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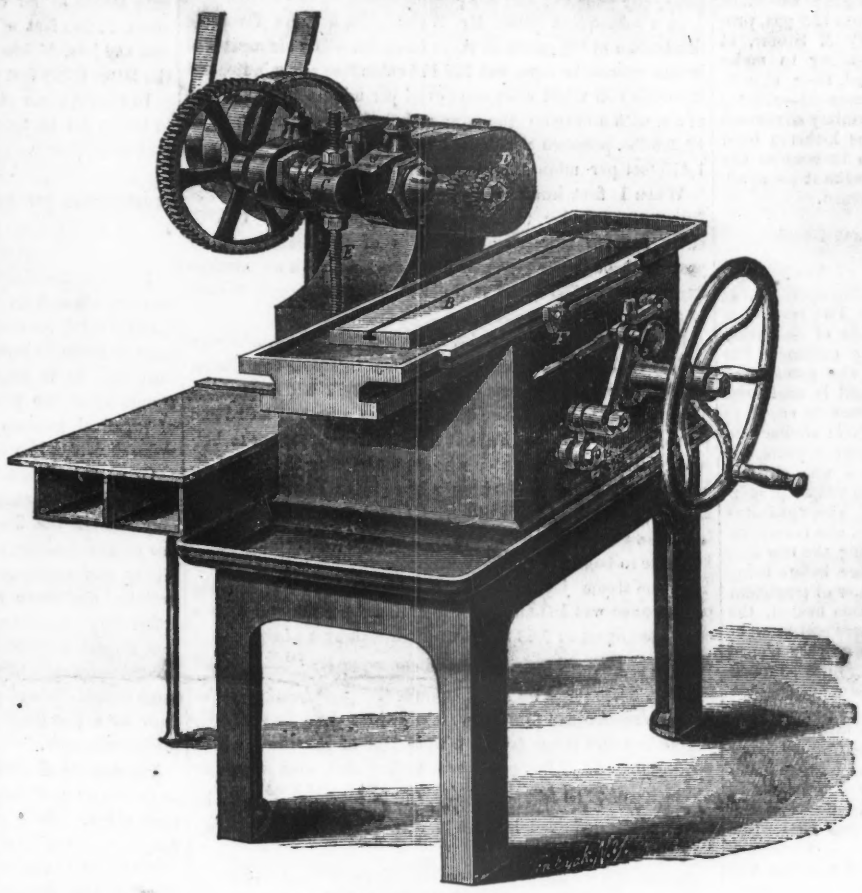
MILLING MACHINES.

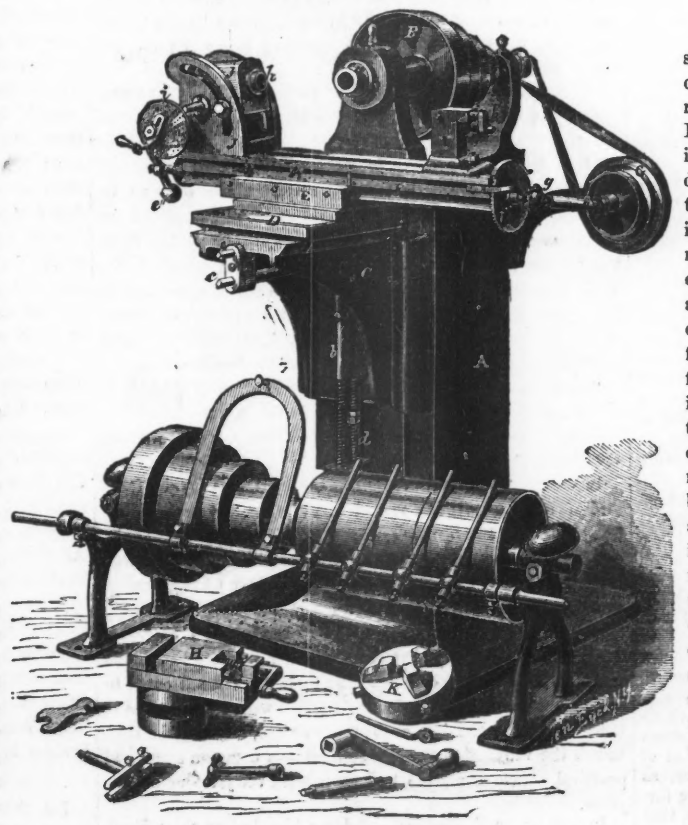
The annexed engraving, Fig. 1, represents a machine designed for ordinary milling operations, and has a strong cast-iron frame fitted with a table, B, on which the work is fastened. In the upper part of the frame is fitted a heavy casting, D, with two projecting arms, C C. In these arms are fitted bronze boxes to receive the spindle holding the milling cutters. The spiudle has an anti-friction bearing at the front end, with arrrangement to close np as wear takes place. The screw, E, fitted with adjnsting nnts, is used for raising and lowering the spindle. The spiudle can be moved endwise by means of the nuts on the boxes. The table is moved by a very simple feed motion placed within the frame of the machine, and easily accessible through an opening in the rear of the bed. The stop, F, on the table, comes in contact with the feed gear, and throws it ont when the work is done. This table has cast with it a pan to retain the oil and chips from the cutters. A pan is also cast on the bed of the machine which is useful to hold work or tools. At the side of the machine is a cast-iron stand to hold boxes containing the work to be milled, underneath which are boxes to contain small tools and waste for wiping. Accompanying the machine is a vise, similar to that marked H, in cut of Universal Milling Machine; suitable wrenches; also an overhead work, consisting of one pair of adjustable hangers, counter-shaft with cone pulley, one pair tight and loose pulleys, iron shipper rod with belt guides, shipper stnd and stops.



PLAIN MILLING MACHINE.—Fig. 1.

The machine represented in Fig. 2, has all the movements of a plain Milling Machine, and the following in addition. The carriage moves, and is fed antomatically, not only at right angles to the spindle but any angle, and can be stopped at any required point. The feed arrangement consists of two Hook's joints and a sliding bar. On the carriage, centres are arranged in which rimers, drills and mills can be cnt either straight or spiral. Spur and bevelled gears can also be cnt. The head, which holds one centre, can be raised to any angle, and conical blanks, placed on an arbor in it, cut spiralling. Either right or left hand spirals can be cnt. A change of gears is furnished, by which any required spiral can be obtained. An index plate is attached to the head, by means of which the article to be cut is divided. Two tables accompany the machine, one showing the changes of gears for spirals and the other the divisions made by the index plate. The base, or frame, is hollow, with shelves cast in it, forming a cupboard to hold tools. The main arbor is of steel, running in a Babbitt metal box, with anti-friction cnrve at front end, and in a straight bronze box at rear end. Both bearings are arranged to close np for wear. The perpendicular movement of the knee which supports the carriage, is limited by stops in both directions. A vise is provided, which can be attached to the carriage at any point. The head can be depressed to cnt tapering rimers. One of Horton's six inch Universal Chucks is fitted to screw on the head, the jaws in this Chuck running through to the back side, so as to hold an arbor firmly. Long twisted drills can be milled by pntting them through the arbor in the head, (which is hollow) and holding them by the chnck and opposite centre. The over head work is arranged for two bolts to reverse the main arbor, and consists of one pair of adjustable hangers, a counter shaft, with cone pulley, one tight and two loose pulleys, iron shipper rod, with belt guides, shipper dog and stops; three wrenches and two cranks go with the machine; also, an extra sliding bar for feed motion. Since the engraving of the machine was made, the following attachments have been added, viz: a device for gaaduating the height of knee to thousandths of inches, an apparatus for cutting mills of irregular forms, an extra feed cone, a middle rest and a stop to go on spiral bed, a pan for tools, and an improved vise block. The pulleys on counter-shaft are four-teen inches in diameter, and the whole width of the three, fifteen inches. The counter-shaft should run 110 turns per min.

Brown & Sharp Man. Co. manufacturers, Providence, R. I.



UNIVERSAL MILLING MACHINE.—Fig. 2.

A New Motive Power.

A practical demonstration was lately given at the college of the city of New York of the working and power of a new electro-magnetic motor or engine invented by Lapan Clark Stuart. The experiments were made by Prcf. R. OgdenDoremus, in the presence of several scientific gentlemen whose applause was frequently evoked. The new invention consists in the appliance of electcricity to magnets, by which the motion is obtained; the magnets are fastened to a cylin-der, which revolves when the electric wires are attached to it. With a galvanic battery of 40 cups, the engine is capable of making 500 revolutions a minute, equal to one-tenth of horse power; with larger magnets, but without any addition being made to the electric force, increased momentum is obtained. When 20 cups are nsed, as demonstrated yesterday, only 120 oscillations a minnte are given to the cylinder; so that the greater the amonnt of electricity and size of the magnets, correspondingly greater becomes the acceleration. The cost of running an engine of this sort at two-horse power is estimated at $12 a day. Its salient features are claimed to be the continuity of the electric current, and the consequent continuity and steadiness of its movement, its cheapness and small size, and its saving of insurance. During his demonstration Prof. Doremus gave an illustration of the explosive qualities of nitro-glycerine. He placed a quantity of the compound liqnid in a capsule, and then impregnated it with galvanic heat, but until he touched the bottom of the vessel which contained it, it did not burn.

New Form of Furnace for Burning Coal Dust.

The eightieth meeting of the Massachussetts Institute of Technology, being the eleventh as a Society of Arts for the sixth year, was held April 16. In the report of the proceedings as published in the Boston Evening Transcript, we find the following, which is interesting to this county with its mountains of coal dust: "Dr. James D. Whelpley read a paper, illustrated by diagrams, on a new form of furnace for burning solid bnt more especially pulverized fuel, givin the results of trials made by the naval engineers appointed by the Department: these, though interrupted by accident, were snfficient to establish the superiority of dust coal, reduced to excessive fineness, over solid fuel in the generation of steam. The inventors ihad found it necessary to apply the principle of the burning class to the combustion of ores; in other words, to concentrate heat of reflection and radiation, by covering the interior lines of fire walls, so that they should radiate their heat upon the central line or axis of combustion. The practical conclnsion is that radiation, and not convection or convey ance, is the most effective method of imparting heat to boilers. The experiments show that with properly constructed and managed furnaces, the poorest, most sulphurons and earthy varieties of waste coal and shales, even those containing only 60 per cent. of carbon, can be burned as thoroughly and completely, after fine pulverization, as the best selected coals of England and Pennsylvania, and with equally good effects, measured by the quantity of pure carbon contained in them. Solid and dust fuels seemed at first to give the same results, but the effect of the pulverization rose gradually to the enormous difference of 44 per cent. over solid fuel, when equal quantities were put in competition. The only explanation of this gain is to be found in the employment of extended radiation from solid particles in place of convection by gases. The efficiency of a mass of particles, as

an agent of radiation, is inversely as its diameter. The thermotic efficiency of a cubic inch of coal is made one thousand times greater by subdivision into a thousand parts by pulverization, by the extent of surface thus made an agent of radiation. In addition to the minute subdivision of the fuel, every particle should be infested with an atmosphere of oxygen, either in air or mixture of air and carbonic acid. The proportion of any gas which a sphere or cube of solid matter can condense on its surface, is inversely as the diameter of the particle, since this condensation is simply an affair of surface. In pulverizing carbon, we arrive finally at a size of particle small enough to condense upon its surface all the oxygen it requires for the formation of carbonic acid. This will be the ideal limit to be attained for perfect and instantaneous combustion. Among the effects of fine reduction upon fuels, the extraordinary length and volume of the flames generated is one of the most noticeable. A jet of coal dust and air four inches in diameter, driven into a hollow brick chamber with a velocity of six thousand feet in a minute, will create a flame three or four feet in diameter and from twenty to thirty feet long. These long flames are probably caused by the repeated formation, decomposition and reproduction of carbonic acid. Minute particles of carbon float the entire length of the flame, and serve at once to generate and to decompose the gas, producing a continued flame. Messrs. Whelpley & Storer, at their new works at South Boston, are preparing to make wrought iron with the coals of New England, their experiments in that line having being entirely successful—making use of coal, at $1 per ton. The immense pecuniary advantage of a process which promises to use what has hitherto been considered waste and useless coal, either from fineness or the presence of too much earthy matter, and to make it as available as the best coal, can hardly be over-esteemed.

Martin's Method of Producing Cast Steel.

[Translated from the Berg-und Huettenmannische Zeitung.]

Martin's method of making cast steel is in full operation at Mr. Verdie's works, since June 11th, 1867. Two reverberatory furnaces have been built, that are capable of delivering 3,500 kilogrames (552 21-100 lbs.) at every melting; two meltings are daily made in each furnace. The annual production is 21,000 tons per furnace. The steel is analogous with crucible steel: the inventor's object was to supplant crucible steel with reverberating furnace steel; similar experiments had frequently been made during the last years, but always without result, and Martin's success was entirely owing to the use of Siemens' furnaces, and the proper proportion of the ingredients composing the slag. The apparatus consists of one Siemens' regenerating furnace, one reverberating furnace, one warming furnace for heating the raw iron blocks, as well as the iron and steel shavings, before being placed in the re-smelting furnace. The manner of treatment is as follows: After all the furnaces have been heated, the raw iron blocks are placed in warming furnaces and brought to a white heat; while in this state they are quickly placed in the smelting furnace and melted. The iron is supplied with a covering of scoria consisting of the dross of blasting furnaces and silicious sand, which is intended to prevent the escape of carbon. After the first charge, the iron and steel shavings, which must be previously heated, are added every half-hour in four portions of 200 kilogr. each. Eight hours are required for the entire operation; the two hours spent in repairing the furnace are not included in this. Between the 6th and 7th hour, when the entire mass, i. e. 900 kilogr. raw iron and 2400 kilogr. shavings, is in the furnace, it becomes of a dough-like consistency. By this time the raw iron has given some of its carbon to the bar iron, and the mixture presents a semi-fluid mass that is neither steel nor bar iron. In order to make steel, 8000 kilogr. of the cast iron, which must previously be heated, are added in quantities of 200 killogr. Through this addition a partial decarbonization again takes place, and when, during the 8th hour, the proper degree of steeling is found to have begun, the steel is tapped and poured into coquills. The mass may remain in a melted state under the scoria for any length of time without taking injury, and the tests meanwhile be quietly made. If the steel proves to be too hard, raw iron is added; if too soft, iron shavings are added. During the entire operation, the workmen have nothing to do but to keep up the fire and put the raw iron and other ingredients in the furnace; no stirring or turning of the mixture is necessary. The steel mixes itself just as in crucibles, and the only important work the men perform is the preparation of the hearth of the reverberatory furnace. The material used by Verdie in his works for making steel is firstly raw iron, made exclusively of Motka (Algiers) ore, and iron and steel shavings of the same origin; thus only ingredients of the same kind are used. The ores of Motka are so rich in manganese, that it is quite unnecessary to add other ingredients containing this substance. The experiments made with the steel thus produced showed astonishing results, although it was only to be employed for making rails. Matthian tells of one flat bar of this steel, 60 millimetres, not quite two and a third inches in width, and nine millimetres, not quite one third of an inch, which was bent double three times without tearing, notwithstanding that it was perforated only four millimetres from the edge. From the same ingot of which this was made, tools were made and tempered which could be used very effectively against hard cast iron and steel. One rail, under the blows of a trip-hammer weighing 300 kilogr., and falling from a height of two and a half metres, (98 9-20 in.) only bent one centi-metre (one metre is 39 19-50 in.—one centimetre is one-hundredth part of a metre), and broke when the hammer was raised to 2½ metres. Matthien considers the rails made by Verdie of Mokta metal, according to Martin's method, superior to those made of Bessemer metal. It can not be denied that Verdie's modification of Martin's method makes the production of steel much more expensive than the Bessemer method, if, as at Terrenoire, he puts the iron direct from the blasting furnaces into the converters. Against this may be urged, that the construction expenses of Martin's system are less than those of the Bessemer, and stand in proportion of 0.45 fr. to., 1.36. This makes a slight compensation for the greater expenses of manufacturing. Finally, Martin's method does not require the use of specular iron, which forms 10 per cent. of the ingredients used in the Bessemer process, and costs 220 francs per ton.—*Iron Age.*

Practical Letters.

[WRITTEN FOR THE AMERICAN JOURNAL OF MINING.]

ON THE VENTILATION OF COAL MINES.—NO. IV.

BY J. W. HARDEN, M. E.

In reducing the effective performance of the furnace, I have treated the rarefaction of the air passing over it, as the power doing an amount of work represented by the increased quantity of air thereby produced, and the extra drag on the mine consequent on its production.

In his comparisons, your contributor makes the water gauge represent the drag in the mine only in his estimate of the power of the furnace, while in the fan and air pump he includes with the drag in the mine, resistance in the shaft, and of natural ventilation he says nothing.

Dealing in a similar manner with the furnace in the instance before us, and we get a rise in the water gauge of 3.2 inches, equal to 16.485 lbs. per square foot over the area of the shaft, which, moved at the velocity indicated, gives a practical working effect equal to the power of 122 horses, and 6.53 horse power per pound of coal per minute.

In a subsequent paper, Mr. Wood gives a more favorable illustration of the power of these furnaces. The air measured in the returns, he says, was 225.176 cubic feet per minute, and the coals consumed were one pound per minute to 11.940 feet of air, with a drag on the mine and shaft resistance, equal to 18,218 lbs. pressure per square foot, which, at a velocity of 1,475 feet per minute, he makes equal to 124.6 horse power.

When I first knew the Hetton Colliery, which was some four years anterior to anything here said about it, 170,000 cubic feet per minute was the mean of the quantity of air passing through the pit in its daily working, with an average expenditure of 746 lbs. of coal per hour, or one pound to each 13,676 feet of air per minute.

In describing the steam jet in former letters, acquaintance with it enabled me to do so in detail, and this your contributor mistakes for "much praise." In doing this, I had a two-fold object; first, to give information to those who had heard and probably read of it, but had not seen it; second, to make better acquainted with it those who, in attempting the use of it, had been unsuccessful, lacking a knowledge of its principle and proper mode of application. Of the latter there are more instances outside the field of your contributor's practice than he seems to be aware of.

Of the steam jet at Hetton, Mr. Wood says "its effective performance was 164,000 cubic feet of air per minute, with a resistance equal to 9.83 lbs per square foot area of shaft, at a velocity of 1,072 ft. per minute, and consequently $\frac{983 \times 1\,072 \times 154}{33{,}000}$ = 49.17 horse power. But to obtain the performance of the jets as a mechanical force, we must deduct the effect of the engine fires and steam on the temperature of the shaft, which was equal to 6,275 lbs. per square foot of shaft area moved at a velocity of 914.1 feet per minute, and $\frac{6.275 \times 914.1 \times 154}{33{,}000} = 26.16$ horses power deducted from 49.17, leaves 22.41 as the mechanical power of the jet."

At the Tyne Main Colliery, the Natural Ventilation, so called, was 35,914 cubic feet of air per minute, and with the jets so applied that their power could not be affected by the heat, the amount of air was 48,348 feet, giving 12,434 feet to the propulsive force of the jets, the drag being 4.4 lbs. per square foot.

At Killingworth 11,249 feet of air is set down to natural ventilation, with a total of 23,018 feet, giving 11,769 feet as due to the propulsive force of the jet.

More favorable examples of its application as a permanent ventilating power within my own acquaintance, were to be found at the Ince Hall Company's Mines, at Wigan, under the management of Mr. J. DARLINGTON, and at the Seaton Delaval Colliery, near Newcastle, under the supervision of Mr. T. E. FORSTER. At the time of Mr. WOOD'S experiments, these gentlemen had been successful with the jet, and were of the number of those advocating its use, yet neither of them had adopted it to the entire exclusion of the furnace.

At the South Hetton Colliery, with a shaft area of 150 feet, Mr. FORSTER obtained 238,000 cubic feet of air per minute by the furnace, at six collieries under his management, it was the ventilating power employed.

In a conversation with myself at the Seaton Delaval Pit, he said of it, that "with an upcast shaft eight feet in diameter, he obtained by two furnaces, 53,000 feet of air per minute only, but that by substituting the steam jet he obtained 90,000 feet per minute; that to have increased the supply by the furnace would have necessitated an unwarranted outlay, and having boilers in the pit, he was able to apply the jet at a comparatively trifling expense; that as to whether the effect obtained was from temperature or propulsive force, he had not cared to be particular about; that the engine fires were obliged to be in the pit, whether the jets were there or not, and that he then had all the ventilation the pit required"—a common sense and practical conclusion. He had then used the jet four or five years.

In a paper on the subject, read by him before the "Institute," he concludes by saying, "the total quantity of air driven up the shaft, by the united efforts of the jets and boiler fires, is 88.363 cubic feet per minute, the weight of which will be $\frac{88.363 \times 536}{7{,}000}$ = 6,766 lbs., being 3.02 tons per minute, 181 tons per hour, or 2,172 tons in twelve hours, which is more than double the weight of coals drawn by two 60 horse engines in the same time.

In his trials with the every day working of the Ince Hall Co.'s Cannel Pits, at Wigan, Mr. DICKINSON, the Government Inspector, found that the effect produced with one furnace six feet across the bars, was 51,466 feet of air measured in the workings. By 18 jets and the two boiler fires necessary for them and an underground engine, the effect was 50,872 feet. On a trial of the furnace, jets and boiler fires together, 61,746 feet was obtained. The upcast shaft had an area of 71 feet, there were two downcasts of the united area of 140 feet; all were 600 feet deep; the aggregate length of air courses was nine miles.

At the Pemberton pits, belonging to the same company, there are two seams of coal worked with a pair of shafts, each 10 feet in diameter; one seam lies at 561 feet from the surface, the other at 642 feet. The ventilating power consists of two boiler fires in the lower seam, and a small furnace, together with an arrangement of ten steam jets placed in the upper seam, the latter being used only when the furnace is out, or at nights when the engine is not at work. The aggregate length of air courses was six miles. With the furnace alone, 42,630 feet of air was obtained; with the boiler fires and the jets, 46,800 feet, the former giving 10,962 feet of air, the latter 6,268 feet per pound of coal per minute.

In consequence of the guide rods in the shaft being likely to be set fire to, they dare not drive this furnace to the extent of its power.

LESSONS IN MECHANICAL DRAWING No. X.

GEOMETRY.

I have hitherto confined my attention to the explanation of instruments and artist's materials required in mechanical and architectural drawing. The student, understanding the purpose of these, is now prepared to enter upon the study of drawing. It is imperative, however, that, at the outset, he should know the great importance of a thorough knowledge of practical geometry. Without this, all his attempts to make drawings in a scientific manner would be of no avail.

Geometry is considered by many who are not versed in the science as a dry, uninteresting study; but, if the student will only master the first elements, and work out, practically, a few of the leading problems, he will soon admire their simplicity and appreciate the advantages they give him. The practical draftsman must have geometry at his finger ends; I therefore strongly urge the necessity of a continuous practice in, and a persevering study of the science. There are several valuable works on geometry, therefore I shall only give some definitions and problems which will enable the student to draw in a practical manner, and give him a taste for still further research.

The science of geometry treats of the properties of figure, or particular portions of space, and distances of points from each other. Much of the difficulty that usually attends the early progress of the student arises, from his taking up too soon the most perplexing part of the whole subject. I shall therefore take the most simple view possible of the subject, and begin with a consideration of surfaces and lines. Upon examination of all surrounding objects, it is found that they have one or more surfaces. The geometrical term of a surface is *superficies*, or, when there are a number of surfaces, we use the plural word *superficii*. Hence the common word superficial, which, strictly speaking, means surface, the idea of thickness being disregarded. *A surface or superficies is defined as that which has length and breadth only.* Of surfaces there are but two kinds, viz., *plane* and *curved*. *A plane surface is one in which any two points being taken, a straight line, having these points for extremities, lies wholly in that surface.* If a surface is not plane, it must be curved. The edges or boundaries of surfaces are lines, always either straight or curved. *A line is that which has length*, without breadth or thickness. The extremities of straight lines are called points. They have no magnitude, but position only. Take then, for instance, the tools to be seen in every machine shop. One finds machines termed planers, which give the machinist plane surfaces, and lathes which turn off curved surfaces. There are drilling and milling machines, which bore and cut holes having curved surfaces; shaping and slotting machines, that give plane surfaces. Thus all the parts of a building, or a steam engine, have plane or curved surfaces. All the works of nature and art present to us only these two kinds of surfaces. The form of plane surfaces is determined by lines either straight or curved. A straight line is the shortest distance between two points, and is therefore distinguished by uniformity of direction. A curved line is one that changes its direction at every point. Straight lines are either horizontal, perpendicular, or oblique. If a straight line is neither parallel nor perpendicular to the plane of the horizon, it must be what is termed *oblique.*

EXAMPLES FOR PRACTICE.

Let the student now take his straight edge and No. 3 pencil, and, holding the latter in a vertical position, draw various horizontal, perpendicular, oblique and curved lines and diagrams. India ink may then be prepared, and the lining and bow pen used. The ink can be inserted into the nibs of the pen by a small brush or piece of writing paper. However simple this first lesson in geometry may appear, the student will find use

for his drawing board, paper, pins, T square, triangles, pencil, rubber, India ink, cabinet saucer, lining and bow pens.

The circle, in the figureis divided at the twelve points A, B, D, E, F, G, H, I, K, L, M, by lines so drawn that they form C, a star with twelve points. From the point A, draw a line to F, from F to L, to D, to I, to B, to F, to M, to E, to K, to C, to H, and back again to A.

The problem now to be solved, is how to distribute the twelve numbers of the following arithmetical progression, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, into the twelve compartments of the twelve letters which stand at the twelve points of the star in such a manner, that the sum of any two numbers that lie side by side, when added together, shall be equal to the sum of the two numbers which are at the two opposite points of the star.

This singular arrangement of the numbers is effected in the following manner: Place number 2 over the ring which incloses the letter A, 4 over F, 6 over L, 8 over D, 10 over I, and so on and the numbers will then be distributed as appears in the cut.

Now take any two numbers that lie side by side, and add them together, and their sum will always be equal to the sum of the two numbers found at the opposite points of the star.

For example, the sum of the two numbers 14 and 4 which cover the letters G and F, is 18, and so also is the sum of the numbers 16 and 2, which are placed over the opposite letters M and A. The same is the case with every other pair of numbers and their opposites.

Mining Summary.

GOLD AND SILVER.

Montana.

THE MINING REGIONS.—PROCESS OF MINING.—HOW GOLD IS OBTAINED.

Union City, Montana Territory.

How is gold produced? This question could be answered in general terms by almost any intelligent person, but there are few, without personal observation in mining regions, who have any just conception of the intricate details necessary to the production of the precious metals. All know that millions are annually developed from the various gulches and mines in the Rocky Mountain Territories and States, and the difference between placers and quartz mines is popularly understood, but of the skill, patience, and labor essential to produce gold, even by the simplest process, the public generally have no sort of correct appreciation. Gulch or placer mining is the simplest method of taking gold from the earth. Gulches are simply the ravines into which the gold croppings of rich leads in the mountain cliffs are washed. Surface or blossom quartz is usually found on any hill in which valuable mines slumber, and the elements gradually decompose it until it separates the particles of gold from the flint or iron that holds it captive, and its specific gravity forces it not only down into the gulch, but down through the earth to the very bottom of the bed-rock of the ravine. This gold, coming as it does from decomposed rock, is entirely "free gold," and has no mixture of the base metals, so that no peculiar scientific attainments are requisite to master it. Its existence in a gulch is easily ascertained by the simplest instruments. A spade, pick, and pan are all that the prospector requires. His pan is made of sheet iron and holds about a peck. The centre of the course of washing is found, the pan half-filled with the earth, and it is washed out by dipping and whirling the pan in water until the loose earth escapes with the water, while the gold, iron, and pebbles remain. All the science necessary to save gulch-gold, is the appreciation of the fact that gold is the heaviest of all substances on the earth and will always attain the lowest point it can find. As the earth is whirled round in the water, the gold gradually settles to the bottom of the pan, and when there is no more earth to wash out, the pebbles are picked out. A little pocket-magnet, stirred around in the pan, will take out all the iron by adhesion, and leave the pure gold or "dust." This dust varies in value according to its fineness, and its marketable price is from $12 to $19 per ounce (Troy) in gold coin. The lowest standard of "dust" has some silver mixed with it, but different gulches will produce gold ranging in degrees of fineness as much as 20 per cent. Any expert dealer in gold in established mining regions can at a glance usually tell the gulch from which any lot of "dust" has been taken. In the early settlement of all mining countries gold is the only legal tender in all business transactions, unless there is a special contract for currency. Every man carries a buckskin purse, and when he buys anything, from a plug of tobacco to a gold mine the dust is weighed out in payment at its standard value per ounce. The various methods of separating the gold from the earth of the gulches are all exceedingly simple, while the first placer miners are working it. They usually make their own "district laws," the district embracing any particular camp or gulch. They meet in mass council and adopt their code, then land laws, then water laws, and all needful regulations for their enforcement. The local or district laws have always been respected both by Territorial and Congressional enactments—so that no better primary title can be procured than a clear title under the district laws. When disputes arise they try titles to claims or water, either by a a jury or by general meeting, as may be the adopted custom, and from the decision of the district tribunal there is no appeal. Indeed, to demur is not often even safe. The dreaded tribunal of Judge Lynch is the one certain to be invoked by attempted resistence to the judgment of the local courts. The claims are usually parcelled in lots of 100 or 200 feet in length, up and down the gulch, and embracing its entire length. The local laws are scrupulously careful to prevent monopoly of water, and it is economized, if scarce, so as to afford the greatest advantage to all. Each owner or owners of a claim (they generally mine and cabin in couples), erects a flume, or digs a ditch, through which to wash the dirt of his claim from each side down to the depth of the bed-rock. Their labor consists of simply digging the earth loose, and shoveling it into the ditch or flume, through which it is to be washed away, while a portion—usually about a half—of the gold is saved by various contrivances. Sometimes the bottom of the flume is made of a thick plank, into which are bored a large number of auger holes, just deep enough not to go through. The pay dirt is washed down over this perforated board, and a very large proportion of the gold will lodge in the holes. They will, of course, first fill up with sand, but the gold will find the least depression in the surface over which it is passing, and work down through the sand and earth to the bottom of the holes. At the foot of the sluice or flume, a cross piece is usually placed, about an inch thick, to make a ripple, and sometimes they are placed at every ten or twenty feet, so that the earth passes over a succession of ripples. The ripples lodge a quantity of the earth, the gold sinks down in it to the bottom and there remains until there is a clean-up. Sometimes small boxes are placed at the end of the ditch or flume, into which the water and earth empty, while the earth washes out by the continuous current, the gold lodges safely in the bottom. In some instances a quantity of quicksilver is poured into the boxes to amalgamate the gold. The finest particle of gold, unless covered with iron, will amalgamate with the mercury at once, and cannot be separated from it until the mercury is strained out through buckskin. Copper plates, amalgamated with quicksilver, are also sometimes used in gulch mining, but not generally. The bottom of the flume is covered with copper, and the copper coated completely with quicksilver. The earth is then washed over it, and fine particles of gold will amalgamate on the plate. When the general clean-up is made, usually once in one or two weeks, the various boxes, ripples, holes, etc., for catching the gold, are emptied and panned out by washing the earth and gravel away, and the pure gold will be found in the bottom of the pan. The gulch miners work their claims very imperfectly. It is deemed a safe calculation that they leave quite as much in the earth as they extract, and more systematic men, with heavy capital, follow them, buy up the abandoned claims for miles together, and sometimes concentrate a whole gulch in one company. They often bring water for miles by flumes, and cut a bed-rock flume the whole length of their claims, through which they flow a strong stream of water. Into this they throw the whole earth of the gulch, and often bring down the whole hill-sides into the flume by hydraulic power. They save the gold as the earth passes through the flume, on the same principles their predecessors did, only with much more completeness and system. This secondary process of gulch mining is just now in its zenith in Montana, and this year it will yield millions of gold. But the most important and permanent mining interest is the reduction of gold and silver quartz, and the separation of the precious metals from the rock. I have seen this process from the mines to the retort, both in Colorado and Montana, and it is a study that must interest any observer. The gold and silver mines do not differ essentially from the general laws which govern mineral and coal leads in the States, and they are worked in the same manner. When opened properly, they are clearly defined, as a rule, have fixed walls with regular pitches, and can be followed by experienced men with great certainty. In most of the mines practical Cornishmen direct the development of the leads. Shafts are sunk, about six feet square, usually on the leads, the sides well timbered, and when a certain depth is attained—from 40 to 60 feet—a level is run both ways from the shafts, and all the ore above the level is stoped out. Instead of working down from the top, the miners work up from the bottom. They run a drift from the bottom of the shaft out under the ore as far as may be expedient, make a floor of firm timbers, so as to protect them when they make their next level below, and then dig or blast the ore down overhead. They select the ore from the rock and earth as it falls down, wheel it out to the shaft for hoisting up, while the refuse drops under their feet, and keeps them up to their stope all the time. When they have worked up as far as there is ore, they go down with their shaft 20 or 40 feet more, drift out again, timber as before, and then stope up to the floor of the first level, and so on indefinitely. The miners work day and night in shifts, changing from day to night work every one or two weeks. There is no day in the mines—night is perpetual. They work by the light of sperm candles, and for a candlestick they use a lump of soft kneaded clay, in which they imbed the lower end of the candle, and they shift it at pleasure by sticking the clay against a rock. Wherever it is placed it adheres, so that handling, changing, and using this light most advantageously involves no trouble. At first the ore is hoisted from shafts by a common windlass, but as a greater depth is attained, horse-power is attached to a whim for the purpose, and often steam engines are used. Foul air is always encountered more or less as shafts descend. As long as the miner's candle will burn brightly he can feel sure that the air is pure, but when it burns in a sickly manner, or goes out, he is admonished of the necessity of pure air. The engine is then employed to force a current of fresh air through pipes to the bottom of the shaft and the foul air driven out. Water is sometimes very troublesome in shafts, and pumps have to be worked by steam to keep it out of the way of the miners. The better method of mining where the mines lie in the hills is by tunnels, horizontal shafts run into the ground from the hillside until the lead is struck. The earth is run out on a little hand-car and dumped down at the mouth of the tunnel. When quartz is found the miners work up from the tunnel, as they stope out a level in a shaft, and car out only the valuable ore. Water cannot impede mining by tunnel, as it drains all the water to the mouth, and air-chambers are also placed in the bottom of the tunnel, and sometimes above also, by which pure air can be preserved to a great depth. When the tunnel becomes too deep for supplying pure air from the mouth, an air-shaft is worked up perpendicularly from the surface, a constant current of air is thus secured, and the tunnel can then be driven for hundreds of feet again. The miners not only dig the ore, but they select it carefully from the granite. An experienced miner will distinguish quartz as soon as he gets his hands on it, and needs no particular examination to determine its quality. He is familiar with the peculiarities of the lead he is working, and can tell at once whether a rock is granite, or first or second class quartz This requires considerable practical experience. I have seen gold quartz of every conceivable color and formation—white crystal, cold gray, all shades of blue, yellow, and pink, and every shade of dark to jet black. Quartz is usually very rich when gold can be detected in it with the naked eye. Miners understand what particular formations carry the gold, and they seldom err in estimating its value. In sulphurets the iron will glisten with a brilliancy that makes any inexperienced observer pronounce it gold; but the gold is infused in the iron in very fine particles, and seldom can be seen at all. Occasionally nugget gold will be found in quartz, but it is only in rare specimens of uncommon richness that the gold appears in that way. The average cost of mining ore in Colorado I would estimate at $5 per ton. In Montana it costs probably $8 per ton, but its development will be cheapened as it is systematized. When the ore is mined, it is delivered to the mill either by wagons or railways, where it is broken about as fine as stone is usually broken on a good turnpike road. This is sometimes done by a machine called a "cracker," but usually by hand, with the common sledge. It is then ready for crushing, and the process in most general use is the stamp mill. A mill consists of from two to six "batteries," each battery having five stamps, which consist of heavy, round bars of iron, set perpendicularly, widening at the bottom, on which is fitted a steel shoe. Beneath the shoe is a steel die, firmly imbedded, on which the stamp drops. It is hoisted by each revolution of the machinery to a certain point, whirled partly around, as it hoists, and its force consists simply in the drop of its weight upon the die. Each battery is surrounded with an iron frame or box, into which the ore is thrown, and a strong stream of water pours constantly. On the outer side of the battery a screen or sieve issues the water, and with it is carried the fine quartz as it is pulverized, so that feeding goes on constantly to supply the place of the fine quartz as it escapes. In the battery is placed a quantity of quicksilver, with which a large proportion of the gold amalgamates as the rock is crushed, and is held there until the "clean-up." Many particles of the gold, however, escape with the fine quartz through the screen before it is brought in contact with the mercury, and in order to catch it, the water and quartz from the latter are run over copper plates, from two to four feet wide, and ten to twenty in length, amalgamated with quicksilver. If the plate is properly coated every particle of free gold will reach the bed of the plate in passing over it. * * * In Colorado some of their refractory ores are smelted, and the gold, silver, copper, etc, are all run out in bars together, and are then shipped to Swansea for separation, but I do not know the measure of success that has attended the effort. The Consolidated Gregory company, of Colorado, is working by this process, but has as yet paid no dividends. After a run has been made in a quartz mill, usually from one to three weeks, they clean up. The batteries or pans are run down very low, and when this is done, then the mercury and remaining fine quartz is scooped out for the process of panning. A small pan is filled with the quartz and quicksilver out of the battery, and whirled around in the water until the sand and earth are washed out, and nothing but the mercury (holding the gold) and heavy sulphurets remain. The quicksilver is then poured out from under the particles of ore and iron, a magnet is run through it to separate the particles of pure iron, and the residue, which contains gold in iron, is pulverized in a hard mortar, and what little gold can be saved is gathered in mercury. The amalgamated plates over which the pulverized ore has been passed are then carefully scraped with square pieces of rubber, and the gold (mixed with mercury) is added to the mercury from the batteries. The tailings caught in the boxes and ripples are then emptied to be worked over in an arastra or barrels. The quicksilver gathered from the plates and batteries then contains all the gold saved by the iron, but the gold is in invisible particles in the mercury. The mercury is then strained out of the gold through buckskin, leaving so many ounces of "amalgam" as the clean up. The amalgam is worth from $5 to $7 per ounce, depending upon the fine or coarse quality of the gold—the gold that is coarsest in its particles being the most valuable, as the mercury can be better strained out of it. The amalgam is about the consistency of thick meal mush, and nearly the same color—the gold giving the mercury a soft yellow color. It has yet to be retorted before it is pure gold. The amalgam is placed in a little iron box, much like a brick-mold, full of fine needle holes. The box is so constructed as to allow the lid to be pressed down with clamps and screws until the amalgam is compressed in the smallest possible space. It is then set inside of another iron box, three times its size, and a lid fitted on it perfectly air-tight, by means of clay joints. In the top of the larger box there is a hole, probably an inch in diameter, to which is attached a pipe that comes down to the level of the bottom of the box, at a distance of probably three feet. The box is then set in a small furnace, and the end of the pipe is placed in a tub of water. A hot fire is made around the box until it is heated to a red heat, when the heat evaporates the quicksilver, in the inner box, out through the needle holes into the larger box, whence it escapes as vapor out through the pipe into the water, where it congeals, and is found in the bottom of the tub pure quicksilver again. This heat is continued until all the quicksilver is evaporated from the gold, and congealed in the tub, when the box is taken out, cooled, opened, and in the little inner box will be found a little brick, probably half the size of an ordinary building brick, the fruits of mining, hauling, stamping, panning, etc., 20, 40, or it may be 100 tons of ore. The brick is assayed to ascertain its actual value, and is then ready for coining or manufacture into any of the thousands of articles for which it is used. In this patient, laborious manner this country is now producing from seventy to one hundred millions of the precious metals annually, at as little profit just now, taken as a whole, as any other branch of industry can complain of, but ten years hence the yield should be nearly double, without a material increase of the gross cost of its production.

A. K. M.—[*In the New York Tribune.*

[FROM OUR REGULAR CORRESPONDENT.]

Eastern Nevada.

Austin, July, 1863.

Owing to various sources the mines of Lauder Hill are not yielding as much ore now as they have been for some months past. The white pine excitement has taken away most of the "chloriders"—men who had made good wages by extracting surface ores, which in the aggregate produced a considerable amount of bullion. Several of the best mines are idle, or doing little in the way of bringing ore to the surface. The mill of the Mettacom Company was closed a week or two ago for want of ore, and that of the Manhattan Company, which, in ordinary cases, is amply sufficient to reduce all the ore produced in the district, is also idle, but will resume work on the 1st of August. The truth is, but few of the mines of this vicinity can be worked at a profit till the cost of production has been greatly reduced. With miners wages at $4 per day in gold, and everything else in proportion, mining stockholders have but a poor prospect of dividends. The ores are refractory in working, and the charge for milling is in consequence $45 per ton; so that our poorer ores, which in other localities would be of great value, are here comparatively worthless. We have large quantities of ore which will yield $40 to $50 per ton, but it is too poor to be worked at a profit now. We need some efficient system of concentrating by washing or otherwise, so that we might obtain the silver of ten tons of low grade quartz in one or two tons. Our greatest difficulty will be in dealing with the brittle silver sulphurets, which are so fine as to float off on the surface of the water if concentration by its agency is attempted. The reduction of our expenses in milling is one of the great problems of the day; and we trust that when the Pacific Railroad has been opened, we will not only secure an increase of skill and capital, but have also such an addition to our mining population that wages will be at least reduced to $3 per day in coin. With supplies of all kinds necessarily lowered after the completion of the railroad, there will then really be more money saved by the mining community than there is at the present high rates of living. It is unfortunately too true also that the saloon-keepers and gambling-house owners get the principal portion of the earnings of the pioneer miner after his board is

paid; but all this will be revolutionized when the east and the west are brought into closer relations. By the establishment of a school of mines, and the intelligent combining of science and practice in the training of mining superintendents and mill men, there will in a few years be a great saving effected in the working of our mines. The visit of Mr. Raymond is likely to have a good effect on our future progress, as he fully appreciates the difficulties we have to contend against, and will no doubt be instrumental in helping to bring us the aid which, for the prosperity of the country at large, as well as that of this State, we so greatly desire—increased skill, a large population; and with these, the certain ability to extract the precious metals on a large scale with fair profit.

The Buel North Star mine is the most productive of the lodes in this district at present. It is yielding a magnificent quality of ruby and black sulphuret ore. Since I last reported the product of this mine, 151¼ tons have been sent to the mill, the pulp assay of which gave an average to the ton of $303.12. After paying milling expenses, this ore yielded $31,956.03, a good return for a month's work.

A very important occurrence happened recently in a conflict between this and the Plymouth companies relative to the title to a vein struck in the works of both. The lode of the Buel North Star Company has had many breaks in it from the surface downwards. In opening an incline which started on the vein at the surface, it was soon found either that the incline must be kept on a regular course beneath the ledge, or it would at points be too flat to be worked through with advantage. The incline, therefore, was carried down to its present depth, and then, as it was supposed the vein was considerably further up the hill, a drift was run off horizontally from its lowest point. After running a considerable distance, a ridge was struck, and in case it might prove to be another vein than the North Star, a location under the name of the North Ledge was made as required by law. Subsequently the Plymouth Company in dritting for their Kale Seed vein, reached the North ledge, and began to extract rich ore. Neither company had any reliable evidence that the newly formed vein was either the Kale Seed or the North Star lode, and therefore, till this point was determined, the title of the North Star Company was good, in virtue of the superintendent having located the ground as a new discovery. Recently the miners of the two companies broke into each other's work, and a personal conflict ensued, in which smoke from wood and coal as well as other agencies, intended to drive out the opposite parties, were had resource to, in place of allowing the law to take its course. One man acting as foreman of the Buel North Star lost his life by suffocation, and others had narrow escapes. The case in dispute has now come into court, and it will probably be a long and expensive suit, which will determine the rights of parties. Where there are numerous veins on the surface which seem to run into each other as depth is attained, it is a difficult matter to show such a connection between the outcrop and a lode found several hundred feet down, as will prove to the minds of a jury that the two bear the same relation to each other that the branch does to the root of a tree.

THE WHITE PINE

excitement has been running its course here with such an effect, that the hitherto lively city of Austin has become a very lifeless place. Such accounts were given of the discoveries there of large quantities of very rich silver ore that everybody who was able to leave wished to do so as quickly as possible. When I reached the district on the 18th of May it had only about two dozen inhabitants; now its population must be seven or eight hundred. Stores and saloons have sprung up as if by magic, and town lots are now being sold at $150 to $200, where at that time there was nothing but a marsh or a rugged snow-clad hill-side. Persons are flocking here from every quarter, and as all cannot hope to discover rich mines or secure paying business stands, much disappointment is likely to be felt. In a previous number of the JOURNAL I gave a description of the district and its mines. Having since had a fuller opportunity of making an examination of the region I now take advantage of the developments which have been made since my letter was written.

DEPOSITS OF ORE.

There seems to be a great difference of opinion among scientific and practical men who have visited the locality as to whether the ore is in deposits or chimneys, or in regular veins. On the table land of Treasure Hill it appears, at first sight, that a prospector cannot go amiss in sinking a hole down any where and finding milling ore. But a closer examination will disclose the fact, that the ore found under such circumstances does not hold out, but appears, in some cases, to be "float-rock deposited in crevices or surface irregularities of the bed-rock." In that part of the district, as also on the southern slope of the hill, the main bodies of ore appear to be in large, irregularly outlined masses, but in other places, such for instance as on the eastern slope of the main hill, there are belts of spar traceable for miles, having several veins of ore in each. These I believe to be true fissure veins, and there are others, of the same kind in the district. But in reality it does not signify anything of importance whether the ore is in lodes, chambers, or deposits, so long as it is abundant in quantity and sufficiently good in quality to pay a liberal profit on the extraction and working.

THE YIELD OF ORE

from the White Pine mines has been very satisfactory to claim owners during the last two months. The proprietors of the Eberhardt south, broke ground sixty days ago, and since then have on an average employed six men in quarrying out the rich surface ore. During that time they have extracted five tons of horn silver ore, which, at a low estimate, will yield $5,000 per ton in bullion; 110 tons of first class milling ore, which from the daily working assays at the Centenary company's mill, at Newark, is proved to be good for $1,000 per ton actual bullion yield; 60 to 70 tons of second class ore, which will give a mill assay of $300, and 80 tons of third class; which will yield $80. This claim, owned by four miners, has yielded during sixty days (on a perfectly safe estimate) $120,000 in coin value over mine and milling expenses, the former being only $1,800. The deposit is not yet exhausted, although it is by no means so productive in high grade ore as it has been. On one side a streak about two feet wide appears to go down into the ground almost perpendicularly, and work is now being prosecuted upon it with satisfactory results.

THE KEYSTONE CLAIM,

which adjoins the Eberhardt, shows more rich ore now than the latter. Nuggets of horn silver ore weighing from thirty to fifty pounds are occasionally taken out of this claim, and proved by smelting and assaying tests to be half pure silver. Several tons of ore have given a mill assay exceeding $1,300 per ton. Nine tons hauled to Austin, a distance of 120 miles, yielded over all expenses $9,200 in coin. From the appearance of this deposit its owners are certain to receive from it, in coin value, from $120,000 to $150,000, even if it does not yield more than is now in sight. Such mines are good for poor men, and those who own them are not particular as to whether they have walls or fissure veins, it being enough that they yield the wherewith to banish poverty in their case, even where it has existed for more years than they can well particularize.

OTHER MINES

in the district, though yielding a lower grade of ore, are being worked at considerable profit. The Aurora, which if a deposit assumes a longitudinal form, traceable on the surface for over a thousand feet, is thirty to forty feet wide in places, and has at least ten to twelve feet of milling ore. True, the latter requires considerable assortment to bring it up to a $200 grade. The Genessee has yielded some sixty tons, which assayed $160 to $175, and the more it is worked upon the greater is its promise for the future. From the Indiana, which at first showed very little good ore, fifteen tons have been taken to the mill, and though it scarcely could be said to be assorted, it gave a pulp assay of $130. The Hidden Treasure is yielding considerable $120 ore, and the Virginia Silver Clond, Iceberg and other claims are also profitably adding to the bullion product of the district.

NEW DISCOVERY.

Several lodes have been located recently, which promise to become valuable mines. The best chance is an east and west ledge located on the southern slope of Treasure Hill, between limestone and clay slate. It yields a fine quality of ore on the surface, and bids fair to be a productive chain. A location known as the Metropolitan, made a week or two ago on the western slope of the same hill, is also a promising ledge. These recent discoveries demonstrate the fact that the rich mineral belt is much more extensive than was at first supposed.

THREE TOWNS,

or as they are termed "cities," have sprung into existence within a few weeks. First is the town of Hamilton, at the north-westerly base at Treasure Hill. It is laid out in a kind of basin, distant about two miles from the principal mines. It has several good frame buildings, and promises to become quite a flourishing place. On the summit of Treasure Hill a township has been laid out, and Treasure City is there growing as rapidly as lumber from the saw mills can be supplied to the house builders. The chief drawback to this city of the mines (for it is in the vicinity of the best known mining claims) is the want of water. Now that the most of last winter's snow has disappeared, water is obtained from pedlers, who haul it two miles in carts, and sell it to the citizens at eight cents a gallon—a pretty heavy tax to those who have much washing to do. If the mines continue to yield as much ore as we anticipate, the price of water will no doubt be speedily reduced, and ultimately the town will be supplied with water from a parallel range of mountains about two miles off. The third city has been laid out by Major C. A Sherman, and is known as Silver Springs. It is at the western base of Treasure Hill, in a low sheltered situation, where there is abundance of water and wood. The winter climate will be mild, and the principal mines will not be over two miles distant. Already lots 25 to 100 feet have been selling in this new city at $125 each, the money being set apart for the building of a road which, if once completed, will make it a very accessible place.

A QUARTZ MILL

is to be built at Silver Springs within the next sixty days by Captain A. L. Page, who is moving ten stamps of the old Keystone mill from this vicinity, it having been destroyed by fire a few months ago. The iron work has been overhauled, and will prove quite suitable for a good mill. The two fine stamp batteries, five washing furnaces, with the necessary pans and settlers, will all be enclosed in the building, and having examined the design, I feel justified in saying it will be the most convenient mill for efficient practical work we have in this section of the State. Captain Page pledges himself to haul and work the ore for $60 per ton, guaranteeing 80 per cent. of the fire assay; and the miners of the district give a pledge that they will, other things being equal, give a preference for six months to the new Keystone mill over any other which may come into the district.

A WARNING.

Let me warn those who are disposed to take small risks in undeveloped mines, that an attempt to sell "wild cat," in White Pine district, is now being made in the Eastern States by a person whose plausibility will fool the most watchful. The new mines, which are good, are saleable on the spot, and claims offered for sale in the east are not likely to be of much value. Schemes too, I ascertain, are being concocted to obtain money from the east to build a mill or two in the district, by parties who only own undeveloped ledges which may be proved worthless ere six months elapse. We have had enough of this kind of operating, and I trust capital will be slow indeed to take hold of anything of a doubtful nature. We have good mines in the country, and it is folly to invest in anything that has not been proved of sterling value.

ITEMS IN GENERAL.

In the lower works of the Mettacom mine a body of ore has been found, but its extent has not been ascertained. A vein was penetrated recently in a level from the bottom of the South America mine on Lander Hill, and considerable ore is being extracted. The Savannah is looking about as well as at any previous period. Only a small amount of ore is being taken out of the Florida. The Plymouth shaft is 267 feet deep, with a level of 260 feet. One or two of the lodes struck in the works have been prospected, but as yet only a small quantity of ore has been found, except on the claim, from the working of which the company have been restrained by order of the court at the instance of the Buel North Star company. A consolidation has taken place between the latter company and the owners of the Lane & Fuller shaft, in the opening of which several lodes were found which promise well. The Toryabe shaft is down over 200 feet, and a good looking ledge was struck in it a week ago.

E. J. DARR.

Colorado.

A correspondent having made a flying visit to Jamestown thus writes, under date of June 2, of its present condition and of its mines and mills. He says: "Jamestown is located in a beautiful opening called Elysian Park, on James Creek, about four miles above its junction with Left-hand. There are two stamp mills and some six or eight arastras. The town at present seems to be passing through her crysalis state—the transition between the grub and the full-feathered butterfly—only, like many other mining camps in the Territory, the order is reversed, the *butterfly* comes *first* and the grub *last*, *i. e.*, there is a great excitement about a place and consequently a great rush to it—reduction works are erected in advance of the development of the mines, and before it is known what kind (if any) are wanted. There are very many promising lodes about James Creek, but from the looks of the lodes and their ores, and from the best information I could obtain from reliable sources as to their character and richness, I think that there are but few lodes there that will pay a fair profit above all expenses, either under stamps or in arastras, at the present prices of labor and supplies. When both mining and milling are conducted as a legitimate business, and on an economical and prudent basis, there are many lodes at Jamestown that will pay good profits to both miner and millman, but they are not rich enough to pay a profit above the extravagant expenses incident to the 'harum scarum' way in which business is usually done amid the first excitement in a new mining camp. Among the most promising lodes that I saw were the American, Stanley, Potosi, Carlisle, Poorman, Buckhorn, etc. The Potosi lode, owned by the Potosi company, has been developed probably more than any other lode in the district. The Cobb Bros. have two shafts on it, one about ninety, and the other about one hundred and twenty feet deep. In the former they have had very light, porous quartz and dirt all the way down, and I am informed that it has been from two to ten feet all the way, and yields under stamps $15 to $25 per cord. It pans better than that, but the gold is very fine and scaly and difficult to save. The deepest shaft is in cap, or off the crevice—the latter most probable, judging from the looks of the last stuff taken from it. The American has a shaft at discovery 30 feet deep, and an ore streak about 20 inches wide, mostly a soft, porous quartz, which Messrs. Keen & Ora are drifting out and running into arastras. I was told that they were getting $50 to $75 per cord from it—has run as high as $100. The Stanley lode has a shaft 30 feet deep, a crevice five feet between walls, and about twenty inches of ore similar in character and yield to the American—is reported to have run a little higher in arastras. The Carlisle is another very promising lode. It has a shaft on the discovery claim 25 feet deep, in the bottom of which are 12 inches of solid, fine-grained iron, that looks well. The crevice is five feet between walls, and it has the appearance of a strong, good vein. The Buckhorn mine was locked up, (there being two parties who claim it,) so we could not see much of it. There was a little very good-looking ore lying near the shaft, but I am told that it does not yield anything under stamps. The Poorman lode has a crevice some seven feet between walls, with about three feet of ore—iron and copper pyrites in a gangue of fluor-spar, which appears to be the principal gangue in nearly all lodes in the district. The discovery shaft on this lode is about 50 feet deep, but it being partially filled with water, I did not go into it. If smelting is ever adopted for the James creek ores, the fluor gangue will be valuable, as it is certainy one of the best fluxes known, especially for copper ore..... In a letter dated June 6, at Sugar Loaf, the same writer of the doings in Gold Hill district, says: "The Hoosier lode is now about sixty feet deep, five by ten inside, strongly timbered, and has a roomy and convenient ladder way, with short ladders and platforms every fifteen feet. In the bottom of the shaft there is a pay vein of very rich ore, three feet in width, which holds its width all the way across the shaft. In the south end of the shaft we found some very beautiful specimens of native silver, in the arborescent form. The whole gangue rock at the point appeared to be filled with this form of silver, some specimens of which are exceedingly beautiful. The Hoosier mill is rapidly approaching completion. Thomas says he will have it successfully running by the middle of August. Alonzo Tubbs is sinking on his Bailey lode, which is situated some 300 feet from the Hoosier, and is supposed to run parallel with it. He is down some twenty-five feet."..... The Georgetown *Miner*, July 30, has the following mining items: Saturday last we visited the New Boston lode, situated on Democrat mountain. A cross-cut has been run in the shaft at a distance of 75 feet to the north wall, disclosing a solid vein of argentiferous galena and zinc-blende three feet in width. Between this ore vein and the south wall there is six feet of mineral bearing gangue, which, we should judge, carries at least one-third mineral. On Monday morning last they commenced driving the tunnel to the north wall. This is looked upon as the largest mineral bearing vein in this district..... From Hon. J. Lynch, just over from Snake river, we learn that he has had 300 pounds of Sukey ore crushed and dressed at John Collum's works, treated in the Sukey company's furnace, that gave a return of 60 per cent. of metal. The result is more than satisfactory to the parties interested. The ore was reduced by J. O. Slater, an experienced smelter in the employ of Mr. Collum. It was roasted and smelted in the same furnace, and no iron was used in its reduction. The metal has not yet been cupelled. We are satisfied that if Mr. Slater can obtain such results as the above without the use of expensive re-agents, he is the right man to aid in the development of the resources of Snake river..... Monday last we visited the Terrible lode, and found that many improvements had been made and others underway. An engine with hoisting machinery has been set up and it operates well. The shaft is now 57 feet in depth, well timbered, and an excellent ladder way. The mine is thoroughly ventilated by a water blast. A Dodge crusher is being set up, and dressing works of the most approved kind are in course of construction. We did not go into the mine, but found considerable first class ore on the dump. When the works are complete we propose giving a full description..... The Cliff lode situated on Democrat mountain, is being actively worked, and is yielding a large quantity of first class sulphuret ore..... Messrs. Snyders & Peters are building a trail to the Snowdrift lode on Sherman mountain. They have out considerable ore which they intend bringing down for reduction..... The frame of the Brown company's mill building is nearly ready for enclosing. C. T. Bellamy has sold an undivided interest in his mining property to Chicago parties. Active development has been already commenced. We are pleased to learn of his success..... The same paper, July 23, has the following mining items: The Fenian lode on the west side of Leaveuworth mountain is a very promising vein. The ore is a rich looking galena with sulphurets of silver. The crevice is large, and the yield of ore, with a little more development, gives every indication of gold, both in quantity and quality. The General O'Neil lode on Sherman mountain, is a large and well defined vein containing a first class quality of ore. Both the lodes we mentioned belong to Messrs. T. A. Hartiwell & Co., who are busily engaged in improving the same. Another fine vein belonging to the same parties is situated upon Brown mountain, and is called the Gus Newton. The ore from this is of the same general character of the Terrible lode, which is too well known to need a description. The mine is being developed by John C. Egan, who gets a half interest for his work, and is making an excellent thing out of it. The Nora O'Neil, situated near the Gen. O'Neil, on Sherman mountain, belongs to Ennis & Co., is a fine lode and is being actively developed. All the above named are comparatively new discoveries, which we deem worthy of note on account of the superior appearance of their ores with present developments..... The Robert Emmet lode, on Sherman mountain, was discovered and partly opened last year by Charles McLaughlin. Messrs. J. S. Reid, D. N. Demain, and others, bought a half interest in the property, and have employed Mr. McLaughlin to sink a shaft thirty feet upon the same. This work is not yet completed. At present the crevice is seven feet wide, well defined walls, and has a foot of first quality ore—galena with sulphurets and some pyrites of iron and copper. Tom Munsell has just discovered a new and very promising vein on Leavenworth mountain, the show of mineral in it being very good, right at the surface. We have not learned the name given this new lode. Messrs. Pearson & Fellows are driving an adit on the Atwanda lode, on Leavenworth mountain. They have a large vein of argentiferous galena, from which we have seen some very fine specimens. Messrs. Tufts & Baxter are opening a fine galena bearing vein on Sherman mountain, near the Bush lode, that they call the Whiteface. It is producing some very fine ore. Gen. Marshall has shown us some very fine galena and sulphuret ore from the W. B. Astor lode, on Leavenworth mountain. The Marshall tunnel cuts the vein on the surface only. Hon. A. O. Patterson and J. Y. A. Rollins have commenced work on some of their veins on Brown mountain. M. P. Parker has been sluicing the debris off the surface of the Dictator lode, situated on Democrat mountain. He has exposed a large vein of mineral bearing gangue. F. B. Darrah is running an adit on the Eclipse lode on Griffith mountain. It is now in 46 feet, showing a fine crevice of ore. J. W. McFarland has recently discovered a very fine sulphuret lode on the Bard creek slope of Democrat mountain..... The erection of the Brown company's mill building was commenced last week, at Brownville, and will be pushed to an early completion..... Messrs. Rigsby & Huddleston are raising some very fine ore from the Wm. Penn lode, situated on

Democrat mountain.....The shaft on the Winnebago lode is now forty-six feet in depth, carrying from four to six inches of very fine argentiferous galena and silver sulphurets.....Messrs. McFarland & Coulter are actively working on the Rockford lode, on Democrat mountain. The vein is noted for its fine ore ..... Fillus, Mahaney & Co., are working a lode on Sherman mountain that has an eight-inch vein of the best and purest argentiferous galena that we have ever seen in the district. Thomas Munsell, who is noted for his extreme good fortune in prospecting, has recently discovered a very fine fissure-vein on Alpine mountain, which he proposes to develope thoroughly. Packard, Moor & Scott have discovered a very large fissure-vein, about half a mile south of the Astor, having the same general characteristics as the latter. A Mr. Knowles, of Chicago, is experimenting with a new smelting furnace at the old Lyon's works below Black Hawk.....From files of the Central City *Herald* to Aug. 3, we extract the following: Captain Dean & Co. are still mining on Grass Valley Bar, South Clear Creek, with very profitable results. They have changed their sluicing to the east of where they first commenced operating with a view to the operating of "heavy breasts," which they had passed by the fore part of the season. Dougherty & Co. are working on the same hill, west of Dean & Co. They, too, are succeeding well.....Campbell & Hardin are running their claim on Illinois Bar. As yet they have not been able to reach bed-rock, having been troubled greatly by the heavy sweeping of water into their pit.....Rist & Co., who are working out the ground on Russell, at the mouth of Davenport gulch, cleared up and returned last Friday 17½ ounces, gold, the yield of a four day's run, five men shoveling up and two men ground sluicing.....The Narragansett mine, on the Gregery lode, will soon resume its former life. This mine has not been worked for years, although known to be second to none on the Gregory, and we hazard nothing in saying that Messrs. Chaffee & Smith, the lessees, will work the same to great profit, and materially aid in swelling our gold shipments ..... Wright & Co. have been bar mining on Clear creek during the season, and have met with great success. With the exception of two days lost in consequence of high water, they have been steady at work, employing eight hands, and have taken out on an average of twenty dollars per day to the hand for the whole season. They have, during that time, made some very large runs, and occasionally have gone as high as $50 a day to the man, and some weeks they have cleaned up as high as $1,600 gold. We mention these facts to show that our gulch mines have by no means played out.....Warren, Hussey & Co. have on exhibition at their counting house, a nugget weighing 108 pennyweights, 12 grains, taken out of Russell gulch, on last Tuesday, by R. J. White. Also, one weighing 40 pennyweights, 12 grains, taken from the Pleasant Valley company's claims, by Alf. H. Owens. In addition to the nugget of Mr. White's, mentioned above, this gentleman cleaned up, the same day, 29 ounces, gold, as the result of that day's run. There is great excitement among the miners at Russell, occasioned by the finding of this, the largest nugget taken out of Russell since 1860. The writer of this seen a nugget taken from the Russell claims, in the fall of 1860, which weighed 119 pennyweights. It had been shoveled out of the "tom-head," and afterwards picked up from the headings by W. Green Russell, while panning out a clean up.....The Barrett mining company, own 400 feet on the Winnebago lode, and have three shafts down to a respective distance of 230, 50, and 60 feet. At present they are working the deepest shaft, and at a depth of 300 feet are running levels east and west. The crevice gives a showing of three feet of very fine pay ore, which, under stamps, is yielding 10 ounces, gold, per cord. The crevice in the bottom of the shaft is of an average width, and continues to improve as they sink, the recent heavy rains having somewhat retarded sinking. They were only working in the levels when we were there. The shaft and the mine is economically worked and well timbered, and the ladder way second to none that we have ever seen put into a mine. The mine in its present condition affords plenty of ore for their twenty stamp mill, which is located on the mine, besides keeping the California Reduction Works constantly employed on first class ore. Their mill is a model one, as regards economy and convenience. The batteries are stationed south of the main shaft about 16 feet, and the ore, after it is raised, is shoveled through a shute to the front side of the batteries. At the foot of the tables there are four large sized vats for the concentration of tailings, of which, the short time the mill has been running, there has been saved 100 tons. The mill building is 38 by 40 feet, mine building 38 by 45. They are well put up and conveniently arranged. Mr. Hulett informed us that the actual cost of mining and milling their ore, per cord, is $50. Twenty men are employed in and around the mill and mine. The company have expended in the erection of their mill and buildings, also the timbering up of their mine, $50,000, and we can safely say that they have as valuable a property for so small an expenditure of money, as can be found in the Territory. The company are entitled to great credit for their pertinacity in carrying on their improvements under the many difficulties they had to contend with. ....Mr. Owens, of the Pleasant Valley G. M. Co., brought down today 85 ounces of gold, the result of their last week's run. Among this were four nuggets which will weigh from four pennyweights up to eighteen pennyweights. This is a very good run, considering the many detentions during the week.....The Sensenderfer 20-stamp water-mill is busily running on ore from the company's claim on the Bobtail lode, and on ore from the Bates and Hunter, for Messrs. Borham, Miller & Co.....The Black Hawk mill is running the full number of stamps this week. The company is running 20 stamps upon second quality Gregory ore and tailings. The other 40 are kept busy on ore from Nevada district.....The recent rains have somewhat impeded gulch and creek mining, more particularly along the line of South and North Clear creeks. On Russell, the miners have not suffered so much from floods as for the want of them. Now that Superintendent A. H. Owens has the ditch in running order, and the lake full of water, we will soon resume our former weekly gold shipments..... At present but little or no gulch mining is being done on Willis gulch. There is but one company now working—the Hepner Bros—and they are hand-rocking. The last week they averaged $8 per hand, two men working, or $16 gold. It is somewhat singular that this gulch has not been made to pay heretofore. From the above report we should judge that it had been more through mismanagement.....Hank Neikerk is over from Sugar Loaf district, Boulder county. He informs us that he is still prosecuting work on the U. S. Bank lode, and that since coming over he has made arrangements with Mr. Teats, of the California Reduction Works, to run a batch of ore from this lode. He says that there is but little work going on in James Creek. John Virden is running two arastras on surface quartz, which is yielding from $80 to $100 per cord.....Mr. Sensenderfer has a force of hands at work at the mouth of Missouri gulch, grading out for his 50-stamp mill. The building is to be 60 by 45 feet in the clear. He is East, superintending the building of the machinery. This mill site is one of the best along the line of North Clear Creek, and there are plenty of rich lodes near by, which, when more fully developed, will supply the mill with ore..... Samuel Gould, agent of the Sterling Gold Mining company, is putting a new engine and boiler into the Sterling mill, Chase gulch. We understand that he will add eight more stamps, which will make a capacity of 23 stamps, 13 being already in position. This mill has been lying idle for quite a while, and we are pleased to learn that it will soon be in motion again..... The Smith & Parmelee company are working both crevices in their mine, and are hoisting four cords of ore every twenty-four hours. Mr. Fitzpatrick is running for them; also, Terry, Smith & Co.....Mr. Hurd informs us that he will have his mill ready to crush ore in a few weeks. The batteries have as substantial a foundation as any mill in the Territory, and we doubt not but that it will yield good and satisfactory results.....Dubois & Behr have closed down the Keith mill. A portion of the machinery is too much worn for further service.....We are informed, upon reliable authority, that the A. Wright mill, located up Four-mile creek, Boulder county, will positively start up the 1st of August.

California.

Nevada County.—We learn that Palmer & Everingham have a new eight-stamp mill. The old engine and machinery have been remodeled and fitted up, so that it is as good as new..... The ditch property and mining claims at Little York, known as the Gardner property, was sold, July 6, to Atkins, Cozzens & Squire for $30,000.....Recently, at the North Star mine, the richest body of rock ever taken out was found. The quartz was full of free gold, and must have yielded enormously .....About thirty loads of rock from the Dromedary mine, on Echo Hill, are being crushed at the Gold Hill mill. It will average from $30 to $50 per load.....Ben McCauley's mill turned out $5,120 from 160 loads of rock from Idaho.....The Grass Valley *Union*, June 20, says: Yesterday, the first clean up of the Mutual Gold Mining company's mill was brought to town, and after melting turned out a nice little bar of gold, weighing 175 ounces. The Mutual's claims are on the Jim ledge, of the Graniteville district. This crushing comes from 160 tons of rock, and the cost of taking out, milling, and all other expenses, will not amount to over $5 per ton, which leaves a handsome profit to the owners of the mine.....The American Mining company, on Manzanita Hill, near the North San Juan, are still buying up the ground in their vicinity, for mining purposes.. ..The North Star company, at the French lead, are still going down, and as they descend are striking it richer than ever. Yesterday about $2,000 in rich specimen rock were taken out of the sixth level, west, and it is expected that more of the same sort will be raised to the surface within a day or two.....On the Greenhorn ledge 300 tons of poor rock are now on the top of the ground, and a company has leased the ledge, preparatory to putting a mill upon it. Yesterday a crushing of ten loads of the rock from the top, which has been on the surface for two or three years, was made at Laton's mill in this place, which resulted in $12 per ton.....The mill at the Empire is now running day and night on splendid rock. The mine shows very well, the smallest part of the ledge being two feet in thickness, and in the bottom of the shaft it is three feet. The sixth level is going into the Rush & Laton ground, 550 feet south of the new incline. This gives good ground for 1,000 feet in length and 160 feet deep deep, and also gives an additional 55 feet down for another level. The Empire will, from this on, run night and day, with the increased facilities for taking out ore .....From Excelsior district the *Transcript*, July 8, has the following from Mr. Figuiere, recently at Meadow lake: Several companies are preparing for work, and by the middle of the month a number of mines will be in operation. The snow now is an advantage to miners, as it facilitates travel and hauling from point to point. A company was organized on the 12th of January, to work the Independence ledge, and work was commenced immediately. After going down with a shaft 80 feet, they found a well-defined ledge seven feet wide. The rock is of a dark, rusty appearance, and sparkles with flakes of pure gold. It is said to be the most promising prospect ever obtained in the district. The Enterprise company have commenced work. They built two furnaces, one for the purpose of roasting rock, and the other for treating sulphurets. This ore has yielded immense assays, but the ore has proved refractory, and they have not succeeded by the ordinary mill process in making it pay. Should the treatment now about being tested prove a success, the mine will come out all right. The Green Emigrant company is taking out first-rate rock, which is to be crushed at the California mill. The ledge is about six feet wide and the rock is easily obtained. The last crushing paid from $25 to $30 per ton in free gold. The Empire company are also at work, taking out fine looking specimen rock from the shaft, which is thirty feet down. They will soon have a crushing at the California mill. The Lake company has a ledge three and a half feet wide, and the rock assays $349 in gold and $11 in silver. They have an incline thirty feet deep, and are only waiting for the water to go down to resume work. The Grant company have a fine ledge and first grade rock. The ledge has been worked more than any other company in the district, except the Mohawk. They will build a large mill this summer. The prospects in the district were never better, even in the days of greatest excitement, and the miners are confident that it will prove a fine quartz region.

Sierra County.—Under date July 4 we learn that Docile mill has again been started on very rich rock.....The owners of the Bush Creek mine are erecting a mill 90 x 40 feet, with a capacity of thirty stamps. The frame is up and being enclosed as rapidly as possible. The shaft is down about 230 feet, and the richest kind of rock is found in the bottom. They will start with ten stamps and increase them as occasion demands..... Nicholas Berrels, owner of the Kearsarge ledge, an extension of the Union, at Alleghany, is going forward on it, with every indication of having an excellent mine.....The owners of the Union quartz claim are taking out very rich rock, and have already started their mill. If the run is satisfactory they will immediately erect steam hoisting works.....Mr. Gardner has sold a one-half interest in the Johnson claim, near the Docile, for $8,000. The ledge has been prospected for about 400 feet, and discloses the richest kind of rock.....Manson & Co., of the Downieville Foundry, have taken a contract to build an eight-stamp quartz mill for the French company's ledge, on Wolf creek. This ledge is believed to be very rich.....The Hunter quartz ledge, below Alleghany, has a tunnel into the ledge, tapping it 150 feet below the surface.

Tuolumne County.—It is stated that the Knox & Boyle mine, at Quartz Mountain, is paying well. The rock will average $30 per ton, and is easily mined. The last run of fifty-seven tons paid over 100 ounces. Apps mill has been running for the last eleven years. The rock is hauled from the mine at Quartz Mountain, a mile distant. The rock pays from $20 to $25 per ton, but Mr. App says that they cannot save more than half of the gold. The tailings, after being oxidized by a year's exposure to the sun and air, pays better than the rock at first crushing; $16 per ton is the average yield of them, but the great trouble is that there is no place to save them at the mill..... Work is going on at Kincaid's Flat with great regularity. They will tap the Flat nearly forty feet deeper than any of the miners have yet reached. The dirt at the deepest point is found to be very rich.

Placer County.—Papers of July 4 report: The mill of Brown Bros., situated in Little York, cleaned up after six days' run $6,000 above expenses. The company employ four men, and this is an average week's work. Messrs. White & Kinder, whose claim is situated about two miles above Lowell Hill, cleaned up two of their boxes after a run of six days, and realized $600. A tunnel is being run for a blast with 200 kegs of powder. The Rising Sun company, in the vicinity of Auburn, continues to clean up weekly, with its five-stamp mill—the yield last week being $2,500. The Montana company are at work, and upon the completion of the drift from their shaft, they are confident of striking it big. A number of other companies are also at work.

Plumas County.—A correspondent writing from Poorman's Creek gives the following items from that locality: The Washington Hill boys are doing well. The American company, of 12 men, are making from $7 to $8 per day to the hand, with plenty of ground to work. Bill Black, in the Washington claims, joining the American company, is also doing well and making money... Sawpit Flat will be a lively camp this spring, as all expect good pay as soon as they finish washing up their winter's dirt. One interest sold in the Buckeye tunnel, a few days ago, for $3,800.

Alpine County.—The mill of the Monitor Consolidated Mining company is being pushed forward toward completion. The machinery is of an improved kind, invented by Whelpley & Storer, of Boston. The Globe company is running a new tunnel to strike the ore deposit deeper. The I X L mine is improving at all points with increased force of miners. Superintendent Thompson will commence work on the new extension of the lode immediately.

Tulare County.—Business in this district is represented as being quite brisk. Several ledges hitherto supposed to be of no value have turned out quite rich. The Long Tom company have opened their mine at a point north of the old shaft. The lead develops fine and pays well. Messrs. Bell & Co. also are taking out rich ore.

Siskiyou County.—Mr. Klimper, of the South Fork of Humbug, took out of his claim last week, for one man drifting, $120. In this there was one piece weighing two and a half ounces..... N. Lash has just made a run of 100 tons of quartz from the Eliza ledge. The yield is a little over $15 to the ton.

Kern County.—Under date June 27, it is reported that from a run on twenty-five tons of rock from the Delphi mine, the sum of $2,000 was cleaned up; also that J. C. Birdseye has purchased two-fifths of the Esperanza mine, near Sageland.

Idaho.

A call is made for a hundred or two working men for the mines and other industrial pursuits in the vicinity of Silver City. The papers there say that that number may find profitable employment. Let the discontented "strikers" of the East strike out for the West. All the mining territories are bidding high for working men. Good wages are offered and the chances of speedy and great reward for honest toil are unequalled. Let all workers seek for fortune in the great West! . . . In regard to mining news for this territory we have but little to offer this week. The *Owyhee Avalanche* of the 25th ult. informs us that the Cosmos company have resumed work on the Silver Cord, with Capt. Prescott as superintendent. The mill will be started up as soon as sufficient ore is obtained to justify it. The hoisting works on the Rising Star mine in Flint district went into operation July 21. As soon as the accumulated water is got rid of the regular work upon the mine will be commenced. A large force of men is on the building designed to contain their fine 30 stamp mill now in course of construction in San Francisco, with a view to having it in full operation before winter. They have already quite a large amount of very rich, selected ore on the dump, ready for milling, and with their superior facilities and advantages of location these will be no difficulty in supplying an abundance of ore, for even twice their mill's capacity.

COPPER.

Michigan.

The news from the Lake Superior iron mines and furnaces in the Negaunee *Mining and Manufacturing News* of the 20th ult. is very voluminous. We make the following extracts:—The Washington tunnel is some 300 feet and within a few feet of the ore deposit. It is pronounced to be the best constructed work of the kind in the district. When completed it will afford an easy outlet for the ore from the different openings. Since Capt. Mitchell took charge of the Edwards mine, about this time last year, a new system has been adopted, and legitimate mining is now the order of the day. Four or five new shafts have been sunk to depths varying from 60 to 120 feet. It is expected the daily shipments will exceed 200 tons a day in future, and to a still large figure, should the shipping facilities warrant it. At the Superior mine work is being prosecuted to a better advantage than ever before, and another year will witness a complete revolution in the mode and expense of working the various openings. At present the centre of attraction is at the principal shaft from which it is designed, ultimately, to raise the ore from the lower levels of all the principal openings, dispensing entirely with the use of horses, except the few that will be required in the lower drifts..... At the Pittsburg and Lake Angelino mines although the total product for this season so far, equals that of last year, there is a great falling off in shipments from the Angeline, due perhaps to a want of shipping facilities, occasioned by the burning of the docks. At present, the only remaining dock is being run night and day, and it is found absolutely impossible to ship all the ore that seeks an outlet over the M. & O. R. R. In fact, all the ore shipped from this point since the fire, goes over to Cleveland dock, which was originally constructed for the use of a single mine, and it is scarcely to be expected that it can now be made to answer the requirements of half a dozen others of the best producing mines. This state of affairs will soon be remedied, however, by the completion of the track to connect it with the Peninsula road, which is promised as early as the 15th August. By this time it is confidently expected the Peninsula cars will reach the Lake Angeline stock piles; and if the anticipation is realized the season's product may yet be made to reach, if they do not exceed, the figures of last year. Work has been suspended at the Champion mine, but at the Barnum it continues to prosper steadily with brighter prospects. There is nothing new, worthy of mention, at the Jackson. The product for the season would be much larger than last year, but there is a probability that shipments will be materially restricted for the balance of the season, owing to a falling off in the price and demand for ore.

COAL.

Onio.

A correspondent writing from Youngstown, Ohio, July 29, tells of a strike among the coal miners of that locality, saying: "A large demonstration of the miners caused considerable excitement in our city and vicinity during part of yesterday. A report was circulated on Monday evening that there was to be a general meeting of the miners at Crab Creek, two miles north of the city, at ten o'clock on Tuesday morning, for the purpose of going in a body to the Powers' coal banks, three miles southeast of the city, in which the Messrs. Andrews were working some forty men for the supply of their furnace at Hazelton, near by and driving the men out of the banks. On Tuesday morning the report came in that the miners were assembling, and, unless their demands were acceded to, they were going to blow out the Hazelton furnace. Several extra police were sworn in, and a large number of our citizens held themselves in readiness, if their assistance was needed, to go and protect the miners and the furnace. Between ten and eleven o'clock

in the forenoon, the miners, numbering about six hundred came in on the Hubbard road—on foot, part of them in procession and part straggling, three of them carrying the United States flag—and the road to the Powers' bank. Two of our Justices of the Peace, one of whom is Mayor, the police regular and extra, two of the Sheriff's deputies from Canfield, (the Sheriff had been sent for but was absent from home,) several of the firemen, and a number of our citizens, rode out to the banks. The miners knotted in a grove in the vicinity of the entrance to the mine where the men were at work. Soon a few men, representing themselves as a committee, went to the entrance and demanded admittance, which was refused. They then returned to the main body, and no further effort was made to gain access to the miners at work. A meeting was then duly organized, and the subject of the differences between employers and employees were discussed. Speeches were made by the miners, principally in Welch, and some remarks were made by Thomas H. Wells, Paul Wiek, and other interested in the coal mines and iron works. At length a resolution was offered, in substance, to adhere to the strike until the twenty cents additional per ton was allowed, which was unanimously adopted—that is, there were no voices heard responding in the negative. Shortly after the meeting broke up, and about three o'clock in the afternoon miners, magistrates and flagmen, with colors flying, sheriffs, police and citizens returned to the city. There was no violence or harsh language used during the proceedings, but matters were conducted peaceably and in good order. The miners disclaim any intention of using force to accomplish their ends, but evince a determination for the present at least, to hold out in their refusal to work until they obtain the wages they demand. The coal operators and iron men have recently held a meeting, and resolved not to advance the price of mining, for the reason that the present price of coal and iron will not justify it. And thus matters stand at present."

Pennsylvania.

From all accounts, the strike in the Lehigh, Mahanoy, Wyoming, and Lackawanna coal regions has ended, and the men are all at work. In some instances the miners have gained somewhat in regard to the number of hours they work. Heretofore the time consumed in going from their homes to the slopes, was not included in a day's work; now they are allowed that time. This is the only gain they have made. It is rumored, however, that in the Wyoming and Lackawanna regions, the miners have notified their employers that they will ask for an advance at the end of the month.

MARKET REVIEW.

FRIDAY EVENING, August 14, 1868.

Gold and Silver Stocks.—The market is dull, and prices are, on the whole, lower. The most notable feature is that Manhattan Silver has fallen from $140 to $115. Twin River is quoted at $15, an advance of $5 since our last. Colorado stocks are the most dealt in, Smith & Parmelee and some others have advanced. Prices are thus quoted :

	Bid.	Asked.		Bid.	Asked.
Alameda Silver	— —	— 90	Kipp & Buell Gold	— 5	— 10
American Flag	— —	— 60	Keystone Silver	— —	— —
Atlantic and Pacific	— 20	— 50	La Crosse Gold	— 35	37
Benton Gold	— 25	— 30	Liberty Gold	— —	— 4
Bates & Baxter Gold	— 30	1 00	Liebig	— —	— —
Black Hawk G	6 00	6 75	Manhattan Silver	115 00	130 00
Bobtail Gold	— —	1 00	Midas Silver	— —	— 80
Bullion Consolidated	— —	— —	Montana Gold	— 50	— 80
Burroughs G	— —	— —	New York	1 65	1 70
Columbian G. & S.	— —	— —	New York & Eld'o	— —	— 75
Combination Silver	— —	10 00	Nye Gold	— —	— 4
Consolidated Gregory	3 95	4 10	Oxyd'ee Mining	15 00	25 00
Corydon Gold	— 20	— 30	Con. Colorado	— —	— —
Edgehill Mining	— —	3 60	People's G. & S. of Cal	— 6	— 12
Empire G	— —	— —	Quartz Hill	1 05	1 10
Gold Hill	— —	— —	Reynolds Gold	— 2	— 4
Grass Valley	— 35	— —	Rocky Mountain Gold	— 11	— 14
Gunnell Gold	— 70	1 00	Smith& Parmelee Gold	4 75	4 90
Gunnell Union	— —	— 34	Sensenderfer	— —	— —
H'n G & S. ba	— —	— —	Symonds Fork Gold	— —	— —
Harmon G. & S. ba	— —	— —	Texas Gold	— —	— —
Holman	— 6	— 10	Twin Riv Sil	15 00	— —
Hope Gold	— —	— —	Vanderburg G	— —	— —

Copper Stocks.—Prices remain the same as last week, being quoted as follows :

Caledonia C	— —	5 00	Gardiner Hill	— 6	— 50
Canada	— —	— 50	Hancock C	— —	— —
Charter Oak	— —	1 00	Hilton	— 50	1 00
Central	22 00	38 00	Knowlton	— —	2 00
Davidson	— 40	— 50	Minnesota	— —	4 00
Evergreen B	— —	10 00	Mendota	1 75	— —
Franklin C	— —	— —	Ogima	— —	— —
French Creek	— —	— —	Rockland	— —	4 00

Petroleum Stocks.—The market shows some activity, and is thus reported :

	Bid.	Ask'd.		Bid.	Askd.
Bennehoff Run	50	1 00	N. Y. and Alleghany	1 50	3 00
Brewsport	70	95	Pit Hole Creek	70	1 00
Buchanan Farm	50	60	Rynd Farm	13	20
Central	60	90	Second National	....	....
Continental Oil	....	....	Sherman & B	75	....
Empire & Pithole	....	....	Tarr Farm	....	....
Home	....	3 00	United Pet. Farms	5	15
Manhattan	....	10	Union	5 00	....
National	2 50	3 00	United States	2 30	2 50

Miscellaneous Stocks.—Walkill Lead, 11@12 ; Del. & Hudson Canal, s.10, 128¼ ; West. U. Tel., 34 ; Del., Kack & W., 119½ ; Cary Imp., 10⅜ ; Pacific M. S., s.10, 101¼ ; Adams Express, 48¼@51 ; Mer. Union, 22½@23 ; N. Y. Cen., 127¾ ; Erie, 57¼@58 ; C. & R. 1, 111⅞@112¼ ; Hudson R., 137 ; N. Y. & N. H. R., 145 ; Mich. Cen., 126 ; Ch. & N. W., 82½ ; Cle. & Tol., 100¾ ; M. & St. P., 74 ; Mil. & St. P. pf., 82 ; Tol. Wab. & W., 50½ ; N. J. Cen., 119¼ ; P. Ft. W. & Chi., 108¼ ; Ohio & Miss., 29¾.

Government Stocks.—The market is unsettled and weak. Prices are thus quoted :

U. S. 6s, 1881, coupon	115 @115¼
U. S. 5-20s, 1862, coupon	114¼@114½
U. S. 5-20s, 1864, coupon	110⅛@110¼
U. S. 5-20s, 1865, coupon	112⅛@112¼
U. S. 5-20s, 1867, coupon	108⅝@108¾
U. S. 5-20s, July, 1868, coupon	108⅜@108⅞
U. S. 10-40s, coupon	109 @109¾

Foreign Exchange.—In Foreign Exchange there is no change of moment. Few bills are offered to the leading drawers, and the supply of "bond bills" is quite limited ; there is, however, a light demand from remitters, so that rates are barely maintained. We quote :

London, (prime bankers')60 days'	109 @109¼
London, (prime bankers') sight	109¾@109⅞
London, prime commercial	108⅞@109
Paris, (bankers') long	5.17½@5.16¼
Paris, (bankers') short	5.15 @5.13¾
Antwerp	5.18¾@5.17½
Swiss	5.18¾@5.17½
Hamburg (bankers')	36 @36½
Amsterdam (bankers')	41 @41⅛
Frankfort (bankers')	40⅞@41
Bremen (bankers)	79⅛@79⅝
Berlin (bankers)	71⅛@71¼

Gold continues very firm, the price having ranged from 147¼@148. Loans are made at 2@4 per cent. "for carrying."

The money market is still well supplied with funds, at 3@4 per cent. to call borrowers ; there are, however, indications of an early demand for money from the Western banks, which are beginning to send considerable amounts of currency into the country.

American silver sells slowly at 6½@7⅛ cents below the price of gold. Mexican dollars range from 103½@104 in gold.

Advices from San Francisco to July 30, report treasure shipments as follows :—

Total from July 1st to 30th, 1868	$ 2,446,803 88
Previously this year	19,937,481 65
Total since January 1, 1868	$22 384 285 53
Corresponding period, 1867	24,994,670 30
Decrease this year	$2,610,384 77

PUBLIC DEBT OF THE UNITED STATES, AUGUST 1.

	June 1, 1868.	Aug. 1, 1868
Original 5-20s, 1862	$514,760 500	$514,771,600
Five-twenties 1864-'65-'67-'68	979,975,100	1,068,334,500
Sixes of 1881	283,677,200	283,677,200
Old Sixes, 1867-'68	8,582,642	....
Five per cents., 10-40s	193 790,400	194,166,400
Fives of 1871-'74	27,022,000	27,022,000
Navy Pension Fund	13,000,000	13,000,000
Total Gold-bearing	$2,020,827,542	$2,101,271,800
Seven-thirties, 1867-'68	$105,610,650	
Compounds, 6s, 1867-'68	21,604,890	$21,604,890
Three per cent. L. T. cert	50,000,000	50,000,000
Sixes to Pacific Road	25,902,000	32,210,000
Total Currency interest	$203,117,540	$116,814,890
Greenbacks	$356 144,212	$356,021,073
Fractional currency	32,531,590	31,367,818
Gold Notes	20,298,180	22,414,000
*Demand free of interest	10,834,202	18,099,176
Total free of interest	$419,808,184	$428 402,067
Total debt in gross	$2,643,753 566	$2,633,588,757
Less cash in Treasury	133 507,680	110,054,276
Total	$2,510,245,886	$2,523,534,481
	June 1, 1868.	Aug. 1, 1868.
Gold on hand	$99,228,559	$83,400,918
Gold Notes out	20,298,180	22,414,000
Belonging to Government	$69,930,379	$60,995,918

* Past due debt, not presented.

The increase in gold-bearing debt is $67,543,598. The decrease in 7.30 per cents is $105,610,650. The apparent increase in aggregate net public debt of the United States, of all descriptions, after paying July gold interest is, $13,288,601. The decrease of gold in the Treasury after paying July interest and $8,582,642 of the principal of the public debt, and after deducting the amount belonging to the holders of certificates, is $8,934,461.

Copper.—There has been more business at a little lower rates. The sales aggregate from 800,000 to 900,000 pounds at 23¾ for Portage Lake and Baltimore ; and 24c. for Detroit. For October delivery, ¼ to ⅜c. more has been paid.

The English advices are dull. Chili bars, £68.

Tin.—A retail business at 23½c. gold, for Straits and English ; 26¼c. for Banca.

Spelter.—6¾ to 6 75-100c. gold, for Silesian, without wholesale transactions.

Lead.—A steady business at 6 30-100c. gold, for ordinary foreign. Sales for the last 10 days, 7 to 800 tons.

Petroleum.—Crude in bulk is in light demand ; 17c. for spot delivery ; 1,000 bbls. deliverable in ten days at 17¼c. Refined—Business is more liberal, although there is no general demand ; standard white is held at 34@34½c. ; 9,000 bbls. were sold for August delivery at 34c., 34⅛@34¼c., and 1,000 bbls. for the first half September, sold at 34½c. ; also 1,600 bbls. in bulk for last half August at 29½c. Naptha—There are sales quoted of 850 bbls. on private terms. For Philadelphia delivery there is a moderately active market, with sales of 6,000 bbls. refined for August at 34c., and 1,000 bbls. for last half October at 34½.

Receipts for the week ending August 11	pkgs.	16,247
Exports for the week	galls.	1,354,919
Do. from January 1	do.	30,137,754
Do. same time last year	do.	17,978,090

The following is the quantity exported from other ports, Jan. 1 to August 8 :

	1868.	1867.
From Boston, galls.	1,479,449	1 243,843
Philadelphia	21,983,420	16,227 316
Baltimore	1,567 380	1,976,781
Portland	417 000	....
Total	25,447,249	18,947,940
Total exports from the United States	57,344,007	36,789,880
Same time in 1866		32,976,189
Same time in 1865		9,265 520

THE IRON TRADE.

NEW YORK, Friday Evening, August 14, 1868.

Sales have been made of 400 tons American Pig Iron, at $41, besides some small sales of Allentown. There is no change in the market, with but little inquiry. Prices are firm.

Scotch Iron is firm and quiet ; transactions have been unimportant, at $44 for Gartsherrie, and $43@44 for Eglinton—$44 50 Glengarnock.

Scrap is quiet, with little inquiry. Sales 133 tons ex Ship, at $44.

OLD RAILS.—250 tons Double Head have been sold, delivered at Philadelphia, at $49 50. The market is very quiet.

Store prices of Bar &c. have been advanced $5 ₱ ton—we quote Swedes Bar $155 ; English and American refined Bar $100 ; Common do. $90 ; Scroll $130@175 ; Ovals and Half-round $125@155 ; Band $130 ; Horse Shoe $130 ; Rods ¾ @3-16 inch $105@165 ; Hoop $135@190 ; and Nail Rod 9½@10¼ cents per lb. Common Sheet is firm at our quotations.

Import, from Jan. 1st to July 31st, 1868.

	Bar.	Pig.	Sheet.
From Foreign Ports, tons.	5,488	tons. 16,873	bdls. 112,181
Coastwise	1,087	32	10,085
Total, tons.	6,575	tons. 16,905	bdls. 122,266
Same time, 1867	11,751	32.879	291,914

BOSTON, Aug. 12, 1868.

Scotch pig has been quiet, and prices are steady and firm. The sales have been at $43@$45 per ton for Gartsherrie, and other brands No. 1 ; and American pig at $40@$45 per ton. Bar iron remains firm with small sales. We quote common at $80@$90, and refined at $95@$100 per ton. Russia sheet iron is firm at 13@14c. per lb., gold.

Imports of pig iron from Jan. 1 to Aug. 1 :

	1868	1867.
From Great Britain, tons	6,084	19,679
Coastwise ports	6,513	5,028

PHILADELPHIA, August 12, 1868.

Pig metal is held firmly, but there is not much activity. Sales of No. 1 Foundry at $38, and No. 2 at $36a$37. Scotch Pig is quiet at $42 50. Manufactured iron commands $42 50 for bars. Blooms are neglected.

Lehigh Valley Iron Trade.

The following table shows the amount of Pig Iron transported over the Lehigh Valley Railroad for the week ending August 8, 1868, and for the season to that date.

From	July 4, 1868. Tons.	Total.
Carbon Iron Co	140	5,285
Lehigh Valley Iron Co	240	7,160
Thomas Iron Co	850	17,505
Lehigh Crane Iron Co	720	15,965
Allentown Iron Co	530	11,820
Robert Iron Co	220	5,910
Glendon Iron Co	460	15,300
Other shippers	550	13,387
Total	3,710	92,422

Lake Superior Iron Trade.

Receipts of Ore and Pig Iron at Marquette, up to and including Saturday August 1, 1868, by the Marquette & Ontonagon Railroad.

IRON ORE.

	Previously reported.	For week end'g August 1.	Total.
Lake Superior Iron Co	144,242	3 227	47,469
Cleveland Iron Co	18.491	1,264	19,755
Marquette Iron Co	5 357	378	5,357
Washington Iron Co	13,749	965	14,714
New England Iron Co	4,116	346	4,462
Edwards Mine	5,897	956	6,853
Pittsburg & Lake A. Iron Co	12,246	807	13,053
Ore to Local Furnaces	11,535	1,002	12,537
Total Iron Ore, tons	115,633	8,945	124,578
PIG IRON.			
Morgan Iron Co	4,370	391	4,731
Greenwood Iron Co	328	....	328
Bancroft Iron Co	1.918	200	2,118
Collins Iron Co	2 035	115	2,150
Michigan Iron Co	2,668	172	2,840
Total Pig Iron, tons	11,319	848	12,167
Total Ore and Pig Iron, tons	126,952	9,793	136,745

Market Prices.

NEW YORK, August 14, 1868.

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

Am. pig, fy. No. 1, best.	$38 00	@43 00	Light rls for mines &c.,		
" " 2x, fdry	36 00	38 00	at works	— —	— —
" Grey Forge,	32 00	35 00	Do. delivered here	— —	— —
White and Mottled	31 00	— —	STORE PRICES.		
Pure white, for Cal. mar.	31 00	— —	Bar, Swedes, ord'y sizes	— —	155 00
Scotch l'ig, No. 1, best bd	44 00	45 00	Bar, Eng. and Am., r'd	— —	100 00
" " " outside.	43 00	— —	Bar, Eng. & Am., com.	— —	90 00
Scrap Iron, ex ship	46 00	— —	Scroll	130 00	175 00
Old rails	49 00	50 00	Ovals and half round	125 00@	155 00
R.R. Iron, For., fm Stock			Band	130 00	— —
gold	51 50	52 50	Horse Shoe	130 00	— —
R.R. Iron, For., to imp.	51 00	— —	Rods, ⅝@3-16 inch	105 00	165 00
" " Amer, at wks.			Hoop	135 00	150 00
currency	78 00	— —	Nail Rod, per lb	9¼	10½
R.R. Iron, Am., deliv'd.	80 00	— —	Sheet, s'gle, D. & T. com	5	7
Solid Steel rls. For, gd.	110	— —	Sheet, Rus. as'd. Nos. (gold)	13½	14
Sti rails of any pattern at			Rails, Eng., gold, ton	51 50	52 00
works, currency	80 09	— —	Rails, American	79 00	80 00
Sti rls of any pat. d. here.	— —	— —	STEEL.		

English, cast (2d and 1st quality) per lb	18 @23
English Spring (2d and 1st quality)	10 @12½
English Blister (2d and 1st quality)	11½ 20
English Machinery	13½ 16
English German (2d and 1st quality)	14 16
American Blister, "Black Diamond,"	10½ 16
American, Cast, Tool " "	19 —
American, Spring " "	10 13
American, Machinery " "	— 13
American German " "	10 13

CHICAGO, ILL., Aug. 6, 1868.

IRON, STEEL AND NAILS.—The *Journal of Commerce* says : The market rules very firm, though without quotable change at present date. Jobbers here are still selling at 3¾ and 4¼c rates for common bar iron. The decreased production is, however, giving strength to the market, which is fully 35,000 to 40,000 tons short of Pig Iron, compared with the stock on hand six weeks ago. Nails are still quoted, though firm, at 4 75 rates. Burden's Horse Shoes are very scarce and sell quick at $7 @ 7 50. Gas Pipe is higher, the discount now being fixed at 40 per cent. as previously reported.

CINCINNATI, Aug. 8.

IRON.—There is a fair business doing in the best grades of hot-blast pig iron, but other descriptions meet with little attention. There has been no alteration in quotations. Malleable iron is quiet. Horse and mule shoes are in good request at our quotations. We quote :—

HOT-BLAST CHARCOAL PIG IRON.

No. 1 foundry, per ton	$38 00@40 00
No. 2 foundry, per ton	37 00@38 00
No 1 Mill	37 00@38 00
No. 2 do	35 00@36 00

COLD BLAST.

Tennessee	$45 00@— —
Missouri	45 00@47 00
Missouri "Maremac"	47 00@— —
Car wheel	60 00@63 00
Car wheel "Hecla"	63 00@— —

BLOOMS.

Missouri	100 000@105 00
Missouri "Merrimac"	105 000@ — —

BAR IRON.

Common, per pound	3½@3¾c.
Charcoal, per pound	4½@5c.

SCRAP IRON.

Cast, per 1000 pounds	$1 20@1 35
Wrought, per 1000 pounds	1 50@2 00

SHEET IRON, p lb.

Bailed	6 @6½c
Charcoal	8½@8¾c
Russian	22 @23c
Imitation	15 @17c

LONDON, July 24, 1868.

In Staffordshire the orders for manufactured continue steady from all the principal markets, and as from the excessive heat of the weather the men have lately been able to make little more than half-time, the orders are not so closely worked up as they would otherwise have been. Prices, however, continue rather low. In Welsh there is a rather better feeling evinced in the trade, consequent upon the favorable tone of the quarterly meetings, but the actual orders on the books show only a small increase. The exports to the United States continue on a tolerably large scale, and Russian engagements are somewhat larger than they were. From the other continental markets the inquiry is small. Last month the total exports reached 21,000 tons, being a large increase on the previous months of the year. Home business is quiet, and the railway companies are slow in making any addition to their purchases. In Swedish iron the demand continues good, and several parcels have lately found buyers. In Scotch pig iron, although the market has not been very active, yet it has been steady, and without much variation in price, remaining nearly at the last price quoted, 52s. 8d. cash.

Bars, Welsh in Lond.	£6	5 0@..	....	Do. railway, Wales.	£5	10 0@£5	15 0
Ditto to arrive	6	5 0	.. ....	Do. Swd. in Loudon	9	17 6	10	2 6
Nail rods	6	15 0	7 0 0	To arrive	10	2 6	.. ....
" Stafford in Lond.	7	7 6	8 10 0	Pig, No. 1, in Clyde.	2	13 3	2	16 6
Bars	7	5 0	9 10 0	Do. f.o.b, Tyne, Tees.	2	9 6	.. ....
Hoop	8	2 6	9 15 0	Do. Nos 3, 4, f.o.b. do	2	6 6	2	7 0
Sheets, single	9	0 0	11 0 0	Railway chairs	5	10 0	5	15 0
Pig, No. 1, in Wales.	3	15 0	4 5 0	" spikes	11	00 0	12	0 0
Refined metal, ditto.	4	0 0	5 0 0	Indian Charcoal Pigs			
Bars, common, ditto.	5	10 0	5 15 0	in London, pr. ton	7	0 0	7	10 0
Do. merch. Tyne or Tees	6	10 0	....				

STEEL.

Swed., kegs (rolled)	£14	5 0	.. .. ..	Swed., in faggot	£16	.. ..	 0
" (hammered	14	15 0	15 00 0	English, spring	17	.. ..	23 .. 0

THE COAL TRADE.

NEW YORK, Aug. 14, 1868.

There being little or no coal in the market for immediate delivery, business is, of course, at a stand-still. Dealers are taking orders for delivery where coal is to be had, at prices to be named at that time ; but whether that delivery will take place in September or next May depends entirely upon the course the present disturbance in the coal regions will take. Whether the price, in the event of actual sale, will be six or ten dollars per ton, is, at the present moment, exceedingly doubtful. What shipments are being made now are on contracts made last Spring, and do not enter into the advance noted in our columns. Dealers would be very happy, could they have foreseen our present difficulties, and taken no orders for delivery during the months of August, September, and October, and thereby have been able to share in the present advance.

At Philadelphia on Tuesday last, the Lehigh operators, miners, and shippers, advanced their prices fifty cents per ton on all sizes. This is just what we stated would take place in our last issue. It is double the advance made by the representatives of the same trade in this city last week. That there will be a further advance for the month of September we have every reason to believe, and ere long retail dealers will wake up to what we have been preaching to them the past three months ; namely, "that the price of coal is going up."

Correspondence from the various mining regions informs us of the continuance of the strike, and a general discouragement as regards mining operations. We understand that one or two colleries in the Schuylkill region commenced operations upon the eight hour system, but were compelled to stop for want of shipping facilities, no cars having been furnished by the railroad company. These were not furnished in view of the fact that the miners, generally, in the district, did not commence work. The transportation companies were unwilling to favor any one or two operators, who, from the fact that the balance were idle, and that some foundry or foundries were greatly in need of coal, would pay them a sufficient advance to cover the demands of the strikers for the accommodation.

We also learn that several collieries started in the Shamokin district on old time and rate of wages, but that a portion of the trestle work of the bridge that connects that section with the Philadelphia and Reading Railroad, had been destroyed by the strikers ; hence their operations were suddenly brought to an end ; thus it is over the whole section of the coal mining region. Men work one day and lie idle the next, in consequence of some threat or exaggerated story coming to their notice.

The shipments from the Lehigh region this week, however, show considerable advance over those of last week, and we are in hopes that the men will, ere many days, see the folly of their ways, and give up the contest, at any

rate, until a time when the profits on coal mining will allow operators to accede to their demands. There are many reasons why eight hours are insufficient as a day's work, and none but those who are actually engaged in the business can thoroughly understand the matter. The expenses at one of these large collieries is enormous, and we do not wonder that proprietors should oppose an advance on them of 25 per cent. Eight hours is a small day's labor for a clerk, mule, pumping engine, breaker, and the general attaches of a colliery. It amounts, in fact, to this: that if the law is enforced we shall have to pay the 25 per cent. advance for our necessary article of consumption, "coal." This advance will, of course, fall very heavily upon the poor, who in all such cases have to bear the brunt of the battle.

The amount of coal exported from the port of New York for the week ending August 11, was:

Exports for the week, tons.....
do. from January 1st, do.....39,370
do. same time last year, do.....43,825

BOSTON, Aug. 12, 1868.

In English Cannel nothing of any consequence has been done. Prices are nominally $18@20 per ton. In Sydney and Picton there have been cargo sales at $8@8 25; and Cumberland at $8 per ton. In Baltimore cargo sales of Cumberland at $4 50, and at Georgetown $4 25 per ton. Pennsylvania and Westmoreland Gas has been selling at $7 20 per ton, delivered in Philadelphia. Anthracite has been selling at $7 50 in retail lots, and cargoes at $6 50@$9 per ton.

BALTIMORE, Aug. 7, 1868.

The supply of coal on the wharf is nearly exhausted; last sales were at $5 75. Receipts per railroad anticipated in a day or two, when shipments eastward will also be resumed; but dealers look for better prices than were previously obtained. At Alexandria prices have advanced 20 cents per ton, on account of the increased pay of boatman. Our corresponent writes:

"The transportation of coal by the Baltimore and Ohio Railroad to Baltimore market is not fully resumed since the late destructive freshet in the Patapsco. The quotations at Locust Point are nominal, there being no stock of coal on hand at this time. The carrying trade, will, however, it is hoped, be resumed in a few days."

The following table exhibits the quantity of Coal passed over the following routes of transportation for the week ending August 8, 1868:

	1867.		1868.		INC. OR DEC.	
	WEEK.	TOTAL.	WEEK.	TOTAL.	WEEK.	YEAR.
Phil. & Reading R. R.	61,553	1,980,957	9,335	1,696,937	d 52,218	d284,020
Schuylkill Canal	24,684	566,406	1,922	482,376	d 22,762	d 84,030
Lehigh Valley R. R.	46,060	1 242,655	47,975	1,396,179	i 1,915	i 163,524
Lehigh Canal	23,627	492,105	15,827	409,777	i 7,800	d 82,327
Scranton North	9,776	248,166	14,018	311,386	i 4,242	i 63,220
" South	27,750	779,139	22,693	646,549	d 5,057	d132,590
Penn'a Coal Co. Rail	19,785	475,281	20,434	528,833	i 649	i 53,555
Penn'a Coal Canal	833	11,796	1,311	15,463	i 478	i 3,667
Del. & Hudson Canal	31,119	741,082	50,625	815,934	i 19,506	i 74,862
Shamokin	4,934	296,911	10,343	280,419	d 5,409	d 10,492
Trevorton	.....	29,073	.....	13,227	.....	.....
Short Mountain	3,638	44,631	3,207	59,297	d 431	i 14,666
Lykens Valley C. Co.	2,079	39,996	2,299	50,439	i 129	i 10,553
Huntingd'n & B'd Tp	4,494	142,257	6,032	146,312	i 1,538	i 4,055
W'mstown Col'y, E.	.....	56,346	.....	92,192	.....	d 35,846
Wyoming South	20,091	158,936	10,441	128,990	d 9,650	d 29,946
Wyoming North	.....	.....	3,007	12,743	.....	.....
Lehigh & Susq. R R.	.....	.....	15,764	240,947	.....	.....
Total	289,423	7,299,717	235,233	7,328,000	.....	.....
	235,233	.....	.....	7,297,717	.....	.....
Decrease	45,190	.....	.....	1 28,283	.....	.....

Lehigh and Susquehanna Railroad, Week ending August 8.

WHERE FROM	WEEK. Tons. Cwt.	TOTAL. Tons. Cwt.
WYOMING REGION.		
New England Coal Co.	.....	50 15
Newport Coal Co.	.....	.....
Valley Coal Co.	.....	.....
Warrior Run Mining Co.	.....	.....
Parrish & Thomas	270 03	7,025 04
New Jersey Coal Co.	484 13	9,493 15
Gaylord Mines	40 02	224 11
Alorighton, Roberts & Co.	469 05	5,049 00
Lehigh & Susquehanna	.....	15 10
Germania Coal Co.	535 16	12,266 17
Franklin "	52 00	129 03
Wilkesbarre Coal & Iron Co.	9,284 18	132,134 01
Union Coal Co.	.....	2,040 07
Mineral Spring	295 17	6,235 03
H. B. Hillman & Son	.....	1,303 17
Bowkley, Price & Co.	121 02	446 07
Wyoming	173 12	3,263 11
Henry	.....	3,519 08
J. H. Swoyer	51 01	2,890 07
Lances' Colliery	184 04	899 15
Morris & Essex Mutual	.....	78 19
Shawnee	1,139 04	9,885 09
Delaware & Hudson Co.	175 18	5,576 19
Pine Ridge Colliery	467 11	8,293 03
Consumers Coal Co.	254 10	2,370 08
Harvey Brothers	.....	184 11
Other Shippers	59 11	5,463 16
Total Wyoming Region	13,939 07	213,840 16
UPPER LEHIGH REGION.		
Upper Lehigh	2,539 16	65,852 06
Other Shippers	175 19	6,776 00
Total Upper Lehigh	2,715 15	72,628 06
HAZLETON REGION.		
A Pardee & Co.	2,329 12	35,703 02
Linderman & Skeer	.....	756 06
Sharpe, Weiss & Co.	140 17	20,813 01
W. S. Halsey & Co.	.....	1,701 09
Harleigh Coal Co.	1,101 02	16,784 06
G. B. Markle & Co.	475 19	24,546 07
Ebervale Coal Co.	487 09	15,392 11
Stout Coal Co.	283 10	7,895 01
Buck Mountain Coal Co.	509 19	9,646 04
Coxe Brothers & Co.	.....	4,718 08
Ashburton Coal Co.	.....	64 06
Highland Coal Co.	131 00	8,917 09
Pardee Bro. & Co.	211 12	5,216 03
Jeddo Coal Co.	.....	5,033 13
Mount Hall	.....	.....
Other Shippers	.....	927 02
Total Hazleton	5,671 00	158,055 08
FROM MAUCH CHUNK.		
Summit Mines	.....	.....
Room Run Mines	1,026 05	2,819 02
Other Shippers	.....	17 00
Total Mauch Chunk	1,026 05	2,836 02
" Hazleton Region	5,671 00	158,055 08
" Upper Lehigh	2,715 15	72,628 06
" Wyoming	13,939 07	213,840 16
Grand Total	23,352 07	447,360 12
Corresponding week last year	9,065 13	315 268 11
Increase	14,286 14	132,092 01
Decrease	.....	.....
Forwarded South from Mauch Chunk by rail	14,593 06	196 422 03
Delivered on line L. & S. R.R. above Mauch Chunk	1,170 09	44,524 08
Delivered at Coal Port for shipment by Canal	7,588 12	206,414 01
Total	23,352 07	447,360 12

Schuylkill Coal Trade by Canal, for the Week ending Aug. 1, 1868.

The quantity sent by Canal for the week ending Thursday last:

St. Clair	1,046 00
Port Carbon	13 15
Schuylkill Haven	231 00
Port Clinton	631 00
Total for week	1,921 14
Previously this year	480,453 19
Total	482,375 14
To same time last year	566 409 12
Decrease	84,033 18

Schuylkill Coal Trade.

BY RAILROAD AND CANAL, FOR THE WEEK ENDING AUGUST 14, 1868.

	RAILROAD.	CANAL.
St. Clair	.....	.....
Port Carbon	3,471	.....
Pottsville	1 955	.....
Schuylkill Haven	2,991	.....
Auburn	3,588	.....
Port Clinton	5,211	.....
Company's use	891	.....
Total for Week	18,108	.....
Previously this year	1,696,937	.....
Total	1,714,045	.....
Same time last year	2,942,247	595,142
Decrease	328,202	.....

Report of Coal transported over the Lehigh Valley Railroad, Week

ending August 8, 1868, and previously this season, compared with same time last year:

Where shipped from.	Week. Tons. Cwt.	Previously. Tons. Cwt.	Total. Tons. Cwt
Total Mahony	726 10	269,608 06	270,334 16
Total Hazleton	26,173 18	642,440 16	668,614 14
Total U. Lehigh	302 02	31,773 10	32,075 12
Total B. Meadow	11,522 16	241,962 15	253,485 11
Total Wyoming	9,249 18	162,418 03	171,668 06
Grand Total	47,975 04	1,348,203 15	1,396,178 19
Same time last year	46,060 03	1,196,594 12	1,242,654 15
Increase	1,915 01	151,609 03	153,524 04
Decrease	.....	.....	.....
Forwarded east of M. Chunk, by rail	47,975 04	1,348,203 15	1,396,178 19
Delivered at M. Chunk and on line of road ab. that point	3,371 19	20,349 10	23,721 09
At Penn Haven for shipment by canal	4,398 15	51,340 01	55,738 16
At Mauch Chunk for shipment by canal	2,902 18	30,847 14	33,750 12
Total by rail and canal	58,648 16	1,450 741 00	1,509,389 16
Same time last year	55 395 18	1,246 510 04	1,301 906 02
Increase	3,252 18	204,230 16	207,403 14
Decrease	.....	.....	.....

Report of Coal Shipped by Lehigh Canal,

Week ending August 8, 1868, compared with same time last year:

WHERE FROM.	Week. Tons. Cwt.	Total. Tons. Cwt.
Mauch Chunk Region	94 00	159,299 12
Beaver Meadow region	.....	30,510 12
Mahanoy Region	95 07	1,449 07
Hazleton Region	1,257 05	119,650 18
Upper Lehigh Region	.....	7,876 14
Wyoming Region	634 01	75,162 04
Total	2,079 13	393,949 07
Corresponding week last year	33,615 05	468,478 17
Increase	.....	.....
Decrease	31,535 12	74,527 10

Cumberland Coal Trade.

BY C. & O. CANAL.—There were despatched from this port, during last week, 16,947 05 tons of Coal, forwarded by the following companies:

American	2,248 06
Borden	2,415 04
Central	4.440 14
Consolidation	4 091 19
C. & I. Co.	2,125 19
H. & B.	1,625 12
Total	16 947 05

Prices of Coal by the Cargo.

[CORRECTED WEEKLY.]

At New York, August 15, 1868.

Schuylkill R. A., choice	$5 75@$....	Schuylkill Chestnut	4 50 ....
" Ordinary	5 50	Lehigh W. A Lump Old Co	5 62½ ....
" W. A., Lump	5 50	Lehigh Broken	5 57½ ....
" Steamboat	5 00	" Egg	5 37½ ....
" Broken	5 50	" Stove	5 62½ ....
" Egg	5 60	" Chestnut	4 87½ ....
" Stove	5 75	Shamokin	5 50 ....

SPECIAL COALS.—DEALERS' QUOTATIONS.

Diam'd Vein R. A., Sch'kill	5 50	Old Co.'s W. A. Lehigh	5 50 ....
Locust Dale W. A., "	5 50	Mt Pleasant	5 00 ....
Honey Brook " Lehigh	5 50	Broad Mountain	....
Harleigh " "	5 50	Buck Ridge W. A., Sh'kin	5 50 ....
Spring M'n " "	5 50	H. Heils, E. S'klin, Lorh	5 50 ....
Sugar Creek " "	5 50	New England Red Ash	5 25 ....
Ashburton " "	5 50	Wyoming	5 50 ....

Dealers in these Coals may be found in our advertising columns.

At Philadelphia, August 15, 1868.

Lehigh Lump and Sc'mh't	5 50@....	Henry Clay, Egg & Stove	....@4 50
" Broken and Egg	5 50	Locust Mount Lump and Steamboat	....
" Stove	6 00	" Broken	....
" Chestnut	4 75	" Egg	....
Schuylkill R. A.	....	" Stove	....
" Chestnut	....	Lorberry Coal	5 00 ....
" W. A. Lump	....	Shamokin	....
" Broken	....	Franklin, (Lykens Valley)	5 50 ....
" Egg and Stove	....	Broad Top	5 00 ....
Schuylkill Chestnut	....@....		
Hill & Harris, Egg & Stove	4 80		

Scranton Coal at Elizabethport, August 15, 1868.

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

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

Prices for Pittston Coal at Newburgh, August 15, 1868.

(Corrected weekly by Penna. Coal Co.)

Lump, per ton of 2240 lbs.	$4 45@....	Egg " " "	4 55 ....
Steamer, " " "	4 45	Stove " " "	4 80 ....
Grate " " "	4 55	Chestnut " " "	4 35 ....
Pea " " "	3 25		

70 cents additional to New York.

Lackawanna at Rondout, August 15, 1868.

Lump	$4 60@....	Egg	$4 10@....
Steamer	4 65@....	Stove	4 90 ....
Grate	4 60@....	Chestnut	4 35 ....

65 cents additional to New York.

Lehigh Coal at Elizabethport, August 15, 1868.

Lump	5 00@....	Chestnut	4 25 ....
Steamboat and Broken	4 65	Stove	5 00 ....
Egg	4 75		

Wilkesbarre Coal at Hoboken, August 15, 1868.

(Corrected by Wilkesbarre Coal & Iron Co.)

Lump	$5 00@....	Egg	5 00@....
Steamer	5 00	Stove	5 50 ....
Broken	5 00	Chestnut	4 60 ....

At Baltimore, August 15, 1868.

Wholesale prices to trade.		Trevonton R. A.	$5 00@$5 40
Wilkesbarre by cargo or car load	@$5 65	&y retail, per ton of 2.340 lbs., delivered	6 75@ 7 25
Pittston and Plymouth	$5 50@ 5 65	Georges C'k and Cumberland f. o. h. at Locust Point for shipping	4 65@ 4 75
Shamakin R., or W. Ash	5 15@ 5 40		
Lykens Valley R A	5 40@ 5 60		

At Havre de Grace, Md.

Cargo prices for shipment south of Patapsco river, (drawback allowed of 21c.)		Shamakin R., or W. Ash	$5 25@....
		Lykens Valley R. A	5 40@....
Wilkesharre and Pittston W. Ash	$2 25@....	Trevorton R. A	5 15@5 25

At Georgetown, D. C. and Alexandria, Va.

George's Creek and Cumberland f. o. h. $....@ 4 55

An advance of twenty cents per ton has recently been allowed boatmen on canal freights from Cumberland, and the price of coal correspondingly advanced

Prices of Gas Coals.

August 15, 1868.

PROVINCIAL.	Coarse. Gold.	Slack. Gold.	AMERICAN.	Coarse. Currency.	Slack. Currency.
Duty, $1 25					
Block House	$1 75	$ 75	Westmoreland Co.	$8 50	$8 00
Gowrie	1 75	75	Despard Coal Co.	8 25	8 00
Lingan	1 75	75	Penn	8 50	8 00
Sydney	2 13¾	71¼	Newburgh Orrel Gas	8 50	8 00
Pictou	2 13¾	1 18¾	Delivered in New York.		
Little Glace Bay	1 75	1 00			
Caledonia	1 60	75			

Prices of Foreign Coals.

Duty $1.25 per ton.

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

Liverpool Gas Caking	$ 9 50	Liverpool House Cannel	18 00@19 00
" " Cannel	14 00	" " Orrel	16 00@18 00

Per ton 2240 lbs., Ex. ship.

PRICES FROM YARD

Liverpool House Orrel, scr'd.	$18@20	Livp'l House Can'l, scr'd.	22 00@— —

per ton 2000 lbs. delivered.

Coal Freights.

(Corrected Weekly.)

Rates of Freight from Newburgh

RIVER.		EASTERN.	
On "Pittston" Coal, by boats and barges of the Pennsylvania Coal Company, per ton of 2,240 lbs.		Stamford	$1 25
Troy and West Troy	$ 55	Norwalk	1 25
Albany and Greenbush	50	Bridgeport	1 25
Coeymans	45	New Haven	1 25
Coxsackie and Stuyvesant	40	New London	1 40
Hudson & Catskill	35	Norwich	1 50
Saugerties and Barrytown	35	Mystic	1 45
Rhinebeck and Rondout	30	Stoningtou	1 45
Po'keepsie and New Paltz Land.	25	Sag Harbor	1 45
Fishkill Landing	20	Bristol	1 55
Cold Spring and West Point	30	Newport	1 55
Peekskill	40	Fall River	1 55
Haverstraw	45	Providence	1 60
Sing Sing and Nyack	50	Dighton	1 60
Tarrytown and Piermont	50	Warren	1 60
Yonkers	55	Pawtucket	1 75
The Coal must be discharged with all reasonable dispatch, at the expense of the consignee, who shall also pay wharfage on the boat. Boatmen will tend guy while unloading.		New Bedford	1 90
		Boston	2 10
		East Cambridge	2 20
		Salem	2 10
		Newburyport	2 20
		Portsmouth	2 15
		Portland	2 00

Freights on Coal Sea-borne from Port Richmond, Philadelphia.

July 29, 1868.—From Philadelphia & Reading Railroad Wharves, Phila., to

Boston	2 25	2 50	New York	1 25@	1 50
Salem	— —	— —	Saco	— —	— —
Providence	2 00	— —	Beverly	— —	— —
Portsmouth	— —	— —	Fall River	— —	— —
Charlestown	— —	— —	Malden	— —	— —
Bangor	— —	2 00	New Bedford	— —	— —
Cambridgeport	— —	— —	Roxbury	— —	— —
Provincetown	— —	— —	New London	— —	— —
East Greenwich	— —	— —	New Haven	— —	— —
Bath	— —	— —	Brooklyn	— —	— —
Portland	— —	— —	Yarmouth	— —	— —
South Amesbury	3 05	— —	Norwich	1 75@	2 00
Lynn	3 50	— —	Southport	1 80	— —
Quincy	2 50@	2 60	Port Monmouth	1 35	— —
Wymouth	2 50	— —	Charleston	1 50	— —
Bristol	2 00	— —			

From Elizabethport and Port Johnson.

Albany	$ 85@—	—	New London	$1 15	— —
Boston	2 00	— —	Newport	1 40	— —
Bridgeport	1 00	— —	New York	60	— —
Fall River	1 45	— —	Norwalk	1 00	— —
Hartford	1 50	— —	Norwich	1 35	— —
Hudson	1 00	— —	Pawtucket and towing	1 60	— —
Wareham	1 55	— —	Portland	1 90	— —
Middletown	1 25	— —	Portsmouth	2 10	— —
New Bedford	1 50	— —	Providence	1 40	— —
Newburyport	2 15	— —	Salem	1 75	— —
New Haven	1 00	— —	Augusta	2 25	— —

Rates of Transportation to Tide Water.

[BY RAILROAD.]

To Port Richmond.—(Philadelphia.)

Philadelphia and Reading R. R. from Schuylkill Haven $2 00

The following are the drawbacks allowed on all coal shipped East of New Brunswick and South of Cape Henry, until further notice:

	Drawback.	Freight.	Nett.
Lump	$1 25	$2 00	$ 75
Steamboat	1 15	2 60	85
Broken	1 00	2 00	1 00
Egg	65	2 00	1 35
Stove	50	2 50	1 50
Chestnut	75	2 00	1 25

From Port Carbon, 8 cents per ton more.

To Elizabethport.

L. V. Railroad from Mauch Chunk to Easton	$ 81
C. R. R., N. J., Easton to Elizabethport	1 22
	2 03
Shipping Exposes at Elizabethport	25
Total	2 28

To Port Johnson.

L. V. R R	$ 81
C. R. R. of N. J.	1 39
Shipping Expenses	25
Total	2 55

To Hoboken.

L. V. R R	81
Morris & Essex R R	1 29
Shipping Expenses	25
Total	2 35

[BY CANAL.]

To Port Richmond.

From Schuylkill Haven to Port Richmond	$1 00
Freights and tolls by Raritan Canal	1 90
	2 90
Drawback	30
Total	2 60

To New York.

From Mauch Chunk to New Brunswick, by Lehigh, Del. Div. and Del. & Raritan Canal	$ 90
Freights through	1 25
Towage	20
	2 35

To New York via Morris Canal.

Lehigh Canal	$ 34
Morris "	40
Towage	10
Freight	1 55
Total	2 39

Expenses from Mauch Chunk to Jersey City for Re-shipment.

Lehigh tolls (net)	$ 34
Morris "	54
Freight	1 50
Re shipping	30
Total	2 48

Provincial Freights.

TO NEW YORK.		TO BOSTON.	
Sydney	3 50	Sydney	$2 75
Lingan	....	Lingan	2 65
Cow Bay	4 50	Cow Bay	....
Port Calidonia	4 25	Port Calidonia	3 00
Little Glace Bay	4 00	Little Glace Bay	2 75

Foreign Freights.

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

SAN FRANCISCO STOCK MARKET.

A telegram from San Francisco, dated Aug. 12, to Messrs. LEES & WALKER, Bankers, 33 Pine street, this city, quotes stocks as follows:

STOCKS.	Bid per ct.		STOCKS.	Bid per ct.	
Gould & Curry	84	@ —	Belcher	115	@ ..
Savage (per share)	109	@ 110	Uncle Sam	..	@ ..
Chollar Potosi	133	@ 134	Amador	225	@ 230
Ophir	19	@ —	Imperial (per share)	107	@ —
Hale & Norcross	71	@ 73	Alpha	46	@ ..
Crown Point	77	@ 78	Kentuck (per share)	354	@ —
Yellow Jacket	1,167	@1 168	Cal. Steam Nav'n Co.	..	@ ..

An assessment of $10 gold, per share is announced by the Hale & Norcross Company, delinquent Aug. 30, and delinquent sale Sept 14th next.

☞ Sun-dried oysters, cured like beef, by hanging in the sun, are becoming an important article of trade in California.

AMERICAN

Journal of Mining.

WESTERN & COMPANY, PROPRIETORS.

ROSSITER W. RAYMOND, EDITOR.

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☞ Mr. T. P. PEMBERTON is Editor of the Mechanical Department and Agent for the JOURNAL OF MINING.

☞ Correspondents, exchanges and others addressing us should be *extremely careful* to write "JOURNAL OF MINING," instead of "MINING JOURNAL," and to give the number of our Box at the Post Office, which is 5969, to ensure safe carriage. Communications intended for publication should be plainly written, and on one side of the paper only.

NEW YORK, SATURDAY, AUGUST 15.

CONTENTS OF THIS NUMBER.

NOTICE TO CORRESPONDENTS.

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THE FUTURE OF AMERICAN MINING—ITS DEMANDS.

The discovery of gold in the Sacramento basin some twenty years ago marked an era in the history of the spread of American civilization. From that time on to the present there has been a constant setting of the tide of emigration thitherward. Thousands eager in the chase for wealth were followed by tens and hundreds of thousands no less zealous in their pursuit of the hoped-for prize. That great stretch of country extending from the eastern base of the rocky mountains to the Pacific Ocean, embracing many hundred thousand square miles, was peopled by an array of miners who went by tens, hundreds, and thousands, roving up and down the winding valleys, and threading along the mountain gulches, stopping ever and anon to wash the gold from the alluvial deposits wherever it could be found. Theirs was a nomadic life; they needed no capital; the coarser articles of subsistence, and a few rough tools, made up, so to speak, the stock in trade of a placer gold miner. When one spot was worked out, these miners would break up their camps, and go in search of a new Eldorado. Nothing more than a few tents or improvised shanties were required. What they build to-day, they take down to-morrow; they make little or no attempt to bring under tribute the forces of nature. Theirs is not an agricultural or mechanical work. No permanent improvements mark their devious line of march. There is, comparatively speaking, but little land susceptible of cultivation in all that vast range of mineral territory. Now that the gold placers are nearly all worked out, naturally enough camps are broken up and villages deserted. With no other source of mineral wealth than surface diggings, that broad auriferous belt of country would soon be for the most part depopulated; it would be given over again to the controlling hand of desolation.

There is, however, an inexhaustible source of treasure buried deep in the matrix rock of those volcanic mountain chains—the mineral lodes. From them came the millions of treasure that have been washed from alluvial clays and sands. The physical and chemical forces of nature, in ceasless action through untold ages, have cut down, and rounded off those volcanic hills, and with them, the mineral veins enclosed therein. Tens, hundreds, aye, perhaps thousands of feet of perpendicular distance would not, in many instances, measure the amount of work done by those silent, but potent influences that harmonized together in the interest of man, long before he appeared upon the earth. From those mineral veins will come a supply of treasure, before the magnitude of which, all that has hitherto been obtained, will sink away, as it were, into utter nothingness.

But the beneficent forces of nature are to do the work no longer. Their mission has been accomplished. They were pioneers in mining enterprises. They did just enough to bring to the knowledge of man the fact that these rugged mountains are so many store-houses of treasure, and at the same time to suggest to him in what manner he must apply the key. Man cannot wait for the "mills of the gods" to grind longer upon those mountain caps and slopes. He steps in with explosive agents, hoisting apparatus, stamp mills, and dressing works, and supplants nature. But to carry on such extensive works, capital is needed, and, here comes the rub. It is no longer the pan, the rocker, and the sluice. Another kind of work is to be done. Shafts must be sunk, and galleries run along the courses of the veins. In order to work these lodes at a rate of profit, and to great depths, general drain tunnels must be constructed, and that, too, oft times at great cost. Men of capital, always suspicious, often ignorant, do not believe in theories. Such men have their doubts as regards the continuity of mineral lodes in depth. They will not invest their money in extensive tunnelling operations, because their powers of vision are not so great as to enable them to look through the rock strata of the earth's crust a distance of a few thousand feet, and determine whether there is treasure enough down there to justify the expenditure. Their life work has been a dealing in collaterals—they want them here. In all the great mining regions of the globe, it has been only by a system of general drain tunnels that mining has been made profitable.

In Hanover, Germany, Austria, Mexico, and South America drain tunnels, at great depths, have proved the continuity of mineral lodes in that direction. Let us have that evidence as regards the vein deposits of our own mining regions, then, there will have been given to our capitalists a case in point, a *practical* assurance that nature's laws, in this particular, are the same for America as for the rest of the world. A great, a momentous question to be decided by the American nation is then simply this: Are they to allow the great mining interests of our magnificent domain, one by one, to go to ruin; and that too, in a very few years, or shall the Government step in at the right moment and render just the aid necessary to bring, hereafter, the requisite capital into this all important branch of mining industry?

We have been led to the foregoing remarks in view of the present state of the Sutro tunnel enterprise—a work that, long ago, should have been in the way to a successful completion. That work accomplished to-day, it would demonstrate to unbelieving capitalists how much of treasure there is, locked up in the depths of our Western mountains; they would then be more ready to invest in such enterprises than they now are in Government securities. The result, unfailing in its benefits, would be, that, with us, as in Europe, every mining centre would have its system of drain tunnels, not only connecting the mines, but also uniting together all the various mining companies in a community of interests, without which there can be no long continued success. Such a system of deep drain tunnels once under way, the miner will see that he has a life work before him on the spot. The permanent will take the place of the transient; temporary cabins will give way to substantial dwellings, hamlets will be transformed into villages, villages into cities, railways will succeed to wagon trains, valleys fitted for the labors of the husbandman and the herdsman will teem with their wealth of production, the blows of the forge hammer and the hum of the manufacturerer's spindle will be heard along the line of the mountain streams; in a word, a taxable property will, in the end, have been created, to be estimated only in tens, hundreds or thousands of millions. All this, and yet more, is possible; it is not, however, probable, nor can it ever be realized in fact, until a proper system and conduct of mining enterprises shall have proved conclusively to all, the truth that in *our* mineral lodes there is a depth and richness that will insure a certainty of ample returns for labor through a line of centuries to come. There is an opportunity, in the proposed Sutro tunnel, for our Government to take the initiatory steps in bringing about this desired end. It remains to be seen, whether, following the worthy example of other nations in such matters, it will render capable of realization what is now only possible, or, regardless of the interests of its people and its own alike, it will prove recreant to its manifest duty, and allow an industry that should be made enduring, prosperous, permanent, to pass away in a few years, as something designed by nature to have only an ephemeral existence.

TAXATION OF MINES—A SOURCE OF RUIN RATHER THAN REVENUE.

The Canadian government, so our exchanges inform us, has come out with an authoritative statement to the effect that no royalty will be claimed upon silver mined on lands lying along the north shore of Lake Superior, for which patents have been issued without any special reservation of such tax. These lands, it appears, were taken up during the year ending July, 1867. Royalty reservation was made in all patents issued previous to, and since that year. In accordance with the Mining Law of 1868, upon all mines where the right of royalty was reserved in the patent, there is a tax, varying from two to ten per cent. upon the gross product of the same. Nothing is said by the Commissioner of the Crown Lands as to whether gold is to be, alike with silver, exempt from taxation whenever produced on the lands covered by the non-reservation patents. Just enough seems to have been said to raise a doubt as regards what will be the course of procedure in cases lying outside of these patents. Is the royalty to be enforced upon the metalliferous product of all mines not coming within the narrow scope of the above-mentioned statement, or is the whole scheme of government taxation of mines to be gradually abandoned, as not at all subservient to its best interests? We are, of course, not directly influenced by Canadian legislation upon their mining properties; we are, however, affected indirectly, in so far as it sets us examples to be either followed or avoided. However rich the Canadian Lake Superior regions may be in mineral deposits, it seems plain to us that no company will attempt to develop them with a royalty tax, of from two to ten per cent. on the gross product, hanging over their heads. It should be the part of every government to foster mining enterprises in their infancy, rather than to be constantly hedging up the way to success. It is plain to be seen that, in this country, gold and silver mining cannot bear taxation in any form and prove in any degree successful. During the first flush of excitement as regards our immense silver deposits in Nevada, and the surrounding Territories, before hardly anything was known in reference to what would be the real cost of production, our government, innocently enough, perhaps, levied a tax on bullion. Later developments demonstrated the fact, and that too, much to our regret, that nearly all the silver mines of that region could be worked, even when relieved of all taxation, only at a great sacrifice of treasure. Our government has very wisely repealed the Bullion Tax Law, and, indeed, in addition thereto, it would do a good deed were it to abolish the insignificant miners' tax, which hardly pays the cost of collection.

Any one who will take an accurate survey of the whole ground, not allowing himself to be misled by a mistaken, short-sighted, and, may be, selfish policy, will see at a glance that, in a new country, where the cost of labor and material is high, where the expenses of every day life always run at very high figures, mines, unless they are fabulously rich, can never pay the expense of working. Taxation under such circumstances is the height of folly. It prevents development, the inauguration of what would prove in the end a permanent and profitable industry. When under the above conditions it is sprung upon mines partially opened up, ten chances to one it totally ruins them. It brings about, so to speak, an abnormal state of affairs. In this view governments should be content with the indirect benefits that are sure to result from the developments of mining and metallurgical industries within their domain. So great, indeed, are these benefits in the end, that, in many instances, governments advance their *own interests* by *fostering*, rather than by *taxing* them. In regard to these matters it is our hope that the United States Government will avoid the short-sighted policy that seems for the most part to control the counsels of our northern neighbor. Let it bear well in mind that, in the new mining localities, taxation of bullion, if a source of revenue to-day, is a source of ruin to-morrow. Rather let a liberal, far-sighted policy be the one, in accordance with which mining enterprises, good in themselves, but struggling for life amid the many natural obstructions that, for the time, stand in their way, may be encouraged, fostered, carried past the dead point, and placed upon a footing that will eventually make them a source of pride, and, if not directly, yet indirectly, the means of a large income to the government that aided them in their hour of need.

THE LOWEST MINE.

We remarked some time ago that the highest mine in the world was a silver mine in the Andes mountains, situated at the height of 11,375 feet above the surface of the ocean. The deepest mine, we said, was the New Salz Werk, in Westphalia, it being 2,050 feet below the surface of the ocean. A cotemporary in speaking of that paragraph, says: "There is, we believe, a silver mine in the Freiberg District of Germany, that exceeds in depth the one above spoken of." We were a little unfortunate in using the word deepest. Strictly speak-

ing, we should have said lowest mine, in contradistinction to the term highest. Bnt the phrase in the context—*below the surface of the ocean*—onght to have clearly shown to any one what we really meant. The Freiberg mining district is sitnated upon the northern slope of the *Erzgebirge*, some 1,500 feet above the level of the sea. The mountain range, upon the whole, has an average height of about 2,250 feet. The highest point stands 3,800 feet above the ocean's surface. The Freiberg mines generally have a depth ranging, say from twelve hnndred to two thonsand feet. The average level of the bottom of these mines must then, fall near, or perhaps, somewhat below the level of the ocean. As one, among the deepest mines in the world, we may mention, for the benefit of those interested in snch statistics, the Samson mine at Andreasberg, npon the Harz Monntains. This mine, one of the most celebrated in Europe, has a depth of about 3,000 feet.

Collieries vs. Graveyards.

Our sensibilities are again shocked by the news of another terribly destructive colliery explosion. Another holocaust of victims has jnst been added to the many that have gone before. Cable dispatches tells ns that at Jemmapes, in the province of Hainanlt, in Belginm, fifty-one persons have met with instant death, while in addition thereto great numbers have been injnred. Of the canse of this signally diastrous occurrence, we are as yet in ignorance. Thereupon the wires are silent. It may have been the result of carelessness, mismanagement, a defective safety lamp, or of any two, or, indeed, all three of these fruitful sources of disaster combined. When our exchanges shall have informed us we will not fail to let our readers know how it was that another half hundred of human sonls were lannched, without a moment's warning, upon the great ocean of eternity. We shall find that somebody, in a greater or less degree, was to blame. Or, will the verdict of censure fall only upon an imperfect safety lamp, just as in the case of many of onr horrible railway slaughters, a defective rail is made to bear the bnrden of blame? What serviceable tools these often are with which to cover up human delinquencies—defective rails and lamps?

EDITORIAL CORRESPONDENCE NO. X.

THE MOTHER LODE OF CALIFORNIA.

CALIFORNIA, JULY 19, 1868.

It is not easy to describe that formation, known in this State as the Mother Lode, and extending, it is said, from Mariposa throngh three counties, into the neighborhood of Placerville. We have traversed it through nearly its whole length, and stndied with some care its general characteristics; bnt we confess onrself pnzzled to answer the very first question which arises concerning it, namely, is it a lode at all? In spite of the statements so often and so positively made, there is not the evidence of a continnous outcrop for sixty miles to support that supposition. Frequently the vein cannot be fonnd on the snrface; frequently it is "split up" (according to theory) into several branches. Nor have careful snrveys established the identity of the individual outcrops exposed. In fact, all that can be held as proven is, that there is a certain belt of the slates, within which occur, parallel with the stratification, the ontcrops of veins or layers of anriferons qnartz, which bear, on the whole, a certain resemblance to each other in general features. Yet even this resemblance is not invariable. Different mines on the "Mother Lode" have different kinds of rock, different quality of qnartz, different associated minerals. The Pine tree and Josephine, adjacent mines, and known to run together, carry distinctly different ore. It is only fair to say, however, that the Mother Lode itself is held by some to be a double vein, the two halves being of different ages (as is always the case in a donble fissnre vein) and showing, throughout their conrse, a steady antithesis of character.

This qnestion we will not argue. At many points, the donble nature of the deposit cannot be recognized. At other points, especially in Tnolnmne Co., there is a talcose companion vein East of the main qnartz deposit, and at the celebrated Amador mine by Sntler Creek, there is a so-called Boulder Vein in the East. It is very difficult to identify these various formations so as to prove (what it is qnite as diffinlt to disprove) that the Mother Lode is indeed a great master vein, occupying the central fissnre in a system. It is even almost impossible to decide whether the different veins which are inclnded nnder the one name, are really fissure veins. ASHBURNER hints that they are veins of segregatim, intercalations among the slates; BLAKE thinks them true fissures, thongh always or nearly always conformable to the layers of slate. We incline to the latter view, bnt we cannot bring forward absolnte proof of the pre-existent fissnres. Withont any donbt, there are evidences enongh of the movement of one wall on the other, of dislocations of vein matter, prodncing "slickensides," which sometimes run directly across the vein. The quartz is sometimes (as in the Amador mine) knit to the hanging wall by ribs or cross-flows of quartz, at right angles to the vein sheet; and these can be traced into the vein mass. It is hard to explain this withont the hypothesis of a fissnre gradnally filled. "Horses" are not uncommon—another significant fact. The qnartz itself has lost the comby strnctnre so often seen in fissnre veins, and appears dense, laminated, and streaked parallel with the walls. Some of it actually has a cleavage like felspar; and one intelligent man whom I have met believes most positively that the so-called qnartz of the Mother Lode *is* felspar. He is mistaken. Felspar sometimes appears in these mines; bnt it is yellow, not white; and the gangue is genuine quartz, but quartz which has undergone so severe and long continued a pressure as to lose the traces of its original structure, and receive new peculiarities from circnmstances. In the Eureka at Grass Valley we saw (and no doubt the same might be observed on the Mother Lode) portions of the vein where the comby structure could still be traced, though with difficulty, in the solid mass of quartz.

All these, and other signs, are interpreted by us to mean "fissnre veins." If we are right, then the Mother Lode presents to ns either a hnge continuous fissnre, or a snccession of similar ones, remarkably regular in strike and dip, and remarkably free from cross-conrses or branches.

This regularity results, no doubt, from the conformability of the fissure or fissures to the slate-strata. Bnt what force could open those strata in such a way, to such an extent, and with so little disturbance of the walls, or creation of faults and cross-courses? In reply to this question, we will only make a suggestion. Future observation may throw the needed light upon the question.

Let our readers bear in mind that the anriferous slates which here flank the Sierra Nevada do not dip Westward, as one would naturally expect them, tilted by the npheaval of that range, to do; but, on the contrary, dip towards the East, at various angles, though in general very steeply. This strange phenomenon, analogous to some Alpine occurrences which long perplexed the geologists of Europe, finds its probable explanation in the observations made by Prof. WHITNEY, the State Geologist, in the ridge between the North and Middle forks of the American river. "This ridge"—we quote from CRONISE'S *Natural Wealth of California*—"is cnt by deep cañons or gorges, in one instance two thousand feet in depth, with sides sloping at as high an angle as forty-five degrees. The auriferous slates beneath are sometimes eroded to a depth of fifteen hnndred feet, and peculiar facilities are thns afforded for the study of their structnre. It was in this vicinity that Prof. WHITNEY observed the very interesting fact, illustrative of the probable fan-like structure of the strata flanking the central portion of the Sierra. These usually show an Easterly dip, towards the chain; in these deep vertical sections, it was noticed that the upper one thousand or twelve hundred feet had the normal dip to the East, bnt below this there was a gradual curve, and at the bottom the dip was to the West, as if the upper portion of the strata had been forced back by immense pressure from above." If the slates, first lifted on the East by the rising Sierra, were afterwards slowly overborne by its weight, we have precisely the canse reqnisite for longitndinal fissures on a grand scale. Further speculation wonld lead us too far; and we might even be betrayed into an attempt to answer the question "How the gold came there?"—which, as thou knowest, dear reader, hath been the ruin of many a smart young *savant*.

We must reserve to another letter what we intended to put in this—a description of the celebrated Amador mine, and, *àpropos* thereof, a discussion of the permanence of these veins in depth.

R.

Mining Companys' Statements.

THE NEW YORK AND MADOC GOLD MINING COMPANY, incorporated under the laws of the State of New York, have a property consisting of 401 acres of mineral lands, situated in the townships of Marmora and Hungerford, county of Hastings, Province of Ontario, Canada. A number of quartz lodes with gold indications have been discovered upon this company's lands. Around them, on all sides, are numerous richly-paying veins. This fact argues well as regards the future prospects of the company. The mines in the Madoc gold region yield rock that pays, by the process of amalgamation, from ten to fifteen or twenty dollars per ton. The comparatively cheap rates of labor and cost of living enable such mines to be worked at a fine profit. This company is based upon a capital stock of $1,000,000. They have no salaried officers. The superintendent in charge of the property receives nothing for his services. It is proposed to sell $200,000 worth of stock, at the rate five cents on the dollar, in order thereby to raise the sum of $5,000, *all* of which is to be expended economically in opening mines, testing ores, and developing the company's property. From the trustworthy information that we are in possession of in regard to the Madoc region, it is our impression that this company have before them a fair chance of success. Their surroundings are in a high degree satisfactory. The following advantages that at the present moment attend mines in the Madoc region may be summed up about as follows:

The district is of easy access, being only a day and a half's ride from New York and only 25 miles from Lake Ontario and the Grand Trunk Railway, and has a fine turnpike road running north from Belleville directly through it. Therefore machinery can be taken to the mines without investing large sums in wagons, oxen, or mules, and transporting the same thousands of miles, while if any part of machinery gets broken it can be quickly repaired or duplicated, and stoppage of works avoided. Crushing mills and reduction works will cost, set up ready for operation, not more than one-fourth or one-third what the same cost, set up in the mountains of the distant West. The country is well watered and heavily timbered, wood only costing the cutting, and the best of pine timber is worth only $8 or $10 per thousand feet, while mining labor can be obtained at reasonable rates of compensation.

Mr. W. J. GATLING is superintendent of the above company, and will be glad to give further information relative to it, at the office of the Land and Immigration Co., No. 7 Broadway, N. Y.

☞ The first iron steamer ever built in Cleveland, Ohio, was launched last week. She is 81 feet long, and of 14 feet 8 inches breadth of beam. She will carry about 70 tons, new measurement, and have room for 400 to 600 passengers.

Original Papers.

[WRITTEN FOR THE AMERICAN JOURNAL OF MINING.]

AMALGAM OF COPPER.

BY PROFESSOR H. DUSSAUCE, CHEMIST.

This amalgam, known also by the name of dentist's alloy, has the remarkable property of being soft when prepared, and of becoming so hard when exposed to the air, that it can be broken. Its use ought to be rejected in the filling of teeth, on account of the readiness with which it becomes soft; but it can be advantageously used for monlding medals. I prepare this amalgam in the following manner: I dissolve sulphate of copper in water and acidnlate the solution with a few drops of sulphnric acid. I then dip in that solution a very clean bar of iron. Very soon the copper is precipitated in the form of a very fine powder. This precipitated copper is washed qnickly and well with boiling water. I then rub it in a porcelain mortar with a few drops of nitrate of mercury, and wash it well again with boiling water. I add metallic mercnry, and grind until the mass takes the form of a paste which can be worked with the fingers. Then I wash again with boiling water until this liquid remains clear and limpid. It is then pressed strongly in a piece of hide or leather, so as to separate the excess of mercury, and afterward exposed to the air. It becomes very hard in less than an hour. A curious fact to note is the action of zinc upon that amalgam. In one experiment, I took quicksilver which had been used for amalgam in batteries, and, consequently, contained some zinc. The amalgam was formed in the same manner as above. It became hard, but was so brittle that a very slight blow was snfficient to make it fall to pieces.

It gives by analysis:—	In its ordinary state:—
Copper.....25,75.....	25,81
Mercury.....74,25.....	74,19
100,00	100,00

Specific Gravity. 11,48

Analysis when soft:—

Copper.....	25,43
Mercury.....	74,57
Specific Gravity..11,033	100,00

Analysis after having been soft, and again become hard:—

Copper.....	25,48
Mercury.....	74,52
Specific Gravity..11,036	100,00

These experiments were repeated several times, and I have always found the composition to be the same. This alloy is useful in taking impressions, bnt in dentistry its use is dangerous, as I have ascertained that it is attacked by very weak acids.

[WRITTEN FOR THE AMERICAN JOURNAL OF MINING.]

THE PARIS AND FREIBERG MINING SCHOOLS.

In Four Parts—Part IV.

BY BENJAMIN SMITH LYMAN, M. E.

II.—THE INSTRUCTION.

The instruction is three years long (besides the preparatory year); and is given in lectures (without recitations), practical exercises in chemistry, drawing, mineralogy and paleontology, and in occasional excursions. With French generosity, it is made quite free of cost to all the students, French and foreign alike; and the lectnres on Mineralogy, Geology and Paleontology are open to the public. The stndents of the second and third years have to travel in mining regions in their long summer vacations.

The students are not left to grope in their ignorance for a fitting arrangement of their studies, but a well-planned regular course of study is prescribed, and things are learned in their proper connection, a matter of great importance.

Preparatory Year.—The instruction of the preparatory year begins at the middle of November and lasts nntil the end of summer.

Prof. HATON DE LA GOUPILLIERE (ordinary engineer of the first class) lectures on the differential and integral calcnlalus and in mathematics.

Prof. FUCHS (ordinary engineer, second class) lectnres on descriptive geometry and the parts of physics that treat specifically of dynamical electricity and optics.

Prof. MOISSENET (ordinary engineer, first class) lectures on general chemistry.

The stndents of the preparatory year also practice geometrical drawing and water color washing nnder Mr. AMOUROUX, the drawing master of the school.

First and Second Years.—The lectnre conrses of the first and second years are given together; that is, some of them are two years long, and the stndents who enter the school one year begin with the second part of the course of those who entered the previous year; bnt the lectnre conrses are so arranged that some begin one year and and some the next. The courses that are only one year long alternate with each other, so as to be eqnal in number each year. It is necessary, therefore, to be at the school at least two years in order to get the most important part of the instruction. Ten lectures of abont sixteen honrs in all are given each week; and the conrses last from the middle of November until the middle of April.

GRUNER (general inspector, second class), professor of metallurgy, gives a two year lecture course that begins the even years (1860, for example) with general metallurgy, furnaces,

fuels and the like, and iron; and the next year takes up copper, lead, silver, gold, quicksilver, tin, antimony, bismuth and zinc.

Rivot (engineer in chief, second class), professor of mineral chemistry, gives a two year lecture course that begins in the odd years with the metalloids, alcalis and earths, together with cements, mortars, mineral waters, soils and manures; and the next year treats of the metals. He has also charge of the laboratory, where each student works in periods of three weeks at a time, alternating with the drawing exercises. In the laboratory the students begin with making preparations of different bodies, and then make analyses and dry assays. A written account of the laboratory work is required from the student.

Daubrée (engineer in chief, first class) is professor of mineralogy, in the place held half a dozen years ago by the much lamented De Sénarmont. The lecture course is only one year long, but it is repeated every year, and it is expected that the students generally will follow it two years running before getting the needful practical familiarity with the minerals. A few, however, are able to pass the examination satisfactorily at the end of the first year. Besides the lectures, there are, for some weeks before the examination, practical exercises in the presence of the professor.

Callon (engineer in chief, first class) is professor of Mining and Machinery, and gives a one year course on each of these subjects in alternate years, beginning the one on Mining in the odd years, and the one on Machinery the even years.

Elie de Beaumont (general inspector, first class) is professor of geology, but he gives only four or five of the lectures himself; and the rest are given by his colleague, Mr. De Chancourtois (engineer in chief, first class). The lecture course is but one year long, but it is repeated every year; and the examination comes at the end of the second year, and hearing the lectures is only required that year. Besides these lectures, there are, in the spring, weekly excursions of a whole day in the neighborhood with both these professors. After the spring examinations are over, there is every year, in the beginning of June, a geological excursion of a whole week to some distant part of France, as, for example, to the Ardennes, or to the Jura. On this yearly excursion, Elie de Beaumont himself takes the lead, and does it most admirably; long may he be spared the strength for such fatiguing labors! The party numbers some forty, counting the professors and two or three of their assistants and friends and the students; to all of whom transportation is furnished free.

Bayle (engineer in chief, second class) is professor of paleontology. He began with paleozoic fossils in 1859; and in 1860 took up secondary fossils; and in 1861, probably, went on with tertiary fossils, making really a three year course of it. The student, however, is required to follow this course only through the first year; but as the examination does not come until the end of the second year, together with the geological examination, he finds it to his interest, if only for that reason, to hear the lectures of both years.

Prof. Fuchs (ordinary engineer, second class) teaches surveying, with practical exercises above ground, and in the catacombs underground, in the summer between the first and second year's lectures.

The drawing exercises of the first and second year, under Mr. Amouroux, consist of machine drawing from copies, and from real machines, plotting, mapping; and later, in the second year, in making original drawings in solution of given problems in mining, machinery or metallurgy.

Third Year.—The lectures of the third year are comparatively few in number, and mostly on subjects of less interest and importance to foreign mining engineers, than the lectures of the other two years.

Couche (engineer in chief, first class) is professor of Construction, and lectures on railroads and machine construction.

Prof. Lamé-Fleury (engineer in chief, second class) lectures on mining laws.

Prof. Delesse (engineer in chief, second class) lectures on agriculture, drainage and irrigation. Excursions are sometimes made to large farms in the country.

The drawing exercises of the third year are original designs connected with the solution of problems in mining, machinery or metallurgy.

English and German.—Mr. Schlessinger teaches German to the students of every year; but the study of it is optional, and few study it after the first few days.

Mr. Elwell teaches English, in like manner, to those of any year who choose to study it.

Examinations.—The examinations at the ends of the lecture courses are both written and oral, and a week is given to the examination in each course. The written examination takes place in the library, and two or three questions are given to all the students together for each to answer. Each student may make use of his lectnre notes or of any books he may bring with him or find in the library; and, if he wishes, he may work upon the answers all through the day, until four o'clock; but the time required for his work is noted. The questions in metallurgy, one year, to give an example, were how to adjust the charges of two iron furnaces in order to produce good foundry iron in one and forge iron in the other, at less than certain given prices, with three ores, and forge cinders of certain given composition and cost, and with labor of a certain given cost. The geological questions, one year, required a description of the coal measures proper, their characteristic structure, composition and fossils, and their difference from other coal formations; also an account of the principal conditions in which limestone occurs on the globe, and the origin of different limerocks; also an account of the different tin ore deposits in the world, and the conjectures as to their probable mode of formation. The written examination in mineralogy, consisted, under De Sénarmont of crystallographic computation. In the oral examinations the students are examined one at a time by the professor of each branch, and a couple of other gentlemen; and the questioning lasts from ten minutes to half an hour. In mineralogy, the student is asked the names of six or eight minerals placed before him. In geology and paleontology, he is tried in the same way with a few fossils, as well as questioned on geological points, and required to explain a specimen or two of ore veins. The examinations of the second year, include, also, the subjects of the first year's lectures."

Journeys.—Besides the geological and agricultural excursions, already mentioned, the students of the second and third years have to travel for at least a hundred days, in the second half, that is, the summer, of those years; commonly two or three students together. They have to make known their plans beforehand, and have them approved of; and after their return, have to hand in a journal of what they have seen. Both French and foreign students are furnished with circular letters of introduction to the government mining engineers, and to all managers of mines and furnaces in France, who take pains to show all needful attentions to the students. In this way there is really as good a chance to see mines and furnaces to advantage, as if the school were placed in a mining region, and a long period of time were specially set apart for this purpose. At the end of their studies those government students who have especially distinguished themselves at the school, are allowed to travel for a time in foreign countries.

III.—THE MANAGEMENT AND DISCIPLINE.

Management.—The Mining School is under the control of the Ministry of Agriculture, Commerce and Public Works; and is managed by a general inspector of the first class, [now Mr. Combes] who has the title of Director of the School. Under him, a general inspector of the second class, [now Mr. Gruner] or an engineer in chief, is charged with the direction of the studies and the details of the management, and has the title of Inspector of the School. The Council of the School, which meets at least once in every two months, consists of the director and the inspector of the school, of two general inspectors, and of the professors; and it deliberates on the standing of the students, and the cases of extreme punishment, and arranges the lecture courses. Another council, called the Improvement Council, consists of the director of the school, a general inspector of the first class, two general inspectors of the second class, the inspector of the school, and two of the professors. It meets at least once a year, and its business is to consider the merits of the work of the students taken as a whole, and to propose improvements in the instruction of the school.

Punishments.—The penalties that can be inflicted on the students are: a reprimand given, either privately or in presence of their comrades, by the professors, by the inspector, or by the director of the school; temporary exclusion, for a week or fortnight, from the rooms for study, and from the laboratory or from the school; public mention; censure by the council, with or without public mention; delay of promotion from one class to the next; final expulsion from the school.

Hours.—The lectures are given at half-past nine in the morning and at noon, and there are in the first and second year, commonly, two each day. The students are required to sign their name in a register before each lecture, and at half-past three in the afternoon. They may leave the school between the two lectures, or from half-past eleven to twelve, for their breakfast; but they must stay there from noon until signing at half-past three. They can stay later if they like, and some work at their drawings by lamplight.

Rank.—The rank of the students is determined by their merit, taking account of their industry, their examinations, and their capacity shown in the practical exercises, and the journals of their journeys.

Dress.—There is a uniform prescribed for the government students, but none for the others. The undress uniform is simply three narrow bands of gold lace around the cap.

IV.—THE BUILDING AND COLLECTIONS.

The school with all its appurtenances is contained within one building, which contains also the dwellings of the director and inspector of the school; but none of the students lodge at the school. Certain portions of the school have been built within the last half dozen years, and it is now handsomely furnished with laboratories, drawing rooms, and rooms for the library and the mineralogical, geological, metallurgical and machine model collections. The collections of fossils and minerals are very large and fine; and they are open to the students and to the public on certain days in the week. The specimens, except the duplicates, are in glass cases on tables, so that they can be easily seen but not handled. There is a small collection of fossils and minerals that is always accessible to the students, and can be freely handled. The large library is open daily and all day.

The collections of the Museum of Natural History at the Plant Garden, are also open to the public on certain days of the week, and are therefore available, especially the fine collection of minerals, for the study of mining students. There are other mineralogical collections likewise accessible, in the city, as well as libraries, machine models, laboratories for private instruction under excellent chemists, and other valuable facilities for study; to say nothing of the great benefit, both directly to the student and indirectly through its effect on the professors, of the presence in the city of a very large number of scientific men.

Further details of the organization of the school may be found in the Laws and Decrees of the *Annales des Mines* for 1856; and details of the examinations for admission, in the same for 1861 and 1867.

Scientific Meetings.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The sessions of this Association during the past week have been characterized by the reading of papers upon various scientific subjects. The following abstracts therefrom, we have no doubt, will be read with a good deal of interest:

CAUSES OF BOILER EXPLOSIONS.

Mr. Joseph Miller, of New York, read a paper on "Steam Boilers and the various Causes Assigned for their explosions." He said:

The causes of explosions may be summed up as follows: 1. Gradually increasing pressure. 2. Sudden increase of pressure by exposed highly heated surfaces. 3. Incrustation. 4. Sudden contraction and expansion of metal. The more mysterious causes assigned, such as decomposition, creation of explosive gases, electricity, we will not here consider, since they are purely speculative."

After having made a careful experiment in order to obtain trustworthy data as regards the actual power stowed up in a steam boiler, Mr. Miller proceeded to point out remedies by which explosions of a disastrous character may be avoided. He said:

"In conclusion, I would lay down a positive law for the construction of steam boilers, which, under all circumstances, must be absolutely free from disastrous explosions.

"1st. A steam boiler should be constructed of the largest number of units, so that the giving way of one of them, under excessive pressure, relieves the whole.

"2d. Each unit must constitute, in itself, a complete steam boiler having its water space exposed to the fire, its steam boiler space above the fire, and a receptacle for the collection of sediments below the influence of the fire.

"3d. All heating surface must be vertical, or nearly so, or nearly at right angles to the line of the fire.

"4th. Free and perfect circulation of the water must be secured by having their belins of water exposed to the heat descending; thereby also securing perfect separation from the water

"Steam boilers constructed on these priuciples will, in the hands of even the most inexperienced persons, be free from danger, and at the same time insure the highest economy in fuel."

THE MOON AND THE WEATHER.

Professor Elias Loomis read a paper upon the "Influence of the Moon upon the Weather," of which the following is an abstract: Several meteorologists have attempted by a comparison of a long series of observations, to determine whether the moon exerts any influence upon the weather. From a comparison of twenty-eight years of observation in Germany, Schubler, in 1830, deduced a sensible influence of the moon; the number of rainy days at the time of the second octant being twenty-five per cent. greater than at the time of the fourth octant. From a comparison of observations made at Paris, Orange and Carlsruhe, Gasparin arrived at results not differing greatly from those of Schubler. By a comparison of sixteen years of observation at Greenwich, nine years at Oxford, and sixteen years at Berlin, Mr. Harrison, of England, has obtained results which are remarkably consistent with each other, and which indicate that the moon exerts an appreciable influence upon terrestrial temperature, the maximum occurring six or nine days after the new moon, and the minimum about four days after the full. The difference between the maximum near the first quarter and, the minimum near the last quarter is two and a half degrees Fahrenheit. These results, which are so different from what might have been anticipated, Mr. Harrison explains by supposing that the moon really attains its greatest heat about the last quarter; but that the heat which the moon radiates to the earth is entirely dark heat, and therefore absorbed by our atmosphere. This heat raises the temperature of the air above the clouds, causing increased evaporation from their surface, by which they are dispersed, and thus there is an increased radiation of terrestrial heat to the sky, and consequently a diminution in the temperature of the air near the ground. He supposes that opposite results must occur at the period of minimum heat in the moon. Upon extending the comparison to forty-three years of observations at Greenwich, Mr. Harrison finds still a fluctuation of temperature, but the range is reduced to one degree and one minute, instead of two degrees and five minutes.

Mr. Ballat, on tabulating a series of seventy years mean daily temperature, according to the moon's age, found that the highest temperature occurred during the seven days after full moon, being almost precisely opposite to the results of Mr. Harrison.

Schiaparelli has made a careful analysis of thirty-eight years of observations, made at Vigiroano, near Milan, in Northern Italy, and has attained results which are also remarkably consistent with each other. They show that about the time of the last quarter of the moon there is a maximum in the number of rainy days, as also in the frequency of storms, and in the degree of cloudiness.

The Professor then exhibited a table of results which he had deduced from seven years' observation, and drew the conclusion that the moon did effect the weather, and maintained in direct opposition to Professor Herschel, that the moon just before its full influenced the weather toward cloudness rather than clearness, and followed the same law as the sun.

The Association adjourned on the morning of August 12th

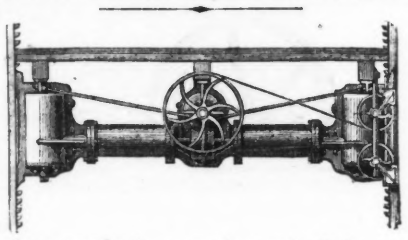
their next meeting to be held at Salem, Mass. The Association will convene at that place August 18, 1869. A very kind invitation was received to the effect that that city be made the next place of meeting. Prof. J. W. FOSTER, of Chicago, is the President elect for the coming year. The hospitality of the Chicago people is almost without parallel.

Manufacturing and Mechanical Notes.

No. XXVII.

James Clayton's Steam Pumps.

The advertisement of James Clayton's steam pumps has appeared weekly in the JOURNAL OF MINING for nearly three years, and it is to be presumed that every reader has noticed it over and over again by this time. If there be any that have not perused it, let such do so this week, for it is worthy of notice that the address has been changed therein. Mr. Clayton has removed his machine works to Nos. 24 and 26 Water street. Brooklyn, N. Y., where, with most superior facilities, he will continue to manufacture his patent steam-pumps, hand-pumps and fire engines in a very excellent manner. We have no hesitancy, after an extended acquaintance with these pumps, to recommend them as most worthy for general purposes. They are recommended as such by many of the leading engineers and machinists in this country; and every reader of these lines in want of a steam-pump, should address him as above for an illustrated circular, which will gladly be sent upon special notification. It may be stated that this pump received the prize medal at the Louisiana State Fair, as the *best pump* for general purposes; also diplomas from the American Institute, New York, and the Maryland Institute, Baltimore.



The above wood-cut represents a part of the machinery attached to an elevator, manufactured by Campbell, Whittier & Co., of Roxbury, Mass. Inside the castings is a horizontal shaft, and some bevel gearing, which is driven by an endless belt and pulley in the centre, between the two posts, having segmental racks. The rack on either side is in reality, a segment of an elongated nut, into which a worm works, the motion of which can be reversed at pleasure. The machinery, as seen in the engraving, is connected with the platform of the elevator and moves with it. No accident from falling can occur with this arrangement. Should the driving endless belt break, the result would simply be a stoppage of motion. The worm's gearing into the segmental racks would of course hold the platform up. The elevators are applicable for warehouses, factories, mines, quarries, or where heavy materials have to be raised or lowered.

ILLUMINATING KEROSENE OIL.

The oil manufactured by patented processes, by the DOWNER KEROSENE OIL COMPANY, South Boston, Mass., is said to be double distilled, and entirely free from acids or alkalies. It burns with great brilliancy, and longer than other oils made in a different manner.

The cause of explosion and accidents at the present time is due to the presence of naptha in the oil used. Naphtha is an exceedingly inflammable product of the distillation of petroleum or coal oil, the ordinary crude petroleum in use containing from twenty-five to thirty per cent. of this article. The abundance of petroleum, and the large proportion of naptha obtained from it, has made this latter article nearly worthless. This cheap, inflammable fluid, mixed with burning oil, reduces its fire test, and cheapens its cost; so much so, that a fire test of 105 degrees Fahrenheit can be produced from 4 to 8 cents cheaper, (according to the price of crude oil,) than a fire test of 115 degrees Fahrenheit, thus making the temptation great for using naptha in the oil to as large an extent as possible;—110 degrees Fahrenheit is undoubtedly the lowest possible point of inflammability that can be safely used. MODE OF TESTING:—Take a cup and an ordinary thermometer, fill the cup nearly full of warm water, make the temperature of the water 110 degrees Fahrenheit, put a tablespoonfull of oil into the cup, stir with the thermometer an instant, and see that it is 110 degrees Fahrenheit; pass a lighted match once across the surface of the oil which always floats on the water; if it ignites, reject it; if it does not ignite, it can be used, though in the Downer kerosene oil a much higher test is given, thereby escaping all possibility of accident.

Sewing Machines.

In the window of WHEELER & WILSON, No. 625 Broadway, may be seen their Paris Gold Medal, an illustration of their Exposition at Paris; their No. 1, and No. 300,000 Sewing Machine (the former having been in constant use fifteen years); their new Button hole Attachment for families and manufacturers making one thousand button-holes a day; their new and noiseless Machine, and a miniature working model fac simile Wheeler & Wilson Machine, complete in every part, with case of elaborately carved tortoise-shell, which was one of the mechanical gems at the Paris Exposition.

The Great Shoshone Falls of Idaho.

Of the great Shoshone Falls, on Snake river, Idaho, a writer for the Idaho *Statesman* furnishes the following interesting description:—The valley of the Snake lies along an almost direct route from the South Pass of the Rocky Mountains, and in early days it furnished the most practicable route overland to the Pacific. In its descent over the elevated plains of Idaho, about 400 miles from whence it takes its rise in the Rocky Mountains, Snake River forms the great Shoshone Falls. The river here runs through a narrow, rocky gorge, which widens and terminates abruptly in precipitous cliffs, the summits of which are about 1,000 feet above the level of the rapids, and so steep that the traveler can descend at only one point—an old Indian trail, its numerous windings making it about a mile in length. Following this trail slowly and carefully, the tourist will in due time find himself standing upon the banks of the river, on a level with the rapids and overlooking the falls. The width of the river at this point has been variously estimated—we thought it at least 200 yards. The rapids here form a series of cascades, ranging from 30 to 60 feet each in hight, and just below them the river, in one unbroken mass, leaps 210 feet into the bottomless pit below. The course of the river at this point is almost due East and West; the contour of the falls is that of an irregular horse-shoe; and their width, following the course of the water, is at least 400 yards. Although the river is not quite as wide at this point as the Niagara river, the falls are higher and quite as beautiful. The most complete view of the falls, including the river above and below—the rapids, cliffs, and surrounding scenery—is obtained from Lookout Point, a narrow cape of rocks projecting from the main bluff about 300 yards lower down on the river than the falls, so narrow that two persons cannot walk abreast; care and caution should be exercised in going to the extremity of this point; the very timid and over bold should never attempt it; a slip of the foot would, in a moment, precipitate one 300 feet into the raging torrent below.

Preparation of Thallium from the Liquors of the White Vitriol Works and Lead Mines at the Lower Hartz.

At the Herzogg-Julius Works, near Rammelsberg, Brunswick, occurs a mineral rich in zinc and lead ore (sulphides of the metals); after having been once roasted, this ore is lixiviated with water, yielding a solution of white vitriol, sulphate of zinc, of 1·441 specific gravity at 24° C. This liquor, of which thousands of hundredweights are to be had, is so rich in thallium, that, according to Bunsen, this metal may be obtained from the liquor by the pound weights. The following represents the composition in 100 parts of this fluid:

Sulphate of zinc	21·740
" protoxide of manganese	8·910
" magnesia	0·717
" potash	0·581
" cadmium	0·536
" soda	0·443
" protoxide	0·386
" copper	0.285
" lime	0·075
" alumina	0·060
" lead	0.008
" litha	trace
Arsenious acid	trace
Oxide of antimony	trace
Phosphoric acid	trace
Chloride of thallium	0·050
Hydrated sulphuric acid	0·119
Hydrochloric acid	0·009
Water	66·761
	100·000

According to Bunsen, thallium is best obtained from this liquor by precipitating, by means of metallic zinc immersed in the liquor, the metals copper, cadmium, and thallium, jointly. The metallic spongy mixture thus obtained is rapidly washed, first with water, by being placed in a bag made of woollen fabric; next, some sulphuric acid is added to the wash-water, whereby the metal thallium and cadmium get dissolved with evolution of hydrogen, while copper is left untouched; from the acid solution so obtained thallium is precipitated, by means of iodide of potassium, as a pure yellow iodide, which is further purified by washing and by decantation. From the remaining liquor cadmium is precipitated in the metallic state by zinc. One cubic metre of the above liquid yields in a few days 6·4 kilos. of spongy metallic precipitate, containing 4·2 kilos. cadmium, 1·6 kilos. copper, and 0·6 kilo. thallium, 7·4 kilos. of metallic zinc becoming dissolved. The solution of cadmium and thallium in sulphuric acid yields, on addition of 0·5 kilo. iodide of potassium, 0·97 kilos. of iodide of thallium. Thallium may be precipitated from the sulphuric acid solution by means of chlorides, but in so doing a not inconsiderable quantity of the metal is retained by the cadmium. The thallium may be directly obtained from the first liquor at once by precipitation with iodide of potassium, provided previously a sufficient quantity of hyposulphate of soda be added to keep the copper in solution; the application, however, of the latter method interferes with the object for which the liquor is prepared, viz., the making of sulphate of zinc.—*Polyt. Centralbl.*, 1868 No. 10.

Patent Claims.

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

80,387.—DRILLING-MACHINE CARRIAGE.—Charles Burleigh, Fitchburg, Mass.

I claim the arrangement of one or of a series of horizontal drill machine bars or holders, substantially as described, so that any of the bars or holders and especially the lower one or the lower series may be elevated to allow the passage of the carriage to the breast when the track rails only are cleared from debris, and to allow passage of a car through the carriage and under the lower bar or bars up to the breast.

Also, a drill machine, carriage, so constructed that a car may run up through the carriage, substantially as set forth.

90,398.—APPARATUS FOR COLLECTING AND SEPARATING MINERAL AND METALLIC SUBSTANCES.—William T. Duvall (assignee to the Duvall Patent Pump, Dredging, and Gold-washing Company). Georgetown, D. C.

I claim, 1st, the arrangement of the separating chambers, m, in such manner that the flow is caused to pass through the body of the mercury therein, and is spread or deflected by the perforated plate, r, essentially as shown and described.

2d.—The application of artificial currents of air or water for the purpose of raising or removing solid matter, in the manner, and by means substantially as herein set forth.

3d, A suction-pipe of a pump, so applied as to be capable of vertical, oscillating, vibrating, or rotary motion, substantially as and for the purposes specified.

4th, The elongated foot-piece of the suction-pipe, substantially as represented in figs. 6 and 7, for operation as set forth.

5th, The wheel, B, constructed with one or more curved vanes, a, attached to the disk, c, when said vanes are made tapering from the periphery of the disk, and vanishing or nearly so at its axis as described.

6th, The projection of the vanes, a, in semi-circular or other form, beyond the periphery of the disk, substantially as and for the purpose specified.

80:413.—HYDROCARBON BURNER.—Samuel P. Legg, Springfield, Mass.

I claim, 1st, A fire-box for burning liquid fuel in a steam-boiler, having the bottom plate, A, elevated above the bottom of the boiler, for the purpose specified, and air flues, F F, closed by valves, and so arranged that the draft is entirely supplied through the air flues, in combination with the reservoir, R, and supply pipe, P, having a contracted nozzle, o, and so inserted in the fire-box as to prevent heating the liquid fuel until it leaves the pipe, P, the whole arranged and operating substantially as described.

80,537.—CUPOLA FURNACE.—John H. Eddy, Taunton, Mass.

I claim, 1st, The air chamber, 1, when used in connection with cupola furnaces, as above described, and,

2d, The introduction of the blast into cupola furnaces, at the center thereof, whether the same is accomplished in the precise method herein described or by any other means substantially the same.

80,579.—ROCK DRILLING MACHINE.—William Weiler, Washington, New Jersey.

I claim, 1st, The driving shaft, D, carrying at the opposite ends wheels, F, and F', and arranged on the frame of the machine, substantially as and for the purpose described.

2d, The yoke, G, secured to the top of the frame of the machine, for the purpose specified.

80,629.—MACHINE FOR SEPARATING AND CONCENTRATING SULPHURETS.—Andrew Hunter, San Francisco, California. Antedated July 25, 1868.

I claim, 1st, The formation of the trough or table, B, with or without metallic lining, and alternately inclining and level, as shown by lines, a b d, substantially as described and for the uses and purposes as set forth.

2d, The combination, with the table or trough, B, and its adjustable hangers, of the cam shaft and spring, X, under the arrangement described, whereby both the oscillatory motion and percussion of the said table are effected, for the purpose of separating the sulphurets and metals from the lighter particles as set forth.

3d, The eccentric strap, R, in combination with the trough, B, and cam, or equivalent means, for imparting an oscillatory movement to said trough, substantially as and for the purpose set forth.

4th, The combination with the table, B, and mechanism for imparting to the same an oscillatory movement of the rocking trough, E, arranged for operation substantially as and for the purpose set forth.

5th, The combination, with the oscillatory table or trough, B, of the rotary scraper, W, made of india rubber, or other suitable material, substantially as set forth for the purposes specified.

6th, The combination, with the table or trough, B, of the inclined screen, T, and mechanism for imparting to the same a vibratory motion, under the arrangement and for operating as herein set forth.

7th, The combination, with the oscillating trough and hanger, by which the rear end of the trough is held, of the wheels or rollers, R, for supporting the front end of said trough, substantially as herein shown and described.

8th, The combination of the table or trough, E, with eccentric throughs, E, and G, hangers, D D, spring, X, wheels or rollers, R, scraper, W, and seive, T, substantially as described, and for the uses and purposes as hereinbefore set forth.

Oudit about Minerals, &c.

☞ To detect nitro-glycerine in cases of poisoning, A. Werber proceeds in the following manner: The organic material to be tested is extracted with ether or chloroform, the extraction mixed on a watch glass, with two or three drops of pure aniline, and evaporated upon the water-bath. A few drops of concentrated sulphuric acid are then added, when, if nitro-glycerine is present, a purple coloration appears which changes to a dark grey on dilution with water. As little as ·001 grain of nitro-glycerine may then be identified.

☞ Another instance of the too common error of expending money upon a mine before it has been thoroughly proved to be worthy of it, is brought to light. The Smith gold mine, in Spotsylvania county, Virginia, containing 100 acres, was recently sold at a trust sale for $1,400. A year or two ago Northern capitalists bought it for $15,000. The boiler used in its working brought $675, and other machinery $325—aggregating $2,400.

☞ It is stated that a gold vein varying in width from six inches to one foot, and traceable on the surface for 3,000 feet, has been discovered on the lands of the Hudson River Slate Company, in Duchess county, N. Y. An assay of the quartz rock taken from this vein shows that it contains $15 45 of gold per ton, besides 20 per cent. of silver.

☞ An extensive blast furnace, in process of erection by the Edge Hill Iron Company, at Edge Hill, near Philadelphia, fell in with a tremendous crash, week before last, occasioning a loss of about $20,000. The furnace was nearly completed, and was to be put in operation in the Fall, but will have to be wholly rebuilt.

☞ According to the Titusville (Pa.) *Herald*, the lead mine in Lehigh county has been deserted as a bad investment. Instead of the lead the projectors found nothing more than plumbago, commonly called black lead, and that scattered through the rocks in small quantities.

☞ A car containing through freight started a few days ago from Boston to Cheyenne, 2,050 miles. The freight will go through without breaking bulk.

☞ The "strike" in the Washburn Iron Works, of Worcester, Mass., has ended, after enduring eight weeks. Work was resumed on Wednesday.

All Sorts.

☞ In 1859, London Bridge was watched for twenty-four hours continuously; the result was marvelous, for 107,000 persons crossed the bridge on foot, while an additional 65,000 crossed it while riding in or on vehicles. No wonder that this busy thoroughfare requires to be well paved! The corporation determined, last year, that they would have another counting of these outdoor people, and that it should be well and thoroughly done. This was how they managed it. All the avenues that lead into the city were grouped into six portions; one day was devoted exclusively to each portion; and the aggregate of all six was believed to present a fair estimate for an average week day.

Taking twelve business hours, from six in the morning till six in the evening, the enumerators counted 549,513 persons entering the really small city of London; in the sixteen hours between five in the morning and nine in the evening, the number reached 679,744; while, in the whole day of twenty-four hours, the number very nearly touched three-quarters of a million—namely, 728,986!

☞ The Director of the Bureau of Statistics has just completed statistics of our imports from all foreign countries to the close of the fiscal year ending June 30th, 1868, specie and bullion included. The total is $371,971,441; total for the previous year, $411,731,104, showing a decrease of $40,000,000. Our heaviest importations occurred in March last, and the movement was constant and steady at the rate of about one million and one-tenth per diem. The tables include from the Pacific coast, embracing California, Oregon and Alaska.

☞ A brick chimney, one hundred feet high, in Worcester, Massachusetts, has been moved 400 feet without stays or tops.

REMOVAL.

The Empire Sewing Machine Company

Have removed to their New Store,

No. 294 Bowery, between Houston and Bleecker Streets.

Their new Factory is now in full operation, which will enable them to fill all orders promptly.

Their IMPROVED No. 2 and No. 3 MACHINE for

FAMILY AND MANUFACTURING PURPOSES,

is not only equal but superior to any other Machine in the market.

Empire Sewing Machine Company,

Aug8:1y No. 294 Bowery, N. Y.

No Labor, No Wear, No Tear.

A SELF-ACTING HOUSEHOLD WONDER,

THE FOUNTAIN WASHER AND BOILER.

Woodward's Patent. March 25, 1862.

For Washing and Cleansing Clothes by the rapid circulation of hot suds through every fiber.

PRICES $6 to $12.

STATE AND COUNTY RIGHTS FOR SALE.

J. WARD & CO.,

No. 23 Cortlandt street.

Aug8:6t **Mangles, Wringers, etc., in Great Variety.**

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WHOLESALE DEALER IN ROOFING SLATE.

SOLE AGENT FOR THE

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

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

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25 PARK ROW, NEW YORK,

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SUPERIOR BLUE SLATE,

IN

ASHLER BUILDING FRONTS,	MANTLES & MANTLE STOCK,
HOUSE TILES, of all sizes,	SLABS of any dimensions,
FLAGGING TILES, of any large size,	HEARTHS, of all sizes,
PLAIN FLAGGING of any thickness,	SLATE DUST,
CURBING, plain and fancy,	BILLIARD BEDS,
COUNTERS & COUNTER TOPS,	SILLS and LINTELS,
WAINSCOTING & PANELING SLABS for MARBLEIZING, of any size ordered,	SINKS,
	CEMENTERY STOCK,
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Any Articles Marbleized to Order in the Most Superior Style.

☞ All orders and communications should be addressed to

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WHITE, FOWLER & SNOW,

Successors to JOHN WHITE & CO.,

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ANTHRACITE COAL,

For Sale in Lots to suit.

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AGENCY OF GEORGE WRIGHT & CO., LIVERPOOL,

Office, No. 32 PINE STREET, NEW YORK.

dec30:66:67 Yard, West 22d Street, near 10th Avenue.

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BITUMINOUS COAL

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Railroad Corporations,

And Manufacturers of

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More than two millions of tons of their Coal have been distributed through the New England and Middle States, and its character is established in the market as having no superior in quality.

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OFFICE—No. 230 South Third street, Philadelphia.

EDWARD C. BIDDLE, President.

FRANCIS H. JACKSON, Sec'y and Treas'r. Ap18:6mo.

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Exclusive Miners and Shippers of the Celebrated

HONEY BROOK LEHIGH COAL,

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JAS. H. LYLES, Agent.

Wharves, Port Johnston, N. J. Philadelphia Office, 209 Walnut street.

ap20:1y **J. B. McCREARY, President.**

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(TRINITY BUILDING), ROOM 79, NEW YORK CITY.

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ANTHRACITE AND BITUMINOUS COAL.

Agents for the celebrated 'HARTFORD ASSOCIATED COAL COMPANY'S" COAL.

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Miners and Shippers of Superior

BUCK MOUNTAIN COAL,

Deliverable at Elizabethport and the Harbour of New York. Supplied to Steamers, Dealers and Manufacturers at market rates.

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SOLE AGENTS OF THE ORIGINAL

SPRING MOUNTAIN LEHIGH COAL,

Extensively Used for Smelting Iron.

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THE DESPARD COAL COMPANY

OFFER THEIR SUPERIOR

DESPARD COAL

To Gas Light Companies throughout the country.

MINES IN HARRISON COUNTY, West Virginia.
WHARVES, LOCUST POINT, } Baltimore.
COMPANY'S OFFICE No. 29 South street, }
Agents, PARMLE BROTHERS, No. 32 Pine street, New York.
BANGS & HORTON, No. 31 Doane street, Boston.

Among the consumers of Despard Coal we name: Manhattan Gas Light Company, New York; Metropolitan Gas Light Co., New York; Jersey City Gas Light Co. Jersey City, N. J.; Washington Gas Light Co., Washington, D. C.; Portland Gas Light Co., Portland, Maine.

☞ Reference to them is requested. May 30

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The Wilkesbarre Coal and Iron Company,

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5. They are sold at the same price of other Irons.
6. Every Iron is warranted to possess the above qualities or no sale.

We hereby authorize all Hardware Dealers to allow their customers to try our Irons, and if not perfectly satisfactory, refund price paid and charge Irons back to us.

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STEEL TEMPERING WORKS,
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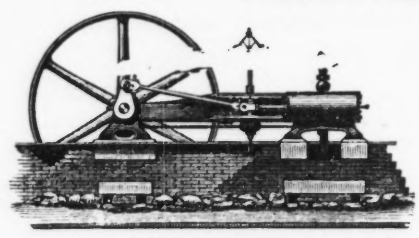

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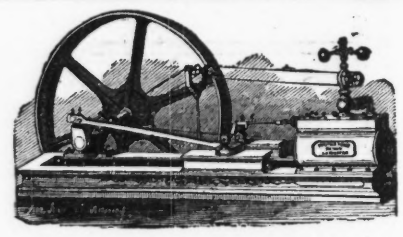

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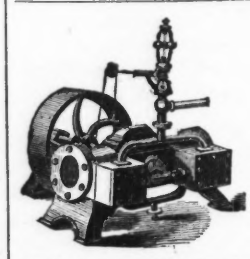

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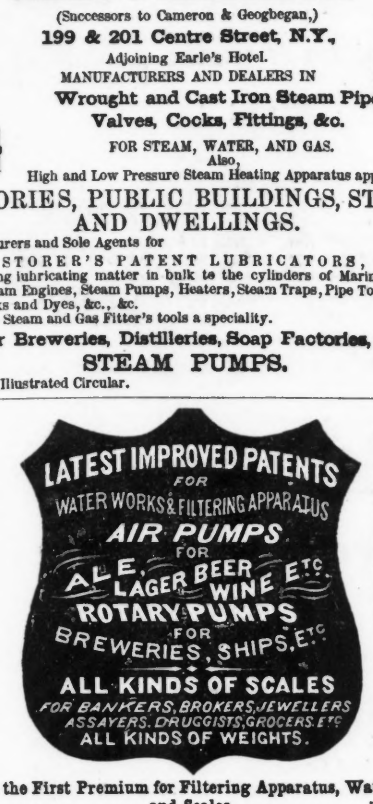

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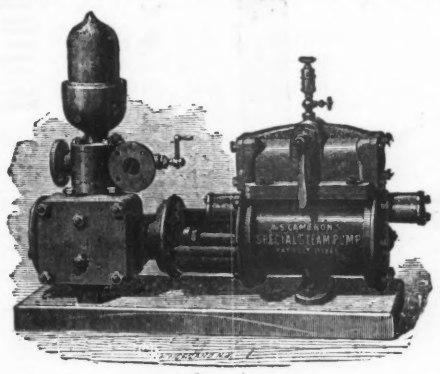

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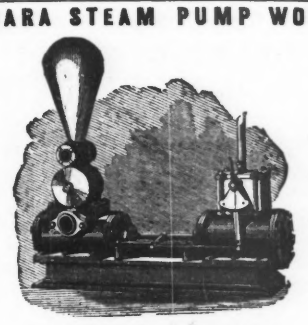

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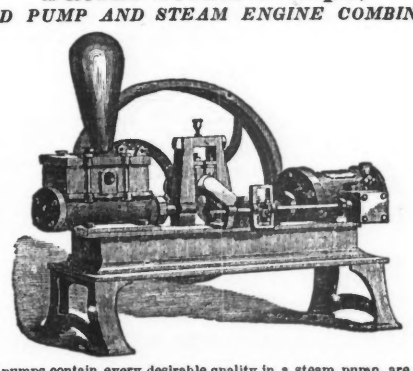

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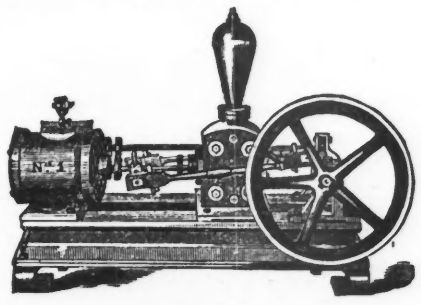

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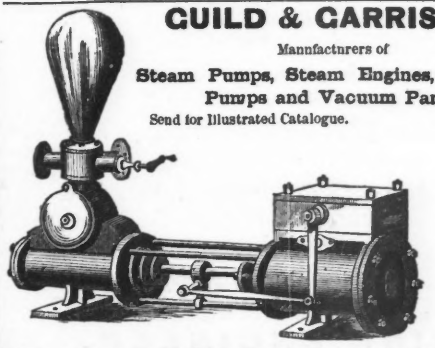

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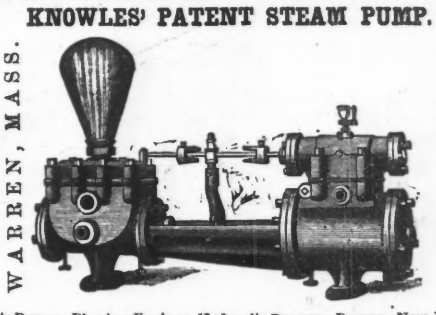

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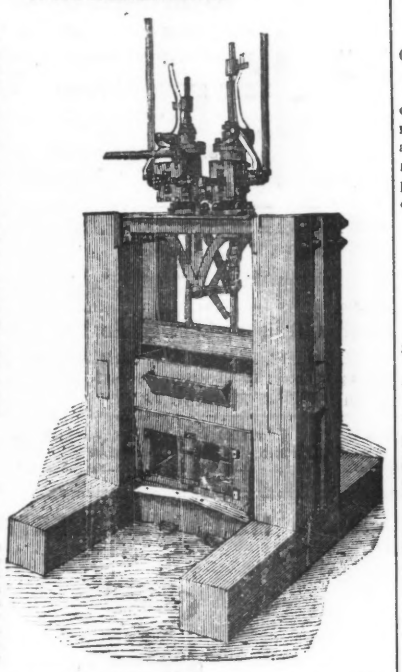

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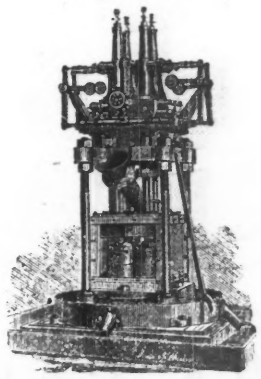

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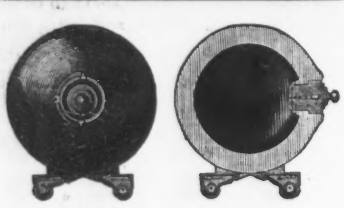

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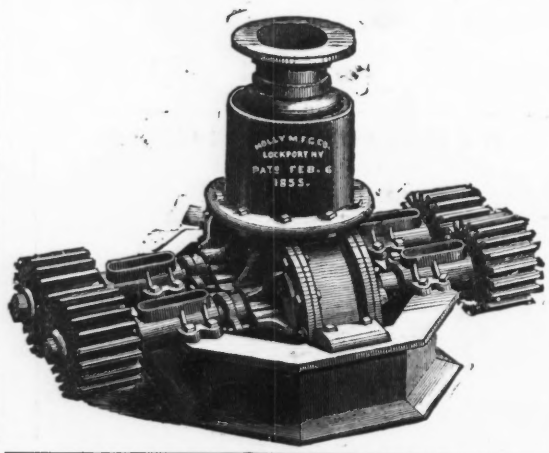

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