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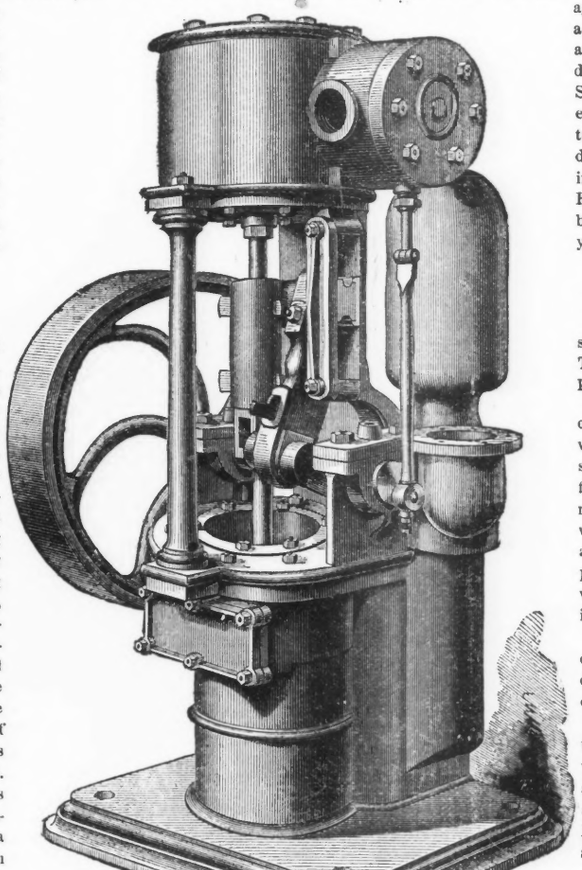
STEAM PUMPS.

Pursuing our series, we illustrate this week a Vertical Steam Pump—one of the varieties of the Crank-fly-wheel pattern built by Messrs. A. S. Cameron & Co., at their establishment, corner of Second avenue and Twenty-second street, in this city. They are built as plain steam pumps: or are arranged to be worked by hand as well as by steam; or as a steam engine, steam pump and hand pump, in one machine. They are designed for situations where space is valuable, as on board of steamships, etc. The iron-clad steamship Dunderberg, and numerous others of the United States navy, are supplied with them. They are made in the most substantial manner, and occupy the least possible space. Their general features correspond with those of the horizontal pumps built by this firm, which are in general use in the United States navy and the merchant marine.



SEWELL AND CAMERON'S VERTICAL STEAM PUMP.

New Desulphurizing Furnace.

A Mammoth District correspondent of the Nye county (Nevada) *News* says: M. B. Howard, a pioneer of the District, has been quietly at work on the most needed improvement in milling, the desulphurizing and chloridizing of silver ores. He claims for his furnace a saving of four fifths in the labor, and fully one-half in the fuel heretofore required, besides effecting the most thorough roasting possible; also, requiring less time for a given quantity of pulp. For this reason his furnace is self-acting throughout, and perpetual in its operation, no time being lost in discharging or refilling. The pulp enters at the point of expanded heat, and is carried gradually around and discharged at the most intense. The arrangement is such that, by shifting the angle of the hoes, any desired length of exposure is given to the pulp between its entrance and its discharge. There is no thing destructible about the furnace that is exposed to the direct action of the heat, except the hoes, which may be replaced in a few minutes' time, at a trifling cost, and in that respect the wear is no greater than in the old reverberatory furnace, on the same quantity of ore roasted. This invention should not be confounded or classed with the numerous rotary and other labor-saving furnaces of late invention, some of which are good, and do their work well, others work well for a short time, but are soon destroyed, or destroyed in part to such an extent as to be no saving at all, in the end. It is the result of long study, by a practical miner and intelligent mechanic, every point of which was suggested by the stern necessity of devising a furnace more effective and economical than those in general use.

The Sodium Process in Nova Scotia.

The following extract of a letter from a correspondent in Nova Scotia, says the London *Chemical News*, will interest some of our readers: "The experiments which I carried out with Dr. K., at the Lake Major Gold Mines proved so satisfactory, that Dr. K. was induced to operate upon a quantity of pyrites, which has hitherto been accumulating as waste matter in enormous quantities about the works, as you are aware. This morning he informed me that he has, by the sodium process, and in a very simple and inexpensive way, obtained gold from the pyrites, in the proportion of *five ounces per ton*. This result far exceeded his most sanguine expectations. He is desirous of making arrangements for having large quantities of amalgam, and would like to know what it would cost in quantities of a ton."

English Patent Office Report for 1865.

The annual report of the English Commissioners of Patents for Inventions has just been published. It states that during the year 1865 there were 3,386 applications for patents, 2,186 of which were passed; the number of complete specifications filed was 2,159, and the number of applicants who neglected to proceed within six months, as required by law, was 1,200. Notwithstanding the immense expense of printing all specifications in full, with the drawings, besides printing the abridgments of patents, amounting to £18,765, the expenses of the Kensington Patent Museum, which were £1,506, the fees paid to the Attorney-General and Solicitor-General and their clerks for doing nothing, amounting to over £10,000, and the ordinary expenses of the office, bringing the aggregate up to nearly £32,000, there is a surplus from the receipts of the year amounting to £47,326, or over three hundred and fifty thousand dollars in United States currency! It is time that the enormous government fees on English patents were further reduced. There is no doubt that they act as a powerful check to invention. The number of patents issued in England was less than one-third the number issued in this country during the same year.—*American Artisan.*

A Story of Wonderful Discoveries.

An English civil engineer named Johnson, has recently visited Khotan, in Chinese Turkistan, and according to the *Post*, reports:

1. The fertility of the country is increased by a fine, impalpable dust or mould which is wafted in from the adjacent deserts, "without wind, in perfect calm, and fills the air so as to darken it." This phenomenon occurred during Mr. Johnson's visit, and he was then unable to read print at noon without a candle. It is not explained how the dust is blown without a wind, but Mr. Johnson says it is "wafted in a calm," and he cannot be contradicted.

2. The storms in the desert raise waves of sand which settle into hills three hundred to four hundred feet high. Why not one thousand feet?

3. The tradition of the country is that three hundred and sixty cities were overwhelmed in one day by sand-storms. The sites of these cities are partially known; so there is a vast array of Pompeiis and Ninevehs awaiting somebody's pick-axe, shovel and archæological skill.

4. The people of these buried towns used gold coins weighing four pounds each—but "this is kept a profound secret by those who know the position."

5. "The store of tea used for the actual consumption of the people is now dug out of one of these ruined cities," and Mr. Johnson brought a brick of this tea away with him. "The Chinese supply is now cut off;" so the Ilchians cut off their supply from these bricks.

We are further informed that the country in which these wonderful things happened is highly auriferous—a remark which is perhaps unnecessary when we remember the four-pound gold coins which seem to have been the circulating medium.

Geology of New South Wales.

Mr. Wm. Keene, Government Examiner of Coal Fields of this colony, in a recent lecture, after speaking of his early home education, and geological

science and practice, adverted to the fact that geology, as a science, was of very recent date, and said, "that the first geologist had been looked upon as a lunatic deserving of pity. He recollected having when a boy, had an interview with *Stratum* Smith, so called, because he was always talking of strata, and who had been looked upon by every one as a madman." With regard to the geology of Australia, Mr. Keene stated that on the Wollombi ranges he had found a bed of salt, upwards of an inch thick; and in Sydney, there were strata of sandstone extending all along the coast, and beneath which they knew coal existed. In the Australian limestone he had found exactly the same indications as in the limestone of Europe, but whilst in Europe when they had reached the mountain limestone, they need never look for coal, in Australia, underneath the beds of mountain limestone, there existed two or three good seams of coal. Thus it was that the Australian coal formerly sent to England, had been treated with contempt, for it was thought to be only the coal from the upper and not from the lower geological deposits. In Australia, there were coal beds much older than in Europe; and, in fact, in New South Wales, seams had been found where they were never before thought to exist. To the English Exhibition of 1862, he (the lecturer) had sent several specimens, showing the geological position of the coal seams, and he had also forwarded Sir Thomas Mitchell's map, geologically colored. By this map, it was shown that the Sydney sandstone passed southward until it arrived at Paddy's River, which was the limit of the coal in that direction. They then came to the gold fields, and these were of different geology altogether to the other. On the top of the sandstone were to be found what might be termed the false coal measures, which had deceived many experienced persons from Europe; for the legitimate coal seams were only to be found below the sandstone. In the iron formation, rain percolated through the igneous rocks, and converted the soft shale into iron. This process was, however, assisted by the ants, and he would exhibit a piece of iron ore from the Fitzroy Mines which was full of these ant cells. The iron ore which was thus supplied from the Fitzroy Mines, he looked upon as inexhaustible. Beyond Golburn, the geology of the country changed, and they soon afterwards came to the gold fields. In New South Wales, however, they had got the upper beds of chalk, &c., as in Europe; but all the lower beds appeared to have been thrown to the surface by volcanic action.—*London Mining Journal.*

"Excelsior."

By Shortfellow, late from the land of "Ho! Joe!"

The shades of night were falling fast,
As through a Washoe village passed
The driver of a scrubby team;
And every now and then he'd scream
Excelsior!

His brow was sunburned, and his eye
Flashed like a meteor in the sky;
And the clam horn's notes were far surpassed
By the accents of that fearful blast—
Excelsior!

Down in the distant valley shown
The firelights of the ranchman's home;
And spectral snow drifts, white as milk;
Surrounded that most famous bilk—
Excelsior!

"Try not to pass," so Paddy spake;
"The shnow won't melt for more'n a wake,
The roarin' Truckee's dape and cowld."
But still that voice defiant howled
Excelsior!

"Oh, stay," the maiden said, "and rest
Thy classic mug upon my breast."
The weary traveler wiped his nose,
As higher yet those accents rose—
Excelsior!

"Beware the snow-storm and the sleet;
Beware the treacherous wild-cat feet."
This was his comrade's last good-bye;
But still he answered with a sigh—
Excelsior!

As homeward at the break of day
A miner plods his weary way,
On end stood each and every hair,
For a voice screamed through the startled air:
Excelsior!

A man was found by a faithful pup,
In snow and ice half covered up,
Hungry, cold and stiff—not dead—
Who faintly, very faintly said—
Excelsior!

At Huffaker's he soon was seen,
Imbibing nitro-glycerine:
And as he quaffed the liquid dram,
In accents while he cried—God damn
Excelsior!

Canadian Mineral Lands.

In all letters patent for mineral lands hereafter issued by the Crown Lands departments, the clause reserving mines of gold and siver is to be omitted.—*Canadian News.*

Mining Summary.

Colorado.

CENTRAL CITY, Aug. 19, 1866.

EDITOR JOURNAL OF MINING:

SIR—Colorado is now reaping the whirlwind from the wind sown in such liberal quantities during the past three years. No mining country has more cause to pray for deliverance from its friends. While the vaunted superiority of her ores is firmly established by every test that science and skill can devise, the headlong rush of experiment and reckless expenditure of money have more than counterbalanced the advantages of intrinsic wealth; and after years of shameful extravagance in every branch of mining operations, the initial steps of legitimate business are yet to be taken. Probably in no branch of operations are these facts more patent than in those which embrace strictly mining and raising of ores. A careful examination of the prominent mines on the Gardner, Gunnel, Gregory, Bobtail and other leading lodes, will satisfy any candid man that scientific mining has been heretofore neglected, at the expense of the best interests of the country. With one or two exceptions, hereafter to be mentioned, the truth is apparent that such workings have been entirely overlooked in the haste to take out ores enough to pay expenses, or make a show; and many of the leading mines have at last come to such a shaping, that sums of money equal in themselves to liberal fortunes must be expended on them to enable their managers to keep good even their present limited supply of ore. There are illy timbered, undrained shafts, dubious levels and planless caverns enough in this vicinity to make mining superintendents thank God, with the doctors, that the ground covers their bad work. It is with no thought of according undeserved praise or unjust criticism that the exceptions are made matters of comment, but more with the hope that attention may be called to workings that should serve as models. It is with this idea that a description of the Consolidated Gregory mine is embraced in this communication, as one that is being worked more with a view to extend, rather than contract, future operations, and to realize, rather than to disappoint, the expectations its owners have a right to entertain of it. Located in the heart of one of the greatest ore-producing veins in Colorado, with many natural advantages for working, it needed only a judicious plan, coupled with the ability necessary to make it enormously and permanently valuable. Both of these requisites were obtained with the services of Mr. Benjamin Rule and brother, now in charge of the property, as mining superintendents. It is immaterial to say in what school of mines these gentlemen gained their knowledge and experience; but a visit to the mine will convince any one of their ability and fitness for the trust committed to their charge. The property consists of claims Nos. 4, 5, 6, 7 and 8, west on the Gregory lode, lying upon a steep side hill. There are three shafts on the property—one 260 feet deep, about 25 feet from the east end of the mine; one 315 feet, between claims 5 and 6; and another 215 feet deep on No. 7. The ground, to a depth of about 200 feet, had been worked out in an irregular manner by the original owners, and has, during the superintendance of Messrs. Rule, been carefully timbered and filled with wall rock and other unproductive material. Below this it is intended to penetrate the vein with galleries or adits 60 feet apart, in perpendicular heighth, and take down the ore by overhand stoping. Already one level, 220 feet from the surface, is being opened and rapidly pushed both ways from the main shaft, and another commenced 70 feet below it. Every part of the mine is accessible from the main hoisting shaft, between Nos. 5 and 6, by means of a ladder-way, on one side of which a Cornish pump is noiselessly ridding the mine of water. The column of this pump is 9 inches in diameter, ribbed at regular intervals, and set with an accuracy and firmness that almost defies accident. It is worked by a 60 horse-power engine, which performs the additional duty of hoisting all the ore from the mine. The shaft is timbered in the most substantial manner, and is 8 feet wide and 14 long. A wind is out about 90 feet west of it, between the first and second levels, and the general ventilation of the mine is perfect. It is proposed to pursue this system of mining to an indefinite depth. The quantity of ore exposed is almost incredible. All along the upper level the ore appears, varying from 2 to 6½ feet in width. On each side of the shaft, in the bottom and through the lower level it holds a glittering promise to the eye, and affords a satisfactory assurance of an unlimited supply. The vein of ore is now exposed. Measured in a dozen different places, in as many varied locations, it averaged 2 feet 7 inches in width; and the mine is capable of producing, in its present shape, in the neighborhood of 70 tons, or over 9 cords per day; and this productive capacity will be doubled with the opening of another level, 350 feet from the surface, to which point the main shaft is being constantly driven. In the bottom of this shaft are many splendid specimens of crystalized sulphurets of copper, and the vein of rich ore is about 4 feet wide. There is an air of substantiality to every detail (and their name is legion) of the mine, which impresses one with a sense of security, and an idea that care and skill have overlooked every step of progress in the workings, and gives ample assurance that future operations have been looked at more than present and transient profit. Nor is it less plain that some such system of mining must become the rule, rather than the exception, before the extravagant expectations formed of this country can be realized. A year of patient labor is now required on many of our producing mines to give any assurance of permanent profit in the future; and mining companies would do well to profit by the workings of this mine, which will shortly have a producing capacity equal to that of any other ten mines that can be enumerated in Colorado.

SENECA.

MONTGOMERY CITY, COL., Aug. 18, 1866.

EDITOR JOURNAL OF MINING:

SIR—Supposing that you don't often hear from this mining region, I have concluded to write a few lines from the Montgomery Mining District of Colorado, which is situated at the eastern base of Mt. Lincoln, at the headquarters of the Platte, Arkansas and the Blue rivers. Our mines are auriferous. The veins, as a general thing, are very well defined, and large quantities of paying ores can be extracted from them right at the start. This district has good natural advantages ever many others; 1st. The favorable location and bearings of the veins, admitting the tunnelling right on the vein itself; 2d. Ample water power for hundreds of mills, etc.; 3d. A good supply of timber for building purposes as well as for fuel; 4th. Easy access to our mines from the valley, specially from the Arkansas; 5th. The large number of shades existing in the district, the large quantity of ores that can be taken from them, and, as a general thing, they assay as well, if not better on an average, than any other gold mining district. But one great impediment to its thorough development is the lack of capital to operate with. Yet this is a good and safe field for investments, if the means employed are placed in the hands of a good, sound and practical miner. When I say practical miner, I mean a man who has graduated with the pick and shovel, not such as, unfortunately for us and for themselves, are sent by many Eastern companies, whose only knowledge of mining they have learned in a college, a dry goods or grocery store, or in a saloon, and who don't know anything else, but riding fast nags, etc., and wearing white kid gloves to visit the mines and to tyranize over their employees. In many instances these refined agents would congregate with each other and their friends, to have good time, good sprees, and their respective companies would foot up the bills, by paying vouchers, for extra labor, powder, fuse, steel, etc., which they never got. In other instances these companies will send men without any experience in mining whatever, but still honest, and when they are on the grounds they can't judge for themselves what to do or even how to commence. They have to ask the advice of outsiders before they dare do anything. Now, no company in the world could ever make any profits at mining anywhere with such management. And I say that capital expended in our Colorado mines, with good practical miners for agents, who will work economically and systematically, can make very neat profits in due course of time. Another oversight of capitalists is that in many instances as soon as they have a company organized, they go to work in spending the biggest part of the working capital in buying machinery, building up fine mills, etc., before they know whether they will have any use for them, whether they have any ores, or whether they have the proper kind of machinery. More than three-fourths of the quartz mills in this Territory to-day, are useless, and they have cost millions of dollars. Why don't they start prudently, first by getting out ores from their mines, learning the quantity and quality of them, then by that time some new and more economical process of reducing ores might be discovered. Besides, it improves the quartz to be exposed to the atmosphere. And to substantiate my statements I would cite one company, the Pioneer Gold Mining Company of Philadelphia. They are operating on the Parsonage and on the Andes quartz lodes in this district, they have selected a good practical miner for their agent, (Captain Daniel Plummer, of Lake Superior mines) and have achieved more than nine-tenths of other companies with a smaller outlay, and to-day they have a better show (in my opinion) to get good dividends than any other company in this neighborhood. The reason is, their operations are conducted systematically and with economy throughout. They are only awaiting the balance of their mill machinery (the boilers) to be ready to run their mill. The plan they work their mines is by tunnelling. Let a few more companies of the same sort come to operate among us and we can satisfy the world that quartz mining is but in its infancy yet. There is plenty room for all. But we don't want any that will spend all their working capital in machinery and send inexperienced men as agents for them, who will come out here and will look at the mountains as if they were ghosts, saying that gold mining is a humbug, a lottery, etc., on account of their being afraid to soil their hands in handling the tools—we would rather be excused from such visitors.

NORTH STAR.

The Black Hawk *Journal* says: Mr. Dubois, agent for "The Colorado Ore Reducing Company," started

his furnace and mill complete, yesterday morning. Everything worked to perfect satisfaction and the mill will be taking out gold as soon as the tables shall be amalgamated. It uses the Keith Process with the latest improvements, and is intended to manufacture four cords of ore a day, and to work custom ore. It was commenced in April last, has been pushed forward with commendable energy, and is as nice and complete an establishment as any in the country. .....The Central City *Register* of August 28, says: Several new smelting works are about to be erected at Georgetown; among them is one which will cost twenty-five thousand dollars. Building is being done rapidly there, as a whole it appears to be about the loveliest place in the Territory. In many portions of Clear Creek county, mining is very dull, and of course everything else follows suite. The roads are in excellent condition. Jule Lombard, of Chicago, is starting several tunnels on North Clear Creek to strike lodes which crop out there. Their present appearance is very unfavorable, and does not promise future success. .....James E. Lyon & Co.. recently purchased some ore from a lode on McClellan mountain in Argentine district. This ore is said to be remarkably rich and the vein extensive. It was packed on jackasses to Georgetown, and thence on teams to Lyonsville; the cost of packing and hauling being $25 per ton. About $25 per ton was paid at the mouth of the mine tor the ore, or—as the rock weighs 12 or 15 tons to the cord—about $300 per cord.....From the Denvir *News* of the 29th ult., we take the following: We have been shown some very rich assays from some of the silver lodes belonging to the Ute Mining Company, situated in Pacific Lake District, near Breckinridge. One assay from Lode No. 1, taken from a tunnel twenty feet from the surface assays $23,421,91 per ton of 2000 pounds. Another from the blossom rock of Lode No. 3 east, in the same district, assays $4,708,20. The assays were made by Mr. Schirmer of this city. The company is getting out a large amount of ore, and we propose erecting reducing works at an early day ..... At Elizabethtown many lodes are being extensively worked.....The works of the Argentine Silver Mining and Exploring Company, are situated in a beautiful park where South Clear Creek leaves the rocky gorge leading from Argentine. The works consist of an Atwater oxidizing machine, the only one in the country, and a Scotch hearth. They are on a small scale and are as yet regarded as an experiment. The company is working the Paymaster Lode in Argentine, and the ores, galena, are packed down from the mine upon jacks, eight miles to the mill, where quite a quantity has been dressed by hand in readiness for a test, as soon as the works are in readiness, which Mr. Stowell expects will be during the present week..... The Colorado Prospecting and Mining Company have raised a working capital of $50,000, and our Mr. Byers as Superintendent of the company, has gone to the Snake River mines to commence operations.....A letter from Boulder, says: Mining is still progressing here. The Ni-wot company cleaned up three hundred and fifty ounces of amalgam from four days run with twenty-five stamps. When retorted, it will be worth at least $2000. The Long's Peak Company are pushing things with a rush. They have their large mill enclosed and will be running shortly. On James Creek a few miles north of Gold Hill, a company are developing some very superior silver lodes, which have given a fabulous assay, and intend to have a mill and furnace at work shortly. On Gold Hill prospecting is going on with satisfactory results, and on Gold Run gulch mining is proving more profitable than ever before. I have not yet seen anything of their mill Judge Sargeant promised to put up in Sugar Loaf district. Please inform him that he is losing a fortune every month by his delay. The bowels of Sugar Loaf yearn for that mill.

Nevada.

The Comstock.—The Stock Brokers' Review of the San Francisco mining share market, for the week ending Saturday, August 18, says: The mining share market has been somewhat depressed this week, and, with scarce an exception, every stock on the list was sold at a decline. There seems to be no material abatement in the yield of bullion from prominent claims, and, so far as we can learn, there have been recently no unfavorable developments worthy of special mention.....Hale & Norcross has met with no sales this week. This stock is now rarely offered, being in the hands of strong holders who are indisposed to sell except at full rates. From the 1st to the 11th instant 1170 tons of ore were delivered to the different mills, and 65 per cent. of the assay value of which has averaged about $50 per ton. A dividend of $55 per foot was paid on the 15th instant.....Savage has been dealt in at fluctuating rates, declining from $1200 to $1125, rallying to $1200, receding to $1150, and selling yesterday at $1170*a*1140, buyer 30. During the week ending the 11th inst. 896 tons of ore were extracted, and 806 were shipped from the mine. The estimated value of the ore extracted was $41,404. The approximate cost of its production, $9,160, and its reduction, $12,190, leaving an estimated profit for the week of more than $20,000. This ore was chiefly taken from the sixth station, and its quality is better than for some time past; second class paying about $60 per ton. and third class is $35*a*40 per ton. On the sixth station the southeast face of the drift is improving daily. and a large body of ore is also being opened in running north. Both of the company's mills are now running regularly, and are likely to crush 2000 tons of ore this month at a cost not exceeding $12 per ton. Crown Point rose from $925, buyer 30, to $945, buyer 30, declined to $850, rose to $890, and closed at about $950 asked. During the week ending 4th inst. 588 tons of ore were hoisted from the mine. The drift from the main shaft—fourth station—is now in about 400 feet.....Gould & Curry declined to $700, rose to $740, closed at $750 bad. Receipts of bullion for the first half of this month exceeded $53,000. There has been some improvement in the quality of ore reduced recently, which has averaged about $45 per ton. .....Yellow Jacket has been more active, and some 100 feet were dealt in, advancing from $715 to $748, steadily receding to $635, ex-dividend paid on the 15th inst., and selling yesterday at $630*a*635. From the 1st to the 8th inst., inclusive, 15 tons first class, and 1497 second class ore were extracted from this mine. The yield of bullion for this period, from partial returns, amounted to $26,825. The total cost of the reduction of 2083 tons of ore by the Yellow Jacket mill last month averaged $11 18 ..Ophir has been in much less favor, and nearly 100 feet were sold, steadily declining from $265 to $210, rallying to $217 50, and changing hands yesterday at $217 50*a* 220.....Chollar-Potosi has been more active, and tolerably well maintained within a range of $180 and $173, closing at $173. No material change to note in any portion of the mine. Operations are still suspended below the Potosi tunnel, owing to repairs being made to the shaft.....Belchor is also in less request, declining from $150, buyer 30, to $110, seller 30, selling yesterday at $108. There is no new feature in this mine.....Alpha was sold at $80 per foot. .....Empire Mill and Mining company has been well maintained at $120*a*118 per share.....Imperial opened at $97, receded to $88, ex-dividend of $6 per share, and closed yesterday at $90.....Recent developments show an improvement in the ore of the Alta mine. The receipts of bullion for the first half of the present month show an increase of $9000, as against the same period in July.....The Lindauer mill is now exclusively employed in working tailings, of which there is a large supply at the Rock Point mill .....Confidence was dealt in at $52a50 50, closing at $51.....Overman has attracted less attention, receding from $40 50 to $29, rallying to $31 50, then selling at $29 50, and closing at $27 50..... Bullion is in rather more favor, advancing from $24 to $34, dropping to $32 50, and selling at the close at $27.

Humboldt.—From the *Register* of Aug. 18, we take the following: Pioneer Mill has been running this week on ore from the Manitowoc ledge. Average about $100 per ton.....Work resumed on the Rochester company's claim, on the Montana ledge, under direction of Superintendent Lark. Work will continue day and night till the ledge is struck. Double shaft down 136 feet.....Chas. Balbach, an old-time resident of Humboldt, has sold his interest in the Montezuma mine, 175 feet, to A. W. Nason, for $7500 in coin. Balbach will leave for the East in a few days. .....At Buena Vista district work is going ahead in most of the old ledges, Manitowoc, Chameleon, North Star, Arizona, Seminole, and others, driving ahead. Several other companies are organizing, and will commence soon to develop their ledges.....A friend writes from Star City, Aug. 16: Yesterday visited Sheba Mills, learned that the ore being crushed yielded $75 to $80 per ton—that they crushed, roasted and amalgamated about 2½ tons per day, running ten hours. Mr. Sauches informed me that heretofore in retorting the amalgam, large quantities of "slag," that could not be melted in the furnaces, came from the retorts with the bullion; but that he had discovered a method of retorting by which the "slag" was so reduced that hereafter no difficulty would be found in melting. Some 500 pounds of "slag," worth about $3 per pound, was shipped to Virginia for melting. To the present time Mr. Faulkner has been running the mill on his own ore, but is ready at all times to do custom work. The Yosemite company is about to resume operations, and will have their ore worked at this mill, which will soon be changed to a wet-crushing institution.

Hot Creek.—We are informed by a person who returned recently from the Hot Creek district, says the Austin *Reveille* of Aug. 22, that prospecting was being carried on actively and generally with success. The business is difficult, for the mountains are very steep and rugged, and the suface indications, especially "float," are so scarce that the prospector is apt to be discouraged. But the prospects of the district are of the most flattering character, and the discoverer of a good ledge is certain of being rewarded sooner or later. Several ledges were lately discovered and located south of the Old Dominion, which give great promise. The Silver Glance, one of the recent locations, is apparently a monster ledge, well loaded with excellent mineral, an an assay of which by J. S. Currie, yielded $1689 of silver per ton. A quantity of ore from the Vintage company's claim on this ledge is about to be brought to Austin for reduction at one of our mills. The American Hunter ledge, located on the same hill as the Silver Glance, is represented to be fully forty feet wide, and we have been shown certificates of assays of its ore running from $40 to $1000. The Old Dominion mine is described as a magnificent property, and as exhibiting a large amount of a high grade of ore. From the number, size and richness of the ledges found in the Hot Creek district, the parties interested would seem to be justified in believing that it is destined to rank among the chief and important mining camps of the region. There is a good supply of wood in the district, and Hot Creek can supply a score of mills. The water is hot enough for the process of amalgamation without the use of steam. The Empire district, a few miles south, contains a number of good ledges, though the rauge appears to be somewhat broken.

Smoky Valley.—In this district, says the Reese River *Reveille*, the tunnel of the Commercial Silver Mining Company, which was projected to cut their claim on the Smoky Valley ledge at the depth of 600 feet below the surface, has been pushed in 150 feet. The tunnel is of fine proportions, being seven feet high and six and a half feet wide, and its extreme length will be about 350 feet. Work on the tunnel is being prosecuted night and day by an effective force. The Big Smoky company's claim upon the same ledge has been perforated by a tunnel 330 feet long, at which point they cut the vein, and they are now proceeding to extract ore. The ore is of a superior character, as shown by the working of two tons at the Butte mill, with the handsome yield of $96. The Everett claim, also upon the same ledge, is at present lying idle, the Superintendent, J. S. Slauson, having gone to the East. Few larger ledges than the Smoky Valley exist in the State. It outcrops boldly, and it has been traced upwards of five miles, and its great width varies from twenty to forty feet.

Reveille.—An assay of mineral from the Orient ledge in the Reveille district yielded silver $113; gold $30.

Red Mountain.—A number of ledges of gold-bearing quartz have been recently discovered in the Red Mountain district, a few miles southwest of Silver Peak.

Reese River.—The hills in the immediate neighborhood of Austin are filled with countless metal-bearing veins lying in close proximity to each other, generally small, and many of them producing ore of most remarkable richness. These are owned by thousands of companies, and this division of energy and capital has in a great measure caused the failures that have occurred. With these innumerable claims, it would be a matter of greater surprise if there were not failures than if all were successes. But a fair proportion have proven rich, and of proportions sufficient to constitute good and workable mines. There is probably no place in the world where so many good mines exist in a small space as in the Reese River district, in the immediate vicinity of Austin.

Montana.

The Helena *Radiator*, of August 11th, contains the following: Judge Turnley's mill is crushing quartz from the Park lode, and the last "clean up" yielded $1,739, being an average of $46,50 to the ton.... We hear favorable reports from Mitchell's Gulch, which is about four miles from Montana, and about twelve from here. Some of the boys are taking out good pay, and all have excellent prospects. Other good diggings are reported in that immediate vicinity.... The "Bannack" has been erected on Nelson Gulch. The mill has been built under the supervision of David Worten, Esq., formerly engineer of the far-famed iron-clad "Kearsage." It is the intention of the owners of this mill to work ore by a new process. .... Owners of the claims down the gulch, who are working back towards the hills, tell us that the ground thus far worked in that direction, has greatly surpassed their expectations in the yield of gold.... We have too many idle men about the streets. It takes money to carry a man through the winter here, and these chaps had better be at work, making a little stake against a time of need.... It is estimated that within the last three weeks not less than five hundred well armed and well provisioned men have left here in small parties to prospect the Big Horn and Wind River Mountain country, and as among these parties are many good miners and old prospectors, we confidently expect that most valuable discoveries will be the result of their explorations, for it has been known for several years past that gold must be abundant there, from the fact that many parties have found it all along the traveled route, and in many places in quantities that would pay, but have been deterred from extended investigations by the number and hostile character of the Indians; and also by the fact that good placer diggings abounded here, where protection was assured and supplies easily accessible.... The Virginia City *Democrat*, of August 16th, says: The miners are hard at work in Alder Gulch and Nevada district, taking out good quantities of gold.... Virginia City is fast filling up, and houses will soon become scarce. Business is very good, and merchants look cheerful.... The *Post*, of August 18th, contains the following: Brown's gulch, which has not heretofore been considered among the gold producing gulches of Montana, we learn from a gentleman just in

from there, is now paying from fifteen to twenty dollars per day to the hand. Only a few men are, as yet, working on this gulch .... Parties are still starting to Wind River: but no one seems to know exactly where the Wind River mines are. We have not yet seen any one who has been there, neither have we seen any of the "precious metal" of which there is said to be such an abundance in that quarter. However, there is scarcely a possibility of a doubt but there are good mines in the Wind River Mountains; but we do think it an utter piece of folly for men to start at this late season of the year on such an uncertainty as the Wind River stampede seems to be. .... By reference to the County Recorder's books, we find, that certificates of twenty new quartz leads have been recorded during the past week—all of which are located in districts in the immediate vicinity of this place.... Yesterday, while on a trip down Alder gulch, we took occasion to visit some of our mining friends in the vicinity of Nevada City. Mr. L. H. Lusk informed us that he had in his employ about twenty men, and was taking out, on an average, three hundred dollars per day. Mr. L. says that he has recently taken out twelve hundred dollars, with the same number of hands now employed. Messrs. Hedges & Co., who own the claim below Mr. Lusk's, took out, on last Thursday, $229, being the first clean-up they have made since opening their ground. In this claim, from one pan of dirt, four dollars and fifty-seven cents were obtained. The California boys, who are working on the bar near Nevada, are not doing as well as they have done for some time past, though principally on account of having to run a great amount of top dirt through their sluices. McDermott, who has been compelled to suspend, on account of water, for the past week, commenced sluicing again on Thursday, and from the way the dirt prospects show we judge Mac will realize some funds when he lifts his riffles for another "clean-up."..... In going up the gulch to Summit district we visited claim after claim, all of which were said to be paying well, though, seemingly, worked to great disadvantage, until we arrived at Mr. Corah's claims, which are located about one mile below Summit City, which take up about one thousand feet of ground, where we found a bed-rock flume. The flume, when completed, will be capable of carrying about five hundred inches of water, and will most certainly serve to show our miners that old Alder has not, as yet, been even prospected. The claims adjoining the city of Summit, and as far as No. 11 above discovery, are owned by Messrs. Hall & Co., who have a flume similar to that on Mr. Corah's ground, through which immense heaps of dirt are being passed, and the proprietors seem satisfied that large amounts of the precious metal are deposited in the riffles thereof. The company at work on discovery claim are taking out about twenty dollars per day to the hand. There are four quartz mills in the vicinity of the town, all, or nearly all, of which are in running order. The Seneca Falls mill is a very large frame structure, and is said to have very fine machinery. The Scranton mill is a Dodge Crusher, with all the latest improved amalgamating apparatuses. The building is of stone, and, standing as it does in the edge of the city, adds much to its appearance. The Excelsior is a very large mill built of stone, and has twenty stamps. The Idaho was the first mill brought into Madison county; but from all we can learn, it has never been very successful in the crushing business. Another mill is also in process of erection in this district, the machinery for which is being brought from Bannack City. Among the ledges which we visited while on our late raid, is the Nelson, which exhibits, at the depth of seventy feet, a crevice seven feet in width, of rich paying rock. The Yankee Blade, too, which has a shaft some fifty feet in depth, into which we did not have time to descend, but judge from specimens of the rock, is rich enough. The bearsage is well developed, having been tapped at the depth of one hundred and twenty feet. The Keystone prospects finely at the depth of sixty feet, and shows a well defined crevice. These are only a few of the numerous quartz ledges which are located in Summit district, and, perhaps, not the best at that; though apparently all good and well defined lodes. .... A letter from Bannack, dated August 6th, says: The Butterfield Company, which is the oldest quartz mining company in Montana; Mr. W. C. Hopkins is the superintendent of this company, and the Territory owes much to him for being the first to induce capitalists to invest in our mines. This company is the owner of number six, on the famous Dacota, which has a shaft over three hundred feet deep. In addition to the vertical shaft, there are several drifts – the one which is now being sunk, at the depth of two hundred feet, is thirty feet long, and they are not to the end of the quartz yet, much of which shows the shining ore to the naked eye. Besides this, they are taking out tons of quartz from a new shaft now fifty feet deep. The mill has been completely repaired, and to-morrow will be set to crushing quartz, and we believe "it will never stop again," only for repairs, till it is worn out, or removed for a better machine .... Hands are still in demand at good wages, for mining, carpentering, brick-making and teaming .... Several trains with machinery are expected in, every day, which we will note in their order .... Prospectors are still very successful. Messrs. Wright, McMeen & Co., have recently made a new discovery at Bald Mountain, which, without doubt, is the best gold lode of that district. The crevice is three and a half feet in width, and is a well defined vein of pure quartz. The decomposed quartz "pans out" well, and it is impossible to select a single piece of the hard quartz that does not yield a good prospect; yet no free gold is visible. It is believed by all good judges that when sunk on, this lode will take the precedence of all others in the Bald Mountain district.... The Bannack Ditch and Mining Company are doing well, and are keeping many hands employed.

California.

Nevada.—From our files of the *Transcript* to August 16th we extract the following: The Whigham Ledge is now turning out very excellent rock, which bids fair to fully equal in yield the quartz taken out in its palmiest days. The last crushing at the French mill yielded about $75 to the ton, and the rock now being taken out is superior to that lot. A number of magnificent specimens containing free gold have recently been found in the bottom of the incline.... We are told by a gentleman who recently visited the Marietta ledge, at Diamond creek, that it is the richest mine, for the depth reached, that he has ever seen. The shaft is now down twenty feet below the surface, and at the bottom the ledge sparkles like gold stone with the virgin metal. The ledge is large and well defined, and can be worked to excellent advantage. ....On Sunday last, after a run of one week, the Banner company took out about $3,300 at their new mill, which is situated at the mine. This ledge is one of the best in the county, on account of its size and the uniformity of the pay. Besides yielding this amount at the new mill, Stiles' mill has been kept in constant operation upon rock taken from this ledge. In the bottom of the incline they are taking out rock superior to any yet found, and the drifts are also giving excellent ore. In a few years the Banner mine will show as good a record as the oldest and best quartz lead in the country .... In the vicinity of Huni's and Quaker hills some very excellent mines have recently been opened on the Blue lead. The Gougeye company, at the former place, erected a mill last Spring, and have since been taking out good pay. On last Thursday they struck a vein of very rich cement, and their next run will be the best ever made.... The San Joaquin company, at Sweetland, after a run of twenty-one days, cleaned up $16,000. A one-twelfth interest in this mine has recently been sold by Richard Kent for $5,000 The shaft upon the Italian mine is now down fifty feet. The ledge is over two feet wide and well defined. The rock is studded with free gold, and the next crushing will pay more than any yet. The last lot worked paid $72 per ton.... A few days since J. S. Crall sold a one-twelfth interest in the American claims, at Sebastopol, Bridgeport township, for $22,600 in gold. These are among the most valuable hydraulic claims in the county, and yielded $10,000 to $12,000 every twelve days.... The McArdy tail flume, which is the outlet of the American and several other claims, has been sold by the Middle Yuba Canal company to Spon and others for $6,000. This flume is little expense, and between six and eight thousand dollars are taken out of it every year.... Yesterday saw at the store of Banner Bros., some excellent specimens of rock from Meadow lake. The specimens were collected from different localities in the district, and show the diversity of the ore. Many pieces contain rich galena sulphurets. Some of the rock is blacked, as though subjected to the action of fire. This lot of specimens give a good idea of the rock taken from the ledges of the new district .... A. T. Frye and James Spring have recently struck a magnificent quartz ledge on Diamond Creek hill, about three miles from Omega. The ledge is about three feet wide in the bottom of the shaft, which is twenty-five feet below the surface. The rock looks splendid, showing a large amount of free gold. The locators have been to work about three weeks.

Los Angeles.—A Los Angeles correspondent of the *Alta* says: The oil districts are looking up, and considerable of the article is being captured by those who understand the slippery business. One of the San Buenaventura mines has suspended work for a short time in consequence of the difficulty of keeping employees. They have plenty of oil, and their suspension is not for any want of the presence of the stuff, but the gas is so strong in the tunnel that workmen cannot be induced to continue the labor. When, however, a chimney is cut in the tunnel for ventilation, the mine can be readily worked. In this county we not only bore for oil and dip it up from springs, but run tunnels for seepage, and follow the vein in the same manner nearly as in mining for ore. The Pioneer oil well has gone through 380 feet, and struck a vein of water which flows out, as estimated by the superintendent, Mr. Pothemus, at forty barrels per hour. A further depth will not be reached until the present hole, which is now being reamed, shall have been enlarged in diameter one inch. The company is sanguine of striking oil in this well when it shall have been sunk to not more than a reasonable distance. Passing the works of the Wiley Oil Springs company, a few days ago, I was astonished to see the stuff (oil, I mean) running to waste. On inquiry, the information was given that tanks were a scarce article in that vicinity, but that the company had already made arrangements to commence saving the fluid in a few days.

Santa Clara.—The capital of the New Almeden quicksilver mine is $11,000,000. It produced in 1865, 47,194 flasks, equal to 3,610,341 pounds. The expenses of the mine were $800,000. The railroad from the mine to the furnaces cost $30,361.

Alpine.—The *Miner* of August 11th says: We were much pleased in passing Davidson's mill, between here and Silver Mountain, a day or two since, to see the life and activity there manifest. Some thirty-five men, consisting of millwrights, masons, stonecutters, carpenters and common laborers, were busily employed, under direction of Captain Charles Uznay, constructing in part from the steam works of the saw mill and the idle stamps so long lying useless there, a quartz mill with six roasting furnaces and the necessary barrels to work ores by the German or Freiburg method.... The drainage of the creek from the point where the American lode crosses has laid bare a portion of the croppings before concealed, proving the lode to be wider than heretofore supposed, and that the drift lately run, instead of being through the ledge, has not yet penetrated the best portion of it—that next the hanging wall. The substance struck, and supposed to be the east casing, is now considered merely a wedge, or horse, in the ledge, and will be cut through in order to strike the ore beneath the croppings, above spoken of, which are superior to those found on any other portion of the lode.... The Mullan shaft is down 75 feet; expecting to strike the ledge every day.

Calaveras.—The *Chronicle* says: At Railroad Flat, Post & Co. have had more rock crushed at Harris mill, since our last issue, which averaged fully equal to their first crushing—$40 per ton. The utmost activity prevails among the quartz miners in that region.... The *Register* has the following: Eighty tons of rock from a claim near West Point, a few days ago, yielded $11,000.

Mariposa.—The Stockton *Independent* says: The first lot of copper ore, consisting of nine tons and a half, from the Ne Plus Ultra mine, Chowchilla, Mariposa county, arrived yesterday by Blanchard's team. There are sixty tons of ore at the mine ready for transportation. The ore assays about 40 per cent.

Sierra.—The *Mountain Messenger* says: The continued and unexampled success of the Sailor quartz company, previously alluded to, has had a salutary effect on our formerly lethargic population. We hear that several companies, located on different veins in the vicinity, have commenced work in earnest, and are now quarrying ores which they propose testing at custom mills. We have visited several of the properties alluded to; some of them show rich prospects, and in no instance have we failed in getting a good working result.... We have seen a rich specimen, about the size of a man's head, from the Sailor ledge, together with smaller specimens from the same, that are full of gold. This company cleaned up after a second short run, doing better than at first.

Tuolumne.—The *Citizen* (formerly the *Courier*) says: We learn that Gen. Darrow and son took from their claim, near Tuttletown, last week, three and a half pounds of gold .... Messrs. Evans & Shanks were in town last week, and exhibited some very rich specimens from the Moor lead .... On a vacant lot on State street, immediately opposite the *Citizen* office, Mr. A. Levy washed out eighteen pans of dirt, on Thursday last, and obtained $6 50 in gold, being an average of a fraction over thirty-six cents to the pan.

Twelve tons of rock taken from the Hazel Dell claim, during the past week, yielded $360. This claim is owned by Messrs. Bacon & Co., and located some seven miles east of this city.

Idaho.

RUBY CITY, August 17, 1866.

EDITOR JOURNAL OF MINING:

SIR:—Thus far the "War Eagle" mountain has poured forth of her wealth in excess of any of her neighboring peaks. The Oro Fino Lode has been upon the lips of nearly all who are familiar with mining interests as the richest vein in this section: and has given to its owners large results; but when the "Poorman" vein was struck, then all other veins ceased in a measure to be talked of. The lawsuit between the "Poorman" and "Hayes & Ray" parties being settled and a consolidation into one company having taken place, they are now at work taking out rich ore in quantities sufficient to furnish two mills until November; viz: the N. Y. and Owyhee company's mill running 10 stamps, and N. Y. and Oro Fino 10 stamps. The results from these mills must be very large, from the quantities of bricks being piled up in the assay offices of Messrs. Blake & Co. and King & Webb of this city. The richest ore is being packed in boxes to be shipped to Swansea, Wales, for reduction. Much excitement has been exhibited in the last week on account of the exceeding richness in gold and silver of a vein located in 1863. It has been considered a good lode by the locators and the necessary amount of work done to hold it; but its richness was not fully known until Eastern capital secured it. The vein is 5 feet wide between the casings; 2 feet of the vein is completely studded with the sparkling color,

beautiful in the extreme; while the balance of the vein, 3 feet, is rich in sulphurets of silver. This vein was located at the "Silver Chord" and runs nearly North and South, which is one of the best evidences of a true vein; and should the "Poorman" and "Hayes & Ray" vein continue down the hill in its present course it must run into the "Silver Chord," which is the oldest location on that side of the mountains. It will be gratifying to the stockholders of the Cosmos Silver Mining Company of N. Y., office 158 Broadway, to learn that their Superintendent, E. H. Dewey, has purchased this lode for the company, and is running their mill upon the ore night and day; with prospects the largest I have ever seen. The vein is finely located, and now being opened in the best manner, with two shafts and two tunnels running in on the vein; miners are sloping from above which will give ore enough for the constant working of their mill night and day through the winter, giving great advantage over mines in other localities. The company have other rich property, the "Morning Star," "Silver Legion," one of the best developed ledges in this camp, also "Varney and Carrico" lode, 3 feet vein, located on the summit of "Florida" mountains, rich in gold and silver, and must soon prove a great accession to the wealth of the company. The N. Y. and Owyhee company are working the "Stamper" claim located some 400 feet south of the "V. and C." and is of same character of ore. A number of veins have been struck upon this mountain, the "Varney and Carrico" having the prior location. A tunnel has been run into this mountain by miners who, for want of funds, were unable to continue to its completion; but if financial aid could be given them, their success must be complete, judging from the float rock which I found on the mountain, being the richest I have seen. The Lincoln company mill is crushing "Oro Fino" ore and working the "Allison" ledge, doing a large amount of work in tunnel and shafts, hoping soon to meet a body of rich ore. Moore and Fogus and Minear's mills are also crushing "Oro Fino" ore. Flint District, eight miles from Silver City, is destined to take a high stand among the mining camps of this country. The quartz vein running nearly north and south are large, well defined, of rich sulphurets of silver with some gold, and easily worked. The country is beautifully laid out with hills and valleys, wood and water in abundance for mill purposes. Feed for stock is most luxuriant and of great growth. While on horseback I have had oats sweep my face which were growing wild on the hills. The "Rising Star," "Virginia City," "Owyhee and Idaho," "Last Chance," "Rochester" and "Twilight" are among the last ledges in this district, being well opened and showing rich in sulphurets of silver, they are from 4 feet to 12 feet wide, and can be worked by tunneling in on the vein. There is a mill going up this fall, and soon the dwellers in Simmonsville, Flint district, will be gladdened by the sound of the stamps. L.

The *Dalles Mountaineer* of Aug. 3, says: We saw at the assay office of Mr. G. S. Miller, of this city, some very rich silver ore from a lead recently discovered in the Flint District, Owyhee. The lead was called "Sherman or Poorman of Flint District," and was discovered by Mr. L. J. Swart formerly of this city. Mr. Miller has made two assays from the rock, the first of which produced $48 16 in gold and $2,559 74 in silver, and the second, $33 10 in gold and $2,648 05 in silver to the ton. The lead is seven feet wide, and has been traced for about a mile. The ore assayed by Mr. Miller was not selected, but is an average of the rock taken from the mine. It is thought that this lead will far out-rival the original Poorman lead of Owyhee in richness and extent when it is fully developed. We congratulate Swart on being one of the "Poormen of Flint District."..... Mr. G. L. Howard, returned from Reynold's Creek near Ruby City, says: "I visited the coal mine on the head waters of Reynold's Creek, owned by G. Hays, Hill Beachy, M. Polk and Mr. Bixby, the Superintendent of the work. They have a tunnel of 176 feet into the hill, the workmanship of which is a credit to the Superintendant It is my opinion that these gentlemen have a fair prospect of a valuable bed of coal. There are three distinct veins or stratas of coal, one of six, one of four and one of two and one-half inches in thickness. The specimens of coal which I have tried by burning, is not of the first quality, as I believe none is so near the surface, although it burns very well. Mr. Bixby is an experienced coal miner; he says he is confident it will be a successful operation, of great profit to the lucky owners. I hope it may, as it will be of great value to the Owyhee country. The Colorado *News* of August 29, says: We were shown a day or two since by Mr A. B. Ingols, of this city, a very pretty "tin stone," which was brought from Idaho by a returning miner. This ore looks more like a precious stone than a mineral, being beautifully striated with various colors, and after cutting will make a very fine setting.

Michigan.

The Ontonagon *Miner*, of September 1st, says: The August product of the Minnesota mine is not yet disclosed, but there is no doubt it will be over 30 tons, from a mining force of fifty men. This result, three-fifths of a ton per man, was considered in its palmy days, when their force was 300 to 350 men, a very favorable one. We have never doubted but that a turn in the fortunes of this company would come, and it is possible that it is approaching. The new rollers, (one set of which are being used) are working admirably.... The Flint Steel River Mining Company are certainly opening the largest, and probably one of the richest lodes in our country, on which there are three shafts down to the third level, numbering at No. 1 shaft. Over 1,000 feet of drifting has been done on the second level, through a lode of unexampled width and quality, in places yielding more than a moiety of its mineral in coarse copper—mass and barrel work—yet the stamp work is very abundant, but no steady large yield can be realized from the mine until the means for its conversion to marketable form are at hand.... The Nonesuch Company will sink a shaft at once.... True's Washers are to be tried at the Union mine.... The improved Copper Washers recently made and started at the Ogima mine, by W. W. Spalding, Esq., have now been running over two weeks and are doing excellent service ... No definite reports this week from the main mass features of the Evergreen range, but presume that at the Caledonia and Evergreen Bluff, the usual progress has been made in the way of removal ... Mr. Crozier editor of the *Miner*, who, apparently, is making a tour of the Lakes, writes: The village of Marquette seems quite as lively as any on the Lake. The facilities for getting to and from it, being better than those of any other place, and the inexhaustible mineral wealth north and west of it have each added materially to its prosperity the present season. The price of iron has been steadily good, and the demand fully equal to—indeed generally, as now, in excess of the supply—has caused a corresponding activity in all other business. The price per ton for carrying pig iron to cities below is now about $4,85, and both pigs and ore are taken off by steamers and vessels as fast as produced. The totals of shipments the present season, from this place, are about as follows: Iron Ore, 57,209 tons; Pig Iron, 9,582.... Of Portage Lake district he says: It is only necessary to announce from month to month the amount of mineral produced by the mines of this district, to convince any one of its immense wealth. The largest producing mines are on the famous Pewabic lode, yet 50 tons per month from the Hancock mine, and 125 to 140 tons per month from the three mines located on the Isle Royale lode, evinces the fact that the Pewabic has some formidable competitors in its own immediate vicinity, while as far as opened, these famous lodes consolidated, will not equal in value the Calumet conglomerate, one of the late wonders of the world. The wagon road from the Rhode Island to the Calumet is now completed, and no one having one spare day on hand should fail to visit this mine. Among the many improvements made here this summer, I noticed a new furnace at the Smelting Works for the reduction of Calumet mineral. The new stamp mills at the Isle Royale and Shelden-Columbian mines, are well under way, and the former may be used a month or two this fall, the railway from the mines being nearly completed. The aggregate of products for July was nearly 500 tons, and this is not far above the monthly average for the season. So far then as mineral wealth is concerned, we all know that Portage Lake is all right ... From the *Enterprise* we learn that Saginaw during the month of August exported 74,035 barrels of salt. The total exports of the same article for the last five months reach 275,829 barrels. Saginaw salt is a favorite wherever known ... The Houghton *Mining Gazette*, of the 6th inst., gives the following August products: Grand Portage, (for 20 days) 26 tons 1897 lbs; Albany and Boston 17 tons 1155 lbs.

Oregon.

From the Dalles *Mountaineer* of August 3d we take the following: By letters received from Canyon City, we learn that the miners in that country are all doing well. The digging on the Main John Day are paying beyond the expectations of the miners. The mines on Olive and Elk creeks are also turning out better than was anticipated. The Indians have again made their appearance on the road, and the old work of running off stock has commenced....The largest lump of gold we have ever heard of being found in the Northern mines, was taken out a few days since at Olive creek. It weighed eighty-five pounds, and had fifty pounds of pure gold ...The *Statesman* has the following: From George Eles, Esq., who has just returned from the Santiam, we learn that the mill is engaged in crushing fifty tons of rock from the middle tunnel of the Santiam company; that the rock looks well, prospects well, crushes readily; that a clean-up will be made about the middle of the week. The Sherman lode, in the Santiam district, is turning out very rich in lead. It is believed that it is now nearly rich enough to work for lead alone. But better than all, it pays about $18 per ton of ore, in silver, and is getting richer in silver the deeper they sink on the lead. Very fine specimens may be seen at Nicklin's store. It is reported that Foley has discovered rich placer diggings, paying 25 cents to the pan, at a creek some twenty miles north of the Gold creek mines .. The *Oregonian*, August 1st says: We learn that the miners are at work in good earnest on the main streams in the John Day country, taking out a good deal of money. There is a good demand for laborers at fair wages, ranging from $4 50 to $6 per day. The scarcity is occasioned by so few having gone to the John Day mines this season, and by the action of the few surplus men already there in securing claims for themselves in the newly discovered districts. There have always been good inducements for laborers in those mines, without seeking the far distant Kootenai or Montana.

Georgia.

A correspondent of the *Times* writing from Dahlonega, Lumpkin county, Georgia, Sept. 3d, says: The country is watered by the Chestatee, Tesnatee and Etowah Rivers, and by several creeks, of which the Yahoolan, Cain, Amicalolah and Yellow are the most important. In almost every part of the country gold is to be found; but the banks of the Chestatee, Cain and Yahoolah creeks are the localities where the richest and most productive veins have been found. Taking this place as a centre for miles around, every hill has been perforated with shafts and tunnels, and every stream and streamlet hacked and chopped with spade and pickax, some anciently and some recently, at every date, from 1829 to yesterday. All the veins hitherto discovered, including the John C. Calhoun, Battlebranch and the famous "1052" veins, which are the most celebrated, are called "pocket veins," as the precious metal is only found in limited portions of them, and in smaller quantities the further the mine is worked below the water level. But it is the opinion of the skilled miners who have visited this region that with capital, adequate machinery, a proper knowledge of the art of mining below the water level, and the use of the smelting process as practiced in Russia, these mines could be made to yield several millions annually. As at present worked, without capital or much practical knowledge, ore which yields 25 cents per bushel is considered profitable, but in some few instances a yield of two or three hundred dollars per bushel has been attained. The gold is found generally in quartz and sulphuret of iron .....The gold fever has been intermittent. At times it has been burning, and owners of lots have disposed of their barren acres for immense sums. At other times it has almost died away, and the lots have been purchasable at a few cents per acre. Now, again, it rages, and happy he who owns a lot on the Chestatee, Yahoolah or Cain creek, and sells it for the price at which lots are quoted. Whether the prices paid are in "legal tenders" or shares of embryo companies, I have not been able to ascertain; but I am rather inclined to think that shares are more abundant than those beautifully executed steel plate engravings of the baptism of Pocahontas, which are commonly called $20 National currency. The stories of the abundance of gold here, there and everywhere, and how Bill Stumps' mother, with nothing but a fire-shovel and a tin pan, scooped up $2,500 in dust, not far from Stover's Branch, in one afternoon; and how Tom Stiles and his little boy take out the Ruthertord Lots "nigh on a hundred dollars a week, and sells it down to Auraria," are more entertaining and exciting than veracious. I will venture to say that for the number engaged in grabbling, digging, picking, shoveling, sifting, washing and kneading, the remuneration is not 25 cents a day each. But still the number of gold-seekers increases, and still the fever glows and spreads, until the tongues of the thousands are parched by the "accursed thirst" which consumes them.

Arizona.

James Churchman, who left Austin, Nevada, last Spring, for Arizona, with a number of others, writes from Prescott that the people around there think of nothing but quartz, ledges and pay no attention to farming. He says: All the quartz lodes here are gold-bearing, some of which contains masses of spongy looking quartz, very easily crushed and rich in gold. When the party arrived at the capital of the Territory, the White Mountains, 200 miles northeast, were attracting great attention by reason of the stories of their rich deposits of gold. That is a singular feature of mining in Arizona—the placers and ledges are invariably 200 to 300 miles off, and "distance lends enchantment to the view" of the prospector. An armed party left Prescott in the month of June, to prospect in the White Mountains, but no report had been received from it at the date of Mr. Churchman's letter, "Our party, joined by several men of Prescott, will leave here to-morrow (the 15th of July) for a creek thirty miles south."

Louisiana.

According to *De Bows Review* the mineral wealth of this State embraces fine deposits of iron, lead, copper, coal, lime, salt, soda, copperas, gypsum, marl, ochres of different kinds, and petroleum in abundance. The iron is found in three different varieties of ore half across the State, some of them yielding 60 per cent. of the pure metal. The deposits lie in the near vicinity of ample water power, and forests of pine and oak to furnish the necessary charcoal as well as lignite or brown coal, which is said to underlie the entire Northern part of the Commonwealth, the strata ranging from 40 to 50 feet in depth. Lead and copper are plentiful and of excellent quality in several interior counties. Salt and salires are also abundant and near the Gulf, in the Southern part of St. Mary's parish, where there is an island 200 feet high, topped with a mass of rock 40 feet thick and several acres in extent, pronounced to be the best and purest article ever used in this country. In fine, there is scarcely a mineral product

from soda to dolonite, that cannot be found in quantities and of the finest in this wonderfully prolific soil.

British Columbia.

The following Big Bend news is from the Victoria *Telegraph:* Mr. Wilson, of Fort Street, received last night a letter from his partner, Mr. Murray, from French Creek, dated June 30th. The writer says "things look very bad on French Creek at present; there are only about 150 men on the creek, and about ten claims that are paying anything of any account. There are some first-class houses put up here, but I don't know what they will do unless things improve. There is one bakery with a hotel here, but they don't sell much. Unless something is struck soon the place will be deserted." The Walla Walla *Statesman* says: "A gentleman just down from Big Bend, reports about five hundred men at work in the mines, many of them taking out large amounts. A good portion of the travel to Big Bend followed the Victoria route, but all the supplies have been taken in by way of the Columbia, which for all practical purposes must remain the main avenue of communication with this rich mining district."

GOLD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Acadia			Nova Scotia	H. W. Nelson, 24 City Ex., Boston.
Ada Elmore	200,000	$2,000,000	South Boise, Idaho	R. Lawrence. 157 B'way, N. Y.
Amber	300,000	300,000	Greene Co., Penn	Geo. W. Grove. 276 S. Third, Phil
Albion		300,000	Halifax. Nova Scotia	H. W. Nelson, 24 City Ex., Boston
Alps	100,000	250,000	Illinois Central Dist., Col	I. Stanton, Jr., 25 Nassau, N. Y.
Ascot	50,000	5,000,000	Sherbrooke, Canada E	G. H. Morrison, 17 Nassau, N. Y.
Atlantic				Chas. Barett, 13 Doane, Boston.
Atlatic & Pacific	50,000	5,000,000	Humboldt T., Humboldt co.	J. N. Sewall, 8 Broad, N. Y.
American	100,000	5,000,000	Gregory Dist.	
American Flag	60,000	600,000	Nevada Dist., Col.	H. Foles, 71 B'way, N. Y.
Astor	200,000	1,000,000	On Comstock Lode	J. Chapman. 71 Broadway, N. Y.
Baltic			Colorado	New York.
Bates & Baxter			Colorado	New York.
Bay State	200,000		Colorado	Lem'l Bangs, Boston.
Benton	100,000	500,000	Colorado	F. W. Capen, 44 Ex. Pl., N. Y.
Black Hawk	50,000	5,000,000	Gilpin co., Col	D. Littlejohn. 81 John, N. Y.
Beacon		500,000	Halifax co., Nova Scotia	J. B. Post, 29 Ex. Pl., N. Y.
Bobtail	100,000	1,000,000		J. Stanton, Jr., 25 Nassau, N. Y.
Briggs	10,000	1,000,000	Gilpin co., Col	D. Littlejohn. 81 John, N. Y.
Bradshaw	250,000	1,000,000	Yavapai County, Arizona	O. H. Conover, 219 Dock st., Phil
Burronghs	100,000	1,000,000		L. Bangs. 22 Pine, N. Y.
Bullion	200,000	1,000,000	Bannock, Montana	69 Liberty, N. Y.
Bullion Consoli.	300,000	300,000	Sammit and Clear Creek	J. P. Whitney, 19 Lindall, Boston
Calvin	200,000	1,000,000	Clear Creek co., Col	
Canadian				A. Call, 7 Phœnix B'l'g. Boston.
Chem. Gold&S. R				64 B'way
Ch. Un. Gold Co.	240,000	1,200,000		Jesse G. Pitts, 69 Liberty
Chebucto	100,000	500,000	12 miles from Halifax	J. E. M. Gilley, Boston.
Clarendon		500,000	5 miles from Halifax	H. Doane, 41 State, Boston.
Chase	5,000	500,000	Colorado	W. E. Lawton, 81 John, N. Y.
Central Gold M.	20,000	1,000,000	Central City, Col	L. Bangs. 17 Nassau. N. Y.
Central Mining	200,000	1,000,000	Colorado	46 Exchange Pl., N. Y.
Chandiere	100,000	500,000	5,000 A Famine Riv. C. E	Wm. B. Fowle. Boston.
Cobden	100,000	1,000,000	Idaho	New York.
Colonial				W. N. Ely, 7 Trav'r B'l'g. Boston
Colorado Boston			Colorado	R. C. M'Laughlin. 60 State, Bos'n.
Colorado N. Y.			Colorado	12 Pine, N. Y.
Coleman			Colorado	New York
Columbia	30,000	3,000,000	Austin City, Nevada	10 Pine, N. Y.
Consuelo Gold				54 William.
Consol Gregory	50,000	5,000,000	Gregory Dist., Col	30 Pine, N. Y.
Cook & Kimball	1,000	150,000	Colorado	W. W. Baldwin. 35 Wm., N. Y.
Copalinshee	250,000	5,000,000	Parke co., Col	J. C. Stocker, 137 B'way, N. Y.
Corrisaunee	100,000	1,000,000	Colorado	New York.
Commonwealth			Nevada	Philadelphia.
Corrydoun	100,000	2,500,000	Gilpin co., Col	46 Exchange Pl., N. Y.
Continental	20,000	2,000,000	Gregory Dist., Col	115 Liberty, N. Y.
Central Gold	200,000	1,000,000		L. Bangs, 22 Pine. N. Y.
Dauphin & Colo.	200,000	1,000,000	Colorado	John S. McMullin, 423 Walnut, Pa.
Day & Bushnell	300,000	3,000,000	Colorado	T. Chalmers, Jr., 20 Ex. Pl., N. Y.
De Lery		10,000,000	Chandiere Valley, Canada E.	J. M. Winchell, 72 Cedar, N. Y.
Denver	50,000	1,000,000	Gilpin & Clear Creek, Col	J. Wadsworth, 61 Cedar, N. Y.
Devonshire				W. Stockbridge, 74 Fr'klin, Bos'n.
Downieville	300,000	300,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Dorset			Chandiere River, C. E	F. McJimsey, 59 Wm., N. Y.
Eaglo	100,000	1,000,000	Gold Dirt Dist., Col	J. P. Davies, 81 John, N. Y.
East Bannack	100,000	200,000	Bannack City, Montana	J. Callender, 48 Ex. Pl., N. Y.
Eldorado	500,000	2,500,000	San A Dist., 9 miles o. Austin	208 S. Fourth, Phila.
Empire Mill & M				O. F. Griffin, San Francisco.
Enriquetta			Arizona	New York.
Esperanza		500,000	Star D., Humboldt co	117 Broadway, N. Y.
Etna	50,000	500,000	Nevada Dist., Col	C. W. Bryant, Boston.
Excelsior	30,000	300,000	Central City, Col	J. Weatherbee, Jr., 11 P. B'g, Bos.
Fairmount	20,000	200,000	Colorado	John P. Harker. 109 N. 6th, Phil.
Famine Falls	100,000	1,000,000		D. L. Dodge, 80 B'way, N. Y.
Garrisons	100,000	5,000,000	Colorado	C. G. Mease, 29 William, N. Y.
Gem	25,000	1,250,000		H. K. Gates, 191 B'way, N. Y.
Georgetown			Colorado	New York.
Gilbert River				C. F. Jackson, 18 Phe'x B'g, Bos'n.
Gilpin				C. W. Gilloupe, 76 State, Boston.
Golconda	250,000	5,000,000	Sherbrooke, Canada E	W. H. Adams, 19 Broad, N. Y.
Gold Field				C. B. Cowling, 39 Kilby, Boston.
Gold Rock	5,000	500,000	Central City, Colorado	R. M. Lockwood, 113 Wall, N. Y.
Gold Hill	50,000	500,000	Colorado	W. T. Enstis, Boston.
Gold Mountain	600,000	6,000,000	Clear Creek Co., Colorado	25 Nassau, New York.
Gold Min'g of Col	50,000	5,000,000	Colorado	E. Latham. 23 William, N. Y.
Golden Gate	60,000	600,000	Sum. Hight'd&Mill C. D., Mon	J. Morse, Jr., 117 B'way, N. Y.
Gunuel Central			Colorado	70 Broadway, N. Y.
Gunnel Gold	300,000	3,000,000	Colorado	F. E. Roelfson, 78 & 80 B'way, N. Y.
Gregory	20,000	1,000,000	Colorado	Thos. Wildes. 17 William, N. Y.
Granada	50,000	125,000	Colorado	I. Stanton, Jr., 25 Nassau, N. Y.
Great Western	60,000	600,000	Bassel Dist., Col	E. Kemeys. 70 Broadway, N. Y.
Gunnel Gold	100,000	1,000,000	Colorado	F. E. Roelofson, 78 B'way, N. Y.
Halifax				A. Case, 7 Phœnix B'l'g. Boston.
Ha mony				Demas Barnes, 21 Park Row.
He rt'ge Ranch	30,000	300,000	El Dorado, Cal	
Hoff p	80,000	2,000,000	Gold Dirt Lode, Gilp. co., Col	J. P. Davies, 81 John, N. Y.
Holman	150,000	330,000	Clear Creek co., Col	J. O'Neil, 23 Wm, N. Y.
Humboldt	100,000	500,000	Colorado	78 B'way.
Idaho Gold	100,000		Montana	5 Pine, N. Y.
Isaac's Harbor	100,000	500,000	Isaac's Harbor, Nova Scotia	W. F. Shirley, 137 B'way, N. Y.
Isle Royale				44 Ex. Pl.
Kansas Colorado	100,000	1,000,000	Colorado	J. G. Greenlies. 111 B'way, N. Y.
Kent				G. H. Wyman, 19 Phe'x B'l'g, Bos.
Kip & Buell	100,000	200,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Knickerbocker	100,000	1,000,000	Colorado	F. Avery, 78 B'way, N. Y.
La Crosse	100,000	$1,000,000	Nevada Dist., Colorado	H. Fales, 71 B'way, N. Y.
Liebig	200,000	$1,000,000	Colorado	
Lake Major	12,000	600,000	Nova Scotia	Fred. Franck. 113 Water. N. Y.
Mariposa Gold	100,000	10,000,000	Bear Valley, Cal	G. W. Farlee, 34 Wall, N. Y.
Mammoth	50,000	500,000	Colorado	J. Jarrett. 41 Liberty, N. Y.
Manhattan	100,000	400,000	Colorado	W. R. Lothrop, 172 B'way, N. Y
Massachusetts	250,000	1,200,000	Gilpin co., Col	W. D. Briggs. 11 Phe'x B'l'g, Bos
Merchants	30,000	600,000	Alturas co., Idaho	Jas. K. Selleck, 157 B'way, N. Y.
Metropolitan				
Mountain Pride	100,000	1,000,000	B'r C'k, St. Bse., Idaho	29 Pine, N. Y.
Montague	50,000	500,000	near Halifax, Nova Scotia	C. B. Cowling. 39 Kilby, Boston.
Mount Alpine			Griffith Dist., Clear C'k, Col	J. B. Randol. N. Y.
Mount Vernon	500,000	5,000,000	Mt. Y. & Mam'th Dist., Nev	25 Park Row, N. Y.
Mount Vista	50,000	500,000		J. Chapman. 23 Nassau, N. Y.
Montana	100,000	400,000	Nevada, Ills., Greg'y, Col	A. L. Guerber, 54 Wm, N. Y
Monte Christo	100,000	2,000,000	White Pine District, Nev	Thos. Dunlap, 413 Chestnut, Phil.
Montezuma	100,000	500,000	Colorado	F. B. Webster, Boston.
Montrose	100,000	1,000,000	Clear Creek co., Col	C. A. W. Sibley. 80 B'way, N. Y.
Morning Star	5,000	5,000,000	Owyhee co., Idaho	E. M. Barnum, 137 B'way, N. Y.
Mexican Pacific	100,000	10,000,000	Mexico	J. Mackie. 88 Wall, N. Y.
Melones & Stan			Calaveras co	606 Mont, San Francisco.
National	300,000	3,000,000	on So. Boulder C'k, Col	31 School. Boston.
Nevada Star				25 Pine, N. Y.
New England	50,000	150,000	Black Hawk, Col	J. Weatherbee, Jr., Boston.
New Mexico			near SantaFe	
New Gregory				W. A. Kent, 144 State, Boston
New York City	50,000	5,000,000	G'd Canon D't, Laud. co. Nev	10 Pine, N. Y.
New York Dist.	50,000	500,000	Austin, N. Y. Dist., Nevada	71 B'way, N. Y.
New York of Col	0 0, 000	1,000,000	Colorado	F. E. Roelfson. 74 B'way, N. Y.
N. Y. & Nevada	100,000	1,000,000	Nevada	J. J. Osborn. 59 Pine, N. Y.
N. Y. G Min'g	100,000	1,000,000	Colorado	F. E. Roelofson. 78 & 80 B.way.
N. Y. & Eldor'do	250,000	2,500,000	Nevada	G. H. Munroe. 106 B'way, N. Y.
N. Y. & Idaho			Idaho	180 Chatham, N. Y.
N. Y. & Santa Fe			Nevada	New York.
N.Y. & Owyhee		1,000,000	Owyhee co., Idaho	6 Pine, N. Y.
N. Y. & Oro Fino	10,000	1,000,000	Owyhee co., Idaho	137 Broadway, N. Y.
N. Y. & Reese R			Nevada	New York.
N. Y. & Renfew				2 Murray, N. Y.
N. Y. & Washoe			Nevada	New York.
North Clear C'k	100,000	1,000,000	Gilpin co., Col	J. Francis, 80 B'way, N. Y.
Nova Scotia				Chas. Barrett. 13 Doane, Bostou
N. Y. & Nova Sc	100,000	1,000,000	Tangier, Nova Scotia	Jos. E. Gay, 3 Hanover, N. Y.
National S Min'g		1,500,000	Owyhee co, Idaho	115 B'way, N. Y.
Occidental	5,000	500,000	Nevada & Ills. C. Dist., Col	100 B'way, N. Y.
Oldham				Chas. Barrett, 13 Doane, Bostou.
Ophir	62,500	625,000	on Comstock Lode, Nevada	Moses A. Hopnock, 45 William.
Pacific	40,000	4,000,000		24 Pine, N. Y.
People's	100,000	5,000,000	Alpine & Sierra cos	23 Nassau.
Peck				F. R. Sawyer, 144 State, Boston.
Perigo	60,000	3,000,000	Ind. Dist., Gilpin co., Col	J. W. Stratton. 90 B'way, N. Y.
Pine Mountain	30,000	3,000,000	Pine Mountain Dist., Nev	F. K. McCully, 157 B'way, N. Y.
Pioneer & Buskip			Buena Vista Dist., Nevada	15 Nassau, N. Y.
Philn. & Color'do	20,000	1,000,000	Central City, Col	E. W. Clark & Co., Phila.
Phelps & Gila're	200,000	1,000,000	Colorado	W. H. Steudevant, 25 Nassau.
Pleasant Valley	125,000	1,250,000	Colorado	J. S. Lyon, 69 Wall. N. Y.
Pontiac	50,000	1,000,000	Ill. Cen. M Dist., Col	R. H. Rickard, 19 Nassau.
Prescott	100,000	1,000,000	Central Arizona	63 B'way, N. Y.
Quaker City			Ind't D't. G'd D't City, Col	103 South Third. Phila.
Quartz Hill	40,000	100,000	Nevada Dist., Col	J. A. Tyler. 29 Wall, N. Y.
Rancho C'k	10,200	1,200,000	Pine Wood Dist., Nevada	18 Broad, N.Y.
Realito		1,600,000	G'd Hill D., Storey co., Nev	117 B'way, N. Y.
Reese River P'r'l	100,000	1,000,000	AmadorDist., Landor Co., Nev	Elijah Alliger, 67 Wall. N. Y.
Renfrew				W. Stockbridge, 74 F'klin, Bos'n.
Republic	15,000	1,500,000	Amador D., Lander co., Nev	67 Exchange Pl., N. Y.
Rocky Mountain	50,000	500,000	Grey & Empire Dists., Col	E. L. Bolles, 70 B'way, N. Y.
Reciprocity	100,000	1,000,000	Canada East	B. B. Grant. Jr., 71 B'way, N. Y
Scorpion			Virginia City, Nevada	617 Clay, San Francisco.
Sherbrooke	100,000	1,000,000	Sherbrooke, Canada East	F. Schumacker, Cliff. N. Y.
Silas Wright	60,000	600,000	Amador D., Lander co., Nev	18 Wall. N. Y.
Silver State	100,000	500,000	Humb't Starr. Pr. R. D Humb't co., Nevada	R. S. Miller. 49 William, N. Y.
Silver Wave	500,000	3,000,000	Reese riv., Lander co., Nev	Emmet Blair, 243 B'way, N. Y.
Smith & P'tndee	125,000	2,500,000	Colorado	G. A. Lathrop, 4 Broad. N. Y.
Smithfield	100,000	400,000	Gilpin Co., Col	A. F. Baum 48 Broad st., N. Y.
Spanish		3,000,000	La Plata, Churchill co., Nev	228 South Third, Phila.
So. Clear C'k			Colorado	Canastota, N. Y.
Starlight Ledge	50,000	500,000	P'ville, El Dorado co	
Star of Color	200,000	2,000,000	Colorado	J. N. Powers. 22 Pine. N. Y.
Standard	50,000	500,000	Gregory Dist., Col	T. A. Mitchell, 70 B'way, N. Y
Steptoe	20,000	2,000,000	G'd Can., Lander co., Nev	10 Pine, N. Y.
Sterling City		1,200,000	Colorado	New York.
Stewart	100,000	500,000	Colorado	C. Durham, 31 Exchange, Boston
Suffolk				Carlos Cobb, 22 William, N. Y.
Southard				Wm. Wallace, 11 Doane, Boston.
Stafford				C. E. Jackson. 15 Central, Boston
Taschier	100,000	1,000,000	Colorado	F. J. Wright, 8 Wall, N. Y.
Texas	50,000	500,000	Black Hawk City, Colorado	Wm. E. Parish, 155 B'way, N. Y
Triunfo			San Antonio, L. Cal	San Francisco.
Union	240,000	12,000,000	Colorado	F. A. Potts, 110 B'way.
United States	75,000	1,500,000	Colorado	J. P. Steveus, N. Y.
University				31 Nassau, N. Y.
Virginia City	250,000	250,000	Nevada	J. B. William. 78 & 80 B'way.
Wauba Yuma	600,000	6,000,000	Arizona	35 William. N. Y.
Waddingham	48,000	1,200,000	Alturas co., Idaho	Jas. K. Selleck, 157 B'way, N.
Waverley				J. Leighton. 97 State, Boston.
Windsor Gold M	10,000	100,000	Colorado	25 William. N. Y
Wilson & Cass			Colorado	New York.

LEAD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Amenia	100,000	$ 500,000	Duchess co., N. Y	G. Furmau, 77 Cedar, N. Y.
Bucks County	10,000	200,000	Bucks co., Pa	R. R. Sinclair, 53 Ex. Pl., N. Y.
Canada	40,000	250,000	Canada	Alb. Case, 7 Phe'x B'l'g, Boston.
Clute	150,000	550,000	Macomb T. St. Law. co., N. Y.	Bev'l'y S. Merrill, 42 Cedar, N.Y.
Contiuental	200,000	500,000	Martiusburg, N. Y	J. Sickles, 57 Ex. Pl., N. Y.
Eastport	100,000	1,000,000	Eastport, Me	R. Vose, 54 William, N. Y.
Erio	40,000	4,000,000	Orange co., N. Y	Ogden Gaul, 25 Pine, N. Y.
Hampton	100,000	500,000	Hampshire co., Mass	C. W. Bryant, Bostou.
Jefferson				65 Wall, N. Y.
King's Hill	0,000	50,000		W. L. Haskin, 180 B'way, N. Y.
Lake Superior	200,000	1,000,000	{ Secs. 5 & 36 T., 49 & 50 R., { 28 & 29 Marquette co, Mich.	C. L. Mather, N. Y.
Lancaster	50,000	250,000	Lancaster co., Pa	J. R. Sibley. 35 Pine. N. Y.
Macomb	10,000	550,000	Macomb T. St. Law. co., N. Y.	C. E. Scofield, 42 Cedar, N. Y.
Maine	50,000	500,000	Eastport, Me	A. L. Butler, 54 William, N. Y.
Mineral Point	100,000	500,000	St. Lawrence co., N. Y	H. W. Warren, 60 City Ex., B'stn.
Morgan	100,000	500,000		W. Williams, 42 Cedar, N. Y
Manhan				40 B'way, N. Y.
Mount Hope	80,000	200,000	Mt. Hope, Orange co., N. Y.	W. Williams, 24 Pine. N. Y.
New Hampshire	100,000	500,000	New Hampshire	W. A. Farrar, 71 B'way, N. Y.
N. Y. & Bostou		1,000,000	Chester co., Pa	S. M. Cockein, 22 William, N. Y.
Oswegatchie				24 Pine. N. Y.
Owens Lake	50,000	250,000		C. W. Boyd, 78 Cedar. N. Y.
Phœnix	50,000	250,000	Columbia Co., N. Y	G. W. Butler, 54 William, N. Y.
Placentia Bay	200,000	1,000,000	Newfoundland	J. Simpkins. 29 Wall. N. Y.
Ramsay	20,000	500,000	Township Ramsay, C. W	C. W. Bryant. Boston.
Rochester	200,000	500,000		J. A. Ferguson, 8 Wall, N. Y
Rossie				24 Pine. N. Y.
Rosa Clara	100,000	1,000,000		H. Lathrop, 25 Nassau. N. Y.
St. Clair	100,000	1,000,000		H. B. Hawkins, 25 Nassau. N. Y
St. Joseph	100,000	1,000,000	St. Francis Co., Missouri	Jas. R. Knapp. 6 Broad. N. Y.
Shawangunk	100,000	500,000	Mt. Hope, Orange co., N. Y.	E. P. Ackerman. 48 Pine. N. Y
Sussex	25,000	625,000	Sparta Town. Sus'x co., N. J.	F. H. Stow. 53 Cedar. N. Y.
Walkill			Orange co., N. Y	W. A. Scott. 11 Wall. N. Y.
Warren			Warren, Gratton co., N. H	J. S. Christie. 100 B'way, N Y
White Mountain			New Hampshire	111 B'way, N. Y.

SILVER.

COMPANY.	SHARES.	STOCKS.	LOCATION OF PROPERTY.	SEC'Y AND PLACE OF BUSINESS.
Amazon	25,000	$250,000	Nevada	W. L. Louther, 134 So. 3d, Phil.
Argentino	50,000	250,000	Argentino Dist., Colorado	D. L. Demmon, 134 State, Boston
Arizona	100,000	10,000,000	22 m W of Tubac, Arizona	J. B. Randol, 25 Nassau, N. Y
Astor	200,000	1,000,000	On Comstock Lode, Nev	J. Chapman, 71 Broadway, N. Y.
Atlantic & Pac.	50,000	1,000,000	Humboldt T, Hum't Co, Nev.	J. N. Sewall, 8 Broad st., N. Y.
Big Smoky	20,000	600,000	Smk'y Hill, Lander Co. Nev.	71 B'way.
Black Eagle	7,000	350,000	Carson, Owyhee co., Idaho	O. D. Gardner, 40 Maiden lane.
Bullion	200,000	1,000,000	Bannock, Moutano	55 Liberty street.
Bush	50,000	500,000	Anstiu City, Nevada	176 Chambers st., N. Y.
Combination	5,000,000	50,000	Nevada	J. W. Stoute, Jr., 155 B'way, N.Y
Colorado Con			Cedar Hill Nevada	New York.
Columbia	30,000	3,000,000	Austin City, Nevada	J. E. Smith, 10 Pine street, N. Y.
Conn. & Nevada	120,000	1,250,000	Averill, ChurchillCo. Nev	49 Liberty street, N. Y.
Commouwealth	200,000	2,000,000	Gold Hill, Nevada	78 B'way, N. Y.
Cosmos	10,000		Owyhee Co, Idaho	137 Broadway, N. Y.
Del Norte & S'br.			Lower California	New York.
Durango	5,000	500,000		W. R. Garrison, 73 W'm st., N Y.
East Bannack	100,000	200,000	Bannock City, Moutano	J. Callender, 49 Ex. P. N. Y.
Empire G. & S.	100,000	10,000,000	Bodie Bluff, Mono	H. R. Gates, 191 Broad'y, N. Y.
Empire and Silver State	20,000	2,000,000	Reese River Dist., Nevada	57 B'way, New York.
Eldorado	500,000	2,500,000	Sau A 90 m s of Austin, Nev	208 South Fourth street. Phila.
Essex & Diadem	125,000	2,500,000	Sierra dis, Humboldt C. Nev.	A. R. Wetmore, 81 Vesey st, N.Y.
Franklin			Nevada	Philadelphia.
Gem	200,000	1,250,000		H. K. Gates, 191 B'way, N. Y.
Globe	100,000	500,000	Austin, Nevada	J. W. Brazier, 26 Pine, N. Y.
Good Hope	20,000	1,000,000	40 m S of Anstin, Nevada	80 Broadway, N. Y.
Huron			Montano	New York.
Incas	300,000	300,000	Summit co., Colorado	J. P. Whitney, 19 Lindall, Bost.
Knickerb'r and Nevada	20,000	2,000,000	Union Dis, Nye Co, Nev	H. R. Shotwell, 70 Cedar, N. Y.
Lauder Hill			Nevada	74 B'way, New York.
Lincoln		1,000,000	Owyhee Co, Idaho	80 Broadway, N. Y.
Lw'r California	40,000	2,000,000	North Part of Lower Cal.	55 William street, N. Y.
Madison	30,000	3,000,000	Nevada	W. W. Perkins, 71 Bd'way, N. Y.
Macedon			Nevada	Philadelphia.
Manhattan			Nevada	57 B'way, New York.
Merchants	30,000	600,000	Alturus Co. Idaho	157 Broadway, N. Y.
Metropolitan	15,000	1,500,000	Austin City, Nevada	158 Broadway, N. Y.
Morning Star	5,000	5,000,000	Owyhee County, Idaho	137 Broadway, N. Y.
Mount Vernon	500,000	5,000,000	Monnt Vernou & Mammoth District, Nevada	Now York.
Mount Vista	50,000	500,000		J. Chapman, 71 Bway, New York.
National	15,000	1,500,000	Owyhee Co. Idaho	115 Broadway, N. Y.
Nevada	100,000	300,000	MountainWells, D. Ch. co.	Nev 323 Walnut street, Phila.
Nevada	20,000	1,200,000	Nevada	E. L. Bolles, 74 B'way, N. Y.
New Y'k & Ione	20,000	2,000,000	Ione City, Nye Co., Nev	71 Broadway, N. Y.
New York	1,500	1,500,000	Austin, Nevada	S. R. Hntchinson, 80 B'way, N.Y.
New York City	50,000	5,000,000	Gold Can Dist. Lander Co. N.	10 Pine street. New York.
New Y'k Dis't.	50,000	5,000,000	80 m f'm Austiu, N. Y. Dis. Nevada	S. A. Hopkins, 71 Broadway, N Y
New Y'k & Nev.	10,000	1,000,000	Nevada	J. J. Osborn, 30 Pine street, N. Y
N. Y. & Owyhee		1,000,000	Owyhee Co. Idaho	6 Pine street, New York.
N.Y. & Oro Fino	10,000	1,000,000	do. do.	137 Broadway, New York.
N. Y. and Silver Peak	20,000	2,000,000	Nye County, Nevada	R. C. Root, 74 Broadway, N. Y.
N Y. & Santa Fe.			Nevada	New York.
N. Y. & Washoe.			Nevada	New York.
North Am. M'g.			Nevada	Philadelphia.
Ocean Transit		1,500,000	Lower California, Mexico On Comstock Lode, Nev	24 Pine, N. Y.
Ophir				
Pah Ranagat C'l.	50,000	5,000,000	Nevada	26 Pine. N. Y.
People's	100,000	500,000	Alpine & Sierra Counties	8 Pine street. New York.
Phœnix	200,000	2,000,000		48 East 26th street, New York.
Picacho	50,000	2,000,000	Arizona	T. H. Perkins, New York.
Pine Mount'n	30,000	3,000,000	Pine Mount'n Dist. Nev	F. K. McChlley, 100 Bd'way, N. Y.
Pioneer & Inskip			Buena Vista Dis., Austin, Nev	15 Nassau street, New York.
Prescott	50,000	2,500,000	Arizona	T. H. Perkins, New York.
Presidential	125,000	2,500,000	Austin, Nevada	Wm. Lemmon, 17 Broad, N. Y.
Republic	15,000	1,500,000	Amador, D Lander Co. Nev.	67 Ex. Place, New York.
Revenue Exten.	50,000	500,000	Lander County, Nevada	W. L. Kite, 142 South 4th, Phila.
Rosario & Carmn	5,244	1,480,000	Smaloa, Mexico	San Francisco.
San Antonio	60,000	3,000,000	Arizona	C. Lamson, 21 Nassau st., N. Y.
Seminole	7,000	1,500,000	Unionv., Humboldt Co., Nev.	L. G. Wilkiu, 119 B'way, N. Y.
Silas Wright	60,000	600,000	Amador, D Lander Co, Nev.	18 Wall street, New York.
Silver Hill	40,000	1,000,000	Nevada	J. C. Hitchcock, 62 B'dway, N.Y.
Silver Series		1,000,000	Lander Co., Nevada	W. B. Rogers, 117 B'way, N. Y.
South Boise, T Co	200,000	2,000,000	Alturas Co., Idaho	A. M. Palmer, 19 Broad st., N. Y
Star Hill	20,000	1,000,000	Nevada	155 B'way.
St'h Cl' Crk			Colorado	Canastota, New York.
Stephensou	500,000	1,000,000	18 m E of Ft. Filmore	A. S. Kellogg, 22 Pine, New York.
Steptoe	20,000	2,000,000	Gold Can. Lander Co. Nev.	10 Pine, New York.
Sterling City		1,200,000		New York.
Tarshish	12,000	1,200,000	Toryahee Range, Un. D., Nev	H. S. M'Collum, 78 B'way, N. Y
Tempest	200,000	1,000,000		L. Bangs, 17 Nassau, N. Y.
Trumfo			San Antonio, Lo'wr Cal.	San Francisco.
Toiyabee	50,000	5,000,000	Pine W'd, Ma'tn Dis, Nev.	J. M. Brown, 157 B'wy, N. Y.
Uniou & El D'o.	100,000	1,000,000	Mogul Silver Mu'tn	40 Park Row.
Upper Missouri.		100,000	Montana	107 Broadway.
Vedder	21,000	2,100,000	Amador Dist., Nevada	L. G. Bingham, 80 B'way, N.Y.
Wamba Yuma	600,000	6,000,000	Arizona	35 William street, New York.
War Eagle	50,000	200,000	Owyhee Co., Idaho	G. M. Eldridge, 144 S. 4th, Pl.
Washington	22,500	2,250,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y.
White Mountain			New Hampshire	111 Broadwny, New York.

COPPER.

COMPANY.	SHARES.	CAPITAL.	SITUATION OF PROPERTY	SEC'Y., AND PLACE OF BUSINESS.
Adventure,	20,000		Parts of Sections 35, 36, T. 51, N Range 38 W,	W. H. Smith, 51 Ex. Pl, N. Y.
Etna,	20,000		1226 A in Secs. 6, 7, 18, T. 58, N R 28, W Keweenaw co. Mich.	B. A. Hoopes, 324 Walnut St., Phil.
Alb'ny & Bost'n,	20,000		Sees 7, 8, 9, 10, 11, T. 55, R. 33	Fred. Beck, 43 City Ex., Boston.
Anita,	20,000		Del Norte co., California,	8 Wall St., N. Y.
Algomah,	20,000		W½ S. 30, T. 51, R. 37,	L. W. Clark, Boston.
Allouez,	20,000		Town 57, R. 32, Sec. 31,	Horatio Bigelow, Boston.
Amy gil'yd't.,	20,000		E½ Secs. 16, 21, T. 58, R. 20, NW¼ Sec. 5, T. 57, R. 31, 160 A,	F. H. Womrath, 324 Walnut St., Philadelphia.
Arcadiau,	20,000		NW¼ Sec. 20, T. 57, R. 33, 160 A.,	C. P. Dixon, 48 Pine St. N. Y.
Astor,	20,000		NW¼ Sec. 5, T. 57, R. 31 160 A,	A. W. Boardman, 35 Court St., Boston.
Atlas,	20,000		NE¼ of E½ & NW¼ of NW¼ Sec. 31, T. 57, R. 31,	L. W. Clark, Boston.
Aztec,	20,000		W½ Sec 31, T. 51, N. of R. 37,	L. W. Clark, Boston.
Bay Stale,	20,000		SW¼ Sec. 29, T. 58, R. 31,	L. W. Clark, Boston.
Beaver,	20,000		NE¼ Sec. 32, T. 58, R. 31,	A. W. Boardman, Bostou.
Bohemian,	20,000		E½ Sec. 31, NW¼ Sec. 32, T. 51, R. 37, W,	R. H. Rickard, 21 Nassau St., N.Y.
Boston,	20,000			H. W. Warren, 60 City Ex., B'st'n.
Canada,	00,000		Brome co., Canada East,	H. P. Monnt, 3 Hanover St., N. Y.
Carp Lake, M.,	20,000		T. 51, N. R. 43, W. S½ of N½ of N. Sec. 14, and E½ Sec. 23, and NE¼ Sec. 23, 440 A,	W. H. Abel, 70 Wall St., N. Y.
Cascade, M.	20,000		SW¼ Sec. 9, T. 49, N. R. 39, W, in Outonagou co., Mich.,	G. F. Riley, 35 Wall St., N. Y.
Copper Creek,	1,000	$100,000	Missouri,	H. M. Thompson, Missouri, Mo.
Copper Falls,	20,000		Sec. 14, T. 58, N. R. 31, W, Keewenah Point,	97 State, Boston.
Copper Harbor,	20,000		S½ Sec. 10, T. 58, R. 28, 320 A, Keewenah co.,	Fred. Beck, 43 City Ex., Boston.
Copper Creek,	20,000	500,000	Douglas co., Wisconsin,	T. B. Lawson, 71 Broadway, N. Y.
Central,	20,000	500,000	E½ Sec. 23, T. 58, N. R. 31, W,	J. Stanton Jr., 25 Nassau, N. Y.
Cornwall,			Strafford, Orange co., Vt.,	D. H. Whitney, 17 State St., B'n.
Continental,	200,000	500,000	Martinsburg, New York,	J. Sickles, 50 Ex. Pl., N. Y.
Corinth,	20,000	500,000	Corinth, Orange co., Vermont,	W. A. Cleveland, 191 B'way, N.Y.
Copper Hill,			Wisconsin,	Boston.
Dacotah,	20,000		Sec. 35, T. 55, R. 34, Portage Lake,	J. M. Cooper, Milk St., Boston.
Delaware,	20,000	500.000		S. M. May, 326 Walnut St., B'st'n.
Derby,			Ontonagon co., Mich.,	P. C. Blancan, 35 Wall St., N. Y.
Dorchester,	20,000		800 A.,	31 and 32 City Ex., Boston.
Douglas,	20,000		E½ Sec. 30, T. 55, R. 3,	S. J. Edwards, William St., N. Y.
Dudley,				H. Bigelow 43, City Ex., Boston.
Eagle River,	20,000		T. 58, R. 31, Secs. 28, 29, 33, 34,	A. Lamson, 70 State St., Boston.
Ely,	00,000	500,000	325 A., Richmond, Canada East,	Ernest Sacchi, 82 B'way, N. Y.
Empire,	20,000		1708 A., Secs. 1, 2, 11, 12, T. 58, N. K. 28, W. K'w'n co., Min.,	J. S. McMullin, 423 Walnut, Phil.
Eureka,	20,000		W½ Sec. 2, T. 49, N. R. 41, W. Ontonagon co.,	H. Shirley, 137 B'way, N. Y.
Evergreen Bluff,	20,000		NE¼ Sec. 6, T. 50, R. 38,	F. W. Capen, 44 Ex. Pl., N. Y.
Flint Steel R.,	20,000		Sec. 11, 12, T. 50, N. R. 39, W,	F. K. McCnlly, 157 B'way, N Y.
Forest City,	20,000		320 A. NE¼ Sec. 36, and SE¼ Sec. 25, T. 51, R. 43,	J. F. Paul, 19 Phœnix Building, Boston.
Franklin,	20,000		¼ Sec. 24, T. 55, N. R. 31 W.,	C. Emery, 26 Kilby St., Boston.
Franconia,	60,000	300,000	New Hampshire,	J. Hanna, 162 Fulton St., N. Y.
French Creek,	00,000		Chester co., Pennsylvania,	R. Roberts, 19 Nassau St., N. Y.
Garden City,	20,000		SW¼ Sec. 60, N. W. Sec. 29, T. 58, N. R. 31 W,	R. H. Howe, Chicago.
Girard,	20,000		600 A. Sec. 15, T. 58, N. R. 28, W. Keweenaw co., Mich.,	B. A. Hoopes, 324 Walnut, Phil.
Gr'd Portage,	20,000		SW¼ Sec. 36, R. 34, W,	A. S. Kellogg, 22 Pine St., N. Y.
Great Western,	20,000		SE¼ Sec. 30, & SW¼ Sec. 29, T. 21, K. 320 A., Ontonagon	J. M. Cooper, 24 Citty Ex., B'st'n.
Hamilton,	20,000		SE¼ Sec. 35, S½ Sec. 36, T. 50, R. 41, SW¼ Sec. 21, R. 20, 14¼ A.,	J. B. Townsend, 44 Exchange, N. Y.
Hancock,	20,000		SW¼ Sec. 26, Tract of Sec. 25, T. 5, R. 34, W.,	Fred. Beck, 43 City Ex., Boston. do. do. do. do.
Hanover,	20,000			
Hartford,	20,000	500,000	320 A. E½ & SE¼ Sec. 32, SW¼ & W½ Sec. 33, T. 50, R. 40, W,	T. M. Tyng, 61 Cedar St., Boston.
Henwood,			Michigan,	57 Broadway, N. Y.
Hope,	20,000	50,000	240 acres in T 57, R 32, Kw co.	19 Nassau St., New York.
Humboldt,	20,000		Sec. 21, T. 58, R, 31, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Hudson,	20,000		Ontonagon co.,	P. C. Blancan, 35 Wall St., N. Y.
Huron,	20,000		Sec. 2, T. 54, R. 34, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Isle Royale,	20,000		NW¼ Sec. 1, T. 54, R. 34, W,	F. W. Chapen, 33 Ex. Pl., Boston.
Keweenaw,	20,000	500,000	Michigan,	F. W. Chapen, 44 Ex. Pl., Boston.
Knowlton,	20,000		SE¼ Sec. 1, W½ of SW½ Sec. 1, and other lands,	44 Ex. Pl., N. Y.
Lafayette,	20,000		Secs. 25, 30, 36, T, T. 51, N. R. 43, and 44, W, Outonagon,	P. C. Blancan, 35 Wall St., N. Y.
Lyster,	200,000	$400,000	Township Nelson, Canada East,	H. W. Nelson, 24 City Ex., B'st'n
Lower California	40,000	2,000,000	N. part of Lower California,	55 William St., N. Y.
Madison,	20,000		Part sec. 18, 19 entire, 30, 31.	Fred. Beck, 43 City Ex., B'st'n.
Merryweather,	20,000		Secs. 9, 19, T. 48, N. R. 4, W,	J. T. Waters, New York.
Mandan,	20,000		680 A. Secs. 8, 17, 19, 30, T. 58, N. R. 29, W., Keweenaw co., Min.,	B. A. Hoopes, 324 Walnut, Phil.
Manhattan,	20,000		W½ Sec. 11, NW¼ Sec. 14, T. T. 58, N. R. 32, W, 360 A.	J. W. Davies, 21 Nassau st., N Y
Mendotta,	100,000	500,000		M. Taylor, 30 Wall St., N. Y.
Mass. M. Co.,	20,000		SW¼ Sec. 7, T. 50, N.R. 38, W,	J. M. Cooper, Pittsburgh.
Mesnard,	20,000		NE¼ Sec. 24, T. 55, R. 34,	L. Burr, 12 Phœnix B'gs, Boston.
Melones & Stan.,			Calaveras co.,	606 Mont St., San Francisco?
Minnesota,	20,000		Sec. 15, T. 50, N. R. 39, W,	S. M. Pond, 12 Pine St., N. Y.
Maryland,			Maryland,	Baltimore.
Merrimac,	20,000		NW¼ Sec. 34, T. 51, R. 38, W, Ontonagon,	J. M. Mills, 284 Pearl St., N. Y
National,	20,000		Sec. 16, T. 50, R. 39, W, 1.988 A.	J. M. Cooper, Pittsburgh.
Native,	20.000		Keweenaw Point, Michigan,	
Nashua,	50,000	100,000	320 A. N. Ontonagon,	W. F. Hardy, 27 City Ex., B'st'n.
Nebraska,	20,000		NE¼ Sec. 12, T. 50, and other lands,	S. W. J. Webb, 54 Wall St., N. Y.
Nequakett,	20,000		Sec. 26, T. 51, R. 43,	G. S. Frost, Detroit.
New York,	20,000		240 A. SE¼ Sec. 10, E½ NE½ Sec. 15,	H. W. Nelson, 24 City Ex., B'st'n.
New Burra,			Baltimore,	R. Roharts, 19 Nassau St., N. Y.
New Jersey Con.	100,000	1,000,000	New Jersey,	W. Bowes, 68 Wall St., N. Y.
N. Y. & Passaic,	100,000		Harrison, Bergen c.,	T. H. Belt, Jr. 23 William St., N.Y
New Devon,				T. H. Belt, Jo, do. do.
North Western,	20,000		W½ Secs. 24, 25, 26, E½ Secs. 35, 35, T. 58, N R. 31,	17 William St., N. Y.
Norwich,	20,000	500,000	Secs. 11, 12, T. 49, N.R. 39, W. and other lands, 1,300 A.	J. M. Cooper, Boston and Detroit.
Ogema,	20,000	500,000	NW¼ Sec. 6, T. 50, N.R. 35, W.	P. C. Blancan, 35 Wall St., N. Y.
Ontonagon,	20,000		631 A. Secs. 20, 21, 28, T. 50, N. R. 39, W. Rockland, Ontonagon,	G. E. Lellingwell, 7 Pine, N. Y.
Ont'n'g'n, Mass.	20,000			G. Hart, 11 Pine Street. N. Y.
Otisville,	100,000	500,000	Otisville, Orange co., N. Y.,	William D. Williams, Michigan.
Penn. Manufg.,	20,000	1,000,000	4,520 A. Secs. 13, 14, 15, 24, ½ Secs. 10, 11, 12, 23, 25, T. 58, N. R. 30, W.	C. Windsor, 69 Wall St., N. Y.
Pewabic,	20,000		W½ Sec. 25, T. 55, N.R. 34, W.	S. M. Day, 326 Walnut St., Phil.
Pitts. & Boston,	20,000		Ts. 58, 57, N. R. 51, 32, W. 12,495 A.	C. Emery, 59 State, Boston.
Pontiac,	20,000		SE¼ Sec. 13, T. 55, N. S. 31, W.	H. A. Johnston, Pittsburgh.
Portage Lake,	20,000		Houghton co. Michigan,	C. Emery, Kilbey St., Boston.
Prescott,	100,000	1,000,000	Central Arizona,	22 William St., N. Y.
Providence,	20,000	500,000	240 A. in Keweenah co., NW½ Sec. 10, W½ NW¼ Sec. 10, T. 57, R. 32, W.	60 Broadway, N. Y.
Phila. & Boston,	20,000		640 A. Sec. 14. T. 58, N. R. 28, W. Keweenaw co., Mich.	J. W. Davis, 21 Nassau St., N. Y.
Quincy,	20,000		Sec. 26, T. 54, N. R. 34, W,	J. S. McMullin, 423 Walnut St., Boston.
Republic,	8,000	200,000		W. H. Smith, 51 Ex. Pl., N. Y.
Reliance,	20,000		Secs. 21, 22, 27, T. 58, N. R. 28, W, 10,785 A.	H. Baldwin, 70 Wall St., N. Y.
Rochester,	200,000	500,000		H. K. Thomas, 11 Wall St., N. Y
Ridge,	10,000		Sec. 35, T. 51, R. 38, W,	J. A. Ferguson, 8 Wall St., N. Y
Rockland,	20,000		Sec. 11, T. 50, R. 39,	51 Exchange Place, N. Y.
Resolute,	20,000		1,120 A. Secs. 7, 18, 19, T. 58, N. R. 29, W. Keweenaw co., Mich,	S. J. W. Barry, 71 B'way, N.Y.
St. Mary,	20,000			F. Beck, 45 City Ex., Boston.
St. Margaret,	200,000	1,000,000	Canada,	E. B. Sutton, 43 Pine, N.Y.
Sharon,	20,000		Ontonagon co., Mich.,	P. C. Blancan, 35 Wall St., N. Y.
Sheldon & Col.,	20,000		SE¼ Sec. 36, T. 55, R. 34, W.	S. J. Edwards, 22 W'm. St., N. Y
South Side,			SE¼ Sec. 34, T. 55, R. 34, W,	H. W. Nelson, Boston.
Societo Fran'se,	10,000		T. 58, 59, N. R. 28, 30 W,	Copper Harbor.
Suffolk,	20,000			Carlos Cobb, 22 William St., N.Y
Superior,	20,000		W½ Sec. 14, T. 50, N.R. 39, W.	S. J. W. Barry, 12 Pine St., N. Y
Toltec Consol.,	20,000		Secs. 25, 26, R. 50, R. 36,	H. W. Nelson, Boston.
Uniou,	20,000	500.000		A. S. Kellogg, 22 Pine St., N. Y
Ural,			Wisconsin,	17 William St., N. Y.
Vulcan,	20,000		1,120 A. Secs. 7, 17, 18, T. 58, N.R. 27, W. Keweenaw co.,	F. K. Womrath, 324 Walnut, Phil.
Victoria,	20,000		Secs. 29, 29, 30, 34, 34, T. 50, R. 39, and other lands,	L. W. Clarke, Boston.
W. Minnesota,	20,000		Secs. 17, 18, 19, T. 50, N. R. 39, W,	C. T. Howard, Boston.
Wickopee,	100,000	500,000	Massachusetts,	G. A. Sneden, 12 PineSt., N. Y
Vermont,	100,000	500,000	W. Fairlee, Orange co., Vt.,	191 B'way, N. Y.
Waula Yuma,	600,000	6,000,000	Arizona,	35 William St., N. Y.

S, means section; T, township R, range.

AMERICAN
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[ILLUSTRATED.]

GEORGE FRANCIS DAWSON,
EDITOR

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PENNSYLVANIA.—A. WINCH, Philadelphia, Pa.

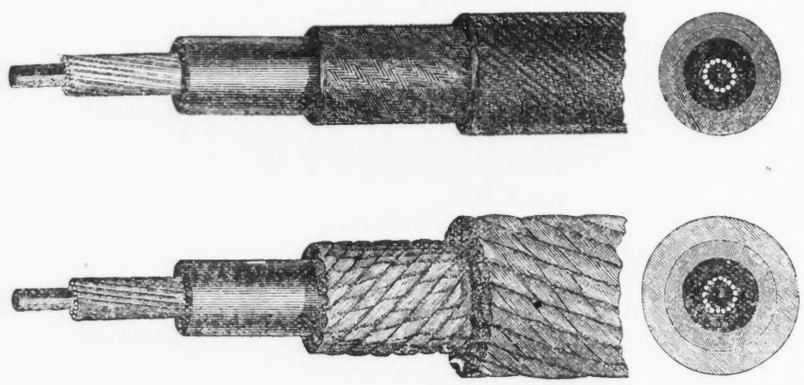
☞ Correspondents, exchanges and others addressing us should be *extremely careful* to write "JOURNAL OF MINING," instead of "MINING JOURNAL," to ensure safe carriage.

NEW YORK, SATURDAY, SEPTEMBER 15.

Contents of this Number.

SEVEN MORE SUB-OCEANIC TELEGRAPH CABLES PROJECTED.

Since the last issue of the JOURNAL OF MINING announcement has been made of the successful junction of the lost cable of 1865 with Hearts Content—so that two great telegraphic nerves now unite Great Britain to America. No excitement followed that announcement, because we suppose the public mind has been too much agitated by politics to care about anything else, but we believe the importance of this success is none the less appreciated, as well by those who in consequence thereof will save money in the reduced rates charged for messages, as by that larger class who gain by reading in their newspapers every morning at breakfast a larger modicum of European telegraphic news. Hence we have thought that some mention of other deep-sea cable projects will prove acceptable to our readers. So far as we can ascertain there are no less than seven of them. *First:* Is that of the American Atlantic Cable Telegraph Company; capital $10,000,000, in shares of $100 each; President W. S. Worl; office 37 New street and 38 Broad street. The route proposed is from Cape Charles (opposite Fortress Monroe) to the Bermudas 677 miles; thence to the Azores 1800; and thence to Lisbon in Portugal 750 miles. The advantages claimed by Mr. Worl, the projector, for this route are: that the cable can be laid in three sections, so that in case of accident to one section the other two would remain intact; that shipping stations at the Azores and Bermuda would be established, where masters of vessels could be placed in communication with their owners; that the business of these stations



alone would pay handsomely; and that such stations would enable the line to be worked with fourfold the rapidity of a single cable. The company have not yet decided as to the particular class of cable they will lay down; but we should not be surprised if one of the Bishop deep-sea cables were adopted. We have therefore illustrated them in this issue, but as they were described on pages 376 end 377, last issue of the JOURNAL OF MINING, we will now simply say that they are very strong and pliable—the inner covering of the conductors being of gutta percha and the outside coverings of tarred canvass in one case and hempen material in the other. It is settled, however, that the Bishop Gutta Percha Company will manufacture the cable whatever the kind decided upon. *Second:* The Ocean Telegraph Company (Limited) of England; capital £600,000 in shares of £20 each, with power to increase; of which Thomas Allan, Electrician and Engineer, is the promoter. The route proposed is from Falmouth, England, 1,240 miles to the Azores, and thence about the same distance to Halifax, Nova Scotia. The cable for this line (invented by Mr. Allan) is already contracted for, and being made. It is a copper wire conductor, surrounded by small steel wires, (instead of a steel wire surrounded by small copper wires as in Mr. Bishop's cables) the whole enveloped in gutta percha and covered with tarred canvas. The Allan cable is five eighths of an inch diameter and will weigh in the ship 9½ cwt. per knot. *Third:* The North American Telegraph Company (limited). This is another English company. The route proposed is from Scotland to the Faroe Islands, 250 miles; thence to Iceland, 240; to east coast of Greenland; 743; to Labrador, 507; to Canada 210. There will be *two* cables, sixty miles apart, laid by this company the whole submarine distance. It is stated that the water in mid-ocean is very deep, hence danger from icebergs will only be encountered near shore. It is calculated that messages will be sent by this line at half a crown (say 90 cents in currency) per word. *Fourth:* The Western Union Company of America; what is generally known as the Russo-American line. This company's cable is to be laid from Russian-America to Asiatic-Russia, (across Behrings Straits) via some small islands about half way between the two continents. The land lines are and have for two years been in process of erection. Already it has been erected for 700 miles north of New Westminster, British Columbia, and by the end of this year 800 miles more will be done. In Asiatic-Russia the line is also being pushed with commendable energy. The American, Russian and British Governments lend every facility to those engaged in this great enterprise, and all *materiel* for the company is everywhere admitted duty free. *Fifth:* A French line via Lisbon, Madeira, Canary Isles, Cape Verde Isles (with branch to the Senegal River in Africa) across the Atlantic Ocean to Cape San Roque in Brazil, and thence to Cayenne in French Guiana is also on the tapis. From Cape San Roque, land lines will doubtless run to Rio Janeiro, and to all parts of South America. *Sixth:* International Ocean Telegraph Company—projected by the renowned Major-General William F. ("Baldy") Smith—office 41 Wall street. This line has just received a concession from the Spanish Government. The route for this cable is from the mainland of Florida via the islands of Sandy Key and Key West to Cuba—the distance between the two latter being only 87 miles; thence to St. Domingo, thence to Porto Rico. Also from Cuba to Jamaica and thence to the Isthmus of Panama. The organization of this company is: General Wm. F. Smith, President; Alexander Hamilton, jun., Vice-President; Alfred Pell, jun., Secretary; M. L. Delafield, Treasurer; Directors: Alex. Hamilton, Cambridge Livingston, Charles Knap, O. K. King, Jas. A. Scrymser, Alfred Pell, jun., Maturin L. Delafield, W. F. Smith, and Wm. P. Blodgett. While speaking of this cable it may be well to mention that under the auspices of Ex-President Murillo, of Colombia, several hundred miles of telegraph wires were projected and are now partially completed across the lofty Andes—at one point in the crossing of which the wires will be 13,000 feet above sea level! A grand chain of telegraphs running from Patagonia up on both sides of South America to Columbia, and from Behrings Straits down through Russian-America, British America, Washington Territory, Oregon, California, Mexico, and the Central American Republics, will doubtless connect with this line as well as with the Russo-American line. *Seventh:* A line from New Zealand and Australia, running from island to island of the Sunda Group, to Singapore, thence connecting with the line of telegraph running from the East Indies to England. When the Russo-American line is completed, a land branch through China, and Cochin-China to Singapore, will also probably be constructed. Several of these companies were organized or partly so, some time ago, but the successful laying and working of the two great Atlantic Telegraph Cables has given them an impetus never before experienced. The high prices charged for the transmission of messages also has much to do with the organization

of the others. Proven, as they now are, secure and very profitable undertakings, we shall expect ere many years have elapsed to learn that the ocean-beds are seamed with scores of these wonderful transmitters of thought and intelligence. And may we not hope that as the various Empires become more closely united by these cables, the nations will be even more closely knit together until the whole earth becomes one happy Arcadia, where Liberty shall sit crowned with the blessings of all tongues, and exercise her benignant sway over all peoples.

GREAT INFLUX OF MINERS FROM ABROAD.

The official return of Emigrants who left Great Britain during last year, exhibits some interesting facts. There were 209,801 of them, of which number 147,258 or nearly three quarters came to the United States, 55 per cent. being Irish and most of the balance English. Among them were 455 coal miners, 64 millwrights, 3,962 miners and quarrymen, besides 41,994 general laborers, many of whom have probably gone to work in the *placere* diggings of the Far West, and may therefore now be classed as "miners." Owing to the recent stoppage of so many mines in England, the migration of miners from that country to this, during the current year will probably be double that of last year. We extend to them a hearty welcome, and assure them and the thousands still remaining that the wealth of this country in minerals and metals is not one quarter developed, and that there is plenty of steady work and good pay here for all of them who are industrious and sober.

TIN.

In the course of a recent article upon tin, the Denver (Col.) *News* says:

"The principal tin mines of the world are at present at Cornwall, Bohemia, and Saxony."

Our contemporary forgets the tin mines of Devon, the "Straits" and the Island of Banca near Sumatra. The tin of the latter now takes precedence of all others in quantity and cheapness, besides being considered in our metal market as at least equal in quality to any produced elsewhere.

MINING COMPANY'S STATEMENTS.

WASHINGTON SILVER MINING COMPANY.—NEVADA.—CAPITAL STOCK, $300,000; SHARES, $5 EACH. OFFICE, 30 PINE STREET, N. Y.

We learn from this Company's pamphlet that their mines are at the head of Panther Canon in Echo District, Humboldt county, California. They own 900 feet on the Washington, 400 on the Jefferson, and a like amount on the Madisnn ledges. "The ledges," it is stated, average each three feet in width, at the surface, with bold out-croppings, showing fine silver mineral throughout. They are fifty feet apart, and every geological indication lends to show that at a depth of from one hundred and fifty to two hundred feet from the surface, all three ledges come together. From a depth of 40 feet, ore was taken which is reported by the assayer from $419 to $6,370 per ton.

DIVIDENDS.

Nevada mines: Savage, $50; Yellow Jacket, $50; Hale and Norcross, $75; Imperial $6 per share.

MEETINGS.

Eureka Copper Mining Company, Directors, at 4 Broad street, on Sept. 19, at 12 M. The Havemeyer and Walker Gold and Silver Mining Companies, Trustees, at 18 Wall street, on Sept. 17. Belford Copper Company at Room 15, 49 Exchange Place, at 12 M. The Norwich and Nevada Mining Company, at 88 Maiden Lane on Sept. 27. A meeting of the New Haven Mineral Company, special, at 88 Maiden Lane, on Sept. 18th, at 3.50 P.M. Oceanic Petroleum Company, at 89 Maiden Lane, at 12 M. Mineral Point Petroleum Coal and Iron Company, Officers, at office of J. M. Robertson, 119 Broadway, on Sept. 21st at 3 P. M.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

Live Toad in "Hard Pan."

EDITOR JOURNAL OF MINING:

SIR—I noticed in your paper of August 18th last, a curious story, condensed from the Louisville *Courier*, of a living frog having been taken from a solid stone (excepting the solid cavity which held him,) in Springfield, Kentucky. Some may think such a story too much to believe, or at least improbable, and I would, also, were it not for the fact that I once saw something nearly the same, or about as mysterious. It was on the farm of Col. J. H. DeWitt in the town of Columbia, Bradford county, Pa., in the summer of 1847, while some laborers were excavating for a mill dam about fifteen feet from the surface of the earth and directly under a hemlock stump, which was near two hundred years old, and in *hard pan*—nearly as hard as rock—they came upon a *living, black, warty toad*. Upon cleaving off the hard pan so as to release him, he began to wink at the light and act like other toads, and finally hopped out and hopped off just as though nothing had happened, except that he appeared glad to be released from his cell, and finally went away to look up other toads, and see what improvements had been made in the region about him since he had been confined to his house. Now, how came he there? How long had he been there? How did he live, without air, without food? It is most probable that he had been there hundreds of years for solid hard pan fifteen feet thick laid on the top of him, and a forest of large timber, some of which was over two hundred years old, had grown up on the top of that since his confinement—he could get no food, no air—strange, indeed, but nevertheless true, for I saw it myself, but never would venture to publish it until I noticed the article in your paper, and which appeared to be quite as mysterious as what I saw. If there are any who can answer the above questions, I would be pleased to have them do so in your paper. W. R.

UTICA, N. Y., Sept.

Coal.—No. 9.

EDITOR JOURNAL OF MINING:

SIR: A second system of mining coal is this: Out of the exploring drifts others are set in at right angles, occasionally at various angles, and from the outside drifts the working places are commenced. These are worked at various widths, generally at from 15 to 18 feet within the blocks of coal that are left for the support of the mine. The blocks are left at about every 12 feet and are of various sizes, but generally from 3 to 6 feet by 6 feet, forming a block of 18 to 36 square feet; to recover these blocks by a second working requires good management, and the floor and cover of the mine must be firm. This system is much the same as what is practised in Lawrence County, Pennsylvania, and has resulted in very disastrous effects. Their roads are overflowed with water, portions of the coal submerged, their working places are sometimes barred off with the crush, and the air courses rendered so small as to be insufficient for the ventilation of the mines, and also there is no attempt made to recover the coal left to support the mines.

At the Shawmut mines in Pennsylvania a system is adopted which is occasionally practised in British mines where there is much refuse, as it improves the ventilation and enables the miners to dispense with the wood partitions required in explosive mines. The system is this: From the levels, or exploring drifts, the working places are set in double so that the roads pass up each side while the refuse is packed between them forming a solid wall, consequently if a swing-door be placed at the end of this wall, the air is made to pass up the one and down the other. Mining in this county is decidedly improving, at these mines several miles of rails are laid down, three locomotives are on the ground, a large machine shop, saw mill, &c., are being erected. The coal is said to be of excellent quality, although small portions of it are rusted with iron water which passes from the upper strata. The next system I shall notice is that practised in the counties of Durham and Northumberland, England. The basin covers an area of 400 miles, and on it are about 268 mines yielding upwards of 16,000,000 tons of coal annually. In commencing they partly work away their coal by intersections. Having advanced the exploring drifts they set away cross-drifts at short distances, being from 6 to 9 feet wide, and out of these the working places are set in their width being from 15 to 18 feet. Between those working places are blocks of coal left for the support of the mine; after the working places have arrived at a certain distance, or to a certain position, the blocks are entirely removed, except under certain circumstances, when they are only partially removed or left untouched. This system has proved a great success for the raising of large quantities of coal. Horse roads can be carried into different parts of the coal at one and the same time, each man can have his own place to work in, and the air can be drawn into and around any portion of the mine. The sizes of the blocks vary, and in determining what size to leave, the strictest attention must be paid to the nature of the coal, of the rocks forming the floor and cover, and to the thickness of the strata above. In many of the old mines the blocks were left too small in size, and the result was a crush which destroyed large quantities of coal, but great improvements have been made of late years, continuous blocks are left to guard districts, so that if a crush takes place it is confined to one part of the mine. The continuous blocks, when placed by the side of the horse roads, also serve to prevent in a great measure the sad effects of explosions, as there are no stopings to be blown out, and the ventilation can be restored with little trouble.

Wilmarth Mines, Elk Co., Pa. A MINER.

Original Papers.

[PREPARED FOR THE JOURNAL OF MINING.]*

THE UTILIZATION OF SODIUM IN GOLD AND SILVER AMALGAMATION.

By Professor HENRY WURTZ, of New York.

Very much discussion has been going on for about a year past, arising out of my recently announced discovery of the extraordinary effect of the alkali-metals in amalgamations. Confirmations of my results from the most reliable sources have appeared abundantly, as well as various criticisms, objections, and even what are represented as negative results. I desire to present a very concise statement of the progress of these things, believing that the Association will not fail to be interested in a subject having such vital relations, at present, to the prosperity of our country, as the successful saving of gold and silver. Prof. Silliman reported last January at the meeting of the National Academy of Science at Washington, the first actual working results with sodium made in this country, although it seems that the new method—divulged to divers persons several years since—had already been actually adopted during the year previous in Wales, California and elsewhere; the value of the discovery being so easily tested and so obvious, that heralding and puffery were not needed to bring it into notice. The communication of Professor S. was extensively copied, and is only referred to now to introduce a continuation of his experiments in another form; in order to ascertain whether the assays of the tailings, after amalgamation, would give confirmatory results. The following report from Dr. Torrey is introduced as embodying such a result:

NEW YORK, Jan. 28, 1866.

PROF. B. SILLIMAN: DEAR SIR—We send you the results of our assay of the "tailings" which you transmitted to us. They were marked, "Tailings from ore of Auction and Texas Lode, which assayed gold, $320; after amalgamation with sodium quicksilver, Gold, per ton, $67 83; Silver, $1 45.

Yours respectfully, JOHN TORREY & SON.

It will be found, on reference to Prof. S.'s report, that the ore alluded to was one from which the ordinary mode of amalgamation produced but from 57 to 60 per cent. of the assay, whilst my methods obtained from 80 to 83 per cent.

The following is a letter from Prof. Silliman, relating to trials on a working scale, instituted under his advice and direction, at some mills in the Pacific States:

"NEW HAVEN, Feb. 27, 1866.

PROF. HENRY WURTZ: DEAR SIR—I have received advices under date of Jan. 17 and 27, 1866, from Dr. Fisher, in Grass Valley, California, the gentleman I requested to put to the test your new methods of amalgamating gold ores with quicksilver containing sodium, and find therein the following passages bearing upon your inventions: Under date of Jan. 17:—Upon applying No. 1 amalgam directly to the clean copper plates, they amalgamate easily and retain their coating better than when coated in the ordinary manner. There were cleaned up after six days run, from the plates coated with magnetic quicksilver, 15 dwts of amalgam, while the five plates coated in the usual manner cleaned up but 13½ dwts. The plates were of the same size, had never been used before and were coated at the same time. They were placed side by side in two sluices, each fed from the same battery, and in all respects the conditions were made as nearly alike as possible. As I advised you in my last, the 'Eureka Mill,' or any other in which the 'blanket process" is employed, cannot give the sodium amalgam a fair test so far as its value in saving gold on an incline is concerned; for 90 per cent. of the total gold saved is detained by the blankets. * * * * Parties have been experimenting in Nevada for some time past with sodium. At the Gould & Curry mill, they tried sodium amalgam in the Hepburn pan (1000 lbs. charges of ore) with very satisfactory results. After running six hours at a temperature of 150°, the contents of the pan were run off, and the yield of silver was ten per cent. greater than when operating as usual! Mr. Attwood tells me that his son, amalgamator at the Ophir mill in Virginia City, has obtained still better results with the Freiberg barrel." * * * Under date of Jan. 27, 1866: * * * It seems to me that the great value of sodium will prove to be in pans and barrels and on copper plates. Last week in my experiments at Eureka, the gold amalgam from the plates coated with sodium amalgam weighed seventy per cent. more than that from plates coated in the usual way!" * * *

(Signed) Yours truly, B. SILLIMAN."

The following is the substance, greatly condensed, of a report by Dr. John Torrey, of *experiments upon ore from the "Moss Lode," Arizona*:

U. S. ASSAY OFFICE, N. Y., Feb. 28, 1866.

PROF. H. WURTZ: We herewith send you the results of our experiments on the comparative value of the new method of amalgamation invented by you, and the old method with ordinary mercury. The ore operated on assayed: Gold, per ton, (2,000 lbs.) $1,072 00; Silver, $30 00.

First Experiment—A quantity operated on by amalgamation in the ordinary way, and the slime treated laboriously for sixty minutes to collect the gold-amalgam yielded: fine gold, per ton, $479 00; equal to 45 per cent. of the dre-assay.

Second Experiment—Another equal quantity, all else the same, except that sodium-amalgam was used, forty minutes only being occupied in separating the gold-amalgam from the slimes, gave:

fine gold, per ton, $817 50; equal to 78 per cent. of the fire-assay.

Third Experiment—The tailings from the first experiment, (much having been lost, however,) amalgamated with the aid of sodium, yielded: fine gold, per ton, $124 00, or 14 per cent. additional of the fire-assay. These results and not a few others of a similar kind, show conclusively the efficacy of your new mode of amalgamation, and its great superiority over the usual method in which ordinary quicksilver is used. Yours respectfully,

JOHN TORREY.

The California metallurgist, Mosheimer, published last Winter the following results obtained by him:

About five months ago, I received several lots of ore to work; and I determined to give sodium a fair test. I worked the same ore side by side, with the same machinery, and the results were as follows; First lot of 500 lbs., each pan with sodium, yielded 85 per cent. of the assay; without sodium the yield was only 55 per cent; Second lot, different ore, with sodium, 60; Third lot, different ore, with sodium, 78 per cent; without sodium, 65. I made many more trials, and found that I got from 5 to 25 per cent. more by using sodium than I could obtain without its aid. I noticed a very great difference, however, in the different kinds of ores which I worked. For certain classes of ores, I believe sodium to be of great benefit, less for others.

J. MOSHEIMER.

The Daily *Alta California*, of March 17, 1866, commenting upon Prof. Silliman's results, says:

"It may be asserted with confidence that if the results of the general working of gold quartz are as favorable as those of Prof. Silliman's experiments, the gold yield of California will increase from $5,000,000 to $10,000,000 annually. There are vast amounts of auriferous quartz that contain barely gold enough to pay for the expense of crushing and reducing, leaving no margin for extraction or profit. If the yield can be increased only ten per cent. by using sodium, the mining of the rock will pay; and the quartz that now comes within fifty cents per ton of paying expenses is far more abundant than the richer qualities."

The *Alta* also says:

We add to that of Prof. Silliman, the experience of R. B. Gray & Co., manufacturing jewellers of this city. They have been in the habit of reducing the "sweeps," that is, the sweepings and refuse of their establishment, into which considerable quantities of the precious metals find their way; and at the last reduction, after the sweeps had been put through the regular process and were ready to throw away, according to custom, an experiment was tried by working them over again with sodium. The result was that nearly as much gold was obtained from the second process as from the first. This work was done in a KNOX amalgamating pan.

* Read before the Buffalo meeting of the American Association for the Advancement of Science, Aug. 29th, 1866.

[CONTINUED IN OUR NEXT.]

[WRITTEN FOR THE JOURNAL OF MINING.]

LEAD FIELDS OF THE UPPER MISSISSIPPI—No. 11.

By J. VANCLEVE PHILLIPS, M.E.

LEAD MINES ABOUT POTOSI.

Potosi is an old mining town about thirty miles north-west of Galena, three miles east of the Mississippi river. The town is built in the upper end of a valley near the dividing ridge that lies between Platte and a fork of Grant river. This ridge has an altitude of about three hundred feet above the Mississippi river, is six miles wide, numerous small creeks are fed by springs along the sides of the ridge, these follow denuded valleys and drain the rain water from the centre of this ridge system. We will leave the town, which is made up of brick store-houses, churches, and mechanic and other shops, nestled in a hollow, and go down towards the Mississippi, and look at the strata. In going down this valley we find it steep, the limestone rising up in steep ridges, and mural rocks from one to two hundred feet in height. As we get near the "big river" the bluffs are steeper, ridges higher, and covered with a stunted growth of black and white and post oak woods. In the valley, sycamore, elm, gum, butternut and other soft wood. This was originally called "snake hollow." The first lead miners, who come here in 1827, found on looking over one of the high bluffs fronting the river, a den of rattle snakes—the spotted reptiles were seen by hundreds basking in the sun along the sloping ground. The lead measures near the bluff are full of open cracks and caves, and in one of these the snakes had their home and had multiplied until their name was legion. At that time the miners had a day appointed each spring to hunt the "critters," and turned out *en masse*, armed with picks and spades and shot guns, to make war on the reptiles. The one who brought in the most "scalps" was offered the freedom of the town and a free bill at the grocer's for a week following; if less than four or five hundred were slain, it was called a bad day for "snaking." Hogs are the great enemies of the rattle snake. One of those long-legged Berkshires, seen in the woods in this part of the west, will follow the trail of the snake the same as a hound will follow that of a fox; and when it comes up with the "crawler" will commence to eat at the tail and chaw up the venomous reptile with all the apparent relish that a pike will snap at a green pond frog. The rattle snake was a cotemporary with the red man. Civilization is sweeping the copper colored tribes as it advances in the path of empire.

Low down on the bluffs of the Mississippi, and forming the bed rock of the river, we find a brown crumbling sandstone; this is known as the upper sandstone in Hall and Whitney's survey of the lead field, and as the sandstone of the Wisconsin river of Mr. D. D. Owens' survey. This rock underlies the lead measures—coming in below the buff limestone, and is a rock of much the same age as the noted old red sandstone of Scotland, made classic by the lamented Hugh Miller. We must suppose the great "quarry-man" fell in the "battle" by attempting to make the first chapter of Genesis and the records in the strata correspond. If the mind had been directed to legitimate observation of the rocky structure of the island, and not attempted to go by cerebral sight into mysteries hidden from the finite mind, the sad fate of the author of the "Old Red Sandstone" would have been avoided.

The lead mines at Potosi are in a belt some five miles long and from one to three miles wide, and are known as Red Dog, Pin Hook, Rockville, British Hollow and Dutch Hollow diggings. The ores occur in upwards of fifty principal gash veins in the upper galena limestone, and numerous pipe veins in the lower rock and patches in the clay. A peculiar feature of the veins in this locality is that they angle from ten to thirty degrees south of east. They are all confined to the high ground of the dividing ridge between Grant and Platte rivers. The crevices are called "ranges" by the lead miner. Some of these have been washed two and three miles in length. The lead ores all belong to the same crevice, and in this distance cross several small ridges, the ore making patches and small irregular veins in the low grounds and gash veins in the ridges. These crevices are from fifty to three hundred feet apart. The deepest work done is about one hundred feet. This ore is evidently the outcrop of a system of veins that belongs to the great field of lead measures north and west. The lead bearing rocks are then all *in place*, and we must suppose the veins will be of a more permanent character.

[WRITTEN FOR THE JOURNAL OF MINING.]

COLORADO LODES, ORES AND TITLES.—NO. 2.

By J. A. H.

Having tried many of these substances for reagents, the writer is satisfied and fully convinced that the desired materials so long looked for, are here at the command of the mining communities, and it only remains to decide upon the best methods of employing them. He feels gratified at the results of his studies, though in many respects similar to those of others, they are yet *original*, and the result of some ten years of practical experience and study in the mines of California and Colorado. Some of them may be stated as follows: Antimonial ores and arsenical pyrites must be de-oxydised by roasting with some chemical; two to five per cent. of soda will usually suffice; if the ores contain but little sulphur, add as much of that substance. Mineral oil exists in the ores of most lodes at a moderate depth, and no common roasting suffices to expel it; but if, when treated as above and well browned, the hot ores are plunged into cold water the oil will be expelled. If the oil be not thus expelled much of the contained metals will not amalgamate. The finer the ores are ground the better they can be treated; this can be best done when they are dry. If the ores are roasted too fast or made too hot, the metals will cement with the refuse in slag. By the above treatment, contained copper will be precipitated in an iron vessel, and silver in a copper vessel. Milling the pulp afterward with quicksilver will extract nearly all the gold and silver yet remaining therein. Mixed precious metals and lead when heated to a sparkling fluid state and drawn off into cold water will separate by explosion. The waste of flour metals in common mills in muddy water—from 40 to 80 per cent. of their gross yield—is avoided; so also is the loss of quicksilver and contained metals made by most processes, ranging from 10 to 40 per cent. of the production. Lump ores may be well treated by roasting in a close furnace with limestone and fuel intermixed, and then raking out hot into cold water in a sheet-iron vat; afterwards pulverize and mill with clean lukewarm water and quicksilver.

Ores containing a good percentage of lead can be most profitably smelted. Rich ores can be smelted at a low temperature and most of their metals extracted, by use of a compound flux and a certain kind of furnace. The mining of precious metals has grown up since 1849 to be one of the leading interests, and promises, if rightly fostered, to become within a short time its greatest interest. Its prosperity depends as much upon the final settlement of mining titles, as upon the improved methods of working ores. No men will spend time and capital to build up this business, unless satisfied that they can do so at a profit, and occupy and hold peaceably the possessions which their industry has created. Any legislation that tends to cripple mining development is prejudicial to the wealth and revenues of the country, as well as ruinous to the prosperity of individuals and communities. Government gives the tiller of the soil 160 acres for a homestead, on condition of occupation and improvement at the cost of survey and title, and never thinks of taxing its produce. It proposes to give the miner four hundred feet along a mineral vein on condition that he expends not less than one thousand dollars thereon, complies with all the local laws regarding such property, pays five dollars per acre for the survey, pays for plotting and mapping of the lode and surveyors mileage, and pays into the U. S. Treasury three per cent. of the net produce of such mine until the national debt is paid off. At present miners pay a royalty of one-half of one per cent. on their gross earnings. If any dispute arises as to title, the mine is to be shut up until a settlement is had in the U. S. courts. Accrued water-rights are to be protected, but all mining rights are to bend to the will of the man who can grasp the most, and has got the most ready money to litigate with. If our national legislators can do nothing better than the above for the miner, they had far better drop the matter altogether and let things take their natural course under existing local mining laws. The least that ought to be done is to give him a title in fee simple to all the mining ground he develops to such an extent as to prove its value. The quantity and bounds and amount of improvement to be in consonance with the mining laws of the district in which it is situated. Certificates of title from the district recorder sufficient for location of survey on the registrar's plots, should be a certificate of warrant for the issue of a patent. Any other division than that heretofore parcelled out to the several claimants would be prolific of infinite litigation and expense. No worse plan could be adopted than to dispose of it by the surface acre, as in most districts two or three plots could be so laid as to hold nearly all the lodes, water-privileges, roadways, timber, etc., worth having, and would interfere with numberless vested rights already accrued. No legislation should favor capital in preference to labor. Mining, this great and national interest—should be fostered and encouraged in every possible manner.

MARKET REVIEW.

FRIDAY EVENING.

The price of gold at 3:30 this afternoon was 145. Large importations continue to arrive from Europe in addition to the usual arrivals from San Francisco, the balance however of exports over imports since January 1st, is over twenty-three millions.

Silver is in better request at 7½ to 9 cents below the price of gold.

The loan market is easy at 4 to 5 per cent. Commercial paper is plentiful at 5 to 7 per cent. Foreign exchange is dull, but has advanced since last week. Bills at 60 days on London are quoted at 106 to 106½; for Commercial 107@ 107¼ for bankers do. at short sight 108 to 108½; Paris at 60 days 4 82½@5 25; Hamburg 35¼ @ 36.

The market for government stocks appears to be improving with increasing purchases for investment; 6 per cent. 1867, 130½ @131; 5-20's '62, 108@108½; 10-40's, 98¼; 7.30's 1st series, 105⅝@106

In mining stocks Consolidated Gregory has fallen to $17.75;

Smith & Parmelee has advanced during the week from $10 to $11. 20; Rocky Mountain Gold from $7.50 to $8.45; Downieville Gold from $1.58 to $1.67, both with considerable transactions; Walkill Lead from $1.55 to $2.30.

Copper.—Ingot is quiet, but prices are firm. The sales are, of Detroit, 60,000 lb. at 31c.; 50,000 lb., for delivery at the middle of the month, 31½c; 50,000 lb., for delivery in October, 32c.; of Portage Lake, 50,000 lb. at 31c.; and of Baltimore, for delivery in October, 125,000 lb. at 32c. The London *Mining Journal* of August 31st states that an advance of £5 per ton is made on English smelters' prices, making present prices for manufactured £91; best selected, £89; and ingot, £86—and that there is every probability of a further advance; that foreign was also advanced—Burra being £90 to £91; for Chilian slab, holders are asking £80.

Iron.—American pig is in better supply, and there is a good demand for No. 1. The price is $18@$20 at Elizabethport. Of Scotch we note sales of 700 tons Glengarnock, ex ship, at $45@ $46, and $47 for small lots; from yard, 1,000 tons Eglington at $47; Gartsherrie, $49. The imports from January 1st to August 31st, 1866, were:

	BAR.	PIG.	SHEET.
From Foreign Ports.....tons.	16,157	tons, 37,277	bdls., 348,666
Coastwise..... "	1,889	" 2,397	" 32,933
Total..... "	18,046	" 39,674	" 381,599
Same time, 1865.. "	6,072	" 10,270	" 108,127
Increase..... "	11,974	" 29,404	" 173,472

The advices from England speak of a slight revival and higher prices.

Steel.—In better demand, and firm at quotations.

Lead.—A steady demand at firm prices. Sales of 250 tons foreign equal to 6¾ cents gold per lb. Bar $10 50 and sheet and pipe $10 70 per 100 lb. Import from January 1st to August 31st, 1865:

	PIGS.
From Foreign Ports	280,573
Coastwise Ports	4,838
Total	285,411
Same time, 1865	93,526
Increase	191,885

Tin.—Market firm, with upward tendency. The sales are 500 to 600 slabs Straits in lots at 22 cents, 150 slabs Banca at 24½c., 17 tons English at 21¾c. in gold. The half yearly sale of Banca will be held in Holland on 28th September. 110,000 slabs will be offered. The last price paid there was 48 fls. The English smelters' prices have advanced £3 per ton, being £88 for blocks £89 for bars, £91 for refined.

Tin Plates are steady, with moderate demand from store, at $10 12½@$10 25 gold for charcoal I C; 200 boxes charcoal term sold at $10 gold. Imports from 1st of January to 31st of August:

	PIGS.	PLATES. BOXES.
1866	70,292	333,050
Last year	44,995	170,757
Increase	25,297	162,293

Spelter.—The market is somewhat dull. Sales of 30 to 40 tons at 6⅞c.@6¾c. gold. Import from Jan. 1 to Aug. 31:

	PLATES.
1866	174,679
1865	4,121

THE COAL TRADE.

FRIDAY EVENING.

Foreign coal is dull. 160 tons Liverpool House Cannel sold at $14 ex ship. There have been sales also of 1,500 to 1,600 tons from Bridgport, C. B., for gas purposes, on private terms. The market for domestic still continues dull and prices drooping. The supply is so much in excess of demand in some descriptions of coal, that any forcing of sales is attended with great depreciation. A novel exportation is that of 400 tons anthracite White Ash lump coal to England. It is thought to be much preferable to English coal for particular purposes.

The returns of traffic for the week ending September 8th, as compared with those of the corresponding week last year, are as follows:

	1865.		1866.		
	WEEK.	TOTAL.	WEEK.	TOTAL.	INCREASE
P. & R. R. Reading...		2,069,218	77,961	2,837,333	846,077
Del & Hudson.....	581	473,071	35,546	913,559	440,488
Schuyl. Can.....	32,803	540,018	33,117	921,590	375,572
Lehigh Val. R. R....	39,641	964,085	35,478	1,338,823	374,738
Penn. C. C.....					
By R. Road.....			18,037	222,076	n'crease
By Canal.....			826	15,672	98,734
Scranton Sth.....			87,601		
" North.....			40,834		

Lehigh Coal and Navigation Co's. Business.

	WEEK.	SEASON.
For the week ending Sept. 8.....	57,858 tons.	674,612 tons.
Last year.....	32,486	502,150
Increase.....	5,371	172,481

Little Schuylkill Coal Trade.

	Co.'s Mines. Tons.	Railroad. Tons.
From December 1, 1865.....	97,799	192,897
Same time last year.....	63,669	147,956
Increase.....	34,130	44,941
East Mahonoy Railroad..		326,657
Last year.....		261,034
Increase.....		55,623
Increase on Railroads.....		100,564

Prices of Coal by the Cargo.

At New York, Sept. 14, 1866.

Schuylkill Red Ash by Boat Load	$7 25@	$7 50
" Chestnut, " "	4 75	5 25
" White Ash Lump	6 25	6 75
" Steamboat	6 25	6 75
" Broken	6 25	7 00
" Egg	6 75	7 00
" Stove	6 75	7 25
" Chestnut	4 75	5 25
Lehigh White Ash Lump	7 25	....
" Steamboat	7 25	....
" Broken	7 00	....
" Egg	7 00	....
" Stove	7 25	....
" Chestnut	6 25	....

At Philadelphia, Sept. 14, 1866.

Schuylkill Red Ash Prepared	$5 75@	$6 00
" Chestnut	4 00	.. ..
" White Ash Lump and Steamboat	5 25	.. ..
" Broken	5 25	.. ..
" Egg and Stove	5 50	.. ..
" Chestnut	4 00	.. ..
Locust Mt. Lump, Steamboat	5 25	.. ..
" Broken	5 25	.. ..
" Prepared	5 50	.. ..
" Chestnut	4 25	.. ..
Lorberry Coal	6 00	.. ..
Franklin, (Lykens Valley)	6 25	.. ..
Broad Top	5 50	.. ..

Scranton Coal at Elizabethport.

Lump	$6 00@	— —
Steamer	6 10	— —
Grate	6 20	— —
Egg	6 30	— —
Stove	7 00	— —
Chestnut	5 50	— —

Prices for Pittston Coal at Newburgh.

Lump, per ton of 2240 lbs	$6 75	.. ..
Steamer, " " "	6 85	.. ..
Grate " " "	6 90	.. ..
Egg " " "	7 00	.. ..
Stove " " "	7 25	.. ..
Chestnut " " "	6 00	.. ..

70 cents per ton additional for delivery at N. York.

Lehigh Coal at Elizabethport.

Lump	$7 25@	— —
Steamboat and Broken	7 00	— —
Egg and Stove	7 25	— —
Chestnut	6 50	— —

George's Creek and Cumberland Coal.

Run of mine, t. o. b. at Locust Point	$5 75@	.. ..
At Georgetown	5 50	.. ..

At Baltimore, Sept. 14, 1866.

Wilkesbarre & Pittston W A., wholesale	$7 50@	$7 75
" " " retail	8 50	8 75
Lykens Valley & Sunbury R A., wholesale	7 50	7 75
" " " retail	8 50	8 75

Coal Freights.

From Newburgh.

Stamford	$1 00@	..	Greenbush	$ 55@	..
Norwalk	1 60	..	Coeymans	50	..
Bridgeport	1 60	..	Coxsackie	45	..
New Haven	1 60	..	Stuyvesant	45	..
New London	1 75	..	Hudson	40	..
Norwich	1 80	..	Catskill	40	..
Mystic	1 75	..	Saugerties	40	..
Stonington	1 75	..	Barrytown	40	..
Bristol	1 95	..	Rhinebeck	30	..
Newport	1 95	..	Poughkeepsie	25	..
Fall River	1 95	..	Fishkill Landing	20	..
Providence	2 00	..	Cold Spring	30	..
Dighton	2 00	..	West Point	30	..
Warren	2 00	..	Peekskill	40	..
Pawtucket	2 15	..	Haverstraw	45	..
Boston	2 10	..	Sing Sing	50	..
Troy	60	..	Nyack	50	..
West Troy	60	..	Tarrytown	50	..
Albany	55	..	Yonkers	55	..
New York	70	..			

From Elizabethport.

New York	$ 70@	— —	Portland	2 00@	2 10
Fall River	1 60	— —	Newburyport	2 30	— —
Newport	1 60	— —	New London	1 60	— —
Boston	1 75	— —	Pawtucket	2 00	— —
Norwich	1 80	— —	Taunton	1 25	— —
Providence	1 65	— —	New Haven	1 25	— —
Norwalk	1 25	— —	Portsmouth	2 25	— —
Middletown	1 70	— —	New Bedford	1 80	— —
Hudson	1 10	— —	Bridgeport	1 25	— —
Lynn	2 35	— —	Hartford	1 70	— —
Salem	2 00	2 10	Albany	1 10	— —

From Port Richmond, Philadelphia.

Reported by the Coal Exchange, Sept. 12.

Albany (& towing)	$2 05@	— —	Neponsett	$0 00@	.. ..
Alexandria	1 60	— —	Nowark	— —	— —
Appanang	2 00	— —	New Bedford	— —	— —
Bangor	— —	— —	Newburyport	2 40	— —
Baker's Landing	— —	— —	New Haven	2 25	— —
Bedford	— —	— —	New London	2 00	— —
Belfast	— —	— —	Newport	2 00	— —
Boston	2 00	2 25	Newport, R. I.	— —	— —
Bridgeport	2 00	— —	New York	1 70	1 75
Cambridgeport	2 50	— —	Norfolk	1 50	— —
Catskill (& tow)	— —	— —	Norwalk	2 20	— —
Chelsea	2 15	— —	Norwich	2 25	— —
Commercial Point	— —	— —	Parkshell	— —	— —
Cohasset Narrows	— —	— —	Pawtucket, & tow'g	— —	— —
Davenport	— —	— —	Petersburg	2 00	— —
Dighton	— —	— —	Portland	2 25	— —
Dorchester Point	— —	— —	Portsmouth, N. H.	2 50	— —
East Cambridge	2 50	— —	Providence	2 00	— —
East Greenwich	2 00	— —	Poughkeepsie, & t'g	1 75	— —
Fall River	2 20	— —	Quincy Point	— —	— —
Fredericksburg	— —	— —	Richmond	— —	— —
Gardner	— —	— —	Rockland	2 25	— —
Gloucester	2 35	— —	Roxbury	2 50	— —
Hartford	3 05	— —	Saco	— —	— —
Hudson	..	— —	Saugus	2 50	— —
Hymannis	..	— —	St. Johns (in gold)	— —	— —
Jantown and tow	..	— —	Salem	2 25	— —
Kennebrook Point	— —	— —	Sag Harbor	— —	— —
Lynn, and disc'ge	2 50	— —	Stamford	— —	— —
Malden	— —	— —	Troy	— —	— —
Middletown	..	— —	Washington, D. C.	1 50	— —
Medford	— —	— —	West Chester	— —	— —
Nantucket	— —	— —	Weymouth't'g&pil'g	2 25	— —

Vessels arrived 35; Cleared, 26 in Port, 15.

From Georgetown or Alexandria.

To Philadelphia	$2 00	— —	Boston	3 25	— —
New York	2 25	— —			

From Baltimore.

To Philadelphia	$1 75@	— —	Boston	2 75@	— —
New York	2 25	— —			

FOREIGN MARKET REVIEW.

Weekly Metal Report.

London, E. C., August 31, 1866.

There has been a great improvement throughout the metal market during the past week, and prices generally are dearer. Bank rate reduced to 6 per cent.

IRON.—There has been a better demand for Welsh bars, at higher prices, and more orders have been given out for Staffordshire iron. Scotch pigs have improved to 53s. 6d.

COPPER.—A large business has been done. The smelters have advanced the official price £5 per ton, and they are very shy of selling even at their present prices, so that a further advance is looked for. In foreign considerable transactions have been reported, closing firm. Burra £90; Wallaroo £89; Chili Slab held at £82; £83 for arrivals in October.

TIN.—Foreign is again dearer, and has been in good demand. Our present prices are: Straits, £84 cash; £85 for arrivals per ships near at hand; and £86 for distant arrival. Banca: business to a fair extent at £85. The Dutch Trading Company will sell about 110,000 slabs Banca on the 28th of September in Amsterdam; conditions as before. Next sale in the spring. Present price, 48fl.

TIN PLATES continue well enquired for.

LEAD.—The market is steady.

SPELTER.—A fair business has been done at from £19 15s. to £20 on the spot, closing at the best; £20 5s. 30th September; £20 10s. end of October; special outports, £20 5s. to £20 10s.

VON DADELSZEN AND NORTH.

Oil Trade Circular.

LONDON, August 31, 1866.

The demand from the Continent during the present week has been unusually large at 2½d. per gallon in advance of our last quotation. Yesterday the market closed firm.

REFINED PETROLEUM.—2s. to 2s. 1½d. per gallon.

CRUDE.—£17 per ton. A cargo of 4,000 barrels which has been off the coast for some days, has been bought by a firm in Scotland.

SPIRIT.—An advance of 4d. per gallon has taken place since last week.

LUBRICATING OIL.—Is also in first-class demand, but without alteration in price

REFINED COAL OIL.—The advance in the price of Petroleum has caused a tendency to higher prices; 1s. 6d. to 1s. 9d. per gallon.

ONCE RUN.—Firm at last quotation.

CRUDE.—Without alteration.

GREASE.—£6 to £15 per ton.

PARAFFIN WAX.—6d. to 1s. per pound.

DITTO SCALES.—2d. to 3½d. per lb.

STRANGE BROTHERS & Co.

NEW YORK METAL MARKET.

(CORRECTED WEEKLY.)

COPPER	Ingot..Lake Superior, ₰ lb., cash.	.. 31	.. 31½
	Baltimore	.. 32	.. ..
	Pig Chili	.. ..	.. ..
	Bolts	.. 43	.. ..
	Braziers	.. 42	.. 43
	Sheathing	.. 45	.. ..
	Yellow metal	.. 33	.. ..
IRON	Pig.....No. 1 Scotch, ₰ ton	45 00	49 00
	No. 1 American	48 00	50 00
	No. 2 "	45 00	46 00
	No. 2 Charcoal	.. ..	.. ..
	Bar.....Swedish, ordinary sizes	170 00	.. ..
	Amer. and Eng. refined	125 00	145 00
	" " common	115 00	120 00
	Rails, American currency	.. ..	.. ..
	" English gold	.. ..	.. ..
	Horse shoe iron	150 00	160 00
	Rods 5-8@3-16 rd. and sq	170 50	185 00
	Band	155 00	.. ..
	Nail rods, 5-8 and 3-16	122 50	185 00
	Hoops	160 00	225 00
	Sheets, Russian, ₰ lb	.. 28	.. 30
	" English "	.. 6½	.. 9
	" American "	.. 25	.. 25¾
	Boiler Plates, English	.. ..	.. ..
	" American	.. ..	.. ..
STEEL	Best cast in bars, war	.. 26	.. ..
	Best sheet cast, "	.. 26	.. ..
	Best cast circular saw plates 46 in	.. 32	.. ..
	Double shear steel, war	.. 26	.. ..
	Single " "	.. 25	.. ..
	Montague & Co. C. S., in bars	.. 23	.. ..
	Round machinery cast	.. 17	.. ..
	Best German	.. 17	.. ..
	Government German	.. 14	.. ..
	Eagle German	.. 16	.. ..
	(L.) Blister, war	.. 22	.. ..
	W. Jessop & Sons, blister, war	.. 20	.. ..
	Double refined	.. 28	.. ..
	Stone Axe shapes	.. 28	.. ..
	Common blister	.. 16	.. ..
	2d quality sheet	.. 23	.. ..
	3d quality sheet	.. 20	.. ..
LEAD	American, per 100 lbs	.. ..	.. ..
	German	Gold 6 80	7 00
	Spanish	" 6 87½	7 00
	English	" 6 87½	7 25½
	Bar, per 100 lbs	19 50	.. ..
	Pipe and sheet	19 70	.. ..
TIN	Banca Gov., per 100 lbs. gold	21½	.. ..
	Straits	22	.. ..
	English	21¾	.. ..
TIN PLATES	IC 10-14 prime charcoal	15 50	.. ..
	IX 10-14 "	18 50	.. ..
	IC 12-12 " "	16 00	.. ..
	IX 12-12 " "	19 00	.. ..
	IC 14-20 " "	16 50	.. ..
	IX 14-20 " "	19 50	.. ..
	IC 14-20 Roofing ch. 1st	14 75	.. ..
	IC 14-20 " " 2d	13 75	.. ..
	IC 14-20 " Coke	12 25	.. ..
	IC 10-14 Coke	12 00	14 50
SPELTER	Lehigh, per lb., currency	.. 11½	.. ..
	Foreign " gold	.. 6⅞	.. ..
ZINC	Mussulman & Amer	.. 13½	.. ..
SOLDER	No. 1	.. 24	.. ..
	No. 2	.. 22	.. ..
QUICKSILVER		.. ..	.. ..

SAN FRANCISCO STOCK MARKET.

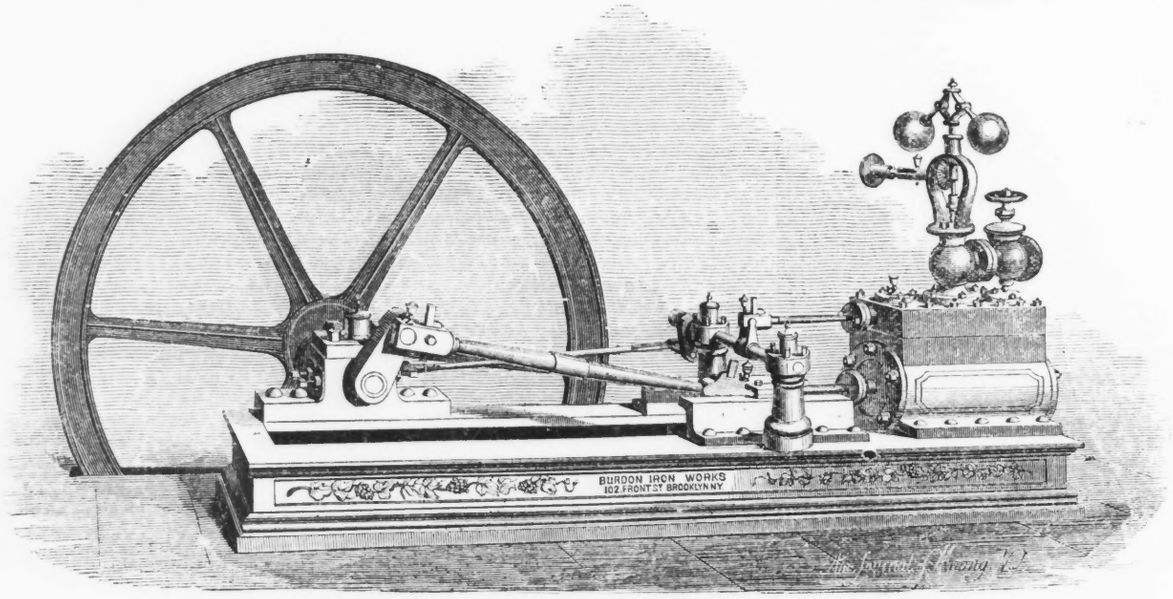
Latest by Telegraph.

SAN FRANCISCO, Sept. 12.

Name.	Bid per foot.	Name.	Bid per foot.
Gould & Curry	700	Crown Point	820
Savage	1130	Yellow Jacket	775
Chollar-Potasi	140	Belcher	125
Ophir	210	Alpha	....
Halo and Norcross	1600	Imperial per share	95

IMPROVED STEAM ENGINE.

The portable and stationary Steam Engine, manufactured at the Burdon Iron Works, 102 Front street, Brooklyn, by Messrs. Hubbard & Whittaker, is too well known to require description. But as our series would be incomplete without it, we prhsent the above elegant and faithful engraving of it. Their works have been established for no less than thirty years, Mr. William Burdon having started them in 1836. The present firm succeeded him about three years ago, and have fully sustained the reputation of their predecessors. The advantages claimed for their engine are the weight and solidity of all its points, their nicety of nonstruction and exact proportions, in addition to their being supplied with all the latest and best improvements.



HUBBARD AND WHITTAKER'S HORIZONTAL STEAM ENGINE.

SPECIAL NOTICE.

BARYTES AND LEAD LANDS FOR SALE.—The attention of our readers is particularly called to the advertisement in another column of Mr. Murphy. We are assured that they are among the most valuable in Missouri.

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men and Others.

The following claims have recently been issued from the United States Patent Office :

57,701.—SMELTING FURNACE.—John L. Gill, Jr., Columbus, Ohio :

I claim constructing a cupola or smelting furnace in such a manner as to allow of a part of the upper portion (of such cupola or smelting furnace) being made from a hollow steam boiler for generating steam to be used in the production of a blast or for any other purpose, as described above.

57,708.—MANUFACTURE OF ARTIFICIAL FUEL.—Wm. Halsted, Trenton, N. J. Ante-dated Aug. 10, 1866:

I claim the combination, mixture, and treatment of the ingredients above-mentioned, substantially as above-described and intended to produce the same effect.

57,738.—BARREL FOR PETROLEUM, ETC.—John T. Lipps, Brooklyn, N. Y.

I claim a barrel for hydro-carbon liquids provided with an air-pipe, c, and escape orifice, a, substantially as and for the purposes described.

57,760.—PUMP PISTON.—Burrill and Edwin Pickering, West Milton, Ohio, and Barton Pickering, Montgomery county, Ohio :

We claim, 1st. The vertical part of the packing-piece, A, having an inclined surface, as represented, for the purpose of holding the flaring packing, F, when combined with the rod, C, and valve-seat, B, substantially as described and represented.

57,830.—SAND PUMP.—Colin Mather, Manchester, England, assignor to Charles P. Button, New York City :

I claim the movable seat, b, clack, a, and rod, c, in combination with the barrel, A, and bucket, B, constructed and operating substantially as and for the purpose described.

57,831.—WATER WHEEL.—Pierre Francois Millot, Paris, France:

I claim, 1st, The combination of a series of buckets, open internally and externally, to receive the water internally, in the manner described, upon each side of the arms, and discharging it externally ; and a series of arms attached at or near the middle of said buckets to allow the water to be introduced on both sides of them, and connecting said buckets to the shaft, as set forth.

2d, The combination of a series of buckets, open as aforesaid, to receive water internally and discharge it externally with the shaft of the wheel and the arms, B, B, the said arms B, B, being set at an angle to each other, converging from points separated and distant from each other at the inner end to the middle of the bucket, as set forth.

3d, The arrangement, in combination with a wheel thereto, of two separate spouts, in such a manner as to discharge water into the interior openings between the buckets, on each side of the arms of the wheel, substantially as described.

4th, The combination with the internally and externally open buckets to receive the water internally and discharge it externally, as described, of the projecting flange, e, to retain the water on its entrance into the buckets, as set forth.

57,832.—COATING SHEET-IRON WITH TIN AND OTHER METALS.—Edmund Morewood, London, England :

I claim, 1st, The slide, B, to receive the sheet or piece of metal to be coated, in combination with a receptacle, C, within the bath of coating metal to convey said sheet or piece of metal to the point of delivery, substantially as specified.

2d, The delivery rollers, F, in combination with the receptacle, C, and an elevating apparatus to raise the sheets or pieces of metal to the delivery rollers, F, substantially as set forth.

3d, Wipers or rubbers, G, in combination with delivery rollers, F, to act upon the coating metal previous to the delivery of the sheet or piece of coated metal, for the purposes and as specified.

4th, A slide or receptacle in a bath of melted coating metal to receive the sheets or pieces of metal at one place and convey them to a different place in said bath where said sheets or pieces are delivered upwards automatically from said bath, as set forth.

5th, In combination with an apparatus for coating sheets or pieces of metal, substantially as described, I claim a pair of delivery rollers, one of which is set in yielding bearings, so as to provide for varying thicknesses of the sheets or of the coating, as set forth.

Special Scientific Brevities.

☞ In contradiction to the opinion that no substitute can ever be found for coal, Mr. Richardson has taken out a patent for burning petroleum and paraffin by the means of a porous and incombustible material, such as fire-brick, etc.; and in a hollow chamber, such as a gas retort, he can keep up a continuous supply of these substitutive appliances, and at less cost, without smoke. No stokers or pokers are required to keep up his fires, and there is in every way an economy of fuel and of labor.

☞ When red-hot shot are fired, the ordnance is elevated to the position desired before the gun is shotted. The powder in the gun is kept from explosion by means of the wadding. Between the explosive substance and the heated mass are generally three layers of wad. That against the ball is dry, the second is wet, and upon the powder another dry piece rests. The ball is discharged very soon after being placed in the chamber of the piece.

☞ Twenty-eight years of observation have convinced Dr. Litchel that few persons can continue to consume (smoke) daily twenty grammes of tobacco without their vision or memory becoming impaired. There are many smokers, he urges, who may long resist these effects, but the pernicious consequences though slow in manifesting themselves, are however, none the less certain.

☞ Among other tremendous machines recently patented in France are : An electrical mortar ; a steam cannon to pour forth a hail of shells and cannon balls for an hour without ceasing ; a steam field-gun; a rifled carbine, to fire thirty shots a minute (two men are required to carry it); and an infernal box belching forth a thousand balls, and intended to annihiliate a whole regiment at a blow.

☞ The tinting power of the salts of Magenta seems incredible. One grain in a million times its weight of water gives a pure red; in ten millions, a rose pink; in twenty millions, a decided blush; and even in fifty millions, in which it is discovered, an evident glow.

☞ An ingenious mechanician of Lyons has applied the principle of the Jacquard machine—that is, the changing of cards differently perforated to produce different patterns—to a musical instrument, the changing of cards producing different tunes.

☞ The feeding apparatus of the louse is not a set of mandibles with which he bites, but a sucking instrument. Examining specimens squeezed under glass is the source of the prevailing error, detected by Dr. Brown, the microscopist of this city.

☞ Blondin has invented a skate which will prevent the diverging of the foot on the ice from the right direction, and consequently save many from a downer if they adopt his invention.

☞ A human red blood globule measures something less than the 1-5,000 part of an inch. One-fourth of this globule will give a distinct characteristic line in the micro-spectroscope.

☞ Hydrate of lime will absorb very thoroughly the carbonic acid in ships' cabins and other close apartments.

☞ M. Bitot recommends the per-chloride of iron as a remedy for cancer, equal to iodine in scrofula.

Mineral and other On-dits.

☞ An operator at the Boston Open Board, the other day, having been fined by Chairman Davis, who presides with great dignity, for violation of the rules of that august body while in a slightly inflated condition, subsequently brought down the house by exclaiming, at the call of "New England" (copper), "*I'll take a gallon!*"

☞ The miners at Freiburg in Saxony are making arrangements to drain their principal mining district by a tunnel, which will be some fifteen miles in length. The work has already been several years in progress. It is expected that forty years longer will be required to complete the undertaking.

☞ The Belgians claim to have been the first to discover the uses of coal; and this discovery, they say, was made by one Hullos, a blacksmith of the village of Plenexaux, near Liege, in the year 1049, from whose name they derive the word "houille."

☞ Vein mining is in a healthy and expansive condition in California. Among the recent developments, cobalt and nickel have been found in combination with copper sulphurets, at Cisco, near Meadow Lake District, Nevada county.

☞ Since July 8th the miners of the Bellingham Bay coal mine, Washington Territory, have been on a strike because of the inefficiency of Wm. Smith, the underground manager. They will not let others work.

☞ Copper ore from the Bruce and Wellington mines of Lake Superior is now being shipped direct to England. The vessels take out iron to Chicago and the balance of the cargo, coal, as ballast to the mines.

☞ The editor of the Cleveland, Ohio, *Leader*, says he has seen some specimens of quartz containing a rich proportion of gold, which were found a few days ago in a garden about four miles from the city.

☞ A company has been incorporeted to mine for quicksilver in Yolo county, California.

☞ A diamond of the first water, recently discovered in Georgia, sold for $1,500.

All Sorts.

☞ An engineer has planned a tunnel to connect Hoboken with New York City. He proposes a cast-iron tube, five feet internal diameter, in lengths of twelve feet, with spherical joints to allow the change of position. The bed of the river would have to be levelled by dredging. The tunnel is designed to convey the Erie Railroad's freight from its dock at Hoboken to the Duane street pier in New York, and it is designed to be worked by the pneumatic method.

☞ At Koniggratz, while the fight was raging at its fiercest, a soldier's eye was arrested by the sight of a plant of clover having four leaves. No German can suffer a four-leaved clover to remain unplucked. There is a mysterious charm about it, bound up with his childhood's fancies and images of fairy magic. As he bent to pluck it, a cannon-ball whizzed over his head. But for the tiny little plant it would have gone through his body.

☞ W. D. Robertson of Star City, Humboldt county, Nevada, has invented a machine which smooths irregularities of railroad grading, lays the rails in their places, stamps the ties down, and cuts them to the right grade for reception of rails, sets the spikes in each tie and drives them home, and even bends the rails to a curve when needed! The machine is calculated to

build a road at about the rate of one quarter of a mile per hour.

☞ An ingenious mode of getting a correct representation of an actual battle, landscape, etc., in a panoramic form, has been suggested in Paris. The main feature of the arrangement is a revolving cylinder, with a vertical slit in it, through which the images, etc., enter, and are thrown on a photographic medium properly sensitized.

☞ A little girl after having been to church, was very fond of preaching to her dolls. Her mother overheard her one day, reproving one for being so wicked. "O, you naughty, sinful child," she said shaking its waxen limbs, "you'll just go to that place of *brimstone and molasses*, and you won't burn up—you'll just sizzle."

☞ At Virginia City, Nevada, at certain seasons of the year stoves become so highly charged with electricity that on touching them, or culinary utensils placed thereon, a smart shock is experienced.

☞ Montana papers tell of a minister who stopped at a ranch at Tobacco Plains on the Pend d'Oreille road, killed the owner, and dished up his cooked remains for hungry travellers!

☞ The London *Times* curtly invites England to examine her navy, and see if it is as strong and invincible as cockneys generally suppose it to be.

☞ A horizontal water-wheel, manufactured in England (Lancashire,) though only three inches in diameter, is equivalent to one man power.

☞ It is said that the difference between a cow and a baby is, that the former drinks water and makes milk, while the latter—don't.

☞ A machine is now in operation in a New Jersey peat bog which turns out twenty-five tons of pressed peat per day.

☞ Manchester, England, employs a steam power equal to 1,200,000 horses, consuming 30,000 tons of coal per day.

☞ If you wish to know how quick you can run a mile, tell a red-headed woman her baby squints

☞ The blind praise not the glitter of the diamond, nor the deaf the sound of the cymbal.

☞ Look upon the world as a glass house; then be a sun and penetrate it.

Coal Statistics of Europe and America—British Mineral Products.

The following table, from the *Iron Trade Circular*, gives a concise view of the importance of our mineral industries:—

GENERAL SUMMARY OF THE MINERALS RAISED AND METALS PRODUCED IN THE UNITED KINGDOM IN 1865.

	Quantity of Minerals raised.	Value of Minerals raised.	Quantity of Metals produced.	Value of Metals produced.
Tin, tons	15,686	£867,438	10,039	971,273
Copper, tons	198,298	927,958	11,888	1,134,664
Lead, tons	90,451	1,153,134	67,154	1,433,161
Silver, oz.	.....	.....	724,856	199,335
Zinc, tons	17,842	52,478	4,460	104,810
Pyrites, tons	114,195	41,174	.....	.....
Gold, (quartz)	4,280	..... oz.	1,064	5,324
Iron, tons	9,910,045	3,524,804	4,819,254	11,774,220
Coal, tons	98,150,587	24,537,621	.....	.....
Earthy minerals, & others, returned	.....	774,466	.....	.....
Earthy minerals & returned, est'd	.....	650,000	.....	.....
Metal-ferous ores & metals, ot'r than above estimated	.....	.....	.....	.....
Total value	.....	32,359,080	.....	15,773,287

The following therefore represents the total value of the productions of our mines and collieries in 1865:

Metals obtained	£15,773,287
Coal	24,536,621
Earthy minerals (not including ordinary clays and building stones)	1,434,496
Total	£41,745,404

The Mineral Statistics give, as the latest and best account of the coal produced on the continent of Europe and in America, the following returns:

	Tons.		Tons.
France, 1865	11,366,000	Bavaria, 1862 (coal)	221,220
Belgium, 1862	9,738,223	Bavaria, 1862 (lignite)	45,570
Prussia, 1863	10,074,815	Zollverein, 1862 (c'l)	16,906,707
Prussia, 1863, (brown coal)	4,003,044	Zollv'n, 1863 (lignite)	5,459,494
		Austria, 1862 (coal)	2,265,228
Saxony, 1863	1,902,175	Austria, 1862 (lignite)	1,786,679
Saxony, 1863 (brown coal)	428,615	Russia, 1863	6,350,000
		Denmark, 1864	2,755
Grand Duchy of Baden 1864	12,338	Sweden, annually	30,000
		Holland, annually (inferior)	18,000
Hanover, 1864	287,415		
Hesse and Nassau, 1864	79,296	Portugal, annually	14,500
Electoral Hesse, 1865	308,150	Switzerland, annually	15,100
Electoral Hesse, 1865 (brown coal)	170,600	United States of America, 1864	14,593,650

Improvements in Copper Smelting.

Mr. C. Ensell, of St. Helena, Lancashire, England, proposes to utilize the gases and vapours given off during the smelting process. He claims to smelt copper economically—that is, with less fuel and in less time than now required and taken by the processes and means practically in operation—and to obtain valuable products from the gases and vapours given off during smelting, are the objects of this invention. A result of the proper carrying out of the improvements is that the gases and vapours which are allowed to escape into the air are of a comparatively, indeed almost entirely, innocuous character. To effect the smelting, which is the first part of the invention, the patentee employs what he terms "gaseous feul," that is to say, the gaseous products obtained from and by burning coal in a furnace or chamber with a limited supply of air; or the gaseous products of coal obtained by destructive distillation of it in closed vessels or retorts. He conveys the said gasseous fuel through a flue or pipe into an ordinary reverbatory or other suitable furnace, in which the charge of copper to be smelted is placed, and just before it the said gaseous fuel enters, or after it has entered the furnace. He allows it to mix with atmospheric air or oxygen, immediately they come in contact or mix, and intense combustion takes place. The second part of the invention consists in the employment of oxides of iron (preferably the peroxide) as agents to collect products of the above smelting, such as arsenic compounds and sulphur, for which they have an affinity.—*London Mining Journal.*

Prices of Anthracite During 40 Years Past.

THE FOLLOWING TABLE, drawn up by Mr. Wm. G. Neilson, of Philadelphia, shows the wholesale prices of Anthracite Coal from 1826 to the present year. It will be seen that the highest monthly average was $10 75, in August, 1864—the lowest $2 78, in April and May, 1862.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
1826	....	....	....	7 00	7 00	7 00	7 00
1827	7 00	7 00	7 00	7 00	....	....	....
1828	....	....	....	....	....	....	....
1829	....	....	....	....	....	....	....
1830	*7 25	*7 25	*6 00	*5 75	5 75	5 75	5 76
1831	....	....	....	....	....	....	....
1832	....	....	....	....	....	....	....
1833	....	....	6 00	5 50	5 25	5 25	5 25
1834	4 87	4 87	4 87	4 87	4 37	4 87	4 87
1835	4 56	4 56	4 56	4 56	4 60	4 63	4 63
1836	7 70	7 44	7 31	6 58	5 38	5 50	5 50
1837	8 25	*8 25	8 04	6 78	6 50	6 38	6 10
1838	6 13	5 91	5 28	5 25	5 16	5 13	5 13
1839	5 00	5 00	5 00	5 00	5 00	5 00	5 00
1840	5 00	5 00	5 00	5 00	5 00	4 63	4 63
1841	6 40	7 00	6 44	5 88	5 69	5 17	5 13
1842	5 63	5 56	5 06	4 38	4 03	3 88	3 83
1843	*3 50	*3 25	*3 25	3 25	3 25	3 25	3 25
1844	3 50	3 33	3 10	3 02	3 00	3 03	3 13
1845	3 26	3 26	3 27	3 31	3 31	3 31	3 44
1846	3 81	3 75	3 72	3 84	3 87	3 97	4 00
1847	3 88	3 81	3 81	3 81	3 60	3 63	3 69
1848	3 90	3 90	3 58	3 44	3 37	3 29	3 33
1849	3 36	3 36	3 45	3 62	3 62	3 86	3 88
1850	3 50	3 50	3 40	3 31	3 25	3 25	3 25
1851	4 28	4 13	3 56	3 31	3 10	3 00	3 00
1852	3 18	3 47	3 40	3 44	3 44	3 45	3 45
1853	3 42	3 44	8 45	3 47	3 47	3 47	4 47
1854	4 50	4 50	4 25	4 39	4 81	5 16	5 55
1855	5 60	5 28	4 53	4 50	4 50	4 45	4 28
1856	4 06	4 25	4 25	4 25	4 05	4 00	4 00
1857	3 92	3 92	3 92	3 89	3 85	3 85	3 88
1858	3 83	3 83	3 77	3 47	3 22	3 23	3 35
1859	3 28	3 38	3 34	3 20	3 20	3 20	3 20
1860	3 28	3 29	3 30	3 30	3 23	3 31	3 36
1861	3 63	3 63	3 50	3 24	3 23	3 29	3 37
1862	3 33	3 33	3 11	‡2 78	‡2 78	3 64	4 58
1863	5 38	5 25	4 63	4 75	5 50	5 80	6 25
1864	7 10	6 75	6 59	7 20	7 88	8 34	9 78
1865	8 38	8 38	8 63	8 10	6 75	6 25	6 03
1866	7 94	7 75	5 40	5 25	5 13	5 53	5 88

Year.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
1826	7 00	7 00	7 00	7 50	7 50	....
1827	....	....	....	....	....	....
1828	....	....	....	....	....	....
1829	....	....	7 50	7 50	*7 25	....
1830	5 75	5 75	5 75	....	....	....
1831	....	....	....	....	....	....
1832	....	....	....	....	....	....
1833	5 25	5 18	4 88	4 88	4 88	....
1834	4 87	4 87	4 87	4 87	4 50	3 84
1835	4 68	4 88	4 90	5 03	6 47	4 84
1836	6 19	6 41	6 50	7 13	8 05	6 64
1837	6 00	6 00	6 09	6 13	6 13	*6 72
1838	5 13	5 10	5 00	5 00	5 00	5 29
1839	5 00	5 00	5 00	5 00	5 00	5 02
1840	4 63	4 66	4 95	5 06	5 34	4 90
1841	5 27	5 56	5 63	5 63	5 63	5 79
1842	3 60	3 56	3 51	3 56	3 56	4 18
1843	*3 25	3 25	*3 25	3 25	3 25	3 27
1844	3 21	3 26	3 26	3 27	3 26	‖3 20
1845	3 44	3 59	3 74	3 76	3 81	3 46
1846	*3 94	3 96	3 88	4 00	*4 00	*3 90
1847	3 83	3 95	3 88	3 88	3 88	3 80
1848	3 56	3 46	3 41	3 39	3 36	3 50
1849	3 81	3 75	3 69	3 57	3 50	3 62
1850	3 2)	†4 25	4 25	4 25	4 25	3 64
1851	3 05	3 17	3 20	3 25	3 00	3 34
1852	3 50	3 56	3 56	3 56	3 50	3 46
1853	3 64	4 03	4 19	4 19	4 10	3 70
1854	6 00	6 00	5 81	5 68	5 60	5 19
1855	4 19	4 19	4 19	4 15	4 06	4 49
1856	4 00	4 12	4 13	4 10	4 08	4 11
1857	3 87	3 85	3 82	3 82	3 82	3 87
1858	3 25	3 32	3 32	3 32	3 30	3 43
1859	3 20	3 19	3 20	3 34	3 29	3 25
1860	3 39	3 50	3 53	3 62	3 53	3 40
1861	3 40	3 35	3 33	3 33	3 33	3 39
1862	4 85	4 98	5 22	5 50	5 63	4 14
1863	6 50	6 75	7 25	7 50	7 13	6 06
1864	§10 75	10 13	8 00	8 88	8 38	¶8 39
1865	6 50	8 32	9 93	8 81	8 25	7 86
1866	....	....	....	....	....	....

* Uncertain. † Rise, due to freshet.
‡ Lowest average for month $2 78, April and May, '62.
§ Highest average for month $10 75, August, 1864.
‖ Lowest average for year $3 20, 1844.
¶ Highest average for year $8 39, 1864.

WHAT IS SAID OF THE "JOURNAL OF MINING" BY THE PRESS.

From the Saginaw (Mich.) Daily Enterprise, Sept. 6.

THE AMERICAN JOURNAL OF MINING is an admirable and able paper, published weekly, and edited by George Francis Dawson. Each number is sixteen pages size, and it contains a mass of information and current news scarcely equalled. Illustrations of the best class are given of the new styles of mining machinery and other matters and processes of popular interest. Terms $4 per annum. Address Western & Co., 37 Park Row, New York City.

From the Nevada (Cal.) Daily Transcript, Aug. 10.

We have received several copies of the AMERICAN JOURNAL OF MINING, an illustrated paper of sixteen pages, devoted to the mineral and metallic resources of the American continent, edited in New York by George F. Dawson, formerly of this city. As the columns of the JOURNAL draw largely upon the prolific resources of the Pacific Coast, it is a subject of peculiar interest to the people of this region. It seems to have reliable sources of information from all mining localities of any note throughout the entire continent, making it a work of great value, especially to parties interested in the development of our metalliferous wealth.

From the Portage Lake (Mich.) Gazette, Aug. 2.

AMERICAN JOURNAL OF MINING.—A most excellent paper. * * *

NEW YORK ROCK DRILL COMPANY.

OFFICE, 137 BROADWAY.

GEN. E. M. BARNUM, PRESIDENT, . . . G. A. GARDNER, SECRETARY.

This company are prepared to fill orders for Drilling Machines for all kinds of Rock work, for outside work, and for Mining.
The Machines now offered for sale are :

No. 1 Hand machine for ONE man, weighing 100 lbs., with 3 drills, complete,.....$ 200 00
No. 2, " TWO " 125 " " " " " 250 00
No. 3, 1 horse power Machine, weighing 150 lbs., with 8 ft. steam hose, 3 drills, complete, 450 00
No. 4, 2 " " " 250 " " " " " 850 00

No. 5, Machine for VERTICAL drilling, *without engine*, to drill holes 4 to 6 inches diameter, with timber frame on wheels, &c.,.....$1,000 00
No. 6, Machine (entirely of iron), drilling at any angle holes 4 to 8 inches diameter, with *nominal* 4 horse power engine (on truck, and moved by own engine), $2,500 to 3,000 00

These are the only machines that have done regular work in this Country, and are the most Simple, Compact and Economical. We invite the closest scrutiny. A full sized Mining Drill can be seen daily, drilling into a block of Rockport (Mass.) Granite, the hardest Granite known, at the Machine Shop of STERLING & KERR, No. 344 and 346 West 24th street, West of 10th avenue.

GARDNER'S PATENT ROCK DRILLING MACHINE FOR MINING PURPOSES.

DRIVEN BY STEAM OR COMPRESSED AIR. G. A. GARDNER, PATENTEE, NEW YORK.

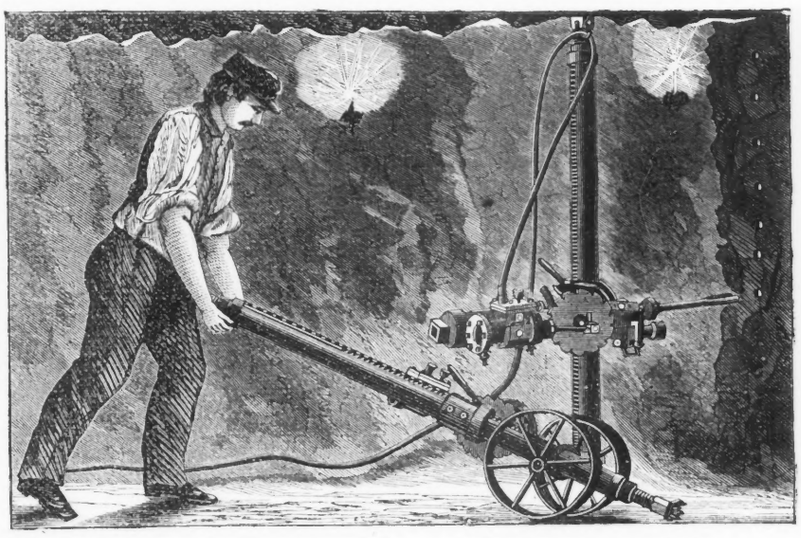
Certificate.

NEW YORK, March 25, 1866.
MR. G. A. GARDNER, Sec'y N. Y. Rock Drill Co.:

SIR—After witnessing the operation of your Rock Drilling Engines on several occasions. . . . I am satisfied that they are capable of boring much faster than by HAND in any kind of rock, and will operate with about equal efficiency at any angle in a vertical or horizontal plane; that they can work in confined spaces, such as shafts and drifts of mines, railroad tunnels, etc., etc.; that several drills can be used where only one could be operated by hand labor. These Machines may be driven by compressed air. It appears to me highly probable that the time required to open mines by machinery may not be more than one-fourth of that which is now required.

The advantages resulting from such a reduction of the time can hardly be over estimated.

Very respectfully,
GEO. D. EMERSON, Mine Engineer,
Late of Lake Superior, Mich.



Certificate.

No. 95 Liberty street,
NEW YORK, March 23, 1866.

MR. G. A. GARDNER, Secretary N. Y. Rock Drill Co.

DEAR SIR: Respecting the "Gardner Drill," I would say, we used it with perfect success on the Niagara Falls Canal. When we first worked it, we drilled to the average depth of 10 feet in the solid Limestone, holes of the diameter of six inches, at the rate of eighteen inches deep, in twenty minutes.

We used it for several months on the regular work, and found it more economical and effective than any other drill we have ever used. The rock is the hardest kind of blue limestone, with occasional boulders of quartz imbedded in it. You are at liberty to refer parties to me who may desire more particulars.

S. M. ALLEN,
Late President of Niagara Falls Water Power Company

☞ This cut represents a section of a tunneling tunnel, or *drift*, 6x11½ feet, with two Drilling Engines; one driven by *compressed air*, drilling horizontal holes, the other being moved by the Engineer to the position on a pair of wheels *temporarily* attached to its supporting column; three of these columns, with two machines on each, may be worked in a drift of this size, producing as much working effect as fully seventy-five men. A drift of this size through solid rock (Granite for example) can be thus driven ten lineal feet every 24 hours.

These machines are very compact, measuring—independent of supporting columns, etc.—30 inches in length by 12 inches breadth and depth, and weighing only 250 lbs. One man can move and adjust them to the work. The supporting columns is held firmly in place by setting out the jack-screw, thus bracing it between the top and bottom of tunnel, or the sides of shaft, and the machines are raised and lowered by a gear working in the rack on side of column, while the attachments to the column is in a *universal joint* and allow the machines to work *at any angle*. They are automatic; one engineer can attend to a gang of four or six, working on the same face. Six of them can be worked in a heading four and a half by six feet; and in a shaft six by twelve feet, eight of them can be worked at once. In a railroad, or other large tunnel, an increased number of machines can be operated, being supported and moved upon a carriage running on rails. The blow is struck by the drill being projected by the reactive force of an india rubber spring, against the rock, the drill being as free from the working machinery at the instant of striking, as an arrow shot from a bow; 300 blows per minute can be given with the utmost force the steel drill point can bear. The cross-head to which the drill is attached is drawn back; (thus compressing the spring) by a cam rotated directly by the piston rod of an oscillating cylinder, the drill point has an automatic turning motion, and the entire machine an automatic feed, *self-regulating*, according to the varying hardness of the rock; the machine working equally well with the same adjustment when drilling on flint, or on granite cutting two inches deep per minute, or on mica slate, sandstone, or other softer rocks, cutting four and six inches per minute. They drill equally well at any angle, and with them holes can be put in the most difficult places with great facility.

Machines for open cuts have been worked for several years on railroad and canal excavations, operated by four-horse engines drilling four, six and eight-inch diameter holes, and doing the work of fifty men. Rock-Drilling can be done with these machines for one-tenth the cost of hand labor, and in one-tenth the time. We are prepared to furnish machines with *gangs of drills* for splitting granite, marble, etc.; *channelling machines* for marble, etc., when blasting is to be avoided; also machines for cutting the "BEARING IN" in Bituminous Coal Mines: we also manufacture the GARDNER PATENT DRILL POINTS, especially desirable for sinking oil wells; making round holes, requiring no reaming, and cutting faster than any other point. 2-tf

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