THE ENGINEERING AND MINING JOURNAL.

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Engineering Models in the Stevens Institute.

It has been the aim of the gentlemen who manage the Stevens Institute, to gather, in the various departments, apparatus which shall serve as models of the best practice, in the arts as well as that which is necessary for theoretical demonstration. We propose to show a part of the engineering collection, by means of illustrations, premising that the collection is by no means a completed one. Additions are constantly made, being obtained from SCHRÖDER of Darmstadt, SALLERON of Paris, the Patent Office at Washington, the instrument makers attached to the Institute, and manufacturers of the machinery of the day.

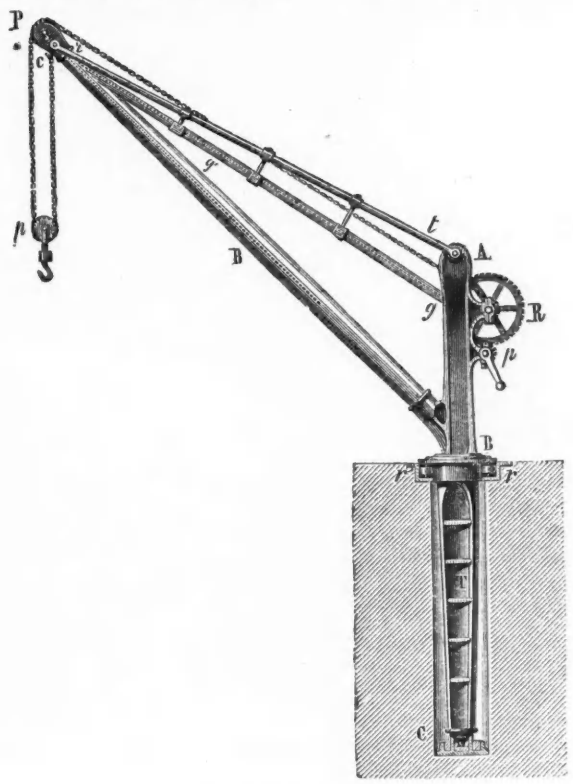

FIG. 1.—JIB CRANE.

FIG. 2.—DRIVING ENGINE.

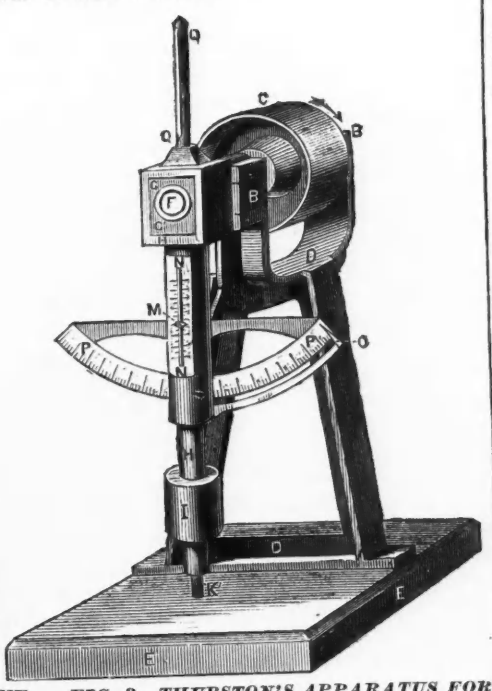

FIG. 3.—THURSTON'S APPARATUS FOR TESTING LUBRICANTS.

Our first illustration shows a jib crane made by SALLERON, and the next a driving engine of the New York Safety Power Co. Turbines, rock-crushers, marine engines, boilers and similar constructions are included in the collection. Models of parallel motions, brakes, dynamometers and indicators are among the models used for illustrating general principles. The most interesting exhibits are those which have emanated from the institute itself. Of this kind are the machines designed by Prof. THURSTON for experimental purposes.

Such, for instance, is the machine designed to test the value of lubricants. The object sought was the construction of an apparatus which should measure at once the amount of friction, heat developed and pressure upon the bearing. This machine is shown in Figure 3.

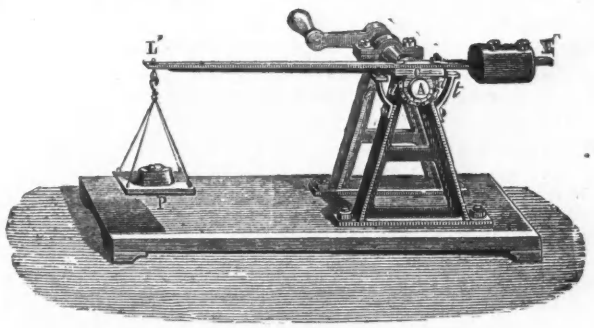

FIG. 4.—WERTHEIM'S TORSION APPARATUS.

Figure 4 is a cut of WERTHEIM'S torsion apparatus, from a model made by Salleron. Unfortunately we are not able to show the torsion apparatus of Prof. THURSTON, with which he made numerous examinations into the breaking strains of various substances, communicating his results to the Society of Civil Engineers. This has an autographic registry by which the personal error is almost eliminated.

The few examples we have given are sufficient to show the general character of the engineering collection. It is not only a standard of practice so far as it has been filled up, but it also forms a field for the activity of the students themselves, some of whom have prepared drawings from which the apparatus has been made.

Piezometry of Gunpowder.

Abstract of a Communication to the Philosophical Society of Washington, D. C.

By LIEUT. C. E. DUTTON, U. S. Ordnance Department.

CONCLUDED FROM PAGE 214.

SOME interesting experiments were made at Washington Arsenal, in 1854, by Major MORDECAI and Dr. W. E. WOODBRIDGE, with a gauge made by the latter gentleman. This gauge consisted of a cylindrical steel vessel, about 2½ inches long, containing sperm oil. The upper end of the vessel was closed by a piston, resting upon the surface of the oil. The inner face of this piston carried a wire stem, and against this stem a small steel point rested. The gauge being exposed to the explosion, the piston compressed the oil, and moved inward, carrying its stem with it, while the steel point (having no motion) made a scratch upon the stem, whose length was equal to the travel of the piston, and, of course, measured the amount of compression of the oil, which, in turn, measured the pressure upon the piston. In order to find in absolute terms the piezometric values of different amounts of compression, Dr. WOODBRIDGE instituted a series of researches upon the compressibility of liquids*—especially sperm oil. This gauge was found to be a troublesome one to use, not merely on account of the manipulations involved, but on account of the complications of the results with the va

* These experiments of Dr. WOODBRIDGE upon the compressibility of liquids are very valuable, and comprised a greater range of pressure than any hitherto recorded, reaching, in some cases, 80,000 lb. per square inch. The apparatus was most ingenious, and very carefully constructed, and the means of registering the pressure were found to be quite effective. The amount of compression of sperm oil, at very great pressures, was more than one-fifth of its original volume.

riations of temperature, produced by compression. These latter, however, may be eliminated by theory with tolerable exactness. There are certain merits in this gauge which it is well to notice:

1st, The piston is made to work against an elastic resistance, while the resistance of copper to penetration is as unelastic as can well be conceived. The elasticity of liquids against absolute compression is probably as perfect as that of gases.

2nd. The resistance of liquids to compression is probably as uniform, also, as that of gases, while there are, no doubt, great differences in the absolute resistance to penetration of different discs of copper, intended and assumed to be identical.

3rd. The mass of the piston and oil, whose inertia must be overcome, is extremely small, and very little complication would be incurred with extraneous work of the pressure not expended in producing the record.

4th. It combines a very small travel, and intense resistance, with extreme sensitiveness. Probably it is the most accurate gauge ever invented, but the extreme difficulty and annoyance of using it has prevented it from being adopted for general service.

The great requirement, at present, is a gauge which will give a diagram of energy, from which the relations to time and space can be deducted. Such a gauge would be obtained if Dr. WOODBRIDGE's piston, acting against the elastic resistance of a liquid, were made to inscribe a trace upon a surface having a known rate of movement in a direction perpendicular to that of the travel of the piston, and in the same plane. Several attempts have been made to obtain several ordinates, in a diagram of energy of gunpowder within the gun, by using a series of gauges, located at intervals along the bore. The most noticeable are those made in 1869 by the English Committee on Explosives. The relations of the pressure to the space travelled by the projectile were obtained by means of Capt. NOBLE's pressure gauges (the crushers), which were inserted in the walls of the gun, with the external face of the piston flush with the surface of the bore, and distributed with intervals increasing from the base of the shot towards the muzzle. The relations to time were determined by inserting a series of electric circuits communicating with a velocimeter, which circuits were successively ruptured by the shot, and the times of rupture recorded upon the rapidly rotating discs of the velocimeter. The two sets of results, giving diagrams of energy, the one in terms of force and time, the other in terms of force and space, were reported by the committee to be conformable to each other. It is to be regretted that fuller details were not given of the amounts of compression of the copper cylinders in the crushers, and the general minutiæ of data, upon which the respective coördinates were determined, and the method of correcting and reducing the coördinates to their proper curves. In a series of experiments of similar character, but with less elaborate apparatus, RODMAN detected a series of maxima and minima in the progress of the development of the pressure, as the shot travelled, which he explained by powerful vibrations, or waves, in the metal of the gun. A similar apparent anomaly was accidentally revealed in the use of Dr. WOODBRIDGE's gauge. In a number of discharges the piston was accidentally rotated about its axis, and the wire stem was necessarily rotated with it. The scratch upon the stem was, therefore, drawn out into a curve, representing a diagram of energy*. In every case where this occurred, the curve showed several strongly marked maxima and minima. It is suggested that this pulsation is not apparent merely, but may be genuine. The development of the gases of gunpowder, as suggested by M. BERTHELOT, is probably strongly influenced by the temperature, and after proceeding to a certain stage, the enormous temperature may retard the rate of development, until the pressure and temperature are reduced by the movement of the projectile, and consequent expansion of the gases behind it. This may permit the combustion to proceed with renewed vigor, and thus give rise to a pulsatory development of gases. Capt. NOBLE, R. A., has expressed a conviction that the generated gases are subject to rapid pulsations in the guns, and exert local pressures of greater intensity at any given instant in some portions of the bore than in others. He conceives a rapid surging, or wave motion, of the gases as occurring in consequence of the great variations in the rate of gas development. Local pressures seem also to be indicated when two or more gauges are situated at the base of the chamber. In some experimental firings with an 11 inch Krupp gun at Tegel, in Prussia, three Rodman gauges were inserted in the wedge fermeture, and though it might have been anticipated that the indications of all the gauges should be the same, yet they were rarely identical, and varied to the extent of 20 per cent.

The great requirement for further progress in the knowledge of the action of gunpowder within the gun is a gauge which will indicate not only the degree of maximum pressure, but the relations of the pressure to the time occupied in its development and action.

THE MEADOW VALLEY MINE.—The work in this mine, says the Pioche *Record* of March 29, under the careful supervision of D. M. Tyrrell, is proceeding very satisfactorily. At No. 3 shaft the incline is 110 feet below the 1,100-foot level, and still sinking in quartzite. On the 1,100-foot level the west-drift is in 95 feet. The face now shows a very promising formation, with some little metal. The east drift on the same level is in 69 feet, and looks well. On the ninth level the east drift is 679 feet in length, and the formation is good, with traces of metal. Four hundred feet east of this level a winze is being sunk, and is 49 feet in depth. The bottom shows a strong vein of quartz, with some little ore. Summit shaft (No. 5) is now fully 1,000 feet on the slope, and the work of sinking is being vigorously pressed. Five hundred feet from the surface a drift has been started and is in 147 feet, the face showing a good formation, but little, if any, ore.

* Since the rate, or time-value, of the rotation of the stem was unknown, the values of the abscissas were of course indeterminate.

The Formation of Fissures and the Origin of their Mineral Contents.*

BY A. J. BROWN, TREASURE CITY, NEVADA.

THE causes that have formed fissures in the earth's crust, and the agencies that have converted them into metallic beds, are among the most important and interesting subjects that can engage the attention of the mining engineer or the scientist. They lie at the very base of the whole system of vein geology, and until something like a correct theory can be arrived at with regard to them, the science as such is necessarily very incomplete. The data for such a theory, owing to a lack of careful and systematic observations in countries preëminently metalliferous, like Mexico and the States of Central and South America, are almost entirely wanting. Doubtless there has been abundant speculation on the subject, from the earliest times down to the present, in every country where mining has been one of the leading industries of the inhabitants. Perhaps the theory of ELIE DE BEAUMONT more nearly approaches a satisfactory explanation than that of any contemporary authority. The most recent investigations, both in Europe and on this continent, tend to produce the conviction that the phenomena of metallic fissure-lodes are in some way connected with, and dependent upon, plutonic agencies—not, however, as the direct product of volcanic activity, but rather as the result of chemical agencies called into play through its aid.

Active volcanoes generally produce only the well-known types of volcanic rocks, though, perhaps, well marked cases can be shown where these contain ores of copper, etc., evidently derived from the same deep-seated source as their hypogene gangue. To prove that there is a connection between metallic lodes and plutonic rocks, it is not necessary that the ores should in all cases occupy fissures within the limits of masses of propylite, rhyolite, or other like rocks, or be in all cases alongside of dikes of trap-rocks, though the latter is no unusual occurrence. The Comstock lode of Nevada evidently occupies, through a part of its course at least, the same fissure which formerly gave vent to the vast mass of propylite that covers the country below it, and afterwards to a limited outflow of andesite. Lodes are often found occupying fissures in or beside dikes of trap rocks. The Murphy mine in Ophir Cañon, Nye County, Nevada, has near its western or foot-wall, a dike of syenite, which contains abundant crystals of bi-sulphide of iron. In Bunker Hill, in the same range of mountains, a large fissure lode alternates from one side to the other of a dike of syenite, sometimes occupying a fissure within the dike for some distance.

There is no valid reason for supposing that the forces requisite for the production of metallic lodes are less active in the present than in past geological ages. On the contrary, it is quite certain that valuable lodes of both silver and gold have been formed as late as the commencement of the Post Tertiary. Nearly every violent earthquake shock is attended with a fissuring of the earth's crust; and it may be possible, and is even probable, that the process of converting such fissures as remain open into metallic lodes, is going on at comparatively slight depths from the surface. It is scarcely two years (March, 1872) since the Owens' valley earthquake gave us a sample of how fissures are actually formed, as well as how strata are faulted and slickensides produced. At Big Pine the fissures were numerous and several miles in length, and attended with a marked faulting of the strata, in places twenty or thirty feet vertically. It matters not that most, if not all, these fissures closed with the subsidence of the shocks that produced them. The fact still remains, and is highly significant of the results of so unparalleled a force. The great eruption of Mona Loa, in the Sandwich Islands, in 1852, was accompanied with violent and continued earthquake shocks and a fissuring of the earth's crust in many parts of the island. These fissures varied in length from a few yards to five miles, and in thickness from a mere seam to three feet in their widest parts. Some of them closed with the subsidence of the shocks; some were filled with injections of melted lava; and a few remained open and emitted various gases, among which could be distinguished that of sulphur, which, condensing on the walls, finally closed them, so that when the writer revisited the islands in June, 1861, nine years after the eruption, veins of sulphur filled such fissures as had remained open. The last eruption is only known to have formed one immense fissure, two and a-half miles in length and half a mile wide, through which flowed an enormous stream of lava several miles in length. A correspondent of the *Scientific Press*, in the last number for 1873, mentions a fissure that was formed in New Zealand during an earthquake shock in 1848. It was of great depth, 50 miles in length, and 18 inches wide. In Central and South America, the fissuring and faulting of the strata is a usual occurrence during the violent earthquake shocks so common in those countries. Such are a few of the constantly-recurring evidences that fissures are actually formed by volcanic force.

The question next naturally arises, how are they filled? and whence do they derive their material? Evidently the same agencies that formed the fissures have also played an important part in filling them. In a few rare cases, ores of copper have been found so intimately mixed with rocks of undoubted igneous origin; that we are forced to the conclusion that they were components of the original deposit.

* A paper read at the New York meeting of the American Institute of Mining Engineers, February 27, 1874.

Such is particularly the case in the Lake Superior region, and in Robinson district, Nevada. Specimen of amygdaloid trap from the former mines c ontain hreads of metallic copper running through the substance of the rock in all directions, and also grains of the same metal in great abundance. Under certain circumstances this metal might be the product of the decomposition of some of the ores of copper; but had such decomposition taken place here, would not the containing rock show some evidence of it? Or, in the case of those large masses of metallic copper, would it be possible that they could be precipitated in a metallic state from thin solutions, and that, too, in the presence of reagents such as the fixed alkalies, that would most probably precipitate a portion of the solution, at least, as a carbonate? The presence of crystals ot calcite or of metallic copper in crystals of quartz does not at all militate against the theory of contemporaneous injection or of sublimation, either of which will serve to account for the phenomenon. Quartz and calcite are almost always components of amygdaloid traps; and it is easily possible for them to crystallize in cavities containing particles of metallic copper. That such is the case, is proved by the fact that the copper is in nearly all cases at the base of the crystal. It would be quite as reasonable to contend that the trap was not an igneous product because it contained those crystals as to contend that the copper was not a contemporaneous deposit, because of their presence.

In the central portion of the Robinson mineral belt, of Nevada, rhyolite occurs abundantly, large areas of which are completely impregnated with copper minerals, not in the seams only, but completely through the substance of the rock. Near the surface and where exposed to decomposing agencies, malachite is the prevailing mineral; but this is replaced with chalcopyrite at a depth of 20 feet from the surface. Assays for silver show traces of that metal up to $9.60 per ton. The largest area containing copper impregnations is about 160 acres, besides which there are several small ones varying in size from ten to thirty acres. No lodes occur in the immediate vicinity, though there are some well-defined fissures about half a mile distant. The principal ore in the lodes is black and red oxide with considerable metallic copper, and malachite.

It is also pretty certain that gold is sometimes found in igneous rocks under circumstances, that would preclude the possibility of its getting there through aqueous agencies. A case of the kind occurs in the Bunker Hill mining district, Lander County, Nevada. A dike of igneous granite, about 12 feet thick, inclosed in argillaceous slate, contains traces of gold up to $10 per ton.

The almost universal occurrence of igneous rocks in proximity to metallic lodes can scarcely be deemed an accidental circumstance. According to VON COTTA, and other reliable authorities, they are found closely associated in nearly all the principal mineral districts of Europe. And so far as investigated, the same rule applies with equal force on this continent; the reverse is the exception. From the Lake Superior copper region to the gold and quick-silver belts of California, there is scarcely a district but contains igneous rocks in proximity to metallic lodes. Indeed, so common is the occurrence that there is no need of naming any special case. In South America the same rule holds good. Only those localities are prolific in minerals in which igneous rocks abound, as in the northern district of Atacama, in Chili; and Huanataya and Cerro Pasco, in Peru.

The region of country comprising the Rocky Mountains, the Great Basin, and he Sierra Nevada range to the Pacific Ocean on the one hand, and from Behrings straits to the Isthmus of Panama, and thence through South America to Magellan straits on the other; and a corresponding region, bordering on the Eastern coast of Asia, and including the adjacent islands of Japan, the Indian Archipelago, and Australia, and New Zealand, have been in the past, as they are in the present, more characteristically volcanic than any like area on the face of the earth; they are also more prolific of huge lodes of silver, gold, quicksilver, copper and such metals than any other known region. And one of the most remarkable circumcumstances connected with the North American belt, has been the gradual shifting of the lines of the greatest volcanic activity from East to West; so that in different portions of the country, they differ widely in geological age. Those on the Eastern part of the Nevada Basin range from the Azoic to the Carboniferous, and the metallic lodes very nearly correspond with the age of the plutonic rocks, not only over wide areas but in special districts. In the western part of the Basin, and in California, the plutonic rocks mainly belong to the Jurassic and Tertiary or still later periods, and the metallic lodes, in the majority of cases, belong to the same eras.

CONCLUSIONS.

1st. That fissures in the earth's crust are formed in nearly all cases by earthquake shocks.

2d. That they may be filled in one of three ways: by melted injections; by aqueous agencies, or by sublimation. The chemical possibilities of the latter are fully equal to the performance of all we see accomplished in metallic bodies. It may be, and perhaps is, in most cases, assisted by aqueous agencies. Accidental proof of what can be accomplished by sublimation alone has been furnished in the formation of miniature lodes in smelting furnaces in two known cases—one in Colorado and the other in Freiberg.

3d. That the minerals are not derived from the immediate wall-rock of the fissure, but from below the zone of sedimentary rocks. It is scarcely possible that such vast masses as we sometimes see accumulated in a single fissure can be derived from the country adjacent.

The opportunities enjoyed by the writer for the observation of volcanic phenomena have been unusually frequent and widely distributed. He was an eyewitness of the eruptions of Mona Loa in 1852 and 1855. No words can picture the terrific grandeur of the sight; but it must have been altogether eclipsed by the eruption in the Kau district, in 1869. The residence of the writer in the Sandwich Islands extended from August, 1851, to June, 1853, during which period he visited eighteen different volcanic craters, leaving at least as many more unvisited. At the end of this period he went to the east coast of Asia, traversing China, Japan and Siberia, as far north as Petropaulovski, and returning to the Sandwich Islands in June, 1855, and leaving in November of the same year for the west coast of South America, where he remained till January, 1861. Of this period, about two and a-half years was spent on the Andean plateau, and the remainder in Southern Chili. The Sandwich Islands were revisited in 1861, and the last few years have been spent in the Pacific States and Territories. As a consequence of this wandering life, the writer has been able, in most of the instances adduced in the present paper, to speak from personal observation.

Engineering and Mechanical Notes.

THE German manufacture of Bessemer steel amounts to 125,000—150,000 tons a year in 20 "furnaces," but as there are 71 converters either built or building in Germany, the actual production is only a fraction of the possible make. All told the 71 converters with their accompanying plant could turn out 450,000 tons of steel and use up 525,000 to 550,000 tons of pig. France produced in 1873 103,233 tons of Bessemer, and 64,444 tons of other steel. The proportionate make of Bessemer and ordinary rails in France is noteworthy, there being 79,206 tons of steel and 22,876 tons of iron rails rolled. The Siemens-Martin process makes great headway both in Germany and France. In the former country 50 furnaces capable of producing 200 tons of steel a day are said to be working.

The discovery of a new deposit of quicksilver ore is reported from Mexico. It is 8 leagues from Guatimapé, in the State of Durango, and if the tale is true it is without question the hugest discovery of this ore ever made. Its strike is toward the north, and it is reported to have been traced for no less than 70 leagues. The exposed portion varies from 4 to 15 meters in thickness. It is quite possible that a bed of this size exists which in some parts has received an impregnation of cinnabar, and in this sense the story is not at all impossible.

It was long ago noticed that iron or steel which had been immersed in strong acid increased in weight and became brittle and inelastic. After much discussion, this is now thought to be due to the absorption of hydrogen and also of the acid itself, by the metal. The porosity of iron is a well established fact, and when a bar of the metal is bent these pores, which are small cavities, change their shape, those on one side becoming shorter and wider, and those on the opposite side lengthening out and becoming slender. This change of shape cannot take place if the pores are filled with an incompressible fluid. Pores which are filled with acid therefore prevent elasticity and the bar breaks just as a frozen rope breaks.

The quantity of gold produced in Australasia in eight years has been as follows:—In 1866 it was 1,536,581 oz.; in 1867, 1,493,831 oz.; in 1868, 1,474,186 oz.; in 1869, 1,367,903 oz.; in 1870, 1,281,841 oz.; in 1871, 1,303,379 oz.; in 1872, 1,317,102 oz.; in 1873, 1,249,407 oz. The total is 11,024,231 oz., equal to £44,096,924, calculating the value at £4 an ounce. The number of miners at work has also fallen off from 73,479 in 1866 to 52,544 in 1872, and the falling off in both is in about the same proportion, the product per man being in 1866 about 21 oz., and in 1872 about 22 oz. This is probably an indication that the improvements in methods of work have been neutralized by increased difficulties of mining, together with decreased value of the ores.

Lead Mines in Wales.

SOME of the lead lodes in Wales are of prodigious size as well as of great richness. There are lodes sixty feet—some more—in width, ascending into the hills to a height of 500 feet, and descending 1,200 feet below the valleys. The great Dyliffe lode, which is analogous to the Van Consols lode in width and productiveness, runs through some of the highest ground in Wales. The lode upon which the Van mine is worked can, it is said, be traced for a length of from 25 to 30 miles, from the central portion of the Cardiganshire district, through Montgomeryshire, across the sources of the Wye and the Severn to the Clywedog river, where it enters the Van Consols, thence passing on into the Van. East of the Van it is supposed to continue its course through the wide valley which opens out southeast of Trefeglwys, and, according to some, across the Cambrian line towards Shropshire.

An item appears in the Western papers which, to the initiated, is very suggestive of the difficulties under which the metallurgists labor there. The furnaces of the Ruby Consolidated Company at Eureka, Nevada, will be worked with coke this year, instead of charcoal. The cost of transportation on Pennyslvania coke is more than 1,000 per cent. of its first cost, and yet it has been found cheaper to use this material in Utah than to use the poorer and dear charcoal. Where the Ruby company will buy its fuel we do not know, but it is too far from the railroad to use fuel brought from the East, and probably it intends to rely on coke made from the Trinidad coal.

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ROSSITER W. RAYMOND, Ph. D., JOHN A. CHURCH, E. M., } Editors.

RICHARD P. ROTHWELL, C. E., M. E., Editor of the Coal and Iron Department.

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CONTENTS FOR THIS WEEK.

ANOTHER explosion has occurred in an English colliery, the cause, as reported by cable, being the use of naked lights. Fifty-three persons were killed, a hundred others escaping alive, though twenty or more of the latter were injured. The mine was situated at Durkinfield, Lancashire.

MR. A. L. HOLLEY has devised a very convenient card for noting down analyses of iron ores, iron, steel, etc. On one side it contains lines for the place, date, seller and chemist, and all of the usual constituents of ores, while the other side has the same for metal. Three analyses of each can be entered to three decimal places. A few of these cards will not only save the necessity of carrying a large blank book, but also save much of the trouble of copying analyses, since MR. HOLLY has left nothing undone but noting down the figures. VAN NOSTRAND publishes them, and we have no doubt they will be well received. They are about as large as an ordinary *carte de visite* photograph.

MR. BROWN'S paper on the Formation of Fissures, which we publish this week, contains nothing positively new ; but it offers valuable confirmation from original and intelligent personal observation, of some important propositions in dynamic geology. The points most likely to be criticized are his deductions based on the neighborhood of igneous rocks to metalliferous deposits. In many instances, it will be said, the argument will break down because it is based on the assumption that granites, syenites, porphyries, ect., are necessarily igneous. Even MR. BROWN'S triumphant *reductio ad absurdum* with regard to the copper-bearing traps of Lake Superior would be accepted at once by leading geologists, who have long ago declared these traps to be metamorphosed sediments.

THE annual report of the Union Pacific Railroad contains some interesting information about the advancing metallurgical interests of the West. There was an increase of bullion transported amounting to 53 per cent., and of silver ore amounting to 154 per cent. on the quantities of the year before. It will be necessary to lay 100 miles of new or re-rolled rails, and at least 2000 tons of these will be steel rails, which are necessary on those mountain grades, where the heaviest locomotives are used. Steel rails now cost the company $3,150 more per mile than iron ones, and considering the high proportion which transportation expenses bear to the whole cost of material, this extra cost for steel is less important to the Union Pacific than to many other roads. It is therefore likely that the managers will probably try to lay the whole or the greater part of the 100 miles with steel. The cost of transporting worn out rails to the mill, and returning them re-rolled is $20 a ton, and the report points out that three-quarters of this sum could be saved by building a rolling-mill on the line of the road. There are a number of good positions for such an establishment. Iron ore is found at points for a length of 500 miles on the road. Other sources of future revenue are also pointed out. Soda is found near the road, and can be mined and sent to the seaboard at rates which will exclude the imported soda, and as there were 118,000 tons of this article imported last year, there is prospect of a large business in time. A vast deposit of sulphur has been discovered in Utah, and there may be some business in carrying this too. Finally the report calls attention to the bituminous shales of Green River, which under good circumstances might become useful as a source of kerosene oil. The anticipations of the report are somewhat overdrawn in regard to these future sources of business, and in all probability it will have to wait many years before soda, sulphur, or even iron ore can be utilized to a considerable extent. Its increase of 18 per cent. in passenger mileage, and of 25 4-10ths per cent. in tonnage, the steady development of mining in Colorado and Utah, and the growing population of those territories are better grounds for expectation of profit than the still unutilized mineral resources which it mentions.

THE celebrated Sandwell Park trial boring for coal, in England, has, after some serious discouragements, reached very brilliant prospects. March 20th, at the depth of 380 yards, a coal seam, 2½ feet thick, was struck. The coal strongly resembled what is known as the Brooch coal, and the identity was confirmed within a week by the passage through the Brooch ironstone, pins ironstone and Herring coal, 10 inches thick. The establishment of this identity is very important, for the Brooch overlies the Thick or ten-yard seam which may now be expected within 45 yards, and if this is reached and found to be workable, the anticipations on which the boring was instituted will receive the most brilliant confirmation. The long dispute about the existence of Thick coal measures under the Permian rocks is now almost established and English coal geology has received an important accession of knowledge. As to the effect of this discovery upon the material interests of Great Britain, it cannot fail to be very great. The coal panic followed close upon the discussions in regard to the probable duration of the coal supply, and though the rise in prices was undoubtedly traceable to many other causes more immediate than this, there is no doubt that the asserted exhaustion of the coal fields, even in so remote a period as 135 years, had at least a moral effect in the speculative excitement that followed. In like manner the discovery of a valuable bed in a position heretofore extremely doubtful, may be expected to have a greater effect upon the *status* of English industry, than would naturally be due to the mere addition of so many tons to the future supply.

The Bullion Product of Utah.

[From the forthcoming Report of the U. S. Commissioner of Mining Statistics].

The following statement of the product of Utah for 1873 in gold, silver, lead and copper has been compiled with care from the best attainable authority.

GOLD.		
From placers (express shipments, plus 20 per cent. in private hands)	$32,616 00	
Extracted at Germania works from Utah bullion, 1100 oz.	19,800 00	
Total gold		$52,426 00
SILVER.		
Produced by stamp mills, 169,486 oz. at $1.18	$199,993 48	
Extracted from Utah base bullion, 360,180 oz.	425,012 40	
Contained in bullion shipped (8032 tons)	1,807,200 00	
Contained in ores shipped (12,384 tons)	1,424,160 00	
Contained in bullion on hand (500 tons)	122,500 00	
	$3,978,865 88	
Less amount in 1,666.05 tons, on hand Jan. 1	253,091 00	
Total silver		$3,725,774 88
LEAD.		
Produced at Germania works from Utah bullion, 2430 tons, at 5c. per lb.	$243,000 00	
Contained in bullion shipped, 8032 tons, at 4c. per lb.	642,560 00	
Contained in lead ores shipped, 30 per cent. of 11,075 tons at 2½c. per lb.	166,125 00	
Contained in bullion on hand, 500 tons, at 4c. per lb.	40,000 00	
	$1,091,685 00	
Less amount on hand Jan. 1, 1,666.05 tons, at 4c. per lb.	133,320 00	
Total lead		$958,365 00
COPPER.		
In 1309 tons of ore shipped, 24.6 per cent., at $52.74	$69,036 66	
In 126 tons of black copper, 90 per cent., at $223 per ton	28,098 00	
Total copper		97,134 66
Total product of metals		$4,833,700 54
Product of gold and silver		$3,778,200 88

Remarks on the above statement. The amount of gold product is less than the estimates of Messrs. VALENTINE, FABIAN and others, who improperly include in the product of the Territory a part or the whole of the gold extracted at the Germania works from base bullion purchased for those works in Nevada, principally at Eureka. The silver and lead of this Nevada bullion have also been heretofore erroneously added to the Utah production. The Germania works treated during the year 1,670 tons of Nevada bullion, extracting 200,400 oz. silver and 5,610 oz. gold.

The value of Utah base bullion, shipped, is estimated at $225 per ton. Mr. FABIAN estimates it at $250, which I consider too high, because the amount of low-grade ores treated (containing considerable lead, and hence producing low

grade bullion) was proportionally large during 1873. The Winnemuck and the Flagstaff (and the Davenport for part of the year) were the only works producing high-grade bullion in large quantities. The numerous works along the Utah Southern R. R. smelted chiefly Bingham Cañon lead ores, producing bullion, a great deal of which did not contain more than 30 to 40 oz. of silver. The value of $225, estimated by me as the general average, includes gold and silver. Judging from the operations of the Germania works, (2,430 tons of Utah bullion treated; silver, 360,188 oz.; gold, 1,100 oz.) the value in gold may be 5 per cent. of the value in silver.

The value in gold and silver (mainly silver) of the ores shipped is estimated at $115 per ton, for the reason that of the 12,384 tons shipped, 964 tons from the Mono mine yielded about $442,000, or an average of $458 per ton; at least 600 tons of Emma dressed ore were worth $500 per ton; 1309 tons of copper ore carried, at a low estimate, $20 per ton in gold and silver; and 126 tons of black copper, about $80 per ton. This leaves 9,388 tons of unknown value, which can safely, however, be assumed to have contained over 45 oz. of silver per ton, since it would scarcely pay to ship it on a lower basis. The average for all shipments, thus obtained, is $115 per ton.

The bullion on hand and in transit is estimated at 500 tons, against 1,666.5 tons at the end of 1872. In that year, the Germania refining works alone had on hand over 800 tons. The value of the stock on hand having been included in the last report as part of the product of 1872, at a reduced lead value, to allow for the expense of refining, is now subtracted; while the estimated amount now on hand is added. The silver contents are taken for each year on the basis of the general average for the year.

In reckoning the values of lead, the refined metal is taken at 5c, the metal in base bullion ingots or pigs at 4c., and the metal in ores at 2½c. per lb.

The values of copper have been calculated at the prices paid in Salt Lake upon the assay. These were: for 24.6 per cent. ores, $59.60 per ton, currency; for 90 per cent. black copper, $252 per ton, currency. I have calculated the prices in gold at 113, thus reducing the values to coin, in harmony with the remainder of the statement of metallic product.

The Value of Mining Excitements.

We publish this week a letter from the San Juan District in Colorado, which is probably destined to be the scene of this year's "excitement" in Western mining. San Juan is not a new district, and the stories now told of it are not more extraordinary, though somewhat more precise, than those which were current years ago. A great removal of prospectors to its limits is on the cards for the early spring, and within a few years we shall no doubt see a valuable addition to the mining attractions of Colorado built up. We are not sorry to see the current of prospecting turn again toward that Territory which is now in a much better condition to receive it and turn it to good advantage than in former times. The fact that this year is likely to witness a great rush, more orderly than those of old times, but still a decided stampede, shows that with all its advance in mining the West has not outgrown its old methods of work. In common with all real well-wishers of the West, we deprecate the unreasonable excitements in the throes of which new districts are brought forth, but we confess that we should be puzzled to find a substitute for them. In an undeveloped country *united* action is an absolute necessity. A community on its travels makes roads, establishes stations and plants farms which not only remain as permanent improvements, but contribute to the continued existence of the mines. If a district were to be opened by prospectors who were too few in number to do this work, the capitalists who attempted to establish permanent mining works would have to pay cash for doing it, and the amount of money required before any return could be expected would not only astound the best informed among them, but would also, in most cases, prevent the undertaking. In fact, these expenses in the case of a district as far off as San Juan would probably appall almost any company. From this we may obtain some comprehension of the immense money value of these excitements. They not only entice capital by their Munchausen stories of local wealth, and build up fortunes for a very few lucky prospectors, but they plant permanent advantages which the capitalists enter upon and enjoy. Whoever buys a mine discovered in some lonely valley by a wandering prospector, buys with it expensive necessities; but he who purchases a mine in a district that has been opened in an "excitement" which has given it the advantages due to the co-operated labor of a great number of men, gets in addition to his "leads" the solid benefits of permanent improvement. He enters a field where he has neighbors who, in working out their own interests, benefit him at every step. While, therefore, the extravagances of these "excitements" are to be deprecated, it is not to be doubted that the method of opening new regions by them has its good side, and the persistence with which it is adhered to in the West is some evidence that it is the best mode for that country.

NEW PUBLICATIONS.

The American Cyclopaedia. *A Popular Dictionary of General Knowledge.* Edited by George Ripley and Charles A. Dana. New York, D. Appleton & Co. Vols. I. to V. inclusive.

CONTINUED.

The fifth volume, which has just appeared, contains more than the average number of interesting subjects. Among those which do not concern particularly the sphere of this journal, we may mention the treatises on Coffee, Coins (profusely illustrated), Colleges (containing complete statistics of the colleges in the United States), Columbus, Spontaneous Combustion, Common Law, Commune de Paris, Comparative Anatomy, Confederate States, Congregationalism, Connecticut, Constantinople, Cotton, and Cotton Manufacture (two admirable articles), Criminal Law, Cromwell, Cuba, Cuneiform Inscriptions, Cyclopædia, Dante, Deaf and Dumb, Delaware, etc.

Among the new articles relating to Mining, Chemistry, etc., we notice those of Professor T. Sterry Hunt on Copper, Copperas, Copper Mines and Copper Smelting, which display the well-known technical learning and literary skill of their accomplished author. Professor Hunt is a master of "the art of putting things."

Under the head of Concrete, Dr. Hogeboom gives a compendious review of the recent progress in construction based on the use of this material, including the various artificial stones and béton. Mr. Daddow treats the subject of collieries in an article which contains much useful and unimpeachable information. A description and an engraving are given of a method invented by Mr. Daddow himself for sinking pits, by the employment of shields and platforms, dividing the pit so that the men who are cleaning up the broken rock from blasts can work at the bottom below the first shield, while on the top of the shield or platform covering the area of the shaft a set of drilling machines is placed which drill holes for the blasts, and over this platform a second one is erected on which the timber-men or masons work. We are not aware that this system has ever been tried in practice; if our impression is correct, and the plan, however ingenious, is merely a proposition of Mr. Daddow's, his otherwise appropriate article would have been improved by its omission.

The biographical article on Peter Cooper is a well-deserved tribute to one of the most practical as well as generous benefactors of working men and women. The admirable plan of the Cooper Union for the Advancement of Science and Art, might well have received a more extended description and discussion than is here bestowed upon it.

In typographical and artistic features, this volume is fully equal to those which preceded it.

FOREIGN PUBLICATIONS.

We have received from Prof. Alexander Sadebeck, of the University of Kiel, two books which we can heartily recommend to those students who are familiar, as every student in these days ought to be, with the German language. The first is a new and revised edition of Gustav Rose's *Elements of Crystallography.* The work of preparing this edition was entrusted to Professor Sadebeck by Rose himself, whose death in July last deprived not only his friend, pupil and assistant of the benefit of his continued advice, but also science of a profound and brilliant investigator and systematizer, and the world of a good man. As Professor Sadebeck justly observes, it was the genius of Rose which opened a new path for the science of mineralogy. Not merely his investigations of rare species, but chiefly his critical observations and definitions of the characters of the commonest minerals caused his activity in this department to be universally recognized as that of a master.

The progress of science required a revision and extension of Rose's work on Crystallography, the only text-book which bears his name, but the old plan has been preserved unaltered, and all additions have been made in conformity with it. Those who are in possession of earlier editions will recognize the importance of the changes which have been made, when we mention that the tetartohedric forms of the regular system, the hemihedric of the quadratic, hexagonal and rhombic systems, the trapezohedric of the hexagonal system, many additional combinations, eighty-six diagrams, etc., appear in this book for the first time. The symbols of Weiss are retained, but the names given to the systems are those now in common use, although the names of Weiss are also given and explained. The 200 drawings of crystals are executed in the well-known beautiful manner of Rose, and lithographed with splendid delicacy and precision. A tabular survey of the mineral species, arranged according to their systems of crystallization, concludes the book. Its use will be assisted for American students by the circumstance that the names preferred by Dana are given in parenthesis whenever they differ from those commonly used in Germany.

The second work received from Professor Sadebeck is a hand-book of Mineralogy and Geology, for the use of architects, foresters, farmers, technologists, etc. This is naturally more brief and elementary than the extended treatises on the same subject. The text and numerous illustrations are comprised in 118 octavo pages. It will serve as an excellent syllabus for lectures, or guide in recitations. The mineralogical part is limited chiefly to those species which are technically or geologically important. Ores are treated very briefly, since mining engineers and metallurgists who deal specially with them, are expected to pursue the subject more thoroughly than the plan of this book permits. In the geological part, the most important rocks and their uses are described, and a brief but clear sketch of the activity of the most important agencies, and descriptions of the most frequent leading fossils, are given. The geographical distribution of the various formations is discussed in its application to Germany chiefly.

The well-known and valuable French technical publication called the *Revue Industrielle*, which has been published monthly in Paris, for several years has consolidated with it the *Chronique de l' Industrie*, a weekly journal, also in French, but published at Brussels, and the consolidated periodicals now appear weekly at Paris under the old title, *Revue Industrielle.* The object of this consolidation is to furnish French engineers with an illustrated weekly paper similar to *Engineering*, which is in many respects the prince of journals of this kind. Both of the

publications which have been thus consolidated, were of the first class, and had taken an honorable position, and in their new form they will be able to add materially in the dissemination of technical information among French engineers.

CORRESPONDENCE.

The San Juan Mines.—Letter from a Prospector.

DEL NORTE, COL., March 17, 1874.

TO THE EDITOR, SIR :—This mining region, as you are probably aware, embraces a large extent of country, (about 3,600 sq. miles), in the southwest part of Colorado. Until last fall much the larger portion of this region belonged to the Ute Indians. The U. S. Government then secured these lands by treaty.

The greater portion of the prospecting done and a large proportion of the locations made are in the vicinity of Baker's Park. This Park is on the waters of the San Juan River, (a tributary of the Colorado of the West,) and on the west side of the Rocky Mountain Range. It is about 250 miles nearly due west from Pueblo, the present terminus of the Denver and Santa Fe Railroad.

The route heretofore travelled is from Pueblo via Sangre de Christo pass to Fort Garland, thence across the San Louis Park to the Rio Grande, thence up the Rio Grande to Del Norte, thence up the Rio Grande to Antelope Park. The wagon road was built last fall as far as Antelope Park, 60 miles beyond Del Norte. From this point a good road will be built over the Range, about 45 miles to Baker's Park, early next Summer. Goods and passengers have hitherto been transported over the Range by pack animals.

The country rock in the vicinity of Baker's Park is slate and granite. Here are found extensive and numerous lodes of argentiferous galena, assaying in silver from $10, to $10,000 per ton. The general direction of these lodes is North and South, although some of them run North West and South East. They vary in width from 6 inches to 100 feet, and the general rule that very wide lodes are comparatively poor in silver holds good here. However, it is said that in all cases the deeper you go, the richer the ore is found to be. A great many of these lodes show *grey copper*, which assays a large per-centage of silver. This copper is found in seams, ranging from ¼ an inch to 6 inches in width, though in some cases, it is not thicker than a knife-blade. It is from these seams in galena veins that the largest assays are obtained.

There are some lodes in which not a trace of galena is found. The ore is called the black sulphuret of silver. These lodes are found mostly, if not wholly, in feldspar. I can take you to a lode of this character, which has assayed from $2,600 to $3,200 per ton, the ore being taken from the surface. The lode has the appearance of being a thin fissure, the walls being well defined and its general direction clearly marked.

The lodes in the vicinity of Baker's Park are generally silver bearing, though some are rich in gold. One of them, the "Little Giant," was successfully worked last season by a company of Chicago capitalists. It is said they will resume operations this Spring, with improved machinery. The Little Giant showed free gold from the start, and in the development of the mine, they found some very rich deposits which paid largely. There was no diminution in the richness of the ore when the company discontinued work last fall. There is another lode of the same character called the "Sampson," in close proximity to the Little Giant.

On going *South* from Baker's Park, the formation gradually changes from slate and granite to limestone. In this limestone formation deposits of mineral are found, some of which assay well, but no regular well defined-lode has been discovered. Progressing still further South we gradually leave the limestone and encounter the coal formation. Here we find the best quality of bituminous coal and in such close proximity to the silver belt as to render its value almost inestimable.

Some fine mines of copper have recently been discovered between the limestone and coal formations. These copper ores assayed upwards of 60 per cent. pure copper.

Many of the lodes in the vicinity of Baker's Park, are 12,000 feet or more above the level of the sea. They cannot be worked at all seasons of the year, until suitable preparations are made to protect miners against snow and severe weather. However, a great majority of the lodes are found at a much less elevation, say 9,000 to 11,000 feet above the level of the sea.

More than 2,000 claims have already been located in this San Juan region. I do not suppose for a moment that all or even a majority of these claims will prove valuable. Many of them, no doubt, are only seams, too narrow to be mined to advantage. Many others, of larger size, will probably prove too poor in silver, to be worked to advantage for years to come. I do think, however, that many of them, of good workable size, may be worked at very large profit as soon as the wagon road from Antelope Park to Baker's Park is completed. I think that many such lodes will yield at least $150 per ton in silver, with 50 per cent. of lead. Many of these lodes can be distinctly traced for miles. In many cases the lodes, for long distances, stand several feet above the surface of the ground.

Many experienced miners, think that gold mines, almost as numerous and far richer than the silver mines, will be discovered when the country is more thoroughly prospected. Placer mines have been discovered South from Baker's Park, in the vicinity of the La Plata River. Good "color" is found at the grass roots, but these placers have not been sufficiently prospected to know whether they will pay or not.

There is plenty of timber in the vicinity of the mines; sufficient, at least, for all practical purposes. There are vast bodies of pine, spruce, quaking aspen, etc. Water is abundant. Fire clay of the best quality is found near the mines.

Good board can be obtained at Del Norte, at from $5 to $8 per week. There are no hotels at Baker's Park, but a man can fix himself comfortably in the mountains by preparing before hand. Del Norte will probably be the trading point for the mines during the ensuing season. After next season other towns will compete for the trade. There is a tri-weekly line of stage coaches from Pueblo to Del Norte, distance 135 miles, fare $20. Freight last season from Pueblo to Del Norte was 2 cents per lb., from Del Norte to Baker's Park by pack animals 3 cents per lb.

Summer pasturage in the mountains is good. On the "Americus" and other tributaries of the San Juan River, there are considerable bodies of excellent agricultural land. B.

Mining Engineering.

By PROF. F. L. VINTON, E. M.

CONTINUED FROM PAGE 215.

ROBBING.

THIS method is as complete as the preceding, and consists in an exploitation by means of two systems of headings, or galleries, crossing each other, followed by a robbing or abstraction of the pillars which they leave between them. The boundary of exploitation, after being approached, is first divided up by a system of horizontal galleries 20 meters apart on the dip, each connected with the shaft, and then subdivided by a system of slopes 40 meters apart on the strike. This leaves, then, a congeries of masses each 40 m. by 20 m., to be made off with under the conditions of safe manœuver and entire removal. As this process, in the absence of filling, involves the accompaniment of a caving-in in rear, the operation must commence at the upper part of the exploitation. Let us suppose, then, that the upper west pillar on the limit of the possession be the object of attack and admit also that the slates are not very solid. This pillar will then first be pierced through its axis on the dip by a slope which is barred by a wall when it reaches the debris at the topmost limit. The western half may then be divided into four sections by means of three horizontal galleries running from the axial slope to the boundary. These sections are attacked one after the other in descent, the upper being first struck and worked out from west to east in breasts of 2 m. front on the strike, the cavity on the west being well supported, so that the miner may command and either moderate or provoke the subsidence of the earth. Ultimately it is possible to have removed thus all the coal of the upper section, together with most of the timber, leaving the vacancy filled with the debris whose accumulation has been coördinate with the retreat of the mining. The next section below is undertaken in the same manner, after a wall has been built across the medial slope to arrest the crowding of the upper wreck into it while a portion of it must still serve for transportation. After the western moiety of the pillar has thus been disposed of, the eastern half is similarly treated, and this is the normal course of the robbing of all the pillars on the upper line and downward. If the roof, or hanging wall, of the bed be comparatively consistent, the attack of a pillar need not be so intimately subdivided as before, that being a precaution only necessary where an aggressive creeping of earth makes it incumbent to prop staunchly, and therefore only a small area at a time. The pillar, for example, might be partitioned into only four sections, a preparation which would admit a larger and more rapid attack by miners disposed in broadway along the whole face of a portion. Still, even under the most favoring circumstances, it is prudent to diminish the front of attack so far that the miner retains always the mastery of the earth which subsides behind him.

Passing now to the exploitation of flat beds, namely those dipping between 35° and the horizontal, and considering, first, such seams, generally not over 1 m. 20 thick, as furnish a filling by their own elaboration, it is evident that some system similar to that of flat stopes in metal mines is indicated. The miner kirves the coal usually at the foot wall, and chips the roof for the insertion of breaching wedges. This, with the spoil of rock from the large galleries, suffices for filling; and, moreover, when the seam is undulating, presenting considerable variation of dip, the disposition of flat stoping may merge easily into over-hand stoping without a change of profile. Supposing, then, that a seam slightly inclined has been reached by two shafts, the first operation is to drift two longitudinal galleries to limit the boundary of the present stoping, leaving a mass of coal around the shafts adequate to their support and protection. Between these two galleries the stoping may be prosecuted, left and right along the strike, from each side of the shaft base. The profile is the echelon already described of offsets, each of which is a breast occupying one or more miners, and from which to the rear a rolling way of sufficient dimension is conserved in the filling. These ways would be mainly horizontal, and were it desired to provide them with a slope to the rear, in order to facilitate hauling, they could be described diagonally between the strike and the dip in the filling, or the stopes themselves could be so directed, or, finally, if the inclination of the bed be not excessive, the whole system could be developed mounting the dip instead of following the strike.

Proceeding now to the case of flat beds between 1 m. 20 and 3 m. thick, furnishing little filling, because all passages can be made in the coal without packing the rock, it is evident that, if the totality of the mineral is to be extracted, a certain depression of the roof cannot be avoided. Therefore it is important to lay on the fewest rolling ways possible, in order to escape the expense of keeping them open, and a process by broadways may here be introduced. The preparation for

this attack is to divide up the boundary into a set of large masses 50 m. to 60 m. square by galleries 4 m. or 5 m. wide. These galleries are directed on strike and dip, or diagonally if the dip be steep, in order to give comfortable footing for the miners. The masses so disengaged are attacked along a whole front, the miners protecting themselves by three or four rows of substantial stalling behind. In rear, the filling, what there may be, is heaped in piles around the timbers, a great part of which is abandoned at the settling of the roof. When the masses are not more than 50 m. to 60 m. square, the rolling way is along the front of attack, and down two of the main ways, which last are maintained in their dimensions by excavating the vault of the roof, when it subsides. For the same or similar condition and character of coal bed, other styles of exploitation are admissable, and the next theory in order is by pillars and stalls, applicable particularly where the roof is less trusty than in the preceding example. This consists in, first, drifting a main gangway from one of the shafts, and then making simultaneous incursions into the coal on its flanks by breasts or stalls of 8 m. front parallel to each other, and leaving between them long pillars 4 m. or 6 m. wide. The stalls are filled, as far as possible, disposing the filling so as to leave a rolling way down the middle of each to the general gangway, and also an airway around the sides and ends of the stalls and pillars. The direction of these is usually diagonal to the strike and dip, and when they have been pushed far enough from the pit the succeeding step is to beat in retreat, removing the pillars, beginning at the most distant. While these masses are being worked away, the roof is supported by props, which also may be partially withdrawn and saved. If the roof, however, be threatening and too unmanageable to permit the acquisition of the entirety of the pillars, they are partially won by cuts through and through, relinquishing an average of one-half. This method exhibits the feature of isolating the breasts, which is, however, particularly commendable as an advantage in mines subject to fire-damp.

TO BE CONTINUED.

TRADE REVIEW.

NEW YORK, April 17, 1874.

ANTHRACITE.

The change in the anthracite market since our last is hardly perceptible; but if any is to be noticed, it is a slightly improved demand. The existing low freights, with the established feeling that the Combined Companies' Programme will be carried out, should bring out more orders than are now being booked; but the manufacturers appear to have carried over large stocks from not having used their usual quantities, owing to many of them having closed their works after the panic.

As business is at the present moment, most buyers have fears of their ability to make payments on large purchases, and until there is some settled feeling to the business of the country, and something to set the wheels in motion, we cannot look for a great improvement upon the present demand. The line trade is reported as very light, although deliveries last week were but little below the previous week. As will be noticed from our Philadelphia correspondence, there is a large amount of coal accumulating in cars on the Reading railroad, but our official report shows no increase of the stock at Port Richmond. The stocks at Coal Port and South Amboy were reduced over 5,000 tons during last week. Vessels are in liberal supply, and cargoes, according to size, are taken at from $1 50 to $1.75 to Boston.

PRODUCTION.

The total production of anthracite from all the regions for the week ending April 11, was 425,816 tons against 402,356 tons, as compared with the previous week. The total quantity mined from the 1st January to the 11th April, inclusive, was 4,101,470 tons, exclusive of consumption at the collieries.

RECEIPTS AT TIDE WATER.

The amount of coal received at Port Richmond during the week ending the 11th inst., as per official report, was 40,000 tons, the shipments 42,000 tons, and the stock on hand 110,000 tons.

The receipts at Coal Port for shipment during last week were 11,383 tons, and the amount actually shipped 12,619 tons. The receipts at South Amboy for the same time were 14,239 tons, and shipments 18,399 tons.

BITUMINOUS COAL.

There is not much change to note in the bituminous coal market. Some large contracts which were pending at the date of our last, and which we had hoped to chronicle in this, have not yet been consummated.

We note contracts for 40,000 tons of Pictou coal from the *Vale* and *Acadia* collieries for delivery at Portland for steamer use from that port; also, 25,000 tons for delivery at Boston, Providence and Somerset, on private terms.

In gas coals there have been no sales for this market since our last issue—the supplies for the current year being now about provided for.

Freights from Cape Breton to this city continue at $3.25.

The total production of Cumberland coal from January 1 to April 11, inclusive, was 371,641 tons, against 461,770 tons for the same time in 1873, showing a decrease this year of 90,129 tons.

The Eckley or Council Ridge Colliery, advertised in our columns, has been leased to John Leisenring, Esq., of Mauch Chunk, Pa, for ten years at a "sliding scale" royalty, based upon the price of coal at Mauch Chunk. The minimum in the lease is 125,000 tons.

A strike exists among the trimmers of the Delaware and Lackawanna Railroad Company, at Elizabethport. They have been receiving 17½c. per hour, and are striking for 20c. The company will firmly resist their demand, and make shipments at Hoboken until the men resume work or others are procured to fill their places.

MESSRS. COXE BROTHERS & Co. have just closed a contract for 250,000 feet (board measure) of Georgia pine timber, to be used in the construction of a new coal-breaker they are about building at their Cross Creek colliery. This timber costs, delivered in Philadelphia, $28 per M., and will thus cost scarcely more at the mines than Pennsylvania white or yellow pine, while it is estimated to last about three times as long. Some of the timber is fourteen inches square and thirty-nine feet long.

The capacity of the new breaker will be about 800 tons per day, or say 200,000 tons per year. The coal to be prepared is from the famous red ash Buck Mountain vein of the Lehigh.

Our Philadelphia Correspondents write:

The low freights have given an appearance of increased activity to shipments of anthracite. Consumers who have contracts at fixed rates on board, order coal which they do not need at present to avail themselves of the low rates. It will not require much of that kind of business to raise freights again, when shipments will be confined to current wants, and reflect the nominal condition of general business.

The "dog in the manger" policy of loading cars with coal not sold to prevent their being loaded with coal which is sold, continues in full force. This action will, as we think, permanently injure the true interests of the anthracite trade, and will hasten the development of the bituminous coalfields. The evil results of this policy are most severely felt by the Schuylkill miners, for there the shipments are practically confined to a single road.

There is no change in the rates of coal, and freights since our last report are a little weaker, $2.15 being paid to Boston.

While one more wharf at Boston was reported last week as having been secured by the Reading Coal and Iron Company for storing coal, one of the wharves they used last year for the same purpose, is stated to have been lost by them and the report of the additional wharf is given now as premature.

The Bituminous Coal Trade of Philadelphia is partaking of the depression which governs the trade elsewhere. No important contracts have been made during the past week, but such sales as have been effected have been generally at reduced prices, while the best qualities of Clearfield or steam coals, such as Kitanning, Powelton, Stirling, and some others, are holding at $4.80@5.00, according to the drawbacks allowed on freights to tide-water, and according to the market to which the coal goes. Other coals from that region have been sold at $4.60 and $4.65, f. o. b. here at Greenwich. The fact is, that with an overstocked market and "hard times" some of the operators will sell at almost any cash offer, and buyers have it pretty much their own way.

There is a somewhat better feeling this week than there has been, and though the state of things could not be much more dull, there is a prospect of better business in the near future. All are satisfied, however, that prices will be low throughout the season, unless the inflation measures of Congress should revive or originate a period of wild speculation when coal and everything else would go up with a bound.

Broad Top Coals (semi-bituminous or dry steam coals) are selling at the same prices as cheapest coal, or $4.75@5.00, according to drawbacks. The Philadelphia Bituminous Coal market has a somewhat complicated price-list, the same coals selling f. o. b. at Greenwich, at different prices, according to the purposes for which they are bought, and their destination; whether sold for canal shipments or coastwise shipments, for use at the brick works, or mills, or other purposes; it is, therefore, impossible to give exact prices; but they can be quoted as above; sales being made at both these limits and between them. Some of the papers quote as high as $5.25 and $5.60, but no such prices are even asked, much less obtained.

J. D. BROWN, Esq., Secretary of the Philadelphia and Reading Railroad Company, explains the apparent discrepancies in the weekly reports of coal received, shipped and on hand, at Port Richmond, by saying: they are only rough estimates, so as to give an approximate idea of the business, and from various reasons cannot be made to check from week to week.

THE BRITISH COAL TRADE.

LONDON, March 28, 1874.

The coal trade continues in the depressed state, noticed by us from week to week, for some time past, and prices, as a rule, are weaker than at the date of our last. There are very few districts where the masters will not attempt to make a reduction in wages. There have been a great many notices issued to that effect; but some important ones do not expire until after the middle of April, so that it will be impossible to judge at the present moment what may take place then; but it is thought that the masters and workmen will come to an understanding, and thereby prevent strikes and lockouts, although in some cases there will undoubtedly be considerable trouble. In the Cannock Chase district there are 3,000 men on strike. The majority of the notices in this section expire to-day, and in the case of a failure to settle the dispute some 20,000 miners will be out on Monday. It is generally felt that in the event of a strike taking place, it cannot be of long duration, as the men are scarcely in a position to offer a lengthy resistance. Meetings are being held by the miners in all parts of the country for the purpose of considering the question of the reduction in wages proposed by the masters, but nothing definite is being arrived at.

The following are some of the leading quotations: At Darlington, unscreened, for manufacturing purposes, 9s. 6d.@11s. 6d, at the pit; household, 15s.@17s.; coke at the ovens, 21s.@23s.; at Barnsley, steam coal, 15s.; in this city, best coals, 19s. 6d.@23s. 3d.

Wales.—It has been generally resolved by the miners in Wales that the output shall be lessened, but that they will not consent to a reduction in wages. The colliery proprietors held a meeting in Cardiff on Tuesday, and resolved not to entertain propositions for a concerted limitation of the output, believing it contrary to the interests of the public. The intended reduction of wages was also discussed, but the question was adjourned for consideration a month later. The steam coal trade remains as last reported, although best steam coals are a little firmer in prices. Households are very dull, and prices still on the decline. Best steam coal is quoted at 20s.@21s.

Scotland.—Coals are unaltered in value, and as the majority of the sales collieries are being steadily worked, they may remain at the same rates for some time. Mr. FERRIE, manager of the Monkland Iron and Steel Company, proposed that, to settle the pending dispute between the miners and masters, a sliding scale of wages should be adopted. His proposition was, that when pig iron was 50s. the miners were to be paid 3s. 6d. per day, and for every 5s. above that that pig iron may bring, the miners to receive an additional 6d. per day. In a considerable number of places the men received it with absolute approval, and in a majority of cases they were favorable to the principle of a sliding scale, but thought the starting point should be from 1s. to 2s. higher, whilst in one instance both employer and workmen were stated to have actually accepted it in its original form. The miners have been ordered to return to work temporarily at a certain number of collieries at the masters' terms, and let the balance of the collieries remain out; but there is some doubt as to whether their services will be accepted. The collieries selected to remain out employ about 4,300 men in all, and it is estimated that it will take £5,000 a week to keep them idle. The miners in East and Middle Lothian are still on strike resisting the 1s. per day reduction.

COAL PRODUCTION.

Anthracite.

Mined for the week ending April 11, 1874.

	WEEK. tons.	YEAR.* tons.
Wyoming Region.		
Delaware and Hudson Canal Co	53,449	605,480
Delaware, Lackawanna and Western RR	47,004	608,870
Pennsylvania Coal Co	25,523	291,413
Lehigh Valley R.R	29,135	266,297
Pennsylvania and New York Railroad	2,675	14,801
Central Railroad of New Jersey	31,142	283,106
Lehigh Region		
Lehigh Valley Railroad	75,953	745,112
Central Railroad of New Jersey	25,337	180,701
†Danville, Hazleton, and W. B. R.R	....	2,735
Schuylkill Region.		
Philadelphia and Reading Railroad	125,056	968,815
Shamokin and Lykens Valley	10,163	129,980
Sullivan Region.		
Sullivan and Erie Railroad	319	6,161
Total	425,816	4,101,470

* Year beginning January 1st.
† From the Penn. R.R. Co.'s report, March 31.

Bituminous.

Mined for the Week Ending April 11.

	Week. Tons.	Year. Tons.
Cumberland and Pennsylvania R.R	42,955	336,485
Cumberland Branch R.R	4,421	35,156
Barclay R.R	4,690	45,744
Huntingdon & Broad Top R.R	6,391	106,370
†Snow Shoe	....	16,036
†Tyrone and Clearfield	....	141,894
†Allegheny Region, Penn. R. R	....	55,584
†West Penn. R.R	....	52,535
†Southwest Penn. R.R	....	784
†Gas Coal, Penn. R.R	....	159,901
†Pittsburgh coal, Penn. R.R	....	81,462
Coke		
†Tyrone and Clearfield	....	112
†Allegheny Region, Penn. R.R	....	35
†West Penn. R.R	....	12,470
†Southwest Penn. R.R	....	88,434
†Gas Coal, Penn R.R	....	9,318
†Pittsburgh Coal, Penn. R.R	....	27,311

†From Penn. R.R. Co's. report for week ending March 31st

The South and North Alabama Railroad reports the following coal mined on the line of their road for March, 1874:

	Tons.
Cahaba Fields	210
Warrior "	1,790
	2,000

The Chesapeake and Ohio Railroad reports the following hipments for week ending April 4, 1874:

	Tons.
Cannel Coal	1,160
Splint "	2,220
	3,380

MARKET PRICES OF COAL.

Import Duty on Coal.

Anthracite free. Bituminous, per ton of 28 bushels, 80 lb. o the bushel, 75c., gold.

All slack, or culm, such as will pass through a half-inch screen, per ton of 28 bushels, 80 lb. per bushel, 40c., gold

Not otherwise provided for, per ton, 40c., gold.

ANTHRACITE.

WHOLESALE PRICES FOR APRIL. F. O. B. AT SHIPPING PORTS.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
Wyoming Coals.						
‡Scranton at E'port & Hoboken	4 60	4 70	4 80	4 95	5 40	4 40
*Lackawanna	4 60	4 70	4 80	4 95	5 40	4 40
§Pittston at Newburgh	4 30	4 30	4 40	4 50	5 00	4 15
Wilkesbarre at Port Johnston	4 60	4 70	4 80	4 95	5 40	4 40
Newport and Plymouth	....	...	4 80	4 95	5 60	4 40
Susquehanna Coal Co. at Amboy	4 75	4 85	4 90	5 05	5 50	4 50
Red Ash, Harvey coal	....	....	4 90	5 05	5 60	4 50
Kingston at Hoboken	4 60	4 70	4 80	4 95	5 40	4 40
Lehigh Coals.						
Old Company at Port Johnston	5 55	....	5 50	5 50	5 40	4 40
Old Company's Room Run	5 05	....	5 05	5 05	5 65	4 70
Sugar Loaf at Port Johnston	5 55	....	5 50	5 50	5 50	4 55
Hazleton at Elizabethport	5 40	....	5 35	5 35	5 50	4 55
Honey Brook at Elizabethport	5 40	....	5 35	5 35	5 50	4 55
Spring Mt. C. Co. at Hoboken	5 40	5 40	5 35	5 35	5 65	4 70
Beaver Meadow at South Amboy	5 55	....	5 50	5 50	5 50	4 55
McNeal at Port Johnston	5 40	5 40	5 35	5 35	4 90	3 55
Schuylkill Coals at Port Richmond.						
Schuylkill White Ash	4 10	4 20	4 30	4 45	4 90	3 80
Schuylkill Red Ash	....	....	4 45	4 60	4 90	4 05
Shamokin W. and R. Ash	....	....	4 55	4 90	4 90	3 80
N. Franklin	....	....	4 90	4 90	5 05	4 05
Lorberry	....	....	5 05	5 05	5 80	4 55
Lykens Valley	....	....	....	5 80	5 60	4 50

* f. o. b. in New York Harbor.

§These are net prices for delivery, during April, of coal previously contracted for, and are not rates at which the company would now make contracts.

‡ These prices are for registered contracts. Buyers not having contracts will be charged 15 cents per ton more than above prices.

Scranton sale, March 25th, averages: Steamer, $4 50; grate, $4 59½; egg, $4 82½; stove, $5 25; chestnut, $4 24.

Line Prices for April, 1874.

WHOLESALE.

AT	Lump and Broken.	Egg.	Stove.	Chestnut.	Pea.
Carbondale	2 25	2 25	2 50	2 00	1 25
Fair Haven	6 00	6 25	6 50	6 25	....
Ithaca, New York	4 90	4 90	5 40	5 15	....
Mauch Chunk, Lehigh coal	3 35	3 35	3 60	3 10	....
" Newport coal	2 25	2 25	3 50	3 00	....
" Wilkes-Barre coal	3 50	3 50	3 70	3 20	....
Pittston Junct	2 45	2 45	2 70	2 45	....
Port Carbon	2 75	2 90	3 00	2 25	1 25
Port Clinton	2 91	3 09	3 19	2 44	1 44
Schuylkill Haven	2 83	2 98	3 08	2 33	1 33
Scranton	2 25	2 25	2 50	....	1 25
Wilkes-Barre	2 25	2 25	2 50	2 00	1 25
Waverly	4 75	5 00	5 25	5 00	....

Furnace Lump $3 25, without any commission.

New York Wholesale Prices.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
Wyoming Coals						
Scranton	5 10	5 20	5 30	5 45	5 90	4 90
Lackawanna, Delivered on wharf	5 10	5 20	5 30	5 45	5 90	4 90
Pittston	4 95	5 00	5 10	5 20	5 70	4 85
Wilkesbarre	5 05	5 15	5 25	5 40	5 85	4 85
Newport & Plymouth	....	...	5 25	5 40	6 05	4 85
Susquehanna Coal Co.	5 25	5 35	5 40	5 55	6 00	5 00
Kingston	5 10	5 20	5 30	5 45	5 90	4 90
Lehigh Coals.						
Old Company	6 00	....	5 95	5 95	6 10	5 15
Old Co.'s Room Run	5 50	...	5 50	5 50	5 85	4 85
Sugar Loaf	6 00	....	5 95	5 95	6 10	5 15
Hazleton	5 85	....	5 80	5 80	5 95	5 00
Honey Brook	5 85	....	5 80	5 80	5 95	5 00
Spr'g Mount. Coal Co.	5 85	5 85	5 80	5 80	5 95	5 00
Beaver Meadow	6 05	....	6 00	6 00	6 15	5 20
McNeal	5 85	5 85	5 80	5 80	5 95	5 00
Schuylk'l Coals. Alongside.						
Schuylkill W. A.	4 95	5 05	5 15	5 30	5 75	4 40
Schuylkill Red Ash	....	....	5 45	5 60	5 90	4 80
Shamokin W. & R. Ash	....	....	5 55	5 90	5 90	5 05
North Franklin	....	....	5 90	5 90	5 90	4 80
Lorberry	....	....	6 05	6 05	6 05	5 05
Lykens Valley	....	....	....	6 75	6 75	5 50

BITUMINOUS.

WHOLESALE PRICES. F. O. B.

Per ton of 2240 lb.

Broad Top	$6 75	Block House	6 75
Derby	6 75	Ohio Caking	10 00
Kittaning	6 75	Ohio Cannel	12 50
George's Creek, Cumberland	6 75@7 25	Lyonsdale Coal	12 50
West Virginia Gas	7 40@7 50	James River Bit	6 50
Peytona Cannel	13 50	" Carb	9 00
Penn. Gas	7 50@7 65	*Cannelton Cannel	12 50
Westmoreland Gas	7 50@7 65	Liverpool Gas Cannel, ex ship	15 00@15 50
Sterling Cannel	14 00	" House "	18 00
" " del'v'd.	16 00	Newcastle Gas	8 50@ 9 00
Caledonia	6 50	Red Bank Cannel	9 00
Waverly Co.'s Youghiog'y.	7 50	†Cannelton Splint	9 00

Freight from Richmond, Va., to New York, $2 00.

* $11 f.o.b. at Richmond.

† $7 " " "

RETAIL PRICES.

PER TON OF 2000 LB.

Liverpool House Orrel, delivered	$20 00@$22 00
Liverpool House, Cannel, delivered	@ 25 00
American and Block, delivered	16 00@ ——
Straitsville Cannel	16 00@ ——

	Grate and Egg.	Stove.	Chestnut.
Pittston Coal, in yard	$5 60	$5 80	$5 00
Delaware & Hudson, delivered	6 60	6 85	6 10
Scranton, delivered	6 75	7 00	6 25
Wilkesbarre, in yard	6 00	6 25	5 50
Lehigh and Locust Mountain, del'd	7 00	7 50	6 50

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

George's Creek and Cumberland f.o.b. $4 65@$5 35, wholesale.

Buffalo, N. Y.

Youghiogheny Gas Coal	$6 00	Connellsville coke	8 00
Catfish Lump	4 75	Beaver Gas Coal	6 50
" Nut	3 50	Red Bank Cannel	5 50
" Nut and Slack	3 00	" Orrel	5 00
" Slack	2 85		

Anthracite, per 2000lb. in cars; retail prices, delivered $1 50 per ton additional.

Lump	$6 50	Stove	6 50
Grate	6 00	Chestnut	6 25
Egg	6 25		

Baltimore, Md.

Reported by †E. Stabler, Jr., coal merchant.

WHOLESALE PRICES.

	afloat.	at depot.
Wilkes-Barre. "Lee," or "Diamond"'		
Lump, steamboat or broken	$5 05	$5 60
Egg	5 35	5 75
Stove	5 45	5 75
Pittston and Plymouth.		
Lump, steamboat, and broken	....	5 35
Egg and stove	....	5 50
"Boston" (free burning,) all sizes	5 35	5 50
Shamokin, red or white ash, all sizes	5 35@5 60	5 50@5 75
Lykens Valley, red ash, all sizes	5 55	5 80

From wharf or yard, wholesale, 50@75c. additional.

By retail, all kinds and sizes, per ton of 2240 lb. $7@7 50.

BITUMINOUS.

George's Creek and Cumberland f. o. b. at Locust Point for cargoes	4 60@4 85
West Va. Gas Coal f. o. b. at Locust Point	6 50@....
Kanawha Cannel, coarse	13 00@....
Tyrone	7 25@....
Bitchie Mineral of West Virginia	19 00@....

Boston, Mass.

April 15, 1874.

The market for coal is quiet. Retail prices are nominally unchanged, but the market is weak, and most dealers, though nomially asking $9, concede 50 cents rather than lose a customer. Most of the cargoes arriving are on contracts, and cargo prices are nominal. We note sales of two cargoes of Lehigh Lump at $8. Cargoes of ordinary furnace can be bought at $7@$7.50. There is nothing doing in Cumberland. The receipts of domestic coal at this port for the week ending April 10, were 17,027 tons, and for the year 95662 tons. The receipts of Foreign coal were 194 tons, and for the year, 1354 tons. We quote:

English Cannel	$24 00@25 00	Pictou	8 25
do do from ship	22 00	Sydney	9 00
Scotch Cannel	15 00@18 00	Acadia	6 75@ 7 25
American Cannel	14 00@15 00	Cumberland	7 00@ 7 50
Lingan	7 50	Anthracite, retail	8 50@ 9 00
Caledonia	7 75	" by cargo	6 75@ 7 50

Chicago, Ill.

April 13, 1874.

REPORTED BY RENO & LITTLE, COAL MERCHANTS.

No change in prices of coal, although they are not so strong as they have been. We quote:

Lehigh Lump	$11 00	Midway (West Va.)	8 00@ 8 50
Lehigh prepared	10 50@11 00	Cannel	9 00@10 00
Lackawanna, Wilkes-Barre and Pittston	10 00	Blossburg	9 00
		Indiana Block	6 50
BITUMINOUS.		Hocking "Brooks"	8 00
Briar Hill and Erie	8 00@ 8 50	Wilmington and Illinois	5 00
Walnut Hill (W.V.)	8 00@ 8 50		

Cincinnati, O.

April 13, 1874.

Coal has a steady trade, and prices are unchanged. We quote:

	Bush.	Tons.
Youghiogheny, afloat	9 c.	$2 52
Ohio River	8 c.	2 24
Pittsburgh	11 c.	3 08
Anthracite	——	11 00
The following are retail prices delivered:		
Ohio River	12 c.	3 36
Kanawha	13 c.	3 64
Kanawha Cannel	24 c.	6 72
Pittsburgh	12 c.	3 36
Youghiogheny	14 c.	3 92

Cleveland, O.

Youghiogheny, f. o. b., per ton	$4 75	Hocking Valley	3 75
Briar Hill	4 00	Morris	3 60
Massilion	3 75	Cleveland Lump	3 00
Massilion nut	3 50	Silver Creek	4 60
Chippewa	3 75	Anthracite, prepared	10 00
		Anthracite, lump	11 00

Denver, Col.

RETAIL PRICES.

Canon	$6 50	Boulder Valley	$4 75
Marshall	5 50	Eulner	5 50
Murphy	5 50	Black Diamond	5 50
Baker	5 00		

Detroit, Mich.

April 13, 1874.

Trade continues fair at steady figures, We quote:

Lehigh Lump, per ton	$11 00	Brookfield	8 50
Lehigh nut	10 00	Chippewa	8 00
Scranton, various sizes	9 50	Massilon	8 00
Blossburg	9 00	Straitsville	5 50
Willow Bank	8 00	Nut	4 75
Briar Hill	8 50		

Indianapolis, Ind.

Per 2000 lb. WHOLESALE.		Per 2000 lb. WHOLESALE.	
Brazil Block	$3 00	Steam Nut	2 60
Highland	3 70	Hocking Valley	3 00
" steam	3 40	Gas Coke per bush	12 c.
Brazil nut	2 00	Pittsburgh	4 40
Slack	1 60	Sand Creek	5 00
Virginia Cannel	9 00	Anthracite	12 00
Indiana Cannel	7 20		

Louisville, Ky.

	Bush.	Tons.
Pittsburgh, afloat	10 c.	$2 80
" retail	14 c.	3 92
Kentucky	11@13 c.	3 08@3 64
Indiana and Peacock Pomroy	13 c.	3 64@....
Anthracite, per ton, from yard		10 00@10 50
" afloat		9 00@ ....

New Orleans, La.

April 11, 1874.

Reported by P. and R. DEVERGES, Wholesale and Retail Dealers in Pittsburgh, Anthracite and Cannel coal.

The supply is greater for this season of the year than it has been for a great number of years. The demand is moderate just now; all the large consumers have taken advantage of the unusually low price which coal has reached to lay in their stock, and planters are deterred from buying on account of the threatening stage of the Mississippi River.

Pittsburgh coal, retail, per bbl		75c.
" wholesale, per bbl		38@40c.
" per hhd		$7 00
" to steamboats, per box		50c.
" to manufacturers, per bbl.		60@65c.
Anthracite, retail, per ton		$12 50
" wholesale, per ton		$8 50@ 9 00
Spadra (Arkansas) coal, retail, per bbl		75c.

Omaha, Neb.

Blossburg(blacksmith)	$18 00	Wyoming	14 00
Anthracite	20 00	Missouri	8 00
Iowa	9 00		

Philadelphia, Pa.

ANTHRACITE.

Broken, in the yard	$5 50
Egg and Stove	5 75
Chestnut	4 75

BITUMINOUS.

Pennsylvania and Westmoreland Gas	6 25
Broad Top, f. o. b., Port Richmond	4 60@4 85
Red Bank Cannel	8 50
Clearfield Coal, f. o. b. at Greenwich, according to drawbacks	4 60@4 85

75c. per ton additional for delivery.

Clearfield and Broad Top coals are about $6 per ton at South Amboy, f. o. b.

RETAIL.

ANTHRACITE.

P. & R. C. and I. Co., per ton of 2,240 lbs.

	In Yard.	Delivered.
Broken	$5 50	$6 25
Egg and Stove	5 75	6 50@7 50
Chesnut	4 75	5 50@6 50

Other dealers generally ask a little more than the P. R. C. & I. Co., having special brands that are prepared in a superior manner.

BITUMINOUS.

Per ton of 2,240 lb.

$6@6 25 in yard; $6 75@7 00 delivered.

Pittsburgh, Pa.

April 14, 1874.

A rise in the river has let out a small run of coal for lower markets. Beyond this there is nothing new in either the Coal or coke trade at this point, prices remaining unchanged.

The following are the prices on cars here:

Youghiogheny	coal	per ton	2 25
"	coke	"	2 75
Connellsville	coal	"	2 25
"	coke	"	3 25
Anthracite all sizes		"	7 00
Castle Shannon coal on platform per bushel			7½c.

San Francisco, Cal.

From the *Commercial Herald*, April 2.

Anthracite, including Lehigh, is very scarce and high. The recent imports of Australian were placed, before arrival, upon private terms. We learn of a contract purchase of 10,000 tons Australian, to arrive, at $9.87½; also a cargo of Androssen from yard at $11, four months' credit. We quote:

Wholesale, ex ship, in gold, per ton.

West Hartley	$13 00	Bellingham Bay	8 50
Wallsend	12 00	Mt. Diablo, coarse	8 50
Australian	10 50@11 00	" fine	6 25
Coos Bay	10 00	Anthracite	20 00
Nanaimo	11 50	Cumberland	18 00@20 00

St. Louis, Mo.

April 11, 1874.

Delivered in St. Louis 4 cents per bushel extra.

Delivered to railroads and mills by car ferry 2c. per bushel extra.

	Per bushel.	Per ton.
Illinois coal, retail at East St. Louis	9½ c.	$2 66
" " manufacturers	8½ c.	2 38
" " delivered	12@12½ c.	3 40

Coal Freights from the Anthracite Mines to the Principal Markets.

Schuylkill Coals, per ton of 2240 lb.	From Pine Grove.	From Tamaqua.	From Port Carbon.	From Mount Carbon.	From Schuylkill Haven.	From Port Clinton.
To *Belmont & W. Manayunk, via P. & R. R. R.	$2 12	$2 07	$2 00	$1 99	$1 92	$
* Port Richmond, "for shipment," " "	2 12	2 07	2 00	1 99	1 92	—
* Philadelphia and "retail yards," " "	2 22	2 17	2 10	2 09	2 02	—
† Philadelphia, including the charge for the use of cars, barges, and for toll, via Schuylkill Canal	—	—	—	—	1 75	1 64
* Swede Furnace, " " "	1 88	1 83	1 76	1 75	1 68	—
* Aramingo, " " "	1 62	1 57	1 50	1 49	1 42	—
* Port Clinton, " " "	91	86	79	78	71	—
* Allentown, via East Pennsylvania Branch	1 57	1 52	1 45	1 44	1 37	—
* Col'bia, Lanc'r, & points on Lan. Brch., via R. & C. R. R.	1 77	1 72	1 65	1 64	1 57	—
* Heidelberg, via Lebanon Valley Branch	1 54	1 49	1 42	1 41	1 34	—
* Robesonia, via L. and T. Branch	1 35	1 49	1 42	1 41	1 34	—
* Lebanon " "	96	1 55	1 48	1 47	1 40	—
* Harrisburg and Paxton, via L. and T. Branch	1 38	1 72	1 65	1 64	1 57	—
* Dauphin, via Schuylkill and Susquehanna Branch	70	—	1 40	1 39	1 32	—
* Harrisburg, " " "	85	—	1 50	1 49	1 42	—
* Jonestown, via Lebanon and Tremont Branch	90		1 80	1 79	1 72	—
* Lebanon, " "	96		2 01	2 00	1 93	—
† Reading, including charges for the use of cars, barges, and for toll, via Schuylkill Canal	—	—	—	—	95	84
† Bridsburg, add $10 per boat, via Schuylkill Canal	—	—	—	—	65	60
† Trenton, N. J., " "	—	—	—	—	1 00	95
† New York, " "	—	—	—	—	1 62	1 57
† Wilmington. Del., " "	—	—	—	—	85	80
† Bridgeton, N. J., " "	—	—	—	—	1 60	1 55

* These tolls do not include wharfage or shipping expenses at tide ports.

† Ten per cent. is deducted from these rates for lump, steamboat and broken coal.

Lehigh and Wyoming Coals. per ton of 2240 lb.	From Penn Haven.	From Mauch Chunk.	From Hazleton ‡‡	From Upper Lehigh.	From Ashley and Sugar Notch.	Lackawanna Junction.
To ‡ Newark, N. J. via Central Railroad of N. J.	2 45	2 31	2 86	—	—	—
‡ Mauch Chunk, Pa. " " "	14	—	56	59	89	—
‡ Phillipsburg, N. J.	93	79	1 34	2 34	2 64	—
‡ Elizabethport, Port Johnston, Hoboken and South Amboy, N. J., shipping and wharfage 35c. additional	2 09	1 95	2 49	3 34	3 64	—
High Bridge, N. J.	2 40	2 20	2 82	2 79	3 09	—
Somerville and Raritan, N. J.	2 80	2 60	3 22	3 19	3 49	—
Elizabeth, Cranford, Westfield and Elizabethport, for consumption	2 95	2 75	3 37	3 34	3 64	—
¶ Jersey City, N. J., and New York, via Morris Canal	2 85	2 35	3 17	3 24	3 54	—
Andover, via Del., Lack., and Western R. R.	3 30	—	3 72	4 29	—	—
Port Oram, Dover and Boonton	2 75	2 55	3 17	4 74	—	—
§ Trenton, Somerset Junction & Greensburg, via P. R. R., Belvidere division	2 65	1 97	3 07	3 64	—	—
Trenton, for shipment, including shipping and wharfage	2 13	1 99				
Owego, N. Y.	3 06	2 92	—	—	—	2 18
Groton	4 10	3 96	—	—	—	3 22
Auburn	3 34	3 20	—	—	—	2 46
Waverly	2 98	2 84	—	—	—	2 10
Athens	2 94	2 80	—	—	—	2 06

‡‡ Rates on line coal from Hazleton are 9c. per ton above these figures.

‡ The cost of unloading is to be added to these rates. No charge less than 40c. per ton will be made for any distance. Tolls from Mauch Chunk to Phillipsburg for way points will be $1 15 per ton.

§ Twenty cents per ton less when five cars at a time to one party. Provided that where the reduction makes the rate $1 a ton, or less, the rate will be $1.

¶ 20 cents per ton additional for transferring coal from boat to boat, and 30 cents per ton for reshipment of same from wharves.

Big Muddy	14 c.		3 92
Trenton	12 c.		3 36
O'Fallon	9½ c.		2 52
Anthracite, delivered in St. Louis			$13 50
Missouri cannel, " "			6 50
Indiana cannel			7 00

Toledo, Ohio.

Scranton, all sizes	$9 00	Briar Hill	6 00
Lehigh Lump	11 00	Bituminous	4 50@6 50
Blossburg	8 50@ 9 00		

Halifax, N. S.

Prices in gold, per ton of 2240 lbs.

Sydney Coal	$8 00	Little Glace Bay	7 75
Victoria		Albion (at Cunard wharf)	7 50
Gowrie	7 75		

Toronto, Ont.

Prices in gold, per ton of 2000 lbs.

Scranton, all sizes	$7 50	Bituminous	7 50
Lehigh prepared	8 50	Blossburg	7 00
" Lump	9 00		

Montreal, Queb.

Prices in gold, per ton of 2000 lb., ex yard.

Scotch Steam	$8 00@ 8 50	Lump Lehigh	9 00@— —
Lower Port	7 50@ 8 00	Grate	10 00@— —
Newcastle Grate	11 00@12 00	Egg, Amer. Ant	9 50@10 00
Welsh Anthracite	9 00@10 00	Stove, "	10 00@10 50
English Coke	—@—	Chestnut "	10 00@10 50

Provincial Coals.

PRICES IN GOLD F.O.B. AT THE SHIPPING PORTS OF THE MINES.

	Coarse.	Slack.		Coarse.	Slack.
Block House	$2 25	$1 25	Sydney (old)	3 25	....
Gowris	2 00	1 50	Lingan	2 30	....
Pictou	3 25	....	Caledonia	2 25	....
			Glace Bay	2 25	....

Freights from Cape Breton to New York are $3 25.

TOWING

FROM NEW YORK TO POINTS ON THE HUDSON RIVER.

	per ton.		per ton.
Manhattanville	8 c.	Haverstraw	17 c.
Spuyten Duyvel	9 "	Verplanck's Point	17 "
Yonkers	10 "	Peekskill & Newburg	18 "
Hastings	11 "	West Point & Cold Sp'g	20 "
Piermont & Dobbs Ferry	13 "	Poughkeepsie	22 "
Nyack & Tarrytown	15 "	Rondout	23 "
Sing Sing	16 "	Hudson	25 "
Croton Landing	17 "		

Boats of 100 tons and under—per boat.

Manhattanville	$11 00	Spuyten Duyvel	$13 00
Yonkers	15 00	Tarrytown	18 00
Sing Sing	20 00	Peekskill	20 00
Newburgh	25 00	Poughkeepsie	30 00

ON LONG ISLAND SOUND.

	per ton.		per boat.
Norwalk & Bridgeport	33⅓ c.	Port Morris	$20 00
New Haven	33⅓ "	West Farms, mouth of Creek	25 00
Derby ($50 per b't extra)	33⅓ "	West Farms	35 00
Southport & Westport	40 "	West Chester	30 00
Milford	40 "	College Point	25 00
Branford	45 "	Flushing & White Stone	30 00
New London	60 "	East Chester Town Dock	60 00
Middletown	65 "	New Rochelle & Glen Cove	50 00
Norwich	68 "	Mamaroneck & Port Chester	70 00
Hartford & Stonington	75 "	Greenwich, Stamford & Darien	75 00
Mystic	75 "		
	per boat		
Harlem	$18 00		
Mott Haven	18 00		

Harbor Towing.

From Hoboken to

	Loaded.	Light.
53d st., towing limits	$6 00	$5 00—$11 00
Gowanus	8 00	6 00— 14 00
Newtown Creek	10 00	9 00— 19 00
Port Johnston	9 00	9 00— 16 00
130th street, North River	....	....— 18 00
From East River to Weehawken and return to East River	9 00	7 00— 16 00

To 61st st., $12 extra; to 79th st., $14 extra; to 93th st., $16 extra.

Lehigh and Delaware Division Canals.

MAUCH CHUNK, PA., March 25, 1874.

Until further notice the following rates of toll, via the above canals will be adopted.

From Mauch Chunk to Easton per ton of 2240 lb..... 46c.
" " " " Bristol or New Hope..... 70c.
Towing from Bristol to Philadelphia..... 7c.
On local shipments the toll sheets of 1873 will remain in force.

Erie and Champlain Canals.

The following rates represent the figures at which orders are taken for shipments upon the opening of the above canals, which will probably be within two weeks.

NEW YORK AND SHIPPING POINTS IN THE VICINITY TO

* Buffalo and Lockport	$1 85	* Utica, N. Y	1 25
* Rochester	1 75	* Syracuse, N. Y	1 35
* Burlington, Vt	1 75	*Oswego, N. Y	1 70
Albany	85	Troy	90

* Alongside.

*Montreal, Canada, gold.	$2 75	Ottawa, Canada	3 25
St. Johns, N. B.	2 50	Quebec	3 25

* Harbor towing extra

Freights.

PORTS.	From Georgetown.	From Baltimore.	From Port Richmond, Philadelphia.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Albany	....	2 35	....	....
Amesbury, Mass	....	....	....	....
Bangor, Me	....	3 00	2 50	....
Bath, Me	....	2 75	....	....
Baltimore	....	1 00	....	....
Boston, Mass	2 70	2 60	2 25	1 75
Bridgeport, Ct	2 15	2 00	1 50	85
Bristol, Ct	....	....	1 90	1 20
Derby	....	....	1 50	1 15
Dighton	2 45	....	....	....
East Cambridge	....	....	....	††1 75
Fall River	2 15	2 10	1 90	1 20
Hackensack	....	....	....	....
Hartford	2 50	2 75	....	1 40
Hoboken	1 75	....	95	40
Hudson	2 25	2 30	....	....
Jersey City	1 75	....	95	40
Middletown	....	....	....	1 25
Mystic	....	....	....	1 15
Newark	2 20	2 00	....	....
New Bedford	....	2 20	1 75	1 25
Newburyport	....	2 75	2 50	1 90
New Haven	2 10	2 10	1 50	85
New London	....	2 10	1 65	1 10
Newport	....	....	1 75	1 20
New York	1 90	1 75	¶ 95	§ 40
Norfolk	90	90	....	....
Norwalk	...	2 20	1 50	85
Norwich	....	2 20	1 50	1 15
Pawtucket	....	....	1 90	‡‡1 30
Philadelphia	1 25	1 15	....	....
Portland	2 70	2 60	3 00	1 50
Portsmouth, N. H	2 75	2 75	2 60	1 75
Providence	2 10	2 10	1 75	1 20
Richmond, Va	1 20	....	....	....
Rockport	....	....	2 70	....
Saco	....	...	3 00	....
Sag Harbor	....	1 25	....	1 10
Salem	2 70	2 60	2 50	1 75
Stamford	....	....	1 50	85
Stonington	....	....	1 75	....
Taunton	....	....	....	....
Troy	....	2 40	....	....
Warren	....	....	....	1 20
Washington	....	....	....	....
Wareham	2 65	2 50	....	....

Rates from Rondout to New York 15c. above Weehawken. They are 5c. less from Newburgh going south, and 5c. above Newburgh rates going north.

§ Under 150 tons, 50c. per ton.

¶ This is the rate alongside. Delivery on wharf costs from 16c. to 18c. additional.

†† Towing extra.

‡‡ 3c. per ton per bridge extra.

Freight on Pittston Coal—From Newburgh.

By boats of the Pennsylvania Coal Co., per ton of 2240 lbs.	
To Troy, Albany and Stuyvesant	60 c.
" Nyack and Hudson and Boston R.R. dock, Hudson, discharged to cars	50 c.
" Hudson, except as above, Rondout and Poughkeepsie	35 c.
" Catskill, at mouth of creek, Sing Sing, Tarrytown, Piermont, and Yonkers	55 c.
" Fishkill Landing and West Point	25 c.
" Peekskill, Haverstraw, Saugerties, and Barrytown	45 c.
" New York	65 c.

MISCELLANEOUS FREIGHTS.

Gas Coals.

From Fairmont and Clarksburg, via B. and O. R. R., to Baltimore, including loading	$5 20
From Coalburg and Paint Creek to Richmond, via C. and O. R. R., per ton, including loading	3 75
From Richmond to New York	2

Delaware and Raritan Canal.

TOLLS AND TOWING.

Per ton of 2240 lb.

From New Brunswick to	cents.	From New Brunswick to	cents.
South Amboy, towing only	10	Newark, towing only	20
Rahway, " "	13	Hudson City, "	25
Elizabethport, " "	15	New York, below 53d st.	20

Canal tolls on anthracite from New Brunswick is 25 cents extra.

Canal tolls on bituminous from New Brunswick is 37 cents extra.

Towing from Port Richmond, 7 cents additional.

Fairmount to New York, including tolls	57 cents.
Greenwich " " "	64½ "
Trenton " " "	35 "
Port Richmond " anthracite, "	52 "

Tolls on bituminous, loaded at Port Richmond and Greenwich, is 12½ cents per ton extra; other bituminous and semi-bituminous, 25 cents extra.

IRON MARKET REVIEW.

Import Duties.

The following are the duties in Gold on Iron:

Flat iron, not less than 1, nor more than 6 inches wide, nor less than ⅜, nor more than 2 inches thick. *Round Iron*, not less than ¾, ner more than 2 inches in diameter, and *Square Iron*, not less than ½, nor more than 2 inches square ₱ lb. 9-10 of 1c. *Flat Round or Square Iron*, of larger or smaller sizes than the above mentioned, per lb. 1 35-100c

Provided, that all iron in slabs, blooms, loops, or other forms, less finished than bars, and more advanced than pig iron, except castings, shall pay the same as iron does.

Provided, that none of the above iron shall pay less than 31½ per cent.

Railroad Iron	63c. per 100 lb.
Boiler plates, or other plate iron not less than 3-16 of an inch thick, per lb	1 35-100 c.
Scrap castings per ton	$5 40
" wrought " "	7 00
Pig Iron per ton	6 00

Iron ore 10 per cent. *ad valorem.*

New York.

April 17, 1874.

The iron trade in this city is exceedingly dull in all its branches. In fact, the past week, it has been more quiet than for many weeks back. Prices are, if anything, not so firm and our quotations can only be called nominal, as there have been no important transactions upon which to base them, and there is nothing what figures a cash offer for a round lot would bring out. Our reports from other markets generally show an increase in transactions, but a weakness in prices. The currency bill has passed the house, and now awaits the signature of the President. In all probability the President will sign the bill, which will remove one cause of the unsettled market; but it remains to be seen if even this will give much life to the iron

business. The railroads have been our great consumers of iron, and until there is more confidence placed in them as investments we cannot look for much improvement in this branch of business. It is felt that no marked improvement will be noticed before July, and some even think as late as September or October. This feeling we find quite prevalent among the larger firms. In the building trade of this city there is hardly anything being done ; the masters refusing to take contracts until ten hours becomes a day's work, and the men being unwilling to work more than eight. This question will undoubtedly create some trouble, and very much reduce the consumption of pig iron by our local foundries which are only working about half time now. The majority of the furnaces in Pennsylvania are out of blast, and in a month's time a portion of those now running will be blowing out unless business should take an unexpected start. Some of the rolling mills claim to have an abundance of orders, but we learn of one—supposed to have the most work—being very anxious to secure orders from this market. That the country is at the present moment in need of a large quantity of iron is quite certain, and orders for new rails, proposed buildings, etc., etc., are withheld for the present apparently awaiting something to turn up. When confidence is once more re-established, and business makes a decided start, we can calculate upon its moving rather lively. It is anticipated that there will be some good rail orders in the market soon. President Watson having been successful in disposing of a portion of the Erie Railroad loan, it is supposed he will be in the market in less than a month.

American Pig. There is a weakness in prices, and the demand is hardly worthy of mention. A few of the best brands of No. 1 are being held at $35, but a cash offer upon other brands would shade that price considerably. We learn of the sale of 200 tons gray forge upon private terms. Our Philadelphia correspondents report sales of about 8,000 tons mixed brands. We quote :

No 1, Foundry Anthracite	$34 00@35 00
No. 2, " "	31 00@33 00
Grey Forge	27 00@30 00
White and Mottled	22 00@26 00
Salisbury Charcoal Carwheel	62 00 ....

Scotch Pig. As there is no demand for pig iron, Scotch has shared the same fate with American. The sales for consumption have been in lots from 5 to 50 tons, and in the aggregate may have reached 300 tons. About 500 tons of Coltness are said to have changed hands on speculative account. Prices here remain the same, but the lack of demand rather has a tendency to weaken them. The latest cable advices inform us that prices on the other side have advanced 1s., which was likely caused by the continued strike. Our mail advices to the 31st. ult. show that the masters are likely to come off victorious, in which case we can look for Scotch pig at a still lower figure. We quote :—Eglinton, $36@$37 ; Glengarnock, $37@$38, and Coltness, $39@$40.

Iron Rails.—The transactions have been very light. We note the sale of 100 tons English at $42 gold, in bond ; 100 tons of American, terms not given, and 60 tons of English at $55, gold. We quote English at $55@$56, gold, and American at $58@60, currency, at the works.

Bessemer Steel Rails.—There have been no important transactions. We learn of the sale of 500 tons to be delivered in Providence, on private terms, and another sale of 600 tons, particulars and terms private. We quote English at $92@$95, gold, and American at $98@$100 currency.

Old Rails.—We learn of no transactions in this market. T rails can be purchased at $38a$39 prompt cash. Our Philadelphia correspondents inform us that old rails have been offered to parties in that city at the latter figure, f. o. b. here.

Scrap Iron.—We learn of sales of 60 tons wrought on private terms, and quote at $40a$42. We do not learn of any transactions in cast, which is quoted at $28a$32.

Scotland.

Mail advices, just received, inform us that there are only 32 furnaces in blast. The demand is very light, and the makers are likely to keep their furnaces damped down until some improvement is noticed, regardless of the action of the miners The latest quotations in the Glasgow warrant market were: sellers, $79s., and buyers, 78s. 9d. The dispute with the miners appears further from a settlement than at any time heretofore. Messrs. Watson, Campbell & Co. can pay only 38 6d. on the pound. Their liabilities are about £275,000 greater than their assets.

Baltimore,

April 14, 1874.

The market for pig iron is very dull, and we have no sales reported. We quote: Scotch, $40 per ton, from yard; American anthracite No. 1, $33; No. 2, $31; and No. 3, $29.

Boston.

April 14, 1874.

There is only a limited demand for refined bar iron, and quotations are nominal. Pig iron is quiet and unchanged. We quote : yard lots of American No 1 at $39@$41, and No. 2, at $36@$38 ; Eglinton, $44 ; Coltness, $48, and Charcoal at $50@$60.

Chicago,

April 13, 1874.

The market remains in the same state as at the date of our last, with no change in prices. We quote :

No. 1 Summerlee	$51 00@ ....
No. 1 Coltness	52 00@ ....
No. 1 Glengarnock	50 00@ ....
No. 1 Eglinton	48 00@ ....
No, 1 Lake Superior	45 00@ ....
No. 2 Lake Superior	43 00@ ....
No. 2 Tuscarawas	48 00@ ....
No. 1 Missouri	45 00@ ....
No. 2 Missouri	43 00@ ....
Union "A" 1 (Anthracite)	44 00@ ....
Union "B" 1 (Anthracite)	42 00@ ....

Cincinnati.

April 14, 1874.

Reported by TRABER and AUBERY, commission merchants for the sale of pig iron, blooms, ore, etc.

There has been a little more animation in our market for pig iron during the past week, and some lots of No. 2 Foundry and Mill iron have found purchasers, but prices remain essentially unchanged. We quote:

CHARCOAL.		
Hanging Rock, No. 1, Foundry	$38 00@39 00	—4 mos
" No. 2, "	36 00@37 00	—4 mos
" Mill	32 00@33 00	—4 mos
Tennessee No 1, Foundry	36 00@37 00	—4 mos
Tennessee. No. 2 "	34 00@35 00	—4 mos
" Mill	32 00@	—4 mos
Missouri, No. 1, Foundry	.... @	—4 mos
STONE COAL.		
Ohio No. 1, Foundry	36 00@37 00	—4 mos
" No. 2, "	33 00@34 00	—4 mos
Ohio Mill	30 00@31 00	—4 mos
Missouri, No. 1, Foundry	36 00@37 00	—4 mos
" No. 2, "	33 00@34 00	—4 mos
" Mill	30 00@31 00	—4 mos
CAR-WHEEL.		
Hanging Rock, C. B.	58 00@60 00	—4 mos
Tennessee "	55 00@57 00	—4 mos
Missouri "	55 00@58 00	—4 mos
Alabama "	55 00@57 00	—4 mos
BLOOMS.		
Charcoal	85 00@100 00	—cash
SCRAP IRON.		
Cast	1 00@ 1 25	—cash
Wrought	1 40@ 1 75	—cash
RAILS.		
Ordinary Sections	63@ 65	—cash

Cleveland

April 14, 1874.

C. E. BINGHAM & Co., dealers in pig iron and iron ores, report the market as follows :

There has been some decline in pig iron since our last quotations ; but the demand is increasing, and prices appear to have reached bottom. Various brands are now held firmly at following quotations :

No. 1, Anthracite Foundry	$33 50@34 50—4 mos
No. 2, " "	31 50@32 50—4 mos
No. 1, Bituminous "	34 00@35 00—4 mos
No. 2, " "	32 00@33 50—4 mos
No. 1, Grey Forge Bituminous	29 00@30 00—4 mos
No, 2, Close Grey	28 00@29 00—4 mos
No. 1, Massilon Black Band	36 50@37 00—4 mos
No. B-1 " "	34 50@36 00 —4 mos
No. 2 " "	33 50@34 50—4 mos
No. 1, Lake Superior Charcoal	41 00@42 50—4 mos
No. 2, " "	39 00@41 00—4 mos
No. 3, " "	44 00@46 00—4 mos
Nos. 4, 5, 6, " "	47 00@52 00—4 mos
American Scotch	34 00@35 00—4 mos

Detroit.

April 13, 1874.

Scotch pig, net	$46 00@ ....
Lake Superior pig, No. 1	44 00@ ....
" " No. 2	42 00@ ....

Louisville.

April 14, 1874.

GEORGE H. HULL reports the market as follows:

The market is quiet but steady. There is no immediate prospect of the mills resuming work, and forge irons are not salable at quotations.

Foundry and car wheel irons are in moderate request to supply immediate wants.

The usual time, 4 mos, is allowed on the quotations below:

HOT BLAST—CHARCOAL.	
No. 1 foundry, from Hanging Rock ores	$38 00@40 00
No. 2 " " "	34 00@36 00
No. 1, forge, " "	31 00@32 00
No. 1, foundry, " Tennessee "	35 00@40 00
No. 2 " " "	33 00@35 00
No. 1, forge, " "	30 00@31 00
No. 1, foundry, " Alabama "	35 00@38 00
No. 1, " " Iron Mountain "	41 00@42 00
HOT BLAST—STONECOAL.	
No. 1, foundry, from Missouri ores	34 00@36 00
No. 2, " " "	32 00@33 00
No. 1, forge " "	30 00@31 00
COLD BLAST—CHARCOAL.	
Car Wheel from Hanging Rock ores	60 00@63 00
" " Tennessee "	53 00@55 00
" " Alabama "	55 00@57 00
" " Georgia "	55 00@57 00
" " Missouri "	53 00@57 00
" " Kentucky "	55 00@57 00

Philadelphia.

April 16, 1874.

The condition of the iron market is by no means encouraging to dealers. Prices, already low, are tending downwards, and though a larger number of sales have been effected during the week than for some time previously, they are not considered by the dealers as indicating any general revival of business. There is every prospect of a very dull market for some months yet, whatever may be the action of the President on the currency bill although this question has certainly tended to retard the revival of business so long desired and expected in the iron trade. It is expected that towards the close of the summer, the demand for iron will greatly increase, though even then it can scarcely be that prices will rule much, if anything, above our present quotations; in fact, it is becoming very apparent that the cost of manufacturing iron must be reduced, so as to extend its use and to enable us to compete successfully with foreign, English and Belgium irons, which have already fallen off greatly and are still falling in price.

It is true, the high prices abroad made consumers familiar with our American irons, who had not used them before, and it is thought its superior quality will now hold the market, though the price should favor foreign brands to a material degree.

As the ENGINEERING AND MINING JOURNAL has on many occasions remarked, our iron market must prepare to export iron, if they desire to make the business remunerative; for the capacity of our works is now, at least, equal to the home demand, and a portion of our market will always be supplied by imported irons.

The new iron fields of Virginia, Tennessee, Georgia, and Alabama, should look ahead for a market for a portion of their charcoal irons ; at present they are bringing very low prices here, and are not easily sold at any price, being but little known in this market. We quote sales of 2,000 tons of Schuylkill Company gray forge (No. 2x) at $28.00 delivered at a point to which freights were a little less than to Philadelphia—terms, cash, thirty days. 800 tons of Schuylkill Company's forge from Cornwall ores, $27.50. 700 tons gray forge, delivered in Philadelphia, $26.50. About 6,000 tons of Schuylkill irons in lots of from 500 to 2 000 tons, grey forge and No. 2, at $28.00 and $30. A lot of cinder pig, grey forge, brought $25 cash. No. 1 Schuylkill iron has been offered here at $32, though quoted at $34.

Cold blast charcoal (Baltimore brand) can be bought at $40 00@42 50 f. o. b. at Cedar Point, and car wheel charcoal pig, from Lake Superior ores, can be purchased delivered here at $42 50@$43 00, and some purchases have been made by one of the principal consumers at figures stated to be even below these. The fact is, that cash purchasers can go into the market and buy at almost any price from some of our dealers, though others hold their prices pretty near quotations, which are as follows : Lehigh No. 1, $33@$34; No. 2, $31@$32 ; Gray Forge, $30; and White and Mottled $26. Schuylkill irons of the best brands are held near these figures, but in general we quote: No. 1, $30 cash, 30 days; No. 2, $28 ; Gray Forge, $25a $26, and White and Mottled, $23.

Rails.—We note the sales of 700 tons 30 lb., Pennsylvania Mills, to the Peach Bottom Railroad at $60 per ton, cash; 1,000 tons 56 lb. to the Bercks County R. R. $60, at the mill; 350 tons of street rails (43 to 53 lb.) at $67@$68, delivered in Philadelphia, and about 150 tons ditto in small lots at $67, cash, 30 days. There was a small sale of steel street rails reported, but prices not made public. We quote iron rails, ordinary sections, at $61.

Old Rails.—We report the sale of 100 tons at $41 50 and about 240 tons at $40 50 at Baltimore. Some old rails have been offered f. o. b. in New York at $39 00, cash.

Local hematite iron ores are quoted at $3 00a$3 50 at the works.

The Marion Furnace at Conshohocken and a furnace at Reading have blown in during the week.

Pittsburgh.

April 14, 1874.

Reported by A. H. CHILDS, commission merchant for the sale of pig iron, blooms, ore, &c.:

Grey forge pig iron continues to sell freely in this market at from $27.50 to $28.50 4 mos, according to quality. Some holders are refusing to sell at these prices, being confident of an early advance, but so far enough has been offered for sale to meet the wants of buyers. Consequently, while the market is very firm at above quotations, no advance in price has yet been established.

The demand for Foundry iron is dull, and prices somewhat weaker. No. 1 Foundry selling in a small way at $31.00 to $32.00, 4 mos. and No. 2 at $29.00@30.00. We quote:

No. 1 Foundry, anthracite or bituminous	$32 00@34 00—4 mos
No. 2, " " "	30 00@31 00—4 mos
No. 1, Grey Forge, "	27 50@29 00—4 mos
No. 2, " " "	27 00@ ....
White and mottled "	26 00@26 50—4 mos

The Pittsburgh *Commercial* reports the following sales for week ending April 3rd :

IRON MADE FROM LAKE SUPERIOR ORES, SMELTED BY BITUMINOUS COAL.	
1600 tons gray forge, red short	$28 50—4 mos
1000 tons " " " "	27 00—cash.
500 tons gray forge, neutral	28 50—4 mos
500 tons gray forge, red short	28 00—4 mos
300 tons white and mottled, red short	28 00—4 mos
200 tons white and mottled, red short	27 50—4 mos
200 tons gray forge, neutral	27 00—cash.
100 tons gray forge, red short	28 50—4 mos
100 tons gray forge, neutral	28 00—4 mos
50 tons white and mottled	26 50—4 mos
50 tons No. 1 foundry	35 00—4 mos
20 tons No. 1 foundry	30 00—4 mos
ANTHRACITE.	
40 tons No. 1 foundry	$32—4 mos.
20 tons white and mottled	27—4 mos.
100 tons mottled	27—5 mos.
COKE IRON.	
20 tons No. 1 foundry	$31—4 mos.
HANGING ROCK CHARCOAL.	
29 tons No. 2 foundry	$37—4 mos
25 tons No. 1 foundry	$41@$42—4 mos
20 tons cold blast	$62@$65—4 mos

San Francisco.

April 2nd, 1874.

The market for pig iron has been more or less depressed by a public offering of 300 tons, No. 1 Eglinton iron, landed ex Sarah Grice, from Liverpool. At auction, 50 tons Glengarnock were sold at $41, ninety days' credit. We have now to notice the sale of 150 tons Glengarnock, ex-Birkly, upon private terms. Scotch pig is nominally quoted at $42@$43.

St. Louis, Mo.

April 11, 1874.

There has been no change in this market since our last. We quote:

HOT BLAST STONE COAL PIG.

No. 1 foundry from Iron Mountain and Maramac ores,	$34@35
No. 2 foundry from Iron Mountain and Maramac ores,	32@33
No. 3 forge from Iron Mountain and Maramac ores,	29@31
No. 1 Massilon,	43@..
No. 1 Tennessee, cold short,	36@..
No. 1 Ohio, cold short,	40@..

HOT BLAST CHARCOAL PIG.

No. 1 foundry from Iron Mountain and Maramac ores,	36@43
No. 2 foundry from Iron Mountain and Maramac ores,	32@40
No. 1 foundry from Tennessee ores,	35@37
No. 1 forge from Tennessee ores,	31@33

COLD BLAST CHARCOAL PIG.

Hanging Rock car wheel,	60@64
Tennessee,	58@60

MISSOURI IRON ORES.

Iron Mountain Co.'s Quotations.

Iron Mountain, per ton	$8 00
Benton Creek, "	7 50
Surface ores, "	8 00
Red and brown hematites, per ton	5 00@6 50
Pilot Knob, per ton	5 50
Rails, 50 to 60 lb. inclusive	70 00

THE BRITISH IRON TRADE.

LONDON, March 28, 1874.

From nearly every district we learn that during the last week, there have been reductions in the prices of iron; although not sufficient to tempt buyers, who are firm in their belief that prices must soon be lower. This feeling, with Belgian competition, makes business very dull, and stocks are accumulating, and becoming very large. In many cases, on account of the large stocks being carried, and in anticipation of strikes, the furnaces are being damped down. Strikes are in existence, and will likely continue to occur; but it is only a matter of a very short time, before a reduction in wages will be accomplished. The masters hold an entirely different position at the present moment, to the one held by them during the two years just past. Then, the temptations to realize the large profits before them, were so great, that they acceded the demands of the workmen without a strong or united batile; now, it is necessary that a reduction of wages shall take place; and the masters had better close their works, than not secure it; hence, the probability of an united and determined action on their part.

The high prices, through which we have just passed, and the supposition that our accessible coal was not of sufficient quantity to supply the demand at reasonable prices, have stimulated the development of the coal and iron interests of our foreign customers to such an extent, that, with many of them, they are to-day, in part or entirely, independent of our products. The large fortunes made from coal and iron during the past two years have greatly stimulated developments in this country, and very much increased our capacity for producing; and now we are driven to some means to create a demand for our surplus. To do this, we have but one course open to us, to wit: to reduce the prices of labor, fuel and iron, to something near what they were in 1871, to economize wherever it is possible, and make ourselves what, we once were—the World's cheapest producers of coal and iron—and compete with our old customers at their very doors, as Belgium is now doing with us. With these facts before them, there is no other course for our producers of coal and iron to pursue, than to unite and stand firm until these results are accomplished, and the earlier they are accomplished, the better for both labor and capital, as every day of delay makes it more difficult to regain our lost ground. Without a reduction in wages and coal we cannot reduce the price of iron, without a reduction in the price of iron we cannot compete with Belgium, and without being able to compete with Belgium, we cannot look for a decrease of our stocks, or a marked improvement in business. There is no doubt that there are a great many orders awaiting lower prices, and an adjustment of the labor difficulties; none of which will be placed until these are settled, unless in cases of necessity.

The manufacture of Bessemer steel is not quite so brisk, and in blooms it is a little cheaper. Cast steel is selling at £2 per ton less than a month ago, and the demand is duller.

The state of affairs in Wales is rather discouraging. The iron business has dwindled almost to nothing, as buyers will not give out orders to any appreciable extent under the present unsettled state of things, and makers do not evince a desire to book contracts, because prices are totally unremunerating. The only thing keeping the iron masters in position is, that they nearly all have good coal properties and are supported by their coal trade. It is anticipated that at the quarterly meetings there will be a general decision in favor of a reduction in the prices of all commodities, with a proportionate drop in the rates of wages. The latter, it is feared, will make trouble some times, and we will undoubtedly bear of extensive strikes and lockouts; but, as in England, the makers have agreed that the time has arrived to lower quotations, and they will undoubtedly firmly insist upon a reduction of wages.

At Cleveland makers quote No. 3 pig iron at 70s.@75s., while merchants quote the same brand at 66s.@68s.; forge is in moderate request at 65s.; at Middlesborough-on-Tees some makers quote No. 3 at 72s. 6d.; merchants as low as 66s., and No. 4 has been sold as low as 60s.; at Darlington, merchants offer No. 3 at 65s.@55s., and No. 4 (forge) at 62s. 6d.; at Birmingham all mine hot-air pigs can be purchased at £7@£7 5s., and cinder pigs at £4@£4 2s. 6d.; at Barrow, No. 1 Bessemer pig £8; No. 2 ditto, £7 17s. 6d.; No. 3 ditto, £7 15s.; India charcoal pigs in London, £10@£12. Rails are quoted in the north of England at £9 10s for ordinary sections, and in Wales at £9 5s.

Scotland.—There has been no activity in the warrant market during the past week. Business opened on Friday at 84s. 6d.@86s. 9d., and closed on Wednesday at: buyers 82s., and sellers 82s. 3d., the market on Tuesday having been as low as 78s. 6d. The shipments of pig iron from Scotch ports for the week ending the 21st inst. were 6,816 tons, being 3,806 tons less than during the previous week, and a decrease of 5,223 tons on the corresponding week in 1873. The imports of Middlesburgh pig at Grangemouth for the week were 37,775 tons, being 2,315 tons more than during the previous week, and an increase of 2,785 tons on the corresponding week of last year. There is but very little business being done, and although most of the furnaces are damped down, or out of blast, yet stocks appear to continue to accumulate. Malleable iron makers are not more than keeping their works going. The quotations for makers' brands are so very wide, that we omit them this week.

The strikes have not the appearance of an immediate adjustment. Numerous propositions have been made by the masters to their workmen, but nothing has been agreed upon. Among others was a proposal by Mr. Ferrie, (of the Monkland Ironworks) to adopt a sliding scale to be fixed at the beginning of each month, and based upon the average price of pig iron for the month previous. He proposed that with pig iron at 50s. per ton, the colliers' wages should be 3s. 6d. per day, and for every advance of 5s. per ton in the price of pig iron, that the colliers should receive a corresponding increase of 6d. per day in their wages. To this they objected by stating that they thought 4s. a day should be their starting point. The miners have finally decided to submit to a reduction of 10 per cent and not an atom more. It appears that the strike is now a matter of how long the miners can resist the masters, upon but very small support from those who are at work; as it is thought the masters, who are operating their works, will not give temporary employment to those who only desire work for the purpose of continuing the general strike. Matters are much the same in Scotland as in England, and the makers will have to pursue the same course if they would find a market for their products.

METALS.

NEW YORK, April 17, 1874.

Gold Coin.—During the last week gold has ranged from 113¼ to 114⅜, and closed to-day at 113⅜.

Bullion.—Fine silver bar, 127@128 gold, per ounce; fine gold bar, par ($20 67 gold per ounce), to ½ per cent. premium.

Copper.—During the past week the sales amounted to about 100,000 lb. Lake on the spot; prices ranging from 24¾c. @25c. Parcels for future delivery from May to October are firmly held at 25c. Cable despatches show a firmer feeling in England. There are negotiations pending here for several million pounds, for immediate and future delivery.

Tin.—At last we note a reaction in the price of tin in the English market, which is having a corresponding effect upon this market. The transactions for the past week are hardly worthy of notice. The following are the present quotations: Straits, 24¼c.; Refined English, 23c.; and L. and F., 21c., all gold. Cable reports indicate that the strike in Wales will probably last not less than a month. The latest quotation from London for Common English, is £96, as compared with £90 a week ago.

Lead.—The market is very dull. During the last week about 400 tons domestic were sold at 6c. gold, and 100 tons ditto at 6⅛c.@6 1-5c. gold; while to-day the regular quotation is 6¼c. gold. We also learn of the sale of 50 tons Figueroa, at 6¼c. gold. Spanish is quoted at 6⅛@6⅜c., gold. The stock of lead here has not been so small for years; it is said to be not more than 2000 tons. There is no bullion coming in. Considerable Western is ready for shipment, and is being quoted at 6 6-100c. gold.

Spelter.—We note sales of 100 tons Missouri at 6 9 10c. currency, and 100 tons Silesian at 6½c., gold. We quote Silesian at 7c. gold, and domestic at 7¾c. currency. Stocks are light.

Zinc.—The market is dull. We quote, nominally: Silesian and Mosselman Sheet at 8¼@8½c., gold, and Western at 8¾c.

Antimony.—The market is firm but quiet at 12⅜c.@12¾c. gold.

Manganese.—There is a brisk demand for Manganese from steel-makers, linseed-oil-boilers, and glass-makers. Good qualities are worth 5c. per lb., and common psilomelane, 3½c.

Quicksilver.—The Quicksilver Mining Company's production for March, amounted to 750 flasks, which was an increase of 75 flasks over February. The production from January 1st to April 1st was 2100 flasks, being a decrease of 1332 flasks, as compared with the same time in 1873. The latest London quotation was £19 15s. per flask, (76½ lb.) The quotation at San Francisco is $1.25, and in this city, $1.33@$1.35 per lb. The demand is still greater than the supply.

San Francisco Stock Market.

BY TELEGRAPH.

NEW YORK, April 16, 1874.

The following from the San Francisco Stock Board is dated the 14th inst. Without exception the list has declined. Savage is the most notable feature in the report, being quoted at $60—a decline of $26 per share as compared with our last.

Savage	60	Imperial	6¾
Crown Point	83	Raymond & Ely	25¾
Yellow Jacket	80	Meadow Valley	11
Kentuck	20	Eureka V. G.....Bid.	9
Chollar Potosi	64	Ophir	—
Gould & Curry	24	Hale & Norcross	—
Belcher	77		

Boston Stock Market.

BOSTON, April 16, 1874.

The following exhibits the prices bid for copper stocks at the closing of the 1st Board. The sales occuring are as follows: 100 shares of Allouze, $8; 50 shares of National, $3.87½; 50 shares of Copper Falls, $23.00 and 100 shares of Rockland at $1.50.

Allouez	7¾	Pewabic	8
Calumet and Hecla Co..	135½	Phœnix	15
Copper Falls	22⅜	Quincy	36
Central	26	Ridge	6⅞
Franklin	3½	Rockland	1¼
Mesnard	1	St. Clair	2¼
National	3⅞	Star	1¾
Petherick	2½		

American Institute of Mining Engineers.

OFFICIAL BULLETIN.

Announcements to Members and Associates.

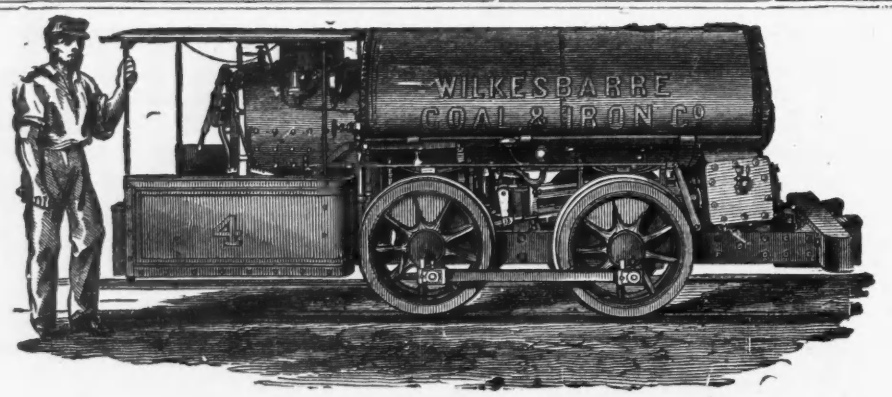
I. The ENGINEERING AND MINING JOURNAL, which is the Organ of the Institute, and contains its proceedings, transactions and notices of meetings, will be sent to each Member and Associate on the payment of his annual dues. Back numbers cannot, as a rule, be sent.

II. Dues (ten dollars per annum) are payable on election and at the annual (May) meeting. Members and associates elected at the February meeting pay ten dollars only to May of the following year. Remittances should be made, as far as possible, by P. O. Order, payable to the Secretary.

III. The Council earnestly requests members to forward to the Secretary, for preservation, copies of all printed mining and geological reports, particularly pamphlets, which may fall in their way. It is believed that by this means a large amount of valuable fugitive information concerning different regions and properties in this country, may be caught and preserved.

THOMAS M. DROWN, Secretary, 1123 Girard street, Philadelphia, Pa.

MISCELLANEOUS.



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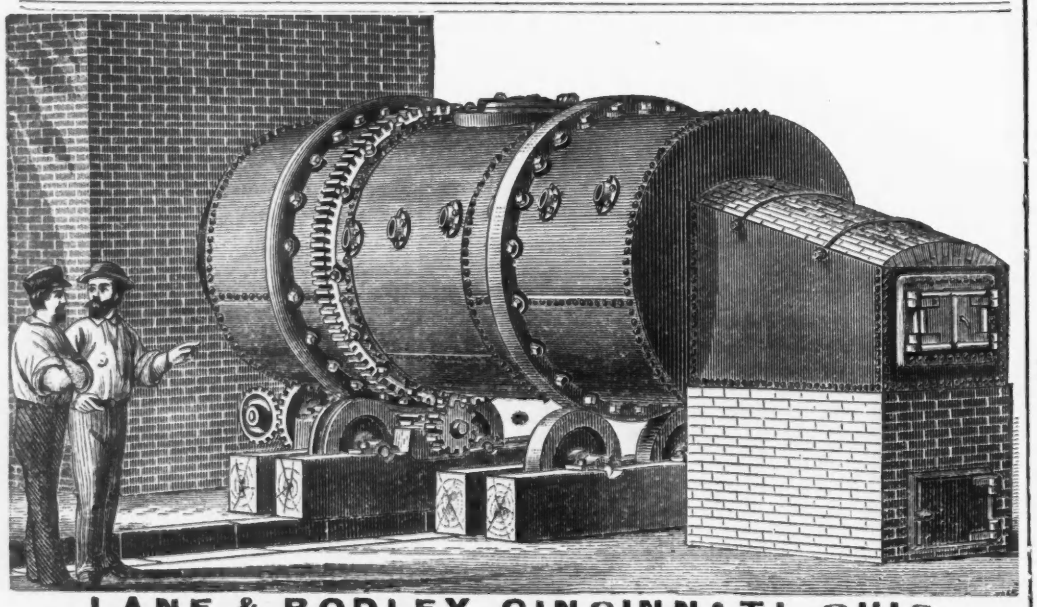

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