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The Belgian furnaces have not been able to keep up with the demand for pig iron, which has this year been unusually large. In spite of low prices the makers of finished iron and steel seem to be doing well; at least they are increasing their output much more rapidly than their German neighbors. For the 11 months up to November 30th Belgian imports of pig iron were 174,945 metric tons, an increase of 68,284 tons, or 63.8 per cent., over last year, and of 61,361 tons, or 53.8 per cent., over 1892. The greater part of the increase came from Germany, especially from Luxemburg, and the gains were partly due to the low prices of pig iron there. The Belgian producers suffer from the fall in prices, like every one else; but they make less complaint and seem to succeed in holding their trade better than any of their European competitors.

The German ironmakers have not found the treaty, which opened the Russian markets to them, as great a benefit as they expected. The pig iron production has increased, but complaints are made of the depressed state of the trade in finished iron and steel. Prices continue to fall, and many of the smaller works have been compelled to shut down. It is only the larger establishments, those that are able to work at low cost and to adopt the best and most economical methods, which have found themselves in a position to meet the market and continue running. The German manufacturers continue their efforts to build up export trade in the hope of improving matters, and they are meeting with some success, especially in eastern Europe, where German iron and steel are replacing British to an extent not at all relished by the English ironmasters.

The amended currency bill which will be reported to the House of Representatives after the holiday recess is substantially Secretary Carlisle's bill in a somewhat clearer and more coherent form, and with its adoption by the banks issuing notes made obligatory and not optional. It does not remedy the defects which we have already pointed out, and does not supply the omissions which we believe would be fatal to the success of the measure in operation.

We may repeat here that no currency bill can remedy the evils under which we are suffering unless it provides for the funding and retirement of so much of the Government demand notes of all kinds as is redundant or not needed in the business of the country, and this redemption should be gradual, so as not to disturb business. This is the essential point, which cannot be avoided or left untouched.

The new bill, like the original one, is further defective in that it does not provide for the direct redemption of bank notes in coin, at the option of the holder; it removes the obligation on the banks to maintain a reserve; and it also contains the requirement that banks issuing notes must deposit 30 per cent. of the amount of their circulation in "lawful money." This last provision alone would probably defeat the objects of the bill.

It is, therefore, as we have heretofore shown in considering the original bill, a measure which must inflate the currency, and thereby increase the evils which it is intended to mitigate. Its passage on this account is to be deprecated, unless it is accompanied by some provision of the kind indicated above, for withdrawing the government entirely and permanently from the business of a bank of issue.

The statistics collected by the railroad journals, though varying a little in detail, unite in putting the new railroads built in the United States in 1894 at about 1,950 miles. This compares with 2,650 miles last year; 4,200 in 1892; 4,300 in 1891; and 5,700 in 1890. The year has shown a smaller addition to our railroad mileage than any year since 1875, while the new road built was only 15 per cent. of the total for 1887, the year of greatest construction, when 13,000 miles were laid. The new lines were pretty well distributed, and were mainly short, since very few long roads or important lines were under construction. Curiously enough, the greatest mileage reported for any State or Territory was in Arizona, where 193 miles were built during the year, Illinois coming second with 147 miles. Montana added 101 miles to its railroad system, and Colorado 65 miles.

When we consider the decrease in new mileage of road, and remember also that there was a corresponding decrease in the building of additional tracks and sidings on existing roads; and also that most companies postponed as far as possible all renewals of their old rails, one reason for depression in the iron trade is recognized. The railroad consumption, while it is not proportionally as large a factor in the trade as it formerly was, is still great enough to make an important difference in the demand.

It must be remembered, however, that electric roads should be considered, and if they are taken into account the decrease in new mileage would be really less than it apparently is. The electric road is fast taking the place of short suburban lines and branches which were formerly built by the steam railroad companies. We have no figures for this class of construction, but its total amount must have been considerable during the year. For the future it promises to increase rapidly, and to call for a large amount of material.

THE BENEFICIARIES OF THE LAST NEW YORK MINING LAW.

In another column will be found the names of those who filed in the office of the New York Secretary of State, between February 21st and November 20th, 1894, notices of discovery under the mining law of the State. It will be seen that, apart from gold and silver, the principal metal claimed is platinum; and the most significant "discoveries" are those which were recorded in June and July, as having been made on or near the shores of Lake George, and as including platinum together with gold and silver.

In my paper, published in 1888, on the New York mining law as it existed at that time, I remarked that I had been consulted by a citizen of the State who had discovered on his own land what he believed to be a deposit of platinum, and wanted advice as to his legal position. It appeared that there was nothing in the law, as it then stood, to meet his case, since, although a platinum mine would clearly belong to the State, the Legislature has never made any provision for the recording and working of other State mines than those of gold and silver.

I have heard no more concerning that particular property; but the discovery of sperrylite, or arsenide of platinum, at and near Sudbury, Canada, where, I am told, some mining and shipping of that rare platinum ore have taken place, has led to various alleged discoveries of platinum in the Adirondack region; and one of these, situated on the eastern shore of Lake George, has blossomed out into a somewhat pretentious mining enterprise, with smelting works as well as a mine. In several instances within my knowledge reputable chemists and assayers have failed to discover traces of platinum in the "ore"; and it is not clear to me on what evidence the parties interested in this mine have expended their money thus far. But I have reason to believe that this scheme, whatever it may amount to, is connected with the passage by the Legislature of Chapter 745 of the laws of 1894. If I am correct in that belief, the law referred to was intended, in somebody's mind, to enable the platinum company to control private lands along Lake George; and it is currently reported in that region that, by some means or other, this company or syndicate has acquired mining rights for a great distance along the lake. If this has been done in any case against the will of the landowners, I trust it will be contested, so that the real force of the new law may be judicially determined.

This record presents some other peculiarities which may prove significant upon further inquiry, and may, on that account, receive comment at my hands hereafter. On the present occasion I will only say that I should be glad to hear from any parties interested, whether as landowners or as discoverers, and that I am willing personally to take considerable pains in pursuing the inquiry I have begun in the interest of justice and the public welfare. I should be specially pleased to communicate with landowners who have been subjected to actual or prospective intrusion without their consent.

R. W. R.

THE SITUATION IN THE CŒUR D'ALENES.

We have noted from time to time the progress of affairs in the Cœur d'Alene district in Idaho, since the last compromise with the Miners' Union was made, and we have not at any time seen cause to change the conviction then formed, that the final result would be the closing of all the mines in the region and the abandonment of work until the companies were permitted to manage their own affairs and return to a rational basis of operations. Events are rapidly justifying our belief. Three weeks ago we noted the closing down of the Bunker Hill & Sullivan, the largest mine in the district, and this has been followed by a shut-down at the Standard and other mines, leaving only the Frisco and some smaller ones in operation; and how long they will be able to continue is uncertain. Nor is the list complete; the interesting co-operative experiment undertaken by Mr. Huntley in the Morning mine at Mullan has also been stopped by the Union, for no cause, apparently, except that the leaders feared that a plan having so many elements of fairness and justice about it as Mr. Huntley's had, and attracting the best men, would endanger their supremacy in case of its success. Apparently these leaders do not intend to permit any work to be carried on where they cannot dictate; but what they expect to do when all the mines are closed and their followers deprived entirely of their means of support it is hard to say.

Our advices from the Cœur d'Alenes make it evident, and, indeed, no one doubts or disputes the fact, that the Miners' Union there is controlled and managed by a violent minority, who have contrived to obtain and hold their power by terrorizing the real majority. Many of the miners are willing to work on reasonable terms, and would readily drop the Union altogether, but they stand in dread of their comrades; they fear the "boycott" which is always ready, and the threat of violence and murder held in reserve. They are not organized, and do not seem to be able to hold together or to resist the compact and resolute clique of Mollie Maguires which dominates the organization, and which also professes to have outside support from Butte and elsewhere. The majority might have been strengthened last summer, when the Kneebone murder and other outrages made decent men revolt; but the abject sub-

mission and surrender of the companies after that affair deprived the better element of the support which it had a right to expect, and practically left its members at the mercy of a violence which might be open, but was just as likely to strike in secret. Under these circumstances too much could not be expected.

The simple facts of the case are that at the present prices of lead and silver it is impossible for the Cœur d'Alene mines to pay the \$3.50 per day demanded by the Union, except in the case of a few mines having exceptional advantages of position or plant; and even in those cases it is doubtful how long they could continue to operate without reducing their expenses. A fair solution was offered by Mr. Huntley, whose plan of co-operation we have fully described. In this case the miner was offered all the share which he could justly claim, and his wages would be regulated by the market, so that every rise in price, or every economy obtained in working, would be felt directly to his benefit. Starting under circumstances not the most favorable, the opening months of this experiment have shown fair wages for the men; but it was not permitted to continue, because, as we have said, the success of the experiment would not suit the purposes of the gang controlling the Union.

We have repeatedly said that we do not question the right—in many cases the duty—of men to combine for their own protection. But the Miners' Union of the Cœur d'Alenes is not, as it stands, a legitimate trade union. It is an organization of a gang of ruffians to dominate a community, and to enforce tribute to themselves and to the saloon-keepers and gamblers who infest the district. Its real objects are not to benefit or protect its members, but to help the purposes of its leaders; and the companies with which it deals should use every effort to break its power, even to the temporary abandonment of the district altogether. Indeed, that result seems to be fast approaching, and it is difficult to see how operations can be carried on much longer. The point most to be regretted is the suffering which will certainly follow the closing of many of the mines early in the winter; but this is unavoidable, and may bring some of the men to a realization of their position and a revolt against their false leaders. Let the history of the Mollie Maguire organization in Pennsylvania be studied and let some new McParlan be employed to ferret out the thugs, and as Mr. Gowen broke up the organization in Pennsylvania by hanging a number of the leading murderers, so can the Cœur d'Alene gang be broken up with resolute and well-directed detective work.

NEW PUBLICATIONS.

GEOLOGICAL AND MINING MAPS AND PROFILES FROM IDRIA, WITH ILLUSTRATIONS OF THE QUICKSILVER DEPOSITS. Prepared by Oebergrathe Wilhelm Goebel, under the direction of the Mining Ministry of Austria-Hungary. Vienna, Austria; Imperial Royal Printing Office.

This work, which has evidently been prepared with the greatest care, contains two large maps showing the formation of the Idria quicksilver mines, with a number of sections and profiles taken in the mines. It is accompanied by some 40 pages of descriptive matter, giving an account of the different geological formations of Idria, the geological relation of the different deposits, and, briefly, the methods of mining. There is also a very full reference list to the publications in which the Idria mines are treated of or described and from which fuller information can be obtained than in the brief description here given. The plans and sections are admirably drawn and engraved, some of them being as excellent specimens of geological work of this class as we have ever seen, while all are good.

PUBLIC WORKS: A TREATISE ON SUBJECTS OF INTEREST TO MUNICIPAL OFFICERS. By Ernest McCullough. San Francisco, Cal.; Published by the Author. Pamphlet; pages, 54. Price, 25c.

This book was founded upon a report written for the trustees of a California town, the intention being to discuss from an engineer's standpoint the problems which they would have to meet. It was put in its present form with the hope that it might be useful to others. The nature of its contents is indicated by the chapter headings, which are on: Streets; Health and Cleanliness; Drainage and Sewage; Water Supply; Surveys and Improvements; Contracts and Work; Plans; Municipal Ownership of Public Works; and Bonds. The two last-named chapters are perhaps somewhat outside of the original plan, but as they are intimately connected with work of this class, their addition seems quite appropriate. The information given is condensed and in not too technical a form, and town and city officers will find it a useful work. No book, of course, can replace the services of a competent engineer, but many useful hints will be received by those officers who desire a general acquaintance with the work before them.

ELECTRIC LIGHTING PLANTS; THEIR COST AND OPERATION. By W. J. Bulkley. Chicago, Ill; The William Johnston Publishing Company. Pages 280, illustrated. Price, \$2.

The object of this book is not to give special technical information, but to show intending purchasers of electric lighting plants such details as may aid them in forming an estimate of the cost of construction and operation of such a plant. For this purpose the author has given a brief description of the buildings required for plants of various sizes and of much of the machinery needed, with particulars as to its cost, the amount of fuel consumed, and the expense in different localities to labor and other operating charges. He gives figures taken from practical work in a number of stations, and illustrates several different classes of engines and methods of transmitting power, although, as far as dynamos are concerned, he confines himself entirely to the Wood apparatus, manufactured by the Fort Wayne Electric Company. A number of hints are also given on systems of wiring, and a useful table showing the cost per lamp per year in over 100 cities where electric lighting is done by contract.

There is also a list of references to books which may be useful in connection with lighting plants. It will doubtless be useful work to those connected with the business department of the electric companies, and may give some hints to the engineers as well.

THE PRACTICAL MANAGEMENT OF DYNAMOS AND MOTORS. By Francis B. Crocker and Schuyler S. Wheeler. With a special chapter by H. A. Foster. Third Edition. New York and London, Eng.; D. Van Nostrand Company, E. & F. N. Spon. Pages, 206. Illustrated.

The third edition of this handy little volume presents, in the same convenient form as the other two, many hints for the practical management of dynamos and motors which will be found exceedingly useful to any one handling this class of machinery. In this edition there has been a slight change of arrangement over the preceding ones, and some subjects have been brought fully up to date. The arrangement of the subjects and clear explanation of the various parts of dynamos and motors are decidedly useful to any one operating them, since not only can their construction and the use of various parts be learned, but in case of any difficulty arising, it becomes a comparatively easy matter to rectify it, and, what is frequently as difficult to do, to place the seat of the trouble.

The general principles of dynamos and motors are first described, going into details of their various parts; then the methods of winding, insulating and setting up, wiring and switching into circuit by various systems. The various classes of motors are described, and the methods of starting, operating and stopping. Following these come chapters on adjustment, resistance, voltage, speed, power and efficiency, and many other points which it is important that the operator should be familiar with. The book is essentially a practical one, and will be found valuable wherever electricity is generated or employed for power.

NINETEENTH ANNUAL REPORT OF THE CHIEF INSPECTOR OF MINES TO THE GOVERNOR OF THE STATE OF OHIO FOR THE YEAR 1893. Robert M. Haseltine, Chief Inspector. Columbus, O.; State Printer. Pages, 334.

We have already published from advance sheets the main points of Mr. Haseltine's excellent report on the coal mines of Ohio. The present volume includes, besides the general statements just referred to, the tables giving the details of the work of the inspectors of mines in the various districts and of the number of accidents during the year. The period covered was one of some depression, although the full effect of the business trouble was not felt by the Ohio coal mines until the opening of the present year. The main features shown are a steady tendency to increase the machine plants and a corresponding increase in hand mining which continued throughout the year. The number of coal mines increased considerably, as 107 new ones were opened and only 63 were abandoned, showing a net increase in number of 45. No less than 957 coal mines were operated during the year, of which 391 were large mines and 566 were small mines and openings worked chiefly for local supplies. The amount of work done by the Mine Inspectors is shown by the fact that 2,237 visits were made to mines in the State: 321 were visited once and a large number twice or more. Much work was also done in the testing of scales and mine-cars as required by the law. The report gives much information as to the systems of ventilation adopted at various mines. Coal is the principal mining interest in Ohio, but there is also a considerable amount of iron ore, fireclay and limestone produced concerning which the report gives some interesting statistics.

GOLD AT MINAS GERAES, BRAZIL. By Paul Ferrand. Ouro Preto, Brazil; Published by the State of Minas Geraes. Pages, 164; maps and illustrations.

This volume is in great part a reproduction of a study on the Ouro Preto and other gold mines in Brazil, prepared by M. Ferrand for publication in "Le Genie Civil." In its present form it has been published under the authority of the Brazilian Commission to the Mining Exposition at Santiago, in Chile. The work is in part historical and in part descriptive. The introduction describes the first discovery of the gold and precious stone deposits of Ouro Preto by the Portuguese, which dates back to the sixteenth century. This is followed by the first part relating to the explorations and mining work carried on under the Portuguese Colonial Government; treating first of the alluvial work in the river beds and of the nature of the gold deposits, then of the discovery and working of the quartz veins at a later period. The concluding chapter on this section gives a summary of the colonial legislature on mines. The second part relates to the operations carried on since Brazil became an independent country, and here we find an account of the organization and history of the several companies which have operated in the Brazilian goldfields from 1824 down to the present time. A condensed description of the different mines, the nature of the ores and the methods of operation is given in a large table. For some years there has been a decline in gold production, but there is now a prospect of an early increase in the output. The principal mines now worked are the Ouro Preto and the St. John del Rey. The book has several maps and a number of illustrations; among the more interesting of these are reproductions of some old prints and sketches showing the method of working adopted in the early colonial days.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

A Short History of Chemistry. By F. P. Venable. Boston, Mass.; D. C. Heath & Co. Pages, 163.

Annual Report on the State of Perak for the Year 1893. By F. A. Swettenham. Taiping, Perak; Government Printing Office. Pages 53.

Geological Survey of Canada: Division of Mineral Statistics and Mines; Annual Report for 1892. Elfric Drew Ingall in charge. Ottawa, Canada; H. M. Printer. Pages 213; illustrated with diagrams.

Annual Report of the Board of Regents of the Smithsonian Institution, Showing the Operations, Expenditures and Condition of the Institution to July, 1893. Washington, D. C.; Government Printing Office. Pages 763; illustrated.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested. Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

The Darien Gold Mining Company.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: In your issue of 17th inst., just to hand, I notice an abstract of the official report of the Darien Gold Mining Company, of Colombia, in which appears the following statement: "After having dismissed an incapable mining manager, the directors decided, etc., etc." This is not correct and should be at once contradicted. As far as I am aware the directors have never dismissed a manager. I was appointed manager at Cana in October, 1892, on the resignation of my predecessor. ERNEST R. WOAKES.

LONDON, England, Nov. 27, 1894.

[The statement referred to by Mr. Woakes appeared to be justified by the language of the report as forwarded to us in abstract from London. If the inference was not correctly drawn, we are pleased to have the correction made.—ED. ENGINEERING AND MINING JOURNAL.]

The United States Geological Survey.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I notice in the issue of December 23d of the "Engineering and Mining Journal" statements relating to the United States Geological Survey. Most of these statements may be fairly regarded as involving questions of personal opinion; but there is one that is in the nature of a direct charge, and which, if it has any foundation in fact, involves a violation of the organic law of the Survey. The article states that:

It is indeed now one of the most objectionable practices in the Survey that it allows its members, who are receiving from the government salaries for their full services, to continue their private practice and use their official positions to make professional fees.

Of this statement I wish to enter an absolute denial, based upon my personal knowledge and belief. If any such work has been done it has been against the orders of the Director and without his knowledge.

If you have evidence of such private practice by the members of the Survey who receive salaries for their full services, I should very much like to have such evidence submitted.

I trust you will give this denial as prominent a place in your columns and as full circulation as you have given the charge.

In this connection it may be as well to allude to another point that is brought up in the article, viz., that relating to land surveys. There is no reference, in the estimates for the Geological Survey, to the making of land surveys. There was introduced in the estimates of appropriations for the General Land Office, at the request of the Commissioner of that bureau, a paragraph in which it was proposed to give to the Secretary of the Interior the authority to order or direct the Geological Survey to make certain land surveys. It is not proposed to make to the Geological Survey any appropriation for this object. Very respectfully,

CHAS. D. WALCOTT, Director.

DEPARTMENT OF THE INTERIOR, UNITED STATES GEOLOGICAL SURVEY,
WASHINGTON, D. C., December 24, 1894.

[It affords us very great pleasure to place upon record here the assurance of Director Walcott that the doing of private professional work and the accepting of professional fees for the same by members of the Geological Survey are strictly forbidden by the organic law of the Survey. We have no doubt that the practice will now be discontinued.

We cordially invite Director Walcott to give our readers his views upon the other points raised in our article published last week, and we withhold communications already received in order that he may do it as a starting-point for these contributors.—ED. E. & M. J.]

The Mineral Industry, Vol. II., 1893.

FROM "THE ELECTRICAL ENGINEER," NEW YORK.

... Some idea of its vast scope may be formed from the fact that there are 9,000 separate titles in the index. It is, indeed, a superb and invaluable book, the best thing of the kind ever done, government reports not excepted. The publishers are entitled to the highest praise for giving us that which is at once an encyclopaedia, a statistical annual and a market record.

FROM "THE BOSTON EVENING TRANSCRIPT," BOSTON, MASS.

... The work includes full statistics of all departments of the various industries into which metals and minerals of all kinds enter for the year 1893, and also figures of consumption and of product for many years back, making it invaluable for reference and for information. In addition there are some papers or essays on various branches of the subject written by the ablest specialists, and the book is a standard volume on the subjects of which it treats, although this is but the second volume. When we say that it occupies the same field in connection with mineral industry as "Poor's Manual" does to railroads, and that the "Financial Chronical" does to commercial and investment matters, we pay the work the highest of compliments, but one which certainly is deserved. ... It is a most valuable book, and it supplies a want long existing, but which, from the magnitude of the subject, heretofore has not been filled to any extent.

FROM "THE ENGINEERING NEWS AND AMERICAN RAILWAY JOURNAL," NEW YORK.

The first annual issue of this publication was reviewed in our issue of April 27, 1893. As was then stated, the work is the development of the annual statistical number which has been published by the "Engineering and Mining Journal" for many years, the statistics being increased to include foreign countries as well as the United States, and so much matter being added of a technical nature that it is really a new work. The minerals are taken up in alphabetical order and their metallurgy, production and methods of marketing are given with such fullness as the economic importance of each seems to demand. All the articles are written by specialists and the whole has been edited to bring about uniformity in the arrangement of the mass of information which has been collected. The volume as a whole is a valuable collection of information and a most useful work of reference and reflects much credit upon its able editor.

THE LEADVILLE DISTRICT, COLORADO, IN 1894.

Written for the Engineering and Mining Journal by our Leadville Correspondent.

The reports of the year are very flattering considering the low price of silver; the gold production is excellent when it is considered that until this month there were only three gold producers in the camp. The recent strikes in the gold-belt mean that the record for 1895 will be a magnificent one. Mining men are greatly elated over the results of 1894 and the outlook for 1895.

The total value of the output of the Leadville district for 1894 is \$8,160,075; if we counted silver at its coinage value the total production in this district would have been \$13,000,000. The gold production of the district for 1894 was \$1,934,240, against \$803,200 in 1893. The greater portion of this gold came from the Ibez, the Lillian and the Golden Eagle properties.

The grand total yield of Leadville from 1879 to 1894, inclusive, was \$196,449,447; this includes gold, silver and lead.

The production for 1894 was 362,907 tons of ore, against 340,000 tons mined in 1893. The 1894 tonnage in detail is as follows: Carbonate, 69,703 tons; iron, 88,543 tons; sulphide, 133,605 tons; silicious, 71,056 tons. The total production of bullion from Leadville district ores for 1894, as compiled by experts for the Leadville "Herald Democrat" is as follows:

Ore smelted.....	347,143 tons.	Copper produced.....	889,867 lbs.
Gold produced.....	96,712 05 oz.	Zinc produced.....	270,000 "
Silver produced.....	7,889,992 77 "	Total value.....	\$8,149,333
Lead produced.....	44,733,000 lbs.		

In addition there was \$18,681 gold from Leadville received at the United States Mint in Denver, bringing the total amount of the output up to \$8,160,075.

The bullion produced from Leadville district ores by the local and valley smelters were as follows.

Name of Co.	Ore Smelted. Tons.	Gold Produced. Ounces.	Silver Produced. Ounces.	Lead Produced. Lbs.	Copper Produced. Lbs.	Zinc Produced. Lbs.	Total Value.
Ark. Vy., S. & R. Co., Leadville.	106,492	61,096 00	3,485,235 70	22,616,112	755,669	.....	\$1,210,651
Union Sm. Co., Leadville.	26,713	4,182 14	389,131 36	7,184,094	.....	.....	552,452
Elgin Sm. Co., Leadville.	27,000	8,810 45	490,719 40	5,100,783	.....	.....	644,304
Bi-metallic Sm. Co., Leadville.	60,082	3,312 00	2,161,810 00	.....	510,709	.....	1,439,079
Omaha Grant S. & R. Co., Denver.	27,878	4,095 68	999,248 00	952,256	90,814	.....	694,293
Globe S. & R. Co., Denver.	35,565	13,189 62	1,737,016 20	8,599,260	.....	.....	1,398,881
Boyle & Colo. S. Co., Argo.	5,732	335 50	156,310 61	.....	1,364	.....	76,325
Philadelphia S. & R. Co., Pueblo.	31,340	10,930 00	630,030 00	3,700,000	2,000	.....	742,833
Pueblo S. & R. Co., Pueblo.	17,491	2,158 00	180,663 00	867,740	.....	.....	183,081
Colorado Sm. Co., Pueblo.	7,392	65 00	363,977 00	750,588	.....	.....	254,155
San Juan S. & M. Co., Durango.	3,287	.....	24,891 00	75,537	.....	.....	18,047
Standard S. & R. Co., Durango.	300	.....	2,400 00	.....	.....	.....	1,513
Am. Zinc-Lead Co., Canon City.	618	105 00	8,545 00	310,000	.....	270,000	27,929
Totals.....	349,885	108,930 05	10,539,351 27	50,157,180	1,403,556	270,000	10,234,132
Matte and Bullion included twice in table	2,742	12,188 00	2,649,358 50	5,424,180	510,709	.....	2,092,739
Grand totals.	347,143	96,712 06	7,889,992 77	44,733,000	889,847	270,000	\$8,149,333

The official reports as made by the mine managers and superintendents give the tonnage of the camp as below for the year 1894:

	Carbonate. Tons.	Sulphide. Tons.	Iron. Tons.	Silicious. Tons.	Total.
Crysolite.....	100	.....	1,850	.....	2,050
Wilden.....	100	.....	580	.....	680
Grey Eagle.....	4,656	.....	24,493	.....	28,529
Orien.....	4,591	.....	119	.....	4,710
Bonair.....	.....	.....	1,110	.....	1,110
Last Chip.....	300	.....	.....	.....	300
Aetna.....	.....	.....	1,000	.....	1,000
Izzard.....	1,000	.....	.....	.....	1,000
Little Ellen.....	1,000	.....	.....	.....	1,000
Bison.....	92	.....	4,357	.....	4,449
Allegheny.....	515	2,296	.....	.....	2,811
Flagstaff.....	403	.....	.....	.....	403
Doris.....	1,530	700	.....	.....	2,200
White Cap.....	1,400	.....	.....	.....	1,400
La Plata.....	463	.....	129	.....	589
Catalpa-Crescent.....	.....	.....	4,959	.....	4,950
Nisi Prius.....	.....	.....	1,200	.....	1,200
Morning Star.....	525	.....	4,863	.....	5,391
Denver City.....	.....	.....	659	.....	659
R. E. Lee.....	.....	.....	1,500	.....	1,500
Evening Star.....	239	.....	2,972	.....	3,211
Boreel.....	1,278	17,549	.....	.....	18,827
Dunkin.....	209	.....	3,105	.....	3,305
Smuggler.....	1,200	.....	.....	.....	1,200
Iroquois.....	.....	.....	1,000	.....	1,000
Big Chief.....	.....	.....	15,000	.....	15,000
Castle View.....	.....	.....	4,000	.....	4,000
Maid of Erin.....	26,474	7,043	4,241	.....	37,738
Wolfome.....	516	10,426	150	.....	11,092
Small Hoops.....	1,536	1,751	2,681	.....	5,968
Iron Silver.....	630	2,000	4,000	.....	6,630
Louisville.....	.....	1,645	.....	.....	1,645
Ibez.....	.....	.....	34,000	.....	34,000
Golden Eagle.....	930	.....	6,000	.....	6,900
Fanny Rawlins.....	.....	.....	454	.....	454
Lillian.....	.....	.....	5,540	.....	5,500
Autloch.....	.....	.....	4,000	.....	4,000
Highland Mary.....	.....	1,000	4,000	.....	5,000
Mabala.....	1,056	15,260	.....	.....	16,316
Yak.....	.....	1,350	.....	.....	1,350
Leadville Con.....	102	.....	102	.....	204
Greenback.....	.....	9,000	.....	.....	9,000
Dinero.....	.....	385	.....	.....	385
A. Y. & Minnie.....	.....	21,000	.....	.....	24,000
Berdella.....	.....	300	.....	.....	300
Other mines.....	18,500	39,600	6,000	17,000	81,100

Included in other mines are the Emmett, the Little Chief, the Marian, the Matchless; the Seneca, the Esther, the Walcott and some small leases. The figures are tons of 2,000 lbs.

Official returns from all superintendents in the camp show the following number of men employed in the mining, hauling and smelting of ore: Miners and mine laborers, 2,231; smelter hands, 650; ore-haulers, 150; total, 3,031.

In the opinion of a mining engineer thoroughly familiar with the camp, the developments on the gold-belt have advanced enough to warrant the belief that the golden Leadville of the future may surpass the silver Leadville of the past. The knowledge that the deposits of gold ore exist and the impetus given by the late discoveries will stimulate exploration and prospecting, and there seems no doubt that the camp will take an important share in building up again the prosperous mining industry of the State.

ABSTRACTS OF OFFICIAL REPORTS.

El Callao Mining Company; Venezuela.

The report presented by President Luccioni to the shareholders for the half-year ending June 30th last says that El Callao lode is now practically exhausted, and adds: "We are now opening up the Remington (Pinta dalla Costa) mine in the company's properties which, according to the many explorations made, is the only mine offering some hopes, but these are not very great. Since we became aware that El Callao lode was becoming poorer day by day and being exhausted, and since the many exploration works in the company's properties have failed to show ore that would pay working expenses and leave a profit, we have embarked in mining enterprises, which not only will prevent this company from perishing altogether, but which may be the means of giving it a long life, and perhaps of bringing to it days of prosperity. We possess a large mill for crushing ore, and have also the means for increasing it at a small cost compared to what the introduction and installation of a new mill would entail. The mill is situated on the best point of the Guayana mining region for the supply of water and firewood, and by means of a Decauville railway the ore can be brought to it from all the surrounding concessions in which the mining and exploration companies of the Orinoco have worked and failed, such as the Nacupay, Remington, Caratal, Tigre, Nueva Providencia, Callao Bis, Union, Hansa, Nueva Hansa, San Luis, Belivar Hill and Panama. All these companies' concessions can be connected with El Callao mill by 15 or 16 kilom. of Decauville railway. The cost per kilometer of railway can be calculated at 100,000 bolivars (francs), so that the capital required would be from 1,500,000 to 1,600,000 bolivars.

"In 1886 our president treated about this matter in London and Paris, and persons well versed in these affairs estimated that a capital of £4,000,000 sterling would be required; but then this business had as basis the rich Callao lode. This lode came to an end, and all the above-mentioned companies which in 1886 were to form part of one great company have also since come to an end. El Callao Company, taking advantage of its resources, started a trial on its own account by undertaking on a small scale the large enterprise planned by the president in 1886. We began by making a contract for the exploration on joint account of the Colombia Company's concessions. For this purpose we have 4 kilometers of railway in working order, and up to the present the results have enabled us to cover expenses and pay a dividend in January last of one bolivar per share. We are now extending the line to Santa Maria and San Felipe mines in the former concession of the Union Company, now belonging to us subject to 25% of the net proceeds paid to the Union Company, in accordance with a resolution passed at the general meeting of the El Callao Company held April 14th last. This extension will be of two or three kilometers more. We have also initiated a plan for working other concessions and extending the railway should the returns of the Colombia and Union mines enable us to do so, as we reckon with no other capital. Should the returns of the mines that we are working not be sufficient to enable us to complete the railway and extend it to the Panama and Hansa mines, we think that for this purpose a loan should be applied for. One or two capitalists in Paris or London could furnish the sum required under guarantee that their money would be duly secured.

"In order to facilitate the operation, the directors would advise transforming the company by reorganizing it, so as to absorb all the different companies (for which we are working mines under contract for half the returns) in one single company to be called El Callao. The capital of the new company would be formed of the valuations that would be given to the properties of El Callao Company and of the different companies which have contracted with us the working of their mines. One-half of these valuations would belong to El Callao, and would be added to the amount at which its properties were valued, and the other half would belong to the different companies. From five to six leagues of hilly lands at present owned by private parties would have to be incorporated in the new company. The acquisition of these lands for obtaining firewood and timber for construction purposes is indispensable, and will also be of great advantage on account of mining discoveries that may be made on them, as these lands are in the center of the mining district. The new company would own over eight leagues of land in the mining district, and much machinery and railroad for the transport of quartz and firewood from the mines and woods to the mill; and its nominal capital would not exceed two-thirds of the nominal capital of El Callao Company. The shareholders of the latter company would see the number of their shares reduced to less than one-half, but the new shares that they would receive in exchange will have, we think, a real value, while the shares they now hold will be lost without the combinations that we are carrying out and trying to perfect."

Cobalt in the Asturias, Spain.—A communication by Sr. Roman Oriol in "Revista Minera" says the Aramo deposits are in many respects similar to the cobaltiferous belt of Villamanin, Leon, and are found in the same geological horizon. He considers the dolomite bands which contain the deposits in both cases to be merely altered beds of the limestone, the foldings of which they follow; but considers the mineralization of the dolomites in the latter case to have been contemporaneous, whereas in the former he supposes it to have been produced subsequently by lateral secretion. The Aramo deposits are, therefore, on this theory true "mantos" (beds), of which he recognizes at least three.

ABSTRACT OF LOCATION OF GOLD, SILVER, ETC., CLAIMS IN THE STATE OF NEW YORK DURING 1894 TO NOVEMBER 20.

From Records in the Office of the Secretary of State, Albany, N. Y.

Page.	Name of locator.	Residence.	Date of notice	Date of filing.	Metals claimed.	Location of claim.	On lands of—
154	Charles Smith		Feb. 21.	Feb. 23	G, S	Gloversville, Fulton Co.	No. 63 Third street.
155	Sylveus Sweet	Benson, Hamilton Co.	March 23	March 24		Benson, Hamilton Co.	Subs. 5 and 6 in lot 2 and sub. 9 in lot 1 of Glen Bleeker & Linsing's Patent.
151	Julius J. Stranahan	Chesterfield, Essex Co.	" 17	" 27	"	Chesterfield, Essex Co.	Lots 128 and 129 in Moule's Patent tract.
151	Lewis P. Jewett	Glens Falls	April 3.	April 4.	G, S, P.	Fort Ann, Washington Co.	Lot 38, Lake George tract.
157	Julia Picott	Keesville, Essex Co.	" 10	" 13.	G, S.	Chesterfield, Essex Co.	Farm of Julia Picott.
155	Frank Storber	Gloversville, Fulton Co.	" 23.	" 24.	"	Gloversville, Fulton Co.	Grove street, Second avenue, McNab avenue.
159	Charles P. Bellows	Johnstown	" 30.	May 2	"	Johnstown, Fulton Co.	From center of road from Gloversville to Bennett's corner.
167	Levi H. Palmer	"	" 30.	" 2	"	"	From center of road from Gloversville to Bennett's corner.
163	Andrew D. Youngs	"	" 30.	" 2.	"	"	From center of road from Gloversville to Bennett's corner.
161	Ansel Scudmore	"	" 30.	" 2.	"	"	From center of road from Gloversville to Bennett's corner.
162	Wm. H. Livingston, Fred H. Ketchum and A. D. Youngs	"	May 10.	" 12.	"	Mayfield, Fulton Co.	From cor. of roads from Northville to Wood's Hollow and Mayfield.
163	George Hoadley	Fort Ann, Washington Co.	" 15.	" 16.	"	Fort Ann, Washington Co.	In front of Big Falls in Shelving Rock Brook.
164	"	"	" 15.	" 16.	"	"	10 to 15 rods n. from outlet to Shelving Rock Brook.
166	Ansel Scudmore, W. H. Livingston, A. D. Youngs and Charles P. Bellows	Gloversville, Fulton Co.	" 18	" 21.	"	Broadallin, Fulton Co.	Near mill, known as Eagle Mill.
165	Ansel Scudmore, Charles P. Bellows	"	May 16.	May 17.	"	Fulton Co.	From depot at Mayfield station to Mayfield Cr. Lot No. 90.
166	Francis E. Trennum	Plessis, Jefferson Co.	" 14	" 17.	"	Theresa, Jefferson Co.	Part of lot No. 67, L. George tract.
167	Fred. W. Duell	Fort Ann, Washington Co.	" 19	" 21.	"	Fort Ann	East of Hudson River, southwest from Goodspeedville.
168	Wm. T. Bullis	Glens Falls, Warren Co.	" 15.	" 21.	"	Queensbury, Warren Co.	One mile west of Corset Pond.
163	A. Scudmore, W. H. Livingston, C. T. Bellows, A. D. Youngs	Johnstown, Fulton Co.	" 18.	" 21.	"	Broadallin, Fulton Co.	Near Eagle Mill.
171	Henry T. Henry	South Durham, Greene Co.	" 23.	" 23.	"	Cairo, Greene Co.	Farm of Jos. V. Hulse and P. D. Hulse.
172	Peter Jos. Marquette	Fort Ann, Washington Co.	" 29	" 31.	"	Fort Ann	Part of Joseph Potter estate.
173	Frank Babcock	"	" 29	" 31.	"	"	Part of Thomas Colridge estate.
174	Peter Jos. Marquette	"	" 29	" 31.	"	"	Part of Frank Talmage estate.
175	F. E. Trennum	Plessis, Jefferson Co.	" 28	" 31.	"	Theresa, Jefferson Co.	Lot No. 91.
176	Dr. Saage R. dwood	"	June 6.	June 7.	S.	"	"
176	David Jones	Glens Falls, Warren Co.	May 28.	" 6.	G, S.	Queensbury, Warren Co.	Land owned by John T. Habtall.
177	Lines P. Burrowes	ibany, N. Y.	June 8.	" 9.	G, S, P, N.	Hague, Warren Co.	Falls of Hague Creek, 3/4 mile from mouth.
178	Lewis Brownell	Coxsackie, Greene Co.	June 8.	" 15.	L.	Coxsackie and New Baltimore	Lands belonging to C. Hallenbeck, Peter Roberts, Peter Fitchett, Newton Soules.
189	Gelbert C. Bedell	New Baltimore, Greene Co.	June 21.	June 23.	G, S	Bolton, Warren Co.	Land of Freeman M. Morgan.
189	George S. Gates	Bolton Landing, Warren Co.	" 21.	" 23.	"	Bolton, Warren Co.	Farm of Mrs. C. Longheny.
189	Mrs. Christina Longheny	Bleeker, Fulton Co.	" 22	" 26.	G.	Bleeker, Fulton Co.	Land of Robert Morris.
181	Wm. T. Bullis	Glens Falls, Warren Co.	" 23.	" 27.	G, S, C	Greenfield, Saratoga Co.	" George Hawkins.
182	"	"	" 23.	" 27.	"	"	" Pollus Gafner.
183	"	"	" 23.	" 27.	"	"	" James Delaney.
184	"	"	" 23.	" 27.	"	"	" Pollus Gafner.
184	"	"	" 23.	" 27.	"	"	" Stephen Leathem.
185	George S. Gates	Bolton Landing, Warren Co.	" 23.	" 27.	"	"	"
186	Art. F. Wells, C. P. Bellows, A. D. Youngs	Johnstown, Fulton Co.	" 25.	" 10.	"	Bleeker, Fulton Co.	Near John C. Longheny's farm.
187	Henry Wilkins, E. M. Sutphen, John Wallace	Albany, N. Y.	July 9.	" 11.	G, S, P.	Fort Ann, Wash Co.	Farm of George Oakley.
185	Henry Wilkins, E. M. Sutphen, John Wallace	"	" 9.	" 11.	"	"	Near Shelving Rock Falls in Shelving Rock Cr.
189	Edwin Sutphen and John Wallace	"	" 9.	" 11.	G, S, P, N.	"	One and a half miles from mouth of Butternut Brook.
191	Edwin Sutphen and John Wallace	"	" 9.	" 11.	"	"	West sh. of Lake George and n. e. from n. end Watch Point.
191	Edwin Sutphen and John Wallace	"	" 9.	" 11.	"	"	East sh. of L. George, and e. from n. end of Phelps Island.
192	Edwin Sutphen and John Wallace	"	" 9.	" 11.	"	"	East sh. of L. George, and s. e. from s. end of Phelps Island.
193	Edwin Sutphen and John Wallace	"	" 9.	" 11.	"	"	East sh. of L. George, about 4 rods n. e. from Huckleberry Island.
194	Cornelius S. Huuyen	Chemung Co.	May 14.	" 14.	"	Elmira, Queen City Mining Dist., Chemung Co.	Amot farm near Elmira.
195	Orlando Mallon	Lake George	July 27.	Aug. 2.	G, S, P, N.	Fort Ann, Wash. Co.	N. slope of Buck Mt., e. sh. of Lake George.
196	"	"	" 27.	" 2.	"	"	Near the north end of Refuge Island.
197	E. M. Sutphen and John Wallace	Albany, N. Y.	Sept. 3.	Sept. 4.	"	Bolton, Warren Co.	West side of Tongue Mt.
198	Orlando Mallon	Lake George	July 27.	Aug. 2.	"	Fort Ann	South slope of Buck Mt.
200	G. Herbert Daley	Stapleton, S. I.	Aug. 13.	" 15.	G, S	"	Three miles north of the Kaatskill House.
203	Ansel Scudmore	Gloversville, N. Y.	" 27.	" 28.	"	Wells, Hamilton Co.	S. side of highway from Wells to Lake Pleasant.
201	Marius W. Lawrence	Lake Pleasant	Sept. 3.	Sept. 4.	"	Lake Pleasant	Lot No. 2, Township No. 10.
202	E. M. Sutphen and John Wallace	Albany, N. Y.	" 3.	" 4.	G, S, P, N.	Bolton, Warren Co.	West side of Tongue Mt.
203	E. M. Sutphen and John Wallace	"	" 3.	" 4.	"	"	Easterly shore of Northwest Bay.
204	E. M. Sutphen and John Wallace	"	" 3.	" 4.	"	"	Easterly side of Tongue Mt.
205	Ansel Scudmore	Gloversville, N. Y.	" 4.	" 7.	G, S.	North Hampton	Land of W. H. Seymour.
206	John C. Longheny	Bleeker, Fulton Co.	" 4.	" 10.	"	Bleeker, Fulton Co.	Near Mrs. C. Longheny's claim.
206	Arthur T. Wells	Gloversville, N. Y.	" 4.	" 10.	"	"	"
217	Octave King	Ticonderoga, Essex Co.	Oct. 8.	Oct. 10.	S.	Ticonderoga, Essex Co.	Ellice Sarge tract, Lots 172, 174, 17 and 188.
217	Simon La Francis	Richville, Vt.	"	"	"	"	"
217	Joseph Sokey	"	"	"	"	"	"
218	Samuel M. Palmer	Glens Falls, Warren Co.	Oct. 27.	Nov. 8.	G, S.	Queensbury, Warren Co.	Dix avenue and Platt street, Glens Falls.
219	"	"	" 27.	" 8.	"	"	Platt street, Glens Falls.

■ G. = gold, S. = silver, P. = platinum, C. = copper, N. = nickel, L. = lead.

GOLD IN ZACATECAS, MEXICO.

Specially Written for the Engineering and Mining Journal by Edward Halse, A. R. S. M.

Since the "Notes on Some Gold-Bearing Veins of Zacatecas" were written, I have paid another visit to the gold camp near that city, and the latest news from there will doubtless be of interest to the readers of the "Engineering and Mining Journal."

Mr. E. F. Ayton, the engineer of El Bote, kindly showed me all the surface arrangements of that mine, including the new mill now in course of erection. A steel gallow-frame, a fine example, has been erected over the main shaft, and a powerful steam hoist will take the place of the old Malacate arrangement. This shaft is already 800 ft. deep, and it will be sunk another 200 ft., so that the Bote will soon rank among the deep mines of the republic. The shaft will be provided with hoisting cages.

The new mill, which is being most solidly constructed, will consist of

rock-crusher and rolls to be worked by a separate engine, below which will be six improved Chilean mills, capacity 15 tons each, or total milling capacity of 90 tons per 24 hours. Below these will come the settling-tanks, and, on the next floor, the pans and settlers of the Boss continuous process. A row of Frue vanners will concentrate the tailings which discharge from the latter. A compound tandem engine will drive the Chilean mills, pans and vanners, and the power will be transmitted from the main to the counter-shaft by hemp ropes. The crushing, pulverizing, amalgamating and concentrating plant is supplied by Messrs. Fraser & Chalmers, of Chicago, and the boilers and engines by Messrs. Fawcett, Preston & Co., of Liverpool, England. The ore will be run down to the mill from the hoisting-shaft, situated about 300 ft. vertical above, by means of a gravity tramway. Sufficient water for washing purposes is pumped up from the mine itself by a Davey "differential" pumping-engine; high and low pressure cylinders 20 and 36 in. diameter respectively; suction pumps 14 in. and force pumps 13 in. Useful effect calculated for an extraction of 400 gallons per minute from a depth of 820 feet. It should be noted that the mouth of the pumping-shaft is some distance below that

* See "Engineering and Mining Journal," July 28th, 1894, p. 78, and August 4th, pp 105-7.

of the hoisting-shaft. A narrow gauge railway is laid from the new mill to the Mexican Central Railroad, which passes close by.

I understand that as soon as the new mill is in working order, which will probably be next March or April, the whole of the ore will be sent through the same, thus dispensing with the two patio haciendas and the tedious and costly hand-picking and breaking as practiced hitherto.

Very little appears to be known about the Bote mine itself outside those immediately interested therein. It is a private concern owned by two families only—one English and the other Italian. The veins appear to be a westerly extension of the great Veta de la Cantera, which, apparently starting some miles E. S. E. of the city, passes round the northern edge of the trachytic hill known as "La Bufa," which appears to have bent the lode considerably out of its general N.W.-S.E. course. Further west, or in the region of the Bote mine, the lode appears to be divided into several parallel branches or veins; similarly to the Veta Grande, between Panuco and Zacatecas, and here it once more pursues a general N.W. to S.E. course. The dip of the main vein is to the south.

Some data with regard to this valuable property were published about 10 years ago* from which it appears that the Cerro del Bote contains two classes of veins, or those bearing silver and gold respectively. Both have a general N. W. to S. E. direction, the silver veins proper running 131° and dipping 75°, and the gold veins 122° and dipping 64°; consequently they meet both horizontally and vertically. The principal junctions of the different veins occur between the San Bartolo and Mestefias mines in the Cerro de La Union, having a trend of 119°. Counting from E. to W. there were at that time 10 shafts in operation, with the following depths: La Purisima, 433 ft.; San Miguel, 197 ft.; La Amistad, 275½; Esperanza, 469 ft.; San Jorge, 515 ft.; San Genaro, 689 ft.; San Fernando, 544½ ft.; El Rosario, 597 ft.; La Llave, 446 ft., and "el tiro de la Union," 367 ft., by which means the veins were exploited for a length of 8,200 ft. The greatest deposition of ore, and that containing the highest percentage of the precious metals (ley), occurred then between the shafts of San Fernando and La Llave, where the veins unite forming a body (cuerpo) of ore 65½ ft. in width. Hand-picked ore was shown me which yields 8 marcos (or 64 oz.) of silver and ½ oz. gold per ton.

I am unable to give the general average of all worked veins as they stand, but I have heard it stated to be about 25 ozs. silver, and ½ oz. (or 12½ dwts.) gold per ton. This probably refers to the veins bearing in value more silver than gold, which have no doubt been worked in the main up to date. The gold-bearing veins proper probably yield a much higher value in the yellow metal than the above.

Mr. James G. Wood, the courteous and hospitable general manager, possesses a fine collection of ores from this mine. Several specimens in his cabinet show visible gold.

The country-rock is usually black slate, but in places consists of decomposed limestone. In some of the lower levels, Mr. Ayton informed me, a good deal of calcite occurs, but the main filling is usually quartz (about 80 per cent. silica on an average). The ore consists of sulphide of silver (mainly argentite, but ruby silver and other high grade ores occur occasionally) and free gold. Iron pyrites is also present in the gangue, but is, as a rule, by no means abundant. Silver, native and as chloride and bromide, often occurs in the upper levels.

The mill of the Australia mine was not running on the morning of my visit; the main pulley was being changed in order to run the stamps (10 of which have been erected) at a higher velocity, or from 90 to 95 drops per minute. It was also found advisable to put smaller screens in the battery, as the gold is in a very finely divided state.

Mr. Dennison, the manager at the mines, assured me that the new mill has been extracting 1½ oz. of gold per ton of rock crushed, and hand-picked ore was shown me which was stated give a much higher result by assay.

A six-months' option has been taken on the San Cristobal property by American capitalists, and a new shaft is being sunk between the main and the San Cristobal workings. It is anticipated that a rich shoot of ore will be found below that spot. The ore from the bottom workings, which were recently unforked, yields by assay from 2 to 3 oz. of gold per ton. The black sulphides are more evenly distributed throughout the vein than in the upper levels, and the gangue consists of quartz, with some calcite.

A company (known as the Cocktail Latino Chicago y Anexas) has recently been formed in the City of Mexico to work a northern extension of the vein known as the Colorado on the San Cristobal property. It is said that work will be commenced on this at once (October). The same vein has been proved between the San Cristobal and the new company, these intermediate claims being held by a Mexican.

A report by Mr. J. C. Haro on the Cocktail Latino, etc., is published in "El Minero Mexicano" of 26th July last. From this it appears that the workings are shallow ones (under 100 ft.), and that the Cocktail Latino vein runs north and south and dips east, with a thickness of about 2½ ft. The Chicago vein has a similar trend, but is nearly vertical and much narrower. Samples from the former vein yielded by assay from 7 to 20 oz. silver and 0.70 oz. gold to 57.36 oz. silver and 6.08 oz. gold, and those taken from the latter gave from 4.96 oz. silver and 0.10 oz. gold to 12.08 oz. silver and 1.42 oz. gold (per ton of 2,000 lbs.). The averages of the samples from the two veins are 26.56 oz. silver and 3.11 oz. gold, and 7.70 oz. silver and .59 oz. gold respectively. The averages of the samples from the first vein are unusually high for this region.

The San Cristobal vein can be traced south of that mine right up to the great trachytic outcrop known as "La Mesa del Cerillo," which is of later origin and cuts off all the veins in this section. West of the San Luis del Oro group the vein can be seen cropping out at surface; the width here is about 2½ ft. and the vein has a very favorable appearance. Still farther south the ground slopes rapidly upward from a small cañada toward the trachytic outcrop above, the northern edge of which trends in a general east and west direction.

The "country" here has clearly been altered by contact with the volcanic rock and is mottled red and purple in color. The stratification planes appear to have been obliterated and the rock has the appearance of a diorite, but is most probably an altered schist.

* Apuntes sobre la Minería del Estado de Zacatecas por Francisco de P. Zárate, Zacatecas, 1884, pp. 42-44.

The vein, which is probably an extension of the San Cristobal, has been opened on to a depth of about 50 ft. vertical, and is about 6 ft. in width at the bottom, consisting mainly of quartz, and exhibiting in one part ribbons of black sulphide, but it contains a good many lenticular 'horses' of country rock, and moreover appears to be considerably bent and ramified, the result probably of great lateral pressure. On the whole the vein has not such a favorable appearance as those in the distinctly stratified rocks immediately to the south of it, but it is well worthy of a trial and can be proved by an exploratory level at a comparatively small cost.

Another fact of much interest is that to the south of La Mesa, or beyond the trachytic sheet or mass, outcrops of veins have, I believe, been traced for some miles, so that there appears to be a great probability of the gold-bearing belt extending for some distance in that direction.

SHIPMENTS OF LAKE ORES IN 1894.

The returns from all Lake Erie docks as published by the "Iron Trade Review" show that in spite of all the influences at work the past year that would tend to curtail the movement of ore, the total is of good proportions, the two big years, 1890 and 1892, alone exceeding it. The aggregates appear thus in gross tons:

Receipts at lower lake ports, season of 1894..... 6,350,825
On dock at lower lake ports, December 1, 1894..... 1,834,247
Shipments from upper lake ports, season of 1894..... 7,776,547

There was on dock at lower lake ports at the opening of navigation this year 2,583,370 gross tons. The shipments to furnaces from Lake Erie docks have thus been 4,104,948 tons the past season, as against 3,358,148 tons in the same period last year, and 4,048,471 tons in the year of prosperity, 1892. The table below gives in the last column the receipts at all ports in the season just closed; and for purposes of comparison the receipts for the preceding years are also shown, in gross tons:

Ports.	RECEIPTS AT LOWER LAKE PORTS.				ON DOCK DECEMBER 1ST.			
	1891.	1892.	1893.	1894.	1891.	1892.	1893.	1894.
Toledo ..	191,105	139,987	145,515	158,284	122,515	71,409	92,911	96,157
Sand'ky.	105,907	49,736	4,464	23,043	122,000	87,500	78,439	77,044
Huron ..	14,910	65,000	137,700	172,775	14,910	45,000	89,100	147,632
Lorain..	266,069	190,400	165,667	150,424	250,812	147,600	201,632	2,373,733
Clevel'd.	1,257,775	1,960,224	1,260,716	1,624,573	1,114,762	1,347,992	1,163,930	1,441,785
Fairport	699,434	866,611	792,517	976,222	597,617	610,669	578,033	660,989
Ashland	1,569,785	2,555,416	1,843,738	1,987,722	903,957	1,312,658	1,295,431	1,439,119
Conn'ut.	.....	1,130	203,207	237,905	.....	.....	91,337	199,365
Erie	393,759	645,230	409,239	654,338	252,516	401,683	359,827	454,233
Buffalo ..	410,000	197,000	308,238	395,339	129,000	125,000	110,170	94,239
Total..	4,939,684	6,660,734	5,333,061	6,350,825	3,508,489	4,149,451	4,070,710	4,834,247

* Includes Tonawanda.

The proportion of unsold ore in the total of 4,834,247 gross tons given above is a matter of conjecture. It must be remembered that a large amount of ore is on docks owned by furnace companies. The same is true, also, of a large amount of the ore on the docks controlled by railroad companies and by lake shipping firms—it has been contracted for and will be taken into furnace yards as fast as needed. It is well known that a good deal of unsold Mesaba non-Bessemer came down this year: a smaller quantity of Bessemer from the same range is unsold. Then there are non-Bessemer stocks that have been on dock for a season, two seasons, and in some cases longer.

Regarding the upper lake shipments, the following table shows the water shipments from each port for 1894 and the three years preceding, in gross tons:

	1894.	1893.	1892.	1891.
Escanaba.....	1,643,009	2,048,981	4,010,085	3,058,590
Marquette.....	1,333,872	1,086,934	1,026,338	1,056,027
Ashland.....	1,738,590	1,117,520	2,223,682	1,261,638
Two Harbors.....	1,373,253	903,329	1,165,076	890,299
Gladstone.....	218,580	203,585	115,886	177,866
Superior.....	.....	80,273	4,245	.....
Duluth.....	1,369,252	440,292	.....	.....
Total by lake.....	7,776,547	5,880,918	8,545,313	6,444,440
Total all rail.....	.....	178,037	528,930	650,541
Total shipments.....	.....	6,058,955	9,074,243	7,094,981

Deducting from the total, 7,776,547 tons, the amount received at Lake Erie ports, the balance, 1,425,723 tons, represents ore shipped to South Chicago, Bay View, and to such of the charcoal furnaces as can be reached by water. Last year this total for Illinois, Wisconsin and Michigan furnaces was only 503,668 tons. Last year the all-rail ore amounted to 178,037 tons, an exceptionally small amount. Should it be no larger this year the total output of the Lake Superior region will not be far from 8,000,000 tons.

The Bhaganwala Coalfield, India.—Mr. Tom D. la Touche, in a report to the Geological Survey of India, says this coalfield is situated on the plateau overlooking the village of Bhaganwala, near the eastern end of the Salt Range. Bhaganwala itself is about 10 miles northeast of Haranpur station, on the Sind-Sagar Railway. The area forms a part of the Eastern plateau. The existence of coal here has been known since 1863, but it is only quite recently that an attempt has been made to open out the coalfield. In 1864 Dr. Oldham estimated that the total quantity of available coal was between 50,000 and 60,000 tons. In 1892 Mr. Luckstedt reported that the quantity of coal was estimated at 10,000,000 tons, of which 6,000,000 were said to be available. Before sanctioning the expense necessary to provide railway communication, further investigation was thought advisable, and the present survey was undertaken. While it was in progress Mr. Luckstedt furnished another report, in which the amount of coal was estimated at 20,000,000 tons. Mr. Touche's conclusion, taking into account only those areas where the existence of workable coal has been actually proved, is about 88,480 tons. This is considered actually proved, while 1,000,000 tons is considered a reasonable estimate of the quantity obtainable.

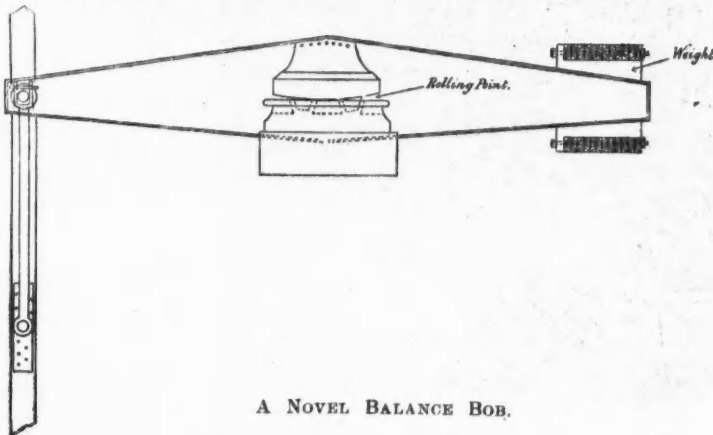
UTILIZING BLAST FURNACE SLAG.

Another use for blast furnace slag is suggested by "L'Industrie." It is pointed out that refined slag is a silicate of the basic type, the silicon being present as dioxide. It contains less silica and more basic oxides than acid silicates of various types. Now, the fusibility of these depends upon the fusibility of the oxides they contain. Therefore double silicates are less fusible than the corresponding simple ones when their basic constituents are more fusible than silica, and the contrary is the case when they are less fusible than silica. Now, the basic constituents of this slag are less fusible than silica. Therefore a mixture of slag and quartz or sand, made so that the two materials shall be in the same proportions as they are found in their double silicates, will melt at a lower temperature than slag alone, and the melting point of the mixture will be exactly the temperature at which the silicate obtained may be remelted. The melting point of this slag is about as high as that of orthoclase (potassium feldspar). The latter only melts at a temperature sufficient to burn porcelain, and its melting point is not lowered by the addition of silica; the mixture of slag and sand, on the other hand, melts at about the temperature necessary to burn bisque. The compounds formed of silica and feldspar are not transparent, while those formed of silica and slag or a mixture of feldspar, slag and silica are; perhaps because feldspar is rich in aluminum, and slag contains but a small percentage of this. The use of slags in manufactories of porcelain and fayence has therefore the following advantages: The glaze can be melted at a lower temperature when refined slag is added to the materials usually employed; i. e., quartz and feldspar. At ordinary temperatures the glaze is clearer if slag be used. The use of slag lessens the amount of glaze necessary for the porcelain—a not unimportant consideration, for the porcelain loses in plasticity as the quantity of enamel is increased. Finally, slag may also be utilized in the manufacture of glass. The advantage of using it differs in different cases, and is largely dependent upon the qualities and relations of the elements which are to enter into the glass. Indeed, the energy with which different silicates enter into combination with each other is dependent largely upon their composition, and especially the proportion of silica they contain. Simple and triple silicates, containing the same bases, combine with each other very readily. Double and triple silicates react on each other with less energy, and simple silicates react very little. Easy and perfect combination of the elements entering into the composition of glass is very conducive to its good quality. Experiments have shown that pure slag is a great help in effecting this.

A NOVEL BALANCE BOB.*

By Walter Bell.

The writer recently saw a novel balance bob attached to a Cornish pump at a colliery near St. Etienne, France, as shown in the accompanying illustration. The engine has a cylinder 72 in. diameter and about 10 ft. stroke. The beam, instead of oscillating about a fixed point, rolls on shoes of cast steel. Thus the beam alters its fulcrum during the stroke. To prevent slip at the end of the stroke, there are two teeth which keep the beam in position. This movement of the beam acts the same as a cut-



A NOVEL BALANCE BOB.

off on the engine. When the rods descend, the weighted end of the beam gets longer, and so acts as a cut-off near the end of the stroke, causing it to be done gradually; and at the ascending stroke there is exerted a greater force which has in the descending stroke been stored up.

The beam is 45 ft. long, its weight about 60 tons, and it is placed a few feet below the surface. About 5½ strokes are made per minute. This system is much appreciated at the colliery. It replaced an ordinary balance bob when they were increasing the length of rods to pump from a lower level, and saved the purchase of a new engine.

Carboniferous Outcroppings in the Sahara.—In a recent note submitted to the French Academy of Sciences, M. Foureau says that the explorations made in Africa have shown the existence of carboniferous outcroppings over a considerable extent of the Sahara. The system best known and examined by the French engineers extends in a general line from northwest to southeast, following the western border of the Igharharem Valley from Khanfoussa and Gared-le-Beida, forming a band parallel to one which had previously been explored by the author. These outcroppings extend over a wide district extending as far to the southward as Issaoun and over the plateau south from that point. The most prominent outcroppings are between the 27th and 28th parallels of north latitude and the 5th and 6th parallels of east longitude. M. Foureau believes that the outcroppings at several points are sufficiently marked to warrant extensive explorations for coal.

* Transactions British Society of Mining Students.

THE MINING EXPOSITION AT SANTIAGO, CHILE.

From Our Special Correspondent at Santiago.

In and around the machinery hall, at the exposition, all of the machinery is directly or indirectly connected with mining. There is a good electrical exhibit, an excellent display of ores and minerals and many models, charts and maps of interest. Although this is primarily a mining exhibition, there are a variety of other subjects touched upon in the smaller buildings—as agricultural machinery and a large exhibit of Chilean home industries. The Brazilian exhibit of minerals, charts, etc., is very interesting.

The condition of exchange during the month of October was a decided improvement over the two preceding months, being on an average, upon letters on London of 90 days' sight, 12½d. per peso.

At present, November 13th, exchange has experienced a great increase, standing at 14½d., though the "conversion ministry" was defeated in Congress on the 8th inst., and has resigned. The President, being a strong concessionist, the position is somewhat embarrassing for him. Of course, the country at large desires conversion, but strong doubts are expressed by those who should know that the conversion to 24d. in 1896 will actually take place. There is much "speechifying," and there should be, as the question is a serious one for Chile. Some think that it would be just as disastrous to convert to 24d. all at once as to leave the matter to take care of itself, and such people, though conversionists, prefer a gradual rise.

It was decreed that the export taxes upon nitrate and guano should be collected during November with a surcharge of 198.04 pesos for each 100 pesos—that is, the duties having to be paid in gold equivalent, more or less. The surcharge is fixed by the government from time to time.

At the sale of nitrate lands in October, the amount received was £1,070,547 14s., which was £717,511 2s. less than the total value of all the lands to be sold. This resulted from the fact that many of the lands were not sold at all. Those that secured purchasers exceeded their minimum value by £147,956 14s. It is thought that higher prices would have been paid had it not been for arrangements made before the auction between purchasers not to bid against each other. Some of the lands are adjacent to those already exhausted, and it was, therefore, almost a matter of necessity that they should be secured by the owners of the latter.

The next sale will take place May 15th, 1895. There are 21 lots the value of which will be determined by an appraising commission, and the amounts published by the 10th of next March.

In October 350,000 Spanish quintals of nitrate were exported from Tocopilla. More than that quantity is exported this month (November) from Iquique.

The exportation of saltpetre during the whole year up to the end of October was 17,574,099 quintals; the consumption, 19,901,981 quintals; an increase on last year. The amount now in sight is sufficient to supply the market for 20 or 25 years.

At the sale of the nitrate oficina, "Pena Grande," the property will be divided into two parts—lot 1, situated at the north, valued at £181,235 16s.; lot 2, at the south, £185,079 6s.

The Gold Mining Company of Alhue has purchased some nine gold mines located in the department of Melipilla, and proposes to work them by the MacArthur-Forrest process, as well as the mines they already own.

At Punitaqui, in the department of Oralle, has been found a piece of pure, native gold weighing 660 grams, which has been sold for 1,500 pesos. The gold in this region is very abundant, but there is not much water to work it.

It is said that in the goldfields at the source of the river Coinetos, there are large quantities of the precious metal, the nuggets ranging in size from a grain of wheat to a kernel of corn. The gravel consists of Metamorphic rocks. Repeated workings have given the following results per cubic meter: Poor banks, .053 gram; high banks, 2.063 grams; low banks, 3.075 grams. Some of the rest is possibly richer. The fineness of the gold is 906.7 and it contains 9.33% silver. The distance to the nearest town is 8 leagues; to the Atlantic, 100 leagues; but the road to the Pacific is better.

From Brazil comes the report that a company has been organized to explore the mercury mines in Triphuy. There are almost mountains of iron and some 50 foundries, which prepare the metal by the direct method in crucible furnaces and Italian and American forges. It is hoped that soon the lead deposits will be investigated and found sufficiently rich in silver to warrant the extension of the railroad.

The Colquechaca-Aullagas Company, of Bolivia, extracted in the month of July over 160,000 oz. of silver, but the large debt prevented the payment of dividends.

In connection with the present interest taken in mining matters, the subject of railroads has come up. These have been insufficient, the freight charges high, and the service poor. The Minister of Public Works has authorized the expenditure of 73,721 pesos 15 centavos to be employed in the purchase of materials for the various lines in construction.

In Buenos Ayres there is some talk of the trans-Andean railroad, for which that government offers inducements in the way of diminished taxes.

The Welsbach vs. Hirschfeld Lamp.—An interesting case has recently been decided in London between the Incandescent Gas Light Company, owners of the patents for the Welsbach burner, and the Deimel Light Company, owners of patents granted to Mr. Hirschfeld for lamps of a similar type. The former company sued the latter for infringement of its patents, asking for an injunction, which has been granted by the court. From the testimony it appears that Hirschfeld sold to the Deimel Light Company a carboy of a certain solution, the composition of which was held secret, and this company made its incandescent mantles for the burners by soaking the cotton fabric in this solution and then burning out the organic portion. It seems that upon analysis this solution was nothing more than sulphate of alum, although Hirschfeld claimed that no alumina was present, and had in it neither thorium, cerium, lanthanum, yttrium or zirconium. The light given by these burners was stated to be nearly equal to the Welsbach, though the latter was a brilliant white, while the former had a more ruddy color, corresponding with the light from an incandescent lamp. The only difficulty said to be encountered was that the Hirschfeld burners did not last so long as the Welsbach.

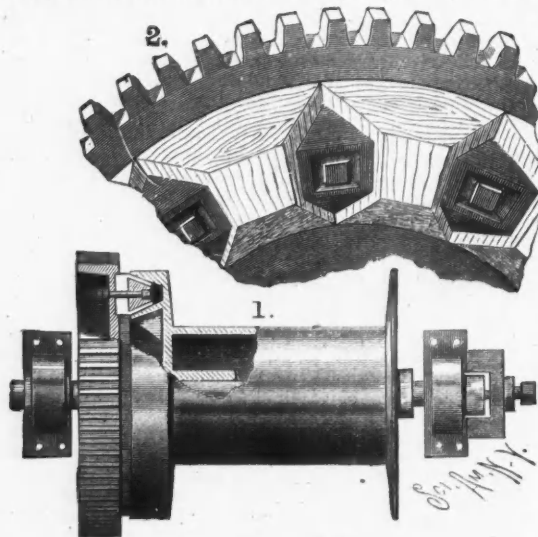
THE DE LA VERGNE REFRIGERATING MACHINE COMPANY.

With the revival of business, which is now apparent in nearly every line of trade, we note a new undertaking by an old firm. The De La Vergne Refrigerating Machine Company, having already gained for itself an international reputation in the manufacture of refrigeration and ice-making machinery, and realizing the fact that there exists an excellent field for improved machinery has secured the exclusive right to manufacture an improved form of friction hoist, patented by Mr. G. P. Wern, who has for many years been chief of the draughting department of the Lidgerwood Manufacturing Company, of New York.

The De La Vergne Company's works are located in East 138th street, New York, and occupy about 90 city lots, with a river frontage of 233 ft., and shipping facilities by both rail and water. The office building has a length of 125 ft. by 30 ft. Abutting on this building, and running along 138th street, are two machine shops, each 200 ft. long, 50 ft. wide, and three stories in height. Thirty feet south of the office is the boiler house, with frontage of 55 ft. This contains also a plant for the manufacture of anhydrous ammonia. It runs back 75 ft. on 137th street, followed by the southern wing, which fronts 275 ft. on the same street. On the other side of Walnut street are the stables and apartments for drivers, together with storehouse for finished stock. In addition to these buildings the company will erect foundry and boiler shops and equip them with modern machinery. On the second floor of the office building are the offices of the president and executive staff. On the same floor is the main business office and financial department. Provision has been made for the preservation of important papers by the construction of a fire vault, extending from the ground to the draughting office on the third floor. On the first, or ground, floor of this building are offices for the erecting engineers, draughtsmen of the construction department and shipping clerk, and headquarters for laborers.

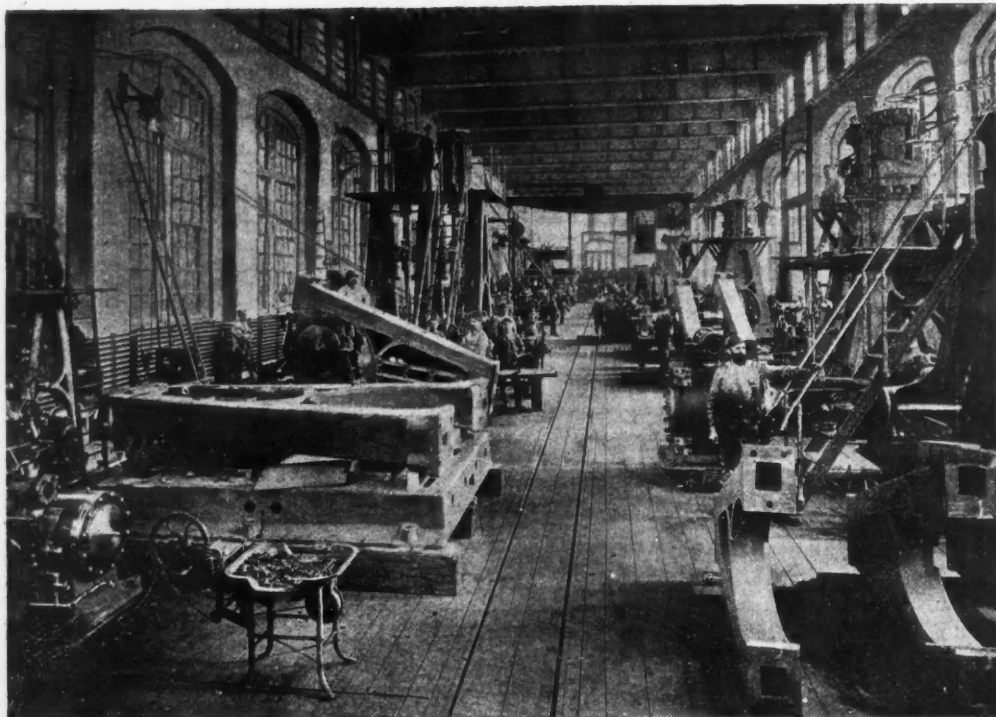
The erecting shop is 55 ft. x 275 ft. clear floor space, the upper floor being supported upon wrought iron girders 4 ft. 8 in. deep. This room is equipped with a 15-ton Morgan electric crane running its entire length, having a travel of about 380 ft. per minute, and operated by three Thomson-Houston motors. At the east end are a number of heavy tools, planers,

The Wern improved friction hoist, which is now being made by the De La Vergne Company, is of the double cone type, composed of blocks of well-seasoned hardwood, secured to the spur gear by bolts and wedge-



WERN FRICTION CLUTCH.

shaped washers between the joints of the blocks. The end of the grain is exposed to wear. If the wood shrinks the washers can be drawn up, forcing the blocks apart and acting as binders, thus preventing chance of



ERECTING SHOP.

lathes, boring machines and slotters, each being run by an independent electric motor of the C. and C. type. It is interesting to note that 9½ H. P. is consumed by all these tools, including the electric crane.

The engine-room, which is connected with the southern wing, contains a 150 H. P. horizontal cross compound Corliss engines, operating electric generators for power and light throughout the shops and one 100 H. P. vertical Corliss engine. Across the court is the main machine shop containing tools for heavy work. The floor above is used in finishing light work. The third floor is occupied by tinsmiths, pattern makers and brass polishers. Every where throughout the building ample precautions against fire are found in fire hose, hand grenades and chemical fire pails.

Across a bridge to the third floor of the other main building is the carpenter shop, where all wood work required for refrigerating and hoisting machinery is made. A store-room for brass and other fittings is on this floor, and also a testing department, where all fittings used upon refrigerating apparatus are submitted to an hydraulic pressure of 1,000 lbs. per sq. in. On the floor below are milling machines, lathes, punches and drills.

In the manufacture of refrigerating apparatus one of the most difficult problems is the piping. After leaving the threading and cutting-off machines, the pipes pass to the emery grinders, where they are ground bright for an inch in width, immediately above the threaded portion, to facilitate soldering. All ammonia fittings are provided with an annular recess, and after being screwed into place the standard and special combinations are taken to the soldering bench, where this recess is filled with solder to make the joint ammonia proof.

splitting. As the friction surface is broken, air enters between the blocks and flange and lessens undue heating. All parts are made to standard gages, and are therefore easy to replace when worn out. A large stock will be kept constantly on hand ready for shipment.

The company has recently completed an unusually heavy hoist designed for wrecking purposes and made for the Chapman Wrecking Company, of New York. This machine consists of three independently operated drums, the middle one being 72 in. and the outer 36 in. diameter, operated by 14 in. x 16 in. and 10 in. x 16 in. double cylinder vertical engines respectively. The normal capacity of the engines is about 230 H. P. The teeth of the large gear are 4 in. pitch with 9 in. face, those of the small gear being of 2½ in. pitch and 7 in. face. The teeth on the large gear are calculated to withstand a strain of 24,000 lbs. with safety, the smaller ones being in the same proportion. This machine is capable of exerting a combined pull on a single rope of 13 tons, and as the purchase blocks are constructed with a ratio of 20 to 1, the lifting capacity will be 260 tons. The weight of the hoist is about 40 tons, while the tackle blocks weigh about 32 tons. A 1½ in. wire cable will be used and, by means of an interlocking shaft, the three drums may be operated in unison. The floor space required is about 15 ft. square.

The Decimal System in Turkey.—From the beginning of next March only decimal weights and measures will be in legal use in Turkey.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specialy Reported for the Engineering and Mining Journal.

SUPREME COURT OF PENNSYLVANIA.

Lessee's Liability for Rent of Oil Land.

One who leases oil land under an agreement to pay a certain sum for each oil well drilled is not released from liability for the rent by his assignment of the lease to another person, whom the lessor recognizes as his tenant. The lessee is not released from liability for rent of a well by the lessor's failure to demand from the assignee the rent at the time boring is commenced.—Pittsburg Consolidated Coal Company vs. Greenlee, 30 Atlantic Reports, 489.

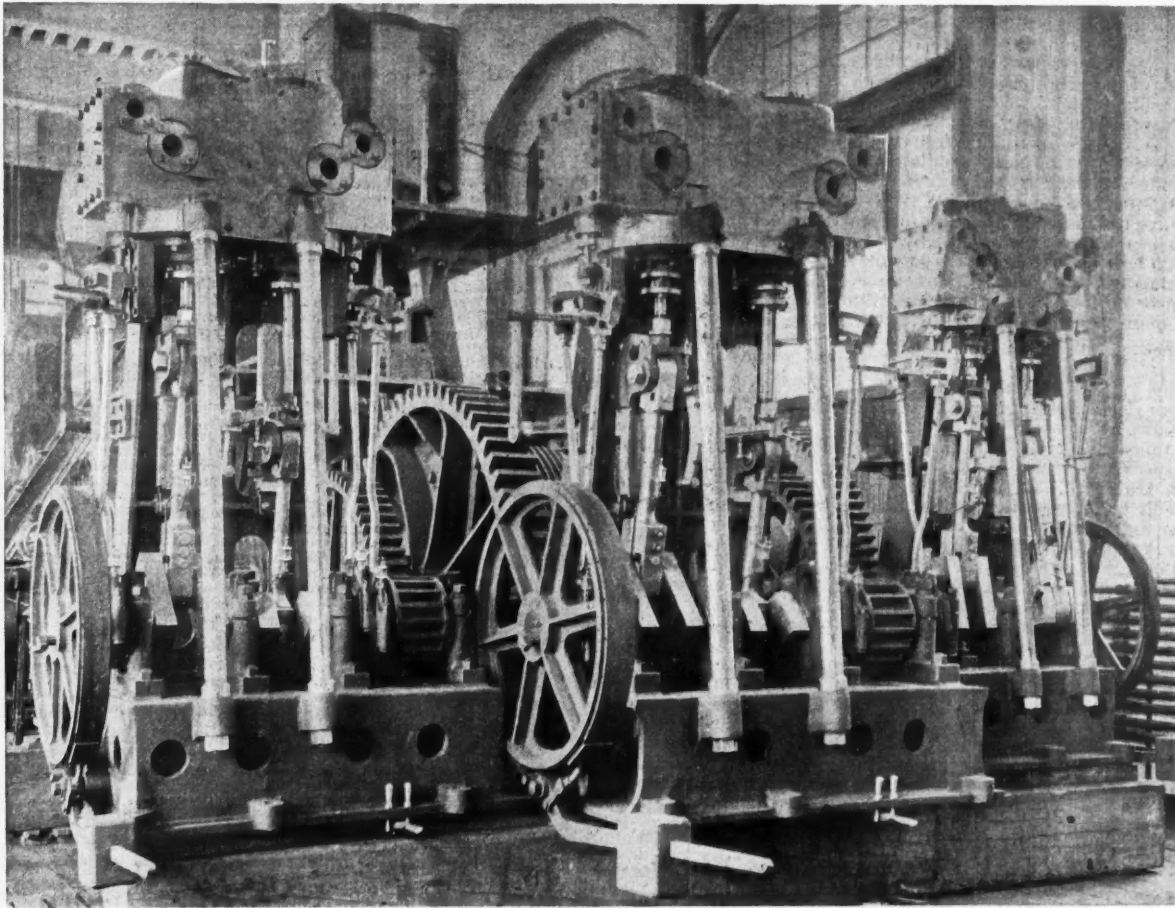
SUPREME COURT OF NEBRASKA.

Rights of Owner of Milldam as Against Riparian Owner.

The owner of a mill, who has the right to maintain a pond or flow back the water of a stream upon the land of another, and to use such water to operate his mill, possesses, as to the water, the dominant right, and, while not the absolute owner of ice which may form on the pond, is entitled to have it remain there during the time and whenever its so remaining will be or is useful and necessary to the legitimate exercise of his right to use the water as motive power for his mill or to successfully operate the mill; but the owner of the land, if upon a non-navigable stream, may make any use he desires of ice which forms over and above so much of

within the surface lines of the location: that is, such part of the ledge as lies within such lines. And there is no limitation or exception of any such ledge on account of the direction it may run. It may be parallel with the original discovered ledge, or may approach it at right angles, or at an obtuse angle, or at an acute angle; it may intersect it or not; and still it may be clearly within the language of the said section."

The act of 1872, in granting all other veins that were within the surface lines of previous locations, did not create any new lines for such other veins, nor invest the court with any authority to make new end-lines for such other veins. And it is apparent from an examination of the statute that the court has no power to make a new location for every vein that may be found within the surface lines of the location, and thereby enlarge the rights of the original locators. When the end-lines of a mining location are once fixed they bound the extra-lateral rights to all the lodes that are thereafter found within the surface lines of the location. It necessarily follows that the end-lines of the survey must be considered by the court as the end-lines of any and all other lodes or veins which lie "inside of such surface lines"; otherwise endless confusion would arise in the construction of the statute. End-lines would have to be constructed in different directions if the separate lodes or veins found within the surface lines did not run parallel with each other, and the result would be that these lines extended might give to the owners of the claims a greater length along the lode as it extended downward than they had upon the surface. If the same end-lines which bind the extra-lateral rights of the surface survey apply to the contact vein and to all other veins, if any are



DE LA VERGNE WRECKING HOIST, CAPACITY 260 TONS.

the bed of the stream to which his ownership extends as does not interfere with or injure the rights of the millowner. If the owner of a mill and the dam subservient thereto wantonly and unnecessarily draws the water from, or lowers the water in the pond, and by so doing injures or destroys the ice privileges of the owner of land bordering upon the pond, he thereby renders himself liable to damages to such owner. An injunction will not be granted or sustained where the injury complained of in the petition filed is not shown to be such as to be irreparable, or the party without a full and adequate remedy at law.—Eidemiller Ice Co. v. Guthrie, 60 N. W. Rep. 717.

UNITED STATES CIRCUIT COURT, NORTHERN DISTRICT OF CALIFORNIA.

Extra-Lateral Rights as to Other Veins.

Under Act of 1872 (Revised Statutes, Sec. 2,322) giving one who had theretofore located a vein and received a patent therefor, by which he obtained a right only to that particular vein, and to the surface ground as surveyed as incident merely to the vein, all other veins throughout their entire depth, the apexes of which lay within such surface lines extended downward, his extra-lateral rights as to such other veins are determined by the original end lines of the location.

In Wilhelm vs. Sylvester (35 Pacific Reports, 997), the Supreme Court of California, in discussing this question, after quoting from section 2,322 of the Revised Statutes, said: "This language is clear and explicit, and in designating the property rights of locators is in no wise ambiguous or uncertain. It expressly, and in language which needs no construction, grants to such locators every ledge or lode the top or apex of which lies

hereafter found, then no such difficulty can arise. This is the rule that applies to all locations made after the act of 1872, and it ought not to be presumed that Congress, by its grant to prior locators, intended to give greater rights to them than were given and granted to subsequent locators under the same act.

It is settled by the Supreme Court of the United States, in Iron Silver Mining Company vs. Elgin Mining Company, that the same end lines bound all extra lateral rights as to all veins or lodes within the surface boundaries of the claim. Justice Field, in delivering the opinion of the court, speaking of the rights of locators of mining ground to follow the lode in its depth, said: "It often happens that the top or apex of more than one vein lies within such surface lines, and the veins may have different courses and dips, yet his right to follow them outside of the side-lines of the location must be bound by planes drawn vertically through the same end-lines. The planes of the end-lines cannot be drawn at right angles to the courses of all the veins if they are not identical."—Walrath vs. Champion Mining Company, 63 Federal Reports, 552.

Coal in Holland.—A correspondent writing in "Zeitschrift für Praktische Geologie," says near Heerlen, in the province of Limburg, a boring proved the existence of flat regular strata of coal. The coals are identical with those of the Aix-la-Chapelle coal-basin, and the strata are the same, but flatter and more regular. The coal was reached at 325 ft., and the boring passed through 78 ft. of coal-bearing strata. At other places, near Heerlen, beds of brown coal, over 22 ft. in thickness, have been found.

The Douro Antimony District, Portugal.—A communication published in "Revista Minera" says the Douro metalliferous zone extends in a northeasterly direction from Castello de Paiva to Vallongo, with a length of 37 and a width of 6 miles. The rocks are argillaceous, talcose and micaceous schists, grauwackes and quartzites of Laurentian, Cambrian and Silurian age. The veins traverse these rocks in all directions, the gangue consisting of white quartz and sometimes of silicified fragments of country rock, carrying stibnite, and generally also some gold in the quartz. The principal mining centers are Vallongo and Gondomar.

An International Exhibition at Amsterdam.—An international exhibition has been decided upon by the city of Amsterdam, and will be opened in the summer of next year. The buildings are to be erected on the land situate at the back of the State Museum, on the site occupied by the Universal Exhibition of 1883, and will cover a superficial area of 160,000 square meters. The plans of the various exhibition buildings are being prepared, and their construction will be shortly taken in hand. The exhibition will be divided into the following sections: Architecture, transport by land, transport by sea, aerial navigation, general industry, alimentary industries, sea and fresh-water fishing, hygiene, machinery, lighting, artistic industry, heating apparatus, geographical section, household requisites, safety apparatus, horticulture, insurance, and miscellaneous. The committee hope that the exhibition will be ready to be opened on May 3d next year. It will last for five months.

The Formation of Coal in Situ.—In a communication in "Zeitschrift der Deutschen Geologischen Gesellschaft," Mr. H. Potonie says, in speaking from his own observations in Upper Silesia, that he notes the extraordinary abundance of *Stigmara ficoides* in the clay-slate under such conditions as to make it plain that the plant has been fossilized where it grew, and therefore that the "clay-slate" is, in a certain sense, a "fossil soil." He figures a specimen of "*Stigmara*" with the appendices ramifying on three sides from corresponding "scars" on a central trunk. Enough is known of their feeble resisting capacity to mechanical forces to feel assured that the plants could not have, say, drifted in their present state, unless the mass of surrounding soil was carried bodily with them. These specimens occur in Upper Silesia in vast numbers, and there is reason to believe that a large portion of the "clay-slate" parting of the coal-measures in that area must have been laid down before the *Stigmara* grew in it and the occurrence of coal vegetation in situ is thus shown to be more extended than the believers in the mainly "drift-coal" theory are prepared to admit.

Experiments on the Heating Power of the Electric Light.—Mascart found that an electric glow lamp, 32 candles, set fire to cotton-wool saturated with india rubber, and packed round it, in two minutes; to black silk in six minutes; and to a double layer of cotton cloth in two minutes, says the "Gas World." The same materials not saturated with india rubber did not take fire. Captain Exler, of the Austrian army, now finds that a 16 candle lamp, sunk in paraffin, reaches a maximum temperature of 94° C.; one of 25 candles 101° C. A layer of gunpowder, ecrasite or pulverulent pyroxyline is not set on fire by this; the ecrasite melted and the gunpowder lost all of its sulphur. If the material be spread on a material, for instance wood, which is opaque to heat rays, the action is more marked when the lamp is brought very near to it; the ecrasite melts, the pyroxyline darkens, the gunpowder loses its sulphur, and the nitre melts, and the wood chars. Two lamps in a cavity of wood get up a temperature of 215° C., but the explosives did not go off, though they decomposed. When the cavity was filled with water it boiled in 15 minutes. The spark produced on turning off the flame only kindles these explosives when they have become very dry; but the spark produced on switching off a feeble resistance between two lamp wires can do so readily. If the lamp breaks, pyroxyline or gunpowder does not ignite, but an explosive gaseous mixture will; whence, in dangerous surroundings, the lamp wall should be thick, and the lamp should never be brought too near combustible material.

Structure of Gold Nuggets.—The structure of gold nuggets is the subject of a paper recently contributed to the New South Wales Royal Society by Professor Liversidge, F. R. S. Gold nuggets on being cut through, or sliced and polished, and then etched by chlorine water, were found to exhibit well-marked crystalline structure closely resembling the Widmanstätt figures shown by most metallic meteorites, except that in the nuggets the crystals are more or less square in section, and show faces which evidently belong to the octahedron and cube. On heating the nuggets in a Bunsen burner, blebs or blisters form, on both the polished and unpolished surfaces; and on still more strongly heating, these, in some cases, burst with sharp reports, and pieces of gold are projected with considerable violence. As no explosions have been observed on dissolving or eating away the crusts of these blisters by chlorine water, it would appear that the blebs are probably due to the vaporization of some liquid or solid substance. As soon as a fresh supply of nuggets is obtained, experiments will be proceeded with to ascertain definitely whether gold nuggets contain occluded gases, or liquids, or solids which are vaporizable. In slicing some nuggets, scattered granules of quartz were met with inside, although quite invisible outside, and at first it was thought that the explosions might be due to the quartz; but the gas, in some cases, continued to issue from the burst bleb—where the aperture formed was small—and forced the Bunsen flame out into lateral jets, just as if urged by a blow-pipe.

The Northernmost Mine.—The mine which is located farther north than any other mine in the United States, and probably in the world, is the Omalak mine in Alaska, owned by Mr. J. C. Green, which has been steadily worked for nearly 12 years past, although very little is ever heard of it. The mine is on the Fish River not far from Golovnin Bay, about 60 miles north of St. Michael, and nearly 1,000 miles northeast of Sitka. The location is in latitude 65° north, or almost under the Arctic Circle. Mr. Green, it is stated, discovered and secured possession of this mine in 1881 and has since then spent about \$100,000 in development. It is a silver mine,

the ore being galena and the average yield for some time past has been about 75% lead and 143 oz. silver to the ton, but only a trace of gold. The owner spends his winters in California, and in the spring charters a ship to carry his year's supply of stores and the miners he engages to the Fish River. He returns in the fall with the cargo of ore, bringing back also the miners. As they receive their board while at work and on the voyage and have no opportunity whatever of spending money, their wages are generally drawn in a lump upon their return. The natives of that part of Alaska are Eskimo, and are usually a very peaceful people. Mr. Green has always been good friends with them and employs a number in performing the unskilled labor required. They are, he says, good workers but are apt to get tired and leave after a few weeks, not being used to continuous labor. The climate is not as severe as might be supposed, as like the whole of the Alaska coast the effect of the Kuro Siwo—the great Japanese current—is felt, making the temperature very much lower than that of the corresponding latitudes on the Atlantic coast of the continent. In the intervals of work there is abundant chance to fish and hunt, game of many different kinds being plentiful. Mr. Green has no hesitation in closing up his mine and leaving it for the winter, as there are no white men in the country except himself, and the miners he takes with him each year, and the Eskimo have no particular use for his ore.

PATENTS RELATING TO MINING AND METALLURGY.

United States.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

TUESDAY, DECEMBER 18TH, 1894.

- 530,944. Generator for the Manufacture of Gas. James L. Hastings, Philadelphia, Pa. Assignor to the National Heat and Power Company, same place. Apparatus having a central circular air tank and air pipes.
- 530,949. Means for Adjusting Rolls for Rolling Mills. Otto Klatte, Neuwied-on-the-Rhine, Germany. Combination with the roll axle of two outer disks or wheels and an eccentric provided with pivots resting in holes in the same.
- 530,939. Well Boring Apparatus. Lane Grist, Scranton, Assignor of one-half to George L. Brower, Des Moines, Ia. Combination of a prime mover, connecting rods with crown-wheels and rotated mechanism.
- 531,004. Process of and Apparatus for Desulphurizing Ores. Louis Pelatan, Paris, France, and Fabrizio Clerici, Milan, Italy. Process consists in treating the ore in a series of batches, which are gradually brought nearer the fire.
- 531,019. Coal Mining Machine. Patrick F. Campbell, Portage, Pa. Combination of a rectangular bed-frame mounted and movable longitudinally, having a depending guide frame, a cross-head, saws, means for moving the saw frame longitudinally on the bed-frame and means for reciprocating the cross-head.
- 521,012. Rolling Mill. Samuel Johnston, New York, N. Y. Combination of a frame, having a lower bed, a roller, a reciprocating platen, and an upper or back-pressure bed.
- 531,043. Rock Drill. Harvey P. Jones and George B. Jones, Denver, Colo. Combination of a supporting standard, a bed, a longitudinally movable track, a fastening device, a drill frame, a ratchet connection between the drill frame and the track, and a drill mechanism.
- 531,068. Ore Crusher. August H. Schierholz, San Francisco, Cal. Combination of a pan and a vertical and rotary shaft, with crushing rollers.
- 531,127. Ore Grinder and Separator. John W. MacDonald, Pittsburgh, Pa. Combination of a casing, an annular grinding track, and an annular auxiliary chamber having an opening or a series of openings arranged inside grinding track and concentric therewith.
- 531,143. Apparatus for Electric Heating, Smelting and Separating. Joseph W. Woodfolk and John C. Wharton, Nashville, Tenn. Combination with means for circulating a body of water of a hollow electrode through which the material to be treated is fed, and the connections from an electric source to the electrodes.
- 531,144. Apparatus for the Manufacture of Gas. Walter A. Allen, New York, N. Y. Combination of a generator, two receiving chambers, two upright combining and fixing chambers filled with checker work, having chambers and atomizers arranged over them.
- 531,160. Apparatus for Burning Granular Fuel. Colin W. Claybourne, Indianapolis, Ind. Combination of a conduit, a source of supply and an enlarged mixing chamber.
- 531,169. Process of Extracting Metals from Sulphide Ores, Etc. Victor Engelhardt, Vienna, Austria-Hungary, Assignor to Siemens & Halske, Berlin, Germany. The method consists in extracting the metals by treatment with an alkaline sulph-hydrate.
- 521,233. Process of and Apparatus for the Production of Caustic Alkali. Claude T. J. Vaurin, London, England. The method consists in the treatment by electrolysis of the chlorides of potassium or sodium in a fused condition over a cathode of molten lead. The patent also covers combination of two covered furnaces or pots, connected at the bottom by an open conduit.
- 531,212. Kiln. William S. Williams, Canton, O. Combination of two sets of furnaces, upright flues or ducts, a system of heating-agent distributing ducts or flues below the kiln.
- 531,289. Hydrocarbon Burner. Charles E. Cookerly, Kansas City, Mo. Assignor of one-half to Frank F. Schmidt, same place. Combination of a shell, a firepan, an oil-discharge pipe and a steam-jet pipe.

Great Britain.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy:

WEEK ENDING DECEMBER 8TH, 1894.

- 23,930 of 1893. R. Pearson, London. Roasting gold-bearing quartz and quenching, afterwards pulverizing with rolls; the roasting tending to agglomerate the float gold.
- 649, 650 of 1894. Siemens & Halske, Berlin, Germany. Various improvements in percussive electric rock drills.
- 1,746 of 1894. J. Pfeiffer, Kaiserslautern, Bavaria. Ball grinding mills. Addition of a fan to draw off the finer particles and also to cool the apparatus.
- 12,467 of 1894. F. J. Collin, Dortmund, Germany. Coke Oven. Improvements in Patent No. 4,205 of 1893.
- 19,791 of 1894. T. Brown, Sheffield. Improvement in picks, in combination with a notched blade, a socket for attachment to the shaft cast on one piece, and a wedge with rounded lower edge.

WEEK ENDING DECEMBER 15TH, 1894.

- 24,704 of 1893. D. W. Sugg, London. A malleable aluminum brass suitable for imitating gold.
- 971 of 1894. S. Arnold, South Moor, Durham. Safety apparatus for mine cages, consisting of heavy weights held up by the winding rope; when the winding rope breaks the weights falling cause arms to grip the guides.
- 10,040 of 1894. A. Taylor, Halifax. Drill for soft rocks, consisting of a twist drill, the operating motion of which also moves, by worm gear, the wheels supporting the carriage.
- 19,824 of 1894. P. B. Bradley, Boston, Mass., U. S. A. Improvements in the centrifugal pulverizer described in patent No. 4,117 of 1893.
- 20,207 of 1894. J. Gayley, Braconck, Pa., U. S. A. An apparatus for extracting the moisture from the air fed to blast furnaces.
- 20,247 of 1894. D. W. Sugg, London. Alloys of bars with aluminum and nickel suitable for tableware.

PERSONAL.

Mr. P. M. Shannon, of Pittsburg, Pa., has been inspecting the oil fields about Casper, Wyo.

Mr. G. C. Hewett has been appointed fuel agent of the Southern Railway Company, with office at Atlanta, Ga.

Mr. Alvin Brooks, formerly of the Iron Hill mine, is now in charge of the work at the Holy Terror mine, in the Black Hills region.

Mr. Frank Wick has resigned as manager of the mills of the Mahoning Valley Iron Company, and will be succeeded by Mr. W. F. Bonnell.

A report that Mr. D. B. Lyman had resigned his position as superintendent of the Ophir and other mines on the Comstock lode is denied by authority.

Prof. George H. Stone, formerly in charge of the mineralogical and geological departments of the Colorado College, at Colorado Springs, is making a professional tour of New Mexico. He will also visit Arizona.

Thomas Rickard, the well-known mining engineer, father of T. A. Rickard, of Denver, Colo., has gone to Pilgrim's Rest, Lydenburg, South Africa, on professional business, and will be absent for the next six months.

Mr. Ferdinand S. Force, who left the mining district of Southern Oregon, nearly a year ago for South Africa, has returned. After some 30 years' experience in mining in different countries he finds the Pacific Coast better than the Transvaal.

OBITUARY.

Alexander Campbell, who died in Telluride, Colo., December 13th, aged 47 years, was born in Aberdeen, Scotland, and came to the United States and Colorado with his parents in the early '50's. He was raised as a miner and has always followed that avocation. Mr. Campbell was one of the first prospectors to arrive in the Dolores mining district, now known as the Pioneer mining district, having come in the fall of 1878. He was the original locator and owner of the Grand View and Hope and Cross group of mines, situated on Nigger Baby Hill. He sold these properties for \$60,000, and after a trip East again returned to Rico and spent a great deal of this money in prospecting and staking other prospectors. He was one of the founders of the town of Rico. At different times he had been the owner of valuable property, but he died a poor man.

SOCIETIES AND TECHNICAL SCHOOLS.

Iowa Civil Engineers' and Surveyors' Society.—Mr. Seth Dean, secretary, gives notice that the seventh annual meeting of this society will be held in the rooms of the Board of Trade at Dubuque, Ia., commencing on January 16th, 1895, at 2 p. m. All practicing engineers and surveyors are invited to attend.

Montana Society of Civil Engineers.—The regular monthly meeting of the society will be held in Helena, January 12th, at the rooms of the Board of Trade, Main street. Ballots for members and for officers will be canvassed, also the votes on the proposed amendments to the by-laws. The annual meeting will be held at the same place, in the afternoon and evening of the same day, at which a good deal of business of importance to the society will be transacted. A full attendance is desired.

Engineers' Club of St. Louis.—The annual supper was held December 19th at the Mercantile Club, the attendance being 41 members and eight visitors, President Crosby in the chair. After doing justice to the supper, the Executive Committee recommended a contribution, by the club, of \$10 from the library fund toward the publication, in complete shape, of ex-State Geologist Winslow's report on the lead and zinc deposits of the State; the contribution to be conditional upon the club receiving two copies of the report for its library. On vote, the club approved the recommendation. The Executive Committee reported the result of the letter ballot for officers for 1895, as follows: President, S. Bent Russell; vice-president, J. A. Ockerson; secretary, William H. Bryan; treasurer, Thomas B. McMath; directors, B. L. Crosby and Wm. Bouton; librarian, J. N. Judson; members board of managers Association of Engineering Societies, J. B. Johnson and W. E. Barns. Retiring President Crosby introduced Mr. Russell, the president-elect, who took the chair and called on Mr. Crosby for an address. The latter gentleman then read an address on the St. Louis extension of the St. Louis, Keokuk & Northwestern Railroad, describing fully the tracks, yards, bridges, culverts, paving, ballast, grades, curves and other features of interest. Particular attention was paid the Bellefontaine bridge across the Missouri River. After discussion by Messrs. Holman, Judson, Wheeler, Johnson and Keane, it was, on motion, voted that further discussion be postponed until a later meeting.

INDUSTRIAL NOTES.

Fisher & Porter, Monadnock Building, Chicago, Ill., have been appointed Western representatives of the Bethlehem Iron Company.

The Quast Gas Engine and Manufacturing Company, Bucyrus, O., has filed at Columbus an amend-

ment changing name to the Quast Gas and Gasoline Engine Company.

The Clinton Wire Cloth Company, at Clinton, Mass., has just completed a new boiler-house. The roof is of iron, covered with the Berlin Iron Bridge Company's patent anti-condensation corrugated iron.

The dinky mill at the Arethusa Iron Works, New Castle, Pa., has been greatly improved and its capacity enlarged. Forty-inch rolls have been substituted for the 37-in. rolls, and all the parts have been much strengthened.

A plan is on foot to reorganize the Akron (Ohio) Iron Company, now in the hands of Receiver J. A. Long. Many creditors have consented to terminate the receivership, and they will have control of the new company until they are paid.

The Berlin Iron Bridge Company, of East Berlin, Conn., is building a new highway bridge for the Boston & Maine Railroad, at Somerville, Mass., and has also secured from the Long Island Railroad Company a contract for its new pier shed.

The plant of the Robison Company, of Bellwood, near Holidaysburg, Pa., manufacturers of electric machinery, has been sold by the receiver to a company of Altoona capitalists. There will be a resumption of operations with work for 125 men.

A movement is reported to be on foot to transfer the works of the West Superior Iron and Steel Company, at West Superior, Wis., to the Great Northern Railway Company for use as general shops for the manufacture of railroad material and repair work.

The furnace of the Warwick Iron Company, at Pottstown, went into blast October 1st, 1892, and has since run continuously, making 110,000 tons of iron. In the week ending December 1st the output was 1,164 tons, which has only once been exceeded by the furnace.

The Totten & Hogg Iron and Steel Foundry Company, manufacturers of rolling mill and tin plate machinery and engines, has closed a contract with the Baltimore Iron, Steel and Tin Plate Company, of Baltimore, for the entire machinery for a new tin plate plant now building at Locust Point, Md.

At Anniston, Ala., the reorganization of the Woodstock Iron Company into the Woodstock Iron Works has been perfected, and Wm. G. Ledbetter was elected president; Hoffman Atkinson, secretary, and James W. McCulloh, treasurer. First mortgage bonds for \$250,000 will be issued at once and complete repairs made to the blast furnace.

The Goulds Manufacturing Company, Seneca Falls, N. Y., has issued a very complete catalogue of the pumps and hydraulic machinery which it manufactures. It describes several designs of triplex and other power pumps not shown in previous editions of the catalogue, and also new applications and many improvements in design and construction. The catalogue is neat in design, well printed and of convenient size. An advantageous feature is the index, which facilitates reference to any class of machine which it may be desired to look for. There are also a number of useful tables and data serviceable to anyone using pumps.

On the afternoon of December 23d one of the large engines at the Carnegie Steel Company's Works at Braddock, Pa., was wrecked. The accident was caused by the governor of the engine breaking, making it impossible to regulate the speed. The ball in falling broke the throttle valve and the steam could not be shut off. As a result, the speed became so great that the fly wheel flew apart and was broken into fragments. The engine was demolished and the engine-house wrecked. An explosion of one of the boilers added to the excitement. The loss is about \$15,000. No one was injured seriously. The wreck necessitates the closing of the two largest furnaces of the plant.

The M. C. Bullock Manufacturing Company states that its works are crowded with orders for hoisting machinery, diamond drills and central valve engines, and in addition to its full force, it has been found necessary to put on a night force temporarily in order to fill contracts. Among the plants under construction are the following: Three FFF engines for the Mutual Electric Light and Power Company, Braintree, Ill.; two FF engines for the Dayton, O., Asylum; one HH engine for John Wanamaker, Philadelphia, Pa.; five GG engines and one PP engine for the Terre Haute Electric Street Railway Company, Terre Haute, Ind., and one GG engine for a large brass foundry in Chicago.

A press report from Anderson, Ind., says the representatives of the Valley Stove Company, of St. Louis, capital \$450,000; the Union Trust Company, of Indianapolis, and the combined Alexandria Land companies, have reached an agreement locating the mammoth rail and Bessemer steel plants of the St. Louis company at Alexandria. The St. Louis Company pays \$75,000 for the old Depauw plant, and will consolidate the ones at Alexandria and New Albany, together with the one now located at St. Louis, and erect a complete new plant at Alexandria. They will also erect a large Bessemer steel plant and contract to have both in full operation by January 1st, 1896. When they have complied with all the stipulations, the combined land companies turn over a bonus of \$175,000 in lots and cash.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" of what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying or selling goods of any kind.

GENERAL MINING NEWS.

The Senate Committee on Public Lands has authorized a favorable report on the bill providing for a commission to examine and segregate the mineral lands in Montana and Idaho within the Northern Pacific land grant.

ARIZONA.

Yavapai County.

(From our Special Correspondent.)

Jessie.—This mine, near the Agua Frio, not far from the old Bowers ranch house, is making a regular monthly shipment. The Gladstone and the Sink to Rise near it are also producers. These mines are among the leading gold producers of the eastern portion of the county.

Deposits and veins of cinnabar accompanying hematite, in rhyolite, are among the unusual geological phenomena of this county. These deposits are found 13 miles southwest of Prescott and about two miles below Copper Basin. The mines were discovered about four years ago and considerable prospecting done, but outside capital appears never to have been enlisted. The hematite is undoubtedly pseudomorph, often pyrite. Some cinnabar specimens are rich in quicksilver.

CALIFORNIA.

The United States Debris Commission granted licenses to the following additional mines to mine by the hydraulic process, under the provisions of the Caminetti Act: Spanish John mine, owned by John Blake, near Rough and Ready, Nevada County; U. S. Grant mine, owned by E. P. Hager and Samuel Peck, near Blue Tent, Nevada County.

Amador County.

North Gover Mining Company.—At the annual meeting in Amador, recently, the following officers were elected: A. Weil, president; R. Tregloan, secretary; R. M. Ford, treasurer; Thos. Kerr and I. Leppley, directors.

Calaveras County.

(From our Special Correspondent.)

Birney.—This mine on the Birney ranche, a little over a mile from Angels, is now promising well. In this claim there are 12 veins running parallel in a zone 200 ft. wide, eight of which occur within 60 ft. The country rock is granular diabase, which is frequently found altered to magnesian schists, sometimes silicified and impregnated with auriferous sulphide of iron. The quartz occurs in vein-like masses and bunches of irregular form, constituting, with calcite and ankerite, a reticulated zone of quartz in the soft magnesian schists. A shaft has been sunk over 100 ft. and a crosscut run 30 ft. or more. This limited work shows a most encouraging condition. The rock prospects from \$2 to \$20 in gold; 2 to 4% of sulphurets occur, which, when concentrated, assay over \$60 per ton. A stamp mill is being completed on this property, which will be used for the purpose of prospecting. Should the mine develop according to the expectation of the owners, who base their judgment on the present showing, 60 stamps will not be too many on this property.

Mariposa County.

(From our Special Correspondent.)

A mine, located six miles from the town of Mariposa, in an easterly direction, is being investigated by San Francisco men with a view to purchase and equipment.

Hite Mine.—This mine, situated at Hite's Cove, 23 miles northeast of the town of Mariposa, is in a fair way to be reopened. The mine was worked continuously for many years in the 60's and 70's, producing, all told, about \$2,225,000. It is said that the quartz milled from \$25 to \$40 a ton for a long time. The mine is located in the rugged and picturesque canyon of the south fork of the Merced River, a few miles below the Yosemite. The country rock is a dark gray argyllite, with a coarser fragmental rock resembling graywacke. The fissure courses nearly east and west, and dips southerly about 85°. Two tunnels, the upper about 200 ft. long, and the lower 420 ft. below and 1,400 ft. in length, crosscut the country rock, which is often very hard. Through these adits the mine was worked, and, it may be said, worked out, down to the level of the lower tunnel. Below this level and at the face of the long tunnel a winze or inclined shaft was sunk 300 ft. on the fissure. This fissure started in a fine appearing banded vein, but in sinking slaty matter began to appear and continued to increase until the quartz gave place entirely to slaty material. A drift was run east and west at the bottom of the 300 ft. incline, and in the east drift a crosscut was carried into the hanging wall, exposing a solid vein 14 ft. wide, but low grade. No similar crosscut was run in the west drift on that level un-

der the pay shoot which came down from the surface, so it is not positively known whether or not there is a pay-shoot in the west end, though some profess to believe that there is. I am informed that there is every probability that the long abandoned levels will be pumped out and activity follow the long period of idleness.

Napa County.

Napa Consolidated Quicksilver Mining Company.—This company has declared a dividend of 10c. per share, payable January 1st. This will require \$10,000, and will bring up to \$670,000 the total amount paid in dividends to date.

Nevada County.

English Mountain Mine.—The Vulcan wire rope-way, erected by the Vulcan Iron Works, of San Francisco, at this mine is 28,000 ft. long, 600 ft. drop, 100 tons capacity in 10 hours. The country over which this line passes is remarkable on account of its extreme roughness, also for the great depth of snow, 15 ft. to 30 ft. and upwards. Automatic loading and dumping machinery is used and the line can be worked the year round.

Gold Point Consolidated Mining Company.—At the annual meeting in Grass Valley last week the old board of directors was re-elected as follows: Samuel Granger, James Watt, James Bennallack, F. S. Richards, A. P. Brady. The directors organized by electing Samuel Granger, president; F. S. Richards, vice-president; A. B. Brady, secretary; James Watt, treasurer; James Bennallack, superintendent. It is expected the new mill will be running some time next week.

Omaha & Lone Jack.—New ground is being opened up at the 500, 700 and 1,000 levels of the Omaha. In the Lone Jack part of the mine two drifts are being run. About 100 men are employed, 65 of whom are on day's pay.

W. Y. O. D. Mining Company.—At this company's mine work is going on in nine levels and the shaft is also being sunk. The new compressor recently installed work admirably and effect a considerable saving in the cost of extracting ore. In the spring it is proposed to increase the capacity of the mill by adding 10 stamps.

San Bernardino County.

(From our Special Correspondent.)

Gold Mountain.—This mine, better known as the Lucky Baldwin mine, situated on the north side of the San Bernardino Mountains, 45 miles east of Victor, is again attracting attention. A party left last week for the mine, coming from San Francisco. This mine was at one time equipped with a 40-stamp mill, and quite a little village nestled at the foot of the hill. The mill was burned down years ago, and Blairtown is now a single house. The mine is a very interesting one. It occurs at an altitude of about 7,000 ft., overlooking a picturesque lake of several hundred acres, beyond which rise majestic pines, over whose waving tops the smooth, snow-clad summits of the San Bernardino Mountains may be seen. Turning to the northward, a long, steep slope runs down 4,000 ft. or more to the broad expanse of sand, rugged mountains and water-lakes which go to make up the Mojave Desert. The view is unobscured for over 100 miles in that direction. The mine itself consists of a great mass of quartzite, tiled, scattered and crushed. In those portions where the crushing has been most pronounced silica has been deposited, together with iron sulphides and gold. It is claimed that the granular quartzite also contains gold. This is not without precedent, as in South Dakota and in Colorado at several places gold occurs in the quartzite of the Cambrian. At the Gold Mountain mine, however, no eruptive dykes or intrusive masses were discovered. The region near the Gold Mountain mine appears to afford numerous deposits similar to that of the mine itself, but none of them has been worked. I am told these quartzites assay in gold, but often do not prospect in the pan or horn spoon. If this be a fact, these ores are not suited to amalgamation, but may be treated by chlorination or by the cyanide process. It is also said that these ores must be pulverized very fine before the gold can be extracted by amalgamation. This statement only tends to confirm my belief that they are in some respects similar to the ores found at Terry's Peak, near Deadwood, S. Dak., at Leadville and Red Cliff in Colorado.

Tuolumne County.

Godfrey Gold and Silver Mining Company.—This company has been incorporated with \$2,400,000 capital stock to operate mines and transact a general mining business. The office is in San Francisco; the mines to be worked are in this county. The incorporators are Enoch L. Lowe, Susanna Lowe, Lewis W. McGiffin, Ellen Maguire and Thomas G. Maguire.

COLORADO.

El Paso County—Cripple Creek.

(From our Special Correspondent.)

Anna Lee.—This shaft is the deepest in the camp, 470 ft. At the bottom level the shoot of ore is increasing in length and width. The width has increased from 18 ft. to 24 ft., until now it is 28 ft., and its lineal distance has increased from 60 ft. to 92 ft., and still in mineral, which samples in 60-ton lots about 4½ oz. There is no sorting about this vein; it is a case of "everything goes." The shipments of the mine average about 80 tons a day.

Dolly Varden.—This mine has been worked in a desultory manner for the past two weeks, pending a compromise between the owners and the lessees. A meeting is being held to-day to settle the differences.

Gregory.—This mine, owned by the Raven company, on Raven Hill, is worked solely by lessees in 100 ft. blocks. Mr. Matthews, one of the sub-lessees, sold two cars of ore this week. The second grade netted \$32 per ton.

Independence Mine.—This is at present being worked to establish a record in gold mining for amount of ore broken, sent to surface and shipped in one day.

Morning Glory.—This mine on Raven Hill is owned by the Work Mining Company and is being vigorously worked by lessees. The company drove the tunnel south 400 ft., and about 180 ft. from surface sunk a winze 90 ft. on which a steam hoist was fixed. The lessees have extended a drift south 80 ft. from the winze, and sunk a winze to communicate with same, and a distance of 8 ft. is necessary to "hole" when a nice block of stoping ground will be opened. A shaft is also being sunk to communicate with the winze in the tunnel, and when done the hoist will be placed at surface. The lessees are placing the property in good condition.

New Moon.—This is a claim on the north side of Gold Hill, owned by the Gold and Globe Company; it is being worked by six men. Two assays taken by a disinterested party for 2 ft. wide gave \$172 and \$184 per ton. Considerable development is being done on this section of the camp, and new strikes are being reported on frequently.

Portland Gold Mining Company.—This company still keeps making discoveries on its properties on Battle Mountain. The Seranton shaft is now 62 ft. and from the sinking alone a profit of \$7,000 has been made. For the first 8 ft. sunk, and 6 ft. wide, the whole of the excavation gave smelter returns of 13 7/7 oz. The sand right at the grass roots for 2 ft. wide sampled 8 87 oz. of gold per ton. The vein in the shaft is now 4 ft. wide. The Portland shaft is 265 ft. deep. At the 150 ft. level, the north drift has been extended 300 ft. and 175 ft. south. The pay streak in the vein varies from 2 to 4 ft. This is still the best of the properties owned by this company. The Bob Tail shaft has been sunk 150 ft. deep. The shoot of ore is 125 ft. in length and about 4 ft. wide. This property is self-supporting, but has not thus far added much to the reserve fund.

Sheriff.—This claim on the saddle between Bull and Raven Hills is at present being worked by the owners. A new shaft is being sunk near the south end line and the vein is 8 ft. wide in the 18 ft. shaft. A series of eight assays taken yesterday across the vein gave \$8.40, \$2.60, \$5.63, \$29.60, \$36, \$11.40, \$2.40, and \$23.43. The owners think they have a fairly good low-grade proposition.

Summit Mine.—This mine, owned by the Summit Mining Company, is situated on Globe Hill. The shaft has been sunk 225 ft. vertically. At the 220 ft. level a drift has been extended northeast 52 ft., and 75 ft. southwest, and all in mineral. The mine never looked so well as at present, and the stamps at Gillette are kept busy, the full 39 crushing about 55 tons a day of a higher grade ore.

United States Economic Reduction Company.—This company is no exception to the rule that perfection is only obtainable through suffering. At the first attempt to generate the gas in the furnace by means of slack an explosion occurred which blew down part of the brickwork and slightly injured the iron framework. Mr. Rosenmann's gas generator has hitherto worked with success. The plant is now fixed so as to work with crude oil, of which there is an abundance at Florence. The roasters and boilers are so arranged and work with oil successfully.

Victor.—The force at the mine has been increased to 83 men. The drifts at the fifth level are being extended both north and south. The new vein still maintains its value. A winze has been sunk 60 ft. in addition to the 180 ft. opened on the vein. A crusher has been added to the dressing department. A dry or charging house has lately been built for the miners.

Pitkin County.

(From an Occasional Correspondent.)

In Aspen, December 17th, at the meetings of the Pontiac Mining Company, the Champion-Empire Mining Company, and the St. Joe & Mineral Farm Consolidated Mining Company, over 90% of the stockholders being present or represented, it was unanimously resolved to consolidate these three adjacent properties. It is the intention shortly to begin sinking a shaft below the Cowenhoven tunnel level for the systematic development of the territory. These properties produced over 10,000 tons of ore during the last year. The results of work in the neighborhood have shown the vein to be better in grade below the tunnel than above.

FLORIDA.

A decision was recently handed down by the Secretary of the Interior in the matter of the protest filed by J. F. Tucker and others against the selection of lands made by the Florida Central & Peninsular Railroad Company, which contained valuable phosphate deposits. The Secretary says the question involved is whether lands containing phosphate deposits are reserved as mineral lands under the law, and finally decides that he cannot find any evidence of the intention of Congress to treat such lands as

mineral lands or to exact them from the railroad grant. He is of the opinion that the word "mineral" as employed in the Act of June 22d, 1874, cannot be construed to include lands containing deposits of phosphate. This decision is of much importance, as a large part of the lands granted to the railroad company have been staked off as mineral claims and in some cases operations are being carried on by parties claiming the land by the mineral law.

GEORGIA.

Bartow County.

(From our Traveling Correspondent.)

Cartersville Ocher Company, of Emerson.—The works of this company are located about 5 miles south of Cartersville, where the ocher is ground and shipped to the Eastern market for use in manufacturing paint. The deposits of ocher in this vicinity are quite extensive and shipments have been made for some years past.

Central Mining Company, of Cartersville.—This company is engaged in mining and shipping brown iron ore from Grady, in Polk County, also from Emerson, in Bartow County. The Grady ore, I am informed, runs from 48% to 52% in metallic iron; the banks embrace about 50 acres. The washer plant consists of two double log washers of the old style. The Emerson ore averages about 50% in metallic iron, and the banks embrace from 20 to 25 acres. The washer plant consists of one double-log washer. The ore from these banks is shipped to the coke furnaces in Tennessee and a limited portion of the product to the Rome (Ga.) charcoal furnace.

Cherokee Ocher and Barytes Company, of Cartersville.—This is the style of a proposed new organization to mine and ship barytes, ocher and manganese. The tract on which it is proposed to mine these minerals joins the city limits of Cartersville. One carload of barytes, direct from the deposit, without grinding, has been already shipped to New Haven, Conn. and I am informed gave good satisfaction. The property is being prospected at the present time. The barytes is found in loose lumps scattered over the surface and imbedded in the clays. Deposits of ocher also occur on the land in several places, which have been prospected with shallow pits. Beds of manganese have also been opened to a limited extent. The amount of work performed is at yet insufficient to warrant the expression of any opinion as to quantity of these minerals. I am informed it is the purpose of the management to enter the field of mining and shipping all of these mineral products quite extensively during the coming year.

Emerson Graphite Company, of Emerson.—The works of this company are at present shut down, in fact have remained idle for some months past. Last autumn the company was actively operating, and shipping graphite to some of the fertilizer plants, where, I am informed, it was used for coloring the guano, but the demand was limited, and the consumption did not equal the supply.

Satterfield & Sons, of Cartersville.—This firm is shipping manganese ores and ocher. During the past year they informed me recently that they were shipping an average of 160 tons a month a portion of which went to the Carnegie Steel Company; shipments had also been made to New York, Boston, Philadelphia and Pittsburgh chemical works. The analyses show an average of about 45% metallic manganese, while some samples have analyzed as high as 63%. This is the only firm at present shipping manganese ores. The same firm has also shipped 380 tons of ocher during the present year.

Lumpkin County.

(From our Traveling Correspondent.)

Lockhart Mine.—This mine is owned by Frank W. Hall, of Dahlonega. This is one of the older gold bearing properties. Three stamp mills, I was informed, had been worn out in treating the ore. At present there is a 20-stamp mill in operation, run by water power from the Yahoola River. This is the only mine in the district where any underground workings of extent have been done. A shaft 50 ft. deep was sunk some years back and the ore body drifted on a distance of 300 ft. I was unable to explore these deep workings, because of the quantity of water in the mine and shaft. I was informed that during the past summer the mine was unwatered but, an accident happening to the pump, a Cornish, run by water power, the openings were again allowed to fill up, and mining by lessees carried on at another portion of the mine on a side hill above water level. A miner who had worked in the underground workings informed me that some 40,000 tons of ore, which averaged \$4 a ton, mill runs, had been mined and milled, also that the ore body was about 14 ft. thick. In the big cut, which has been worked in the past by hydraulicicking and milling, the material washed down a flume from the summit a side of the mountain; the pay ore appears interstratified with the horriblastic schist country rock; the structure of the ore body is apparently a series of lenses of quartzite and ferruginous sandrock bedded between the schists, with but little regularity of either strike or dip above the surface, but showing a general line of strike north-east and south-west with a general dip toward the east.

Mary Henry.—This mine is owned by Judge W. N. Murray, of Tennessee. The work on this mine has been by blasting out the ore and washing it down the mountain side to the five-stamp mill at the base. This ore body differs from any I saw in

the Dahlonega district in its structure. Instead of being a series of lenticular stringers interstratified with the country rock, it is a bedded vein about 5 ft. thick at the contact between hornblende slate and gneiss. Much of this hornblende slate in this district is altered by decomposition, hence the name, "brick-bar," given it by the miners, because of its resemblance to reddish brown brick bats of irregular size, streaked with black lines, which in a mass give it the appearance somewhat resembling a brick wall. The ore is white quartz heavily sulphuretted, sometimes carrying free gold visible to the naked eye. The open cut in which work was progressing at the time of my visit is run along the line of strike of the ore body N. E. and S. W., with its dip toward the S. E. at an angle of about 55°. I was unable to ascertain the value of this ore by mill runs.

Singleton Mine.—This mine is owned by Frank W. Hall, operated by J. W. Weaver, lessee. The location of this property is about three miles from Dahlonega, on a ridge extending almost parallel in a north-east and southwest course to that on which the Lockhart mine is located. The method of mining carried on is the same combination of hydraulic mining and milling—the material washed into the mill from down the mountain side—as prevail so universally throughout the entire district. The water for hydraulicking is furnished by a ditch 13 miles in length, the water being taken from Ward Creek. The pay ore is found in seams of quartz in the schists. The openings consist of one main open cut, run on an incline which furnishes grade for the ground sluice and flume. The yield, I was informed by Mr. Weaver, averages about \$1.50 per ton, which is mined and milled at a cost not to exceed 50 cents a ton. Water power furnished by the Yahoola River is the motive power used for running the mill. By this method of mining, of course, a great deal of barren material is run through the mill with the pay ore, which reduces the average yield. The quartz itself in this mine, I am informed, assays an average of about \$20, but the seams, so far as work has progressed, are thin and irregular.

Polk County.

Oredell Iron Ore Banks.—The owner of these banks, Mr. Marsh, of Moore, Marsh & Co., Atlanta, has contracted with the North Georgia Mining Company, of Cedar Town, to construct a water line and erect washers on this property. The water line will be about 3 miles in length from the Milligan Springs, located to the northeast of this property. The contract price for the work is \$12,000. When this is completed it is proposed to mine brown ore to the capacity of the washers, and ship to the Tennessee and Birmingham coke furnaces, as well as to some charcoal furnaces. A large percentage of this ore is well adapted for treatment in these last named furnaces, because of the low percentage of phosphorus it carries. Shipments of about 1,000 tons a month were made from this property for a short period during 1893. Scarcity of water caused the shutting down of the work, and during the present year the same cause compelled lessees early in the season to abandon the banks. But the water line now being constructed will furnish an abundant supply in the drier seasons.

IDAHO.

Bradley County.

(From our Traveling Correspondent.)

Blue Springs Mining Company.—Several years ago an outcrop of lead ore in granular masses was discovered in this vicinity, and prospecting in 1890 by this company exposed an ore body of some extent, apparently filling a fissure in the limestone. Since then development work has progressed until a shaft about 100 ft. deep has been sunk distant some 300 ft. in a course slightly east of north from the outcrop. In this the ore body was encountered at a depth of about 80 ft., dipping almost vertically, and with its line of strike slightly east of north and west of south. A plant consisting of revolving screen washers, jigs, table concentrator, and a furnace patterned after that erected at Rome, Ga., by Hartsfeld, was erected for treatment of the ore. With the exception of the furnace this plant yielded satisfactory results, but I am reliably informed that the furnace did not work satisfactorily. The product from these works up to date, according to the best information I can obtain, has been 15 carloads (2 tons capacity) of pig lead, 6 carloads of lead concentrates, and 3 carloads of zinc concentrates. At the time of my visit recently I was unable to gain all the information I desired or examine the workings because of the sickness of Mr. Samuel Devine, the resident of the company, also of his superintendent.

Hardwick Lead and Zinc Company, of Cleveland, Tenn.—This company's property adjoins that of the Blue Springs Company on the north. The body of lead ore was encountered in a shaft sunk about 3.0 ft. northerly from that of the Blue Springs Company, at a depth of 105 ft. Sinking was continued until a total depth of 182 ft. has been reached, 15 ft. of which is used as a sump. A level was opened at 136 ft., and a tunnel cut 32 ft. to the east crosscut, apparently the same body of ore as occurs in the Blue Springs shaft, as well as another body 19 ft. east of the shaft, which had a thickness of about 8 ft. This last named ore body was drifted on for several feet to the north, and it was found that it formed a junction with the main body, when a crosscut showed the two possessed a thickness of nearly 20 ft. A drift has been run from this point toward the south, intersecting the crosscut tunnel from the shaft. The total distance of this drift is 90 ft., and the ore was found to maintain its continuity, but to vary in

thickness from about 4 ft. at the narrowest point to about 10 ft. at the widest, except at the junction of the two bodies. This ore has been stopped out 25 ft. above the level of the drift, the southern extremity of which, I am informed, is immediately under a drift run from the bottom of the Blue Spring shaft. If this is correct it would determine the continuity of the vein along its line of strike from the outcrop, a distance of nearly 700 ft. At a depth of 167 ft. another and apparently distinct body of ore was cross cut in the shaft on the east side, showing a thickness of about 5 ft. and a continuity in depth to the bottom of the sump, and beyond to an undetermined depth. Work of opening a level at 167 ft. is progressing to determine the facts relative to this last discovered body. This company is erecting a 50-ton smelter with roasters, and has engaged the services of an expert lead metallurgist from Leadville, Col., to superintend the construction and starting of the plant. The machinery, purchased from the Gates Iron Company, has been shipped. I am informed, and it is expected that the smelter will be in blast in about 60 days. The company has about 1,000 tons of ore on the dump, as well as some concentrates. These I am informed assay: Lead, 74.6%; zinc, 7.40%; sulphur, 15%; silica, 1.33%; iron, 0.88%; silver, 2 to 3 oz., but I could not ascertain the quantity of ore concentrated or the average percentage of concentrates carried by the ore. No work has been done to the northward beyond the point of junction of the two ore bodies on the 136-ft. level; the floor of the drift on that level is still in ore, apparently continuing on down almost vertically. Some surface indications are said to occur at various points in a direction slightly east of north for several miles, which would tend to show that a lead of this ore occurred. The results from the Hardwick Company's smelter are watched for anxiously, and if successful will stimulate prospecting in this locality.

"Oneida County.

Malad Copper Mine.—A recent discovery of copper ore has been made near Malad, and a company composed of the discoverers and some business men of the town has been organized to develop it. A shaft has been sunk 80 ft., and a drift is now being run on the ledge. So far as opened up it is 3 ft. wide, and assays give from 18 to 22% copper and from 5 to 10 oz. silver to the ton.

Shoshone County.

Bunker Hill & Sullivan Mining Company. The mines still continue closed down, with no present prospect of the resumption of work. In the United States Circuit Court at Boise City, December 12th, the adverse suits against this company, involving the Miner's Delight mine, were decided. The plaintiff's location notices were so apparently irregular that they concluded to compromise. The attorneys on both sides held a conference and agreed that judgment should be taken by the Bunker Hill & Sullivan company, giving the latter a patent to the Miner's Delight. The company pays the plaintiffs a sum about equal to the costs.

Frisco.—At this mine, says the Wallace "M several men are at work laying the 8 in. pipe for the air compressor. This is 1,400 ft. in length, reaching from the mill building to the new station for the hoisting plant, and this work was nearly completed on the day in question. The compressor is of 6 drill capacity and will operate the pump, the drills and the hoist at the shaft. This is only a temporary arrangement, however, as a 40-drill compressor will be erected at the concentrator as soon as the machinery can be got here. The hoisting chamber is located at a distance of 1,200 ft. from the mouth of the main tunnel, and is 66 x 22 ft. in size and 22 ft. high. The caps are each 23 in. in diameter at the small end and the posts are 24 in. in diameter. The backing consists of 3 in. planks, which are fitted together with tongue and groove and leaded overhead so as to make the roof absolutely water tight. Although this has been built over three weeks, there is not a leak to be seen anywhere. The timber used in the chamber is all red fir, selected on account of its durability. The approach to the station has been widened out to 18 ft. in width so as to allow for 3 car tracks in width, one of which is intended for full cars, one for empties and one for timbers and tools. This is 6 ft. long and 11 ft. high. The shaft has three compartments, two of 4 x 5 ft. and one 5 x 5 ft. It is now 14 ft. deep. It has been started about 80 ft. south of the vein, which it will intersect at a depth of 630 ft., provided that its normal pitch is maintained. It is expected that the hoisting engine will be in place and ready for business within 10 days. This is a double-cylinder hoist of 50 H. P. This will be used only in sinking the shaft, after which a 200 H. P. engine will be employed to hoist the ore from the levels below. The first level will be run at a depth of 200 ft. A Knowles sinking pump will be used in the shaft. A great convenience which has just been added by Manager McDonald is a telephone line running from the station to the mill. The Frisco mine is turning out 12,000 tons of ore per month, every pound of which is weighed before concentration. Special attention is given to weighing every particle of lead that can possibly be saved, and for this purpose three triple-decked slime tables are employed, the table capacity having been doubled recently. For handling the slimes which the tables fail to save four Frue vauners are employed, two of which are 4 ft. in width and two are 6 ft. A new power-house for the Pelton water wheels is also a recent improvement which has been made at considerable expense. Two 4-ft. wheels run the entire concentrating machinery, after

which the water is used in the jigs and other concentrating appliances. In the same room is a small dynamo for lighting up the main tunnel of the mine and a larger one for lighting the mill and other buildings. The concentrator can now be operated the year round by water alone but steam is used for the air compressor. The ore is hauled out of the mine by two mules, one on each shift. Each train consists of 10 cars, aggregating 15 tons of ore at each trip. There are about 150 men employed in the mine and mill.

Horseshoe Gold Mining Company.—This company has been incorporated with office at Wardner to work mines near that place. The capital stock is \$1,000,000, and the officers are: Francis Jenkin, president; G. W. Harris, vice-president; H. Drough, treasurer; H. A. Jones, secretary.

Morning Mining Company.—The co-operative experiment undertaken by Manager D. B. Huntley in this mine at Mullan is at an end for the present. On December 10th a notice was posted at the mine requesting all underground workmen to come down to Mullan that evening and join the Union. A few men went. On December 11th a committee of three from the Mullan Miners' Union gave notice that all underground men of the mine were requested to join the Union at Mullan that day. There was no direct intimidation nor threats made. The result was that 29 men, mostly non-union, called for their time, and a few rather aggressive union men were discharged by the mine foremen. A few joined the Union that evening. On December 12th a notice was posted in No. 3 tunnel, calling on all union men, no matter on what shift, to attend a union meeting at Mullan. On the afternoon of the 13th the meeting was largely attended and lengthy. It adjourned at 5:30 to meet again at 7. During the recess a committee of five Morning mine workmen, appointed at the meeting, called upon Mr. Huntley, and announced: We are a committee from Mullan Miners' Union, appointed to notify you to stop breaking ore, to take out the ore already broken, to stop work on the co-operative plan, and to stop timbering at co-operative expense. We would like an answer.

The committee also said some other plan of work and wages might suit better, and: Have you any objection to the miners appointing an expert book-keeper to come to the office and examine the month's account?

The manager replied that he would stop work if they wished. In answering he would have to speak as two persons. As lessee he personally could not afford to pay \$3.50 per day with lead and silver at pre-ent prices, and he should shut down. The co-operative plan was something like contract work, and men did more work for the same money, hence it is well suited to the Morning mine in these times. As manager, he must consult the directors of the company; but from their many letters in the past months, he thought they would shut down rather than pay \$3.50, for the mine never had made anything when paying that in the past. He had no objection to the men employing an expert book-keeper, and as soon as the month's accounts were settled and returns made by the sampler for the last few cars of concentrates, they could send the expert. He thought the November accounts would be settled in time for pay day on December 17th, and he suggested that the men go back to work until that date. But the men did not go back, and the mine is again closed down indefinitely.

Standard Mining Company.—This company has closed down its mine near Wardner, discharging about 40 men. Only 10 men have been retained, who will be employed in running the lower tunnel and keeping the mine free of water. This stoppage also involves the closing of the Union mill, which has been running on standard ores.

INDIANA.

Howard County.

Stewart & Carter Quarries.—These quarries, at Kokomo, have closed down for the winter throwing out 150 men out of employment. It is said, however, that there is a prospect for much activity in the spring.

Lawrence County.

Bedford Blue-Stone Company.—A new opening was made recently on this company's property near Bedford, developing a fine grade of blue-stone. The company is preparing to extend its quarrying operations and is also building a new mill at the Benzel quarry, which will have two gangs of saws.

IOWA.

Hardin County.

A deposit of fine marble has been opened on the bluffs along the Iowa River, just west of Iowa Falls, and a company is now being organized to open a quarry. Samples have been taken out and are pronounced of excellent quality by experts.

Local papers state that a deposit of whetstone, or hone-stone, has been discovered about two miles from Iowa Falls. The land is owned by B. B. Bliss, of Iowa Falls, and arrangements are being made to develop the deposit at once.

MICHIGAN.

Copper.

Calumet & Hecla Mining Company.—Four extra drilling machines were started up last week on the ground in Nos. 4 and 5 shafts.

Franklin Mining Company.—On this company's recently acquired Peninsula property about a dozen

men are now employed. The work of unwatering the mine is proceeding as far as possible. As soon as it reaches the fourth level the working force will be increased.

Iron—Marquette Range.

Cleveland Iron Company.—This company has stopped hoisting ore for the winter at the Lake shaft, and part of the force has been let off. About 100 men have been detained doing work underground and on the surface in preparation for next season. It will take the greater part of the winter to build the new engine-house and put the machinery in place.

MINNESOTA.

Iron—Vermillion Range.

Chandler.—By a refusal of the Secretary of the Interior to reopen his decision in the Hartman-Warren Sioux half-breed suit case in section 33-63-11, near the Chandler mine, the property, which has been 10 years in litigation, is held finally by the Minnesota Iron Company and others. On these 40 acres and the adjoining Hyde-McDonald tract probably \$150,000 has been spent in litigation, though the only exploration ever done was the sinking of two or three test pits perhaps 6 ft. Thos. Hyde, a poor pre-emptor who a few years ago was offered \$75,000 for a relinquishment of his rights, now decided to be worthless, has been for six years living in a hut on the land, which is absolutely a wilderness.

Pioneer.—An error was made in this column last week in reference to Pioneer. It has not suspended operations, but is drifting and sinking with a small force.

Iron—Mesabi Range.

(From our Special Correspondent.)

Auburn.—This mine is to have a large electric light plant. It is to be put in such shape this winter that 700,000 tons can be mined in 1895 if desired.

Canton.—This mine has now nearly 300 men at work. Water, which has been a great bother of late, is being overcome.

Mahoning.—The stripping at this mine is employing a force of 100 men. Explorations are being carried on by the company several miles west of its mine, near which point Hibbing & Trimble also have an exploring crew making excellent developments.

MISSOURI.

Bates County.

Vernon Coal Mining Company.—The Hanley interest in this company at Vernon has been sold out to J. M. Wise. A considerable amount has been spent in improvements on this mine which now employs about 100 men and is putting out from 30 to 40 cars of coal per day.

Jasper County.

(From our Special Correspondent.)

Joplin, Dec. 24.

The mines of this lead and zinc district made an average production of ore during the past week, but, as we predicted, there was a decline in the price of ore, and this is a natural result of the downward tendency of the metal market. The top price for zinc ore at Webb City and Cartersville was \$19 per ton, while at Joplin it was \$18, with an average for the entire district of \$17.50. Lead ore sold at from \$16.25 to \$16.75 per 1,000; but as a rule the large operators are holding their lead ore in bins for better prices, and as a result the year will close with a large surplus stock on hand. Following are the sales of ore from the different camps: Joplin, 1,407,700 lbs. of zinc ore and 551,060 lead; value \$20,325; Webb City, 619,160 lbs. of zinc ore and 70,160 lead, value \$6,702; Cartersville, 1,176,380 lbs. of zinc ore and 119,870 lead, value \$12,504; Oronogo, 59,170 lbs. of zinc ore and 40,910 lead, value \$1,166; Carthage, 97,850 lbs. of zinc ore, value \$987; Zincite, 40,330 lbs. of lead ore, value \$790; Galena, Kan., 1,430,860 lbs. of zinc ore and 245,220 lead, value \$11,251; district's total value, \$54,233. Newton County, 446,360 lbs. of zinc ore and 119,800 lead, value \$5,934; Aurora, 966,000 lbs. of zinc ore and 155,000 lead, value \$9,541; Stotts City, 88,000 lbs. of zinc ore, value \$704; lead and zinc belt's total value \$70,462.

MONTANA.

Park County.

Montana Coal and Coke Company.—This company has now fully resumed work at its mines and has also started up the coal washer and fired one section of its coke ovens. Arrangements have been made for disposing of the product and it is understood that work will continue steadily through the winter.

Silver Bow County.

Butte & Boston Mining Company.—Among the great copper properties of the district which deserves especial mention is the East Grey Rock, one of this company's properties. Originally a silver proposition, like the Gagnon, when development advanced it was found that beneath the silver deposits there were unlimited quantities of copper ore. Year by year the development work has been carried on until at present the shaft has touched the 1,300-ft. level. Crosscuts, drifts and stopes honeycombed this great property, and as depth was attained it was found that the ore body became larger and richer. The ledge at the 1,300 is fully 15% richer than the ore at the 500, and, in order to test its quality at a greater depth, preparations are now being made to develop the shaft an additional 100 ft. A small hoisting engine has been placed in position at the bottom level, and the operations of

sinking will be conducted by it, so that the regular work of hoisting ore may not be interfered with. A Cameron sinking pump will be used in the shaft during development to throw the accumulating water to a tank on the 1,300-ft. level. This tank is a novelty in its way, being hewn out of the solid rock at the station.

NEVADA.

Esmeralda County.

Mt. Diablo Mining Company.—At the annual meeting in San Francisco last week the following directors and officers were elected: James M. Shotwell, president; J. N. Knowles, vice-president; George W. Grayson, Louis Teese, Jr., and R. W. Heath, secretary. No work was done in the mine during the past year. The total expenses of the year were \$5,306, leaving a cash balance on hand at present of \$1,627.

Storey County—Comstock Lode.

Gould & Curry Mining Company.—At the annual meeting last week 82,000 shares were represented and the following officers elected: President, H. B. Havens; vice president, Charles H. Fish; directors, Thomas Fish, Thomas Anderson, H. Zadig, A. K. Durbrow and W. C. Stadtfeld. P. Kervin was elected superintendent. The company has a cash balance of \$4,601.

Kentuck Consolidated Mining Company.—At the annual meeting last week 74,000 shares were represented, and R. E. Kelly was elected president; H. Zadig, vice president, and A. Waterman, S. Jacobs, and W. H. H. Hart, directors; A. Waterman was appointed secretary and J. H. Kinkhead, superintendent.

The following are extracts from the latest weekly official letters of the mine superintendents:

Alpha.—During the past week we have advanced the north lateral drift on the 450 level 12 ft.; formation, porphyry and quartz.

Alta.—During the week the west drift on the 825-ft. level was extended 49 ft.; total length, 741 ft. A north lateral drift, same level, was extended 33 ft. in vein material; total length 75 ft.

Andes.—On the 420 level, west crosscut from the north lateral drift from the top of the upraise up 50 ft., advanced 50 ft.; total length, 141 ft. Formation, quartz and porphyry.

Belcher.—Repairs are still being made on the different levels of the mine. They have hoisted during the week 39 tons of fair grade ore.

Best & Belcher.—On the 200 level the joint winze started in the west crosscut No. 5, on our south boundary, has been sunk 10 ft.; total length, 54 ft., passing through hard porphyry and quartz.

Bullion.—The west drift from the Ward shaft 820 level, has been advanced 18 ft. during the week; total length, 1,263 ft.; face in porphyry and clay, with a light flow of water from it.

Chollar.—We are stoping fair grade ore from above the 550 level, and are doing the usual amount of repairing to the main incline below the 930 level. The winze on the 450 level, 350 ft. south of our north line, is down 18 ft.; the bottom shows 3 ft. of fair-grade ore. We have saved during the past week 113 tons 1,800 lbs. of rich ore, which has been shipped to the Nevada mill for reduction. The average battery sample assay was \$24.40 per ton.

Consolidated California & Virginia.—On the 1650 level we have continued to stope out ore from the new ore body from the sixth floor up to the 11th floor, and on the 11th floor have advanced one set of timbers farther to the south in ore, making seven sets in all, from north to south. The south face and top on the 11th floor is in ore of good quality. On the 1750 level the south drift has made connection with the ore body at the bottom of the winze sunk from the 1,700 level, and at the point of connection 18 tons of ore have been extracted, assaying \$41.50 per ton. We have extracted during the week from all openings 300 carloads, nearly 300 tons of ore, the average assay value of which, per mine car samples, was \$54.24 per ton.

Crown Point.—The stopes above the 600 and between the 600 and 700 levels show no particular change for the week. We have extracted from them since last report 592 tons 1,560 lbs. of gold ore, which has been shipped to the Mexican mill for reduction. The average battery sample was \$9.66 per ton, of which \$8.60 was gold.

Gould & Curry.—On the 200 level the joint incline winze started on our north boundary has been sunk 10 ft., passing through hard porphyry; total depth 54 ft. Resumed work in west crosscut No. 5, which was started in northwest drift, 432 ft. from main west drift, and advanced the same 16 ft.; total length, 1,834 ft.; face in hard porphyry.

Hale & Norcross.—On the 975 level west crosscut No. 1 was advanced 8 ft.; total length 78 ft. Face in porphyry and seams of quartz. Have advanced and timbered north drift from No. 1 west crosscut 8 ft.; total length, 56 ft. The face of this drift shows a streak of good ore which continues to look about the same as last report.

Mexican.—On the 1,465 level the drift running north from the end of west crosscut started from the top of the upraise which was carried up 45 ft. above the sill floor of this level at a point 40 ft. west from the main north drift and 100 ft. north from the south line of the mine has been extended during the week 12 ft.; total length, 181 ft.; face in porphyry and clay.

Occidental.—From the west ledge above the 400 level we extracted about 6 tons of ore of the average assay value of \$27 per ton as per car samples.

Ophir.—On the 1,465 level the new west crosscut was extended 13 ft.; total length, 160 ft.; continuing in porphyry, clay and quartz carrying some value. Have continued jointly with the Mexican Company the work of making repairs in the main shaft on the 1,100 level and upward.

Potosi.—The northwest drift from the shaft, on the surface, is now out a total distance of 234 ft. The east drift, 200 ft. south of north line, 550 level, is out 24 ft. The mine was closed 2½ days pending repairs to the machinery and water pipe.

Savage.—During the past week they have obtained 141 cars of ore, the samples of which average \$26.30 per ton. Shipped to Nevada mill, 165 tons. Battery samples average \$22.78 per ton. Bullion yield for the week, \$2,631.

Segregated Belcher.—On the 200-level the main south lateral drift is now in 450 ft. The face is in material giving low assays. The east crosscut from the south lateral drift is now in 15 ft., having been commenced during the past week. The face shows a mixture of quartz and porphyry. They continue to extract a few tons of fair grade ore from the 1,100 level.

Sierra Nevada.—During the week have started a southwest drift at a point 285 ft. west from the mouth of the Layton tunnel and advanced the same 23 ft.; face in a mixture of clay, porphyry and quartz.

Union Consolidated.—The west crosscut from the south lateral drift from west drift, 1,520 ft. west of shaft, has been extended 21 ft. during the week; total length 332 ft.; face in clay and hard porphyry.

West Consolidated Virginia & California.—During the past week the necessary repairs have been attended to and the west crosscut run from a point 320 ft. north of the shaft on the 1,100 ft. station has been extended 17 ft., the last 6 ft. of which is in clay and porphyry carrying seams of quartz and is now in a total distance of 1,366 ft.; the face is in the same kind of material as above stated. There is a decrease in the flow of water and in the temperature since the last report.

White Pine County.

Calcutta Gold Mining Company.—This company, owning a number of claims in the Osceola district, held its annual meeting last week in Salt Lake, Utah, where most of the stockholders reside. The following officers were elected: T. D. Johnson, president; H. W. Fuller, vice-president; I. A. Benton, secretary and treasurer. The report presented stated that the shaft is now 60 ft. deep and shows a vein of quartz carrying free gold. The prospect is so good that development work is to be continued and a mill erected in the spring.

NEW MEXICO.

Grant County—Pinos Altos District.

(From an Occasional Correspondent.)

Golden Giant.—This property has been leased by Tom Holman, who is working it successfully.

Mammoth.—This mill is running steadily on custom ore.

Mountain Key.—This mill has started up and the company is employing a number of men to take out the ore.

Pacific No. 2.—Messrs. Bell & Stephens have purchased this property, thus settling the lawsuit which has been pending for five years. This firm also owns the Pacific Extension and is said to be making extensive shipments of gold. They have placed new bumpers in their mill for the concentration of the ore taken from their mines. The firm is now one of the largest and steadiest shippers of gold in the Territory.

St. Louis Gold Mining Company.—This company has leased its Pacific No. 1 mine for two years to Messrs. Spiller & McLane. These parties have begun to sink the main shaft and running levels south. The ore is hauled and treated at the company's mill at Silver City.

Wagner.—This mill is running full time on custom ore from mines in the district.

Taos County—Cochiti District.

Cochiti Mining and Milling Company.—This company, John W. Bailey manager, is now running its mill at Allerton on Iron King ore. The company has developed an ample supply of water at that point, drawing its supply from Cochiti canyon through a 4-in. pipe and storing the same in a substantial reservoir of 1,000,000 gallons capacity. The water plant of the company is capable of supplying water for 1,000 stamps, besides all that may be needed for domestic purposes. The mill is now running night and day and with satisfactory results.

Crown Point.—This mine, near Allerton, is now shipping ore steadily. The ore, it is stated, is improving with value as the shaft goes down.

Lone Star.—The shaft is now down 300 ft. A crosscut at this level is on the vein, which is 35 ft. wide, of low-grade ore, with two streaks of richer ore, one about 4 ft. and the other about 5 ft. wide. The force has been increased by 15 men, and preparations are being made to put up a mill.

Union Mining Company.—This company's property is showing well as the shaft goes down. Shipments of ore are now being made regularly.

NEW YORK.

St. Lawrence County.

Oakham Mining and Manufacturing Company.—This company has been incorporated to mine and manufacture ores in Oakham. The capital stock is placed at \$125,000, and the directors of the company are: David S. Rice, James Spears and James H. Gannon, of Canton; Edward B. Bulkley, of Antwerp, Jefferson County, and Hawley D. Hepburn, of Davenport, Ia.

NORTH CAROLINA.

Cabarrus County.

(From our Special Correspondent.)

Nugget Gold Mine.—This mine continues to produce some gold. They are working the placer up on the hillside and nearing the source of the nuggets, it is thought.

Rocky River Gold Mine.—Here they are producing some good ore. A car-load has just been shipped to Kansas City for treatment. Mr. Darlington, the engineer in charge, thinks he has telluride in his ore, which is a quartz with auriferous galena and iron pyrites. No doubt the ore is good, but it is the opinion of your correspondent that the raw ore will not stand shipment. With metallurgical works in this State for the treatment this no doubt would make a good concentrating proposition and one that would pay well.

Troutman.—This mine has been leased to F. H. Manney, of Gold Hill. They have struck a small but rich lead of gold ore. This mine has been noted for pockets of rich ore. Aside from this they have a vein of very regular but refractory ore.

Mecklenburg County.

(From our Special Correspondent.)

Capps Mine.—This old mine is again going into operation under Colonel Talcott, of Richmond, Va. This has always been thought a valuable mine and has a record of over \$1,000,000 in gold.

Clear Creek.—This mine, at present operated by J. L. Yountz, of Indian Trail, is turning out ore which he reports to run about \$20 per ton. At any rate the mill is yielding gold in satisfactory quantities.

Farris Mine.—This mine, a few miles from Charlotte, is being worked by Dr. McCombs, of that city. He has several hundred tons of gold ore on the surface and is turning out more every day.

Randolph County.

Mr. L. M. Russell, of Eldorado, N. C., has opened a deposit in Randolph County, near Ashboro, that he reports is a slate belt 6 or 8 ft. in width and worth \$7 per ton for gold. He is down some 10 ft. and thinks he has struck a valuable mine.

Jones Gold Mine.—This property has been sold to Mr. Gamble, of Pittsburg, Pa., and is now known at the Keystone. They are operating a Huntington mill with good results.

Rowan County.

(From our Special Correspondent.)

Kaolin Shipments.—Quite a number of cars of this mineral are being shipped through Salisbury from the western part of the State to different potteries throughout the country.

New Discovery Gold Mine.—The ore from this property, three miles from Salisbury, is being milled and concentrated at the Supply and Commission Company's mill, in that city. This mine is located on the granite belt, and for that reason has more than usual interest attached to it, as most of the mines in this section are in slate country.

Reimer Gold Mine.—At this mine, near Salisbury, they are erecting a 20-stamp mill, with Frue vaners and chlorination works. The ore is quartz, with auriferous iron pyrites, and is adapted to this mode of treatment. This mine, although but 200 ft. in depth, is reported as having 24,000 tons of \$8 ore in sight. The mine is operated by a Salisbury business man.

Reimer Gold Mine.—At this mine they have closed down, owing to the death of the owner, James B. Lanier, of Salisbury, who was erecting a 20-stamp mill with concentrating and chlorination plant. Mr. Lanier had partly paid for the mine, which will, it is reported, be sold by his administrator, Hon. Lee S. Overman, to some Philadelphia parties.

Stanly County.

(From our Special Correspondent.)

Crawford Mine.—Your correspondent saw one pound of nugget gold taken from this gold mine by two men on December 21st. Mr. Richard Eames, Jr., is in charge of the mine for a New York corporation.

OHIO.

Summit County.

The judgment of the Board of Arbitration in the Massillon district has not been accepted by the miners of Summit County, and 400 of them went on strike December 22d. There are 1,100 miners in this county, all of whom are affiliated with the United Mine Workers, and it is expected that the other 700 will join the strikers. The principal mines now affected are those of the Brewster Coal Company, Lakeview Coal Company and half a dozen small concerns.

OREGON.

Baker County.

Columbian.—The incline shaft is now down to a depth of 125 ft., and at this point the ledge is 6 ft.

wide and the ore shows free gold. Extensive arrangements are now under way for the prosecution of work and with a view of putting a 10 or 20 stamp mill on the property at an early day. Superintendent McDowell is of the opinion that he will strike water in the incline shaft inside of another 60 ft., judging by adjoining claims.

Sumpter Placers.—At these placers, says the Baker City "Democrat," the gravel banks have been worked for almost a quarter of a century in such a manner as only limited means would admit. The output each year has not been inconsiderable, and the former owners, Messrs. Rimbol & Young, netted a neat income annually. The mines, however, required more extensive improvements for their successful working. A few weeks ago the interest of Messrs. Rimbol & Young were purchased, together with townsite and sawmill, by Messrs. Ellis and Cupid, of Nevada, and they have set about for an enlargement of operations. They have ordered from San Francisco 80,000 lbs. of 12 in. hydraulic pipe, and an electric dynamo for the lighting of the mines for nightwork, and new machinery for the sawmill. The shipment is expected to arrive in Baker City in a few days, when it will be forwarded at once to Sumpter. Messrs. Ellis & Cupid will put their improvements in place as nearly as possible before winter sets in and be ready for an early spring campaign of mining.

PENNSYLVANIA.

Anthracite Coal.

The anthracite collieries have generally closed down, and very few will start up again until after January 1st. This is due to the restriction of the December output.

Beaver Brook Colliery.—A new tunnel to catch what is supposed to be the Lykens Valley coal vein, which was tapped in the No. 10 slope over a year ago, has been started from the east No. 5 lift. It will be completed in 10 weeks.

Coleraine Colliery.—The new branch line from Treskow to this colliery has been completed. It will be operated by the New Jersey Central Company.

Lehigh & Wilkes-Barre Coal Company.—The new Maxwell No. 20 breaker at Ashley has been completed and started up.

Bituminous Coal.

H. C. Frick Coke Company.—This company is trying the experiment of using iron or steel beams instead of timbers at its Leisenring No. 1 shaft. The shaft casing will be entirely replaced by iron.

McClure Coke Company.—This company is putting in foundations for a new engine at its Mullin slope. Work in the slope is stopped for the present.

Blair County.

Tussey's Mountain Mining and Smelting Company.—This company has been organized under the laws of West Virginia and has filed the necessary record in this county. The capital stock is to be \$1,000,000, and the main office of the company will be in Martinsburg. The object of the company is to mine for gold, silver, copper and lead in this county and also in the adjoining counties of Huntington and Bedford. It has been asserted for a number of years that there were deposits of silver and lead in the mountains in this district, although none has ever been mined there.

SOUTH DAKOTA.

Charles Mix County.

Jasper Co-operative Stone Company.—This company has been organized to quarry and work stone near Jasper. The officers are: President, Andrew Rae; secretary, William Rae; treasurer, Alexander Rae.

UTAH.

The total dealings in ores and bullion at Salt Lake for the week ending December 22d amount to \$178,259. In addition shipments of Alice bullion containing 22,623 oz. silver were reported.

The returns of the Salt Lake smelters for the year 1894, the closing week estimated, are as below:

	Germania.	Hanauer.	Pennsylvania.
Gold, fine.....	8,127 oz.	3,869 oz.	14,350 oz.
Silver, fine.....	1,358,374 "	723,550 "	1,108,507 "
Copper, lbs.....	314,626 lbs.	490,000 lbs.	162,500 lbs.
Lead, lbs.....	14,661,275 "	7,175,300 "	12,851,850 "

The Germania shows an increase over last year of 132 oz. gold, 324,774 oz. silver and 314,626 lbs. copper, but a loss of 4,563,725 lbs. lead. The Hanauer shows an increase of 45,000 oz. silver, and also increases in copper and lead. The Pennsylvania showed decreases of 940 oz. gold, 375,000 oz. silver, 47,366 lbs. copper and 5,753,310 lbs. lead.

Juab County.

Swansea Mining Company.—This company, at Silver City, has declared its first dividend of 1 1/2% per share, or \$1,500 in all.

Millard County.

Drum Mountain Mining Company.—This company has filed articles of incorporation. The capital stock is fixed at \$1,000,000, divided into 1,000,000 fully paid up and unassessable shares of the par value of \$1 each. John T. Getty will act for the ensuing year as president; Ernest Rossberg, first vice-president; James Aspden, second vice-president; Walter V. Austin, secretary; Edward E. Austin, treasurer; B. T. Hutchinson, manager. The property of the corporation consists of the Rattler and Pat Mahan groups, 10 mining claims in all, and situated in the Detroit Mining district. Salt Lake City is named

as the principal place of business, and James D. Pardee is designated as the resident manager of the company. Nearly all the stockholders are residents of Minnesota. Some months ago the incorporators purchased the group of claims now incorporated and proceeded to develop the mines, which are near the Ibex. The ore from the properties will go to the Ibex smelter at Leamington for reduction.

Salt Lake County.

Salt Lake Copper Manufacturing Company.—This company's property is now in possession of Mr. A. Hanauer as trustee under a trust deed given to secure certain notes, which have not been paid. It is understood that the property will be sold about January 12th, or as soon as the necessary legal formalities can be completed.

Summit County.

McCune Tunnel.—Work has been renewed, says the Salt Lake "Tribune," on this drain tunnel in the Park City mining district. Managers E. C. Williams and J. H. Rogers set a force of men to work there last week and announced their intention of retaining them until the tunnel should be completed. Up to the present time a penetration has been made of only 2,000 ft., whereas the entire length proposed will drain all the properties that run along the veins south of and parallel to the Ontario tunnel. The latter include among others the well-known Wasatch and McHenry mining groups. The tunnel should be almost as useful as the Ontario eventually, because of the property it drains, and because of the fact that it finds an equally low outlet.

Tooele County.

Mercur Gold Mining Company.—The new mill of this company is rapidly nearing completion, says the Salt Lake "Herald," and a few more days will see it in a condition to operate. Being considerably ahead of the railroad, which is now necessary to the successful operation of the plant, the contractors are not rushing things rapidly as before, but the mill will be ready for operation by the date of the completion of the road. Having attained a depth of 110 ft. in the tunnel shaft of the Ruby without finding the foot wall, it has been decided by the company to change the original programme, and the sinking of the shaft has been discontinued. Instead the miners are now drifting in order to thoroughly explore the new territory. Tests made from samplings all the way down the tunnel shaft average \$8 per ton.

WASHINGTON.

Oranogan County.

North Leavenworth Coal Mine.—The contract has been let for a tunnel 450 ft. long on this coal mine, says the Leavenworth "Times." The tunnel will be started at the edge of the creek and will be run in a direction that will crosscut all the veins of coal and at the same time gain considerable depth. Messrs. Spromberg & Lilligreen were the successful bidders, and work will be pushed until the completion of the tunnel.

WEST VIRGINIA.

Fayette County.

Collins Coal and Coke Company.—This company is preparing to put in new hoisting engines, a new tippie and other improvements at its mines near Glen Jean, and also to put up 100 coke ovens.

Sugar Creek Coal and Coke Company.—This company has been organized with \$100,000 capital to open a coal mine on property near Mt. Hope.

Marion County.

William A. Ohley and O. S. McKinney recently purchased the coal rights on 1,000 acres of land at Farmington. These parties now control the coal rights on 5,000 acres of land. They are understood to be acting for Pittsburg parties who intend to organize a company and operate on a large scale.

WYOMING.

Albany County.

It is reported that a deposit of cinnabar has been discovered on the Big Laramie River about 35 miles from Laramie. The vein outcrops about 12 ft. wide and exploration work is to be carried out.

Carbon County.

(From our Special Correspondent.)

Four-Mile Placers.—The placer grounds southwest of Rawlins have passed into the hands of some miners from Colorado, who intend to construct a long ditch for water and to put in a large hydraulic plant.

Penn Mining Company.—This company, after a shut down of six years, has resumed work on its gold mines in the Seminole Mountains. The company seems to mean business, for it has started out with a \$15,000 contract for development.

Crook County.

(From our Special Correspondent.)

The coal mines at Felix, which were opened lately, have shipped nearly 5,000 tons of coal. These are the first coal shipments from this county.

Sweetwater County.

It is reported that a Chicago syndicate has bought a controlling interest in the Rock Springs, the Sweetwater and the Vandyke coal companies. These companies own all the coal mines in the Rock Spring district not belonging to the Union Pacific Railway Company, and their mines, when worked to their full capacity, can turn out about 200 carloads of coal a day. The prices and terms of purchase are not stated.

FOREIGN MINING NEWS.

NEW ZEALAND.

The Australian "Mining Standard" says: It is now little more than two years since the Cassel Gold Extracting Company, Limited, first started an energetic policy in New Zealand. Since that time the following companies, among others, have adopted the cyanide process, under license from the Cassel Company, in the treatment of ores or tailings:

Boatman's Tailings Company (Reefton).—Cyanide plant for treatment of tailings only.

Cassel Gold Extracting Company (Waihi).—This plant was erected by the Cassel Gold Extracting Company, Limited, to treat a heap of tailings recently purchased from the Waihi Gold Mining Company. The plant is capable of treating 1,500 tons of tailings per month.

Golden Cross Gold Mining Company (Waitekauri).—Ten head of stamps and cyanide plant. Up to the present this company has been cyaniding the tailings produced from former crushings; but they have now completed the necessary alterations to adapt their machinery to dry crushing, and will in future cyanide their ore without previous amalgamation, this being deemed the more lucrative method.

Grace Darling Gold Mining Company (Waitekauri).—Ten head of stamps and cyanide plant. Dry crushing and treatment by cyanide.

Great Mercury Gold Mining Company (Kuaotunu).—Ten head of stamps and complete cyanide plant.

Komata Gold Mining Company (Waitekauri).—Ten head of stamps and cyanide plant. The ore is first amalgamated and the tailings afterward treated by cyanide.

New Zealand Crown Mines Company (Karangahake).—Twenty head of stamps and complete cyanide plant. This company crushes the ore after a preliminary drying through screens, 30 holes to the linear inch, and treat direct by cyanide without previous amalgamation, thus doing away with any difficulty that might arise from the formation of slimes, as well as insuring the recovery of all "float" gold.

Premier Gold Mining Company (Otago).—Has erected and is working successfully a cyanide plant for the treatment of concentrates produced from tailings after amalgamation.

In addition to these plants, there are also contracted for and in course of erection the following plants: Ravenscliff Gold Mining Company (Blenheim), Woodstock United Gold and Silver Mining Company (Karangahake), Kapal-Vermont (Kuaotunu), and others who are contemplating the erection of plants in the near future.

During the quarter ending June, 1894, the total value of the bullion produced in the North Island of New Zealand was £52,920, and of this quantity £27,567 was produced by cyanide.

Te Aroha Gold Mining Syndicate (Waiorongomai).—Twenty head of stamps and complete cyanide plant.

Try Fluke Gold Mining Company (Kuaotunu).—Fifteen head of stamps and complete cyanide plant. This company is crushing the ore by the wet process, collecting the resulting tailings in pits, and cyaniding them after transferring to the vats.

Waihi Gold Mining Company (Waihi).—Sixty head of stamps and cyanide plant complete. The Waihi company have also, after due consideration, applied the cyanide process to the treatment of their dry crushed ore. Previous to the adoption of the MacArthur-Forrest process, they were operating by means of dry crushing and pan amalgamation for a recovery of about 60% of the assay value of the ore. Since cyanide was used, however, the percentage of gold recovered has risen to the following figures for their consecutive monthly returns: 88.5%, 91.8%, 86.4%, 83.3%; and during the month of July, when the plant had got into thorough working order, they recovered 96.6% of the assay value of the 2,107 tons of ore treated, giving them a return of £6,498. These percentages are calculated from the amount of bullion actually recovered.

SOUTH AFRICA.
Transvaal.

African Gold Recovery Company.—This company reports that in November 56,000 oz. gold were recovered in the Witwatersrand district by the cyanide process, and 9,000 oz. in other districts. This is a total of 65,000 oz. for the month, an increase of 300 oz. over October. The gold reported from the Witwatersrand was about 32% of the total output of the district for the month.

Witwatersrand Gold Production.—The output of this district for November is reported at 175,309 oz. gold, an increase of 1,931 oz., or 1.1%, over the October production, and of 36,669 oz., or 26.5%, over November, 1893. The output for the 11 months to November 30th was 1,841,590 oz., against 1,332,118 oz. last year; 1,083,119 oz. in 1892; 648,926 oz. in 1891, and 444,517 oz. in 1890. At the usual rate for Witwatersrand gold—about 800 fine—the production this year is equal to 1,473,250 fine ounces gold.

LATE NEWS.

Mr. A. C. Savage has just returned from Trinidad, W. I., where he has been erecting cable lines for the Trenton Iron Company.

The Montana Ore Purchasing Company, of Butte, has entered the list of dividend-payers, having just declared dividend No. 1 of \$1 per share upon the capital stock (40,000 shares). The dividend is payable at the New York office, January 4th.

The Trenton Iron Company has just completed the erection of a Bleichert tramway 4,800 ft. in length, and a surface haulage plant 6,000 ft. long to transport the asphalt from the Pitch Lake, Trinidad, W. I., and deliver it on board vessels. The present capacity is 500 tons per 10 hours. The tramway runs over a jetty and iron piers 1,750 ft. from the shore, the erection of which was in charge of Mr. E. G. Freeman for the Trinidad Asphalt Company.

The annual meeting of the Geological Society of America began in Baltimore, December 27th, with a large number of members present. The meeting was held in the laboratory building of the Johns Hopkins University. After addresses by President D. E. Gilman of the University, and appropriate responses on behalf of the Society, the secretary announced that Prof. N. S. Shaler had been chosen President for the ensuing year, with Prof. Joseph Le Conte and Prof. C. H. Hitchcock as vice-presidents. After the routine business had been transacted several papers were read and discussed. The technical work of the meeting was continued on Friday. Among those who read papers were Prof. Shaler, Prof. H. T. Cushing, Prof. C. D. Walcott and Prof. C. H. Hitchcock.

The tenth general meeting of the American Chemical Society began in Boston, December 27th, with about 75 members in attendance. The meetings were held in the Massachusetts Institute of Technology. The report of Mr. Albert C. Hale, general secretary, showed that the present membership is 783, and in addition 37 members have just been elected, bringing the total up to 820. Resolutions were passed directing that the necessary legal steps be taken to do away with the present requirement of the Society's charter that a majority of the trustees shall be citizens of New York. Reports were submitted by the treasurer, librarian, and the editor of the "Journal" of the Society, all of them being of a satisfactory nature. The Society then proceeded to the reading and discussion of papers. On the second day, December 28th, the presentation of papers was continued, and there were also some technical discussions. This session was held in Boylston Hall of Harvard University, in Cambridge.

The Shoenberger Steel Company, of Pittsburg, filed articles of incorporation December 27th. It is a consolidation of the interests of the firm of Shoenberger & Co. and Shoenberger, Speer & Co. The stockholders are: Charles L. Fitzhugh, individually; Charles L. Fitzhugh, as executor of G. K. Shoenberger; John Z. Speer, Gottlieb Steiner, R. Ramsey Speer, Henry Fitzhugh and the trustees of the Shoenberger estate. Of the stock \$180,000 is paid in cash. The remainder is subscribed and issued for real and personal property, consisting of a piece of land in the Ninth and Tenth wards of Pittsburg, on which are erected two fully equipped blast furnaces and steel and iron works, several lots of ground in the Tenth ward, 492 acres of coal land and 45 acres of surface coal in Unity Township, Westmoreland County, 1,500 shares of the capital stock of the Juniata Coke Company; all goods, wares and merchandise, book accounts and all other assets of the firm of Shoenberger & Co. and Shoenberger, Speer & Co.; the whole of the property so constituted being valued at \$1,845,000.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Dec. 28.
Statement of shipments of anthracite coal (approximated) for week ending December 22d, 1894, compared with the corresponding period last year:

Regions:	Tons.	Tons.	Difference.
	Dec. 22, 1894.	Dec. 23, 1893.	
Wyoming region.....	443,434	449,926	Dec. 6,492
Lehigh region.....	141,751	149,334	Dec. 7,583
Schuykill region.....	245,945	279,923	Dec. 34,878
Total.....	831,130	879,183	Dec. 48,053

Totals for year to date. 40,773,178 49,349,707 Dec. 1,576,529

PRODUCTION OF BITUMINOUS COAL, in tons of 2,240 lbs., for week ending December 22d and year from January 1st:

Shipped East and North:	1894.		1893.
	Week.	Year.	Year.
Phila. & Erie R. R.....	867	74,839	78,255
Cumberland, Md.....	†	2,906,702	4,087,541
Barclay, Pa.....	†	16,841	43,641
Broad Top, Pa.....	6,730	581,926	566,312
Clearfield, Pa.....	89,765	2,237,409	3,778,892
Allegheny, Pa.....	37,276	1,257,021	1,252,407
Beech Creek, Pa.....	63,889	2,534,592	2,659,730
Pocahontas Flat Top.....	†	3,338,047	2,767,399
Kanawha, W. Va.....	†	2,632,417	3,187,622
Totals.....	198,518	16,079,785	18,421,799

† Returns not received.

Shipped West:	1894.		1893.
	Week.	Year.	Year.
Pittsburg, Pa.....	32,941	1,457,115	1,213,518
Westmoreland, Pa.....	39,446	1,633,501	1,771,548
Monongahela, Pa.....	7,657	643,619	687,010
Totals.....	80,054	3,734,235	3,672,076

Grand totals..... 278,572 19,804,020 22,093,875

Production of coke on line of Pennsylvania Railroad for the week ending December 22d, 1894, and year from January 1st, in tons of 2,000 lbs.: Week, 112,064 tons; year, 3,545,826; to corresponding date in 1893, 3,825,927 tons.

Anthracite.

The condition of the anthracite coal market has undergone no modification since our last report. Very little new business is doing, but such sales as take place are made at the circular prices, save when an individual operator or a middleman offers some slight concession for some particular reason. It is a fact, however, that prices are being maintained to-day better than at any time these past six months.

The present cold snap has not been of long enough duration yet to create much new business. If it lasts but two weeks longer we shall see the effects of the restriction in the output.

In spite of all the "recommendations" of the sales agents it has been found impossible to limit the December output to the 2,556,200 tons counseled by the agents. For the three weeks ending December 22d the output of anthracite coal amounted to 2,504,507 tons. This should leave but 51,693 tons to be mined during the remaining nine days of the month, which is manifestly impossible. The figures of production during the past week are not yet ready and it is difficult to estimate what the month's tonnage will be. Probably it will not be over 3,400,000 tons, or about 20% in excess of the amount recommended by the agents. The Lehigh Valley Coal Company ceased work altogether on Saturday last, and will not resume until next year. Many producers who wore idle during the first part of the week and intended to work on Wednesday and Thursday, were prevented by the storm. This also interfered somewhat with the movement of coal, so that stocks at tidewater should diminish during the next few days.

The chief event of the week was the meeting of the presidents which took place in Philadelphia, on Thursday, December 27th. There were present high officials of most of the railroad companies controlling coal companies. The object of the meeting was to decide on new percentages of allotment for the ensuing year and to reach some understanding by means of which prices can be maintained and the output restricted to safe limits. There can never be any but an "amicable understanding" between the anthracite interests. The latter invariably disclaim all intentions to do anything which might make them liable to action under the provisions of the Anti-Trust Law.

We understand from one of the gentlemen who were present that although the meeting showed perfectly harmonious feeling, nothing definite was done. The question of allotment was discussed with the usual result, that is to say that it would take 120% to go around, and consequently nothing definite was done.

The form of the agreement between the various companies will not be altered. It will remain an "understanding among gentlemen," and may consequently be broken with freedom and impunity, as it was all along this year. Some time ago a committee was appointed to recommend certain percentages. It did so, but only one or two interested accepted it. It is now desired to make all of them adhere to the new allotment, but this would be an unheard of thing.

The meeting adjourned after the praiseworthy intention had been proclaimed of doing everything in the power of the presidents to render impossible in 1895 a repetition of the scenes of the past few months.

Another meeting will be held in this city on Monday next, when further efforts will be made to reach some definite understanding as to percentages. In the meantime the companies will go on as they have been doing during December; that is to say, maintaining prices and wisely restricting the output.

There are many persons who manage to derive considerable comfort from the thought that the unanimous recognition by the presidents of the necessity of concerted action in the future augurs well for the prospects of the trade. But then, some people are stubborn optimists even though they have followed the doings of the anthracite interests for several years past.

A meeting of the sales agents was held in the office of the Pennsylvania Coal Company, this city, this, Friday, morning.

Presumably the sales agents received instructions from their superiors and decided upon conservative action. After a conference lasting three hours the agents agreed to leave present prices unchanged at \$3.60 for stove, \$3.45 for egg and chestnut, and \$3.35 for broken, all net on board. It was "recommended" that the output for January be restricted to 45% of the June tonnage, or 2,300,580 tons. If this restriction is adhered to the market ought to be in a pretty fair condition by the end of next month, and stocks will not accumulate. Prices, therefore, ought to rule firm.

Bituminous.

The soft coal trade continues dull and uninteresting. Consumers are apparently waiting for the New Year's holidays to pass before they place further orders for coal for daily consumption. Salesmen report that it is useless to look for orders at

present; trips to the various consuming districts being just now only a waste of time and money.

The present cold snap is expected to create some activity in the market, but only temporarily. The coal mining companies are busy just now on their balance sheets, figuring out the profits for the year, and are not pressing their product on the market. Considering the hard times quite a respectable showing is made, though not as good as last year and certainly far below that of 1892. The margin of profit has been smaller than usual but more uniform, owing to the low prices, which has prevented much cutting.

Most consumers have taken the minimum amounts specified in their contracts, and it looks as if some would not take even that much. The trade east of Cape Cod seems to be the duldest of all; the Sound trade is somewhat better; and New York harbor between the two. There is a lull in the export trade to South America and the West Indies. Vessels, however, are desirous of engaging in it and are consequently offering low rates of freight as an inducement.

The all rail trade, despite all the efforts making by producers, continues very quiet. Local business at the shipping ports is as good as any, though all the coal moving is going through the usual contract channels, with little spot business of any consequence.

The recent efforts to resuscitate the old Seaboard Steam-Coal Association, as we predicted some time ago, have resulted in nothing. Another effort will be made at the beginning of the contract season next February, but it is not likely to prove more successful than past attempts. If producers continue willing to sell at the low prices which have prevailed during the past year nothing short of an iron-bound trust can prove effective.

The transportation of coal from the mines to tide-water is better than it has been. The dullness of the trade is probably the reason why it should appear so, for with the present light demand the delay of coal in reaching tide for reshipment is not noticed. The car supply is all that producers can desire; they find no difficulty in getting all the empties at the mines that they call for.

In the vessel market a plentiful supply is reported, and shippers are able to take their choice of vessels, according to the size of the orders. Rates are weak and vessels are seeking charters. We quote the following rates of ocean freight from Philadelphia: To Boston, Salem and Portland, 90@95c.; Providence, New Bedford, New Haven, Allyn's Point, Bridgeport and other Sound ports, 70@75c.; Wareham, 90c.; Lynn, \$1.05@1.25; Newburyport, \$1.15; Portsmouth, \$1.

NOTES OF THE WEEK.

The shipments of coal by the Chesapeake & Ohio Canal during the season of 1894 were 303,695 tons, divided as follows among the various producing companies: Consolidated Coal Company, 238,831 tons; George's Creek Coal & Iron Company, 69,379 tons; Black, Sheridan & Wilson, 4,186 tons; West Virginia Central and Borden companies, 299 tons. Of the total shipments only 145,485 tons, or less than one-half, reached Georgetown, the tidewater terminus of the canal; the balance went to points along the line of the canal.

Buffalo. Dec. 27.

(From our Special Correspondent.)

The close of 1894 has not brought any improvement to the anthracite coal trade. The weather during December has been very mild. Navigation on Lake Erie is still open, several vessels having arrived and departed this week to and from Toledo and Buffalo; an unusual occurrence. Prices of anthracite coal nominally unchanged, with no indications of variation for January.

Bituminous coal continues quiet and dealers say that quotations are entirely nominal, as buyers make practically their own figures in the face of large stocks. The trade is now confined to manufacturers and a few orders occasionally from Canada. Railroads are not burning as much coal as usual, as freighting is light.

Being holiday time there are but few topics for discussion or mention. Dealers seem to have discontinued ordering soft coal from the mines, for lack of customers so that by and by a firmer market and higher prices may prevail.

The flow of the natural gas well at Berg, a few miles out of Buffalo, is only 2,000,000 cu. ft. per day, and the product is consumed in our city.

Representatives of railroads leading to and from the soft coal regions met at the Iroquois Hotel in this city last week, but failed again to establish winter rates on coal.

The ferry cars to run between Conneaut, O., and Port Dover, Canada, are to be completed by August next.

The days of navigation on Lake Superior this year numbered 230, against 206 in 1893.

Our docks and wharves present a very melancholy and deserted appearance nowadays; a marked contrast to the busy thoroughfares uptown and in the manufacturing districts. There is a great improvement in the condition of our working classes as compared with this time last year.

Chicago. Dec. 26.

(From our Special Correspondent.)

There are those in the coal trade who assert that the week just gone has been the duldest week of the entire year in the coal business of Chicago. The weather is probably ten-tenths to blame for the

present conditions. The past week has been very mild, there being a few days on which the thermometer was up almost to a summer temperature. No heat was needed in any of the office buildings, and naturally residences and other buildings kept their fires low. When we consider the enormous saving in coal bills such weather is capable of making, we naturally regard the coal dealers with a great deal of sympathy. These remarks apply both to anthracite and bituminous coal.

At a meeting of the Coal Trade Commercial Agency, Wednesday, resolutions condemning the selling of coal at retail on short weights were received from the anthracite shippers of Chicago and unanimously approved. The Agency further resolved that it would pay a reward of \$25 for evidence which would enable them to arrest and convict any dealer in the city of Chicago guilty of selling less than 2,000 lbs. for a ton of coal.

Circular rates on anthracite coal are: Grate, \$5.00; egg, stove and chestnut \$5.25. For bituminous prices are: f. o. b. Chicago: Youghogheny, \$3.15; Raymond, \$3.50; Shawnee, \$2.50; Blossburg, \$3.90; New Kentucky, \$2.75; Hocking, \$2.90; Brazil Block, \$2.15; Birdseye Cannel, \$5.25; Green Ridge, \$1.75; Wilmington, at mine, \$1.50; Streator, at mine, \$1.40; Du Quoin, at mine, \$1.05.

Coke trade is fair, with shipments large. Connellsville foundry coke is selling for \$3.00; Connellsville coke crushed, \$4.15; Pocahontas, \$3.85; New River, \$3.85@4.

Pittsburg. Dec. 27.

(From our Special Correspondent.)

Coal.—The situation shows no particular change since the date of our last report. The miners in the pools have all the work they want; the late rise in the Ohio enabled the boats on the way up to reach port with empties, which being forwarded to the mines will give the miners work for some time.

The Lynn Coal Company, six miles from Connellsville, will open a raw tract of coal land containing several hundred acres. This mine will be on a slope, and will be ready by the first of the year; the company has a capital of \$75,000.

In the railroad district mining operations are pretty active. By all odds the most important matter in the world of labor at the present time is the mining rate. A miners' strike is considered inevitable; it may not come right away, but it is on the way. Railroad miners and operators will meet in joint session on Friday in this city. President DeArmitt, of the New York & Cleveland Company, is invited to attend. John McBride may be here to argue the miners' side; a satisfactory agreement is expected.

Connellsville Coke.—Shipments show a decrease but production for the week increased; on the whole there is but little change. Several furnaces are to be fired, which will increase the demand, but may not increase the output. The number of active ovens will be 11,391, leaving 3,180 in the idle list. Last week's production increased 2,076 tons, but the shipments decreased 45 cars. All the active plants in the region, except five, made full six days last week, and the general average increased from 550 to 580, and the prospects are good for nearly full time at all the works this week. All the operators in the region, with the exception of the Frick and McClure companies, have many tons of it piled in their yards. The enormous supply of fuel on hand at the Edgar Thompson Steel Works represents the Frick company's surplus production. Total shipments 7,392 cars as follows: To Pittsburg, 2,603 cars; points east, 1,516 cars; to points west, 3,773 cars; prices nominal; furnace \$1 per ton.

Shanghai, China. Nov. 23.

(Special Report of Wheelock & Co.)

Coal.—Beyond a steady supply to consumers and contractors there has not been much done in Japan and there is very little demand for it. No steamers calling here seem to require bunker coals, as they can be procured so very much cheaper in Japan, and the high rates of freight ruling prohibit the import of cargoes for sale on any large scale. In Cardiff we note two arrivals, one of 3,000 tons, and the other of 1,600 tons. In Sydney Wollongong we have nothing to record, and with large stocks, some 5,000 tons, we do not anticipate any business till after Chinese New Year, and then only at greatly reduced prices. There is an inquiry at very much lower rates, 10@10.50 tael, but with high prices ruling in the South for Newcastle coal, importers prefer to deal in the latter kind for the present. In Newcastle there have been no transactions, cargoes from Australia being sold in Hong-Kong at higher prices than can be obtained here. Quotations are, for cargo lots, 12 taels per ton for Cardiff; 12 taels per ton for American anthracite; 11.60 taels per ton for Sydney Wollongong; 11 taels per ton for Newcastle; 6.50@7.50 taels per ton for Japan, for such as can be procured.

Kerosene Oil.—There have been transactions in spot cargo among natives at prices as high as 1.35 1/4 taels, but rates have since fallen again to 1.32 1/4 taels, at which the market closes weak. In cargoes to arrive we have heard of no business, and our quotation for near arrivals is 1.32 1/4 taels, 1.32 taels being asked for later arrivals. We note one arrival of 100,000 cases Devoc's, and this is the last cargo to arrive to former importers, the supply being now confined to the agent of the Standard Oil Company, to whom all future shipments will be consigned. In Russian there is nothing to record in case oil, while for bulk oil small transactions have taken place at 1.20 taels, and at this price there is a demand, but a

scarcity of packages prevents any further business for the present. Stocks are estimated at 1,020,087 cases American, and 127,622 cases Russian. Quotations are: Devoc's, 1.32 1/4 taels per case; Batoum, 1.20 taels per case; Batoum bulk, 1.20 taels per two tins.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Dec. 28, 1894.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending				From	
	Dec. 29, 1893.		Dec. 28, 1894.		Jan., '93.	Jan., '94.
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
Anthracite.	33	16,635	38	21,450	1,378,998	871,707
Coke.....	73	77,511	127	147,330	5,384,949	5,274,234
Charcoal...	24	4,540	23	4,770	392,604	218,794
Totals ...	130	98,716	188	173,550	7,156,641	6,364,735

The iron market in New York is practically featureless, the demand being dull and little effort made to sell. This will undoubtedly continue until the annual accounting is settled, and there is little prospect of the demand increasing until after the first few weeks of the new year. Our correspondent in Chicago reports that while trade is quiet there, the total sales for December will be much in excess of those during November, and the outlook for the coming year is most promising. Buffalo reports a quiet market and good prospects for the future, and our Philadelphia correspondent says that while actual sales are light, inquiry is good, and the indications are that there will be a considerable volume of business during the coming year. Taken altogether the iron trade situation is promising, and unless all signs fail it may be expected to show a marked improvement during the early months of the year, enlarging considerably toward spring. The only possible drawback to be noted is the possibility of labor troubles toward summer. These may or may not seriously affect trade.

Pig Iron.—There is but little demand noted. Quotations remain: Northern brands, No. 1 X, \$12.25@12.75; No. 2 X, \$11@12; gray forge, \$10@11; Southern irons, No. 1 foundry, \$11.50@12; No. 2 foundry, \$10.50@11.50; No. 1 soft, \$10.50@11; No. 2 soft, \$10.25@10.75.

Spiegeleisen and Ferromanganese.—The market is quiet at \$20.50@21 for 20% spiegeleisen, and \$49@50 for 80% ferromanganese.

Billets and Rods.—The market is dull and it is rumored that some shading has been made on billets. Nominal quotations remain \$17.50@18 for billets and \$24.50@25 for domestic wire rods.

Rails and Rail Fastenings.—There is no change in this market and but little sale or inquiry noted. Some sellers regard the outlook for rails as very unpromising, but others expect to find a material increase in business during 1895. Quotations remain: Standard rails at tidewater, \$22.75. In rail fastenings prices remain: Fish and angle plates, 1.20@1.40c. at mill; spikes, 1.40@1.60c.; bolts and square nuts, 2@2.25c.; hexagonal nuts, 2.10@2.30c. delivered.

Structural Iron and Steel.—While there is no material change in this market, there is a moderate demand for building material, and some fair sized orders have been secured with the prospect of larger ones to come. Quotations remain: Angles, 1.20@1.35c.; beams up to 15 in., 1.30@1.50c.; channels, 1.40@1.50c. on dock; tees, 1.50@1.60c. on dock.

Old Material.—This market is without any features of interest, no sales having been made. Nominal quotations remain: Old steel rails, \$9.50@10; old iron tees, \$10@11 per ton; New York railroad scrap, \$11.50@12 per ton, delivered at mill, and yard scrap at \$10; wrought turnings, delivered at mill, \$8@8.50; No. 1 wrought scrap at \$9.50@10.50 from yard, and machinery cast scrap \$9@10; old wrought tubes and pipe, \$6.50@7; old car wheel, \$9.50@10.50, New York; cast borings, \$6@6.50, delivered at mill.

Merchant Steel.—There is practically nothing of interest to note. It was expected that the meeting of Eastern barmakers in Philadelphia would have some results, but their adjournment until January 3d leaves matters as before. Quotations are: Tool steel, 5.65@6.25c.; tire steel, 1.30@1.40c.; toe calk, 1.65@1.75c.; Bessemer machinery, 1.25@1.40c.; open-hearth machinery, 1.85 @2c.; open-hearth carriage spring, 1.70@1.90c.; crucible spring, 3.40@3.65c.; axles, scrap, 1.30@1.50c.; steel, 1.25@1.55c.; bars, common, 1.15@1.30c.; refined, 1.25@1.40c.; steel hoops, 1.45@1.60c. delivered; hooks and pins, 1.40@1.50c.; plates, flange, 1.50@1.65c.; firebox, 2@2.25c.; marine, 2.45@2.70c.; sheared, 1.80c.; shell, 1.40@1.50c.; tank, 1.20@1.40c.; universal mill, 12.5@1.40c. delivered.

Buffalo. Dec. 27.

Special Report of Rogers, Brown & Co.

Nothing in the way of large new business has developed during the week. Inventory's blighting influence is now being felt, and is blocking shipments on old orders. There are some evidences, however, of more general consumption, if not of increase, in each individual case. We quote on the cash basis f.o.b. cars Buffalo, viz.: No. 1 foundry strong coke iron, Lake Superior ore, \$11.25; No. 2 foundry strong coke iron, Lake Superior ore, \$10.75; Ohio strong softener No. 1, \$11.75; Ohio strong softener No. 2, \$11.00; Jackson County silvery No. 1,

\$15.75; Lake Superior charcoal, \$13.75; Southern soft No. 1, \$11.25; Southern soft No. 2, \$11.00; Hanging Rock charcoal, \$18.50.

Chicago. Dec. 26.

(From our Special Correspondent.)

The Chicago iron market for the past week, in consequence, presumably, of the holidays and the drawing to a close of the year 1894, has been rather dull in all lines, with the possible exception of pig iron, and that material has upheld its last week's record. The sales of billets are now very small, and it is a question as to whether the mills desire to make sales at the prevailing low price. The Illinois Steel Company will close down its Joliet mills, possibly January 1st, for ten days.

Pig Iron.—There has been no change one way or the other in pig iron sales during the week to speak of; the total sales would almost be equal to last week if footed up. There have been sales of 1,000 and two of 500 each of foundry iron, and one of 500 tons malleable iron, and a number of smaller sales down to carload lots, which were fairly numerous. The total pig iron sales of December will surpass November by a good percentage. Southern iron sales have been mostly of carload lots. The furnaces, both North and South, are maintaining prices exceedingly well, and it may be said that their position in this is from the fact that they are nearly all sold far enough ahead to warrant them. Prices are per gross ton f. o. b. Chicago: Lake Superior charcoal, \$13.50@14.50; Lake Superior coke No. 1, \$10.25@10.50; No. 2, \$10@10.25; No. 3, \$9.50@9.75; Milwaukee Scotch No. 1, \$11; No. 2, \$10.75; Jackson County silveries, \$14.50@15; Southern coke, foundry, No. 1, \$11@11.25; No. 2, \$10.25@10.50; No. 3, \$10@10.25; Southern coke, soft, No. 1, \$10.25@10.50; No. 2, \$10@10.25; Southern car-wheel iron, \$17.50@18; Southern silveries No. 1, \$11.50@12; No. 2, \$11.50@12; Tennessee charcoal No. 2, \$14@14.50. Bessemer, \$10.50@11; Ohio strong softeners, \$13@13.50.

Structural Material.—Business has been only fair, but inquiry would indicate a better business after first of new year. Building and bridge shapes continue in about equal demand. Quotations are f. o. b. Chicago: Angles, 1.45@1.50c.; tees, 1.65c.; universal plates, 1.50@1.55c.; beams and channels, 1.50@1.60c.

Plates.—Competition continues great after the small trade now moving, and consequently low prices rule. Prices are: Flange steel, 1.65@1.75c.; fire-box steel, 1.95@4.50c.; tank steel, 1.40@1.50c.; boiler tubes, 70 to 75% discount.

Merchant Steel.—Sales have not increased any with the week, but after the holidays prospects are much brighter. December sales in the aggregate will foot up a good total. Prices are, carload lots: Smooth-finished machinery, 1.75@1.90c.; tire steel, 1.60@1.70; Bessemer bars, 1.40@1.45c.; toe calks, 2.10@2.20c.; crucible spring, 3.40@3.65c.; tool steel, 5.5@6.5c.; specials, 10.50@11.50c.

Black Sheet Iron.—Trade continues very dull and prospect is decidedly adverse to any early improvement. Mill lots are selling 2.35@2.40c. for No. 27 f. o. b. Chicago.

Bar Iron.—The week has developed nothing of a hopeful nature. Inquiry remains very light and sales are all for small quantities. Common iron sells for 1.05@1.10c., and refined 1.15@1.20c.

Billets.—But few sales are being made, and inquiry is exceedingly light. The Illinois Steel Company's Joliet mills will close for 10 days from January 1st. Prices are yet \$17.

Steel Rails.—The holidays have about stopped sales, and the outlook for 1895 is not so bright. Quotations are \$25@27.

Old Rails and Wheels.—No sales have been made in this market of either old rails or wheels during the past week. Old iron rails are selling at \$10.75@11; and old wheels, \$9.

Scrap.—Small sales have been made, but the outlook is not good. Quotations are: Forge, \$8.50@9; cast-iron borings, \$3.50; wrought iron turnings, \$4@4.50; axle turnings, \$6.50; mixed steel, \$5.50; tires, \$12.50@13; iron axles, \$13.

Philadelphia. Dec. 27.

(From our Special Correspondent.)

Pig Iron.—Brokers report that virtually no business has been done this week, but say that correspondence is in progress with certain large consumers with whom they expect to close large contracts, perhaps early in January. The foundrymen are disposed to listen to propositions for larger supplies than usual, though no orders have been secured lately. Buyers of Bessemer will wait for a little time. Millowners expect to be in the market for large amounts before long. No change in quotations.

Steel Billets.—Consumers are watching the Western markets with increased interest. Brokers who are posted as to buyers' intentions think there will be an unusually large amount of business done in billets next month.

Bar Iron.—The meeting held to talk over trade matters adjourned without definite action, but another meeting will be held next week when a fuller attendance will make united action possible. Prices are very weak.

Nails.—Offers were received from New York parties for nails at a shading from lowest known prices.

Skelp.—Skelp quotations are given at 1.20@1.30 in a small way.

Sheet Iron.—Manufacturers are satisfied that they will be able to resume next week with a fair volume of business. None looks for better prices.

Merchant Steel.—Stores are well supplied at present. Factories and shops are absorbing more steel, and a better demand next month is a reasonable anticipation.

Plate and Tank.—More severe competition from Western markets is now feared. The market is flat; mills idle. Out of the large volume of business in sight our manufacturers expect to run at least as regularly as during the fall. They may do much better.

Structural Material.—Much business has been delayed, as it was whispered around that a reduction would be made in wages. One or two Eastern concerns may make slight equalizing reductions to protect themselves. Prospects are fair for moderate activity. All that is needed is a general improvement in trade.

Steel Rails.—No orders are reported. Standard sections, \$22; girders, \$24.

Old Rails.—Quiet at \$12@12.50.

Pittsburg. Dec. 27.

(From our Special Correspondent.)

Raw Iron and Steel.—The situation in the iron and steel trade is one of waiting for what the next year will produce; at the same time the volume of business held up to its recent proportions, but there has been but little expansion of late. This is the last report of the old year. The new year has been anxiously waited for, and unusual preparations have been made. There are the usual negotiations being made for 1895, in fact it is a year of great expectations; reports from various points are extremely favorable for a big year's trade. The duration of the present prices for crude iron and steel depends on circumstances and the width of the gap that must be bridged to the railroad, buying looked for early in 1895. The few strong roads will doubtless lead off as formerly in placing orders for rails; the ability of other roads to get money for track renewals, and the rehabilitation of rolling stock put out of use for lack of funds to repair it, depends upon increased earnings. Bearing on this question, the outcome of the pooling bill is an important factor. Throughout the country the demands for material have dwindled to limited proportions, and notwithstanding the fact that prices are somewhat more favorable to buyers, purchases continue to be almost entirely restricted to current wants. In the local market a better feeling has followed the placing of some good orders for structural material, but the prices at which the business was secured were not reassuring. In view of the long period of dullness it is gratifying to be able to note an increased buying movement, and that numerous inquiries made since the first of the month result in actual business. Several round lots Bessemer pig sold at Valley furnace, first three months 1895, at \$9.40 cash; sales first six months, \$9.50 cash.

To-day we find a better feeling, with several sales of Bessemer \$10.15@10.25, January and February delivery, and steel billets \$15.15@15.25, same delivery. Skelp steel and iron prices have declined to 2 1/2 c. per 100 lbs. Ferromanganese is lower.

COKE SMELTED LAKE AND NATIVE ORE.		800 Billets, Jan., Feb., at mill.....	
Tons.	Cash.	500 Billets, spot, at mill.....	15.15
4,000	Bessemer Valley furnace, first 3 mos.....	SKELP IRON.	15.25
3,000	Bessemer Valley furnace, Jan. to July.....	400 Wide gr'vd. 1 1/2 x 4 m.	
2,000	Bessemer, Jan., Feb.....	350 Nar'w gr'vd. 1 1/2 x 4 m.	
1,000	Bessemer, Jan., Feb.....	300 Sheared.....	1.25 4 m.
1,000	Bessemer, Dec., 10.15	SKELP STEEL.	
1,000	Bessemer, Jan., 10.25	500 Wide gr'vd.....	.97 1/2 4 m.
1,000	Bessemer, Jan., 10.25	480 Sheared.....	1.10 4 m.
1,000	Bessemer, Jan., 10.25	300 Nar'w gr'vd.....	.97 1/2 4 m.
1,000	Bessemer, Jan., 10.25	MUCK BAR.	
1,000	Bessemer, Dec., 10.15	300 Neutral, Jan.....	18.40
800	Gray Forge, Jan., Feb.....	100 Neutral, prompt.....	18.25
500	Bessemer, prompt 10.25	SHEET BARS.	
500	Mill Iron.....	250 At maker's mill.....	21.00
300	Gray Forge.....	STEEL WIRE RODS.	
200	No. 1 Foundry.....	1,000 5 gauge, at mill.....	21.50
200	No. 2 Foundry.....	FERRO-MANGANESE.	
100	Gray Forge, special.....	100 80% delivered.....	50.00
100	No. 3 Foundry.....	100 80% delivered.....	48.50
100	Silvery.....	BLOOMS, BILLETS, BAR ENDS.	
50	Open Mill.....	600 Delivered.....	10.30
	CHARCOAL.	SPELTER.	
100	Cold Blast.....	120 Western.....	3.25
50	Cold Blast.....	OLD RAILS.	
50	No. 2 Foundry.....	500 Long steel rails.....	10.50
50	No. 3 Foundry.....	350 Iron rails.....	12.50
25	Cold Blast.....	200 Iron rails.....	12.25
	BLOOMS, BILLETS AND SLABS.	SCRAP MATERIAL.	
2,000	Billets, Jan., Feb., at mill.....	300 Cast scrap, gross.....	9.00
1,000	Billets, Jan., Feb., at mill.....	200 No. 1 R. R. W., net.....	10.00
1,000	Billets, prompt, at mill.....	100 Cast borings, gross	6.25
		FURNACE COKE.	
		35,000 Furnace f. o. b. ovens, next 3 mos.	95c.

METAL MARKET.

NEW YORK, Friday Evening, Dec. 28, 1894.

Gold and Silver.

Prices of Silver per Ounce Troy.

December.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in \$.	December.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in \$.
22	4.88 1/2	27 1/2	59 3/4	.462	26	4.88 1/2	Hol.	59 3/4	.462
24	4.88 1/2	27 1/2	59 3/4	.462	27	4.88 1/2	27 1/2	59 3/4	.462
25	Holiday	.....	.....	.....	28	4.88 1/2	27 1/2	59 3/4	.450

Owing to the holiday season there has been some accumulation of silver here, which, when offered on the market, depressed it to 27 1/2 d., at which price there is a limited demand; shipments continue to be fully up to the average. Buyers are cautious even at current rates.

The United States Assay Office at New York reports the total receipts of silver at 83,000 oz. for the week.

Gold and Silver Exports and Imports.

At all United States Ports, November, 1891, and Eleven Months, 1894 and 1893.

	Gold.		Silver.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
Nov.	\$419,999	\$1,919,600	\$3,601,589	\$670,558	E. \$1,431,430
1894..	92,009,321	20,213,610	43,348,728	8,979,906	E. 106,161,533
1893..	77,121,275	72,016,144	41,043,039	17,342,785	E. 28,905,385

The statement includes all United States ports the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York.

For the week ending December 23d, 1891, and for Years from January 1st, 1891, 1893 and 1892.

Week	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
1891..	\$3,870,300	\$51,854	\$908,850	\$16,327	E. \$1,710.96
1891..	91,296,704	16,438,291	32,359,876	1,641,715	E. 109,136.54
1891..	72,791,514	63,983,398	32,970,710	3,592,174	E. 38,186.75
1892..	70,009,474	8,488,083	22,577,628	3,050,944	E. 81,648.07

The gold imported came from the West Indies; the silver from Central America. Of the gold exported \$1,750,000 went to Germany and the rest to France; the silver went to London.

During the five days ending December 27th the imports and exports of gold and silver from the port of New York were as follows: Imports, gold, \$14,665; silver, \$7,668. Exports, gold, \$11,000; silver, \$458,025. All the gold exported was in American coin and went to the West Indies. Of the silver exported, \$29,325 was in Mexican coin, all of which went to the West Indies. The remaining \$428,700 was in American coin and bullion and went to London. There were also in transit to London \$12,337 in gold and \$7,500 in silver, all of which was in Mexican coin.

FINANCIAL NOTES OF THE WEEK.

The closing week of the year, while it finds business in better condition than a year ago, still leaves much to be desired. It is true that there has been an improvement, but to most of us it seems that the return to prosperity has been unreasonably delayed and that much is yet to be accomplished to put us on a normal footing. We are apt to forget the long period needed for recovery after former panics and to consider the present slow growth of trade as altogether unprecedented. It is not; and the fact is that we have gone forward further than is fully appreciated. The only thing now needed is to put our currency on a safe and stable footing, a great task, it is true, but not an impossible one. Let us hope that 1895 will see the work well advanced.

The amended bill which the Banking Committee of the House of Representatives proposes to report after the holiday recess does not materially change the bill as first proposed by the Secretary. The chief points of difference are the omission of the clause holding stockholders of failed banks expressly liable for their notes; the withdrawal of the clause making the banks mutually and indefinitely responsible for each other's notes in case of failure, and the withdrawal of the clause permitting banks to continue the present bond basis for circulation, if they prefer to do so. We have not given the text of the bill, since it is altogether probable that it will be further amended before it is brought to a vote. As to the prospects of the bill in the House, the best judges offer no prediction as to its passage or the ultimate form it may take. In the majority of the House there are many and wide differences of opinion; while, it is apparent, that for political reasons the minority will not help to pass any currency bill at the present session. Should a bill pass the House it is quite possible that it may be delayed in the Senate until the session ends in March.

No gold was sent abroad by the steamers sailing early in the week, and up to the present time the amounts taken for shipment by Saturday's steamers have not been large. The sum so far reported is a little \$750,000, all for French account. Exchange is a little easier, and the absence of any special demand abroad may make shipments light for a week or two, though an increase is possible at any time, until a settlement of the currency question is reached.

Notice was given on Thursday of the dissolution of the syndicate which took the last issue of \$50,000,000 gold bonds. The chief reason given is that the sale of the new bonds has been difficult owing to the apprehension caused by the discussion of currency reform. It is understood that the syndicate has sold about \$30,500,000 of the bonds to the public, leaving \$19,500,000 which will be distributed to the members. The chief reason for this action is the fall in the price of bonds below the figure fixed by the syndicate. This fall is largely due to the belief that should the bill now before Congress pass, a large amount of bonds now kept on deposit by the banks to secure circulation will be thrown on the market.

The statement of the New York banks for the week ending December 22d shows increases of \$554,850 in surplus reserve, \$6,550,100 in specie, and \$36,200 in circulation; decreases of \$8,605,100 in loans, \$8,569,800 in legal tenders, and \$10,294,200 in deposits. The total reserve was \$172,528,100, or \$33,900,425 in excess of legal requirements. The large decreases in the loans and deposits may partly be accounted for by sales and transfers of the new bonds, and partly also by the usual contraction of discounts in preparation for the January settlements. The exports of gold, a large part of which represents the withdrawal of funds available for loans, also had its effect. The investment of money in bonds has further withdrawn some balances from the loan market. On the whole, while the rates for money are still very low, there is a tendency toward their increase.

The statement of the United States Treasury on Thursday, December 27th, shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

	Dec. 20.	Dec. 27.	Changes
Gold.....	\$93,210,434	\$89,070,012	D. \$4,140,422
Silver.....	7,535,732	7,391,922	D. 143,810
Legal tenders.....	32,314,493	33,471,712	I. 1,157,219
Treasury notes, etc.	27,059,320	27,397,474	I. 338,154
Total.....	\$160,119,979	\$157,331,120	D. \$2,788,859

Government deposits with national banks on the same date amounted to \$11,590,104.

It will be seen that the gold reserve is steadily decreasing, while the legal tenders and Treasury notes are gaining.

The total Treasury receipts for the week ending December 22d are given below, in comparison with those for the corresponding weeks in 1893 and 1892:

	1892.	1893.	1894.
Customs.....	\$3,851,319	\$1,922,130	\$2,468,144
Internal revenue.....	3,414,504	2,793,306	2,335,767
Miscellaneous.....	324,510	1,310,594	638,324
Total.....	\$7,590,333	\$6,026,030	\$5,442,235

The receipts for the week were \$96,987 in excess of those of the preceding week; the gain was entirely in the internal revenue payments.

It may be of interest to compare the Treasury balance with former years. Below we give the statement at the close of last week (December 22d for three years:

	1892.	1893.	1894.
Gold.....	\$119,960,108	\$82,609,957	\$90,850,310
Silver.....	4,284,371	5,467,755	7,219,574
Legal tenders.....	9,086,300	4,469,168	33,275,557
Treasury notes, etc.	2,767,445	1,218,918	27,259,350
Total.....	\$136,098,224	\$93,765,738	\$158,584,791

The increase in legal tenders and treasury notes emphasizes the point which we have heretofore made, that the Treasury is receiving, in payment of amounts due to it, its paper issues almost entirely. The payments for customs and internal revenue are practically all in treasury notes, while in addition to this there is a continual outflow of gold in exchange for legal tenders.

It is stated that the Director of the Mint, in preparing his report for 1894, will make an effort to obtain more exact statistics of the amount of gold in the country. As we have heretofore stated, the mint reports on this point have not made sufficient allowances for several sources of loss of gold; this defect Mr. Preston intends to remedy as far as possible.

The report of the Comptroller of the Currency for the year ending June 30th last, shows that in the 3,650 national banks reporting to him the total number of depositors was 1,929,349, and the total amount of deposits \$1,647,017,129; the average amount of balance being therefore \$853 per depositor. The highest average was shown by the banks of New York city, \$5,784 per depositor. Boston came second with an average balance of \$4,136; Detroit third with \$3,520; Cleveland fourth with \$3,513; Chicago fifth with \$3,412; Philadelphia sixth with \$2,483; San Francisco seventh with \$2,435; and Milwaukee eighth with \$2,319.

The statistics collected by Mr. Eckels for the savings banks of the United States show that the banks reporting, including nearly all of those in existence, had 4,777,687 depositors. The amount of deposits was \$1,747,961,280, an average of \$366 for each depositor.

Mexican imports of merchandise for the fiscal year ending June 30th last were (in Mexican dollars) \$30,287,489, showing a decrease of \$13,125,642, or

30.2%, from the preceding year. Exports for the year were reported as below, in Mexican dollars:

	1892-93.	1893-94.	Changes.
Precious metals.....	\$56,499,005	\$46,484,360	D. \$10,014,645
Merchandise.....	31,010,202	37,858,927	I. 1,848,725
Total.....	\$87,509,207	\$79,343,287	D. \$8,165,920

On these returns the "Mexican Financier" comments as follows: "The diminution in imports, apparent in the foregoing table, is largely to be ascribed to smaller purchases of American maize, and, so far forth as it points to better home crops, is not to be deplored. The falling off in exports is due exclusively to the diminished shipments of Mexican dollars, silver bullion and silver ore. But, in the opinion of the most competent observers here, among bankers and railroad officials, the ore exporting business is on the eve of a considerable expansion, and a renewed demand for Mexican dollars in the Orient may spring up at any moment. We have no faith in the success of the attempts of European nations to oust our dollar from Asiatic markets. Custom in the Orient is all-powerful, and custom is entirely in favor of a coin which has been current there for centuries. We think, then, that much of the shrinkage in the exportation of precious metals is merely transient."

Imports and exports of gold and silver in Great Britain for the eleven months to November 30th are given by the Board of Trade returns as below:

	Gold.		Silver.	
	1893.	1894.	1893.	1894.
Imp.....	\$22,672,729	\$25,986,261	\$10,776,660	\$10,290,204
Exp.....	17,936,416	13,235,423	12,087,652	11,454,242
Exc. I. £4,736,313	I. £12,750,838	E. £1,310,992	E. £1,164,038	

The net imports of gold, therefore, show an increase of no less than £8,014,525, or 109.2%, over last year; the increase of gold in Great Britain has been £63,750,000 this year. The net exports of silver show a decrease of £146,954, or 11.2%, from last year. These returns cover only coin and bullion, and not silver in ores, base bullion or matte.

The imports and exports of merchandise in Great Britain for the eleven months ending November 30th are given below, from the returns of the Board of Trade:

	1893.	1894.	Changes.
Imports.....	£368,330,171	£375,435,238	I. £7,105,067
Exports.....	255,927,344	251,832,277	D. 4,095,067
Excess, imports	£112,402,827	£123,602,961	I. £11,200,134

The increase in imports was chiefly in manufactures and in cotton and other raw materials for the textile trades. The decrease in exports was almost entirely in manufactures, chiefly in iron and steel.

The Bank of England on Thursday, December 27th, reported its total gold holdings at £32,547,478, an increase of £8,058,900, as compared with the corresponding date last year. The bank showed a net loss of £814,916 gold during the week, chiefly from the home demand incident to the closing weeks of the year, since foreign shipments were lighter than for several weeks past. The proportion of reserve to liabilities was 63.57%, against 63.67% last week and 45.75% a year ago. Receipts of gold from South Africa and Australia are expected to be large for some weeks to come.

The Bank of France on Thursday, December 27th, reported its total specie holdings at 2,079,600,000 fr. gold and 1,242,000,000 fr. silver; an increase of 398,974,356 fr. gold and a decrease of 21,827,292 fr. silver as compared with the corresponding date last year. The changes during the week were an increase of 19,575,000 fr. gold and a decrease of 150,000 fr. silver. The Bank continues to accumulate gold.

Specie holdings of other European banks on Thursday, December 27th, are reported by cable to the "Journal of Commerce" as below:

	Gold.	Silver.	Total.
Imp. Bank of Germany.....			\$265,725,000
Austro-Hungarian Bank.....	\$76,350,000	\$70,145,000	146,495,000
Netherlands Bank.....	20,445,000	34,490,000	54,935,000
Belgian National Bank.....			26,223,000
Bank of Spain.....	40,021,000	54,979,000	95,000,000

The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately. The latest report from the Imperial Bank of Russia, of date November 8th—20th, gives their holdings at \$214,032,000 gold and \$113,092.

The settlements for the new Russian loan are now nearly completed. The next borrower expected for a large amount is Austria. Under the law providing for the currency reform in that country the amount of gold required for the resumption of specie payments was 624,000,000 crowns, of which Austria was to provide 70% and Hungary 30%. The Hungarian quota is provided. Austria obtained 228,000,000 crowns by loans made in 1893, leaving 208,000,000 crowns (\$41,224,000) to be raised by the new loan. The 4% bonds issued in 1893 were put out at 95% and 97; they are now selling at 101, so that the new issue can be made on favorable terms. It is said that some of the gold has already been bought in anticipation of the loan, and that much of it is South African gold.

The 228,000,000 crowns for which the gold has already been purchased were obtained in the following form as stated in a recent official report: Bar gold, 71,500,000 cr.; American eagles, 118,500,000 cr.; English sovereigns, 20,500,000 cr.; French nap

leons, 5,000,000 cr.; German marks, 12,000,000 cr.; miscellaneous, 500,000 cr. Of the bar gold 50,000,000 cr. were purchased in London, 13,000,000 in Paris, 3,500,000 in Brussels, 1,000,000 in Amsterdam, and 4,000,000 in British India. The bars bought in London were chiefly South African gold, although some came from Australia. It will be seen, however, that over half the amount of gold purchased—about 52%—was in American coin. At the time these purchases were going on we pointed out in this column the large amount that was going to Austria and being absorbed by that country. Under present circumstances it seems quite probable that the new loan and the additional purchases to be made will have the effect of drawing more gold from this country.

The demand for Indian Council bills this week was unexpectedly good so far as the amount taken was concerned, though not strong enough to cause any improvement in the price, which remains a fraction under 13d. per rupee.

Shipments of silver from London to the East for the year up to December 14th are given by Messrs. Pixley & Abell's circular as below:

	1893.	1894.	Changes.
India.....	£6,278,051	£4,836,053	D. £1,441,998
China.....	2,025,216	2,711,771	I. 686,555
The Straits.....	1,525,213	1,189,746	D. 335,467
Total.....	£9,828,480	£8,737,570	D. £1,090,910

For the week the shipments in silver were £107,600 to Bombay and £42,500 to Canada. The receipts of bar silver included £110,000 from New York, £54,000 from Chile and £19,000 from the West Indies; there were also receipts of £27,000 in Mexican dollars from Vera Cruz.

Gold sales are again reported from India as the price of silver falls; but the amount thus far is small, and much less gold is coming out than made its appearance when the rupee went below 13d. a few months ago.

There seems to be a prospect that peace negotiations between Japan and China will soon be brought about. As has been before stated any treaty between the two countries will probably involve the payment of a large sum by China as a war indemnity; and this would make a temporary demand for silver.

Domestic and Foreign Coins.

The following are the latest market quotations for the leading foreign coins:

	Bid.	Asked.
Mexican dollars.....	\$0.49%	\$0.50%
Peruvian soles and Chilean pesos.....	48%	50
Victoria sovereigns.....	4.37	4.39
Twenty francs.....	3.86	3.88
Twenty marks.....	4.75	4.78
Spanish 25 pesetas.....	4.82	4.85

Other Metals.

The holidays have interrupted business, and there is very little of interest to report.

Copper has been very firm indeed, and the price of 10c. for Lake copper is now firmly established. For ingots from second hands 9% has been refused. Electrolytic copper is now held for 9%, and casting copper for 9%. We understand that some sales of fine copper have been made for export, but the transactions were not important.

The European market opened very firm after the holidays at £41 5s., an advance of about 10s., and the demand abroad is reported to be very good. For refined and manufactured we quote: English tough, £43 5s. @ £43 10s.; best selected, £44 @ £44 10s.; strong sheets, £51 10s. @ £52; India sheets, £49 @ £49 10s.; yellow metal, 4 1/4 d.

It is reported from London that last week a sale of 100 tons of copper was made for shipment to America. But if this has actually been done it can be assumed that it was done simply to manipulate the market abroad as the foreign market is still rather below the parity of ours, and besides there is no necessity of bringing the copper over here.

Messrs. James Lewis & Sons' circular of December 17th reports recent sales of furnace material in England as follows: 200 tons Verde mate, 70%, at 8s. 6d. per unit; 3 tons Lapilla precipitate, 70%, at 8s. per unit. The circular adds: The balance of the French syndicate stock of Montana matte, 700 tons has been sold at the equivalent of 8s. 3d. per unit, delivered here, and, with the 1,000 tons previously sold, will be smelted in the United States.

Copper Exports.—The exports of copper from the port of New York for the week ending December 27th, as reported by the New York Metal Exchange, were as follows:

Havre—La Champagne.....	Ingots	80 tons
Bordeaux—Chateau Lafitte.....	Bars	100 "
Rotterdam—Veendam.....	Plates	14 "
Liverpool—Campania.....	Pigs	193 "
Trieste—Pawnee.....	Ingots	201 "
Liverpool—Tauric.....	Pigs	163 "
Matte:		
Liverpool—Tauric.....		620 "
—Britannic.....		167 "

Exports of copper from Baltimore for the week ending December 27th are reported by our special correspondent as follows:

Liverpool—Templemore.....	720 cakes	231,572 lbs.
Rotterdam—Delano.....	1,976 ingots	3,600 "
" ".....	37 cakes	11,273 "
" ".....	858 bars	134,477 "

Imports and Exports of Metals.—Imports of metals into this port for the week ending December 20th are reported by the New York Metal Exchange as follows: 385 tons tin, 75 casks antimony from London; 10 tons English tin from Liverpool; 50 tons Straits tin, 25 tons billiton tin from Holland; 25 tons Silesian spelter from Stettin, 150 casks antimony from New Castle.

Exports of metals (other than copper) from this port for the week ending December 20th are reported by the New York Metal Exchange as follows: 30 tons tin scrap to Antwerp; 63 tons tin scrap to Rotterdam; 24 tons nails to London; 10 tons pig iron to St. John; 30 tons nickel to Hamburg.

Imports at the port of Philadelphia for the week ending December 22d were: 2,950 tons iron ore from Cuba; 25 tons tin from London; 25 tons lead from Swansea; 20,659 boxes tin plates from Great Britain.

Imports at Baltimore for the week were: 2,657 tons iron ore from Cuba; 75 tons spiegeleisen from Liverpool; 40 tons pig iron from Glasgow; 100 tons steel ends from Glasgow; 4,662 boxes tinplate from Great Britain.

Exports of metals (other than copper) from the port of Baltimore for the week ending December 28th are reported by our special correspondent as follows: 125 bundles, 33,275 lbs. tin scrap.

Tin has been quiet during the holidays, and very little business has been doing. In the mean time London shows a further decline, the market having dropped to £61 5s. for spot, the lowest price established during the present year. The same price is quoted for three months prompt, and in consequence of this we have to lower the quotation for spot and delivery during the first six months of next year to 13-55@13-65.

It is again reported that shipments from the East for the next two or three months will be very heavy.

Lead.—The market is very flat with sellers at 3-05, and very little inclination on the part of buyers to do anything.

The foreign market is reported firm, but this is hardly expressed in the quotations, which for Spanish lead are £9 11s. 3d. @ £9 12s. 6d., and English lead 2s. 6d. higher.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: "Lead dull with latest sales on basis 2-80c. East St. Louis transactions are light, owing to indifference on part of buyers to allow themselves to be supplied at the late decline."

Spelter is flat, with sellers at 33 1/2 @ 33 3/5, New York.

The foreign market is weak, and it appears that all hopes that the combination which existed to regulate the output would be renewed have been given up. Good ordinaries are quoted £14 5s., and specials £14 7s. 6d.

Antimony is flat. Cookson's, 8 1/2c.; L. X., 8c.; Hallett's, 7 1/2c.; U. S. French Star, 8 @ 8 1/2c.

Quicksilver.—This market remains unchanged. Prices are as follows: New York, \$36; London, second hands, £6 10s.; Rutschschin's price, £6 12s. 6d.

Aluminum.—Current quotations are unchanged as follows, No. 1 being over 93% pure metal, and No. 2 over 91% pure: No. 1 in rolling ingots, 63c. per lb. for small lots at factory; 60c. in 100 lb. lots; 55c. in ton lots. No. 1 in ingots for remelting, 60c. for small lots, 55c. for 100 lb. lots, and 53c. in ton lots. No. 2 in ingots for remelting, 55c., 53c. and 50c. per lb., according to size of order. Sheets, 80c. @ \$1.40 per lb., according to size and thickness. Wire, \$1 @ \$2.50 per lb., according to gauge. Castings, 90c. per lb. up, according to number, weight, patterns, etc. Tubes, from 20c. to \$3.15 per foot, according to thickness and diameter.

Abroad quotations for 90% pure metal in Paris are 5.50 @ 7 fr. per kilo. for ingots; 8 fr. and upward for sheets; 11 fr. for wire over 0.5 mm. and 19 fr. for tubes. The Neuhausen Company quotes No. 1 (guaranteed 98% pure, and in fact 99.75%) at 5 fr. per kilo. for ingots in small lots; for large lots a considerable discount is allowed. This price is at the works in Switzerland.

Bismuth.—No late sales in New York are reported. Quotations are nominal at \$1.95 @ \$2.45 per lb., according to quantity.

Magnesium.—No quotations are to be found for this metal in New York, where sales are usually made in small lots for special purposes only, and on private terms. Prices in Germany are, for lots of over 10 kilos: Ingots, \$6.75 per kilo.; bars, \$6.50; powder, \$9; ribbon and wire, \$9.50. For orders of less than 10 kilos., 25 cents per kilo. must be added for ingots or bars, and 50 cents for ribbon, wire or powder. These prices are delivered at works; the Aluminum und Magnesium Fabrik, Hemelingen, Germany, is the only maker of the metal in commercial quantities.

Nickel.—Sales reported are all on private terms. Quotations are nominal at 38 1/2 @ 43c. London quotations are 16 @ 17d. per lb., and somewhat firmer. In Paris no change is reported; pure metal is quoted at 4-75 @ 5 fr. per kilo., equal to about 41 1/2 @ 43 1/2c. per lb. Copper-nickel alloy, 50% nickel, 2 7/5 @ 3 fr. per kilo.

Phosphorus.—Quotations are steady at 50 @ 52 1/2c., f. o. b., New York or Philadelphia.

Platinum.—Abroad the prices continue firm, with an upward tendency reported.

For chemical ware, hammered metal, Messrs. Eimer & Amend, New York, quote crucibles and

dishes 41c. per gram for orders of over 250 grams; 43c. for orders of 100 grams or over, and 45c. for small lots. Wire and foil are 40c., 41c. and 42c. per gram, respectively, for orders of the quantities named. Current retail prices for crucibles are 50c. per gram.

Sodium.—In England and Germany makers quote 85 @ 95c. per lb., according to quantity. Sales in this market are too small to furnish quotations.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, Dec. 28, 1894.

Heavy Chemicals.—The heavy chemical market continues very quiet. The attitude of sellers is altogether one of waiting, for it is expected that by the middle of next month there will be a fairly active demand experienced for most of the heavy chemicals. Just at the present there is very little doing, consumers being busy taking stock and attending to the work incident to the closing of the year. Caustic soda is quiet, but steady. For alkali there has been a fair demand for future delivery and prices are fairly firm. There is no change of importance in prices and we quote as follows: Caustic soda, 60%, 2-10 @ 2-25c. for spot; futures 2c. and upward; 70 to 74%, 2-05 @ 2-30c. Carbonated soda ash, 48%, is 5c. @ \$1, according to quantity and delivery; small parcels range higher. Alkali, 48%, is 97 1/2 @ 1c., with special makes at 1 @ 1-05c. Bicarb. is 2 @ 2 1/2c. for spot. Bleaching powder is 1-75 @ 1-90c. for English; 1-50 @ 1-65 for German and Belgian. Sal soda, 70 @ 75c. for domestic.

Acids.—The past week, owing to the holidays, has naturally been very quiet, but the acid market generally shows little or no improvement from the conditions reported in this column for the past few weeks. The jobbing demand is rather light just now. Contracts for next year's delivery have been the exception rather than the rule. Some consumers, knowing what little probability there is of a further decline in prices, and believing that their own business will improve in 1895, have placed their orders for next year, but the prevailing tendency is to buy acid as it is needed. The manufacturers themselves are not particularly eager to push their product on the market. There is no change in prices save in sulphate of copper, which is rather firmer and shows a rising tendency. We quote per 100 lbs. in New York and vicinity, in lots of 50 carboys or more: Acids, acetic, \$1.40 @ \$1.65 (in barrels). Muriatic, 18", 80 @ 90c.; 20", 90c. @ \$1.15; nitric, 38", \$3.25 @ \$4; 40", \$4 @ \$4.50; 42", \$4.50 @ \$5.25. Mixed acids according to mixture: oxalic, \$7 @ \$7.50. Sulphuric, 60", 60 @ 70c.; 66", 70 @ 85c. Blue vitriol is quoted at \$3.25 @ \$3.50.

Brimstone.—The brimstone market is quiet and featureless. Prices are slightly lower and we quote this week best unmixed seconds, on the spot and near by, \$16.75; futures, \$16.50. Best thirds are \$1 less.

Fertilizing Chemicals.—The fertilizer market is exceedingly dull. Only a few small sales are reported. Prices of ammoniates are still weak. Our quotations are as follows: Sulphate of ammonia, gas liquor, \$3 25 @ \$3.30; bone, \$3 20. Dried blood, high grade, \$2.10 @ \$2.15; low grade, \$2 @ \$2.05. Azotine, \$2.10 @ \$2.12 1/2. Concentrated phosphate (30% available phosphoric acid), 75c. per unit. Acid phosphate, 13% to 15%, av. P₂O₅, 57c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, P₂O₅, 90c. per unit. Acidulated fish scrap, \$12 50 @ \$13, and dried scrap with few or no sales, nominally \$21 f. o. b. fish factory. Tankage, high grade, \$21 @ 21.50; low grade, \$20. Bone tankage, \$22; ground bone, \$20. Bone meal, \$23 @ \$24.

In lots of 50 tons on contracts we quote: Double manure salts, 48-53% (basis of 48%): New York and Boston, \$1.12; Philadelphia, \$1.14 1/2; Charleston, Savannah, Wilmington, N. C., and New Orleans, \$1.17. High grade manure salts, 90-95% and 96-97% basis 90%, respectively: New York and Boston, \$2 07 @ \$2.11; Philadelphia, \$2.09 1/2 @ \$2.13 1/2. Charleston, Savannah, Wilmington, N. C., and New Orleans, \$2.12 @ \$2.16.

Phosphate Rock.—Quotations at Charleston, S. C., are: \$4 for standard land, kiln-dried rock; ground rock, in buyer's bags \$5.50 @ \$5.60, in seller's bags \$1 higher.

Muriate of Soda.—Prices for 1895 have not yet been fixed by the Syndicate. Quotations for lots of 50 tons are as follows: 80 85% and minimum 95% (basis 80%), respectively: New York and Boston, \$1.78 @ \$1.91; Philadelphia, \$1.80 1/2 @ \$1.83 1/2; Charleston, Savannah, Wilmington, N. C., and New Orleans, \$1.83 1/2 @ \$1.86.

Kainit.—Prices for kainit (minimum 23%) in cargo lots for 1894 delivery are nominally unchanged and are as follows for invoice and actual weights respectively: New York, Boston and Philadelphia, \$9 @ \$9.25; Charleston, Savannah, Wilmington, N. C., and New Orleans, \$9.75 @ \$10. For sylvinit, 27-35%, prices are as follows, per cent. per gross ton, invoice weight: New York, Boston and Philadelphia, 37 1/2c.; Charleston, Savannah, Wilmington, N. C., and New Orleans, 41c. Actual weight, 1c. more per cent. There is a little better demand, but not enough to warrant an increase.

Nitrate of Soda.—Owing to the recent large arrivals and the small demand, prices for nitrate are lower and weaker. We quote this week: On the spot or ex-vessel in port, \$1.92 1/2 @ \$1.95 the nominal price being \$2. Arrivals, \$1.77 1/2 @ \$1.90, according to position.

Liverpool.

Dec. 19.

(Special Report of Joseph P. Brunner & Co.)

There is little of interest to report with respect to our market for chemicals, and from now to the end of the month will be more or less of a holiday time. Soda ash is scarce and makers have difficulty in supplying prompt orders. We quote: Leblanc ash, 48%, £3 15s. @ £4 per ton; 58%, £4 @ £4 5s. per ton, net cash.

Ammonia ash, 48%, £3 5s. @ £3 10s.; 58%, £3 10s. @ £3 15s. per ton, net cash; 5s. less for bags.

Soda crystals are slow of sale at £2 7s. 6d. @ £2 10s. per ton, less 5%. Caustic soda in limited demand, and rather weaker. Spot range, as to market, is about: 60%, £6 15s. @ £7 2s. 6d. per ton; 70%, £7 15s. @ £8 2s. 6d. per ton; 74%, £8 15s. @ £9 2s. 6d. per ton; 76%, £9 15s. @ £10 2s. 6d. per ton, net cash. For parcels under 10 tons, 5s. per ton extra is charged.

Bleaching powder is quiet, and for hardwood packages quotations range from £7 5s. to £7 15s. per ton net cash, according to export market.

Chlorate of potash is practically unsalable, and spot quotations are quite nominal at about 5 1/2 @ 1. to 5d. per lb. For all 1895, the nearest value is 5d., less 5%.

Bicarb. soda is maintained at £6 15s. per ton, less 2 1/2% for 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia has had a further decline, and is now quoted at £11 10s. @ £11 15s. per ton, less 2 1/2%, for good gray 24-25% in double bags f. o. b. Liverpool, according to quality.

Nitrate of soda dull at £9 2s. 6d. @ £9 5s. per ton, less 2 1/2%, for double bags f. o. b. Liverpool.

Carb. ammonia is lower at 3 1/2d. per lb. for lump, and 3 3/4d. per lb. for powdered, less 2 1/2%.

MINING STOCKS.

[For complete quotations of shares listed in New York, Boston, San Francisco, Aspen, Colo.; Colorado Springs, Colo.; Duluth, Minn.; Helena, Mont.; Baltimore, Philadelphia, Pittsburg, London and Paris, see pages 598 and 600.]

NEW YORK, Friday Evening, Dec. 28.

The mining stock market during the past week has been very quiet, as is always to be expected from a "holiday week." Prices, however, ruled fairly steady. The brokers report a better inquiry for the gold stocks, although actual sales do not show any increase in volume.

The Comstocks have been very quiet with prices slightly higher than last week. Of Consolidated California & Virginia 450 shares changed hands at \$3 65 @ \$3.85. Hale & Norcross advanced from 84c. to 93c., although only 200 shares were sold. Sales of Comstock Tunnel stock amounted to 4,300 shares of 5 @ 6c.; and a \$1,000 bond was sold for 8% of its face value. Bullion, which had not been traded in for some time past, this week shows a solitary sale of 100 shares at 31c. Of Alta 200 shares were sold at 19c. Other sales were: 50 shares of Best & Belcher at 48c.; 100 shares of Ophir at \$1.55, and 300 shares of Yellow Jacket at 42c. @ 43c.

The California stocks were in better demand this week. Of Bulwer Consolidated 200 shares were sold at 5c., assessment unpaid. There was a sale of 50 shares of Bodie Consolidated at 70c. Of Standard 100 shares changed hands at \$1.90. Quicksilver, which had not been traded in for some months past, this week shows a sale of 100 shares of the common stock at \$1.88.

Of the Colorado stocks, Lacrosse was stationary at 8c., with sales of 500 shares. An equal number of shares of American Flag changed hands at 4c. There was a sale of 50 shares of Victor at \$2 75. Leadville Consolidated was quiet, only 300 shares being sold at 10c.

Ontario returns to the exchange this week with a sale of 100 shares at \$10.

Total transactions for the week amounted to 8,600 shares of which 2,950 were dividend shares, and the rest non-dividend shares.

Boston.

Dec 27.

(From our Special Correspondent.)

The usual holiday dullness has prevailed the past week, and very little has been done in the copper share market. There is a good undertone to the market, and it will not be unreasonable to expect much greater activity early in the new year. Ingot copper is in better demand, and the price has advanced to 10c., which will enable the producing companies to increase their earning capacity and pay the stockholders better dividends.

Boston & Montana declined in early dealings to \$32 1/2, but since Christmas there has been a good demand for it, which carried the price up to-day to \$33 1/2. Butte & Boston has also shown a good degree of firmness and sold up to \$11 1/2.

Calumet & Hecla is firm with but few sales at \$290 @ \$292 1/2. Tamarack, from some unknown reason, was inclined to be heavy and sold off to \$151 against \$155 last week, but rallied \$1 to-day to \$152. Quincy has been very strong, although early in the week it sold at \$99 1/2. All the stock offered at or under par has been taken, and to-day sales were made at \$105; closing strong. The scrip also advanced from \$37 1/2 to \$42, with a fairly good demand. There is but little doing in Osceola, but the price was advanced from \$21 to \$22 1/2 on the limited transactions. Franklin was a little weak, showing a decline of \$14 1/2 to \$14. Kearsarge declined from \$7 1/2 to \$7 for a 25 share lot. Atlantic sold at \$11 for 10 shares only.

The year closes with a much brighter outlook for

the copper interests, and better prices are confidently predicted for the near future.

Salt Lake City, Utah. Dec. 22.
(Special Report by James A. Pollock.)

As predicted in my last week's letter the declining interest in the stock market has become a fact. The general disinclination to trade has been due in part to the lowering price of silver, but in the main to the near approach of that season of the year when the balancing of books begins and the desire is to close in, rather than to branch out in new investments and enterprises. I look for a very active business immediately upon the advent of the new year. The general tendency of speculation is in the direction of mining securities. The foreign market is especially strong.

Contrary to general expectations Ontario did not show the weakness which was expected. Until there are more convincing signs of improvement in the price of silver, it must be realized that with all the enforced economies the Ontario management has only a small working margin between the cost of production and the amount realized. The shares closed at \$9.50 bid and \$12.50 asked.

Daly is \$6.75 bid and \$8.25 asked. Alliance is quiet at 75c. and \$1.25 asked. There will be no sale of delinquent assessment stock. Anchor is \$3.25 bid and \$3.50 asked, and several blocks of stock changed hands at the latter price. One thousand Bogan sold at Park City for \$1.25; confidence in this property is gaining ground among the mining fraternity. Cane Springs was offered down to \$1, with no sales. Centennial-Eureka for the first time in many months failed to score an advance on the payment of the double dividend. The shares are stationary at \$42.50 asked and \$40 bid.

Comstock was offered at 25c. Two cents was bid for Crescent. Ajax is on the market at \$2.50 per share. Bullion-Beck was \$8 bid, but no stock offered under \$9.50. The shares are too closely held to become an investment favorite among the speculative. Dalton is creating much interest, and reported strikes, change of management, massing of stock in strong hands and various other rumors keep the stock constantly before the public. The shares closed at 2 1/2c. bid and 3 1/2c. asked. Mercur is in strong demand at \$3.25 bid and \$3.50 asked. Horn Silver is steady at \$2.50 bid. Mammoth is very strong at \$1 bid for any number of shares. Silver King moved at \$13.50. Swansea, a stock rarely dealt in, has paid a dividend of 1 1/2c. per share, \$1,500 in all.

San Francisco. Dec. 22.
(From our Special Correspondent.)

The closing weeks of the year do not show a very active business in stocks, and the general tendency is bearish. The better showing made by some of the Comstock mines, and the recent dividends paid by Consolidated California & Virginia, have been offset by the long list of assessments to which people point.

The operators now look forward with some hope to next year, believing that there will be a revival of speculation which will bring outsiders into the market. Meantime there is some consolation in the gold mining boom, which is bringing out many new mines, besides old ones revived.

The Bodie Consolidated reports for the week 11 tons of ore, averaging about \$30. The ore in the bins now amounts to 277 tons; as soon as 300 tons are on hand, the mill will be started.

The number of mining companies levying assessments whose stocks appear on the San Francisco exchanges was as follows for 1894, so far as figures are collected:

	Mines.	Amount.
California	28	\$171,750
Nevada	40	1,257,600
Arizona	3	60,000
Mexico	3	29,250
Total	74	\$1,518,600

The list is believed to be nearly complete; it is, however, comparatively a light one, since a list for 12 years past shows as follows:

Year	Mines.	Am't.	Year	Mines.	Am't.
1883	118	\$5,885,784	1889	92	\$2,999,050
1884	120	4,724,700	1890	89	2,392,460
1885	105	2,701,750	1891	90	2,925,540
1886	85	3,024,674	1892	81	2,536,320
1887	97	3,137,360	1893	78	2,196,80
1888	90	3,750,300	1894	74	1,518,609

Of the assessment mines 37, or just one-half in number, and \$1,187,600, or 78 2/3% of the total amount, are Comstock mines. Nearly all the well-known Comstock companies appear in the list, several of them for more than one assessment.

The showing is not a bad one when the comparison with former years is made. Nevertheless, the assessments have come often enough to frighten people away from the mining stock market in a year when they are especially susceptible to discouraging influences.

BY TELEGRAPH.

SAN FRANCISCO, Cal., Dec. 28th.—Prices have advanced slightly during the past week, although the market owing to the holidays was as follows: Best & Belcher, 90c.; Bodie, 60c.; Bulwer, 5c.; Chollar, 40c.; Consolidated California & Virginia, \$3.60; Gould & Curry, 30c.; Hale & Norcross, 88c.; Mexican, 60c.; Mono, 21c.; Ophir, \$1.50; Savage, 28c.; Sierra Nevada, 48c.; Union Consolidated, 50c.; Yellow Jacket, 38c.

London.

Dec. 18.

(From our Special Correspondent.)

The market in South African gold shares continues very active and the amount of speculation going on is extensive. This branch of the market entirely monopolizes the attention of the Stock Exchange. Foreign bonds, home rails, American rails, beer and other former favorite spheres of speculation are deserted, and the only field for transactions is in South African gold and investment stocks such as 2 1/4% Consols, which now stand at 103. West Australians have received rather more attention during the past week and are showing some signs of struggling out of the slump. Orders from France and Germany have been received for West Australians, an encouraging sign.

The most important event among American mines is the payment of the first dividend by the reconstructed Montana company. The price of the shares has been sinking gradually from 18s., the high price which they reached after the last general meeting, to about 11s., when suddenly yesterday they started up again without any publicly recognized reason. The cause, however, is explained by to-day's announcement of the dividend of 6d. per share to be paid on January 7th.

Another noteworthy movement among American stocks is in Harqua Halas, which have recovered considerably from the weakness, and have climbed out of their low water, and have reached the price of 8s. Confidence in this property is returning, now that it has been proved to contain large quantities of low-grade ore which can be worked so cheaply as to leave a satisfactory margin of profit. De Lamars keep steady and firm at 27s. Alaska-Treadwells have fallen to 43. Other American stocks show little or no movement either way.

Some months ago inquiry was made in your columns as to the present position of the Mount Jefferson Gold Mining Company, which was formed in 1888 to acquire the Mount Jefferson gold mine in Tuolumne County, California. Here is the history up to date: The nominal capital was £120,000, and the vendors, Graham, Douglas & Co., acting on behalf of the owners, were to receive £110,000 in fully paid shares and £5,000 in cash. The remaining £5,000 was subscribed in England and the shares allotted. One of the stipulations was that Graham, Douglas & Co. should underwrite £10,000 of the shares, but they failed to carry out this undertaking, and consequently the mine was never acquired by the company. The shareholders and creditors have now taken proceedings to wind up the company, and it appears that the amount owing to creditors is £1,200 and the assets nothing. The result of this little game of company promotion is that the owners still own the property and somebody has got the £5,000 that the shareholders subscribed, besides £1,200 value received.

The history of the Golden Feather is followed closely in these columns. After another unproductive season it is announced that the funds have run out, and that recourse will have to be made to reorganization. It is proposed to reconstruct on the basis of a share capital of 180,000 ordinary and 12,000 priority shares of £1 each, with 18s. 6d. per share credited as paid. One shilling per share will provide ample means to carry the company up to the turning of the river in 1895. The priority shares will retain their right to a priority of dividends to the extent of £1 per share, as at present. It is stated by the directors that there will be no difficulty in carrying through the reconstruction.

From the report of the Emma Company it would appear that the end of this unlucky enterprise is approaching. Six months ago I wrote that the company had agreed to lease the Grizzly mine to Mr. H. C. Wo drow. It turns out, however, that after the terms of the deed were agreed to, though not signed, and possession of the mine given, Mr. Woodrow declined to accept the lease, the reason being, probably, that he considered he had made a bad bargain. All chance of the mine being worked is now abandoned by the directors—at any rate, while silver continues in its present depressed condition—and they do not suggest the raising of further money to prosecute search or development. They are desirous of spending their small remaining capital in investigating West Australian properties, and, if they meet with success, of forming a new company with extended capital.

The directors of the Oldtown Mining Company are proposing to go into voluntary liquidation. This company was floated in 1888 by the "Gresham House" circle, who promoted the Montana, Yankee Girl and other silver companies. This mine was in the San Juan District, Colorado. It proved a failure from the first, and considering its subsequent history the original prospectus proves a very grave error of judgment on the part of the promoters. It is evident that they took the vendors' word for the richness of the silver-lead, for a syndicate with good advisers, as they usually have, would hardly have purchased the property if they had thoroughly examined it. A motion is on foot among some of the larger shareholders to seek restitution from the vendors, but how they are going to carry their proposition into effect is a little doubtful.

The Holcomb Valley Company is struggling along painfully, and apparently a dividend is as far off as ever. The new manager has been in charge now for a couple of months, and while he states that there is plenty of rich gravel, he considers that the equipment is totally inadequate. Before anything can be done something will have to be done to give a water supply, and he recommends the building of a

dam and the acquisition of further claims from which more water may be pumped.

Paris.

Dec. 17.

(From our Special Correspondent.)

Transactions in stocks have been somewhat disturbed this week by the new Russian loan, which has drawn attention in another direction. Nevertheless, there has been some activity. In the metallurgical stocks there has been more dealing, and they have been generally strong, owing to an increased demand, due to the hope rather than the prospect of improvement. The same thing can be said of the coal and iron shares. In these the Russian companies—notably Dombrowa and Huta Bankowa—have led; both the stocks named were strong and active.

In the metal stocks Malfidano has lost a little, but, on the other hand, Vieille-Montagne gains a little. Laurium, Aguilas and the other lead stocks have been weak. Nickel has been stronger than for months past, chiefly on reports of the increasing use of nickel-steel. The copper stocks have all gained, especially Tharsis and Rio Tinto, on the better prices of the metal in London, and on reports that your great companies have formed some agreement to keep down production.

The downward reaction in Huanchaca silver still continues. Speculation in the South African gold stocks is not so active, but there is still much buying for investment. This is done on the London market chiefly, so that its amount cannot be estimated with precision.

The returns of our commerce for the 11 months ending November 30th are as follows:

	1893.	1894.
IMPORTS:		
Food	Fr. 938,576,000	Fr. 1,151,653,000
Raw materials	2,019,014,000	2,115,269,000
Manufactures	501,870,000	514,353,000
Total imports	3,459,460,000	3,781,275,000
EXPORTS:		
Food	639,884,000	650,175,000
Raw materials	716,736,000	769,474,000
Manufactures	1,501,613,000	1,328,101,000
Postal parcels	63,233,000	68,054,000
Total exports	2,921,466,000	2,815,804,000
Excess imports	529,427,000	865,411,000

November made an excellent showing, giving a large increase—14,613,000 fr.—in the exports of manufactured goods, and of 2,394,000 fr. in postal parcels, which are chiefly manufactured goods also.

The new Russian loan was many times oversubscribed, as I foretold. That is, on paper; for there are whispers that bids to a large amount were made by agents of the Russian Finance Minister. This is probably true; nevertheless there is no doubt that the genuine bids exceeded the amount of the loan. Austria-Hungary will be the next European country in the market.

Peace is probably secure for a year or two now, since the new Czar seems likely to remain under the German-English family influence, for a time at least, and there is even talk of some liberal measures for Russia. At any rate, we are told that the persecution of the Jews is to cease; but that seems more the result of a treaty with the chiefs of European finance, who might have injured the new loan and the refunding which is to follow by-and-by. Our German friends are a little less warlike, too, since there are ominous signs that the people are growing restless under the Kaiser's imperious talk, and there may be trouble enough to keep him and his new Chancellor busy at home for a time.

Commerce with the East shows an unlooked for gain this year; the receipts of the Suez Canal have been, for the year up to December 10th, in all 69,630,727 fr., a gain of 3,113,766 fr., or 4 1/2% over last year.

A propos de Suez, the cable has told you all about poor De Lesseps' death. He lived too long—like many others; since had he died a few years ago his fame would have been un tarnished. After all, he fell a victim to bad advisers and the overpowering desire for success; but what a pity he did not die before the Panama infamy engulfed his reputation!

AZOTE.

DIVIDENDS.

Montana Company, dividend of 6d. per share, payable January 7th at the office of the company, in London, England.

Montana Ore Purchasing Company, dividend No. 1 of \$1 per share (\$40,000 in all), payable at the New York office of the company on January 4th, 1895.

Swansea Mining Company, dividend of 1 1/2 cents per share, \$1,500, paid December 20th at the office of the company in Silver City, Utah.

Tennessee Coal, Iron and Railroad Company coupons, due January 1st, 1895, on the Birmingham division bonds of this company, will be paid on and after that date at the Hanover National Bank, New York city.

The Boston & Colorado Smelting Company, dividend of 2 1/2%, payable January 1st to stockholders of record December 20th.

MEETINGS.

Blue Bell Consolidated Mining and Milling Company, at the office of the company, in the Mack Block, Denver, Colo., January 14th, at 10 a. m.

NEW YORK MINING STOCK QUOTATIONS.

DIVIDEND-PAYING MINES.

NON-DIVIDEND-PAYING MINES.

Table with columns for Name of Company, Par value, and stock prices for various dates (Dec. 22, 24, 25, 26, 27, 28) for both dividend-paying and non-dividend-paying mines.

*Ex-Dividend. †Dealt in at New York Stock Ex. Unlisted securities. ‡Assessment paid. §Assessment unpaid. Dividend shares sold, 2,950. Non-dividend, 5,650. Total, 8,600.

BOSTON MINING STOCK QUOTATIONS.

Table with columns for Name of Company, Par value, and stock prices for various dates (Dec. 21, 22, 24, 25, 26, 27) for Boston mining stocks.

Dividend shares sold, 1,591. Non-dividend shares sold, 200. Total shares sold, 1,791.

COAL AND COAL RAILROAD STOCKS.

Table with columns for Name of Company, Par value, and stock prices for various dates (Dec. 22, 24, 25, 26, 27, 28) for coal and coal railroad stocks.

Total shares sold, 79,927.

INDUSTRIAL AND TRUST STOCKS.

Table with columns for Name of Company, Par value, and stock prices for various dates (Dec. 22, 24, 25, 26, 27, 28) for industrial and trust stocks.

*Pittsburg quotations. †Bid. ‡Asked. Total shares sold, 141,180.

San Francisco, Cal.

Table with columns for Name of Company, Par value, and closing quotations for San Francisco stocks.

Philadelphia, Pa. Dec. 27.

Table with columns for Name of Company, Par value, and latest actual selling prices for Philadelphia stocks.

Pittsburg, Pa. Dec. 27.

Table with columns for Name and Location of Par Company, Par value, and latest actual selling prices for Pittsburg stocks.

London, England.

Table with columns for Name of Company, Par value, and Dec. 18, 1894 prices for London stocks.

Baltimore, Md. Dec. 27.

Table with columns for Name of Company, Par value, and latest actual selling prices for Baltimore stocks.

Denver, Colo. Dec. 22.

Table with columns for Name of Company, Par value, High, Low, and Sales for Denver stocks.

DIVIDEND-PAYING MINES

NON-DIVIDEND-PAYING MINES.

Table with columns: Name and Location of Company, Capital Stock, Shares, Par, Assessments (Total Levied, Date and amount of last), Dividends (Total paid, Date and amount of last). Lists 145 companies including Adams, Alaska-Treadwell, Alice, Amador, American, American Bell, American Nettle, Atlantic, Argyle, Aspen Mt. & S., Aurora, Badger, Bald Butte, Bates Hunter, Belden, Belcher, Bellevue, Best Friend, Bi-Metallic, Bieble, Boston & Mont., Boston & Mont. C.S., Brotherton, Bulwer, Bunker Hill, Caledonia, Calumet & Hecla, Centennial, Central, Champion, Chrysolite, Comstock, Colorado Central, Commonwealth, Confidence, Cons. Cal. & Va., Contention, Cook's Peak, Cop. Queen, Cortes, Crescent, Crown Point, Daly, Deadwood Terra, DeLamar, Derbec, Dexter, Elkhorst, Enterprise, Eureka, Evening Star, Father de Smet, Franklin, Gleanery, Golden Reward, Gould & Curry, Grand Prize, Granite Mountain, Great Western, Hale & Norcross, Hecla, Hecla Con. S. G. L., Helena & Frisco, Helena & Victor, Holman, Homestake, Hope, Horn Silver, Idaho, Illinois, Iron Mountain, Iron-Silver, Jackson, Kearns, Kennedy, Kentuck, Leadville Con. S. L., Lexington, Little Chief, Maid of Erin, Mammoth, Maxfield, Mayflower, Minas Prietas, Minnesota, Minnesota Iron, Mollie Gibson, Monitor, Mono, Montana, Moose, Morning Star, Morning Star Drift, Mt. Diablo, Napa, Navajo, New Guston, North Banner, North Commonw., North Hill, North Belle Isle, North Star, Omaha Cons., Ontario, Ophir, Osceola, Pacific Coast, Parrot, Petro, Plumas Nevada, Plymouth, Poorman, Portland, Quicksilver, Quincy, Red Cloud, Retriever, Riato, Richmond, Rice, Rice-Aspen, Ridge, Robinson Con., Savage, Sierra Buttes, Sierra Nevada, Silver Cuts, Silver King, Silver Mt. of L.V., Small Hopes, Standard, Swansea, Tamarack, Trinity R. V. Hydr., Union, United Verde, Victor, Ward Con., W. Y. O. D., Yankee Girl, Yellow Jacket.

Table with columns: Name and Location of Company, Capital Stock, Shares, Par, Assessments (Total Levied, Date and amount of last), Dividends (Total paid, Date and amount of last). Lists 145 companies including Alliance, Allouez, Alpha Con., Alta, American Flag, Anchor, Barcelona, Belmont, Best & Belcher, Black Oak, Brownlow, Brunswick, Butte, Butte Queen, Caaveras, Calaveras Con., California, California Con. & Q., Challenge Con., Chollar, Colchis, Colorado, Colorado Con., Comstock, Con. Imperial, Con. New York, Con. Pacific, Cresswell, Crocker, Crowell, Dahlonega, Deatur, Denver, Dickens-Custer, Durango, El Dorado, Emma, Empire, Eureka Tunnel, Exchequer, Found Treasure, G. & S., Golden Era, Golden Flat, Gold Rock, Golden Feather, Goodyear, Good Duke, Gregory, Harlem & M. Co., Harrier, Hartshorn, Head Cent. & Tr., Hector, Himalaya, Holywood, Huron, Idaho, Ingalls, Iron, Ironsides, Kenyon, Julia Con., Justice, Lacrosse, Little Josephine, Lone Star, Madeline, Mammoth Gold, Mayflower Gravel, Mexican, Michigan, Mine & Star, Milwaukee, Modoc Chief, Monitor, Montreal, Neath, Nelson, Nevada Queen, New Gold Hill, New Pittsburgh, North Standard, Occidental Con., Onida Chief, Oriental & Miller, Original Keystone, Overman, Pay Rock, Peer, Pennell, Pennington, Phoenix, Phoenix Lead, Pilgrim, Poché, Potomac, Potosi, Proustite, Puritan, Quincy, Rappahannock, Red Mountain, Ruby, Rube & Dun, S. D. & L., Sampson, Sever, Silver Age, Silver Bell, Silver King, Silver Queen, Silverton, Skidway Con., South Bulwer, South Hite, Stanislaus, St. Kevin, St. Louis & Mex., St. Louis & Sonora, Stenwinder, Sunday Lake, Sullivan, Sylvanite, Taylor-Plumas, Telegraph, Telegraph, Telestar, Toga Con., Tornado Con., Torrance, Union Con., Utah, Utah & Ulay, Valley, Washington, West Aztec, West Granite, Whale, Wood River, Yuma.

G., Gold, S., Silver, L., Lead, C., Copper, B., Borax. * Non-assessable. The Deadwood previously paid \$275,000 in eleven dividends and the Terra \$75,000. 1 Previous to the consolidation in August, 1884, the California had paid \$31,320,000 in dividends, and the Cons. Virginia \$12,390,000. 1 Previous to the consolidation of the Copper Queen with the Atlanta, August, 1885, the Copper Queen had paid \$1,350,000 in dividends. 1 Previous to this company's acquiring Northern Belle, that mine paid \$2,400,000 in dividends against \$425,000 in assessments.

COLORADO SPRINGS, COLO., MINING STOCK QUOTATIONS.

Table with columns: NAME OF COMPANY, Par value, Dec. 17, Dec. 18, Dec. 19, Dec. 20, Dec. 21, Dec. 22, Sales.

*Official quotations of Colo. Mg. & Ck. ass. *Per 100 shrs. Total shrs. sold, 347,294.

ASPEN, COLO., MINING STOCK QUOTATIONS, Dec. 22, 1894.

Table with columns: NAME OF COMPANY, Location, Par value, Latest actual selling price, Bid, Askd.

MONTANA MINING STOCKS—QUOTATIONS.

(Special Report by Samuel K. Davis.) HELENA, Dec. 7, 1894.

Table with columns: STOCKS, Location, Co.'s office, Par val., Bid, Askd., Shrs. sold, Price, Date.

Salt Lake City, Utah.

(Special Report by James A. Pollock.)

Table with columns: Par val., Bid, Askd., Actual selling price.

All the above companies are located in Utah.

Duluth, Minn. Dec. 24.

Table with columns: Par val., Bid, Askd., Latest actual selling price.

FOREIGN QUOTATIONS.

Paris, France, Dec. 8.

Table with columns: Par val., Fr. ca., Fr. ca.

ASSESSMENTS.

Table with columns: COMPANY, No., Dlnqt. in office, Day of sale, Amt. per share.

CURRENT PRICES.

These quotations are for wholesale lots in New York unless otherwise specified. Acid-Acetic, chem. pure. 17@19. Commercial, in bbls. and cbs. 01 1/2@02.

Chalk—ton \$1.50@2.2. Precipitated, lb. 04@0.09. China Clay—English, ton \$13@15.00. Chlorine Water, ton \$3@3.11.

Metallic Paint—Brown ton \$20@25. Red \$20@25. Tiles—in sheets according to size. Tin—In sheets according to size.

Terra Alba—French, lb. .65@.80. English, lb. .65@.80. American, No. 1, lb. .65@.80. American, No. 2, lb. .65@.80.

DEWEY-WALTER RECEIVING COMPANY

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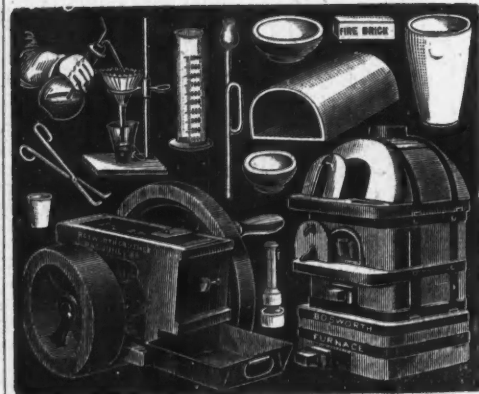
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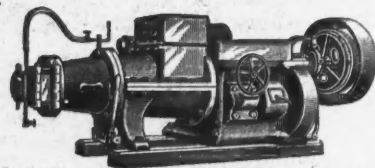
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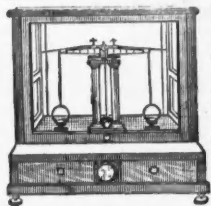
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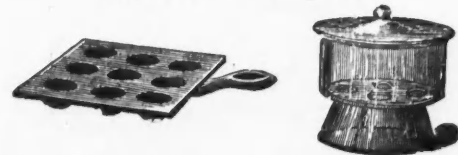


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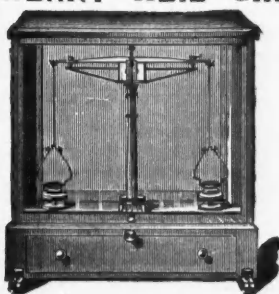
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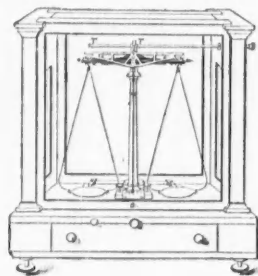


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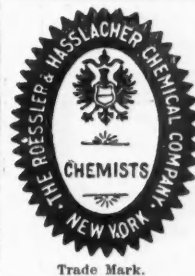
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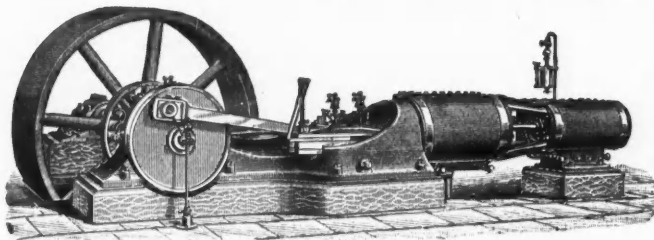
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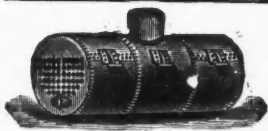


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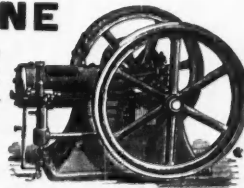
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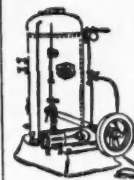
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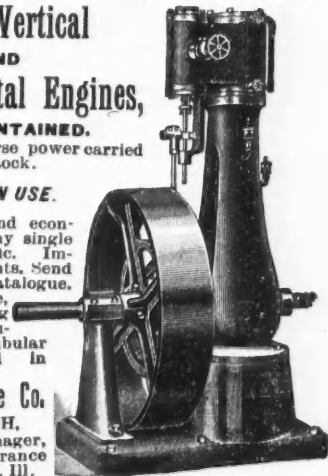
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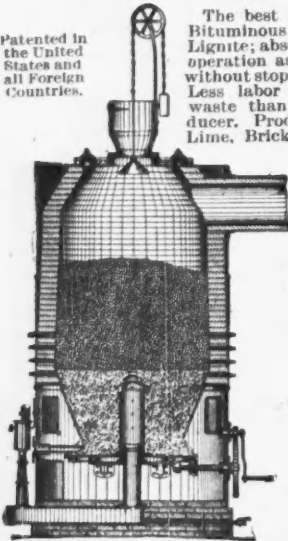
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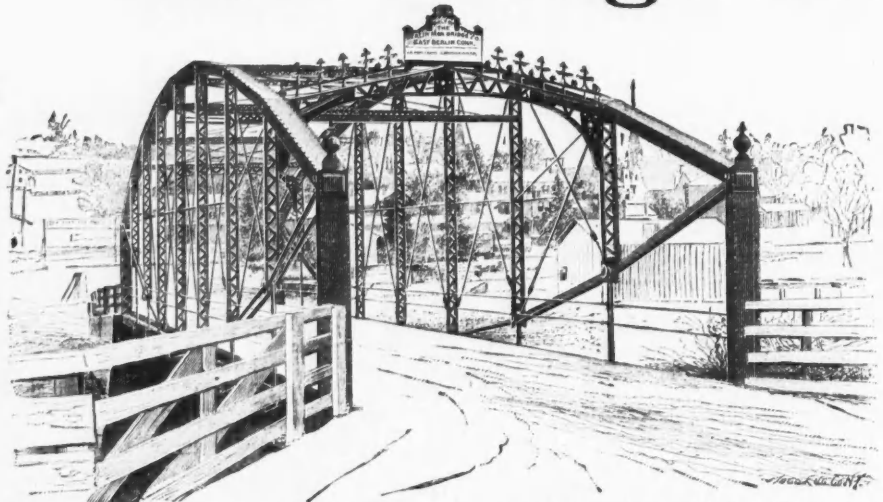
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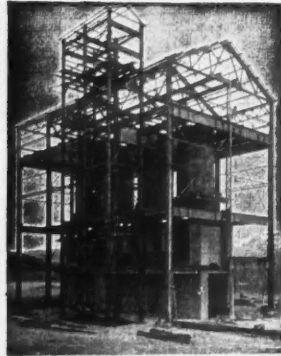
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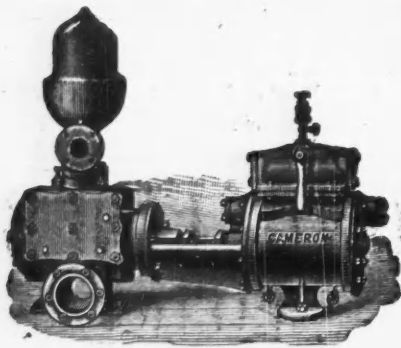
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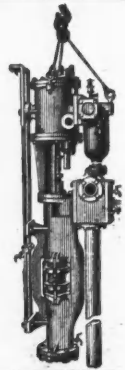
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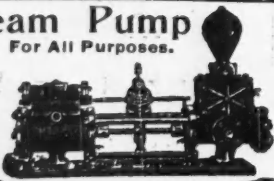
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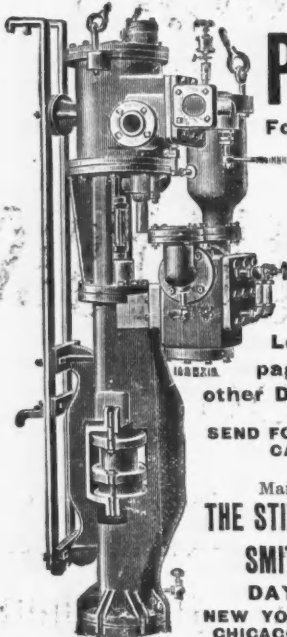
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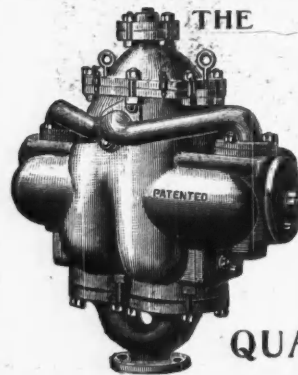
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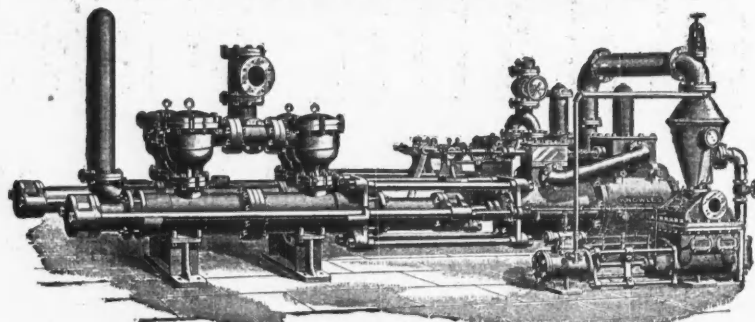
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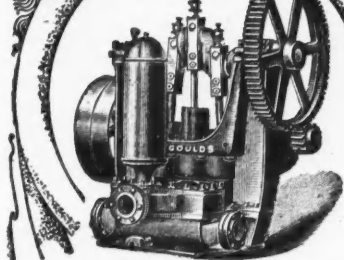
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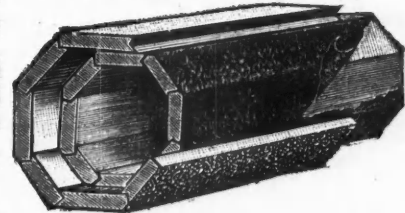
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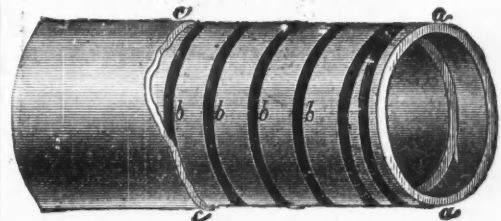
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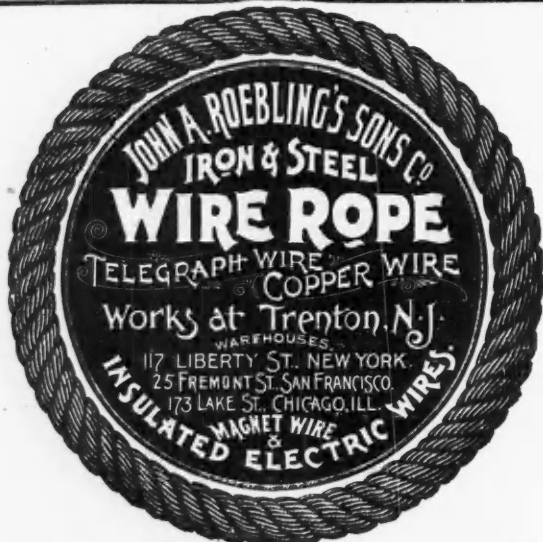
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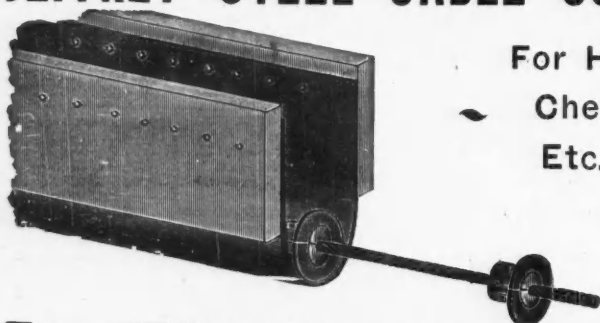
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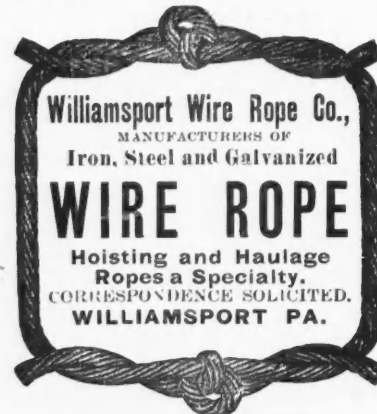


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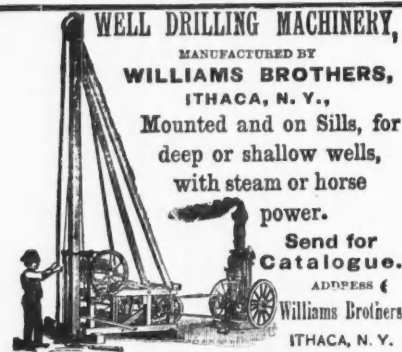
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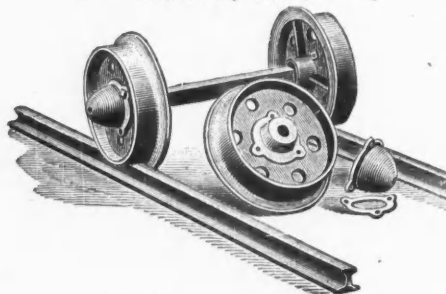


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The grandest scenery in this wonderful State is generally conceded to be that of Clear Creek Canon along the line of the Colorado Central Branch of the Union Pacific, Denver & Gulf Railway, from Denver to Silver Plume.

The road after leaving Golden, enters Clear Creek Canon, a narrow gorge whose rugged walls rise perpendicularly in many places to a height of 2,000 ft., permitting the sun's rays to penetrate for only a few moments each day to the turbulent waters of the stream from which the Canon derives its name, and along which the train traverses a tortuous course. Time and the elements have adorned these massive Canon walls with many fantastic shapes and left great jagged rocks weighing many thousands of tons projecting out over the water in a menacing attitude, yet so secure in their positions that the very mountains must crumble ere they can be disturbed. Yet all is not dark and gruesome, for nature has very graciously disturbed the monotony of the scene at intervals where the Canon widens into delightful little valleys, not unlike those of Switzerland, where thriving cities are located and all is sunshine and life, in remarkable contrast with the solemn stillness from which the traveler has just emerged.

The more important of these towns through which the train passes after leaving Golden are Idaho Springs, a picturesque place with a population of 3,000 people, where are located hot and cold springs with medicinal properties which attract many tourists each season; Georgetown, with a somewhat larger population, a beautiful spot and an active mining camp, as is also Silver Plume, situated just beyond the loop.

After passing Georgetown the journey around the world-famous loop is begun.

The train passes beneath an iron bridge, which, after many turns and counter-turns, it crosses, and the passenger looks down upon the track 90 feet below which the train has just traversed, and follows with his eye the course of the rails which coil about the narrow valley like a huge snake. Continuing the train winds its way around many short curves, climbing higher and higher, until at last Silver Plume is reached, and the traveler has a pleasant recollection and one that cannot soon be effaced, of having been around the most wonderful loop in the world.

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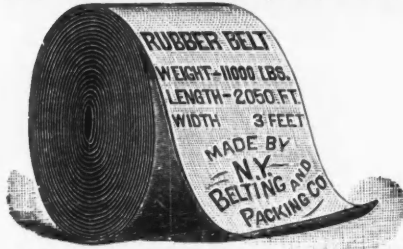
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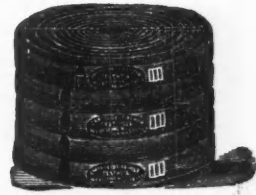
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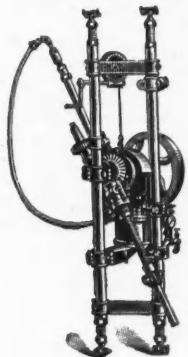
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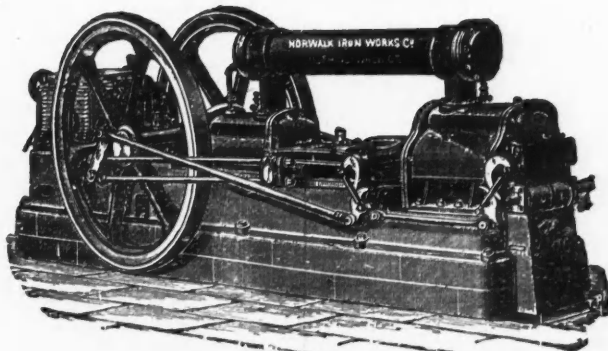
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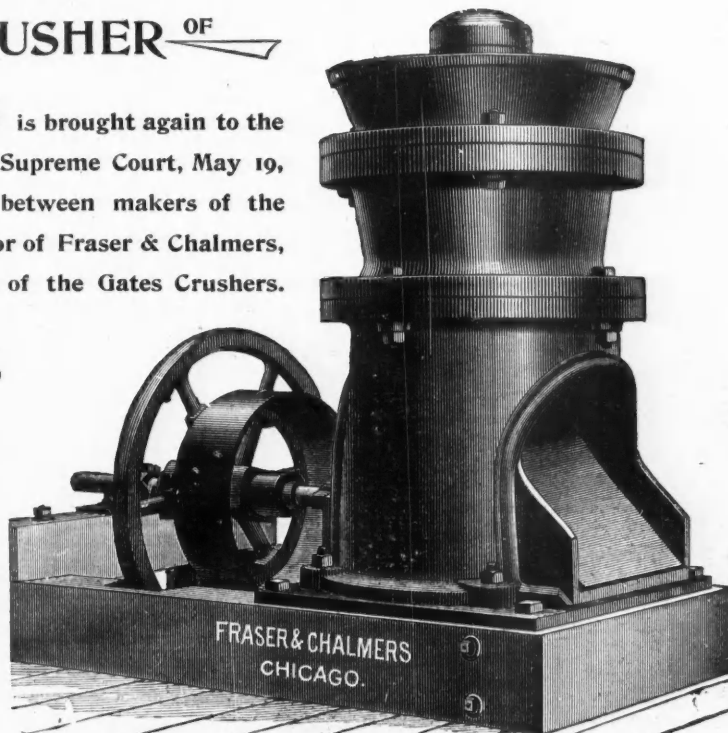
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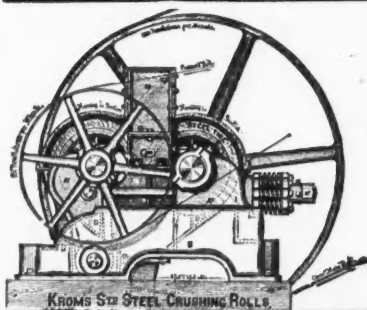
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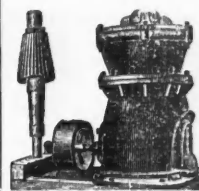
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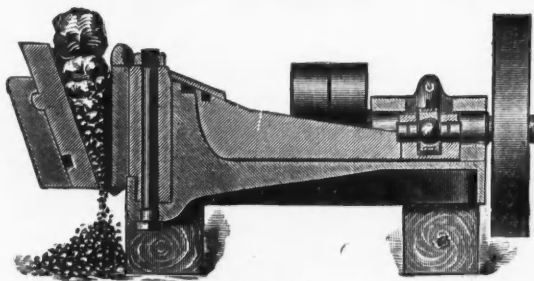


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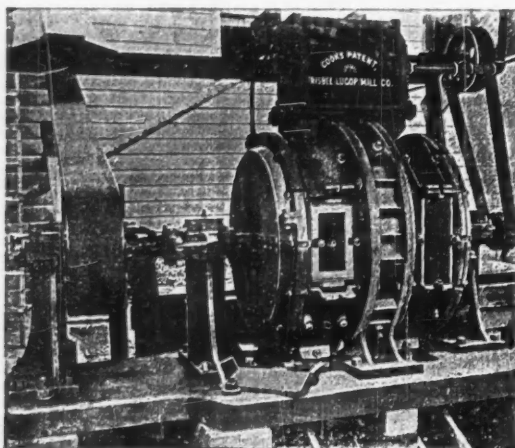
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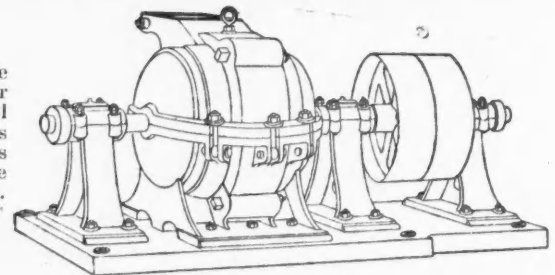


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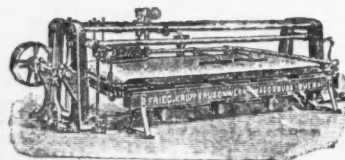
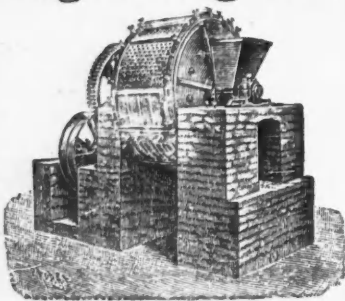
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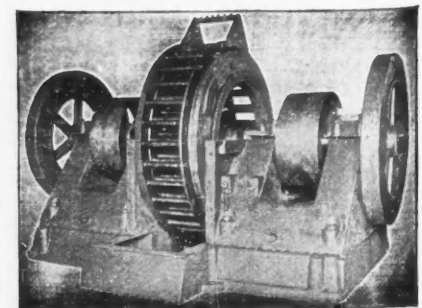
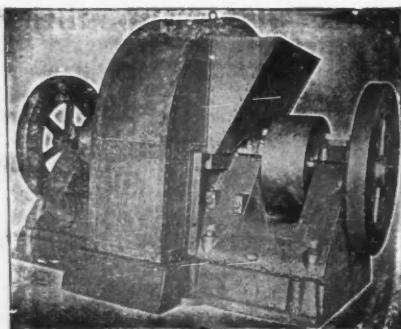
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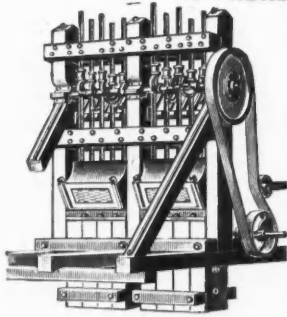
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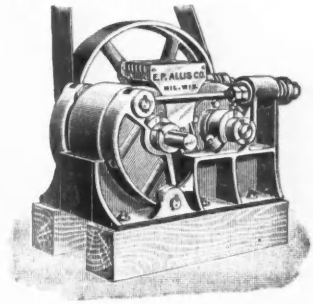
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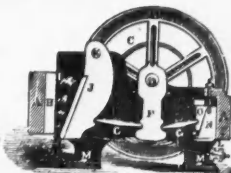
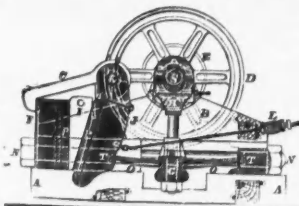
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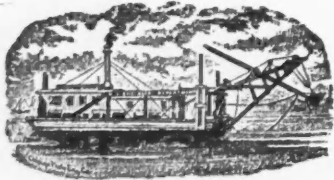
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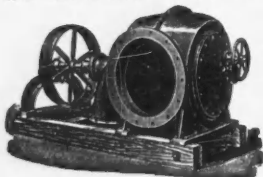
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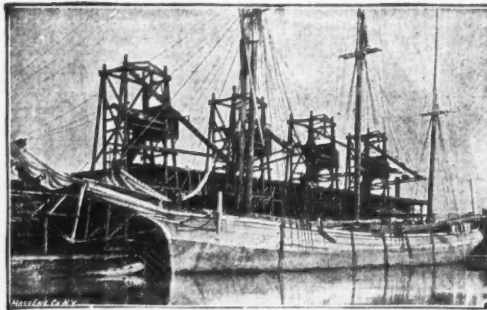
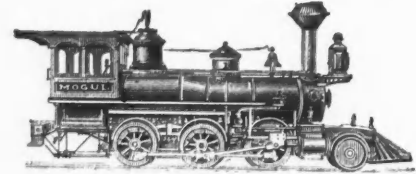
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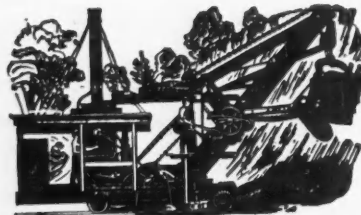
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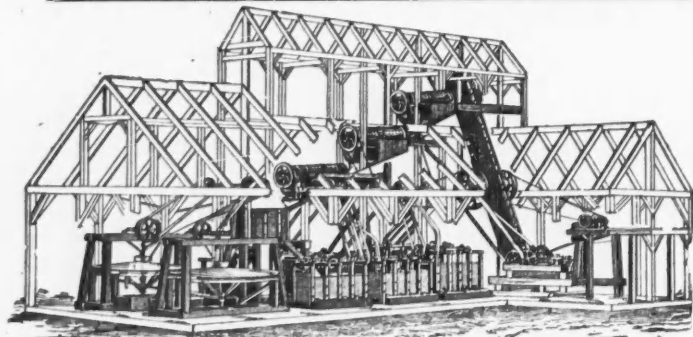
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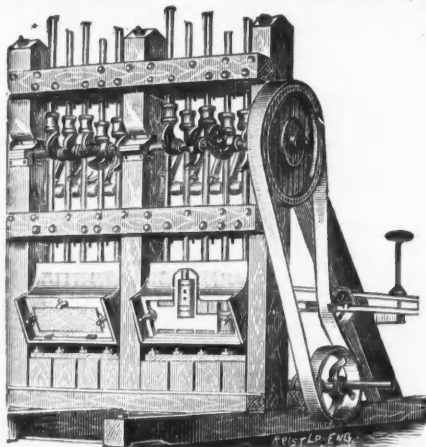
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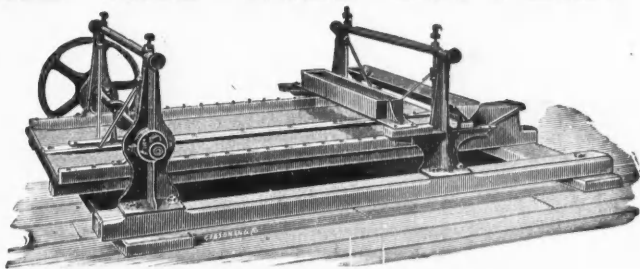
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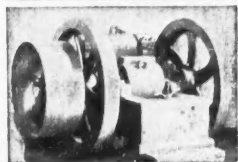
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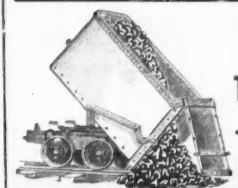
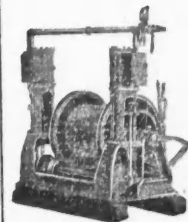
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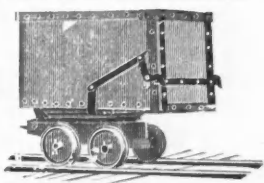
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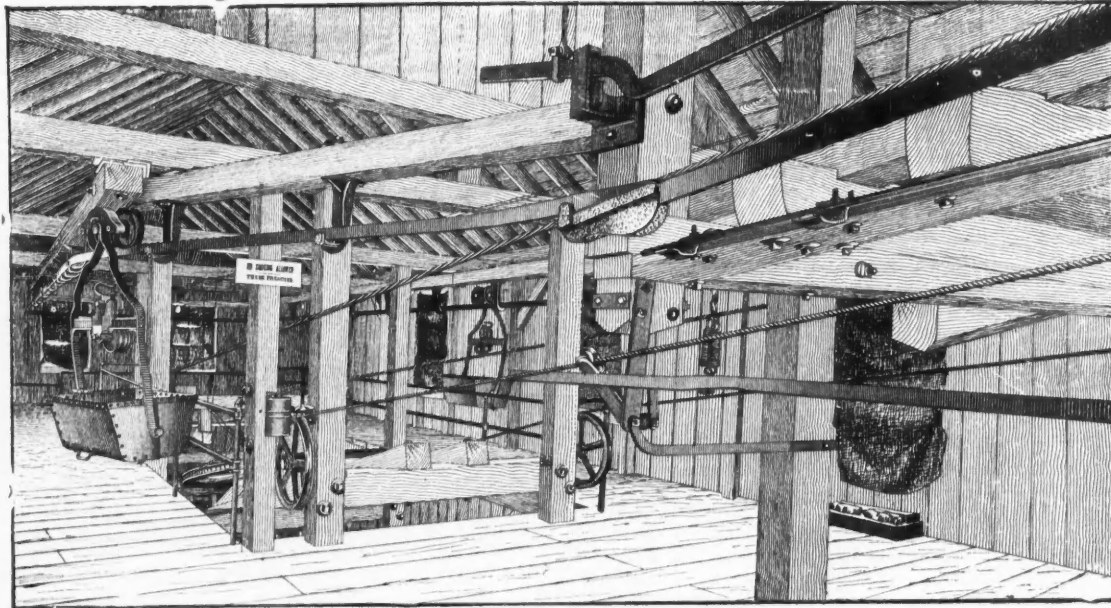
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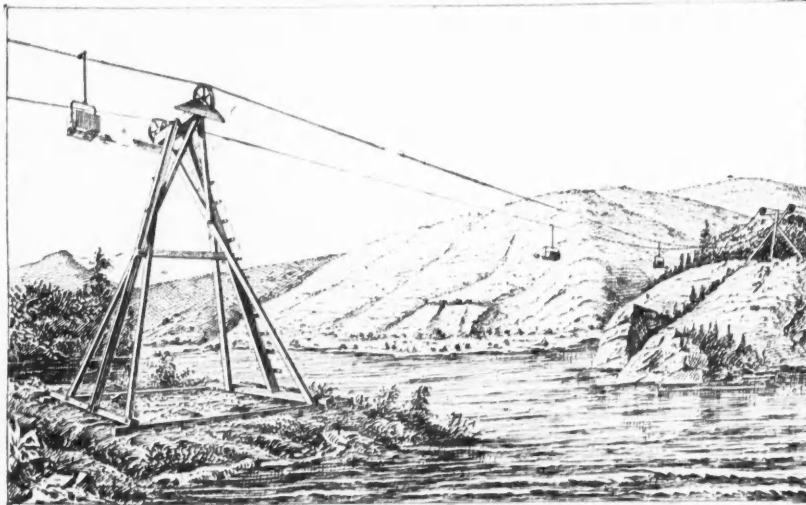
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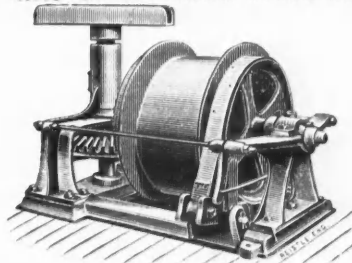
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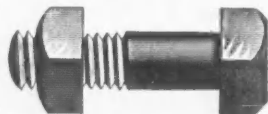
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