo	06
Great Western	12	St. Paul	12 1/2
Helen	04	Silverine	06
High Ore	05	So. Cross & W. Con	20
Imperial	10	War Eagle Con	10
Iron Horse	20	West Le Roi	19
Iron Mask	45	White Bear	19

DENVER STOCK REPORT.

Aetna	003 1/2	Elkon	32
Alamo	02 1/2	Eureka	009
Anaconda	42	Garfield Grouse	04
Arcadia	004	Golden Fleece	25
Consolidated	01 1/2	Goldsmith	008 1/2
Argentum Juni	27	Gold Standard	02 1/2
Bangkok-C-Bell	02 1/2	Inaley	003 1/2
Bankers	04	Isabella	28 1/2
Ben Hur	02 1/2	Jack Pot	04 1/2
Bob Lee	04 1/2	Jefferson	08 1/2
Boston & C C	01 1/2	Mollie Gibson	70
Chimbarazo	002	New Zealand	05 1/2
C K & N	008	People's	01 1/2
Colo. C. & M.	01 1/2	Pharmacist	08 1/2
C. C. Con	06 1/2		

HELENA, MONTANA

Am Den & M Co.	1 10	Helena & Frisco	7 50
Bald Butte	2 50	Iron Mountain	25

Bi-Metallic	—	Merrill	—
Combination	—	Ontario	—
Con T & P 'n'n.	25	Yellowstone	12 1/2
Diamond Hill	8 50		

MEXICO

Name of Company	State	Price
Alianza	Hidalgo	\$ 5
Amistad y Concordia	"	25
Angustias	Guanajuato	800
Arenal y Anexas	Hidalgo	200
Aturiana y Anexas	Zacatecas	300
Barraza y Cabras	Durango	380
Bartolome de Medina	Hidalgo	100
Cabezon y An	Zacatecas	30
Candelaria de Pinos	"	180
Candelaria de Panuco	"	20
Candelaria de Chalch	"	30
Capuza	Durango	120
Carmen	Hidalgo	350
Castellana y San Ram	Tepec	80
Cerro Colorado	Chihuahua	10
Cinco Senores y An	Guanajuato	865
Concepcion y Anexas	S. Luis Potosi	280
El Oro	Guanajuato	40
Esparanza y An	Mexico	1,300
Guadalupe	Guanajuato	180
Huautla	Santa Ana	100
Luz de Borda	Michoacan	10
Luz de Maravillas	Hidalgo	200
Palma	"	150
Purisma de los Com	Zacatecas	180
Real del Monte	"	5
Refugio y Va	Hidalgo	900
Restauradora	Durango	60
Rosario y Anexas	"	50
San Francisco	Hidalgo	280
S. Ped. Chalcihuites	"	100
do, Free Stock	"	100
San Rafael del Oro	Hidalgo	20
San Rafael y Anexas	S. Luis Potosi	730
Sirena	Durango	80
Soledad	Hidalgo	400
Sorpesa	"	40
Trinidad	Guanajuato	27
Tlaxiungo	Puebla	250
Union	Hidalgo	250
Zaragoza	"	15
Zomelahuacan (gold)	Veracruz	100
Zona Min de Pozos	Guanajuato	15

NOTE—The above Mexican stocks are figured on the basis of Mexican silver

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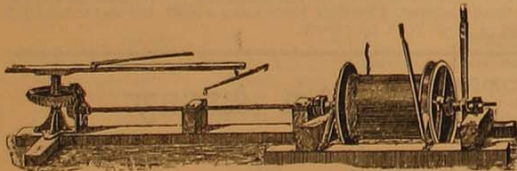
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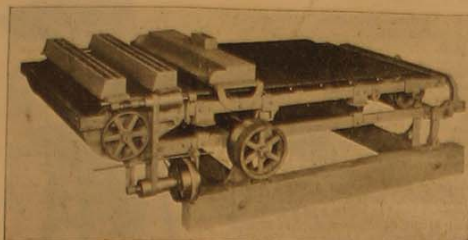
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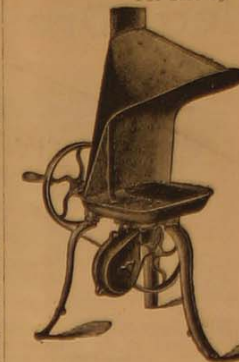
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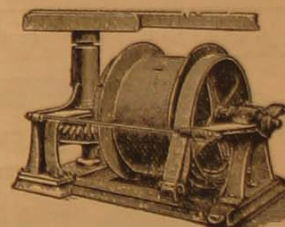
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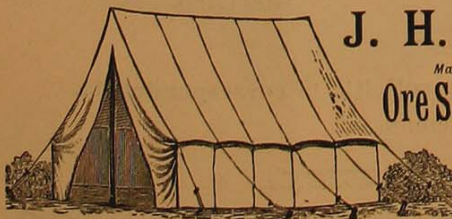
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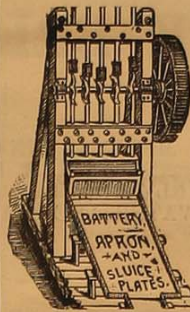
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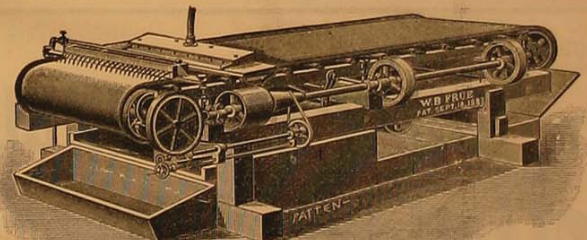
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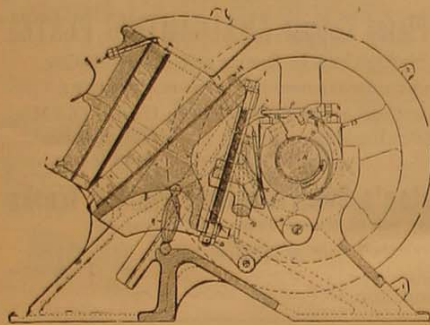
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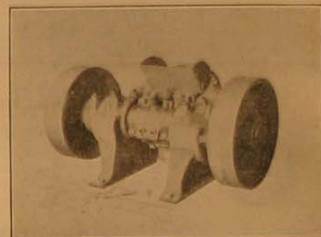
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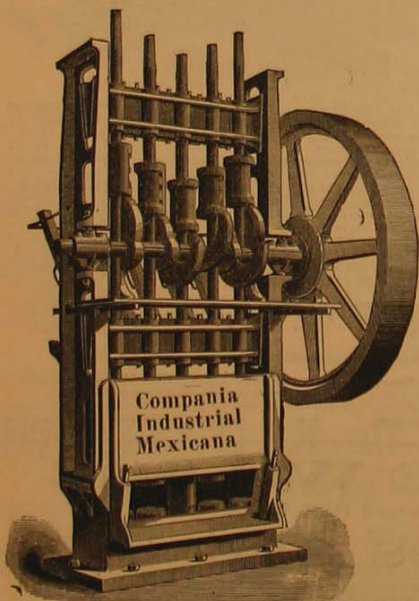
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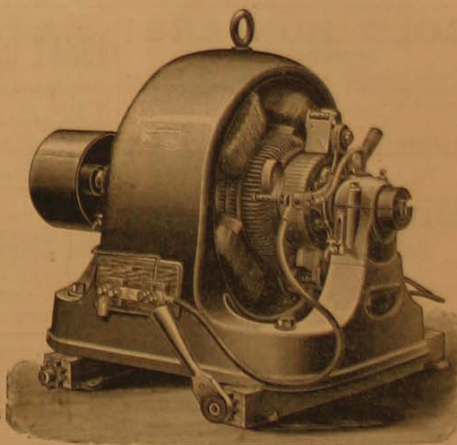
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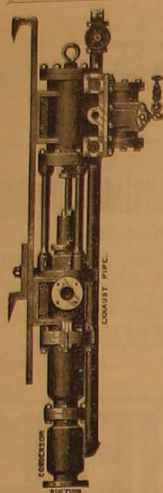
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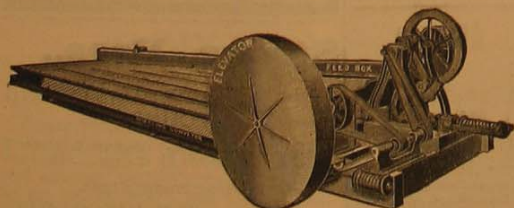
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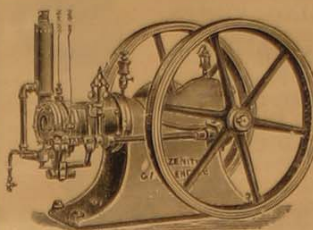
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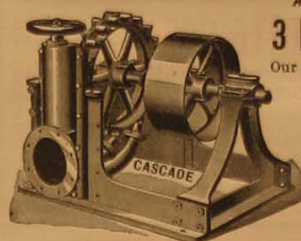
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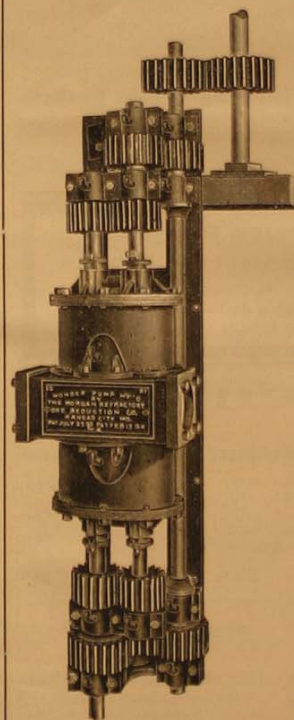
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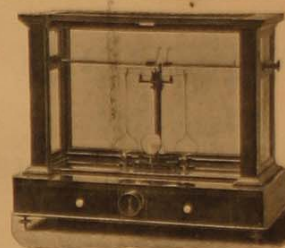
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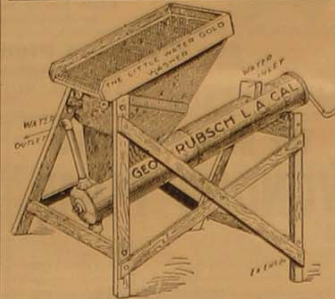
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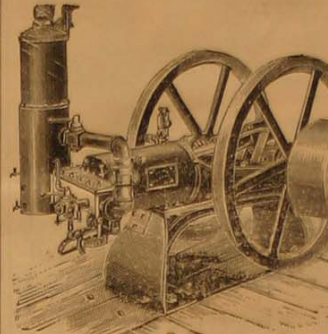
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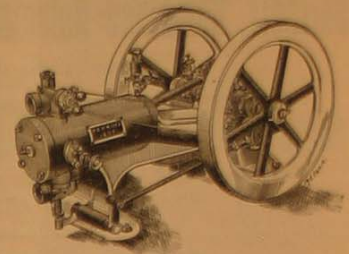
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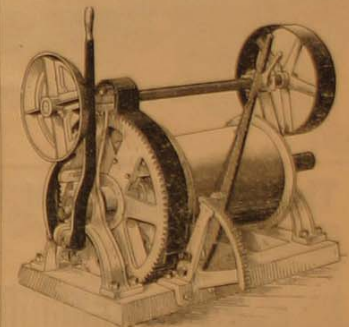
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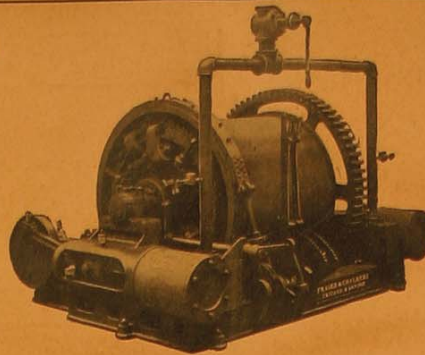
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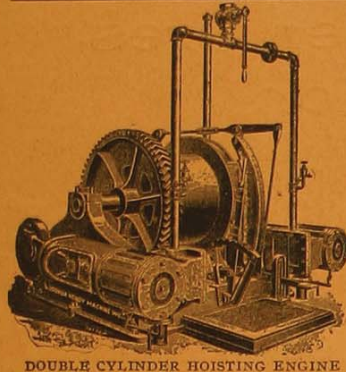
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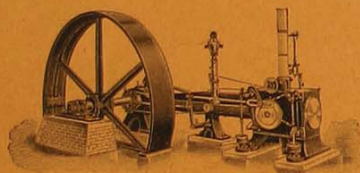
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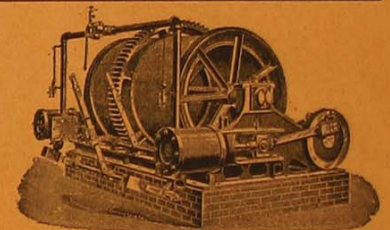
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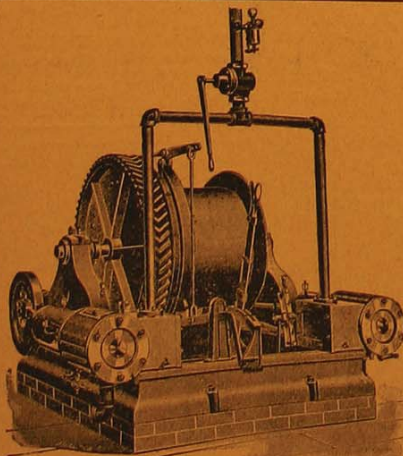
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THE ROPP STRAIGHT LINE FURNACE, For Roasting, Chlorinating and Desulphurizing Ores.

WE CARRY IN STOCK

Horizontal, Vertical and Portable Engines and Boilers. Rock Breakers, Cornish Rolls, Pulverizers, Concentrators, Ore Feeders. Hoisting Engines, Horse Power Hoisting Whims, Water Wheels, Steam Pumps, Ore Cars, Wire Rope, Ore Buckets, Water Buckets, Skips. Blowers and Exhaust Fans, Shafting and Pulleys, Belting, Oils and Mine Supplies. **Manganese Steel Shoes and Dies**

Estimates Furnished for Complete Plants for Hoisting Works, Smelters, Concentrating and Stamp Mills.