AMERICAN Journal of Mining,

Engineering, Geology, Mineralogy, Metallurgy, Chemistry, etc.

VOLUME V.—Number 3. New Series. | NEW YORK, JANUARY 18, 1868. | $4 A Year in Advance. Single Copies Ten Cents.

MINING AND RAILROAD IMPLEMENTS.

There is no business in life, no scientific or mechanical pursuit, that is not, to a great extent, dependent upon machinery for its promotion and advancement; but there are, and we presume always will be, many operations and a great quantity of work which can only be performed by the dexterity of the human hand, through the exertion of muscle and sinew. There is no lack of machinery and mechanical appliances for working the various metals. The lathe, planer and drill give us unbounded facilities in the construction of the heaviest, as well as the lightest, machinery. But after all, any nice adjustment of parts in machinery has to be done by manual labor and by manual dexterity. Looms worked by machinery weave for us cloth exceeding in finish and texture anything ever produced by hand, and that with a speed almost incredible. Sewing machines accomplish in an hour what would be a day's work for a toiling female, while the agricultural machinery of our day has more than doubled the power of producing food and materials for clothing. We might thus continue to enumerate the results of labor-saving inventions, but in all these ingenious contrivances, which have dispensed with a vast amount of manual labor, there is yet left a broad margin for the dexterity of the human hand, guided alone by education and intelligence. Railroads are constructed, mines and quarries are worked by only those who can apply the "Lay of the Laborer."

We make these remarks as preliminary to a notice of mining and railroad implements made by the Ten Eyck Axe Manufacturing Company; for by the miner, the quarryman and the industrious laborer, a good pick or axe, is as much appreciated as are tools of other descriptions in the hand of expert mechanics. The firm we have mentioned own large works in Cohoes, N. Y., for the manufacture of picks, axes, hatchets and edged tools. We here present in fig. 1 a neat and strong form of railroad pick with cast steel polished points. There are several grades of this description of pick, varying in weight from three and a half to eight pounds, and they are classified as "light," "medium," "heavy," and "extra heavy." Fig. 2 represents a curved mining pick with cast steel polished points, which are made from three and a half to eight pounds each; and classified as "light," "medium" and "heavy." The patterns of axes made by this company are quite numerous, some of which are termed the "Yankee;" the "Ohio;" the "Western;" the "Allison" or "Delaware;" the "Canadian;" the "Excelsior;" the "De Tumba;" the "Media Labor;" the "Labor Eutera," &c.

The Ten Eyck Company have great facilities for the manufacture of implements of this sort, and in the prosecution of their calling employ skilled operatives, excellent machine tools, and superior materials, besides using all the means possible to insure cheapness as well as perfection. Their well stocked show-cases of bright and finished edge tools, at No. 57 Beekman street, N. Y., are worthy of inspection by all, and cannot fail to be appreciated by those interested in such work. Mr. Thomas E. Gaynor is the general agent for the company. For further particulars see advertisement.

FIG. I.

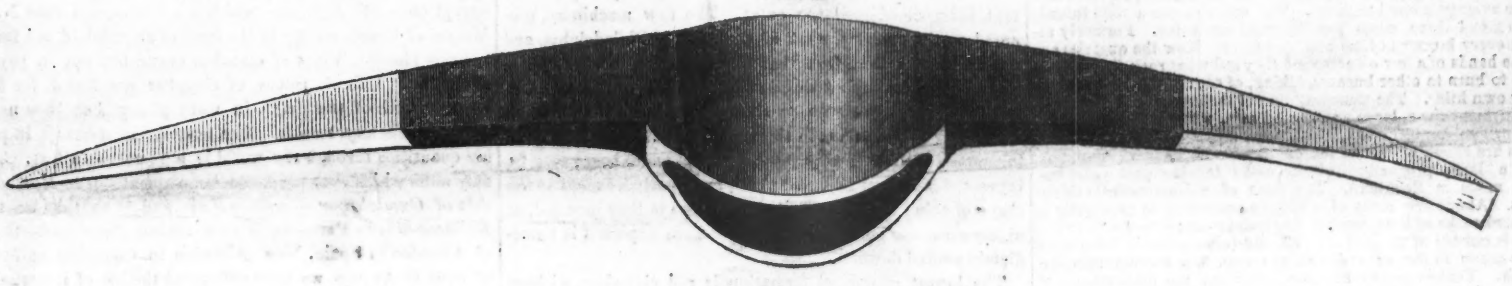


FIG. II.

Ancient Roman Drawing Wheels.

The Paris *Presse* relates the discovery in one of the mines of Portugal, of an old wheel which was doubtless employed by the Romans to raise water in the operation of draining the mine. It is well known that the hydraulic works of the Romans surpassed in extent any of those of modern times. As that great people had not the use of either steel or gunpowder, they were sometimes obliged to raise water over a ledge, where modern engineers would carry it right through. In some of the mines of San Domingo were dug draining galleries nearly three miles in length, but in some places the water was raised by wheels to carry it over the rocks that crossed the drift. Eight of these wheels have recently been discovered by the miners, who are now working the same old mines. These wheels are made of wood, the arms and felloes of pine, and the axle and its supports of oak, the fabric being remarkable for the lightness of its construction. It is supposed that these wheels cannot be less than one thousand and four hundred years old, and the wood is in a perfect state of preservation, owing to its immersion in water charged with the salts of copper and iron. From their position and construction these wheels are presumed to have been worked as treadmills by men standing with naked feet upon one side. The water was raised by one wheel into a basin, from which it was elevated another stage by the second wheel, and so on for eight stages. The wheel is on exhibition at the Academy of Arts.

The New Territory of Wyoming.

In the annual message of Governor FAULK to the Legislature of Dakota, delivered on the 8th instant, occurs the following refereuce to that portion of Dakota which it is proposed shall form the nucleus of the new Territory of Wyoming:

"Your attention is invited to that large part of Dakota known in our statutes as Laramie County, lying west of the 104th meridian. The extension of the Union Pacific Railroad through the southern portion of this county has given a strong impetus to immigration in this direction, and it would be well to consider whether we have in our power, by legislative enactment, to afford them the benefits of civil protection. Experience demonstrates that our courts, as at present organized and located, at such a remote distance from their settlements, can be of little service to them in the administration of justice. The civil cases which will continually arise must be attended to; and crime, which now goes unwhipt of justice, must be punished. We may render aid, to the extent of the authority given us, under the organic law; but if this is not sufficient in their opinion, I know of no good reason why they may not be clothed with all the blessings and protection of a separate organization. The lines embracing the limits of a new territory would most likely be identical with those which now embrace this new county, and I know of no policy of our own, counterbalancing the benefits of such an organization to them, for opposing such a measure."

The Vermont Marble Quarries.

There are ten different quarries at West Rutland, Vt., now in successful operation, while south of these, on the western edge of the valley, there are three others in process of development. The whole thickness of the marble in these quarries is near fifty feet, and it is so stratified as to be easily worked in separate layers, ranging from two to six feet in thickness. In the deposit wherein these quarries are situated there is presented a great variety, both in color and quality of marble, from the purest white to the coarsest of colored rock, the best often lying in close proximity to the poorest. One layer of marble may rest between two of limestone, and all so strangely intermingled that from the poorest there may be some beautifully variegated marble produced. A statuary marble is produced in considerable quantities at these quarries, superior in fineness and texture to that of Carrara, and much preferred by American artists, on account of its life-like color, and the absence of that dead white characteristic of the Italian—and also from its toughness and non-liability to fracture in cutting.

Electric Safety Lamp.

The danger of explosions in coal mines from the careless use of Sir Humphry Davy's safety lamp has been frequently demonstrated. It is proposed to obviate this danger by the introduction of a lamp composed of Geissler tubes properly protected by wire and driven by a small Ruhmkorf coil and battery carried in a knapsack on the back of the workman. These tubes have the air pumped out of them and the light comes from a constant stream of electricity passing from one end to the other. If the glass breaks, no fire can be communicated to the outer gases, as the connection with the battery is broken at the same instant and no spark can pass. This kind of a lantern could be used by travellers for reading at night on the railroad, as the whole apparatus can be carried in a carpet bag and can be easily suspended from a hook.

Lord Rosse's Great Telescope.

The London *Guardian*, speaking of the great telescope of the late Lord Rosse, tells how it was made: Lord Rosse's speculum is six feet in diameter, and its focal distance—that is to say, the distance of the point at which the reflection image is formed—is fifty-three feet. This necessitates a wooden tube of rather more

than that length, and at least seven feet in diameter. Let the reader figure the difficnlty of suspending such a tube heavily weighted at one extremity with four tons of metal, cast into the shape of a mirror, provided at the upper end with the moveable galleries for the observers, and the whole capable of smooth though limited motion, and he will have some notion of the easiest part of the problem Lord Rosse had to solve. For by far the most difficult part was the casting and polishing of the mirror itself. These four tons of tin and copper, mingled in definite proportions, had to be cast into the shape of an exact peraboloid, and the whole surface raised afterwards to a faultless polish. Three hugh iron crucibles, in three separate furnaces, held these vast masses of fusing metal, which, after three hours' exposure to the heat, were lifted ont by huge cranes and poured into the carefully-prepared mould. The spectacle of that casting must have been a sight fit only to be described in the "Song of the Bell." It took place at night. "Above," we quote from Mr. Weld's picturesque description in his "Vacations in Ireland"—"the sky crowded with stars seemed to look down auspiciously on the work; below the furnaces poured out huge colnmns of nearly mono-chromatic yellow flames; and the ignited crucibles, during their passage through the air, were fountains of red light, producing on the towers of the castle such accidents of color and shade as might almost transport fancy to the realms of enchantment." And when the crucibles discharge their seething contents, "for several minutes the metal rolled in heavy waves like those of heating quicksilver, and broke in a surf of fire on the inside of the mould." This, however, was only the first process. For sixteen weeks the moulded metal was left in the annealing oven, and when it was withdrawn it had still to undergo the delicate and hazardous operation of grinding and polishing. These were successfully effected by a small steam engine, imitating with the utmost nicety the touch of the human hand—the only instrument which had hitherto been thought capable of this work. Not even yet, however, had the speculum passed all its dangers. The construction of the framework which was to support it was a problem of no small difficulty. The slightest strain or flexure is sufficient to distort the image of a star. It was necessary to support the speculnm by a pressure which should tell with exact equality on every portion of its surface. A most ingenious contrivance of a system of triangles, carrying at their angles eighty-one brass balls capable of revolving freely, supplies this want. On these balls the speculum reposes with an absolute uniformity of pressure, through the changes of direction communicated to it by the universal joint by which the whole vast apparatus is connected with its foundation in the earth. This is a brief sketch of the many difficulties which had to be overcome, and the many problems which had to be solved, in the construction of this great telescope. We have enumerated them in order that due meed of fame may be assigned to the genius, perseverance, indnstry, and munificence which triumphed over all. All this was done by Lord Bosse himself.

The Lime Quarries of Maine.

A correspondent of the Portland *Press* writes from Rockland, Me., as follows: "The inspector of lime here has not made his report for 1867, bnt I am informed that at least a million casks of lime have been prepared for the market dnring the year, and this is the average annual product. The quarries are a mile inland, and extend three miles parallel with the coast. Formerly almost every burner of lime had his quarry. Now the quarries are in the hands of a few owners, and they sell what rock they do not wish to burn to other burners, taking, of course, the best rock to their own kilns. The transportation of the crude rock furnishes employment for a large number of men, who with teams of six, four or two horses, bring in four tons and less at a load. Lime casks are brought in from the country as far back as Angusta; but a large proportion of the casks for the past year has been made in Rockland. The price of a lime cask is thirty cents. About five cords of wood are consumed in producing a hundred casks of lime, most of the wood being brought from the islands outside of the harbor. The old-fashioned lime kilns were sinks made in the ground, and the rock was thrown into the mouth. Yankee genius has revolutionized the manufacture of this commodity, as was natural, and by the introduction of patent kilns has given vigor and increased facility to this branch of prodnction. Three-fourths of our kilns are of the new invention. They are elevated above the ground, lined like coal stoves, and resemble gigantic fnrnaces or miniature volcanoes. They burn day and night, and are tapped at the bottom three times a day, irreverent of Sabbaths, and the lime, when cool, is barrelled and housed in low, broad sheds, to which the kilns serve as chimneys. Raised platforms extend along from month to mouth of several kilns, so that the rock can be thrown from the cart into the kiln or may be loaded conveniently at hand. The General Inspector of lime inspects the empty casks to see that they are of proper size, and by his deputies makes sure that they are duly filled. The depnties are often the lime burners or the owners of the kilns; but as the manufactnre must brand his casks of lime, it is for his interest to do everything honestly."

Foreign Miners' Licenses.

This subject is thus referred to by the California State Comptroller in his last report to the Legislature: "At the last session of the Legislature, amendments were made to the law providing for the collection of foreign miners' licenses, which amendments were expected to increase the efficiency of the law and the revenue derived from this source. The first object may have been effected, but the latter has not. The revenue from this source has decreased rapidly until it has fallen to the almost insignificant sum of $76,650 93 the last fiscal year. The law regulating the collection of this tax is so hedged about with safeguards and penalties that its violation seems almost impossible, and the diminished revenue received from this source must be attributed to other causes than dereliction of dnty on the part of the Tax Collectors. The payment of this tax has for several years been confined exclusively to Chinese miners, who, under the operation of this law and the opening up of other branches of industry, have gradually left the mines for other employment. The construction of the Central Pacific Railroad has drawn from 10,000 to 15,000 of this class of laborers from the mines, leaving the large central mining counties, from which the principal portion of this tax was formerly received, almost destitute of Chinese miners, while the discovery of rich placer mines in the Territories of Idaho and Montana has drawn heavily upon the northern counties of the State."

Wind Power.

As showing the force of the wind during the late cyclone in the West Indies, Mr. R. H. Twigg writes:—"The anemometer had three of its arms blown away, and the other twisted. One leaf of my door got open before the lull; two men held me while I put my head and shoulders out to try and shut it; I failed, and another man tried, and succeeded, but it took three others to hold on by his arms and legs to prevent his being blown away. Solid pieces of rock have been severed by wind and sea from the cliff leaving broken sections of about a square yard area; and on a piece of rock, which I would judge to weigh 15 cwt., was broken off the face of the cliff south-east of the lighthouse (Sombrero) and stranded about fifty yards to the south-west of it."

Original Papers.

[WRITTEN FOR THE AMERICAN JOURNAL OF MINING.]

MINING AND METALLURGY IN MEXICO.—II.

A SKETCH OF THE SYSTEM OF WORKING MINES AND OF EXTRACTING THE PRECIOUS METALS FROM THEIR ORES, AS PRACTICED IN MEXICO.

By DAVID COGHLAN, Mining Engineer, Scranton, Pa.

REAL DEL MONTE.

Not having had any personal acqnaintance in this district, I cannot say a very great deal about it. It is situated on an elevated range of mountains, the mines extending from Pachuca, at the foot, to Real del Monte on the top—a distance of some seven or eight miles. Extensive adits have been made to drain the higher mines, and water-power and wood, generally so scarce in the mining districts of Mexico, are plentiful here. The ores are beneficiated more on the barrel system than in any other part of the country. The mines are among the oldest in the conntry, and have been exceedingly rich—the owner of one of them having presented a ship of the line at one time to the King of Spain, paid for ont of his snperabnndant wealth. These mines were worked for some twenty years with the greatest constancy by an English company, which erected most costly machinery for drainage, &c., and though a great qnantity of silver was produced, the expenses were so high, that loss resulted, and the company sold ont mines and machinery for a trifle to some capitalists of Mexico, who almost immediately after struck rich ore, which has been turning in immense dividends for the last ten years. The works for the barrel amalgamation process and smelting ore, are sitnated near the summit of the monntain; bnt the works for the patio process are at the foot of the mountain, the temperature not being snfficiently high for this last on the top. The silver from this district is coined in the City of Mexico—which is only twenty-five leagues distant.

CATORCE.

CATORCE, the last of the principal mining districts, is in the State of SAN LUIS POTOSI, and the silver was coined at the mint of SAN LUIS nntil lately, when a mint was established in the town of CATORCE itself, the vastly greater proportion of the silver of the State being produced there, and the risk of sending the silver to the mint of SAN LUIS, sixty leagues distant, being considered too great. The new machinery, procnred on the model of that of the mint of Philadelphia, and put np by an artisan from that establishment, is vastly superior to the old machinery of SAN LUIS. It is moved by mule-power. There are seven or eight mints in Mexico, a thing which may seem curious in this country; but the risk of sending money or silver great distances, except nnder heavy escorts, is great. No silver is permitted to be exported, except in the shape of coin; and a very useless expense is thus incnrred, as ninety-nine ono-hundredths of the bullion exported is immediately melted down.

The lowest geological formation is red clay-slate, without fossils; next comes limestone, abont twelve hundred feet thick in this immediate neighborhood, without fossils, though this is probably owing to the volcanic action to which the rock has been exposed; as monntains some ten leagues off, of the same fermation, contain an abnndance. Above this is a thick bed of friable clayslate, abonnding in fossils, which were probably preserved from destruction by the yielding natnre of the rock, and above that again, a bed of limestone not exceeding fifty or one hnndred feet in thickness. The strata are always conformable, but much distorted, and seemingly inverted in places. The limestone is arranged in layers, abont three or fonr feet thick, and so regular as, in some steep hills, to appear like courses of masonry.

M. LAUR, the mining engineer sent out by the French Government to report on the mines of the conntry, determined from these fossils, that the limestone belongs to the lower carboniferous period, corresponding to the monntain limestone. It is a remarkable fact that all the prodnctive mines are fonnd in the limestone, none of any value having yet been discovered in the nnderlying clay-slate, though the veins are nnmerons. The veinstone is generally calc-spar, thongh sometimes qnartz is fonnd, and in some of the veins clayey fluccans accompany the lodes, which render the breaking of the ore easier, bnt make the timbering costly and hazardous. Other veins, again, are of so consistent a material that enormous chambers have been worked, so that, standing in the middle with a torch, neither sides or roof can be seen.

The *colorados*, or oxidized ores, reach deeper in this district than in any other part of the country. Indeed, they were the only ones worked there until the last fifteen years. These generally extend to a depth of 100 to 500 yards; and there (about where the water level begins) the *negros*, or black unoxidised ores, commence. The difference of treatment of these two classes of ores is immense. The *colorados* offer a wonderful facility, compared to the others, since they contain mostly bromide, chloride and sulphuret of silver, without being accompanied by those very tronblesome, and, in the *negros*, common adjnncts, blende and antimony. Again, in the *negros* we find no bromide nor chloride, bnt plain sulphnret, and also the snlphuret of silver and antimony (dark ruby silver ore), sulphuret of silver and arsenic (light ruby silver ore), and native silver.

The most remarkable mining works in this place are the adits—a class of constructions for which the monntains afford great facilities. Some are as much as twenty feet wide and fifteen feet high, and arched over with masonry where the grounnd is bad. The principal ones vary from one-half to three-quarter miles in length, and are sometimes driven on the conrse of the veins, and sometimes as cross-cuts, traversing as many as eight or ten veins, and attaining, not unfreqnently, a depth of 400 yards under the snrface. The extraction is effected on tram-roads of wood, with strap-iron nailed on top, though in a few cases common wheel carts are nsed, as on a tnrnpike road The water of the drainnge runs out throngh a drain formed at one side of the adit. The system of carrying ore and rubbish on men's backs to the shafts and adits is the same as before described under the head of GUANAJUATO. The tribute system of working ore has been invariably in nse here. There is this difference, however: In GUANAJUATO the whole ore extracted from each pitch, and cleaned by the miners at their own expense, is sold by the mine-agents to the highest bidder; whereas in CATORCE the ore is divided into one-half, one-third, up to one-sixth—the smaller qnantity being handed over to the miner, to be disposed of by him as he may think fit, and the greater held by the management, to be sold or beneficiated on its own acconnt on a large scale. All ore of the same class is mixed together.

Porphyry is common in this district, bnt occnrs in regular cross-conrses, cutting the mineral lodes, more or less, nearly at right angles. These cross-courses sometimes attain a width of 100 to 200 feet, and run for miles throngh the monntains, thongh I have never observed that they heave the vein, as is so common in Enropean mines. Most generally they cut through the vein, thongh ramifications of the latter are often observed running through them. These porphyry veins are evidently eruptive, the marks of igneous action being apparent on the limestone walls. As these mines have been bnt lately troubled with water, only two steam engines have been erected—one a pumping engine, the other a winding engine, acting, as described under the head of ZACATECAS, for extraction of water and ore. I mnst here notice another fact like that previonsly remarked of the *Veta Madre* of GUANAJUATO, that the rich vein of SAN AGUSTIN occurs in a fault, the foot wall being red clay slate, and the upper wall limestone to the depth of about 400 yards, attained by the workings. The direction of all the principal veins is about 30° N. of W. underlie N., except one—the *Refugio*—which is a contra, and runs N. E. Masses of basalt, mostly in the form of amygdaloid, are fonnd in some places. Veins of cinnabar occnr, but not in paying quantities. Indeed, traces of cinnabar are fonnd, for fifty leagnes north of this point, in many places, but have never given satisfactory resnlts. The scarcity of mercnry in paying quantities through the world is a remarkable fact. The only mine which ever prodnced large qnantities in Mexico is that of *Guadalcazar* near SAN LUIS, and if to this we add *Huancavelica* in Peru—both now all but abandoned—those of Almaden in Spain, New Almaden in California, and that of Idria in Anstria, we have exhansted the list of remarkable mines of this metal. A fact I noticed in these mines is, that when the back of a vein was rich, the ore kept on straight downwards, or slanting somewhat from the perpendicular, it might be in interrnpted bunches; whereas, in parts of the back not rich on the surface, but poor ore was found in depth. This, though not an invariable rnle, may yet be accepted as a valuable indication of richness nnderneath. As generally observed in limestone rocks, the ore often runs in floors between the strata on the npper wall of the vein to a considerable distance.

TO BE CONTINUED.

GAS-FLAME REACTIONS—X.

By R. BUNSEN, Professor of Chemistry at the University of Heidelberg. Translated for the AMERICAN JOURNAL OF MINING, by H. ENDEMANN, PH. D.

Concluded from Page 3.

32. REACTIONS OF THE MANGANESE COMPOUNDS.

a. They give in the oxidation-flame an amethystine, and in the reduction-flame a colorless borax bead.

b. With soda on the platinnm wire is formed, with especial ease after the addition of a little saltpetre, a bead which appears green when cooled, and ontof which water leaches a green solution. When acetic acid is added, this solntion turns red, and then loses its color altogether, after precipitating brown flakes.

33. REACTIONS OF THE URANIUM COMPOUNDS.

a. They give in the oxidation-flame a yellow bead, which tnrns green in the redncion-flame very readily after being moistened with protochloride of tin. These colorings are very similar to those of iron, but may easily be distinguished, when no other color-giving oxide is present, by the fact that the nranium bead emits when glowing, a bluish-green light, like the fnorescence of the nraninm compounds. Borax beads with oxide of lead, stannic acid, and some other substances, present a similar phenomenon when glowing, but are not colored like the uraninm bead, after cooling.

b. Treated with bi-sulphate of potash in the fine platinnm spiral, np to nearly glowing heat, the insolable nraninm compounds are decomposed to soluble forms. The product of smelting being pulverized with a few grains of crystalline carbonate of soda, and moistened, the liquid is absorbed into blotting paper. On the paper, moistened with acetic acid, ferrocyanide of potassinm produces a brown spot.

34. REACTION OF COMPOUNDS CONTAINING PHOSPHORUS.

a. These may be easily recognized, even when they are

mixed with great quantities of other substances, in the following way: The assay, pulverized upon the porcelain plate, and heated, is put into a glass tube, drawn out to the size of a straw, and welded together at the bottom. A piece of magnesium wire, two lines in length, is buried in the assay. When the tube is heated, phosphide of magnesium is formed, with vivid display of fire. The black contents of the tube (the whole being crushed upon the porcelain plate) give, when breathed upon or moistened with water, the highly characteristic odor of phosphoretted hydrogen. In the absence of magnesium wire, a piece of sodium may be used with equal success.

b. When it has been ascertained that the assay gives, in the upper zone of oxidation, no coatings upon porcelain, the salts of phosphorus can be also recognized by the fact that, upon the platinum wire, with boracic acid, and a piece of hair-fine iron wire, held in the hottest lower reduction-flame, they give a bright molten globule of phosphoric iron, which may be extracted by means of the magnetic knife, after the boracic bead has been crushed with paper.

35. REACTION OF THE SULPHUR COMPOUNDS.

a. They give with soda on the charcoal-rod, in the lower reduction-flame, a melted product, which, moistened upon silver, turns the latter black. Since selenium and tellurium produce the same reaction, it is necessary to be convinced of the absence of both these substances, by ascertaining that no spot of tellurium or selenium can be obtained in the usual manner upon porcelain.

b. Where the compounds sought are sulphides, and not sulphates, it is sufficient to heat the assay in the flame, and recognize the presence of sulphur by its odor.

IV. ILLUSTRATIONS.

It would lead us too far, to follow the special paths into details, which are opened by the assay of more or less complicated mixtures, according to the above reactions. It must suffice, therefore, to show by a few examples the advantages of the method we have described.

1. MIXTURE OF SULPHIDE OF ARSENIC, SULPHIDE OF ANTIMONY, AND SULPHIDE OF TIN.

These three compounds of sulphur are, by the ordinary qualitative analysis, extracted with alkaline sulphides and precipitated again with acids. When only traces of antimony are present, their detection by the methods hitherto employed is, as chemists are aware, highly tedious and uncertain. In the following manner, however, they may be easily and surely detected, even when the quantity of tin does not exceed several thousandths, and that of the antimony a few hundredths, of the whole mixture.

About three decigrammes of the sulphides are burnt off on a piece of glass (a fragment of a thin digesting flask is the best) which is small enough to be surrounded by the flame. The few milligrammes of residuum are scraped together with the knife, moistened, taken upon the end of an asbestus rod, volatilized and precipitated upon the bottom of a test-tube, giving a heavy metallic coating. To avoid the simultaneous deposition of carbon, which would be a hindrance in subsequent operations, the upper reduction-flame is made so faint that its point is scarcely luminous. The coating being dissolved in a few drops of nitric acid in the depression at the rim of the lamp-plate, FIG. 3, it is evaporated below its boiling point, by warming and blowing upon it, during which operation it is kept in as small a space as possible. A drop of perfectly neutral nitrate of silver solution being added to the residuum at the instant when it first appears dry, the characteristic black spot of antimoniate of the protoxide of silver may then be produced by ammonia, in the atmospheric current and in aqueous solution. This is usually accompanied by the reaction of arsenic (citron-yellow or brownish red color, redissolving in the ammonia).

In order to detect the tin, a few scarcely visible particles of the roasted sulphides are melted in the upper oxidation-flame into a borax bead, which is just barely tinted with oxide of copper. The bead being then transferred to the lower zone of reduction, becomes ruby-red from the formation of protoxide of copper. If it should become, by reason of excessive segregation of the protoxide of copper, light or dark brown and opaque, it is only necessary to pass it back and forward a few times in the upper oxidation-flame, and to hold it at intervals against the light, so as to watch its changes, and obtain the transparent ruby glass, which may be at pleasure destroyed in the zone of oxidation, and reproduced in the zone of reduction. This test for tin can only be made in the lower reduction-flame of the non-luminous gas lamp—not at all in the blow-pipe flame, since the latter will reduce the oxide of copper to the protoxide *without the presence of tin.*

2. ORE CONTAINING TELLURIUM, SELENIUM, ANTIMONY, LEAD, GOLD AND SULPHUR.

After sulphur has been recognized by its odor during heating, a metallic coating is first produced in a test-tube. A few drops of concentrated sulphuric acid are put into another test-tube, a little wider and shorter than the first, and the first tube is sunk into the second, until the metallic coating is surrounded by the sulphuric acid. They are exposed to slowly and gradually increasing heat, when the tellurium immediately makes its presence known through the intense carmine-red color which it imparts to the acid. The temperature being increased to the boiling-point of sulphuric acid, the dissolved tellurium is first oxidized; the red color of the acid gives way to the dirty green, due to dissolved selenium; the cooled solution is, when diluted with water, no longer black with tellurium, but faint yellowish red with segregated selenium. When selenium is only present in traces, this coloring will be best seen by holding the test-tube over a sheet of white paper, and looking in at the mouth through its length. Since the sulphuric acid of commerce often contains traces of selenium, it is advisable to make certain the absence of this substance from the acid to be used, by a preliminary test.

The antimony of this ore can be detected in the manner described under the foregoing illustration. To discover the lead and gold, a sample is reduced on the charcoal rod, the auriferous lead is brought into a shallow glass, and the metallic particles are dried, and then treated, as long as anything continues to be dissolved, with tolerably concentrated nitric acid. The solution is evaporated to dryness, and the residuum dissolved in a few milligrammes of water. The solution is transferred by means of a capillary pipette to another glass dish, and a few milligrammes of sulphuric acid are added, giving the characteristic precipitate of sulphate of lead. The gold, which remains as a brown powder when the lead is dissolved, is thoroughly washed clean, by repeatedly pouring water upon it, and sucking the water up again with a pipette. The gold particles, cleaned and dried, are divided into two portions. One is melted with soda on the charcoal-rod; and shining golden scales are obtained by subsequent rubbing in the agate mortar. The other is tested with muriatic acid, in which it is insoluble, then dissolved by the addition of nitric acid, evaporated, and tested with protochloride of tin (see *Reactions of Gold*, above). One centigramme of the assay, containing only a few tenths of a milligramme of gold, is, in a skilful hand, sufficient for all these reactions.

Mining Summary.

GOLD AND SILVER.

California.

Amador County.—We learn from the *Ledger* of the 7th ult. that the main shaft of the Union mine has been run down over 260 feet, and that the last ore taken from the shaft is as good or better than any found above. The company will probably continue the work until it shall have reached the depth of 300 feet. It is already the deepest shaft on the middle range quartz belt in the county, and the company are entitled to much credit for their perseverance. They purpose, we think, starting up the mill in a few days.....Last Monday Coney & Bigelow sent to San Francisco a gold brick, the product of fifty days run of their chlorination works, weighing 418 ounces; fineness, 994; value, $20,54 per ounce, the whole amounting to $8,588.15.....The Tuhbs mill is crushing rock from the Kennedy mine. A good clean up is anticipated.....The Oneida mine is supplying more ore than their forty stamps can crush. They will add twenty additional stamps and another boiler to the mill.....The ore in the shaft of the Union mine is as good, if not better, than any found above .....The chlorination works are now running on sulphurets from the Keystone mill, at Amador City. And the following in the same paper of the 14th ult.:—One-half of the Union mine, near Pine Grove, was sold last week to a capitalist of San Francisco, and that work will be pushed ahead vigorously on it.

Alpine County.—According to the *Miner* of Dec. 7, the down shaft in the Tarshish mine finds the ore in the bottom to be fine and more evenly distributed through vein rock than any heretofore found.....B. Pilkington furnishes a few notes in regard to the mining works under his charge in Raymond district. The tunnel of the Illinois and California company is fast approaching the Sacramento lode, the first promising vein of the series to be cut and the one on which the shaft was sunk last year. This shaft exhibited pay ore, but before a drift could be cut across the lode the workmen were driven out by water. Forty feet more of tunnel will, it is thought, cut the lode at a depth of three hundred feet.....A correspondent thus writes in the San Francisco *Times*, relative to the silver mines in this county: Alpine county is undoubtedly one of the richest mining sections in California. It is new, and as yet undeveloped, but during a recent visit the writer saw enough to convince less practical eyes, and less credulous people, of the great wealth yet to be amassed from the mines around Monitor and Silver Mountain. The great Tarshish mine, at Monitor, is owned by the Schnectady mining company of New York. It was located in 1864, and first opened in 1866. Work has progressed slowly but surely, and it begins to show evidences of richness, perhaps second to no other mine in the State. The main tunnel has probed the mountain 670 feet, and 120 feet into the ledge, which is well defined, yielding a rich mineral, abundant and valuable to the highest degree. They have two drifts in process, leading in separate directions, and tapping the vein at different points. The north drift is now 215 feet in length; the south 225 feet. Several cross-cuts run through the ledge, each over 75 feet in length. The incline shaft is down 75 feet; the upward incline 45 feet. The ledge is composed of what is known among miners as putty quartz and porphyry. The ore abounds with black sulphurets of silver, and crumbles easily into a chalky dust. The specimens from this mine are very rare; in fact the outcroppings themselves are very beautiful and geologically wonderful. The first class ore of this mine pays $350 to the ton; second class, $75. The mountain in which this ledge is situated, is a cragged, abrupt spur, roughly faced with rocky outcroppings of a peculiar reddish color, freely veined with crystals. But little of smoothness or evenness can be found upon the rough sides of the mountain; some timber, enough for practical use for some time covers its sides. From base to apex it is one thousand feet high. The tunnel is about two hundred feet from the creek at its base, and the lower tunnel is to be two hundred and fifty feet below this when completed. The work upon this mine has been done with the praiseworthy view to permanence and convenience for all future operations. The company know the mine is a valuable one, and are determined to work it effectually and successfully. To do this, they have applied themselves and their means to the business with confidence, care, and steadiness, satisfied to wait patiently for the ultimate results. Hon. Abel Smith, of Schenectady, New York, President of the company, has lately arrived to look after their interests. This mine has been working about thirty men. The force will doubtless be increased in the spring. Of the many mining interests around Monitor, we find the Morning Star, the Ringgold, Merrimac, Leviathan and Globe being worked, with fair prospects of unusual richness. The Loudon Imperial Silver Quarry Company have lately sent out a very competent agent, by the name of Chalmers, to examine certain locations and interests near Monitor. Monitor is a small place, just in its infancy, nourished in the cold arms of the Sierras, hid away in one of the rich gulches of the mountains, where already Eastern and English capitalists have sent their representatives. Like other places, Alpine county has its disadvantages. The early rush of the mad men who furiously crowded the little towns in the crazy struggle for "wealth in a month," in the beginning, is over—and cool heads, with patient hearts, are now working to develop the gold and silver that lies imbedded in the hills. Markleeville, Monitor and Silver Mountain are the only places of any note in Alpine county. The Big Tree route, via the Big Trees, afford easy access to Alpine, and also the route from Genoa. Both are fine natural roads and lead through excellent farming districts and beautiful mountain passes. All the fine features of the wild beauty of the Sierras can be seen and enjoyed in the Alpine district, and ere long this section will become interesting for its silver quartz mining, which at the present time promises so much.

S. L.

Butte County.—We learn from the *Record* of the 7th ult. of the arrival of machinery for a quartz mill at Swedes Flat, for the Merrimac company, who are erecting a fifteen-stamp mill.....A forty-stamp mill is in process of construction near Forbestown.

Calaveras County.—The *Chronicle* of Dec. 7 has the subjoined intelligence:—Paul & Co., near the Junction, are working their claim with profit. At present they are taking out pay dirt .....Prindle & Bowman are working their claim in Chili Gulch night and day. Albright & Co., Allen & Co., Bracket & Co., Dicare & Co., and many others in that vicinity are doing well .....Mr. M. Shaw has commenced operations on the hydraulic plan on his claim, and will soon wash a gap through Stockton ridge.....We were shown this week, by Dr. Hepburn, some quartz which assayed $700 per ton. The location of the mine is a secret as yet. A few pounds have been sent to San Francisco to be carefully assayed.....Staples & Co. have some twenty men at work clearing off the ground and making preparations for the erection of their mill in Rich Gulch.....The ditch of the Water company is completed to the new diggings near Camanche .....The *Register* of the 7th ult. has the following:—At Rich Gulch Alexander, Seavers & Co. the past season have realized enough from their lode to pay for their ten-stamp water mill and $6,000 beside. Mr. Staples, a capitalist from San Francisco, is now making arrangements for the erection of a mill on his lode, in the same locality. A company will also erect a mill on the Lamphear & Co. lode, early in the spring.....Most of the laborers on the Union copper mine have been discharged. The company have 400 tons of first-class ore out awaiting shipment. Work will not be resumed until spring.

Mono County.—The Dutch Flat *Enquirer* says that the Dozier company have chosen Benton as a field of operation, where they have erected three furnaces. The Secretary has already received a test brick weighing six pounds.

Nevada County.—The *Transcript* of Dec. 17 says of mining at Relief Hill that the late storm has done considerable damage to the Union claim. The heavy blasts, one of which consisted of 450 kegs of powder, and another of 300, so loosened the banks that they crumbled down during the heavy rain and filled up the shaft. The damage will only delay them a few weeks in opening the mine. This company have been taking out large amounts of money. The Eagle company is washing, using four large streams on the bank, and tearing down an immense quantity of dirt. They will clean up about the last of the month. The North Star and What Cheer companies are also washing on the hill. About one hundred and fifty men will be employed on the hill when the Union company resumes work, and when all the claims are worked a large amount of water will be used. The Eagle company is running 500 inches at the present time. A tunnel is being run north of the Union company, for drift diggings, and they have a fine prospect of striking the gravel lead .....Also the following relative to quartz mining at Grizzly Ridge:—For several months past the prospecting for quartz in the vicinity of Grizzly Ridge has not been so active as a year ago, but still several companies have been at work and some new and rich developments are being made. Hubbard and others have recently commenced work upon a ledge, the rock of which is peculiar and gives evidence of being exceedingly rich, assaying about $1,800 to the ton. In quartz mines it is commonly the case that the quartz on the surface is more or less decomposed, showing little or no sulphurets, but considerable pure gold where it is rich below; but in this instance the rock contains a large amount of dark sulphurets, and looks as though it held considerable iron. All through these sulphurets the small particles of bright gold are imbedded, showing that much of the gold contained in the rock may be saved by ordinary mill process. The ledge has not yet been sufficiently developed to prove the existence of a true and well defined lead, but if the croppings are any criterion, the new discovery will prove one of the best mines in the county.....Grass Valley *National*, Dec. 4th, says:—The owners of the Chipps' quartz ledge are putting up an eight-stamp mill, having ascertained that their rock pays remarkably well .....A man named Henry Beckman, while out prospecting lately, broke off a piece of float quartz and extracted from it $12.....The same paper of Dec. 7th:—The works of the Nevada mine on Deer Creek have recently been put in thorough order. The dam has been strengthened and the mill overhauled. The tunnels have been put in order, and a body of ore struck which is equal to any ever taken from the mine.....Teams are briskly employed in hauling float quartz from off the slide to the Gold Hill mill for crushing.....Arrangements have been made by which the employés and creditors of the Jim company have taken the mill and mine for payment of their claims..... *Transcript*, Dec. 4th, says:—Several sets of gravel diggings have already started washing at Scott's Flat, and one or two more companies will soon be at work. The washings have so far been first-rate, and there is a prospect that all the claims in this locality will yield large returns during this season.....Work has been resumed on the Inkerman ledge, on Weimar Hill, near the French lead, by A. Powning & Co. They are now down 65 feet, and the prospects are flattering.....Excelsior—The snow is now about a foot in depth, with the prospect of more, and work on many of the claims has ceased. Operations are still carried on in a number of claims, among which are the Enterprise, U. S. Grant, Mohawk and Montreal, Excelsior, and a few others; but the gold production is not sufficient to support the population and many of the residents will leave to spend the winter in a more genial clime, with the intention of returning in the spring.

Plumas County.—A correspondent of the Quincy *National* writes from Cherokee that the Indian Valley company have struck it big in their lower level—ledge 18 feet in width, all pay rock .....Judkins & Kellogg's ledge having been drained, looks better than ever before.....The Caledonia mine continues to pay largely. Two mills are kept running on $12 to $15 rock.

Sierra County.—The Sawpit Flat correspondent of the Downieville *Messenger*, writes that the Eagle company are breasting out good dirt. The Union is also taking out pay dirt..... The Buckeye claims are paying well. One-sixth interest sold lately for $3,000.....The American and Union companies, at Washington Hill, are doing well.....Mr. Hagan has purchased the old Franklin ditch and thoroughly repaired the same..... The Forest City correspondent says: The Adelia company, at Rock creek, have lately struck rich pay in their main tunnel. Persons who have been into the diggings within a week and pros-

pected them, inform me that they obtained from $1 to $3 to each pan of dirt.....The Brush creek quartz mine near the Mountain House, looks as promising as ever.

Siskiyou County.—The Yreka *Union*, Nov. 30th, says that Wm. Smith, of Cottonwood, lately cleaned up, for a little more than a half a days' work, $2,250. The claim is known as the "Hundred Feet."

Tulan County.—At Kernville, the Cochran Brothers have built and put in operation a new quartz mill of eight stamps. They have rich rock. The Staples will soon have up another mill on their lodes in the same district.

Yuba County.—The Marysville *Appeal*, Dec. 8th, says: On many of the Yuba bars work has been resumed. At Long Bar No. 2 the Long Bar company have erected, set wheels, and made other preparations to continue operations during the present propitious weather. Work has also been resumed to some extent on Slate Range Bar, in the bed of the river, where moderately fair remuneration is being obtained. At Castle Bar considerable has been done the past season.....The Brown's valley correspondent writes: The Rattlesnake company are still taking out very rich quartz, and their improvements are rapidly advancing in all directions. They intend to have their ten stamp mill ready within a week. The prospects of the Dannebroge are very flattering—meanwhile their mill is partly supplied with quartz from the Rattlesnake mine.....The Pennsylvania company have run a lot of tailings, formerly considered worthless, through one of Wheeler & Randall's grinding pans, and cleared up 84 ozs. of amalgam, worth $5 per oz.

Nevada County.—The Gold Hill *News* learns from Mr. L. T. Heath late from from Meadow Lake, where he has been a resident for the past three years: The Enterprise Company during the Summer have built a new mill 40 by 80 feet, and now have five stamps in operation, with room to add 15 more as soon as emergencies require it. They have also put up a shaft-house, 30 by 40 feet over their new shaft, which is now 100 feet deep and shows excellent ore all the way down. The ledge is some 20 feet in thickness, and shows free gold in almost every part. The company have erected a furnace 27 feet in height, and capable of roasting 30 tons of ore at one time. The furnace is enclosed in a house 30 feet square and 40 feet posts. It is of the same model as those used in Grass Valley, and is said to work within 6 per cent. of the assay. Mr. C. Yound has charge of the mine and mill. The old mill has been torn away and a substantial one taken its place. Goss & Lambert have been bought out, and the company is on the old basis, and will no doubt do well. The U. S. Grant Company are sinking a shaft on their mine, with good prospects. The Kentuck Company, on the same ledge, is taking out a large amount of good pay ore, which they have had tested at the reduction works, with an excellent result. The Mohawk is paying well. The Green Emigrant Company are taking out a large amount of good paying ore. They have been having their ore reduced at the California mill, but have now rented the Excelsior mill for this Winter, it being in close proximity with the claim. The Gold Run and several other mines are busy taking out ore that will pay from $12 to $30 per ton. The town of Meadow Lake is rather dull, most of the people having left for a warmer climate. Although many of the mines will discontinue work during the Winter, Mr. Heath has great confidence in the future of that district; he says it is but a question of time to prove it one of the best mining regions on the coast.

Nevada.

The Comstock.—The Virginia City *Trespass* thus reviews the Mining Stock Market for the week ending Saturday, Dec. 21: From the East—Belmont, Austin, San Antonio and Humboldt weekly, come bullion shipments of increasing value. At Pine Grove and Washington incorporations of companies meaning business have been made, and to-day we look upon mining affairs in Nevada much more hopefully than within the past quarter of a year.....Ophir opened at $59, advanced to $80, and closed at $72. The shaft is now 148 feet in depth, and is being sunk at the rate of about 40 feet per month, with a six-inch vein of water that requires constant exhaustion in order to permit labor in the shaft, which at best is tedious. The only cause for the rise is a sympathy with other stocks. The meeting of stockholders for the annual election did not take place on the 16th, as appointed, owing to the fact that a quorum of the stock was not represented, The meeting will be held next Monday, 23rd inst.....Sierra Nevada has been in considerable demand, on account of a body of promising quartz developed in the northwest drift, at the lowest station. During the week 805 shares were sold, opening at $8.50, advancing to $20, declining to $12.50, and selling at the close at $11 .....Gould & Curry opened at $310, advanced to $375, buyer 30, declined to $345, and is mentioned at the close at $340. There is nothing new to relate of the mine, except it be that the large body of water encountered has decreased, and the drift and shaft are now clear, so that prospecting can be continued.....Gold Hill mill opened at $75, and closed at $80. There is nothing new to say of the mine. The expected dividend for this month is now a matter of doubt.....Savage has been unusually active, and 1,743 shares have been noted at the Board. It opened at $111.50, advanced steadily to $120, declined to $113.50, jumped suddenly to $124, and closed with sales at $122. This stock is extremely well held, and the ore returns are increased for the month both in quantity and quality. The dumps at the mine are full, and all the mills steadily employed. The profits for December will be much larger than for the past months, but the dividend will probably be as usual ($150), with a much larger surplus to carry over. At the fourth station, south mine, drifting has been resumed south to connect with the winze from the third station. It is believed the connection will be made in running 30 feet. The ore is of very good quality, and will average second-class. The winze at the second station—Potosi chimney—is down 78 feet, and continues in good milling ore. None of the drifts from the third station, however, have as yet succeeded in developing this body of ore. Contrary to expectations, this winze has developed a much larger and better body of ore than was supposed to exist at that depth.....Hale & Norcross opened at $1,300, declined to $1,100, rallied and advanced to $1,160, and closed at $1,150. The drift toward the Savage ground is now advanced 178 feet, and is in hard and difficult rock. It is expected to reach the ledge in running 92 feet further, which will require from fifteen to twenty days more time. .....Chollar-Potosi has been inactive, and remained quiet at $130@134. There is nothing new to relate at the mine, and no improvement to note that we learn of.....Bullion opened at $20, advanced to $25, and closed at $20. Sinking for a new level, to be opened 700 feet below the present, has been commenced. When completed, the shaft will be 1,260 feet in depth and the deepest in the State.....Exchequer has been in considerable demand, advancing from $11 to $15 .....Alpha has met with limited sales at $550@600 An assessment levied February 18, 1867, is advertised as delinquent, and the usual sale will be made on January 20, 1868.....Imperial has been well held. It opened at $170, advanced to $178, declined to $168, and closed at $164. The old mine is yielding some fair ore; the drifts and shafts have been retimbered. Machinery at the east shaft is being repaired as rapidly as possible, but it will be many months, in our judgment, before a level west, from the bottom of the shaft, can be opened.....Empire has been noticed at 165@167.50.....Confidence, under its late annexation project, has ceased to be noted in the market.....Daney has been mentioned at $6@9.....Yellow Jacket has been very active, opening at $650, declined to $620, jumped to $780, and closed at $770. At the lowest levels, south shaft, the drift east is being cut, but with what result is unknown to any exeept accredited agents. A new station is being put in the shaft, with a view of drifting south to the Kentuck ground, which it is expected will be reached in about thirty days. A north drift from the main west drift has been started, which, it is expected, will penetrate and develop the body of ore known in the station above as the "frog-pond" vein. The south winze, now down 157 feet, continues in very fine ore, that will mill $50, at least. From the south mine about 60 tons and from the north mine 80 tons are being mined daily, keeping the Morgan mill at Empire City and two other mills constantly employed.....Kentuck opened at $169, advanced daily to $226, and is mentioned at the close at $248. The stock is exceedingly well held, and a further advance is predicted. Eighty tons of ore daily are being mined—50 tons from the east and 30 tons from the west ledge. In addition, 15 tons of good milling ore are being taken through the seventh station of the Crown Point ground, and the drift will be pushed to connect with the lower level of the Yellow Jacket. The ore above the 500-feet level, on the east, is looking much better, and recent developments in the Yellow Jacket, previously alluded to, have had the tendency to advance this stock. Kentuck is believed to be a good "buy" at ruling prices..... Crown Point opened at $650, advanced to $700, remaining at about that figure during the week, but at the close advanced suddenly to $800. There is no improvement whatever to note in the mine since our last report.....Belcher has been mentioned at $120@125.....Overman has been active, and large transactions are noted. It opened at $69, advanced to $80, and closed at $84. There is nothing new to mention in regard to the mine. Rumors of a suit against the company have reached us .....The following is the statement of the amount of bullion dispatched or received for assay during the past week: From the office of Wells, Fargo & Co., in this city, there was dispatched 3,176 pounds of assayed bullion, valued at $69,925.69; from their office in Gold Hill, 1,141 pounds, valued at $34,210.25. The amount of crude bullion received for melting and assay is as follows: E. Buhling & Co., of this city, 21,650 ounces; Theall & Co., of this city, 39,500 ounces; George W. Dorwin, of this city, 3,200 ounces; Van Wyck & Co., of Gold Hill, 26,406 ounces; C. Wiegand, of Gold Hill, 17,476 ounces.

Montana.

Mr. Wm. T. Lovell writes in the Helena *Post* on the tunneling system in Montana. He directs his remarks to the Territorial Legislature, now in extra session, setting forth the importance of amending the Territorial law of 1865, or of repealing and enacting one that shall be more extended in its scope, and certain in its provisions. The act concerning the location of tunnels, approved Jan. 31st, 1865, provides "that any person or persons may locate a tunnel claim for the purpose of discovery and mining," upon the following conditions: First, "They shall record the same, specify the place of commencement, and the course thereof, with the names of the parties interested therein." The language of the section is at least vague and uncertain. Where shall the locator record? How shall the prospector know if this ground has been pre-empted or not? No stake is required, nor any local notice given, of a prior occupation, and he cannot know by the record, for the statute is silent as to where it may be found. Second, the second section says that "he may have 300 feet on each side from the centre of said tunnel, on any or all lodes he may discover in the course of said tunnel, provided they were not recorded previous to the pre-emption of the tunnel, under the act relating to the discovery of gold and silver quartz leads, and the manner of their location." This is all well enough, but how and where is the fact of its being a prior location to be determined? The locator of the tunnel in its course ents some vein of auriferous quartz, he ascends to the surface, and in the vicinity of the line of the tunnel finds a stake; no shaft is nearer than 1,000 feet, and this but the prospect shaft of a few feet in depth, while the tunnel has cut a vein say at from one to five hundred feet in depth. The first pre-emptor declares that he is certain it is the same lode, and says to the tunnel company, according to Sec. 3, of the tunnel law, you can cut through the vein, but you must deposit at the mouth of the tunnel the ore for my use. Why? Because I am certain it is the lode I staked in 1865. How can this be decided? Certainly not by any test from the surface. The work has up to now been so superficial that neither course, dip or strike of vein can be given; still owing to this provision the locator of the tunnel must await the pleasure or leisure of the pre-emptor, until the fact is established or demonstrated that it is the same lode that was pre-empted in 1865. The vein cut is rich, the tunnel drains the mine, the level enables the owner of the tunnel to dump the ore in the ore yard of the mill, the enterprise is a success, but lo! the ore in the eye of the law is the pre-emptor's, and if worked by the tunnel company, it is at their peril, and in so doing they will only prove the fact that it is mine, because in September, 1865, I dug a hole 2x4, and planted stakes at each end of discovery, and said that I and my friends claimed 1,100 feet, each way, sometimes easterly, sometimes westerly, others northerly, and yet others southerly. This is wrong. The pre-emptor should be protected, but the great interest of the Territory should not be fettered by Legislative enactment. Capital, ever timid, should not be frightened away by a desire to have the pre-emptor lay still until capital not his own comes to his relief. Some pledge, some assurance should be given those who locate their tunnel that if mines are cut in its course that they shall at least have an interest commensurate with the outlay, in developing and draining a mine that may or may not be one "located according to an act relating to the discovery of gold and silver quartz leads, lodes or ledges, and the manner of their location."

3. There is still another objection to our present tunnel law. In Sec. 4, we find the only limitations that the Legislature has imposed to make a tunnel claim an estate of inheritance or of fee, is the requirement "that in one year from the date of the pre-emption, they shall run the distance or depth of one hundred feet on said tunnel." This provision we regard as one that certainly should be amended, for the reason that it acts directly as an injury and preventative of development of the mines of the Territory by tunnels. The proper location of tunnels must be with reference to the cutting or striking of the mine at a great depth and at such a grade as to insure the drainage of the mine. To permit me to occupy and enjoy this by only going on the length of the tunnel 100 feet, or by sinking 100 feet, and then remain indifferent, in the way of any more enterprising neighbor, is wrong. You should at least compel me to do something each year, or let me, by neglect, suffer a forfeiture of the right conferred—compel me to do something to advance the object for which the rights and privileges are conferred or give place to those who will. Under this provision the observant may secure every available point in his district for tunneling, and when he has expended a few hundred dollars, say to others, "you are shut out. I have caged the bird, and unless you pay me my price you shall not even drain your mine, save with hoisting apparatus." We can hardly realize any enactment so injurious to the true interest of the Territory as this, and trust that the Legislature will at once amend so that hereafter tunnel companies may be required to progress each year with their tunnel at least 200 or 300 feet, or forfeit their pre-emption. 4th. Sec. 5 gives to the pre-emptor 300 feet on each side of the tunnel, for an ore yard. This is as it should be, if the pre-emptor is required to work; but is wrong if the statute remains as it is. By this provision he has 600 feet (the width is not given), for this reason, that no other tunnel could in this distance be pre-empted, and obtain the 600 feet. It is very often, and especially when the entrance of the tunnel is that of a precipitous mountain or hill, that only 600 feet can be had along the face of the hill or mountain, or at right angles with the line of the tunnel, and in this way (no matter how desirable) preventing the location of another tunnel in that locality. Having stated the defects of the present law, and believing that the true system of development of the mines is by tunnels, we ask of the Legislature to take this question under consideration. We would not have a right of the miner touched or disturbed; but if our Territory is to be properly mined and developed—if our hidden wealth is in our day and generation to be brought to light—if Montana is to hold and increase her gold and silver production—in short, if mining is to be a success, we must cherish, encourage and safely protect capital by a wise and prudent legislation, as well as to guard the rights and interests of our toil and careworn prospectors.

We wish all readers of the JOURNAL OF MINING to understand that we are not to be held responsible for the accuracy and truthfulness of the articles that appear in our Mining Summary, taken from other newspapers. We give such extracts for what they are worth, only exercising a reasonable discretion in regard to excluding such as bear palpable semblance of puffery or falsehood. We are led to make these remarks from having noticed in the columns of many of our exchanges extracts credited to us for which we are responsible, no further than having published them in our columns. The Montana *Post*, for instance, of the 21st ult., gives us credit for some figuring done by a St. Louis paper in regard to the profits realized on some ore worked by a Flint Creek company, which appeared in our issue of November 16, 1867. As we regret that this usually accurate paper should make such a mistake, we deem it proper to state that so long as we give due credit for extracts in our mining news, our readers will not necessarily suppose that we endorse the truthfulness of *all* mining intelligence.

Colorado.

From the Central City *Register*, Dec. 7th, we gather the following news items: The shipments of gold from Central City during December, 1867, per W. F. & Co.'s Express, amounted to $118,622. It is probably the largest product of either of the last four or five Decembers. It has nearly all been taken out by stamps. It is encouraging because it shows that the only trouble with our ores and processes is shiftlessness or laziness.....Not for four years have there been as many mills running in Black Hawk as now. Every one that is fit to run is in use, crushing custom rock for from $4.50 to about $6 a ton. It costs, with everything cut close, about $3 a ton, thus leaving, as will be seen, a handsome margin for profit. We know of no more favorable speculation now than the building and operating of a twenty stamp mill. It might be done for $10,000, and be made to clear that amount, 100 per cent., in a year. Kimber's twelve stamp mill in Eureka cleared $3,000 last summer. The mills in Nevada are mostly idle for want of water. Those in Central—mills of the gods—are grinding slowly but exceedingly fine and well.....There is a good deal of talk on the streets with regard to Mr. Conlee's operations in Nevada. He is working five shafts on the Kansas and Burroughs lodes, but his ore principally comes from the bottom of the Gilpin company property. Last week he mined and hired crushed, at a cost of $5 for mining, and $7.50 for hauling and crushing, $12.50 per ton in all; 175 tons, the same producing $18.50 currency, per ton. About five per cent. of the best ore was saved for the smelters. This proportion will soon be increased by two or three per cent. Mr. Conlee designs to employ the N. Y. mill, 35 stamps, Peregrine's, 18, the Sterling, 15, and Mendell's, 12, 80 stamps in all, steadily from this on. They will crush about 240 tons a week, which will yield from $15 to $20. About seven per cent. 16½ tons, estimated to be worth $100 per ton, will be saved for the smelters. Suppose there to be mined 15 tons of first class ore per week, which shall be sold to the smelters, and shall net the miner $75 per ton; and suppose there to be mined and crushed by stamps 200 per week which shall net $5 per ton, we have for weekly profit of this one mine, 262½ feet in length, $2,125, at the rate of $110,500 per year. That is not as well as Mr. Conlee is certain to do. Well, Mr. Conlee did the last work in this mine before it was sold to the Gilpin company. There were two shafts 350 and 420 feet deep. The latter had been 25 feet in pay, and from its bottom a drift had been run west 50 feet, in a six-foot vein of pay rock. A pinch, or cap, 130 feet thick, had been gone through. The other shaft was in cap. There were 300 tons of pay-rock out on the surface when the mine was sold. There was a wooden, gravity railway from the mine, some 200 yards, to a twenty-two stamp mill, thirty-six horse engine in the gulch. Another mill of ten stamps, thirty-six horse engine, was sold to the company with this property. The hoisting was done by horse whim. The Gilpin company was organized four years ago. They sent on an agent, a man pretty well posted in geology, mineralogy, etc., and of many years experience in mines. He expended in the course of three years $60,000 for the company, and never realized a dollar from the property; but on the contrary, as we were informed by the gentleman who sold the property, and who retained a considerable interest in it, damaged it to the amount of $10,000. He was finally relieved, and the property laid, as indeed it had before laid, idle, up to a recent date, when the company leased it to Mr. Conlee, with the result stated in the beginning of this article. This is a striking illustration of the general experience of Colorado mining companies, and goes far to prove that gold quartz mining in Colorado has been a comparative failure during the last three or four years, only because of the most outrageous and incomprehensible mismanagement .....Mr. A. B. Clark, managing for the Clark-Gardner company, gives us a mining item. They have got their new shaft, started about in the centre of the mill, down to a sufficient depth, 240 feet, to drain the water off the old workings. The walls have been eleven feet apart all the way, the rock crushed growing better constantly, paying at first only six to eight dollars a ton, the last crushing yielding nearly as much again as that. Mr. Clark expects to draw off the water by Monday, and then commence mining in earnest. When he last came out in October, he brought but $500 with him, and he has had no occasion to send for more. Which shows that a mine can be opened even, five times as expensive as working after opening, on its own resources, provided there is an average vein that will pay eight or ten dollars a ton.....The Georgetown *Miner*, says: Garrott, Martine & Co., have taken out and shipped during the week 1242.90 ounces of silver bullion, coin value $1452.61, currency value $1888.39. Considerable amalgam and retort are on hand, but not in proper shape for retorting. During the week they have been delayed some by the cold weather. Shaft No. 3, east, on the Hunkadora lode is now in to a depth of 100 feet, it being the deepest shaft in this district. The crevice is now eight feet between the walls, and the ore vein full three feet in width. Work is still progressing, and will be actively carried on all winter. The owners will commence sinking shaft No. 5, east, immediately.

New Mexico.

The Denver, Colorado, *Gazette* of the 1st inst. has the following additional particulars relative to the Moreno mines and matters in that section of the country from some miners who were re-

cently there:—Our informants went there early in the spring and secured claims on the lower end of a gulch, which had been "staked off" for six miles in length. The ground prospected with plenty of pay dirt. The great drawback was the want of water. They dug two ditches connecting with what they thought were living streams, but early in the summer the water dried up, and they were unable to work their claims. They consider that with water they could have cleared $40,000 from the claims during the summer, and the ground on the upper part of the gulch prospected better than where they were located..... Several other paying gulches and placer diggings have been discovered in the neighborhood. In one small valley not a bucket of dirt could be washed that did not yield over two cents to the pan. In places, there are round water-washed mounds, over fifty feet in height, which prospect throughout. Even the prairie dog camps in this valley would pay to wash away. Altogether there is no doubt but the auriferous deposits are very extensive, and that an immense amount of money will, during the next two or three years, be taken out of the ground in this vicinity. Frank Pope has a number of men employed digging a large ditch intended to supply water for the mines. The river from which the water will be taken is distant sixteen miles from the mines, and the work is to be completed by the first of May next. A number of good-looking lodes have been discovered, from which beautiful specimens of wire gold have been obtained. The vein rock is white calcareous quartz, intersecting beds of metamorphic slate and micaceous schist. The lodes are situated near the summit of the Range, and the snow was over two feet in depth at the time of the latest advices. A large number of prospectors are on the ground, and the roads are crowded with men en route from Colorado, and even from Montana. It is expected that at least 4,000 people will be on the ground by spring. Virginia City is situated at the foot of the mountains, on Maxwell's grant. The lots will be sold by auction early in January. Virginia City will occupy the same position to the Moreno mines that Denver does to the mines of Colorado. One or two more mines will be laid out in the mountains, from which stages will run to and from Virginia City. The mines are not all on Maxwell's grant—some of the best of them being on land claimed by parties residing at Taos. It is not thought, however, that any objections will be urged to parties mining, as the value of the agricultural land in the neighborhood of the mines will be greatly enhanced..... The Denver *Tribune*, discoursing of the route from Denver to the Moreno mines, says that teams, heavily loaded, have no difficulty in making the entire distance, 320 miles, without unloading. A new route has been opened from Trinidad to Virginia City, running up the Purgatoire, which shortens the distance one-half, or fifty miles.

Idaho.

The Owyhee *Avalanche* says: There is an extensive and interesting field for geological research on and in the vicinity of Sinker creek, commencing at its junction with Snake river and extending several miles up the creek. Mr. J. C. Holgate, of this place, who is quite a practical geologist, has recently made some interesting discoveries in that section, showing abundant evidence of its having been densely populated by animals that existed during the Cretaceous period of the Reptilian age. Among other things of interest that were shown us by Mr. H. were a number of bones, that from their size and appearance, unmistakably have belonged to the *Mastodon giganteus*, long before man's appearance on the earth. It is thought the entire skeleton to which the bones belong can be exhumed. In the collection we observed the head of a reptile, well preserved, and almost entire, somewhat resembling that of an alligator of the present day. It had fearful looking teeth, and its jaws were firmly set, as if sealed by some great and sudden convulsion of nature. Marine shells and petrified wood also abound. Facts like these, if investigated by Agassiz, would form valuable contributions to science. As it is, they exhibit one among the many interesting features of Owyhee county..... We learn from good authority, says the same paper, that the Rising Star mine, in Flint, has been sold to Wm. M. Lent, Geo. Hearst, and others of San Francisco. They have also purchased Gen. McQueen's lease: so that now they own the entire mine—discovery claims and extensions—for which they paid $30 per foot, cash down. We are informed that the purchasers have incorporated under the name of the "Rising Star Silver Mining company." The parties having charge of the mine have suspended work thereon until the arrival of the agent, who is expected from San Francisco in about a week, when, in all probability, operations will be vigorously resumed. We understand it is the intention of the company to erect a large mill as soon as possible.

Utah.

The *Frontier Index* (Fort Sanders) has the following items:—We are informed by Colonel Henry A. Morrow that the gold prospects around Fort Bridger, three hundred miles west of Sanders, are, without question, equal, if not far superior to any "gold signs" yet discovered outside of California..... We are presently to have a new railroad town here at Sanders that will eclipse all the other towns in the rear. There are now between three and four thousand western men in this immediate vicinity getting out ties and wood, and gouging into the earth for gold, silver, copper and iron, all of which are found to be abundant within an arms reach of Sanders .....A miner just from the Sweetwater mines, two hundred miles west of Fort Sanders, says over three hundred people are wintering there. Five stores have been established, and more on the way. Some of the miners are still at work, crushing with arastras and amalgamating caresa rock, which yields from $300 to $400 to the ton. The facilities for working the rock are yet very few and imperfect.....Fort Sanders is by far the most splendid post in the west. The buildings are made of sandstone and mountain lumber.

Oregon.

We have Portland dates of Dec. 7th. The *Oregonian* says: We get the following facts concerning the mines in Grant county from Mr. Sawyer. The gold and silver bearing quartz in and about Elk district, Grant county, looks promising indeed. Though little has been heard abroad concerning the richness of the veins in that locality, the prospecting and development of the ledges been steadily going on during the past two years. Mr. Sawyer says that the yield of $20 per ton lately obtained from the refuse rock of the National lode, was obtained under many and great disadvantages. He thinks that when worked properly, the rock will yield not less than $50 per ton. Rock taken from the Diadem and Marshall ledges is now being crushed, and it is confidently expected that the result will give further evidence of the richness of the quartz mines of Grant. D. L. Sawyer, the discoverer of the Diadem ledge, is now having a tunnel run, to intersect the vein at the depth of 100 feet, and other companies are making similar improvements. The placer mines of the North Fork are proving rich.

Arizona.

The Prescott *Miner* of Nov. 23d, says: Last week, the Vulture company struck a pocket, out of which they took a small lot of rock, which contained over $2,000 worth of gold. Smith & Wickenburg were getting ready to work. They are fixing up Henry Wickenburg's five stamp mill, have sent teams and men to the mine, and expect soon to turn out bullion.

Australasia.

A Melbourne paper of Oct. 30, says that a nugget of gold weighing over five hundred ounces, was found near Sandhurst last week.....Within sixteen years the two colonies of Victoria and New South Wales have produced a supply of gold amounting in value to £150,000,000 sterling, four-sixths of which has been the produce of Victoria alone.....A Sydney paper says that gold has been found on the sources of the Mana river, sixty miles from Maryborough, Queensland. Two hundred ounces of gold have been brought in. One man obtained, in ten days, seventy ounces of coarse gold. The working is all surface, no sinking. The extent is not yet known. A nugget weighing forty-one ounces, is reported to have been found.

COPPER.

Michigan.

On the 30th ult. (?) a portion of the Portage Lake smelting was destroyed by fire. The warehouse was completely burned. It is estimated that the company's loss will not fall short of from $15,000 to $20,000. Fortunately the damage to the new furnaces and stacks was but slight. A report, dated Tuesday morning, 31st ult., says: Fire has been started, and charges put in two of the new furnaces, and a large party of carpenters are at work putting up the frame for the construction of a shed over the furnace to protect the workmen during the winter. A large number of laborers are also engaged in removing the debris of the warehouse, and cleaning up the fragments of timber, &c., scattered about. The following is a statement of the amount of ingot copper shipped from the Portage Lake smelting works during the season of 1867:

COMPANY.	LBS.
Pewabic	1,706,690
Franklin	1,434,910
Huron	976,472
Calumet	864,232
Isle Royale	773,250
Hecla	556,965
Grand Portage	504,187
Hancock	451,558
Albany & Boston	52,203
Concord	44,880
Hoar Bro's	30,300
Mesnard	5,510
	7,401,157

Or 3,700 tons, 1,157 lbs.

MINERAL COPPER.

Franklin	18,992
Hoar Bro's	12,700
Concord	11,080
Quincy	Not yet returned.

The Houghton *Gazette* of the 26th ultimo reports progress in its district as follows: At the South Pewabic mine several new buildings are going up, the most prominent being the rock-breaking house, to which the rock is to be trammed on a railway running into the top of the building. When this is completed it will effect a considerable saving over the present cost of handling and breaking rock. As we stated last week, the reduction of working force was but slight, and only temporary, the amount of rock on surface being so great as to inconvenience operations, and greatly increase the cost of handling rock to get it out of the way. Some trouble has been experienced with the locomotive, from the amount of snow on, and consequent slipperiness of the track. Some think the engine is not heavy enough. As it may be, it has not been able to bring enough rock to the mill to keep the four hands constantly running for the past week or ten days. At the mill the usual number of difficulties incident to the starting of new machinery appear to exist, notwithstanding much greater care was exercised in the construction and setting up, it is generally conceded, than in any other mill in the country. So far, we have not heard that the stamps have performed anything but admirably, the main trouble being with the pump. First the friction of the immense column of water, two feet in diameter, turning so many angles, so shook the building, broke valves, &c., that they had to stop and carry the pipe straight up to the desired height, and discharge in a launder running to the tank. It is said the washers are not working as satisfactorily as could be desired, the main complaint being that they lose copper. In stamping rich rock any machine is liable to be overworked, and yet not be at fault. The appropriate remedy is the insertion of Asmus' self-discharge in each seive, keeping the copper down to a fixed line. The stamps, as we previously intimated, work exceedingly well, striking the most powerful blow of any in the country. Saturday we saw all four heads in operation, and a gentleman who is a strong advocate of Cornish, or light-headed stamps, voluntarily admitted that as improved and operated in the South Pewabic mill, they were vastly superior to any of the kind we had seen, and quite altered the question of their inferiority to his favorites. This was more of an admission than we expected, but at the expiration of a year we expect to hear more than that; we expect to find the light-head champions transformed into warm friends of the heavy head and blow. Nothing positive has been ascertained yet relative to the per centage of the rock, which has been sent from the mine to the mill without selecting out any poor rock, as nothing like a steady run has been made; yet it is evident from the manner of those who should be able to form a tolerably correct idea of what the per centage is likely to be, that they have no fears it will fall below two per cent.....We learn that the Messrs. Hoar, of the Albany and Boston, shipped twenty-one tons of ingot copper since the commencement of operations the latter part of September last. This was the result of two months and five days' stamping. During the coming winter they expect to make a monthly product of ten tons of ingot, or about fifteen tons mineral. They are working with the most rigid economy consistent with regular mining operations. As an instance, they have all their stull timber, lagging, &c., down in the mine, near where it will be used, and now dispense with the services of timbers. Many other little, yet important economies, are practiced, and we have little fear that even with copper at its present low price, they will manage to earn a small profit.....The following is the cost of stamping and dressing at the Copper Falls mine for the month of November, 1867:

LABOR.

Chief engineer, ½ salary as superintendent	$62 50
Mechanics	61 40
Engine-driver and head boys	162 65
Oiler	42 30
Firemen	173 06
Stamp-feeders	224 00
Copper dressers	319 34
Mason	9 00
Carpenters	63 75
Blacksmith	9 50
Total	1,127 50

FUEL, OIL, ETC.

230 tons Massillon coal, at $7 50	1,725 00
13 galls. lard oil, at $1 35	17 55
20 galls. spinale oil, at 60c	12 00
16 galls. lubricating oil, at 60c	9 60
18 galls. illuminating, at 60c	10 80
24 galls. fish oil, at $1 30	31 20
8 lamp chimneys	2 00
10 lbs. cotton waste, at 33c	2 30
8 lbs. hemp packing, at 33c	2 64
1 stamp shoe, 300 lbs., at 8c	24 00
Grate bars, 500 lbs., at 7c	35 00
3 shovels, at $1 50	4 50
1 bbl. lime	2 50
500 brick	10 00
12 feet wire cloth, at 65c per foot	7 80
	1,896 89
Total	3,024 39

3,061¼ tons stamped—total cost 98.8 per ton, or $3,024 39. Running time, 23 days.

One contemporary directs attention to the more pressing needs of its section, and enumerates a few things of vital importance to the copper country, and to those persons who have capital invested in its mines. After strongly advocating a greater protective tariff for copper, "as protection for everything except hen-roosts seems to be the order of the day," the editor proceeds as follows: What we need, and must have, if we would see our mines placed on a paying basis, is an advance of from five to seven cents per pound on the price of ingot copper. This must be obtained during the present winter, and every man in the country, or interested, must labor zealously for its accomplishment, or they will be well punished for their indifference ere 1868 passes away. The need of a railway along the mineral range from Portage Lake to Cliff mine, and eventually Lac La Belle, becomes more apparent every day. The arguments in favor of its immediate construction are many and well known. Its construction would be of benefit to a half dozen or more existing mines, and would precipitate the commencement of operations on at least a dozen properties more. In this connection we again suggest the construction of two or three custom stamping mills to work up rock sent in over the railroad by the small mines working along its line. From Boston we learn that the unwiseness of locating the Hecla railway as it has been is attracting considerable attention, now it is beyond remedy. We disapproved the route when it was first suggested, but it was claimed that we wrote solely in the interest of Portage Lake. Now, however, they begin to see that the business of the road is likely to be confined to their own mine, when they might have had the business of all the mines from Keearsarge to Highland, with every chance for an annual increase of business from these and future mines. Besides, it might have come in for a government grant of land to aid in construction. But all this is passed now, and it behooves the people to stir themselves, and, at all events, commence the railroad the coming season. That the mining laws of the State of Michigan need a thorough remodeling no one will deny. The succession of rascally transactions which have shocked and injured the mineral interests of the State have shown us that. So far as the overissue of stock is concerned, it will be difficult to legislate so as to reach and punish the guilty parties, but we think a safeguard may be provided by requiring that a list of stockholders and the number of shares held by each should be filed in the county clerk's office quarterly, with a statement of the assets and liabilities of the company. We have not space to give again our reasons for requiring a quarterly statement of each company's affairs, but will merely state that if the State of Michigan had before this exacted such statements, we should have been spared such lamented failures as those of the Pennsylvania, Huron, and a host of minor ones, compared with the two named, but through which the people doing business in and with Lake Superior, during the past six years, have lost not less than two millions of dollars. Let these statements of stock, assets and liabilities be furnished under oath, and whenever they are falsely rendered, let the party so doing suffer the extreme penalty of the law for perjury, and his name forever be rejected from association with those of honest, respectable men.....The Ontonagon *Miner* of the 21st ult. has the following table of products for November last:

Name.	Barrel Work.	Stamp.	Mass.	Total. Tons.	Lbs.
Minnesota	9,576	6,347	23,682	19	1,596
Rockland	4,674	11,025	412	8	111
Superior	2,208	....	4,635	3	843
Omiga (no stoping)	1,669	35,35	....	3	1,214
Ridge	16,453	....	3,828	10	280
Knowleton	8,173	23,776	900	16	849
Evergreen Bluff	24,413	19,530	16,560	30	323

Also the following mining news: The workings of the Caledonia, as is well known, have been confined since May last to opening up the property, and the result of this is, that the small force employed—eight miners—will be able by spring to have the mine in the best condition for stoping, employing a large force, and producing plenty of copper. Three hundred miners could be placed in the mine, advantageously employed, and, we doubt not, make the Caledonia a paying concern. At every point where the vein is exposed, the rock hangs heavy with copper, particularly in the deep adit and in No. 1 cross-cut east, on Knowlton vein, where, for a width of fifty feet, can be seen as rich a block of ground, we venture to say, as in any mine in our district. In the old or deep adit, where so much stoping has already been done, heavy mass and barrel copper is exposed. The Champion vein, in this part of the mine, maintains its acknowledged character for richness. Fine results may be expected when the directors decide to commence stoping operations. They have the rich ground, and also the room in which to work. Nos. 1 and 2 cross-cuts are something over 450 feet in length, and when the winze, now being driven, connects the cross-cuts, a very large amount of stoping ground becomes available. In the different levels driven from these cross-cuts over a hundred tons of stamp work, and very rich indeed, has already been thrown down, waiting removal to the stamp mill. The connections of these cross-cuts, and also the old or Butler shaft, with present workings, is the main desire of the winter. No works are to be prosecuted except to prepare the mine for workings on a large scale with the rise in price of copper, &c. The lately prepared plan of the mine, by Mr. Rudolph, show that to connect with the winze on the second level in the Butler shaft, from No. 2 cross-cut, rising 24°, the distance would be 100 feet, and to connect with the same point from the end of No. 1 cross-cut, rising 6°, the distance is 122 feet. The calculations are based on the supposition that the Butler shaft occupies a certain position, which the engineer was unable to determine to a certainty, on account of the water in the old mine, but the above distances, for all that is known, will be the number of feet to be driven by spring. If the discovery at the Ogima, referred to last week, proves all that we contend it will, the Caledonia can, by driving the Nos. 1 and 3 cross-cuts 50 to 75 feet, make connection with that great vein, and thus open up another channel of richness on their property.....The Victoria has remained idle for the past fifteen months. Capt. Henry Buzzo has taken the mine on tribute for the period of three years, commencing the 1st of May, 1868. We have not been able to learn the full conditions of the lease; simply, all the work must be confined to the old Forest vein, and a regular system of mining carried on. We shall look for encouraging results, believing that the Victoria has one of the best stamp lodes of any mine in Copperdom.

MISCELLANEOUS.

Washington.

A letter in the Portland *Herald*, from Gray's Harbor, dated

November 27th, says the people of that section are greatly excited about mines—gold, coal and coal oil. Dudley Henry is here looking after the gold on Smith's Point, but whether it will pay or not is more than I know. It appears to prospect very well. It is quartz, which has been discovered on John's river. Dave Hellser told me yesterday that he had discovered coal close to the harbor that cropped out of the bank six feet in depth and sixty feet in width, and a navigable stream runs right by it. Bruner, an old Californian, it is said, has discovered coal oil on John's river; he sunk a little hole, and in a short time the oil collected on the water, and he secured a half quart bottle full with a feather. He took it to Olympia, and it was pronounced genuine coal oil.

California.

A correspondent of the San Francisco *Times*, writes from Santa Cruz, under date Dec. 7: In coming to this place *via* San José and Watsonville, I passed the Chapman Quicksilver Mines, abont three miles from San José. I visited and inspected the lead and works. Quite a little mining town is springing up on the hills to the right of the road, in the immediate vicinity of the mining operations. I counted in this miniature valley, twenty-two houses and ten shanties, all, from appearance, within a year. The mine is a very promising one from all appearances. The lead, for three fourths of a mile long, produces ore varying in quality from five to thirty per cent. in quicksilver. The width of the lead where the pay ore is found, is judged to be over two hundred and fifty feet, though both the wall rocks of the mine are not yet very fully determined. They have not been down over fifty feet, and no assessments have been levied, as ore enough has been taken out to pay the expenses of opening the mine thus far, and three hundred tons of mineral are on hand, which will pay fifty dollars to the ton. A new furnace has now been completed, capable of reducing sixteen tons to the charge. It is constructed after the usual manner of such furnaces, with an improvement by the builder, Mr. I. M. Merritt, which consists in introducing iron plates under the brick work just above the foundation. The plates incline to the troughs, so as to prevent the metal from seeping through the foundation into the ground, and directing it into the receiver. The mine is in serpentine rock, has the same characteristics that are seen in the New Almaden, and belongs to the same general formation which can be traced from San Luis Obispo, in the south, to Lake conuty, in the north. Mr. John Goldsworthy, who has been brought up in practical mining and has studied the subject scientifically as mining engineer, is the superintendent at present in charge of the work.

MARKET REVIEW.

Gold and Silver Stocks—The market has again quieted down, and but few transactions are recorded. Many stocks, it will be noticed, by comparing the subjoined table with that published last week, have declined considerably, while, on the other hand, some few continue firm, even at a slight advance in price. Quartz Hill sells at $1 15; Consolidated Gregory, $3 40, and New York Gold $1 00. Quotations range:

	Bid.	Asked.		Bid.	Asked.
Alameda Silver	— 75	1 50	La Crosse Gold	— 35	39
American Flag	— 50	80	Liberty Gold	— —	4
Atlantic and Pacific	— 25	—	Manhattan Silver	140 00	150 00
Bates & Baxter Gold	— —	1 00	Midas Silver	— 75	1 00
Benton Gold	— 40	50	Montana Gold	— 32	39
Bobtail Gold	— —	2 00	New York	— 95	1 10
Black Hawk G	2 50	5 25	New York & Eld'o	— —	1 50
Bullion Consolidated	— —	1 00	Nyo Gold	— 3	5
Columbian G. & S.	— 4	10	Owyhee Mining	10 00	— —
Combination Silver	55 00	70 00	People's G. & S. of Cal	— —	40
Consolidated Gregory	6 40	5 45	Quartz Hill	1 10	1 15
Corydon Gold	45	52	Reynolds Gold	— —	— 5
Edgehill Mining	3 75	3 90	Rocky Mountain Gold	— 26	30
Gold Hill	— —	4 00	Seaver Gold	— —	— —
Gunnell Gold	1 05	1 30	Smith& Parmelee Gold	3 15	3 25
Gunnell Union	— —	40	Sensenderfer	5 00	8 00
H'n G & S. bs	— —	92	Symonds Fork Gold	— —	1 00
Harmon G. & S. bs	— —	10 00	Texas Gold	— —	15
Holman	— 5	15	Twin Riv. Sil.	60 00	— —
Hope Gold	— 10	25	Vanderburg G	— —	75
Kipp & Buell Gold	— 10	20	Yellow Jacket	— —	— —

Copper Stocks are dull and are quoted:

	Bid.	Asked.		Bid.	Asked.
Caledonia	....	10 00	Hancock	5 00	....
Canada	....	25	Hilton	....	1 00
Central	18 00	....	Isle Royale	....	5 00
Copper Falls	19 00	....	Knowlton	....	2 00
Davidson	44	46	Minnesota	....	5 00
Evergreen Bluff	....	3 00	Ogima	2 00	....
Franklin	9 50	....	Rockland	....	6 00
Gardiner Hill	....	1 50			

Petroleum Stocks are also dull. United States sells at $2 25; Pithole Creek continues to advance, being held at $1 30. The market is thus quoted:

	Bid.	Ask'd.		Bid.	Ask'd.
Beechcroft Run	2 00	2 25	N. Y. and Alleghany	1 75.	3 00
Brevoort	37	50	Pit Hole Creek	....	1 30
Buchanan Farm	32	34	Rynd Farm	17	22
Bilven	....	....	Second National	....	....
Central	....	75	United Pet. Farms	....	15
Clinton Oil	50	1 25	United States	2 25	2 35
Manhattan	....	10	Union	1 25	....
National	50	3 00	Webster	....	....

Government Stocks.—United States securities have advanced, in sympathy with the higher quotations for gold, and holders are firm. The market is quoted as follows:

U. S. 6s, 1868, reg. ..... 138½@ —
U. S. 6s, 1881, regular ..... 109¾@109⅞
U. S. 6s, 1881, coupon ..... 109¾@110
U. S. 6s, 5-20s, 1862, regular ..... 106 @ —
U. S. 6s, 5-20s, 1862, coupon ..... 109½@109¾
U. S. 6s, 5-20s, 1864, coupon ..... 107⅛@107¾
U. S. 6s, 5-20s, 1865, coupon ..... 108⅛@108⅜
U. S. 6s, 5-20s, July, 1865, coupon ..... 105⅛@105⅞
U. S. 6s, 5-20s, July, 1867 ..... 105¾@106
U. S. 5s, 1871, regular ..... 116 @116¼
U. S. 5s, 1874, reg. ..... 108 @ —
U. S. 10-40s, regular ..... 102⅛@102½
U. S. 10-40s, coupon ..... 102⅜@102⅝
U. S. 7-30s, June, large ..... 105⅛@105⅞
U. S. 7-30s, July, largo ..... 105⅛@105⅞

Miscellaneous Stocks.—New York Central, 122½; Erie, 74¾; Hudson River, 139; Reading, 92½; Michigan Southern, 86¾; Pittsburg, 93¼; Northwestern, 61¾; Northwestern Pref., 72¼; Toledo, 102½; Rock Island, 96¾; Pacific Mail, 110¾; Western Union Telegraph, 87½; Adams' Express, 78¾@79; American, 75½@77, United States, 78¾@79¼; Wells, Fargo & Co., 48@48¾, Merchants' Union, 25 per cent., 37½@38; Rutland Marble, $11; Wallkill Lead, 51; Quicksilver Mining, 25@25½; Mariposa Pref., 14¾.

Foreign Exchange continues dull. The advance in gold has facilitated exports, and there is consequently an improved supply of produce bills. Merchants do not appear to have any important remittances to make, and are deferring buying bills, in many cases, in hope of the gold premium ranging lower. Prime bankers' 60 days' sterling is quoted at 109¼@109⅝. The following are the current rates:

London, (prime bankers')60 days' ..... 109¾@109¾
London, (prime bankers') sight ..... 110⅛@110
London, prime commercial ..... — @ —
Paris, (bankors') long ..... 5.16¼@ 5.15
Paris, (bankers') short ..... 5.13¾@ 5.12½
Antwerp ..... 5.18¾@5.16¼
Swiss ..... 5.18¾@5.16¼
Hamburg (bankers') ..... —@ —
Amsterdam (bankers') ..... 41½@41¼
Frankfort (bankers') ..... 41½@41¼
Bremen (bankers') ..... 79¼@79⅝
Berlin (bankers') ..... 72 @72⅝

Gold is unsettled, the price fluctuating between 138¾@139¼.

American silver sells at 5¼@6¼ cents below gold. Mexican dollars are quoted at 102¾@103 in gold.

The steamship America, from this port on Thursday for Europe, took out $61,980 in specie.

The Pacific Mail Steamship Company's steamship China, sailed from San Francisco on the 13th inst., for Yokohamma, carrying $584,000 in treasure, of which $205,000 is for Japan, and the balance for China.

Copper.—In the beginning of the week a good deal of business was done; the sales amounted to 700,000 lbs., at 23 for Baltimore, part March delivery, 23¼ for Detroit, cash, and 24 for March delivery, and 22¾ to 23, cash, for Portage Lake. During the last two days the market is quiet but firm. The production at Lake Superior is likely to show a falling off this year, as some of the leacing companies have reduced their mining forces.

Tin.—Sales of 700 slabs Straits reported in Boston at 24c. This is the quotation here · Banca, 26; English, 23¼, with a retail business only.

Lead is firm at 6¼c. for ordinary foreign, with sales of 50 to 75 tons.

Spelter dull, at 6¼c. gold, without wholesale transactions.

Pig Iron.—Scotch is firm under the advance of gold. Sales of 1,000 tons Eglinton, $36, and 200 to 300 tons Glengarnock at $37 from ship. American is quite nominal.

Petroleum is dull, at 10c. for Crude, and 24½c. for Refined, in bond.

Receipts for the week ending Jan. 14	pkgs	5,552
Exrorts for the week	gals	1,488 570
Do. from January	do.	1.8 '0,655
Do. same time last year	do.	1,530,175

THE IRON TRADE.

NEW YORK, January 17, 1868.

The Iron market this week exhibits decidedly a better aspect. Scotch Pig has advanced in price, owing to the cessation of unprofitable imports and the rise in gold. American has not been in much demand, the market being most firm, though not brisk, in Scotch. No contracts for the former have as yet been made. At the close of last week 1,000 tons No. 1 were sold on private terms, since which time 300 tons will cover all the sales effected. In rails the market has been somewhat more lively. We note sales of 500 tons Bessemer steel rails, at $105, gold; 2,000 tons American, and 400 tons old rails on private terms. The increased demand in manufactured iron of last week continues, but not in the manner necessary to effect desired results.

WEEKLY STATEMENT OF NEW YORK IRON IMPORTS.

The following table shows the quantity and value of iron imports at the New York Custom House, for the week ending and including Jan. 10, 1868:

	QUANTITY.	VALUE.
Anvils	22	181
Iron, Hoop, tons	48	2,241
Iron, Pig, tons	850	11,742
Iron, Railroad bars	3,257	17,125
Iron, Sheet, tons	38	2,857
Iron, other, tons	1,600	48,410
Nails	3	385
		82,941

Lehigh Valley Iron Trade.

The following table shows the amount of Pig Iron transported over the Lehigh Valley Railroad for the week ending Jan. 11, 1868:

From	Tons.	Total
Carbon Iron Co.	130	410
Lehigh Valley Iron Co.	130	420
Thomas Iron Co.	400	1,210
Lehigh Crane Iron Co	210	480
Allentown Iron Co.	50	55
Robert Iron Co.	145	470
Glendon Iron Co.	370	750
Other shippers	90	276
Total	1,525	4,081

Missouri Iron Trade.

The following figures show the amount of Iron and Ore shipped over the St. Louis and Iron Mountain Railroad from Iron Mountain and Pilot Knob during the month ending Dec. 31, 1867:

Pig Iron, Tons 505
Ore, tons 2,919

From the 1st to the 7th of January, 1868, there was transported over the same road the following amount:

Pig Iron, tons 108
Ore, tons 999

Iron Shipments from Liverpool to the United States.

The following are the shipments of Iron from the port of Liverpool for the week ending December 28, 1867:

CHAINS AND ANCHORS.—Boston, 1 ton chains; New York, 10 tons chains; San Francisco, 28 tons chains, 27 tons anchors.
IRON, BAR AND BOLT, tons.—Boston, 52; New York, 129; Portland, 3.
IRON, HOOP, tons.—Baltimore, 18; Boston, 2; New Orleans, 6; New York, 10.
IRON NAILS.—New York, 144 tons.
IRON, PIG, tons.—Baltimore, 75; Boston, 3; Philadelphia, 50.
IRON PLATE, tons.—New York, 2.
IRON, RAILWAY, tons.—New York, 177.
IRON, ROD, tons.—Boston, 73; New York, 130.
IRON, SHEET, tons.—Boston, 2; New York, 22; San Francisco, 1.
IRON, WIRE, tons.—New York, 2.
STEEL, tons.—Boston, 19; New York, 42; Portland, 21; San Francisco, 1.

Scotch Pig Iron Trade from 1845 to 1867.

The following table exhibits the progress of the Scotch iron trade, during the past twenty years, showing the total of pig-iron made annually; the shipments and home consumption; the stock on hand, and the number of furnaces in blast on the last day of each year since 1845:

FURNACES IN BLAST.	MAKE.	SHIPMENTS AND HOME CONSUMP'N	STOCK.
	Tons.	Tons.	Tons.
On Dec. 31, 1845.. 88	475,000 in 1845	390,000 in 1845	245,000 " 1845
" " 1846.. 98	570,000 " 1846	666.000 " 1846	149,000 " 1846
" " 1847..100	510,000 " 1847	579,000 " 1847	80,000 " 1847
" " 1848..103	580,000 " 1848	562,000 " 1848	98,000 " 1848
" " 1849..112	690,000 " 1849	578,000 " 1849	210,000 " 1849
" " 1850..105	595,000 " 1850	535,000 " 1850	270.000 " 1850
" " 1851..112	760,000 " 1851	680.000 " 1851	350,000 " 1851
" " 1852..113	775,000 " 1852	678,000 " 1852	450,000 " 1852
" " 1853..114	710·000 " 1853	950,000 " 1853	210.000 " 1853
" " 1854..117	770,000 " 1854	860,000 " 1854	120.000 " 1854
" " 1855..121	825,000 " 1855	847,000 " 1855	94.000 " 1855
" " 1856..128	832,000 " 1856	842.000 " 1856	88,000 " 1856
" " 1857..123	915,000 " 1857	843.000 " 1857	160,000 " 1857
" " 1858..132	945,000 " 1858	810.000 " 1858	295,000 " 1858
" " 1859..125	950,000 " 1859	915,000 " 1859	330.000 " 1859
" " 1860..131	1,000,000 " 1860	933,000 " 1860	427,000 " 1860
" " 1861..121	1,085,000 " 1861	927,000 " 1861	525,000 " 1861
" " 1862..125	1.080,000 " 1862	970,000 " 1862	645.0 0 " 1862
" " 1863..134	1,160,000 " 1863	1,105,000 " 1863	756.000 " 1863
" " 1864..134	1,160,000 " 1864	1,156.000 " 1864	760,000 " 1864
" " 1865..136	1,164,000 " 1865	1,272 000 " 1865	652,000 " 1865
" " 1866.. 98	924,000 " 1866	1,136,000 " 1866	510,000 " 1866
" " 1867..112	1,031.000 " 1867	1,068,000 " 1867	473,000 " 1867

Market Prices.

NEW YORK, Jan. 17, 1868.

DUTY.—Bars, 1 to 1½c. per lb.; railroad, 60c. per 100 lbs.; boiler and plate, 1½c. per lb.; sheet, band, hoop and scroll, 1¼ to 1¾c. per lb.; pig, $9 per ton; polished sheet, 3c. per lb. Paynble in gold.

Anthracite, No. 1, best.	$38 00@—	—	6 to 12x¾ to 5-8	165 00
" " 2x, fdry,	36 00	38 00	Common Iron	
" Grey Forge,	30 00	35 00	¾ to 2 in. round and sq.	95 00
Scotch Pig, from yard	39 00	42 50	1 to 6 in. wide by ¾ to 1 th.	95 00
Charcoal, coal blast	50 00	60 00	1 to 6 in. wide x¼ to 5-16 th.	105 00
Old Wrought sc'p, fm yd.	40 00	— —	⅛, 9-16, 5-8, 11 16, r'd & sq.	105 00
" " " fm. vsl.	37 00	— —	2½ to 3 inches	105 00
English rails, gold	52 50	53 00	Refined Iron.	
American " at works	78 00	80 00	¾ to 2 in. r'd and sq.	105 00
Nails and spikes	5 75	....	1 to 6 in. wide x ¾ to 1 th.	100 00
Old Railroad Iron	45 00@....		3½ and 3½, round and sq.	115 00
Hoops, ¾ per ton	$190 00		Rods—5-8 and 11-16, round & sq., per ton	105 00
" ⅝ "	160 00		½ and 9-16 round & square.	110 00
" ½ "	150 00		7-16, round and square	120 00
" 1 "	140 00		⅜, " "	125 00
" 1¼ "	137 50		5-16, " "	130 00
" 1¾ to 2 per ton	137 50		¼, " "	134 00
Scroll Iron—¾x14 per ton	180 00		3-16, " "	165 00
" 12 "	170 00		Horse Shoe Iron	127 50
" 10 "	160 00		Band—1 to 6 in, x 3-16 to No. 10	132 50
" 3-16 "	150 00		1 to 6 in. x No. 11 and 12	132 50
" ¼ "	140 00		Ovals and half Rounds.	
" ¾x14 "	160 00		¾ to 1¼	127 50
" 12 "	160 00		⅜ & 11-16,	132 50
" 10 "	150 00		½ & 9-16	137 50
" 3-16 "	140 00		Nail Rods, per lb.	
" ¼ "	135 00		"	9@10¼
" ⅞x14 "	150 00		Norway Shapes	8¾c
" 12 "	150 00		Spring Steel	10¼c
" 10 "	140 00		Tire " ⅞ to 1¼x1¼ & 5-16	10¾c
" 3-16 "	135 00		Toe Cork Steel	10¾c
" ¾ "	132 50		Sleigh Shoe Steel	10¾c
Swed'h I'n, ord'y sizes, ⅞ to 2 in. sq., per ton	155 00		Plow Steel—6 to 14x1¼ to ¾	11c
1¼x¾ to ¾ and ¾ in sq.	160 00			
1¼x¾ to ⅜	165 00			

[From Boston Shipping List.]

BOSTON, Jan. 15, 1868.

Swedish—common ass'd	$150@155	Scotch Pig, No. 1	
English—com	90 95	Gartsherrie	$42@43
do refined	100 105	No. 1, other brands	40 42
do sheet, per lb	6¼@10c.	American, No. 1	40 45
Russia, sheet	15@17c		

PITTSBURGH, Jan. 11, 1868.

Pig Iron and Blooms.—Dullness and inactivity continue to prevail in all branches of the iron trade. There is, however, increased inquiry on part of consumers of raw irons, preparatory to a resumption of operations.

Prospects of an active business, however, are not flattering. Manufactured irons are selling at relatively low rates, and under a light demand manufacturers are generally indisposed to accumulate stocks in advance of current wants of trade.

Stocks of desirable grades of standard forge descriptions continue light, and prices fairly maintained, but in medium and inferior grades, concessions are making to effect sales.

The market for foundry irons is excessively dull, and under pretty liberal receipts and pressure to sell, a heavy decline in Hanging Rock descriptions has been established.

Coke, 400: anthracite, 235; charcoal, 825; bituminous coal smelted, 425 tons. Total, 1 885 tons.

We quote the following sales:

BITUMINOUS COAL SMELTED FROM LAKE SUPERIOR ORE.

75 tons Inferior Forge ..... $35 50—cash.
150 tons Inferior White and Mottled ..... 37 50—5 mos.
100 tons Open Gray ..... 38 00—5 mos.
100 tons Open Gray, favorite brand, at furnace ..... 28 50—60 dys.

CHARCOAL.

100 tons No. 1 Foundry ..... $47 00—4 mos.
250 " " " ..... 47 00—4 mos.
50 " No. 2 " ..... 44 00—6 mos.
200 " No. 1 " ..... 47 00—time.
100 " " " ..... 48 00—time.
125 " " " ..... 50 00—time.

ANTHRACITE.

130 tons No. 3 Josephine ..... $40 00—cash.
150 " Mottled ..... 37 00—4 mos.

ALLEGHANY COKE.

150 tons Coke, Langhlin's ..... $38 00—cash.
150 " " " ..... 38 00—4 mos.
100 " " " ..... 38 00—4 mos.

IRON BARS AND NAILS.

During the past week trade has ruled dull. By reference to our schedule of prices, it will be seen that the prices of all kinds of iron, excepting boiler and tank, has been reduced one-quarter cent. per pound, to take effect on Monday next. Prices of nails remain as last quoted.

STEEL.

Is dull, but quite firm, with advancing rates of gold.

LONDON, Dec. 28, 1867.

(From the London *Mining Journal*.)

Bars, Welsh in Lond.	£6 10 0@..	....	To arrive	10 5 0 10 10 0
Ditto to arrive	6 10 0	....	Do. railway, Wales.	£5 0 0@£5 10 0
Nail rods	7 0 0	7 10 0	Do, merch. Tyne or	
" Stafford in Lond.	7 10 0	8 10 0	Tees	6 10 0 .. ....
Bars	7 10 0	9 10 0	Pig, No. 1. in Clyde.	2 13 0 3 0 0
Hoop	8 10 0	9 12 6	Do. f.o.b. Tyne, Tees.	2 9 6 .. ....
Sheets, single	9 5 0	10 0 0	Do. Nos 3, 4, f.o.b. do	2 6 6 2 7 0
Pig, No. 1, in Wales	3 15 0	4 5 0	Railway chairs	5 10 0 5 15 0
Refined metal, ditto	4 0 0	5 0 0	" spikes	11 0 0 12 0 0
Bars, common, ditto	5 15 0	6 0 0	Indian Charcoal Pigs	
Do. Swd. in London	10 5 0	10 10 0	in London	7 0 0 7 10 0

STEEL.

Swed., kegs (rolled)	14 5 0	.. .. ..	Swed., in faggots	16 .. ..
" (hammered)	15 5 0	15 10 0	English, spring	17 0 0 23 .. 0

THE COAL TRADE.

NEW YORK, January 17, 1868.

The Coal market this week shows a slight improvement. The wholesale is more buoyant, but the retail is not perceptibly changed for the better Prices remain unaltered. Freights are for the most part irregular, and can hardly be quoted. Vessels are reported as quite scarce.

We would urge upon the superintendents of mines and coal agents, who have not yet sent us their annual statements, to do so as soon as possible, as we require them for immediate publication.

The following table shows the quantity of Coal shipped over the principal roads for the week ending January 11, 1868, compared with that shipped the same time last year:

	1867.		1868.		
	WEEK.	TOTAL.	WEEK.	TOTAL.	INCREASE.
Phil. & Reading R.R.	30,819	156,681	32,692	254,398	97,717
Schuylkill Canal	.....	.....	.....	.....	.....
Lehigh Val. R. R	24,408	79,427	33,853	193,989	119,562
Lehigh Canal	.....	.....	.....	.....	.....
Del & Hudson	.....	.....	.....	.....	.....
Scranton North	5 691	10,203	9,099	14,903	4.700
Scranton South	19,661	35,500	20,483	29,129 d	6,461
Penn'a Coal Co. Rail	12,823	20,303	14,236	22,559	2,256
" " Canal	.....	.....	.....	.....	.....
Wyoming North	.....	.....	.....	.....	.....
Wyoming South	.....	.....	.....	.....	.....
Shamokin	1.423	4.661	6,169	8,898	4.237
Trevorton	545	545	434	1,346	801
Short Mountain	759	1,265	945	1,691	426
L. V. Co	582	924	1,486	2.201	1.277
Broad Top	.....	6.124	2 411	4,495 d	1,629
Williamsto'n	.....	.....	.....	.....	.....
Total	96.711	315,723	121,658	538,609	.....
1866	.....	.....	96,711	315,723	.....
Increase	.....	.....	24,947	222,886	.....

Schuylkill Coal Trade.

BY RAILROAD, FOR WEEK ENDING JAN. 16, 1868.

St. Clair	26,126
Port Carbon	2,616
Pottsville	593
Schuylkill Haven	847
Auburn	153
Port Clinton	2,357
Total for week	32,692
Previously this year	221,796
Total	254,398

Lehigh Coal Trade.

SHIPPED BY RAILROAD FOR THE WEEK ENDING JANUARY 11, 1868.

WHERE SHIPPED FROM.	WEEK.	PREVIOUSLY	TOTAL.
	Tons. Cwt.	Tons. Cwt	Tons. Cwt.
WYOMING REGION.			
Franklin Coal Co.	....	....	....
Andenreid	....	50 06	50 06
Lehigh & Susquehanna	....	....	....
Germania Co.	471 17	866 02	1,337 19
Wilkesbarre Coal & Iron Co.	1,174 11	3.649 07	4,823 18
Warrior Run	398 12	1,161 07	1,559 19
Farrish & Thomas	1,695 01	3.822 00	5,517 01
New Jersey	154 11	1,353 12	1,508 03
Union	....	355 12	355 12
Wyoming Coal & Transportation Co.	437 13	1,096 05	1,533 18
Newport C. C.	....	....	....
Morris & Essex Mutual C. C.	....	644 18	644 18
Consumers	....	....	....
Everhart C. Co.	....	152 14	....
Plymouth C. C.	....	....	152 14
H. B. Hillman & Son	267 11	1,050 10	1,318 01
Bowkley, Price & Co.	....	149 08	149 08
Mineral Spring	....	1,529 05	1,529 05
Valley Coal Co	....	....	....
Enterprise Colliery (J. H. Swoyer)	253 15	1 948 18	2.202 13
G. B. Linderman & Co.	....	....	....
Washingtoo C. C.	....	....	....
West Pittston	....	....	....
Barclay Coal Co.	....	....	....
Shawnee	107 06	490 14	598 00
Consumers Coal Co.	127 11	461 11	589 02
Harvey & Bro.	121 18	343 09	465 07
Other shippers	....	....	....
		19,195 18	
Total	5,210 06		24,406 04
B. M REGION.			
New York & Lehigh	1,916 11	5,680 17	7,597 08
Honey Brook	80 03	8,411 10	8,491 13
German Penna. Coal Co.	713 06	3,687 07	4,400 13
Spring Mountain	....	6,461 15	6,461 15
Coleraine	49 15	3,559 02	3,608 17
B. Meadow, D. W.	....	....	....
John Connery	....	....	....
Lehigh Zinc Co.	....	....	....
Spring Brook	....	....	....
Other Shippers	....	31 05	31 05
Total	2,759 15	27,831 16	30,591 11

HAZLETON REGION.			
Central Coal Co.	....	....	....
Ashburton Co.	57 12	27 03	84 15
Mount Pleasant	325 17	1,842 06	2,168 03
Hazleton	4 167 09	20,766 10	24,933 19
East Sugar Loaf	4,334 16	11,237 14	15,572 10
Mount Holl	....	219 14	219 14
Latimer (A. Pardee, Jr., Bro. & Co)	446 00	1,694 08	2,140 08
Stout Coal Co.	....	3,105 09	3,105 09
Harleigh	1,131 15	5,026 11	6,158 06
Ebervale C. Co.	591 12	7,391 09	7,983 01
Jeddo (G. B M. & Co).	3 258 02	11,614 13	14,872,15
Woodside, J. C. Co.	191 08	770 14	962 02
Highland Coal Co.	2,061 04	5,906 16	7,968 00
Cross Creek	223 03	2,276 03	2,496 06
Council Ridge	1,988 11	8,035 00	10,023 11
Buck Mountain	250 09	3,639 18	3,890 07
Other shippers	....	....	....
Total	19,024 18	83,554 08	102,579 06
UPPER LEHIGH REGION.			
Upper Lehigh Coal Co.	1,154 18	7,049 13	8,204 11
Other shippers	....	....	....
Total	5,488 14	7,049 13	8,204 11
MAHANOY REGION.			
Trenton Co.	....	....	....
Mount Etna	45 19	545 01	591 00
Mahanoy Colliery	742 01	1,509 13	2 251 14
Dolano	....	....	....
Glendon Colliery	747 14	2,061 08	2,809 02
Primrose Colliery	....	550 05	550 05
E. S. Silliman	2,181 06	9,412 10	11,593 16
McNeal Co.	100 16	2,113 11	2 214 07
Knickerbocker	490 04	3,642 06	4,132 10
Thomas Coal Co.	134 10	2,161 19	2,296 09
Williams & Herring	156 17	600 13	757 10
New Boston C. C.	497 07	3,565 11	4,062 18
Shamokin C. C.	....	....	....
Caledonia M. and M.	607 00	1,325 17	1,932 17
Coal from Catawissa Railroad	....	....	....
Other shippers	....	15 13	15 13
Total	5,703 14	27,501 07	33,208 01
Grand total	33,853 11	165,136 02	198.989 13
Same time last year	24,408 15	55,018 10	79,427 05
Increase	9,444 16	110,117 12	119,562 08
Decrease	....	....	....

Cumberland Coal Trade.

From the Alleganian.

COAL TRADE BY RAILROAD.—Statement of Coal shipments over the Baltimore and Ohio Railroad for the week ending Jan. 11, 1868:

From George's Creek via Piedmont.		Tons.
George's C. & I. Company		127 03
Central	do	46 03
Piedmont	do	280 00
Swanton	do	177 13
Potomac	do	947 15
George's C M	do	106 07
Franklin	do	955 17
Hampshire	do	1,164 36
Total		3,806 14
From C. and P. R. R.		Tons.
Consolidation		2,474 05
Boraen		1,334 07
American		101 08
Midland		89 42
New Hope		117 15
From Eckhart R. R.		Tons.
C. C. and I.		153 08
Total		8,077 04

Prices of Coal by the Cargo.

[CORRECTED WEEKLY.]

At New York, January 18, 1868.

Schuylkill R. A., choice	$5 75@$6 00		Lehigh Broken	5 25	....
" Ordinary	5 25	5 50	" Egg	5 25	....
" W. A., Lump	5 25	5 50	" Stove	6 80	....
" Steamboat	....	5 25	" Chestnut	4 20	....
" Broken	....	....	Wilkesbarre Lump	5 25	....
" Egg	....	....	" B'ken & Egg.	5 25	....
" Stove	5 50	5 75	" Stove	5 50	....
" Chestnut	4 00	4 25	" Chestnut	4 75	....
Lehigh White Ash Lump.	5 37	...			

SPECIAL COALS.—DEALERS' QUOTATIONS.

Diam'd Vein R. A., Sch'kill	....	....	H. Heils, E. S'kiln, Lorh. 5 50 ....
Locust Dale W. A., "	....	....	New England Red Ash $5 25 ....
Honey Brook " Lehigh.	5 50	....	Broad Mountain 5 25 ....
Harleigh " "	5 50	....	Wyoming 5 00 ....
Spring M'n " "	5 50	....	McNeal Co. 5 50 ....
Sugar Creek " "	5 50	....	Locust Mount'n (Reppller) 550 ....
Ashburton " "	5 50	....	Duncan Red Ash " 6 00 ....
Fulton White Ash	5 50	....	W'barre Coal & Iron Co. 5 25 ....
Stout	5 50	....	New Burgh Orrell Gas Coal 9 00 ....
Old Co 's " "	5 50	....	Despard Gas Coal 9 00 ....
Buck Ridge W. A., Sh'kin.	5 00	....	

Dealers in these Coals may he fennd in our advertising columns.

At Philadelphia, January 18, 1868.

Lehigh Lump and St'mb't.	$5 00@....		Schuylkill Chestnut	2 75	....
" Broken and Egg	5 00	....	Locust Mount Lump and Steamboat	4 25	....
" Stove	5 00	....	" Broken	4 25	....
" Chestnut	3 75		" Prepared	4 25	....
Schuylkill R. A. Prepared	4 25	4 50	" Chestnut	2 87	....
" Chestnut	2 75	....	Lorberry Coal	4 25	....
" W. A. Lump and Steamboat	4 25	....	Shamokin	4 75	....
" Broken	4 25	....	Franklin, (Lykens Valley)	4 75	....
" Egg and Stove	4 25	....	Broad Top	4 75	....

Scranton Coal at Elizabethport, January 18, 1868.

(Corrected weekly by D. L. & W. R. R. Co.)

Lump	$4 25@....		Egg	5 00	....
Steamer	4 50	....	Stove	5 50	....
Grate	4 75	....	Chestnut	4 40	....

Prices for Pittston Coal at New York, January 18, 1868.

(Corrected weekly by Penna. Coal Co.)

Lump, per ton of 2240 lbs.	$5 40@....		Egg " " "	5 40	....
Steamer, " " "	5 40	....	Stove " " "	5 60	....
Grate " " "	5 40	....	Chestnut " " "	4 90	....

Lackawanna at New York, January 18, 1868.

Lump	$5 50@....	Grate	5 75@....
Steamer	5 50@....		

Lehigh Coal at Elizabethport, January 18, 1868.

Lump	5 50@....	Chestnut	4 50 ....
Steamboat and Broken	5 25	Stove	5 50 ....
Egg	5 25		

At Baltimore, January 18, 1868.

Wilkesbarre & Pittston W. A. by cargo or car	$5 50@5 75	From wharf or yard, 75c. to $1 per ton additional.	
Lykens Valley R. A. by cargo or car	5 75@ 6 25	Retail, del'd, per 2,240 lbs	7 00@7 75
Sunbury & Shamokin R. or W. A. by cargo	5 50 5 75	George's C'k and Cumberland f. o. b. at Locust P't for shipping	4 85@5 00

At Havre de Grace, Md.

Wilkesbarre or Pittston, W. A., on board	$4 85@5 10	Sunbury or Shamokin, R. or W. A., on board	....@5 25
		Lykens V'y. R. A. on b'd.	5 60@5 85

The above rates are only nominal. Shipping at this port is suspended for the season.

At Georgetown, D. C.

George's Creek and Cumberland on board, $4 25@ 4 50

Wilkesbarre Coal at Elizabethport, January 18, 1868.

(Corrected by Wilkesbarre Coal & Iron Co.)

Lump	$4 50	Egg	5 00 ....
Steamer	4 50	Stove	5 25 ....
Broken	4 75	Chestnut	4 50 ....

Ten cents additional on shipments from Jersey City.

Prices of Provincial Coals.

[CORRECTED WEEKLY BY LOUIS J. BELLONI, JR., 43 PINE STREET.]

Duty $1.25 per ton.

Block House (on board)	$2 00 gold		Little Glace Bay "	1 87½	"
Gowrie "	1 75	"	International Co.'s "	1 75	"
Lingan "	1 75	"	Slack Coal B. H., "	75	"
Sydney "	2 25	"	" L. G. B., "	1 90	"
Pictou "	2 25	"			

Prices of Foreign Coals.

Duty $1.25 per ton.

Corrected-weekly by PARMELEE BROS., 32 Pine Street, N. Y.

Liverpool Gas Caking	$11 00	Liverpool House Cannel	—@20 00
" " Cannel	14 00	" " Orrel	16 00@18 00

Per ton 2240 lbs., Ex. ship.

PRICES FROM YARD:

Liverpool Orrel, screened	$18@20	Liverpool Cannel, scr'd	22 00@— —

per ton 2000 lbs. delivered.

Coal Freights.

(Corrected Weekly.)

From Elizabethport.

Albany	$ 90@— —		New London	1 50@— —	
Boston	2 25	2 00	Newport	1 75	— —
Bridgeport	1 25	— —	New York	65	60
Fall River	1 75	— —	Norwalk	1 25	— —
Hartford	1 50	— —	Norwich	1 65	— —
Hudson	1 00	— —	Pawtucket and towing	2 00	— —
Lynn	— —	— —	Portland	2 25	— —
Middletown	1 25	— —	Portsmouth	2 15	— —
New Bedford	1 75	— —	Providence	1 75	— —
Newburyport	2 50	— —	Salem	2 25	— —
New Haven	1 25	— —	Taunton	1 40	— —

From Washington, N. J.

Hackettstown	$ 58	Iron Dale	$ 1 19
Waterloo	81	Dover	1 24
Stanhope	90	Paterson	1 80
Port Morris	99	Pompton	80
Rockaway	1 32	Bloomfield	1 80
Denville	1 33	Newark	2 00
Boonton	1 44	Belleville	2 10
Little Falls	1 70	Communipaw	2 10
Drakesville	1 08	Jersey City	2 20
Dickerson's Basin	1 11	New York	2 20

From Baltimore.

To Philadelphia	$1 40@— —	Boston	2 25@ 2 50
New York	2 10 — —	Sound Ports	2 25@ 2 50
Washington	1 10 — —	Norfolk	1 00@— —
Annapolis	75 — —	Richmond	1 30@— —

From Georgetown or Alexandria.

To Philadelphia	$1 50 — —	Boston	2 75 2 50
New York	2 15 — —	Sound Ports	2 25 2 50

Foreign Freights.

New Castle and Ports on Tyne	£17 keel.
Liverpool	12 6@15s. ton.

SAN FRANCISCO STOCK MARKET.

A telegram from San Francisco, dated the 12th inst., to Messrs. LEES & WALLER, Bankers, 33 Pine street, this city, quotes Nevada silver and other stocks as follows:

Stocks.	Bid per ft.	Stocks.	Bid per ft.
Gould & Curry	385	Belcher	175
Savage	2,500	Imperial (per share)	175
Chollar Potosi	225	Alpha	750
Ophir	70	Kentuck	275
Hale & Norcross	2,850	Cal. Steam Navigation Co.	84
Crown Point	975	Cal. State Telegraph Co.	51
Yellow Jacket	750	Greenbacks	..

The Discoveries in Jerusalem.

The London *Times* publishes an interesting letter in regard to the discoveries in progress at Jerusalem, from which we select the following: The colossal foundations of the temple wall, which are "stones of ten cubits and stones of eight cubits," laid by Solomon or his successors on the throne, are now being laid bare at the enormous depth of ninety feet and more beneath the present surface. The bridge that once spanned the ravine between the palace on Zion and the temple on Moriah, is now proved to have been upward of sone hundred and fifty feet high. If this be a sit seems, the ascent to the house of the Lord which Solomon showed to the Queen of Sheba, we cannot wonder that on seeing it there was no more spirit in her. The pinnacle of the temple, on which the tempter placed the Saviour, has been uncovered to the base, and is found still to have an elevation of 136 feet. The statement of Josephus is therefore no exaggeration. "If any one looked from the battlements into the valley he would be giddy, while his sight could not reach to such an immense depth." Sections of the ancient wall of Ophel have been exhumed, showing that as Josephus says, it was joined to the southeast angle of the Temple. Aqueducts, cisterns, rock-hewn channels and passages, have also been discovered within and around the harem, throwing new light on the buildings, the arrangements, and the services of the temple. The great work of a complete exploration of ancient Jerusalem is thus fairly and auspiciously commenced. The opportune visit of the Sultan and grand vizier to this country, and the representations made to the latter by the archbishop of York, followed up as they have been by the energy, the wisdom and tact of Lieutenant Warren and his admirable staff, have smoothed down Moslem prejudice, removed local opposition, and thus brought about opportunties for excavation and exploration such as never occured before; and, besides, large numbers of Arab laborers have been trained to the work and are eager to be employed; and the exact points for successful exploration are now well-known

Brief Mention of the Resources of Nevada.

It is very frequently asked whether this State has any other resources than silver by which its population may be sustained and enriched. It embraces an extensive region, large tracts of which have received no further exploration than the hasty and random visits of the prospector for silver mineral. Enough is known, however, to warrant the assertion that not only the noble metals but also many of the useful metals, as well as a great variety of mineral substances, exist, and some of the latter in such abundance that they must become of considerable value as commodities when greater facilities shall be offered for transporting them to points of manufacture or consumption. Besides the salt beds which we have frequently described, there are sections in which copper and iron ores of superior quality abound; beds of sulphur, from several of which the mineral is obtained quite pure, though frequently mixed with gypsum or other matter; deposits of lignite, and possibly true coal, though the State is not regarded as a carboniferous region; there are gypsum, manganese, plumbago, kaoline, and other clays useful for making pottery and fire brick; there are many of the more important salts and varieties of alkaline earths, soda in all its combinations, occurring in nearly all parts of the State in great abundance. Galena, zinc, antimony, arsenic, cobalt, and nickel occur in combination with silver and other metals. Limestone, granite, marble, and other rocks suitable for building purposes, with slate suitable for roofing, are common, and generally easily obtained by quarrying them above ground. Ores of iron exist in great abundance, and the opinion has been expressed that iron could be manufactured to great advantage in some localities where its consumption is considerable and freights are high. Perhaps the most extensive bed of iron ore yet discovered in the State is situated in the district of Mammoth in Nye county.

Upon many of the alkaline flats, as well as about certain springs and other localities, the carbonate of soda exists so pure and in such profusion that it will yet become one of the staple exports of the country. There is a strong probability that nitre, borax, alum, and other salts will be found in such quantities as to render them valuable. The state is rich in organic remains, both animal and vegetable, and some of the latter are of extraordinary size and beauty. Great fragments of fossiliferons wood, and even the entire trunks of large trees, have been discovered lying upon the surface of the ground in a high state of preservation. The most beautiful of those remains occur in the districts of Volcano and San Antonio, fine specimens of which have been collected and now adorn cabinets here as well as in the older States. No precious stones have as yet been discovered, we believe, though opals and agates—the latter in great variety and of remarkable beauty—have been found in many sections of the State. As we said at the outset of this brief mention, the present knowledge of our resources is meagre and unsatisfactory.—*Reveille.*

Gold in Norway.

Mr. Ashburton furnishes the *Transcript* with a translation from the *Scandinavian*, of October 17th, in regard to the discovery of gold mines of almost fabulous richness in Norway: "These fields are found in the northern part of Norway. It is said that a tributary of the Tana river, which forms, in part, the boundary between Norway and Lapland, on account of the late spring and high water, changed its channel in one place, and in the old bed of the stream gold was found, not only in fine dust, but also in large lumps. One person who has been in California, states that the locality where this discovery was made resembles very much the gold fields of that State. Gold is also said to have been found in Alten. The Christian Morgenblad has information from Finmarken, that wages for workmen engaged in gold washing in the rivers have gone up several dollars specie per day."

All Sorts.

☞ White ants have proved so destructive to the wooden sleepers of East India railways, that Government, some time since, offered a reward of £50 for the discovery of any means for putting an effectual stop upon their ravages. It would naturally be expected that the jarring of the sleepers, whenever trains passed them would of itself drive them from the wood, but the contrary is the case. The timbers have been boiled in poisonous liquids and have been coal-tarred, but neither operation had the desired effect. In response to the Government offer, many plans were presented, but the successful competitor has recommended "teak oil." It has been shown that timber coated with this specific, remained untouched, after lying for a long time, even in the very nests of the white ants. This subject deserves the attention of our American inventors.

☞ Mr. Samuel Gardiner has just placed his electro gas-lighting apparatus in the picture gallery of A. T Stewart, Esq., it being a part of the magnificent mansion which he is soon to occupy on the Fifth avenue. The numbers of burners is 325. The room was instantaneously lighted on the evening of the 19th inst., and was decided by Mr. Stewart, Mr. Kellum, the architect, and others present, to be a perfect success. From the street the view was magnificent, the reflected light being seen at the distance of several blocks. On turning the gass off and on, the effect was like that of repeated flashes of lightning. In the Gardiner machine each burner is lighted by means of a platinum wire, made red-hot by means of an electric current.

☞ Certain native animals of New-Zealand, seem to give way before those from Europe, with which they are brought in contact. The Norway rat has completely exterminated the native rat of New Zealand. The English house-fly drives out the blue-bottled native. Cap. Cook carried pigs to New Zealand and they increased so rapidly that landlords now offer rewards for killing them. English weeds monopolize the soil. European clover exterminates the native flax-plant, and European annuals destroy the New-Zealand perennials. These facts tend to prove that organisms of the northern latitudes are more hardy than those nearer the Equator.

☞ In 1835, the first two steamers for the Swedish fleet, were built, namely, the Gylfe and Oaden, each 100 horse power. In 1840, the first iron steamer was built in Sweden by Owen; she was 60-horse power, and was called the Oresund. In 1844, tubular boilers were first used in Sweden. In 1848, the first screw corvette, of 300 horse power, was built in Sweden. In 1865, the Swedish fleet got her first monitor, the John Ericsson; she was built at Motala from Ericsson's designs and has engines of 150-horse power; she is 205 feet long and 46 1-2 beam, with 11 1-4 feet draught. Two such vessels have since been added to the fleet.

☞ A suspension bridge is to be erected by M. Ondry, engineer, over the Straits of Messina, Sicily, from Point Pezzo, on the Calabrian coast. It is to consist of four spans of 3,281 feet each, elevated about one hundred and fifty feet above the level of high water, so that the largest ships may pass under. The proposed Roebling bridge over the East river, between New York and Brooklyn, is to have a single span of one thousand six hundred feet.

☞ About twenty-five years ago the valuation of real and personal estate in New York city and county, was a little over $220,000,000, and the taxation thereupon was nearly $1,750,000. This year, while the estimated property value had by the last valuation risen only to $736,000,000, the Comptroller's computation for taxes, calls for about $22,000,000. The taxation has grown from $5 50 per head to over $30, nearly sixfold.

☞ It has been discovered by Professor Czermark, of the University of Jena, that the Egytians took off the skin from the soles of the feet of those who were to be embalmed, rolled it up and deposited it under the stomach of the deceased. He thinks this was symbolical of the eternal separation of the dead from the earth.

☞ The strongest and cheapest boots and shoes, worn in this country some times fail, owing to the shrinking of the wooden peg. A very simple remedy is to rub petroleum along the line where the upper leather is joined to the sole. When the pegs are saturated with this oil they resist the action of wet and dry weather.

☞ Mr. Micolan, of Paris, proposes the following alloy for bells as well as for hammers, hard tools, &c.: 20 parts of iron turnings or tin waste, 80 parts of steel, 4 parts of manganese, and 4 parts of borax, but these proportions may be varied, and two or three parts of wolfram may be added to increase the tenacity of the alloy.

☞ Evans' Pass, the highest point between the Atlantic and Pacific oceans—elevation, 8,242 feet above the level—will be reached by the Union Pacific railroad in January. Work on the rock cuttings on the Western slope, will continue during the winter, so that track laying may be resumed early in the spring.

☞ An ounce of the purest ultramarine is sold in France for 200 to 250f., which is not within the reach of all painters. In the year 1828, the discovery was made by Professor Gmelin, in Tubingen, that sulphuret of soda was the proper material for imitating this precious and valuable pigment.

☞ At Burning Springs, West Virginia, they use gas for cooking, heating dwelling and business houses, lighting the streets, running engines, &c. For several years this gas was allowed to escape from the wells, no one thinking it worth while to attempt turning it to any use.

☞ Illuminatind gas is said to be considerably increased in power by heating it and burning it with heated air. It would not be difficult or expensive to pass gas and air pipes, or a double pipe for both in connection with household furnaces, etc., and apply combination burners.

☞ The latest improvement in stock is a new breed of cats in Vermont, which have tails only an inch long. The advantages claimed for such tails is that they cannot get under a rocking chair or be stepped upon, and that the door can be closed quicker when they go out.

☞ The screw propeller is probably as old as the windmill, and a windmill of the construction now usually employed is shown in the seventy-seventh proposition of Hero's "Spiritalia," a work written 140 years before the Christian era.

☞ On the Rhenish line compound rails have been used, twelve inches deep, with steel tops, the base being nine inches wide, laid directly on the ballast—the whole weighing one hundred and five pounds to the yard.

☞ A gentleman, who recently traveled over a railroad, declared his opinion that it is the safest road in the country, as the superintendent keeps a boy running ahead of the train to drive off calves and sheep!

☞ Immense works have been commenced in the south of France, for rendering the Rhone navigable from Arles to the sea.

☞ Any odor in petroleum arising from sulphur may be removed by treating it with a solution of oxide of lead in caustic soda.

AMERICAN
Journal of Mining.

WESTERN & COMPANY, PROPRIETORS.

R. W. RAYMOND, EDITOR.

OFFICE, 41 PINE ST., NEW YORK.

EDITORIAL ROOMS, 37 PARK ROW.

By publishing contributions, the JOURNAL OF MINING does not necessarily endorse the positions assumed by contributors.

Published Every Saturday Morning.

TERMS.—Subscription, $4 00 per annum, in advance; $2 25 for six months; Single copies Ten Cents. ☞ Specimen copies sent free.

ADVERTISING:

Fifteen cents per line of thirteen words for each insertion. Terms invariably cash in advance. A discount allowed to permanent advertisers.

DESIGNING, LITHOGRAPHING, WOOD ENGRAVING, and JOB PRINTING
Executed in elegant style, on reasonable terms.

SPECIAL AGENTS AUTHORIZED TO RECEIVE SUBSCRIPTIONS.

MICHIGAN—J. W. CROZER, Ontonagon.
COLORADO—GEO. TRITCH, Denver City.
CALIFORNIA.—W. E. LOOMIS, San Francisco.
PENNSYLVANIA.—T. R CALLENDER, cor. 3rd and Walnut streets, Philadelphia
ENGLAND—FREDERICK ALGAR, 11 Clements Lane, Lombard street, London.
MEXICO.—JAMES SULLIVAN, City of Mexico.
CUBA.—THOS. W. WILSON, Havana.

Mr. T. P. PEMBERTON is editor of the Mechanical Department and agent for the AMERICAN JOURNAL OF MINING.

DEALERS AGENTS.

THE AMERICAN NEWS COMPANY, 121 Nassau street, N. Y
THE NEW YORK NEWS CO., 10 Spruce street, N. Y.

☞ Correspondents, exchanges and others addressing us should be *extremely careful* to write "JOURNAL OF MINING," instead of "MINING JOURNAL," to ensure safe carriage. Communications intended for publication should be plainly written, and on one side of the paper only.

☞ The American JOURNAL OF MINING has a larger circulation than any other paper of the kind in the United States.

NEW YORK, SATURDAY, JANUARY 18.

CONTENTS OF THIS NUMBER.

EDITORIALS.—The National School of Mines, V.—Processes Extraordinary—The Proximate Analysis of Coal—The California Geological Survey—Gas-Flame Reactions.
ORIGINAL PAPERS.—Mining and Metallurgy in Mexico, No. 2, by David Coghlan, M. E.—Gas-Flame Reactions, No. 10, by R. Bunsen.
ILLUSTRATED MACHINERY—Mining and Railroad Implements.
MANUFACTURING AND MECHANICAL NOTES, No. 2.—Fire and Burglar-Proof Safes.
MINING SUMMARY.—Gold and Silver: California, Montana, Nevada, Colorado, New Mexico, Idaho, Utah, Oregon, Arizona, Australasia. Copper: Michigan. Miscellaneous: Washington, California.
MISCELLANEOUS.—Ancient Roman Drawing Wheels—The New Territory of Wyoming—The Vermont Marble Quarries—Electric Safety Lamp—Lord Rosse's Telescope—The Lime Quarries of Maine—Foreign Miners' Licenses—Wind Power.
NEW PUBLICATIONS.
SPECIAL NOTICES.
MARKET REVIEW.—Mining and Petroleum Stocks, Finances, Stocks, Metals, etc.
THE IRON TRADE.
THE COAL TRADE.—Quotations, Shipments, Freights.
PATENT CLAIMS.
SPECIAL SCIENTIFIC BREVITIES.
ON-DIT ABOUT MINERALS.
ALL SORTS.

NOTICE.

Subscribers receiving their paper in a *blue* wrapper will accept the same as a notification that their subscriptions have expired, and that the journal will be discontinued unless we are otherwise authorized.

THE NATIONAL SCHOOL OF MINES.—V.

How far is the National School proposed in Senator STEWART'S bill a government affair? Certainly not more than are the free schools of New York and other States, to support which, the people are taxed without distinction, and to manage which, the people elect their Boards of Education and other officers.

The special tax on bullion is of questionable wisdom, not to say justice. The similar burdens laid upon petroleum and cotton have been found to prostrate industry; and if our mines of gold and silver bear the burden a little better, it is because it is not, in this case, quite so heavy. But there is no good reason for this tax. It is founded only in the simple policy which dictated to the framers of our present revenue system to hang a tax wherever there was a nail for it. The farmer was not taxed on his gross production of grain, but the miner it was thought, could pay an extra commission to the government from his golden gains. This mistaken notion about the profits of mining is due, no doubt, to the boastful talk of speculators and of those frothy politicians who have been thrown to the surface of affairs by the tumultuous agitations of the past few years. These two classes play into one another's hands. The speculator finds an El Dorado in every piece of ground he has to sell; and the stump speaker talks glibly of paying the national debt out of the treasures of the Rocky Mountains, as one pays the porter with a pinch of small change out of one's vest pocket. All this is nonsense. The national debt will be paid by the labor, not of any one class, but of all classes. To lay an undue proportion of the burden upon any one industry will merely depress that industry, and cause it to do less, not more, than its share of the work. The mining communities might with propriety demand the utter abolition of the bullion tax. Instead of that, however, they only ask that the proceeds may be applied to an object which concerns the welfare of the whole nation, quite as much as their own.

This object is so vitally important, so truly national and so impossible of attainment in any other than a national way, that it would be perfectly justifiable to seek it by taxing the shipper and the farmer, just as the miner is now taxed to support the Agricultural Bureau, the Lighthouse Board, and the Coast Survey. But the miner only asks to be allowed to pay all his other taxes, and to support in addition a National School of Mines. If *he* does not object to such an arrangement, who should?

We said at the outset of this discussion, that the school proposed would be, after all, just what its managers are willing and able to make it. The immediate question is, whether the plan proposed in Congress is the best that could be adopted. Of course the institution may suffer afterwards from incompetent management, be its original constitution never so good; but we think the guaranty of success in the organic structure of the school is unusually strong.

In the first place, the election of a delegate from each of some ten different States and Territories secures a board of trustees of high character.

If one State, or, still worse, one person had the nomination of all these trustees, it might be supposed that favoritism, or political preference, or simple carelessness, would admit to the list some unworthy names; but where each legislature chooses a single man, and that to a position not attended with pecuniary emolument, it is reasonable to expect that the honor will be conferred upon capacity and merit.

In the second place, the power given to the Secretary of the Treasury, and to him alone, of confirming the dismissal of professors, &c., is a praiseworthy feature of the bill, calculated to secure the school against being affected by partisan politics. The Secretary of the Treasury is not controlled entirely by partisan intrigues. The Postmaster General (perhaps without any great detriment to the public service) puts none but political friends in office; the land and Indian agencies are understood to be among the spoils of party; army and naval contracts go by favor; in the Treasury Department itself, the immense revenue service is far too nearly an administrative contrivance to reward adhesion and punish defection; but there are some things which stand unchanged through the vicissitudes of parties. The Mint and the Assay Office, the great national institutions, once put into good hands, have been left there by the wise firmness of successive ministers of finance. It is, moreover, a significant fact, that under all administrations our secretaries of the Treasury have been men of ability. We are at all times a great deal more certain of finding in the Treasury than in the White House, a man who can consider the fundamental interests of the country and of science, aside from temporary issues, and who, in exercising the power conferred by this bill, would act without reference to petty intrigues and revenges. In a word, although we do not implicitly follow Mr. MCCULLOCH in his political and financial course, we are perfectly willing to entrust to him the power of final decision concerning the removal of officers of the proposed National School.

The provision that the professors shall travel every year through the mining districts is another excellent feature, which we shall consider next week, in connection with the location indicated for the school by the bill.

PROCESSES EXTRAORDINARY.

A correspondent of the San Francisco *Mining and Scientific Press* describes as follows the work of the Dozier Metallurgic Company, situated at Benton, 110 miles from Carson City, the capital of Nevada, and 45 miles from Aurora.

"Discarding the mechanical mill process for reducing silver ores to an impalpable powder, and then collecting their precious particles by the agency of quicksilver; also discarding the European and Mexican tedious imperfect process by smelting—Dr. Dozier effects easily and at once by the laws or forces of chemical analysis and combination, aided by the agency of heat, a nearly complete separation of the baser metals—antimony, copper and other metals—from the precious metals of gold and silver. As a demonstration will soon be made, when it is expected, the works will themselves report as to the success and completeness of the process, further description of the works, or explanation of the process would seem at present to be uncalled for."

The ores of the district, including the Camanche, Diana, Cornucopia, and other mines, have given some trouble to the smelters, we believe; but the real trouble, in many cases, has been the regular and unreliable character of the veins. The Cornucopia, for instance, stopped for want of paying ore; and the same was the case with neighboring mines. Much of the ore is the so-called Partzite, and not difficult to treat successfully by intelligent smelting. The shipment of rich ores to Swansea, in Wales, involving 275 miles of overland transportation, was a piece of poor economy, we think. It would have been easier to import capable metallurgists to treat the ores on the spot. This was indeed done in one or two instances.

As for Dr. DOZIER and his process, we may safely presume that he will not put ore into veins that are barren now, and, furthermore that he is not likely to improve upon the "European tedious and imperfect process by smelting," by using the "forces of chemical analysis and combination, aided by the agency of heat." The fundamental theory of smelting is the separation of metals by the force of their chemical affinities. Silicic acid, which is one of the very weakest at ordinary temperatures (an aqueous solution of it will not even expel carbonic acid from its salts) becomes the most powerful of all at high temperatures, driving out the strongest acids with ease. Other affinities and reactions are modified by the excessive heat of the smelting furnace, and the ore is reduced to a molten condition, so that its elements may most freely follow the laws which the metallurgist has discovered, and knows how to use with skill. Speaking in general terms, the "forces of chemical combination and the agency of heat" could not be more effectively applied than they are in smelting. We fear Dr. DOZIER'S dose is but quack medicine.

In the same journal we find a paragraph on RIVOTS' process for extracting gold and silver from sulphurets by the use of superheated steam, which is about to be revived in California. The agent asserts that by this process it is possible to work ores and tailings *thirty per cent. above the assay value.* The *Press* well says:

"Of course this assertion implies that our assayers do not reach the full value of our ores by their laboratory work. The value of this assertion may be estimated when it is stated that all assayers are in the habit of *proving* their work by placing known quantities of metals in non-metalliferous rocks, and proceeding in the usual way to recover it. New process men would be much more likely to succeed in securing the confidence of the mining public on this coast, if they would confine their pretensions more closely to facts, and let their *work* precede their *assertions.*"

There are some ores which can be treated more economically on a large than on a small scale; so that the furnace of the smelter sometimes gives as good results, or even slightly better, than the crucible of the assayer. In some of the silver-lead reduction works of the Hartz, for instance, the workmen were found to earn a considerable surplus when the fire assay was made the standard of production; and the "assays of control" were therefore ordered to be made in the hurried way. The reasons of the superior economy of the furnaces in such cases are mainly two, and simple enough. The first is the fact that the loss by volatilization is greater in a crucible, which has a wide mouth, and, at best, a loose lid, than in a furnace, which is provided with dampers, condensing chambers, &c. The second is that minor losses in slags and refuse, which are not recoverable in an assay, are constantly recovered in workings on a large scale. The matt and slag from one operation may be utilized in the next; and thus, sooner or later, the valuable metals of the ore are extracted.

These triumphs of metallurgical economy, however, are only possible under the most favorable conditions, and to the highest skill. For the present state of the art in this country, it may be considerd a decided success to approach within ten per cent. of the pulp assay; and we may lay down as a safe general rule that any man who prates of extracting more than its assay value from any ore is either ignorant of the principles of metallurgy, or imagines everybody else to be so.

THE PROXIMATE ANALYSIS OF COAL.

The two papers from Prof. HINRICHS, of Iowa, on the analysis of the coals of that State, which we have recently published, contain matters of interest and value to chemists and geologists. We think that the distinguished author is inclined, however, to claim (by hint, at least,) a novelty for his methods of analysis and computation which they by no means possess. Not to multiply references, he will find the importance of the ratio between the volatile matters and the carbon of the coal set forth in JOHNSON'S *Report to the Navy Department on American Coal*, 1844, and the same author's *Researches on American and Foreign Coals*, published in 1850. The same point is made clear in BODEMANN'S manual of assaying, and is, we venture to say, familiar to most chemists. The true value of Prof. HINRICHS' labors lies in the application of a well-known method, to the demonstration of a great general uniformity in the character and value of the combustible of a large coal-field.

The conclusion of the first paper, that "the total volatile matter of coal is determined with accuracy by taking one to two grammes of undried, pulverized coal, heating it for three and a half minutes over a Bunsen burner, and then immediately, without cooling, for the same length of time, over a blast gas-lamp," can hardly be meant to apply to all coals, since Prof. HINRICHS will certainly not claim that all kinds of coal require the same length and exposure to a given heat, in order to drive away the volatile parts.

It is also a question of some importance whether a fat coal, like that of Iowa, could be exposed to the degree of heat, and for the length of time, which Prof. H. recommends, without an undue waste of the coke. He has given us very acute speculations and determinations as to the slow oxidation of coal; may there not be a quick oxidation, which would seriously affect the Professor's procrustean plan of analysis? Finally, as he complains of the incomplete details which others have given of their experiments, we must beg him to add to his own description an answer to the question: how closely did he cover his crucible?—an element of the problem, one would think, worthy of notice. With this exception (doubtless an unintentional omission), we cannot too highly praise the fullness of Prof. HINRICHS' description, and the evident thoroughness of his experiments. If other chemists should at any time disagree with his results, they will have no difficulty in comparing his methods, step by step, with their own. If all scientific men would adopt this accuracy in little things, there would be fewer disputes and strange contradictions of facts.

THE CALIFORNIA GEOLOGICAL SURVEY.

Prof. Whitney, the State Geologist of California, read a paper, Dec. 2, 1867, before the California Academy of Natural Sciences, on the condition of the State Geological Survey. From a condensed report in the San Francisco *Mining and Scientific Press* we extract a few facts of special interest.

The survey is now seven years in progress; and, out of the dozen or fifteen volumes contemplated, only two or three have

been published; but considerable work has been done in preparing materials for the remainder. We regret especially that the results of Mr. S. F. PECKHAM's examinations of all the important oil-bearing localities in the State, and of the samples collected from each, must wait for publication until the Legislature appropriate money enough to continue the general work and to publish the volume on economical geology, which is understood to be nearly ready for the printer, and to contain articles on the non-metalliferous minerals, such as coal, all bituminous substances, petroleum, asphaltum, building materials, mineral paints, fire-clays, &c. No plans have yet been made for thorough economical reports on the metalliferous mines of the State, the geologist very judiciously remarking that superficial investigations will be of no service, and that a thorough performance of a work so important to the State would require a sufficiently liberal appropriation to allow the engagement of competent assistants. The table of quartz mills between the Merced and Stanislaus rivers, by the late Mr. REMOND, is the only publication of mining statistics yet made by the Survey.

The main work of the last two years (aside from Mr. GABB's palæontological labors) has been topographical. As a necessary preliminary to a complete geological map of the State Prof. Whitney is preparing a careful geographical map. There is no such map at present in existence. The United States Land Survey abounds in errors and discrepancies, which only a series of astronomical observations can correct and reconcile. At least eight different maps are projected by the State Geologist, of which the map of the whole State will have the scale of ten miles to the inch.

An appropriation of $15,000 is asked for the continuance of the Survey through the present fiscal year; and, if this is not granted, the work will be stopped at once. The total cost to the State thus far has been $134,000; and the completion of the work will certainly requireas much more—if indeed we may properly speak of a completion: the department of geological survey should be a permanent bureau in the government of every State. As no one questions the ability with which this enterprise has been thus far conducted, and as the outlay already made will have been practically wasted, unless its results, by continued liberality, are put into a permanently useful form, there is no reason to doubt that the Legislature of California will promptly make the appropriation required.

Those journals which inveighed, "half in joke and all in earnest," against the excursions of Prof. WHITNEY to Washington, Oregon and Nevada, will be pleased to learn that, for the six weeks he spent in those regions, the State of California paid neither his salary nor his expenses. We must confess, however, that, to outsiders, observing the industry and devotion of the distinguished State Geologist, the enforcement of such petty "drawbacks" appears unworthy of a great and prosperous commonwealth.

GAS-FLAME REACTIONS.

We give this week the tenth and last instalment of BUNSEN's admirable monograph on the reactions of substances in the flame of the non-luminous burner which bears his name, and which has now received a new and most interesting application at his hands. As the instrument of rapid, convenient and accurate qualitative analysis, the gas-flame is, for most substances, superior to the blow-pipe, although the latter possesses, it must be acknowledged, the advantage of being portable. We have received, from accomplished chemists who have practised this new method, strong assurances of its high practical value, and we are urged to republish, in pamphlet form, the treatise of BUNSEN on the subject, which we have already given in our columns. Should we complete our arrangements for such a measure, we believe we might rely upon receiving both the patronage and the gratitude of every chemist in the country.

MECHANICAL NOTES.

The new series of articles we have commenced under the caption of "Manufacturing and Mechanical Notes," will, we hope, prove acceptable and interesting to our readers. They are written with a view of giving information upon practical science, and explaining, in a comprehensible manner, the various mechanical operations of the day. Any parties who wish for a description of their manufactory, machinery, inventions, or improvements, will receive attention upon applying at this office; and, if the subject offered is calculated to interest and instruct our readers, we shall with pleasure make arrangements for its examination and presentation in our columns.

NEW PUBLICATIONS.

EL CORREO HISPANO-AMERICANO. *A Journal of Commerce, Agriculture, Mining, Mechanics, Railway Enterprise, &c.*

The first number of this new Spanish American periodical, which is to be issued hereafter on the 1st, 10th, and 20th of every month, lies before us. Its typography and general appearance are the same as those of the AMERICAN JOURNAL OF MINING, after saying which, we need not add that the CORREO is an extremely pretty paper. We find its eight pages well filled with able editorial matter, interesting miscellany, extended and thorough market reports, and advertisements of a substantial character. We observe that many of the esteemed patrons of the JOURNAL OF MINING have appreciated the advantages for extensive advertising offered by the CORREO HISPANO-AMERICANO, and have hastened to secure for themselves room in its somewhat limited columns. If the present active patronage be continued, the Spanish paper will have to be enlarged, like its American companion, to sixteen pages, to accommodate at once the demands of readers and advertisers.

The editorials and translations contained in this number, reflect credit upon DON J. DE VEITELLE, the editor, and sufficiently indicate his general intelligence and literary ability. We notice especially the accuracy and facility with which English technical terms are rendered into Spanish, a feat of which few men are capable. Sometimes the editor goes perhaps farther than is necessary, to make matters perfectly plain, as, for instance, in the following sentence: "Los anuncios so justifican en la letra llamada nonpareil (en español, nonpareil.)" "Advertisements are printed in the type called *nonpareil* (in Spanish, *nonpareil.*)" This is a trifling error, if error at all.

That our readers may see the range and variety of the CORREO, we subjoin a translation of the table of contents of the first number.

EDITORIALS.—Prospectus.—Steamship Line between New York and Vera Cruz.—Waves Produced by Earthquakes.—Malleability of Metals.—Manufactures in the United States.—Tobacco in France.

AGRICULTURE.—Three Practical Questions about Manures.—New Catalogue of Agricultural Implements.

MINING.—Coal Mines in South America.

MACHINERY.—Steam Pump (Illustrated).—Improved Wrench (Illustrated).

MISCELLANY.—Extra Duties in Venezuela.—Imports in San Domingo.—Great Progress of Agriculture in Mexico.—The Sugar Industry in France.

COMMERCIAL AND FINANCIAL REVIEW.

TELEGRAPHIC NEWS.

MARINE NEWS.

Scientific Meetings.

POLYTECHNIC BRANCH OF THE AMERICAN INSTITUTE.

TUNGSTEN—CAN CHARCOAL BE MADE TO CUT GLASS?—SUSPENSION BRIDGES—METALLIC RAILWAY CARS.

The regular weekly meeting of the Polytechnic Branch of the American Institute was held last Thursday evening, Prof. Tillman in the chair. The hall was well filled by the members and auditors.

A desultory discussion arose as to the peculiar properties of tungsten, during which no new ideas were evolved. A statement was, however, ventured that steel was rapidly superceding iron, and that soon all articles now manufactured from the latter would be made from the former. Dr. Van der Weyde exhibited a tungsten steel knife of very ordinary pattern, and proved its power of cutting glass. A question was started respecting the truth of the statement that a Paris chemist had succeeded in giving to charcoal the diamond's property of cutting glass. Prof. Joy stated that it was true to a certain extent, but that it had been accomplished only at an outlay of time and money, which would make the charcoal more expensive than the native diamond.

Mr. Bender read a paper on suspension bridges. Owing to the length of the essay the first part only was given, being a description of the various suspension bridges thus far erected, with the history of their origin and construction. The first bridge of the kind was built in America by Finley, in 1796—a fact to which the President subsequently referred with some warmth of national feeling. The second portion of Mr. Bender's essay was deferred until the next meeting, when he will propound a new theory of construction.

Mr. Lamoth exhibited a cross section of a metallic passenger car. Its chief merit seems to be its peculiar construction, for which tubes are used, instead of bars, and which are curved at the corners, and not bent at right angles. Its claim was for great durability, enabling it to withstand any accident or wear. Apart from the fact that it cannot be burnt, or easily destroyed, it possesses the recommendation of cheapness, costing about twenty per cent. less than other patterns. One of these cars has been in use since 1859, and though it has been in one collision, it is pronounced now almost as good as new. A small model car chair about three inches high, dependant on the same principles of construction, was also exhibited, which it was boldly stated would sustain a weight of two hundred pounds. The covering of the car was to be metallic, and of a very ingenious principle. The windows were to be sufficiently long to permit the escape of passengers, should the doors in any accident be closed. The hour having arrived, the meeting was then adjourned.

City of Paris.

The annual report issued by Baron Haussmann, Prefect of the Seine, contains some interesting statistics concerning the growth, revenue, improvements, and population of the French capital. The document shows that during the year ending the 30th of September last 2,325 houses, comprising 14,287 separate apartments, were pulled down in the 20 arondissements; while during the same period 3,809 houses, consisting of 23,753 apartments were erected; the increase was consequently 1,484 houses, affording accommodation for 9,466 families. The greater portion of the new constructions were in the outlying districts, included between the former exterior boulevard and the fortifications; in the more central quarters the aggregate number of constructions and demolitions was about balanced, although rather unequally distributed over the different arrondissements. The report shows that in the entire department of the Seine, which, in addition to the 20 arrondissements of Paris, includes those of St. Denis and Sceaux, the number of houses built during the last fifteen years has been 86,944, and of those demolished 21,641. The total direct revenue of the city of Paris amounted during the year to 39,238,752f., divided as follows: Land tax, 10,995,702f.; furniture tax 6,424,989f.; doors and windows, 17,298,587f.; and licences to trade, 17,298,587f. The return of the recruitment in the city of Paris shows that although the population has continually increased, the number of young men of 20 called on to draw lots for the conscription on the last occasion showed a falling off of 528 from the previous year. The report attributes the result, which has also occurred all over France, to the famine of 1846, which rendered the marriages in that year less prolific. There were on the 31st of December last in the department of the Seine, 1,482 primary schools, of which 361 were public and 1,482 private; the number of pupils was 82,385 or 6,939 more than at the date of the previous return.

Speed of Railways.

Dr. Lardner adopts some ingenious arguments or rather illustrations, to render familiar the extraordinary velocity with which express trains move. The Great Western Express to Exeter, travels at the rate of 43 miles an hour, including stoppages, or 51½ miles an hour without including stoppages; to attain this rate a speed of 60 miles an hour is adopted midway between some of the stations; on certain experimental trips 70 miles an hour have been reached. A speed of 75 miles an hour is about equivalent to 35 yards per second, or 35 yards between two beats of a common clock: all objects near the eye of a passenger travelling at this rate will pass by his eye in the thirty-fifty part of a second; and if 35 stakes were erected at the side of the road, a yard asunder, they would not be distinguishable one from another: if painted red, they would appear collectively as a continuous flash of red color. If two trains with this speed pass each other, the relative velocity would be 70 yards per second: and if one of the trains were 70 yards long, it would flash by in a single second. Supposing the locomotive which draws such a train to have driving wheels 7 feet in diameter, these wheels will revolve 5 times in a second; the piston moves along the cylinder 10 times in a second; the valve moves and the steam escapes ten times in a second—but as there are two cylinders which work alternately, there are really twenty puffs or escapes of steam in a second. The locomotive can be heard to "cough" when moving slowly, the cough being occasioned by the abrupt emission of waste steam up the chimney; but twenty coughs per second cannot be separated by the ear, their individuality becoming lost. Such a locomotive speed is equal to nearly one-fourth that of a cannon ball; and the momentum of the whole train, moving at such a speed, would be nearly equivalent to the aggregate force of a number of cannon balls, equal to one-fourth the weight of the train. That 'smash' should follow a collision, is no subject for marvel, if a train moving at such a speed—or anything like such speed—should meet with any obstacle in its progress.—*Dodd's Curiosities of Industry.*

The National Domain.

Very few persons have a definite conception of the extent of our National Domain. What are called the "Land Estates and Territories"—a list of which is given below—contain one billion and nearly five hundred million acres. The last report of the Commissioner of the General Land Office, gives the number of acres of public lands surveyed up to June 30th, 1866, as 475,160,554, and the number of acres not yet surveyed as 991,308,249. Only the merest fraction of our public lands is yet settled upon, and the whole vast area is open for free homesteads. The following table gives the aera of the land, States and Territories:

	In acres.	In Square miles.
Wisconsin	34,511,360	53,924
Iowa,	35,228,800	55,045
Minnesota,	53,459,840	83,531
Kansas	52,043,520	81,318
Nebraska Territory,	48,636,800	75,995
California,	120,647,840	188,981
Nevada,	52,184,980	81,539
Oregon,	60,975,360	92,274
Washington Territory,	44,796,169	69,994
Colorado,	66,880,000	104,500
Utah Territory,	68,084,480	106,382
Arizona Territory,	80,730,249	126,142
New Mexican Territory,	77,568,640	121,201
Dekota Territory,	153,982,080	240,597
Idaho Territory,	53,136,480	60,932
Montana Territory,	92,016,640	143,776
Missouri,	41,824,000	65,350
Alabama,	32,462,080	50,722
Mississippi,	30,179,840	41,156
Louisiana,	26,461,440	41,349
Arkansas,	33,406,720	52,198
Florida,	37,931,520	52,268
Ohio,	25,576,960	39,964
Indiana,	21,637,760	33,809
Michigan,	36,128,640	56,451
Illinois,	35,482,400	55,410
Indian Territory,	44,154,240	68,990
Total,	1,475,468,800	2,289,795

New-York, the "Empire State," has only 46,000 square miles; Nevada has twice as many square miles as New York, and Kansas and Nebraska have each nearly twice as many; Colorado and Utah are more than twice as large as New York; Montana more than three times; California more than four times; and Dekota more than five times. The "Empire State" could be lost over and over again in our National Domain, and we should have to send our surveyors with a solar compass to run her base lines and find where she was.

Extent of the Amazon.

The following extract is from Prof. Agassiz's new book entitled "A Journey in Brazil:" "A region of country which stretches across a whole continent and is flooded for half the year, where there can never be railroads or highways, or even pedestrian travelling to any great extent, can hardly be considered as dry land. It is true that in this oceanic river system the tidal action has an annual instead of a daily ebb and flow, that its rise and fall obey a larger orb, and are ruled by the sun and not the moon; but it is, nevertheless, subject to all the conditions of a submerged district, and must be treated as such. Indeed these semi-annual changes of level are far more powerful in their influence on the life of the inhabitants than any marine tides. People sail half the year above districts where for the other half they walk, though hardly dry shod, over the soaked ground; their occupation, their dress, their habits, are modified in accordance with the dry and wet seasons. And not only the ways of life, but the whole aspect of the country, the character of the landscape, are changed. The two picturesque cascades, at one of which we took our bath the other morning, and at this season such favorite resorts with the inhabitants of Manaos, will disappear in a few months, when the river rises for some forty feet above its lowest level. Their bold rocks and shady nooks will have become river bottom. All that we hear or read of the extent of the Amazon and its tributaries fails to give an idea of its immensity as a whole. One must float for months upon its surface, in order to understand how fully water has the mastery over land along its borders. Its watery labyrinth is rather a fresh-water ocean, cut and divided by land, than a network of rivers. Indeed, this whole valley is an aquatic, not a terrestrial basin; and it is not strange, when looked upon from this point of view, that its forests should be less full of life, comparatively, than its rivers."

Resources of New Jersey.

In the Annual Message of Gov. Ward we find the following in regard to the public resources of New Jersey: Its mines of iron and zinc are a source of wealth to the State. More than 250,000 tons of the richest iron ore have been mined in the State this year, which, at the mines, is worth a million dollars. The zinc mines have yielded 24,000 tons of ore, all of which is manufactured into spelter or zinc oxide within the State, and have yielded products worth nearly if not quite a million dollars more. This product of zinc is more than half the yield of the United States, and is considerably more than is supplied from all the mines in Great Britain. When the proposed improvements in opening, draining and reclaiming land are carried out, the area capable of high cultivation, may be doubled, and the State can support a population three times as large as the present. Transportation of marl on railroads has this year reached about 150,000.

Manufacturing and Mechanical Notes.

No. 2.

Fire and Burglar-proof Safes.

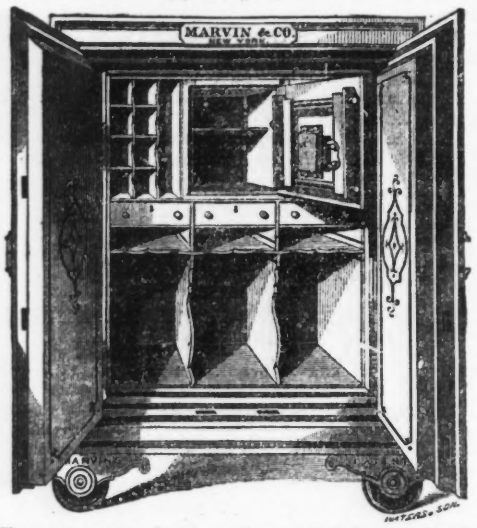
We cannot take up any daily or weekly newspaper for perusal without meeting with some account of a disastrous fire or a daring burglary. Despite all the numerous insurance companies, with their legion of agents, and millions of capital; in opposition to all the efforts of brave firemen and their humming fire-engines; in the face of a supposed intelligent and watchful police, who are, or ought to be, the careful guardians of our home and property during the hours of night; fires will break out, leaving not a wreck behind, and burglars will break in and steal. When a business firm or any individual have, by dint of untiring assiduity and perseverance, combined, perhaps, with a certain degree of shrewdness, accumulated money and valuables, it is only natural to suppose that the preservation of them becomes a matter of no small importance. To have our business fail through fire, or our earnings deposited in the pocket and den of a burglar, are certainly among things which try men's souls. Yet such occurrences are by far too frequent, even in this our day of iron bolts and salamandrine buildings. Too often does the deep-toned bell proclaim the presence of the raging fire, and the consequent destruction of property, and too seldom does the wary detective fail in rescuing money and valuables from the clutches of the burglar and thief.

The improvements in mechanism, throughout all business departments, have of late years been both rapid and extensive; and we select for notice the great progress made in the manufacture of fire and burglar-proof safes. There are now many enterprising firms engaged in making safes, and there is a vast amount of ingenuity displayed in their respective construction In fact, these iron closets bid defiance to the burning element, and the burglar has to be a very ingenious and persevering fellow in order to surmount the difficult devices prepared for his practice. "The more ingenious men are, the more apt are they to trouble themselves" for the honorable rivalry existing between nations and individuals, in regard to making safes fire and burglar-proof, develops some curious contrivances, and a great amount of excellent workmanship. In fact, no sooner does some cunning contrivance and arrangement in safe-making become known, than mechanics study to surpass it by a still greater perfection.

Among those who have done much in the construction and manufacture of safes is Walter K. Marvin, of the firm Marvin & Co., 265 Broadway, New York, who has been engaged in manufacturing safes for many years. The father of Walter K. Marvin commenced dealing in safes in 1841. The factory of Marvin & Co.—the present style of the firm—is situated in West 37th street, near 9th avenue, and is the largest building of its kind in the United States. The entire structure is one hundred and twenty-five feet front, by one hundred feet in depth. The buildings are quadrangular in figure, enclosing a spacious yard, and are four stories high, with a good airy basement. The average number of hands is one hundred and twenty, and the firm have turned out over 21,000 safes. The machinery is driven by one of the Allen's engines of fifty horse power, a plain and noiseless specimen of a finely constructed steam engine. Among the many facilities we observed in the workshops for manipulation of materials, our space will only permit us to mention a ponderous pair of shears, which cost $4500, and are capable of cutting wrought-iron plates, one inch thick by ten feet long; a moveable platform connected to some powerful gearing, which permits the largest kind of safes to be placed under a polishing emery wheel; an elevator, made by Otis Brothers & Co., of Yonkers, New York, by which the heaviest safes could be carried from one room to another; numerous lathes, drilling machines, grooving and planing machines, and several circular saws, emery wheels, &c.

We will now say something concerning the safes manufactured here. The principal materials used in their construction are iron and steel plates with angle iron. Cast or chilled iron has been proved worthless for safes, as it can never be chilled hard enough to resist a good steel drill, and will invariably crack when exposed to fire. The steel used is tempered as hard as any drill can be; it is laid in bars, each layer of bars being at right angles to the next, with plates of heavy boiler iron between. The rivets are so arranged that none pass entirely through any part of the safe; and, of course, cannot be punched or drilled out. On all the burglar-proof safes Marvin's patent combination lock is used. This lock has no springs, is capable of 400,000 changes, cannot get out of order, is the easiest to operate, and among the most secure of any bank lock manufactured. One of the most important branches in the manufacture of these safes is the introduction of what is termed "filling." Iron plates are soon heated through, warped, and destroyed, when exposed any length of time to an intense heat. They would be useless, in case of fire, was it not for the "filling." Marble dust, plaster, and similar materials, have been used as filling, but the water which was combined with them rusted holes through the iron of the safes, and it made the interior constantly damp, moulding books and papers. Another objection to this kind of filling is that it becomes dry in three or four years time, and at the first exposure to heat, the safe being nothing but a dry oven, its contents are certainly destroyed. It is well known to the chemical student that alum is 55 per cent. water, which portion of water is set free, and forms steam at a moderate degree of heat. To fill a safe exclusively with alum, however, does not answer the purpose, as it melts too soon, or evaporates. A mixture of dry, calcined plaster of Paris, with the suitable proportion of alum, is used by Marvin & Co., as filling for their safes. This compound has been patented by W. K. Marvin, and possesses remarkable properties; it will keep dry for a great number of years, and yet instantly forms the suitable quantity of steam to protect the contents of the safe when subjected to heat. The excellence of this filling for the purpose of fire-proof safes has been tested and confirmed by many scientific men. Fig. 1 represents a folding-door fire-proof safe with a burglar-proof chest inside.

FIG. 1.



The arrangement of such a safe consists in having a burglar-proof chest, 18 inches high by 12 inches wide; sixteen pigeon holes, 4 inches by 4 inches; three drawers, 13 inches by 4 inches; book spaces across the bottom of safe, with movable shelves, and two alongside the burglar-proof chest, 18 inches by 4 inches.

By placing a burglar-proof safe, or specie vault on the inside, it adds to the security from fires as well as burglars; there are, therefore, two safes, and the protection is consequently doubled.

Safes of this description are made as large as 84 inches high, by 76 inches wide, by 32 inches deep, outside dimensions.

FIG. 2.

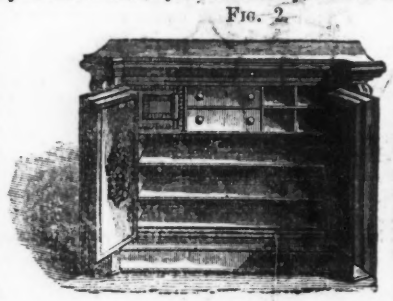


Fig. 2 represents the interior of a folding-door family plate safe. This has for its arrangement an iron vault 6 inches by 8 inches; two drawers, 12 inches by 3 inches; four pigeon holes; movable shelves for silver plate, lined with velvet, and the safe is painted to imitate furniture. It will be observed that the molding at the base covers the wheels or castors. Fig. 3 shows the same safe closed. These safes are made in both plain and ornamental styles, with single or folding doors, ornamented and painted in imitation of rosewood, walnut, oak or mahogany, with elegant marble tops and etageré pattern—forming a piece of handsome furniture for the dining room or library. They are secured by Marvin's patent powder-proof lock, with key weighing less than half an ounce, or with the patent combination lock.

FIG. 3.

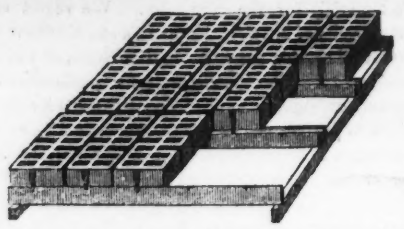
We noticed a very large and handsome safe at the manufactory of Marvin & Co., intended for the St. Nicholas Hotel in this city. It is about 7 feet high by 5 feet wide. The doors are 6 inches thick, and the whole of this massive work is put together in the strongest and most workmanlike manner.

The composition of dry calcined plaster of Paris and alum is packed in this safe as in others between the inner and outer cases. The advantages of using this dry filling are very apparent, viz: it does not mold the contents of the safe; it never can rust the iron; and it will always remain perfectly fire-proof.

L. B. TUPPER'S IMPROVED FURNACE GRATE BARS.

The best explanation of the principle on which these grate-bars are constructed, is found in the report given by the judges at the fifth exhibition of the Worcester County Mechanics' Association in the year 1866. They say—

"These Grate Bars are constructed upon a new principle, the peculiarities of which consist in the small surface of iron exposed to the action of the fire, as compared with the common bar now in use, preventing their becoming heated; while the surface in contact with the cold air being very large, the temperature is kept so low that the grate will not burn or twist; the air spaces being more numerous gives a better area for the passage of air to the fuel, causing more perfect combustion and a great saving of fuel. They will last nearly twice as long as the common kind, while their cost is about fifteen per cent. less."



The economy of this Grate over all other Short Length Grates will be noticed by reference to the above cut; the supports, as shown, are not affected by the heat, nor do they in the least obstruct the draught, being placed directly under the cross-section of bar.

This description of grate can be applied to square or circular furnaces. They are applicable to locomotive fire-boxes, to marine, horizontal, or upright stationary boilers.

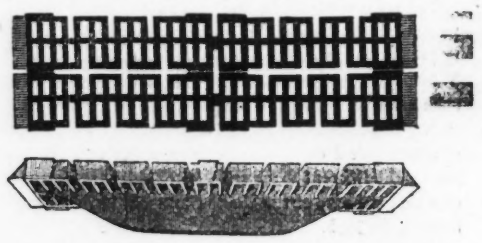


FIG. 2 is a top view of two bars in two lengths, and FIG. 3 shows the side and bottom view of one bar. From these illustrations it will be seen that the superiority of these bars over others is owing to the distribution of the metal in such a manner that all strain in consequence of expansion from heat is relieved, so that they will neither warp nor break. They give, also, more air surface for draft, and are at least one-third lighter than other bars, and save fifteen to twenty per cent. in fuel.

In a communication from an engineer of the Atlantic Cotton Mills in Laurence, Mass., an account is given of a trial with the Tupper Grate Bar. It says:

"1. Economy of first cost. The 25.504 square feet of bar, removed to make way for yours, weighed 2,016 lbs., which, at five cents per lb., (the present rate, I believe,) would be $100.80. The Tupper Bar of 25.122 square feet weighed 1,190 lbs., at 7½ cents per lb., $89.25; a gain of 826 lbs. in favor of the Tupper Bar in weight, and $11.55 in cost. 2. Durability. The small surface of the metal exposed to the action of the fire, as compared with the old bars, being for the Tupper bars 2267.208, and in the old bars 3163.125 square inches, prevent their burning, springing, and warping of the bar, which always gives more or less trouble with the common style of Furnace Bar. The latter trouble (springing) is also counteracted by the bevel given the ends, which forces up the fuel and clinker, as the bar expands. The more uniform distribution of the air keeping the bar comparatively cool. 3. Economy of fuel. The area of air space, as compared with the old bar, being for the Tupper 103.635 square inches, and with the old bar, 509.5 square inches, giving a more perfect distribution of oxygen to the fuel, and therefore requiring less cleaning of the fires, and, in consequence, a more perfect combustion in the furnace. In order to test this point, two furnaces were fired, one with 25,504 square feet of common bar, 1¼ in. wide, with ¾ in. air space, the other with 25.122 square feet of the Tupper Bar, ¾ in. wide, ¾ in. air space; distance of bar from crown sheet, 33 in. Each boiler was run one day of 23 hours and 10 minutes running time; thickness of fires on bars 8 in., the draft in the stack the same in both cases (.625 in.) the fuel a very good quality of anthracite. The consumption of fuel with the common bar was 8,000 lbs.: with the Tupper Bar, 7,052 lbs. The waste from the ash-pit was carefully sifted; under the common bar in 20 lbs. of waste, 11.5 lbs. was coal from the size of buckshot to a walnut, 6.5 lbs. of clinker and 2 lbs. of ashes. Under the Tupper Bar, in 20 lbs., 4.25 lbs. was coal of the size of buckshot, 3 lbs. clinker, and 12.75 lbs. of ashes."

The durability and advantage of these bars are apparent at a glance. It is, therefore, the manufacturers, and those suffering the frequent expense of replacing the ordinary bars, whose attention should be directed to a trial of these grate bars, which are now in use in a great number of places, including some of the largest steamship and manufacturing companies in the United States. The bar was patented June 14, 1864, and is the only grate-bar that has received a silver medal in the United States. These grates, with all other kinds of mechanical supplies, can be furnished at short notice by application at the Patentee's place of business, 120 West street, New York City.

Earthquake Waves — Curious Facts in Physical Geography.

The papers have lately announced the terribly destructive force of waves of the seas, produced by earthquakes, in the West India Islands. Professor Brocklesby, in his elements of Physical Geography, states some facts of an interesting character in reference to the velocity of these waves. On the 23d of December, 1854, immediately after an earthquake, the sea rolled in upon the town of Simoda, in Japan, in a wave thirty feet high, overwhelming it in an instant. After the wave fell there were only four feet of water in the harbor. Four or five similar waves followed at intervals, completing the destruction of the town. Professor Bache of the Coast Survey, by observations made on the tide gauges at San Francisco and San Diego, which registered all changes in the sea level, discovered that these earthquake waves at Simoda travelled across the Pacific. The distance from Simoda to San Francisco is 4,527 geographical miles, which was traversed by the wave in twelve hours and twenty-eight minutes, or with a velocity of six miles a minute. At San Diego, which is 4,917 miles distant from Simoda, the waves arrived an hour later, the velocity being sensibly the same. The curious fact is stated that the breadth of the wave, its velocity, and the depth of water in which it travels, have been found by Professor Airy to have a relation to one another. For example, a wave 100 feet broad, travelling in water 100 feet deep, has a velocity of fifteen miles per hour, while a wave 10,000 feet broad, travelling the ocean with a depth of 10,000 feet, advances with a velocity of 154 miles per hour. So that, given the velocity of a wave and its breadth, the depth of the water may be

calculated. Professor Bache from these data calculated the depth of the Atlantic, and found it to be on an average of 22,000 feet—a result corresponding with soundings made. The force of ocean waves has been calculated. During a storm on the western coast of Scotland, in March, 1845, the force of the waves was estimated at 6,000 pounds per square foot. It would seem that the immense wave, which, like a wall thirty feet high, moving with resistless velocity, struck the ship-of-war Monongahela broadside in the harbor of St. Thomas, and drove her from her moorings, forcing her over the tops of the warehouses, and leaving her, when the waves receded, high and dry on the coral reefs of the island, must have had a force even greater than 6,000 pounds to the square foot. If the ship had not yielded to the terrible impact of the water, and moved shoreward - if she had been stationary and immovable—she must have been crushed like a cockle boat or a shell by the terrific blow given by the wave.

Patent Claims.

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

72,714.—STEAM ENGINE.—Wm. Ball, Chicopee, Mass.

I claim in a steam cylinder the arrangement of the depressions, t, formed with reference to their induction and eduction ports at points intermediate between the ends of and around the inside circumference of the cylinder, substantially as and for the purpose described.

The arrangement of the steam passages, k, for conducting steam from the cylinder, below the piston head, in its ascent, around into space between the piston and cylinder head, to form a cushion for said piston, substantially as shown and described.

In said cylinder, the arrangement of ports, h1 h2 h3 h4, for operating the valves thereof, substantially as described.

The cut-off valve, t, in combination with the balance valve, c'', and piston, c, substantially as described.

The steam port, 1, in combination with port, 2, so arranged as to hold the piston in a fixed position until released, to prevent damage to the lower head of the cylinder, substantially as shown and described.

The arrangement of the steam exhaust port, 4, by which a free exhaust of steam from the upper end of the cylinder is effected before the ascent of the valve, c'', substantially as shown and described.

Producing a rotary reciprocating in connection with a vertical motion of the piston, c, in connection with one or more ports h1 h2 h3 h4, substantially as shown and described.

The port, 4, arranged with reference to the ports, 6 and 7, whereby a free exhaust is secured after the ascent of the piston, c, and by which, in connection with the steam cushion at the upper end of the cylinder, all injury is prevented to the cylinder in its ascent, substantially as described.

72,715.—MACHINE FOR STAMPING ORES.—Wm. Ball, Chicopee, Mass.

I claim, 1st. In connection with a quartz crushing machine, the sills, D, when constructed of metal in place of wood, as and for the purpose described.

2d. Arranging the bed plate, J. crosswise of a series of spring timbers, E, having their bearing upon metallic sills, D, substantially as and for the purpose described.

3d. The construction of the staves, e', tapering in form from the bottom toward the top, as specified, to suit the bell form of the mortar, substantially as and for the purpose set forth.

4th The hammer die, e, in combination with the surrounding stave-holding ring, e', substantially as and for the purpose described.

5th. The two-part ring, b, secured beneath the top-plate, and between it and the lining around the stamp-shaft opening, substantially as and for the purpose described.

6th. A tubular urn-shape ring necking, d, made in two parts, and secured upon the top plate around the stamp-shaft, opening substantially as and for the purpose described.

7th. The connection of the stamp shaft, K, with the steam piston, i, by means of the bonnet, i'', flange, i', and collar, j, with the interposed elastic washers, as described, all arranged and combined together in the manner and for the purpose set forth.

72,720.—STEAM GENERATOR.—G. H. Clarke, Brooklyn, N. Y.

I claim the arrangement of the series of hollow balls constructed substantially as described.

72,755.—MANUFACTURE OF STEEL AND IRON.—Jas. Park, Jr., Pittsburg, Pa.

I claim producing cast steel of mild or low temper, or wrought iron, in the manner substantially as hereinbefore described, by first melting partially carbonizing wrought iron in the ordinary or any other suitable furnace, and then adding to and melting in it highly heated wrought iron, so as to reduce the percentage of carbon in the mass, and repeating the process, if necessary until the carbon is sufficiently reduced or entirely removed.

72,794.—PREVENTING INCRUSTATION OF STEAM BOILERS.—Samuel G. Cabell, Quincy, Ill.

I claim, 1st. The application to steam boilers of an electrical conductor arranged to convey the electricity from within the boiler or steam space to the exterior of the boiler, said conductor being insulated where it passes through the shell of the boiler, substantially as described.

2d. In combination with an electrical conductor arranged as described the use of permanent magnets located within the boiler, substantially as set orth.

72,843.—REVOLVING RETORT FOR ROASTING ORE.—Wm. F. Goodwin, East New York, N. Y.

I claim a corrugated retort, constructed in form and manner and for the purpose substantially as described.

72,878.—MATERIAL FOR THE MANUFACTURE OF GLASS.—Peter E. Minor, Schenectady, N. Y.

I claim the manufacture of glass of the dross or refuse which is thrown off in the smelting of iron ore, substantially as described.

72,882.—STEAM ENGINE GOVERNOR.—Daniel F. Mosman, Cambridge, Mass.

I claim, 1st, The combination of two shafts, A B, having independent rotation in the same direction, and a sleeve, G, adapted to receive longitudinal motion, by any inequality in the rotation of the said shafts, substantially as and for the purposes set forth.

2d. The combination with the shafts, A B, of the arm F, and pin, f, the scroll cam, C, and sleeve, G, constructed and operating substantially as described.

3d. The combination of the sleeve G, plungers, H H,' and pins, k k,' and helical cam, L, constructed and operating substantially as described.

4th. The helical cam, L, in combination with a traversing rod, K, with an intervening device, such as the spring pins, k k', or their equivalents.

5th. The helical cam, I, in its combination with the pulley, M, the pawl and ratchet, m m', and the shaft, A.

6th. The cam, C, sleeve, G, ratchet wheels, g g', pawls, n n', and pins, f 1 t 2, on the arm, F, operating substantially as described.

72,884.—PUMP PISTON.—Benjamin H. Naves, Philaelphia, Pa.

I claim, 1st. The inside lining, C, constructed with a tapering base for receiving the clapper or valve box, and also with a provision at or near its upper end for receiving a packing, e, substantially as described.

2d. The pump bucket, A, constructed with two parts, a a', with packing, b, between said parts, being confined together, with the clapper held in place by means of tangs on the ends of the bail, E, substantially as described.

72,919.—ART OF MANUFACTURING AND UNITING ALLOYS OF METALS IN FORMING WATER PIPES AND OTHER ARTICLES.—William Anthony Shaw, New York City.

I claim, 1st. Covering the surface, either inside or out, or both inside and out, of an alloy of lead and antimony, or of lead and tin, or of lead, tin, and antimony, or their equivalents, for this purpose, with pure tin, when said alloy is made in a pipe, or other article of manufacture, substantially as described.

2d. Covering the surface, either inside or out, or both inside and out, of an alloy of lead and antimony, or of lead and tin, or of lead, tin, and antimony, or their equivalents, for this purpose, when made into a pipe or other article of manufacture, with an alloy of cadmium and tin, or of cadmium, tin, and bismuth, or of tin, lead, cadmium, and bismuth, or of tin and nickel, or of tin, nickel, and bismuth, or their equivalents, for this purpose, substantially as described.

3d. Covering an alloy of lead with an alloy of tin, when made in a pipe or other article of manufacture, by first making the lead alloyed pipe or other article, and then applying the tin alloy thereto in a state of fluidity.

72,931.—FURNACES FOR ROASTING AND TREATING ORE.—Charles Stetefeldt, Austin, Nevada.

I claim a furnace constructed with a shaft, B, the fall of the ore through which is retarded by the upward motion of the heated air and chloridizing gases, combined with a fireplace, J, opening into the canal, H', and below the fine, D, substantially as described and for the purpose set forth.

☞ At a certain College, the senior class was under examination for degrees. The professor of Natural Philosophy was badgering in optics. The point under illustration was that, strictly and scientifically speaking, we see no objects, but their images depicted on the retina. The worthy Professor, in order to make the matter plainer, said to the wag of the class:

"Mr. Jackson, did you ever actually see your father?"

Bill replied promptly, "No, sir."

"Please explain to the committee why you never saw your father?"

"Because," replied Mr. Jackson, very gravely, "he died before I was born, sir."

☞ The grinding of slate for colors used in the manufacture of oil cloth, is carried on by Mr. Willis, at Skowhegan, Minn. He has a contract to grind $42,000 per year for five years.

Special Notices.

Preserve Your Papers.

We can now supply our subscribers with a handsome cover, made expressly for the AMERICAN JOURNAL OF MINING. *These file-covers prove exceedingly useful in preserving the numbers of this paper.* Instead of lying about loosely—getting soiled and destroyed—the weekly copies can be filed away, preserved in book form, and kept always smooth, clean and ready for reference. Price two dollars each.

Steam Stamp Mills.

From the New York Stockholder, Jan. 7, 1868.

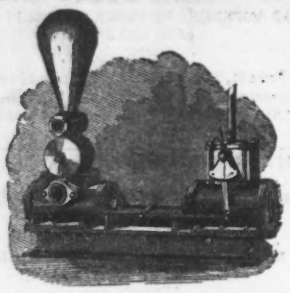
A mining superintendent, at Helena, writes as follows concerning the New York company's (222 Pearl street) Steam Stamping Mill, recently introduced there: "All the mining men here, when they heard of the mill coming, said it would be a failure, and it was foolish to spend my time and money with the mill; but after a long time, I got it up, and then, after trial, they all had to admit that it is the best stamp mill now in use in the Territory. Almost every man in the business wants one of them. It has created a great sensation among mining men here."

We call the attention of our readers to the advertisement for a partner in engineering business. The gentleman is eminently qualified to carry out his proposals, and gives numerous and excellent references. Among them we may name Messrs. Brinton and Henderson, proprietors of the Hydraulic Works, 247 South Third street, Philadelphia, Pa.

STEAM PUMPS.

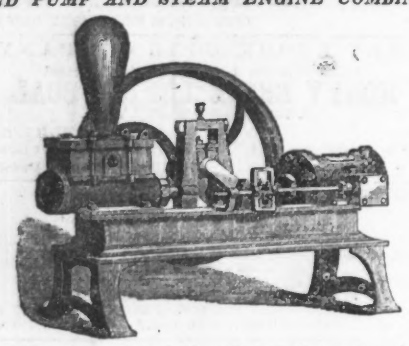
NIAGARA STEAM PUMP WORKS.

First Premium AT FAIR. American Institute. 1867.



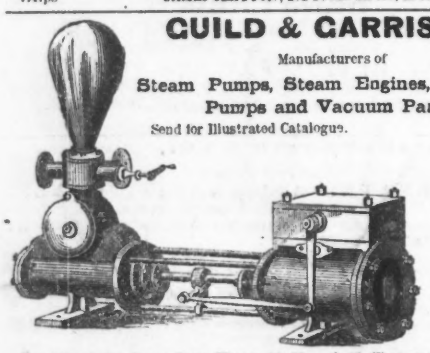
CAMPBELL & HARDICK, BROTHERS,
No. 9 ADAMS STREET, BROOKLYN, N. Y.
Send for circular. 6-4-xm

J. CLAYTON'S
Patent Steam Pumps,
HAND PUMP AND STEAM ENGINE COMBINED.



These pumps contain every desirable quality in a steam pump, are made o the best material, and in the best manner, and are the cheapest first-class pumps in the market. For cut and description see JOURNAL OF MINING, No. 18, Vol. 1. Please send for circular.
All sizes of pumps made to order at the shortest notice.
7.4.ps JAMES CLAYTON, 102 Front street, Brooklyn, N. Y.

CUILD & CARRISON,
Manufacturers of
Steam Pumps, Steam Engines, Vacuum Pumps and Vacuum Pans.
Send for Illustrated Catalogue.



For sale at the STEAM PUMP WORKS, 26, 28 and 30 First street, Williamsburgh, N. Y. jan1-6m

ROTARY ENGINE AND PUMP Co.

METROPOLITAN PATENT
The best and most effective Steam and Belt Pump adapted for general use. Warranted to form a vacuum of 28 inches. Mine owners should call and examine it as a MINING PUMP.
Offices of the Company, No. 181 PEARL STREET, Room 10, and No. 14 econd Avenue. ☞ Send for Circular. 12.3:qp

THE
POSITIVE STEAM PUMP,
WILLIAM HARSEN,
PATENTEE AND MANUFACTURER, GREENPOINT, L. I.
Costs one-third less than any other First-Class Pump of the same Capacity.
☞ Send for Circular to
J. W. COLE,
MANUFACTURER'S AGENT,
nov2-1y-q Room 3, No. 205 Broadway, near Fulton street, New York

CHAPPELL'S PATENT
STEAM VALVELESS PUMP
OR
BILGE EJECTOR.
Address
CHAPPELL MANUFACTURING COMPANY,
4:4:xm 99 BANK STREET, New York

METALLURGY.

I. W. SYLVESTER,
ASSAYER & CHEMIST.
Laboratory, 22 Willow street, Brooklyn. To be seen during office hours at United States Assay Office, No. 30 Wall street, New York.
Orders received for HIBBS' ASSAY FURNACE—an invention combining many new and really useful improvements. 5:8:1y

SCHOOL OF MINES, COLUMBIA COLLEGE,
EAST 49th STREET, NEW YORK.
FACULTY:
F. A. P. BARNARD, S.T.D., LL.D., President.
T EGLESTON, JR., E. M., Mineralogy and Metallurgy.
FRANCIS L. VINTON, E. M., Mining Engineering.
C. F CHANDLER, Ph. D., Analytical and Applied Chemistry
JOHN TORREY, M.D., LL.D., Botany.
CHARLES A. JOY, Ph. D., General Chemistry.
WILLIAM G. PECK, LL.D., Mining Surveying.
JOHN H. VAN AMRINGE, A.M., Mathematics.
OGDEN N. ROOD, A.M., Mechanics and Physics.
JOHN S. NEWBERRY, M.D., Geology.
The plan of this School embraces a three years' course for the degree of ENGINEER OF MINES, or BACHELOR OF PHILOSOPHY.
For admission, candidates for a degree must pass an examination in Arithmetic, Algebra, Geometry and Plain Trigonometry. Persons not candidates for degrees are admitted without examination, and may pursue any or all of the subjects taught. The next session begins October 7, 1867. The examination for admission will be held on October 3. For further information, and for catalogues, apply to DR. C. F. CHANDLER,
3.-1qp Dean of the Faculty.

THE STAATS AMALGAMATOR,
FOR
Amalgamating Gold & Silver Ores,
WILL TREAT
From One Thousand to Twelve Hundred Lbs. of Quartz Every Three Hours,
AT LESS EXPENSE THAN ANY OTHER PROCESS,
and takes out at least 90 per cent of the Gold and Silver. Said estimate is based upon repeated trials which have been made upon free and sulphuret ores.
It is not necessary to desulphurize previous to treatment, as the vapor of mercury in connection with steam penetrates the sulphurets, and extracts the particles of Gold and Silver.
One of the Amalgamators can be seen at 239 and 241 Cherry street, near Rutgers street, New York.
J. T. STAATS, Patentee.
o12:qp 83 Amity street, N. Y.

MANHATTAN
METALLURGICAL AND CHEMICAL WORKS,
552 and 554 West Twenty-eighth Street, N. Y.
ASSAYS OF GOLD, SILVER, COPPER AND LEAD ORES.
Special attention given to the Analysis of Ores, Minerals, Clays, Waters, and General Commercial Products of all kinds.
Tests of Gold, silver, and Lead Ores, by smelting, in quantities of One Hundred Pounds to Fifty Tons.
Gold and Silver Ores worked in Parcels of One Hundred Pounds to Fifty Tons, by Amalgamation Process.
Gold Dust, Bars, Old Gold and Silver bought. Jewellers' sweeps worked and refined.
Founders and Metal Workers furnished with Alloys of every description.
Parties requiring plans and specifications for the erection of Smelting Works, can be supplied, and the actual process while working shown.
Plans and specifications furnished for works, and processes for the manufacture of Sulphuric Acid, Soda Ash, and general Chem cal produce.
Superintendents: MR. CHARLES F. SECOR, formerly of Nevada and California, and MR. WILLIAM WEST, formerly of Swansea, Wales.
For sale, 1 Hepburn & Peterson Pan, and 1 Bogardus Quartz Mill. Inquire at the Manhattan Metallurgical and Chemical Works, 552 and 554 West Twenty-Eighth street.
For engagements and terms, apply at the Works or to
SECOR, SWAN & CO.,
P. O. Box 1412. **66 Broadway, New York.**

HYDRAULIC WORKS,
MANUFACTORY,
BROOKLYN, N. Y
Steam Pumping Engines, Single and Duplex, Worthington's Patent, for all purposes, such as Water Works Engines, Condensing or Non-condensing; Air and Circulating Pumps, for Marine Engines; Blowing Engines; Vacuum Pumps Stationary and Portable Steam Fire Engines Boiler Feed Pumps, Wrecking Pumps,
Mining Pumps,
Water Meters, Oil Meters; Water Pressure Engines; Stamp Mills for Gold, Silver and Copper Ore; Eaton's Patent Amalgamators for Gold and Silver Steam and Gas Pipe, Valves, Fittings, &c.; Iron and Brass Castings.
☞ Send for Circular. E. R. WORTHINGTON,
19-2-qp 61 Beekman street, New York.

STEAM PUMPS.
A. S. CAMERON & CO.,
22ND STREET, CORNER OF 2ND AVENUE, N. Y.
Have one hundred and forty patterns to select from, arranged to order for pumping WATER, AIR, OIL, ACID, LIQUOR, SYRUP, MASH, &c.
Pumps guaranteed in the most difficult situations We refer to any first class machine shop in the United States.
Parties are hereby cautioned against using Steam Pumps arranged to work by hand in violation of our original and re-issued Letter Patent, covering this feature. 8.4.qp

JOHN WATERS' SONS,
GOLD AND SILVER REFINERS
AND
ASSAYERS.
ESTABLISHED 1839.
No. 57 VESEY STREET, NEW YORK.
ANALYSES MADE OF ORES, MINERALS, ETC.,
BY FIRE.
Lead and Copper Ores a Specialty.
Miners are assured of careful and accurate assays.
Gold Dust and Bars Purchased. 24:2:px

LABORATORY OF INDUSTRIAL CHEMISTRY.
DIRECTED BY
PROF. H. DUSSAUCE, Chemist.
Advices and consultations on chemistry, applied to arts and manufactures, agriculture, metallurgy, etc.; plans of factories, drawings of apparatus. He can furnish the most recent improvements in chemical fabrications, such as chemical products, petroleum soaps, candles, colors of lead and zinc, varnishes, ceramic glass, wines, liquors, vinegars, matches, inks, dyeing and calico printing, perfumery, colors of coal tar, tanning, etc., etc.
He will give all necessary information to exhibitors to the great Exhibition Address New Lebanon, Columbia Co., N. Y. 8.4.qp

HUEPEDEN & WOLTERS,
ANALYTICAL CHEMISTS and ASSAYERS,
AND CONSULTING ENGINEERS,
Central City, Colorado.
Examinations of, and Reports on Mineral Lands and Mines, furnished on application. Analyses and Assays of Ores executed with accuracy. Plans and specifications furnished for the erection of Smelting Works, Desulphurizing Furnaces, &c., &c. 24:4:tf

R. P. ROTHWELL,
MINING & CIVIL ENGINEER AND METALLURGIST,
From the Imperial School of Mines, Paris, Member of the Geological Society of France, &c.
OFFICE, WILKESBARRE, PA.
Having had a large practical experience in Europe and this country is prepared to examine and report on all kinds of Mineral property, superintend Mines and Metallurgical Works, Assay Ores, &c. 18:2:qp

PROFESSOR HENRY WURTZ,
Formerly Chemical Examiner in the U. S. Patent Office, may be employed professionally as a SCIENTIFIC EXPERT. Geological Examinations and Reports. Analyses and Assays, etc., etc. Practical Advice and Investigations in the CHEMICAL ARTS and MANUFACTURES. Invention and Examination of new chemical methods and products. Address 26 Pine street, Rooms 35 and 36. Always in from 12 to 3.
☞ Written communications preferred.

Important to Gold and Silver Miners and Companies.
PROFESSOR WURTZ,
Who is the Inventor and Patentee of the new and wonderful uses of
SODIUM IN WORKING GOLD AND SILVER ORE AND JEWELERS' SWEEPINGS.
Will furnish at the above address information relating thereto together with experimental packages of
SODIUM AMALGAM.
All preparations and instructions elsewhere obtained are spurious and unreliable.
Working Experiments on Amalgamation of Ores, Etc.
Prof. W. has in operation a large and small Hepburn Pan, for working 1,000 lbs. and 20 lb. charges of material for experimental purposes. 8.4.xm

C. H. HITCHCOCK, Professor of Geology at Layfayette College, Geologist to the State of Maine, etc., examines and reports upon
GOLD. SILVER, COPPER, COAL, PETROLEUM
and other mineral lands, and conducts geological surveys of large areas.
20:4:ps Office, 33 Wall street, New York.

ADELBERG & RAYMOND,
MINING ENGINEERS AND METALLURGISTS,
90 BROADWAY, N. Y.
Mines, Mineral Lands, Machinery and Metallurgical or Chemical Works examined and reported upon. Advice given to miners, chemists and manufacturers. Assays and analyses made. Competent Engineers furnished to companies or individuals. 5:3:qp

IMPORTANT TO MINERS.
Every description of Analysis and Assays carefully attended to, and returns promptly made, by
WESTERN & COMPANY.
No. 41 Pine street and No. 37 Park Row, New York City.

ALFRED P. ROCKWELL,
(PROFESSOR OF MINING IN YALE COLLEGE.)
Consulting Mining Engineer.
Address, NEW HAVEN, Connecticut 12:3:qp

MISCELLANEOUS.

NATIONAL FREEMASON.

A WEEKLY ILLUSTRATED JOURNAL OF SIXTEEN PAGES.

PUBLISHED WEEKLY AT
432 Broome Street, New York City.

Contains the latest news—Masonic, Home, Foreign. Abounds in stories, and has the best selected Poetry of any paper in the country. The FREEMASON is immensely popular with families.

FIVE THOUSAND SUBSCRIBERS IN CALIFORNIA ALONE.

Every State has its list on our books. Specimen copies sent free.
Terms, $4 Per Year.
Address all communications,
R. MCMURDY, P. O. Box 5903.
dec 14-3m

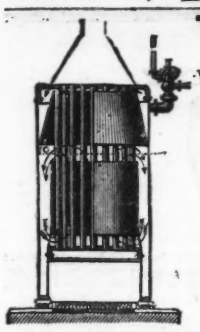
W. S. FOX & CO.,
DEALERS IN
STEAM ENGINES AND BOILERS,
LATHES, PLANERS, STEAM PIPE AND FITTINGS, SHAFTING, PULLIES AND BELTING.
Also Manufacturers of
FOSTER'S PATENT PEAT,
AND
PAPER BOX MACHINES,
11:3:xm 470 WATER ST, (cor. Pike,) N. Y

PORTABLE STEAM ENGINES,
COMBINING THE MAXIMUM OF
EFFICIENCY, DURABILITY AND ECONOMY,
with the minimum of weight and price. They are widely and favorably known, more than SIX HUNDRED being in use. All warranted satisfactory or no sale Descriptive circulars sent on application. Address
nov10-67:6m J. C. HOADLEY & Co., Lawrence, Mass

$5,000 TO $10,000.
WANTED.—A partner with the above amount, to join the advertiser, a Civil Engineer, in the construction of Iron Bridges and Turn Tables of the most approved plans, and well introduced. This is one of those genuine opportunities for realizing a handsome per centage on a moderate investment which seldom occurs. Address C. E., 339 South Fifth street, Philadelphia, Pa. jan18:3t

A PRACTICAL MINER, who has had sixteen years experience in California, Nevada and Montana, both as owner and operator, desires the superintendence of a mine, or will go out to make reports on mining properties. Can furnish the best of references. Address
ALLEN HEALD, Office Journal of Mining
17-4-1yt New York City.

BOILERS.



THE HICKS BOILER,

WILL NOT SCALE,

WILL NOT FOAM,

GIVES DRY STEAM,

Send for Circular to

JAMES M. HICKS,

No. 85 LIBERTY STREET, New York City.

11:3:1qp

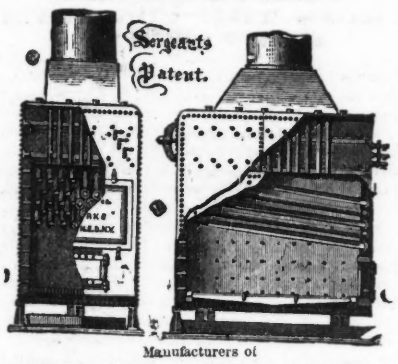
THE GREATEST IMPROVEMENT OF THE AGE.

Sergeant's Patent Boilers.

ACKERMAN & VOGT,

STEAM BOILER WORKS,

OFFICE, 279 FIRST STREET, BROOKLYN, E. D.



Manufacturers of

SERGEANT'S PATENT BOILERS,

which will raise more steam from the same amount of fuel, and occupies less space than any boiler now in use.

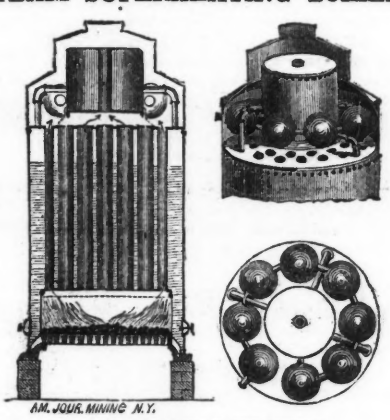
Also of all kinds of Steam Engines and Boilers. High and Low Pressure Boilers, Tanks, Filters, Kettles, Curbs, Oil Stills, &c. New and Second Handed Boilers constantly on hand.

THOS. ACKERMAN, HENRY VOGT.

Send for circular. 17-2 qp

DAVIS' PATENT

STEAM SUPERHEATING BOILER.



AM. JOUR. MINING N.Y.

GREAT SAVING IN FUEL.

Among the many in use would refer to two (75 horse each) now running the machinery of the New York Tribune.

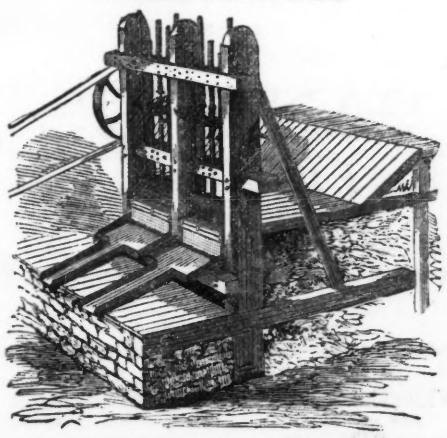
Manufactured by the Duplex Steam Boiler Manufacturing Company, Long Island City, Long Island. (Opposite 34th Street Ferry, New York.)

☞ Send for Illustrated Circular. ☜ 25:2:qp

MILLING.

MOREY & SPERRY,

MANUFACTURERS OF THE MOST IMPROVED



CALIFORNIA STAMP MILLS.

For wet or the dry process.

HEPBURN & PETERSON,

PATENT PAN AND AMALGAMATOR,

BEATH'S REDUCER.

HENDY'S CELEBRATED

WET CONCENTRATOR,

ROCK BREAKERS, SEPARATORS,

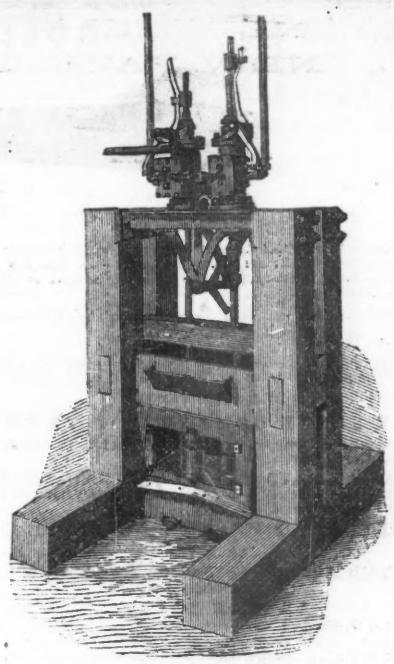
ENGINES, BOILERS, SHAFTING, &c., &c.,

Will be pleased to give practical information in milling and amalgamating Gold and Silver Ores, can furnish complete plans and specifications for the erection of machinery and buildings.

Agents for the North Carolina tubular Desulphurizing furnace for treating concentrated tailings, complete plans and firebrick for the same furnished; also agents for the Miners' Foundry, San Francisco, Cal.

MOREY & SPERRY, 95 Liberty street, N. Y.

WILSON'S PATENT



STEAM STAMP-MILL COMPANY,

OF PHILADELPHIA, PA.,

Are now prepared to supply Miners and other parties with their

NEW STEAM STAMP MILLS,

At the shortest notice.

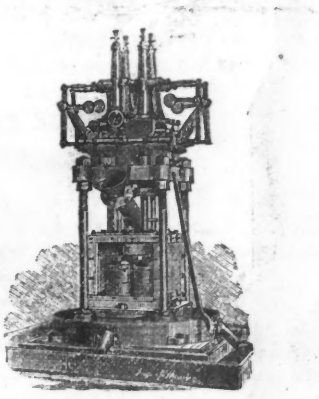
These Mills, for durability, efficiency, and facility of transportation are not excelled by, and are believed to be superior to, any other Mills manufactured. The Valve Gear is of the simplest and most durable construction; readily adjusted by moveable cams on the Piston Rods or Stamp Stems, thereby giving the operator absolute control of the length, and velocity of motion and force of the blow. These mills are adapted for both dry and wet crushing, and for the hardest rock or softest cement. For full particulars call on or address "WILSON'S PATENT STEAM STAMP-MILL CO.," 326 Walnut St., Philadelphia, Pa.

N. B.—One of the above Mills can be seen in operation at Messrs. Cresson & Smith's Machine Works, S. E. corner Eighteenth and Hamilton Sts., Phila

jan11:2m

NEW YORK STEAM ENGINE COMPANY,

Manufacturers of



STEAM STAMPING MILL,

STATIONARY AND PORTABLE ENGINES,

Engine Lathes, Planers, Bolt Cutters, Upright Drills, and Machinist's Tools of all Descriptions.

OFFICE AND WAREROOMS, 222 PEARL STREET, N. Y. 6:4:xm

TURBINE WATER WHEELS.

The REYNOLDS PATENT embodies the progressive spirit of the age.

SIMPLICITY,

ECONOMY,

DURABILITY,

ACCESSIBILITY,

all combined. The only Turbine that excels Overshots. Awarded the Gold Medal by American Institute.

SHAFTING, GEARING AND PULLEYS

furnished for all kinds of Mills, made on Mechanical principles, under my personal supervision, having had long experience. Circulars sent free.

GEORGE TALLCOT,

mar12:67.1y No. 96 LIBERTY STREET, New York.

STEAM ENGINES.

PORTABLE AND STATIONARY

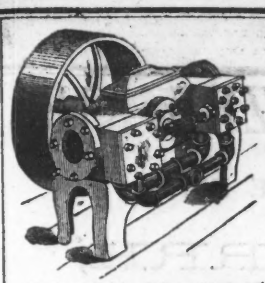
STEAM ENGINES.

Boilers, Circular Saw Mills, Mill Work, Cotton Gins, Cotton Gin Materials,

Manufactured by the

ALBERTSON & DOUGLASS MACHINE COMPANY,

NEW LONDON, CONN. 8:3:qp



ALL IN SEARCH OF ENGINES SHOULD EXAMINE

"THE RUDDICK,"

The most compact, simplest and CHEAPEST in the world.

DEVEREUX, THOMPSON & CO.

82 Cedar Street, N. Y.,

or

A. E. DEVEREUX & Co, Boston,

Sole Manufacturers.

22:4:qx

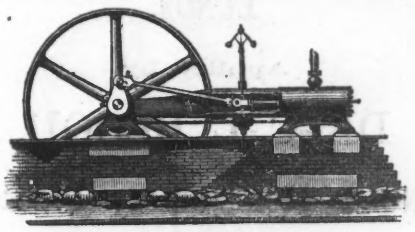
No Experiment. Old approved methods in all its parts.

SOUTH BROOKLYN

Steam Engine and Boiler Works,

ON IMLAY, SUMMIT AND VAN BRUNT STREETS, BROOKLYN, N. Y.

D. McLEOD, Proprietor.



Manufactory of the

"Babcock & Wilcox Patent Steam Engines,"

high and low pressure, for Stationary and Marine purposes, up to the largest class. Orders for the above Engines, and for BOILERS, IRON and BRASS CASTINGS, COPPERSMITH WORK, FORGINGS and HEAVY MACHINERY of all descriptions (for which this establishment has unsurpassed facilities), executes promptly, at moderate prices.

The BABCOCK & WILCOX Patent Engines combine the simplest and most durable Valve Gear, the greatest range of cut off, perfect regularity of speed and the highest economy of fuel. The cylinders are jacketed with live steam, and all the parts are designed and constructed with reference to the greatest durability and smoothness of action. They are daily gaining in popularity, and are superseding the best cut-off Engines heretofore built, with a saving of from twenty-five to forty per.cent. in fuel.

Send for circulars, containing full description. Address

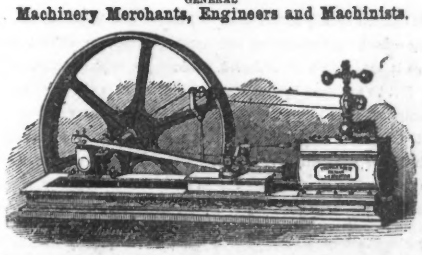
D. McLEOD, Box 2993 New York P. O.,

doc27.67:1y Or at the Works in Brooklyn.

TODD & RAFFERTY,

GENERAL

Machinery Merchants, Engineers and Machinists.



Manufacturers of Stationary and Portable Steam Engines and Boilers "also Flax, Hemp, Tow, Oakum, and

ROPE MACHINERY, MILL GEARING, SHAFTING,

Lathes, Planers, Drills, Chucks, &c., Iron and Brass Castings. Judson's & Snow's Patent Governors constantly on hand.

OFFICE AND WAREROOMS, NO. 4 DEY ST, N. Y.

Office and Works, Paterson, N. J.

JOSEPH C. TODD, 5-3:xm PHILIP RAFFERTY.

ROOT'S TRUNK ENGINES,

STATIONARY, PORTABLE AND PROPELLER,

FOR MINING PURPOSES.

Engine 10 H. P., weight 1,000 pounds. Price, $450; 20 H. P., 2,000 pounds, $800; 40 H. P., 4,800 pounds, $1,400. Larger and smaller sizes in proportion.

Engines and Boilers, complete, 5 H. P. 1,750 pounds, $770; 10 H. P. 4,000 pounds, $1,125; 20 H. P. 7,500 pounds, $1,880; 40 H. P. 13,000 pounds, $3,145.

Parts very light for shipment.

GREAT COMPACTNESS AND SIMPLICITY.

Priced catalogues mailed.

ROOT STEAM ENGINE COMPANY,

oct12:3m 500 to 510 Second avenue, corner 28th street, N. Y.

BIRD'S PATENT

OSCILLATING ENGINES,

FOR

MINING, MARINE AND MANUFACTURING PURPOSES,

COMBINING SIMPLICITY, DURABILITY AND ECONOMY.

These Engines work a slide valve in a stationary steam chest, and require no packing around the trunnions.

These engines are offered at 20 per cent. lower than any other make of equal power or quality of finish.

All sizes constantly on hand or made to order.

W. E. BIRD, 163 Bank street, New York.

Call and examine, or send for circular. 13-4-ps

ATLANTIC

STEAM ENGINE WORKS,

IRON AND BRASS FOUNDERS.

MANUFACTURERS OF

Steam Engines, Boilers, Sugar Mills, Tanks, Hydraulic and Hydrostatic Machines, and Machinery used in the Arts and Manufactures.

CORNER WATER AND ADAMS STREETS, BROOKLYN, N. Y.

R. B. DUYCKINCK, Treas. 2:4xm **WM. ARTHUR, Pres.**

W. D. ANDREWS & BRO., 414 WATER ST., NEW YORK

Manufacturers of Andrews' Patent

OSCILLATING ENGINES,

CENTRIFUGAL PUMPS, AND TUBULAR BOILERS.

Our ENGINES occupy little room, are light, simple, cheap, and economical require no special foundation or balance-wheel pit, and can be run from 150 to 500 revolutions per minute with Safety. Sizes from 1-2 Horse to 250 Horse-Power.

Our CENTRIFUGAL PUMPS pass mud, sand, coal, corn, gravel, etc., without injury, and use little power. Sizes from 90 Gallons to 40,000 Gallons per minute capacity. For sewers, canals, cofter dams, condensers, irrigation, and wrecking, they are unequaled.

Our BOILERS are light, strong, and portable, are economical of fuel, burn Wood, Hard or Soft Coal, and CONSUME THE SMOKE. Sizes from 2 to 50 Horse-power.

Awarded First Premiums at the recent Fair of the American Institute—a gold medal to each.

Portables from 2 to 20 Horse-Power. Send for descriptive pamphlets and price-lists, July1:qp.q

OXYGENIZED AIR;

A CURE FOR

CATARRH,

AND

DISEASES OF THE THROAT AND LUNGS,

Applied by

DR. C. L. BLOOD,

No. 9 Montgomery Place,

BOSTON MASS.

CHRONIC CATARRH.

Why entertain this loathsome disease when relief can be obtained? We meet those every day who are suffering from Catarrh to such an extent, that the Air Passages in the head are in a partly decomposed condition,—the nose and throat filled with such a mass of corrupt matter that they are objects of disgust to themselves, and of pity to those with whom they associate.

Chronic Catarrh usually affects the head, fauces and bronchial tubes. It is invariably caused by humoral or inflammatory blood, by which the mucous membrane is made sore or inflamed, producing a copious effusion of viscid matter. If it be produced by Scrofula in the blood it is almost certain to end in Consumption, unless speedily cured, because it is impossible to entirely prevent the matter from running down the Bronchial into the air vesicles, and such is the excoriating, or scalding property of the matter, its contact with the delicate linings of the air-cells at once causes irritation, and invites the humoral properties of the blood to deposit therein Tubercles and Ulcers.

Catarrh almost always attends Consumption, and frequently leads to it.

In Oxygenized Air we have a positive cure for this disease. The remedy is taken by inhalation—breathed directly into the lungs, and through them carried into the blood; thus as soon as the blood will carry it, it reaches all parts of the system, decomposing the impure matter in the blood and expelling it through the pores, and through the natural channels from the system. Thus you will see that the cause of the disease is removed, and the disease itself must follow.

In this same manner we treat and radically cure Bronchitis and Consumption. Let no one suffering from these diseases despair of relief. If you are too far away to visit our office and see us personally, write a description of your symptoms, and forward to the address below.

Send for our circular, which gives a full description of these diseases.

Out of the many thousands of testimonials received we publish the following:

DR. C. L. BLOOD:

Dear Sir—I desire to give you my testimony in regard to the value of your scientific system of treating Catarrh and diseases of the Respiratory organs. I have used your remedy, "Oxygenized Air," in my practice for the last year with complete success. I have cured the worst forms of Catarrh, and a majority of the cases of Bronchitis and Consumption in their advanced stages. I unqualifiedly pronounce "Oxygenized Air" the greatest boon ever yet conferred upon our suffering race, and hope the day is not far distant when every intelligent physician will adopt your system in the treatment of all forms of chronic affections.

Fraternally yours,

L. M. LEE, M. D.,

No. 199 Westminster Street, Providence.

—

R. C. L. BLOOD.

My Dear Sir—I have tested your remedy, "Oxygenized Air," in advanced stages of Catarrh, Bronchitis and Consumption, and the results have been, in the highest sense, satisfactory; so positive am I of its wonderful power to arrest the progress of the above named diseases, that I can conscientiously advise all who may be suffering from them to place themselves under the treatment at once.

Respectfully yours,

REV. R. TOMLINSON

Plymouth, Mass.

Circular, and address,

DR. C. L. BLOOD,

No. 9 Montgomery Place,

BOSTON, MASS.

☞ *Physicians wanted to adopt this system of practice.*

January 4:1 m

COLLINS & CO.'S
NEW PATENT SCREW WRENCH.

All consumers have noticed that their wrenches first fail by reason of the forcing back of the handle, and by the springing of the bar. Our improvement remedies both these defects, the bars being finished wider than any other wrench in market, and the handle cannot be displaced, as all strain on it is prevented by the screw thimble, D, (see cut.) Already adopted as the best by the principal railroads and machine shops, and for sale by Hardware Dealers generally. Address

10:v4:xm COLLINS & CO., 212 Water street, New York.

JOHN GALT,

WHOLESALE DEALER IN ROOFING SLATE.

SOLE AGENT FOR THE

EAGLE SLATE COMPANY OF VERMONT,

Who produce Purple, Green and Red ROOFING SLATE. Sole Agent for New York and the West for the

CHAPMAN SLATE COMPANY OF PENNSYLVANIA,

Who produce a Superior Black or Dark Blue Slate; also Sole Agent for New York and the West for the

LEHIGH SLATE COMPANY OF PENNSYLVANIA.

GENERAL DEPOT,

Cor. Tenth Avenue and Twelfth Street, N. Y. City.

Established in 1850.

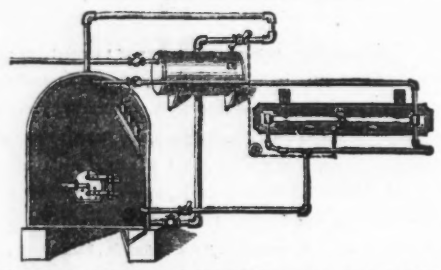
BRANCH DEPOTS:

Buffalo: Jas. W. Chatman, Terrace Square.
Chicago: James Parker, corner Franklin and Washington Streets.
Charleston, S. C.: C. J. Demorest, East Bay, near Wentworth Street.
New Orleans: J. J. Lee, 366 Magazine Street.

☞ I am prepared to give parties the prices of Slate delivered throughout the United States at the nearest Railroad Station.

Orders by mail will receive prompt attention. jan 1:1y

J. N. B. BOND, JR., MANUFACTURER OF THE

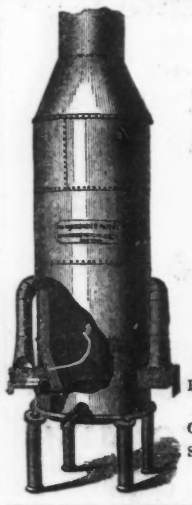


STEAM BOILER FEEDER.

PATENTED MAY 23d, 1865.

361 WEST TWELFTH STREET,

10:4:ps (Late Troy street,) NEW YORK.



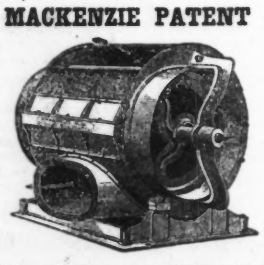
SMITH & SAYRE

MANUFACTURING COMPANY,

PROPRIETORS AND MANUFACTURERS

OF THE

MACKENZIE PATENT



BLOWER and CUPOLA and SMELTING FURNACE

Also, Mackenzie's Patent GAS EXHAUSTER and COMPENSATOR. Address

SMITH & SAYRE MANUFACTURING COMPANY

95 Liberty street, N. Y.

Send for illustrated pamphlet. 13:4:xm:q

NOTICE.

HIKO, August 24, 1867.

CHARLES SCHENK, a resident of Pah-Ranagat Silver Mining District, and County Surveyor of Lincoln county, Nevada, begs leave to inform the mining public, that he is able and ready to give true and valuable information about mining property in this District.

CHARLES SCHENK, M. E.

References—Wm. A. Smith, Esq., 25 and 27 Nassau street.
Prof. Harper, New York, etc. oct12, '67:'68

INCRUSTATIONS thoroughly removed and prevented at trifling cost, without injury or foaming, by

Winans' Anti-Incrustation or Boiler Powder,

Twenty thousand first class references, during twelve years' use, prove this article efficient and reliable, saving many times its cost in fuel or repairs, also time and labor of cleaning so frequently.

Clean Boilers steam more freely, save 20 to 60 per cent. of fuel, and outlast ten dirty or incrusted ones

BEWARE OF FRAUDS AND IMITATIONS.

nov23;67;3m H. N. WINANS, Chemist, 11 Wall street, New York.

FOR SALE.

FOR SALE

1 BOGARDUS QUARTZ MILL,
1 LARGE SIZE HEPBURNS & PETERSON PAN.

Apply at the MANHATTAN METALLURGICAL WORKS

dec7.3m 552 & 554 West Twenty-eight street.

SR. DON PEDRO M. LUELMO AND C. DE ST. CHARLES, Proprietors and fully authorized agents for the new mining districts of the State of Vera Cruz, Mexico, may be seen at room 17, 90 Broadway, corner of Wall, every day from 11 A. M. to 3 P. M. They have complete information of the mines of that region, and the largest collection of mineral samples ever brought thence into this country, and they will take pleasure in satisfying interested parties of the bona fide character and superior advantages of this new field of enterprise. 17.4.ps

---

BANKERS.

525 MILES

OF THE

UNION PACIFIC RAILROAD,

Running West from Omaha

ACROSS THE CONTINENT,

ARE NOW COMPLETED.

This brings the line to the eastern base of the Rocky Mountains, and it is expected that the track will be laid thirty miles further, to Evans' Pass, the highest point on the road, by January. The maximum grade from the foot of the mountains to the summit is but eighty feet to the mile, while that of many Eastern roads is over one hundred. Work in the rock-cuttings on the western slope will continue through the winter, and there is now no reason to doubt that the entire grand line to the Pacific will be open for business in 1870

The means provided for the construction of this Great National work are ample. The United States grants its Six Per Cent. Bonds at the rate of from $16,000 to $48,000 per mile, for which it takes a *second lien* as security, and receives payment to a large if not to the full extent of its claim in services These bonds are issued as each twenty-mile section is finished, and after it has been examined by the United States Commissioners and pronounced to be in all respects a first-class road, thoroughly supplied with depots, repair-shops, stations, and all the necessary rolling stock and other equipments.

The United States also makes a donation of 12,800 acres of land to the mile, which will be a source of large revenue to the company. Much of this land in the Platte Valley is among the most fertile in the world, and other large portions are covered with heavy pine forests, and abound in coal of the best quality.

The company is also authorized to issue its own First Mortgage Bonds to an amount equal to the issue of the Government and no more. Hon. E. D. Morgan and Hon. Oakes Ames are trustees for the Bondholders, and deliver the Bonds to the company only as the work progresses, so that they always represent an actual and productive value.

The authorized capital of the Company is $100,000,000, of which over $5,000,000 have been paid in upon the work already done.

EARNINGS OF THE COMPANY.

At present the profits of the company are derived only from its local trafic, but this is already much more than sufficient to pay the interest on all the Bonds the company can issue, if not another mile were built. It is not doubted that when the road is completed, the through traffic of the only line connecting the Atlantic and Pacific States will be large beyond precedent, and, as there will be no competition, it can only be done at profitable rates.

It will be noticed that the Union Pacific Railroad is, in fact, a GOVERNMENT WORK, built under the supervision of Government officers, and to a large extent with Government money, and that its bonds are issued under Government direction. It is believed that no similar security is so carefully guarded, and certainly no other is based upon a larger or more valuable property. As the Company's

First Mortgage Bonds

are offered for the present at NINETY CENTS ON THE DOLLAR, they are the cheapest security in the market, being more than 15 per cent. lower than U S. Stocks. They pay

SIX PER CENT. IN GOLD,

or over NINE PER CENT. upon the investment, and have thirty years to run before maturity.

Subscriptions will be received in New York at the Company's Office, No. 20 Nassau Street, and by

CONTINENTAL NATIONAL BANK, No. 7 Nassau street,
CLARK, DODGE & CO., Bankers, No. 51 Wall street,
JOHN J. CISCO & SON, Bankers, No. 33 Wall street,

and by the Company's advertised Agents throughout the United States. Remittances should be made in drafts or other funds par in New York, and the bonds will be sent free of charge by return express. Parties subscribing through local agents, will look to them for their safe delivery.

A NEW PAMPHLET AND MAP, showing the Progress of the Work, Resources or Construction, and Value of Bonds, may be obtained at the Company's Offices or of its advertised agents, or will be sent free on application.

jan11:2t **JOHN J. CISCO, Treasurer, New York.**

DUNCAN, SHERMAN & CO.,

BANKERS,

CORNER PINE AND NASSAU STREETS, N. Y.

ISSUE CIRCULAR NOTES AND LETTERS OF CREDIT FOR TRAVELLERS,

AVAILABLE IN ALL THE PRINCIPAL CITIES OF THE WORLD,

MERCANTILE CREDITS

For Use in Europe, China, etc. Also Make

Transfers of Money to California & Oregon by Telegraph.

nov 20;tf INTEREST ALLOWED ON DEPOSITS.

GET THE BEST.

WEBSTER'S DICTIONARY, UNABRIDGED.

NEW ILLUSTRATED—OVER 3,000 FINE ENGRAVINGS.

10,000 Words and Meanings not in other Dictionaries.

A necessity to every intelligent family, student, teacher and professional man. What Library is complete without the best English Dictionary?

The work is the richest book of information in the world. There is probably more real education in it than can be bought for the same amount of money in any language. Every parsonage should have a copy at the expense of the parish. It would improve many pulpits more than a trip to Europe, and at a much less cost.—[N. Y Christian Advocate.

Lay it upon your table by the side of the Bible; it is a better expounder than many which claim to be expounders.—[M. Life Boat.

The work is really a gem of a Dictionary, just the thing for the million.—[American Educational Monthly.

In one vol. of 1,840 Royal Quarto Pages. Published by G. & C. MERRIAM, Springfield, Mass. For sale by N. TIBBALLS & Co., 37 Park Row and 145 Nassau street.

ALSO, JUST PUBLISHED,

WEBSTER'S NATIONAL PICTORIAL DICTIONARY,

jan18 1040 Pages Octavo. 600 Engravings. Price, $5.

PLATINUM APPARATUS, SHEET, WIRE, etc., for all Laboratory and Manufacturing purposes. Platinum scrap and ore purchased. H. M. RAYNOR,

dec28:2m Office, No. 748 Broadway, N. Y.

PUBLICATIONS.

American Journal of Mining,

FOR 1868.

The Best and Largest Paper of the kind in the United States.

Of the numerous sources of wealth which this country possesses, none are more important, either in richness or extent, than her minerals. These have added largely to her prosperity, and afford a profitable means of investment for capital, and an extensive field for labor. THE AMERICAN JOURNAL OF MINING is acknowledged by the public and the press to be a faithful and accurate exponent of the important interests dependent on Mining, and to more fully meet the demands of circulating valuable and reliable information, it is now increased in size to sixteen large quarto pages, thus making it the largest paper devoted to mining on this continent.

It contains: Illustrated descriptions of the latest improvements in Mechanical appliances used in opening, working and draining mines; crushing and treating the ore.

Original Papers on Geology, Metallurgy, Assaying, Chemistry, and various Scientific subjects, contributed by able Scientists, in a popular style and with scientific method and exhaustiveness.

A Summary of Mining News, collected from all parts of the continent, and classified geographically and mineralogically.

Original Editorials, devoted to a review of the legislation affecting mining, to a denunciation of fraudulent speculation, to an advocacy of such measures as will advance the interests of miners or will increase public confidence in legitimate mining, and to a consideration of all other matters of value to those interested in mines.

Interesting Correspondence, giving the opinions of the public on topics of the day.

Miscellaneous Articles, culled from a selection of the leading scientific publications of Europe and America.

Reviews of New Publications on Science, Statistics, and other subjects immediately connected with the objects of the paper.

Reports of the Proceedings of the Polytechnic Branch of the American Institute, and other Scientific bodies.

Statements of the formation and progress of Mining Companies, of their meetings and dividends, assessments, &c.

A comprehensive and correct Market Review of Stocks and Metals.

Reports on the Slate Trade, now rapidly increasing in importance.

Coal Trade Reports that will be found to surpass in extent and accuracy those given by any other paper, comprising accurate tables showing the shipments of Coal over the principal roads and canals during each week, and the increase or decrease as compared with the same period of the preceding year, the prices of coal, home, provincial and foreign, the rates of transportation, and the various tolls.

Iron Trade reports and statistics, which in point of completeness and accuracy, deserve the favor they have received. Each week contains carefully prepared statements of Iron imports, and productions in various sections of the country; Market prices in New York, Boston, Cincinnati, Pittsburg, and London; miscellaneous statements of great value, and special items of news invaluable to every Iron merchant or manufacturer, besides a correct and unbiassed review of the Market for the past week.

Reports on the Foreign Metal Markets.

Notices of Patent Claims interesting to Miners and Metallurgists, &c., and lists of Scientific Books.

The advertising columns afford a very full directory of the chief Manufacturers of Machines used in Mining, of Chemists, Assayers, Scientific Publishers, &c.

☞ As soon after the close of every year as possible there is published in the AMERICAN JOURNAL OF MINING a complete and accurate review of each of the various Mining interests of the United States. These reviews comprise carefully compiled statistics, which show at a glance the progress, extent and operations of the whole country in every Mineral during the year past.

Each number of the AMERICAN JOURNAL OF MINING is printed in the best possible manner, on an excellent quality of paper, contains 16 large solid pages, two volumes a year, each containing 416 Pages, forming a valuable book of reference to all interested in Mining, Milling, Geology, Chemistry, &c.

☞ Published every Saturday morning.

TERMS.

SUBSCRIPTION:

$4 00 per annum, in advance. | Single copies Ten Cents.
$2 25 for six months. | ☞ Specimen Copies sent free.

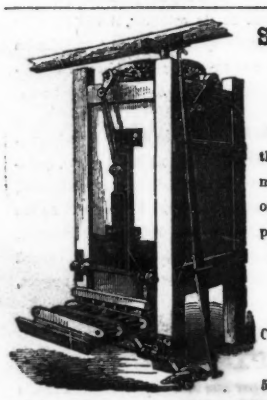
RATES OF ADVERTISING:

15 cents per line of 13 words for each insertion. ☞ A Discount allowed to permanent advertisers

☞ Terms invariably in advance

WESTERN & COMPANY, PROPRIETORS,
No. 41 Pine street and 37 Park Row, New York City.

MISCELLANEOUS.



STAR BRICK MACHINE

The best, strongest and cheapest in the United States. We warrant it to make more and better Bricks than any other Machine now in use. It takes less power and help to run it.

Manufactured and sold by

JAMES MARTIN,

Corner North Third and Grove streets,

Jersey City, N. J

5:1:qp

THOMAS INGHAM,

BROKER IN PIG IRON, AMERICAN AND FOREIGN.

dec7:tf **66 Wall Street, New York City.**

ARION PIANO-FORTE.—PATENTED.

Pre-eminently the best Piano ever constructed, unrivalled for tone, durability and elegance of finish. The Brooklyn Daily Times says: "It has in higher degree than any Piano that we have met with, the singing quality or character that musicians so much admire and seek for in a Piano; the bass notes reminding you of the deep-toned notes of a large organ. The middle octaves are more elastic and clear than in most other Pianos, while the upper or treble notes possess that pure, distinct, bell-like clearness that is so necessary to the correct rendering of difficult pieces of music, and that also lends such a charm to melody." Professor J. M. Abbott, organist of the Church of Our Saviour, in Brooklyn, says: "For elasticity of tonch, for the singing quality so much sought for by artists, and for richness and purity of tone, it is unexcelled by any Piano I have ever used." Professor John W. Henry Canoll, editor of the American Educational Monthly, says: "* * * * Listen, however, to one of another class, for example, one of the Arion Pianos, made by Manner & Co.; bow your head as the bass sends forth its riches, clear and unhurred; observe the singing, swelling melody that in its middle octaves so wondrously represents vocal expression, and which predominates above even the silvery brilliancy of the upper treble; then reflect that this is a scientifically constructed and durable instrument." * * *

Is for sale at the Manufactory and Warerooms, 187 and 189 Bowery, second door above Delancey street. MANNER & CO.

N. B.—We have a number of Second Hand Pianos to sell or rent. 12-v:2:qp

GREGORY YALE,

ATTORNEY & COUNSELLOR AT LAW,

18 Merchants' Exchange,

SAN FRANCISCO, CAL.

Has been practicing Law in California since 1849. He will give special attention to applications for United States Patents for Mining Lodes, under the act of Congress of the 26th of July, 1866, before the local officers of the respective Land Districts in the State, and is prepared to give opinions upon all legal questions relating to the Mining Laws of the State, and upon the Mining Ordinances of Mexico and Spain.

He refers to the Hon. Stephen J. Field, Associate Justice of the Supreme Court of the United States.

Jan. 1, 1867. 18:12:qp

BENNETT, JOHNSON & CO., 45 DEYST., N. Y.,

Manufacturers of the

NEW PATENT BAG-HOLDER AND SHINGLE BRACKET.

This BAG-HOLDER is emphatically the Farmers' and Grain Dealers' friend. Does the work of two boys in holding a bag open, and with it a farmer can bag up grain, potatoes, apples, &c., as fast as two men in the ordinary way. Having large sales at the West, where first introducod. Retail price $5. Sent to any address.

THE SHINGLE BRACKET

is especially adapted for Builders, House Joiners, Masons and Carpenters. With it a scaffolding can be built in less time upon a roof and with greater safety, and taken down as quickly, without leaving a single nail-hole in the roof. Retail price $6 per dozen. Send for illustrated circulars on above. Orders promptly filled, at wholesale and retail.

Manufacturers of the

NEW STEAM COOKING APPARATUS,

which cooks all vegetables and meats together, without flavoring each other, and does away with all offensive odors. Saves Labor, Fuel and Time.

SEEING IS BELIEVING. One trial will convince any one. Large numbers already in use, and everybody pleased. Sold low. Several sizes—fit any stove—a whole dinner can be cooked on one stove-hole. Orders promptly filled, at wholesale and retail. Send for an illustrated circular, with full particulars. Retail price: 7 inch, $4; 8 inch, $5; 9 inch, $7; 10 inch, $10. Sent to any address on receipt of price. 28.4.7t

HUDSON RIVER SLATE COMPANY,

25 PARK ROW, NEW YORK,

Supply from their Quarries

SUPERIOR BLUE SLATE,

IN

ASHLER BUILDING FRONTS,
HOUSE TILES, of all sizes,
FLAGGING TILES, of any large size,
PLAIN FLAGGING of any thickness,
CURBING, plain and fancy,
COUNTERS & COUNTER TOPS,
WAINSCOTING & PANELING SLABS for MARBLEIZING, of any size ordered,
MANTLES & MANTLE STOCK,
SLABS of any dimensions,
HEARTHS, of all sizes,
SLATE DUST,
BILLIARD BEDS,
SILLS and LINTELS,
SINKS,
CEMENTERY STOCK,
SLAB ROOFING.

Any Articles Marbleized to Order in the Most Superior Style.

☞ All orders and communications should be addressed to

ABRAHAM BELL'S SON,
Nov. 23,qx.m 25 Park Row, New York

LINDSAY'S PATENT.

The merits of this Wrench are too well known to need comment. Go to the nearest hardware store and LOOK AT IT BEFORE PURCHASING ANY OTHER, or send for illustrated circular to

MANVEL & LINDSAY,
15.4qx New York.

SUBSCRIBE FOR AND ADVERTISE IN THE

AMERICAN JOURNAL OF MINING.

Published every Saturday in

NEW YORK CITY,

THE GREAT MONEY-CENTRE OF THE CONTINENT.

The JOURNAL is invaluable to the

CAPITALIST, MINER, MERCHANT.

and all who desire to be acquainted with and profit by a knowledge of our

VAST MINERAL WEALTH,

and the best direct and indirect methods of getting it.

TERMS (Invariably in Advance):

SUBSCRIPTION.		ADVERTISING.
Per annum, one copy	$4 00	Fifteen cents per line of Thirteen
Six months, one copy	2 25	words for each insertion. A discount
Single copy	10	allowed on permanent advertisements.

☞ Specimen copies sent free. Address

WESTERN & COMPANY, Proprietors,
No 37 Park Row and No. 41 Pine street.

TO BUSINESS MEN AND OTHERS.—A gentleman conversant with the English, German and French languages, and capable of keeping accounts, desires employment as Correspondent, Book-keeper or Translator. Address W. V., care of this Journal.

HEALTH AND ECONOMY.

PATENT LEAD-ENCASED TIN PIPE

PURE WATER

Recommended by the medical faculty and approved by Water Commissioners.

COSTS LESS THAN LEAD PIPE, AND IS MUCH STRONGER.

Recent improvements enable us to supply this Pipe at a less price per foot than common lead pipe.

To furnish the cost per foot, please give the head or pressure of water and bore of pipe. Pamphlets sent free on application. Address the COLWELLS, SHAW & WILLARD MANUFACTURING COMPANY, foot of West 27th street, New York. 9:v4:6m

E. S. EARS' WOOD ENGRAVING ESTABLISHMENT.

ENGRAVING, DESIGNING AND PHOTOGRAPHing on Wood, in all its branches, viz.: Portraits, Fine Book Work, Machinery Maps, Buildings, Illustrated Catalogues, Views, &c. N. B special attention given to Color Work of all descriptions. 48 BEEKMAN STREET. New York. 4:4:qp q

JOB PRINTING.

Plans, Specifications, Bill-Heads,
Receipts, Letter-Heads, Show-Bills,
Cards, Circulars, etc.

Executed at the office of the AMERICAN JOURNAL OF MINING.

WESTERN & COMPANY,

P. O. Box 5,963 No. 41 Pine street, and 37 Park Row, New York City.

PATENT

INTERLOCKING GRATE BARS,

MANUFACTURED BY THE

Salamander Grate Bar Company.

These Bars have been used and approved in upwards of 4,000 different Furnaces, in Factories, Steamers and Locomotives, and are superior to all others

In Durability and Economy in the Use of Fuel.

OFFICE, No. 32 Broadway, New York.

dec28:3m

STEPHEN J. GEOGHEGAN & CO.

(Successors to Cameron & Geoghegan,)

199 & 201 Centre Street, N.Y.,

Adjoining Earle's Hotel.

MANUFACTURERS AND DEALERS IN

Wrought and Cast Iron Steam Pipes, Valves, Cocks, Fittings, &c.

FOR STEAM, WATER, AND GAS.

Also,

High and Low Pressure Steam Heating Apparatus applied to

FACTORIES, PUBLIC BUILDINGS, STORES AND DWELLINGS.

Manufacturers and Sole Agents for

STORER'S PATENT LUBRICATORS,

for supplying lubricating matter in bulk to the cylinders of Marine and Stationery Steam Engines, Steam Pumps, Heaters, Steam Traps, Pipe Tongs, Pipe Vices, Stocks and Dyes, &c., &c.

We make Steam and Gas Fitter's tools a speciality.

Coils for Breweries, Distilleries, Soap Factories, &c., &c

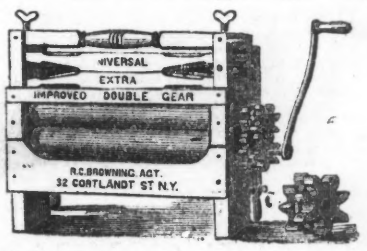
STEAM PUMPS.

Send for Illustrated Circular. 7-4-xm

WASHING MACHINES

AND

CLOTHES WRINGER.



ORANGE JUDD,

REV. BISHOP SCOTT,

SOLON ROBINSON,

REV. HENRY WARD BEECHER,

MRS. LAURA E. LYMAN,

PROF. E. L. YOUMANS,

And thousands of others, will tell you that DOTY'S WASHING MACHINE, and the UNIVERSAL CLOTHES WRINGER, are a *real success*, and save their cost in clothing every year, besides saving more than half the TIME and LABOR of washing. Send the retail price, Washer, $14, extra Wringer, $9, and we will forward either or both machines, free of freight, to places where no one is selling, and so sure are we they will be liked, that we agree to *refund the money* if any one wishes to return the machines free of freight, after a month's trial according to directions.

Large discounts to canvassers and the trade everywhere.

R. C. BROWNING, General Agent,
No. 32 Courtlandt street, N. Y.,
Jan 11:3m (Opposite Merchant's Hotel.)

THE AMERICAN METALLURGICAL COMPANY.

organized under the general Mining and Manufacturing Law of the State of New York, make the following Report: The amount of their Capital Stock is Five Hundred Thousand Dollars, the whole amount of which has been issued in payment for property. There are no existing debts against the Company. New York, January 16, 1868.

D. R. STANFORD, President.

JOHN AUSTEN STEVENS, Jr.,
HERMAN FUNKE,
LIVINGSTON SATTERLEE,
R. W. RAYMOND,
} Majority of Trustees.

STATE OF NEW YORK, County of Kings. } ss.

R. W. Raymond being duly sworn, says that he is the Secretary of the American Metallurgical Company, above named, and that the foregoing report of said Company is true. R. W. RAYMOND.

Sworn to before me, this sixteenth day of January, 1868.

HORATIO C. KING,
Jan 18:1t Notary Public.

THE ADELBERG GOLD CO., organized under the General Mining and Manufacturing Law of the State of New York, make the following report: The amount of their Capital Stock is Five Hundred Thousand Dollars, the whole amount of which has been issued in payment for Mining Lands and other Real Estate. The existing debts of the Company do not exceed eight hundred dollars. R. W. RAYMOND, President.

NEW YORK, January 16, 1868.

R. W. RAYMOND,
GERIN PALMER,
A. H. SCOVILL.
} Majority of the Trustees.

STATE OF NEW YORK, County of KINGS. } ss.

R. W. Raymond, being duly sworn, says that he is President of the Adelberg Gold Company above named, and that the foregoing Report of said Company is true. R. W. RAYMOND, President.

Sworn to before me this 16th day of January, 1868.

jan18:1t HORATIO C. KING, Notary Public.

THE MACDONALD SILVER MINING COMPANY, organized under the General Mining and Manufacturing Law of the State of New York, make the following report: The amount of their capital stock is

ONE MILLION DOLLARS,

the whole amount of which has been issued in payment for mining lands and other real estate. There are no existing debts against the company.

New York, January 16, 1868.

C. M. DEPEW, President.

Majority of the Trustees { CHARLES TUTTLE, WILLIAM POND, CLARK BELL.

R. W. RAYMOND, Secretary.

STATE OF NEW YORK, County of Kings. } ss.

R. W. Raymond being duly sworn, says, that he is the Secretary of the Macdonald Silver Mining Company above named, and that the foregoing report of said company is true. R. W. RAYMOND.

Sworn to before me this sixteenth day of January, 1868.

It HORATIO C. KING, Notary Public.

PATTERNS and MODELS

Of every description made by WILLIAM BURROWS, No. 47 Gold street, near Fulton, New York. nov21:3m

RANDOLPH BROTHERS,

SOLE AGENTS OF THE ORIGINAL

SPRING MOUNTAIN LEHIGH COAL,

Extensively Used for Smelting Iron.

ROOMS, 28 AND 30 TRINITY BUILDING, NEW YORK. 3-2 qi q

PRACTICAL DRAFTING AND MECHANICAL Drawing taught in the evening by T. P. PEMBERTON, Practical Engineer and Draftsman. Apply at 21 Delancey street, off Bowary, after 6 o'clock P. M.

SUPPLIES.

Ten Eyck Axe Manufacturing Co,

MANUFACTURERS OF WARRANTED

CAST STEEL EXCELSIOR AXES,

Picks, Hatchets, and Mining Tools of all Descriptions

FACTORY, COHOES, N.Y.

THOMAS E. GAYNOR, Agent,

jan18 57 Beekman street, N. Y.

THE

BISHOP GUTTA PERCHA COMPANY.

The Original and Only Manufacturers in the United States of

PURE GUTTA PERCHA GOODS,

GUTTA PERCHA INSULATED SUBMARINE TELEGRAPH CABLES,

Insulated Wire for Telegraph, Mining and Blasting Use.

WATER, BEER, AND SODA PIPE; CHEMICAL VESSELS.

Factory, Nos. 208, 210 and 212 East 25th Street.

Office and Salesroom, 113 Liberty Street, N. Y.

West of Broadway

WALTER O. LEWIS, Esq., Electrician to the Co. — SAMUEL C. BISHOP, General Agent.

jul6;67

L. B. TUPPER'S FURNACE GRATE BAR, for Steamships, Steamboats, Locomotives, Stationary Furnaces, &c. This is the only GRATE that has received a SILVER MEDAL in the United States, Patented September 11, 1860. The only original Tupper Furnace. Grate Bar, L. B. Tupper's Patents, furnished at short notice, for Steamers, Locomotives, Stationary Furnaces, &c., either circular or square. Now is your time to purchase. If you wish to save fuel and expense, use L. B. Tupper's Improved Patent Furnace Grate Bar: they are lighter, more durable, and save more fuel than any other Grate in use. Orders giving exact size of Furnace promptly attended to by addressing L. B. TUPPER, 120 West street, between Courtlandt and Dey streets, or at JOHN POWERS' Machine Shop, 434 East 10th street, New York. jan18

THE FUEL SAVING

FURNACE COMPANY,

No. 205 BROADWAY,

Jan. 1, '68-1y **NEW YORK.**

SAWS! SAWS! SAWS!

ATTENTION, LUMBERMEN!

HENRY DIRSTON, OF PHILADELPHIA,

Is making both inserted and solid teeth Saws, that are preferred by those who use them above all other makes.

For further particulars send to Factory, 67 and 69 Laurel street. dec7:3mo

---

CIRCULAR SAWS

WITH

EMERSON'S PATENT MOVABLE TEETH.

These saws are meeting with unprecedented success, and their great superiority over every other kind, both as to efficiency and economy is now fully established,

ALSO,

EMERSON'S PATENT PERFORATED **Circular, and Long Saws.**

(All Gumming avoided.) And

Emerson's Patent Adjustable Swage,

or Spreading, Sharpening, and Shaping the teeth of all Splitting Saws. Price $5. Manufactured by the AMERICAN SAW COMPANY,

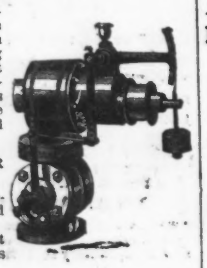
Office No. 2 Jacob Street, near Ferry Street, New York.

Send for new Descriptive Pamphlet and Price List 1v4-ps

HUNTOON PATENT GOVERNOR.

The advantages which these Governors possess, are that the engines to which they are attached, will maintain a

REGULAR SPEED WITHOUT ANY VARIATION,



whatever may be the resistance of the work, or how suddenly it may be thrown on and off. The engine will run uninfluenced by the varying pressure of the steam, be it thirty or eighty lbs. In a moment's time the revolutions of the driving wheel can be changed to exactly the speed required.

WITHOUT STOPPING OR CHANGING

any of the mechanism, remaining perfectly governed wherever set.

The proprietors warrant economical results from its use, for in no instance has it failed

TO PROVE ITSELF A STEAM SAVER.

THE CENTRIFUGAL OR BALL PRINCIPLE IS ENTIRELY ABANDONED IN THIS INVENTION,

and the valve lever is sustained with the same velocity in one position as another.

This Governor was illustrated in the JOURNAL OF MINING, August 3d, 1867. Send for Illustrated Circular.

R. K. HUNTOON,
J. AUGUSTUS LYNCH,

13:4xqp 62 Kilby street, near Liberty Square, Boston, Mass.

GUNPOWDER SUPERSEDED.

Explosions and accidents from this time counted among the things that were. Quarrymen and miners, hunters and soldiers use only

NEUMEYER'S PATENT SAFETY POWDER.

Now in universal use for blasting and mining purposes in England, France and Germany. You can handle and ship this powder with no more danger than you handle oil, sulphur, or charcoal. To explode it has to be confined and ignited by means of a fuse. One feature that specially recommends its use in mines and confined places is that very little smoke results from its combustion, and this smoke is very light, and not at all injurious to the lungs.

NEUMEYER & NIESE, ST. LOUIS, MO.,

Are the Patentees and sole manufacturers for the United States. One genera agent wanted for each State. For further particulars address.

NEUMEYER & NIESE,

july67:67 No. 9 South Third street, St. Louis.

NEW YORK BELTING AND PACKING COMPANY,

MANUFACTURERS OF

VULCANIZED RUBBER FABRICS,

ADAPTED TO MECHANICAL PURPOSES.

Patent Smooth Belting, (Patented Nov. 22, 1859,) vulcanized between layers of a patent metallic alloy, by which the stretch is entirely taken out, the surface made perfectly smooth, and the substance thoroughly and evenly vulcanized. This is the only process that will make reliable Rubber Belting.

Hose never needs oiling, and warranted to stand any required pressure.

Steam Packing in every variety, and warranted to stand 300° of heat.

Solid Emery Vulcanite.—Wheels made of this are solid, and resemble stone or iron; will wear out hundreds of the ordinary wheels.

Directions, Prices, etc., can be obtained by mail or otherwise.

15-4 -qp JOHN H. CHEEVER, Treasurer.

Warehouse, 37 & 38 Park Row, N. Y.

WIRE ROPE.

The Subscribers, agents for

GARNOCK, BIBBY & CO.'S

Celebrated Steel and Charcoal Wire Rope, for Mines, Inclined Planes, Bridges, Derricks, and Hoisting Purposes. Also Galvanized Charcoal and B. B. Rope for Ships' Standing Rigging, Stays, Guys, &c.

A large stock constantly on hand. Orders filled with dispatch. For further particulars as to price, test weight and working strain, apply for Mining Circular to

JOHN W MASON & CO.,

14:3:1y 43 Broadway, N. Y

IRON AND STEEL WIRE ROPE.

MANUFACTURED BY

JOHN A. ROEBLING,

TRENTON, N. J.

FOR

INCLINED PLANES, MINING,
STANDING SHIP RIGGING,
SUSPENSION BRIDGES, FERRIES,
STAYS AND GUYS ON DERRICKS,
CRANES & SHEARS, ELEVATORS,
TILLERS, &c.

A large stock of Wire Rope constantly on hand Orders filled with dispatch.

☞ For strength, size and cost see circular, which will be sent on application. nov3:67:xm

---

THE ANTI-INCRUSTATOR.—Highly important to those using Steam Boilers.—This simple instrument renders a Boiler self-cleaning, thereby economizing fuel. It is fixed in the steam space, is durable and easily attached. By its action scale of any thickness is gradually and surely detached from the sheets, flues and tubes, which are afterwards kept perfectly clean, without any injury to the iron or metal of which they are composed. When applied to a new Boiler it entirely prevents incrustation. Thousands are in use throughout the country. NEW YORK ANTI-INCRUSTATION COMPANY, 73 WILLIAM STREET, New York City. P. O. Box 240.

B. H. Van Auken, Pres., J. R. Estill, Sec., David Barney, Sup't. 4:3:qp

---

WATER-PROOF SAFETY FUSE.

Warranted Sure Fire if not Cut in Tamping.

MANUFACTURED BY

UREN, DUNSTONE & BLIGHT,

EAGLE RIVER, KEEWENAW CO., (L. S.) MICHIGAN.

JINERS TRY IT! All we ask is A FAIR FIELD AND NO FAVOR. nov 10-1y-qp

---

MACHINISTS.

FRANK B. POLLEY & CO.,

ENGINEERS AND MACHINISTS,

277 & 279 First street, Brooklyn, New York.

Manufacturer of

HIGH AND LOW PRESSURE STEAM ENGINES,

PORTABLE AND HOISTING ENGINES,

Also,

ROSS PATENT BURR STONE GRINDING MILL.

FRANK B. POLLEY. EDWD. W. CLARKSON.

Send for Circular. 13:3:qp.q

M. BOTTICHER'S

PATENT ADJUSTABLE PRESSURE AND VACUUM

EAGLE GAUGE,

Can be furnished from 10 to 600 pounds pressure. The most simple and reliable Gauge in use.

Every Gauge warranted to give satisfaction. State rights for sale.

Address, M. BOTTICHER,

20.4.qx 264 Broad street, cor. Bank, Newark, N. J.

LUCIUS W. POND,

MANUFACTURER OF MACHINERY,

MACHINIST'S TOOLS AND SUPPLIES,

Superior Turbine Water Wheels,

SHAFTING, MILL-GEARING AND JOBBING.

And also Sole Manufacturer of

TAFT'S CELEBRATED PUNCHES AND SHEARS,

(Works at Worcester, Mass.)

No. 83 LIBERTY STREET, NEW YORK. 18.4qxq

THE WATSON MANUFACTURING COMPANY,

RAILROAD AVENUE, OPPOSITE ERIE RAILWAY STATION,

MACHINISTS AND MILLWRIGHTS,

PATERSON, N. J.

Water Wheels, Heavy Gearing, Shafting, Pullies, etc.

ALSO, PORTABLE ENGINES.

And all kinds of Machinery for Oil Wheels, etc.

Rolling Mills, Steam Engines, Hydraulic and other Presses,

LATHES, PLANING AND SCREWING MACHINES,

And Tools in general. Iron and Brass Castings, of all sizes and descriptions Patterns made to order. Also, manufacturers of the

Improved Turbine Water Wheel.

oct.12, '67-1y

CLINTON IRON FOUNDRY,

502 and 504 WATER, and 239 and 241 CHERRY STREETS,

Between Pike and Rutgers Slips, New York.

LEADER PIPES,
PULLEYS, HANGERS,
GRATE BARS,
MACHINERY PATTERNS of all kinds,
Also,

LOAM AND DRY SAND CASTINGS

of every description, for mining purposes, made to order at the shortest notice and on reasonable terms.

W. McKINLEY. oct 26-6m R. SMACK.

PROSPECTUS.

EL CORREO HISPANO-AMERICANO;

A Journal of Commerce, Agriculture, Mining, Mechanics, Railway Enterprise, &c., especially devoted to the interests of the Spanish American States, issued the 1st, 10th and 20th of Every Month.

The much-to-be-regretted absence of adequate commercial intercourse between the Northern and Southern continents of America is mainly to be attributed to two causes. The first of these is the lack of proper information, among the industrial and agricultural classes of the Spanish American Republics, concerning the facilities and advantages offered by the manufactures of the United States; and the second is the entire absence of direct communication between the producers of this, and the consumers of those nations; while those who are really aware of the favorable opportunities here offered are deterred from availing themselves of such advantages by the fact that the expense of importations is not infrequently tripled or quadrupled by the passage of merchandise through three or four hands before reaching its final destination. England and France have commanded hitherto the markets of South America for all kinds of manufactures, while the United States, excelling in almost every department, and offering in addition the inducement of low prices, have enjoyed but a small share of the trade. Few manufacturers in this country are aware of the vast extent and profitable nature of this commerce; but the conviction of this fact is rapidly making itself felt; and there is urgent inquiry for the proper means of turning this tide, which now flows to Europe, towards the shores of the Northern Continent. The possible acquisition by the United States, at no remote day, of an important foothold among the Spanish American islands gives the subject at the present time great additional importance. Our naval supremacy in those regions should be accompanied by the commercial supremacy which it is chiefly useful to defend.

The best and surest means to this end is to furnish the Spanish American consumer with full and accurate information regarding the commerce, manufactures, mechanical arts, mining, metallurgy, railways, &c., of this country, setting forth in these departments our superiority to the nations of the Old World, and explaining the advantages offered in our markets.

Our conviction of the usefulness of such a step, based upon long and careful examination of the subject, and thorough personal acquaintance with each one of the Republics in question, their resources, interests and requirements, has received, of late, additional confirmation from communications addressed to us, as Publishers of the AMERICAN JOURNAL OF MINING, by prominent and influential citizens of Mexico and the other Hispano-American Republics, pointing out the expediency of either translating our Journal into Spanish, or publishing a periodical in that language for circulation in those countries. These gentlemen have urged us to put the plan into immediate execution, and promised us their influence and personal support.

We have therefore resolved upon the issue of "EL CORREO HISPANO-AMERICANO," for the purposes set forth above; and we feel assured that the nature of the Journal itself, together with the facilities we possess for its publication, and the patronage already spontaneously offered and secured, will render it not only the best medium of publicity for the manufactures of the United States, but one which cannot be superseded in point of universal circulation, efficiency of advertising, and economy of terms.

It will at once be evident, that the "CORREO HISPANO-AMERICANO" will not, like newspapers in general, depend upon partisan or political beliefs for its popularity. Politics having no place in its columns, it will have no rivals, will be free from all shackles of party spirit or interest, and will be welcomed in all circles and by all classes as a real friend, the bearer of useful information on matters of vital interest to all. Hence, it cannot come into competition with political journals of the day.

Besides the matters of value to the Spanish American reader already enumerated, the CORREO will contain the most complete market reports, including the prices of all crude and manufactured materials in the production, exchange, or consumption of which its subscribers are interested. As the day of publication coincides with the sailing of the Pacific Mail Steamer, these reports, corrected to the last moment before going to press, will afford the very latest information which can be obtained, surpassing, in this respect, all other periodical bulletins of prices current.

We would respectfully submit the following facts for the consideration of

ADVERTISERS:

Our terms for advertising are 25 cents per line for each insertion on inside pages, and 40 cents per line for each insertion on the outside.

We feel confident that this tariff will meet the approbation of all concerned; and to those who have already advertised in the columns of South American papers, the difference offered in their favor by the "CORREO" will at once be apparent, especially when they reflect that, in order to secure an adequate advertisement, covering the ground offered by our new Journal, the "CORREO HISPANO-AMERICANO," they must have recourse to the columns of all the principal newspapers in all the chief cities of each Island and Republic. Now, there are no less than *forty-seven* such newspapers, charging at an average rate 5½ cents in gold (equal to say 7½ cents in currency, at the present price of gold) per line for each insertion: that is to say, an advertisement of 10 lines costs for a *single time* $26.00 (gold), or $36,40 (in currency). The same advertisement in the "CORREO HISPANO-AMERICANO" costs but $2.50 in currency, and gives, besides, a superior medium of publicity, and also an incomparably wider circulation than can be reached through the above papers; for the "CORREO" will circulate where those, for political reasons, if for no others, can never go, namely, Spain. There too our Journal will be received as the welcome harbinger of useful and profitable information for all classes of society, and chiefly for the mercantile, agricultural and industrial communities.

Need we mention the benefit advertisers will derive also from the considerable circulation the "CORREO" will have in the United States? This we deem superfluous, and so, shall add no more to the incontestable advantages already enumerated.

We hope our friends and the industrial community generally will make all possible dispatch in handing in their advertisements, for the time is now short for translation, &c., before the publication of the first number, January 10th, 1868.

TERMS OF SUBSCRIPTION.

$5 per annum, payable invariably in advance. Single copies, 15 cents.

The above prices are of course exclusive of postage.

All communications relative to the "CORREO HISPANO-AMERICANO" are to be addressed to

WESTERN & COMPANY, Proprietors,
Office 41 Pine Street,
Editorial Rooms, 37 Park Row, New York.