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COAL

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CONTENTS.

In September, 30 mining companies, which make public statements of their earnings, paid dividends to the amount of $1,454,325. Since January 1, 89 companies have paid $12,398,005. In September, 1890, 16 companies paid $1,048,000, while in the first nine months of 1890, 56 companies paid $9,339,981.

It seems certain that Peru will be well represented at the coming Exposition at Chicago. It is proposed to send thither the great Raimondi collections, and other collections illustrative of the history, archæology and wonderful natural resources of the country are being gathered with the same object. The Government has appointed a commission of organization, which, judging from the two members whose names have been given us, is excellently chosen. The president of this commission is Mr. E. Habich, the able Director of the School of Civil and Mining Engineering at Lima, whose scientific attainments and executive ability are of the highest order. Another member of the commission is Mr. Leonard Pflücker y Rico, a most successful mining engineer and mine owner, who has enriched the text-books of mineralogy by valuable contributions. The names of the other commissioners have not yet reached us, but doubtless gentlemen well qualified to co-operate with Messrs. Habich and Pflücker have been selected.

PRODUCTION OF COPPER IN 1889—THE CENSUS REPORT.

When the Census bulletin on the production of lead in the United States was published we were obliged to say that it contained abundant evidence of the work having been done in a perfunctory manner, and with great carelessness. The Census bulletin on the production of copper which has been recently issued, an abstract of which we print elsewhere in this issue, though somewhat better than the report on lead, is still far from being as satisfactory as we had reason to expect from its accomplished author, Mr. CHAS. KIRCHHOFF, Special Agent of the Census.

Since we have official returns in this office from all the copper producers for the year 1889, we are enabled to speak with authority on this subject. The census figures differ from those collected by the ENGINEERING AND MINING JOURNAL, and published promptly January 1, 1890, or more than a year and a half ago, in some particulars which are worth noting. Where native copper is produced, as in the Lake Superior district, the census figures agree very closely with those collected by this journal, but where the copper comes in various forms, and especially where it is a by-product of the lead smelters, the census investigation does not appear to have received full reports or to have traced back to its source the copper reported to it. Thus the copper produced by California in 1889 is stated as 151,505 lbs., while in reality it amounted to more than ten times that amount. The Census appears also to have omitted the copper smelted in other States from ores originating in California. The same is true of the census report for Utah and Colorado, where neither State is credited with anything like the amount of copper actually mined within its borders. One cause of this error may be in the apparent omission in these returns of the copper used in the manufacture of sulphate, which in Colorado absorbs more than the entire amount credited to the State.

The total expenditures for the production of copper in the four States of Michigan, Montana, Arizona and New Mexico are put down at $12,062,180, or about 5.4 cents per pound of copper. How surprised the impatient stockholders of several producing companies must be to learn that the average cost of producing copper was only 5.4 cents per pound, and how they must wonder at their balance sheets and their modest dividends or occasional assessments! Their experience will scarcely allow them to believe this item of the census statistics. Everyone, indeed, knows that it is very far from correct. The labor statistics are also open to criticism, but it is not our intention to do more than indicate a few of the most important points, and to express our great regret that the census statistics of the great lead and copper industries should have been treated in so disappointing a manner.

THE IMPORTATION OF GOLD.

The Director of the Mint, with the approval of the Secretary of the Treasury, issued on the 30th ult. the following special instructions to the Superintendent of the Assay office in New York:

"In cases of deposits of foreign gold coin or foreign gold bars at the United States Assay Office at New York, such approximation of the value of the bullion delivered as in the discretion of the superintendent may be regarded safe and proper, not to exceed 90% of the value, will be paid pending melt and assay."

The purpose of this regulation is to encourage the importation of foreign gold into the United States, so far as can be legally done, by allowing importers to draw against their deposits at the Assay Office immediately, instead of requiring them to wait two or three days pending an assay to determine the exact value of the coin or bullion. It is commonly understood that both the Bank of France and the Bank of Berlin have been crediting the banking houses of Paris and Berlin, respectively, with the value of the gold imported by them from New York at the date of shipment, thus diminishing the cost of the movement by the interest on the amount during the time of transit. This was notably the case during the period, last spring and summer, when the flow of gold from this country reached such large proportions. It was reported several weeks ago, when the return flow of gold to this country began, that one of the prominent banks of New York was to pursue the same policy. Of course it is impossible for the Government of the United States to do anything of this kind, and the recent order of the Director of the Mint reaches the limit of his power in this direction.

The new regulation will obviously facilitate the business of bankers in this city, but it does not seem to us likely that it will be any more effective in hastening or stimulating the importation of gold into this country than was the order last spring, discontinuing the custom of exchanging gold bars for coin for foreign shipment, successful in retarding the exportations at that time. These new systems slightly alter the rates of exchange at which gold can be profitably imported or exported, but the flow of the yellow metal between this country and Europe will always be governed by the balance of trade.

At the present time, with our large grain exports, the balance of trade is in our favor, and the shipments of gold to this country are already beginning to assume large proportions. The incoming steamers this week brought quite an amount, making the total receipts thus far $7,120,000. There is also $5,525,000 on the way, so that the total received and in transit already amounts to $12,645,000.

THE CLOUD COMPELLERS AND THE PRESS.

Since *The North American Review* published Professor NEWCOMB'S simple but conclusive demonstration of the complete impossibility of creating or evoking rain by such means as General DYRENFORTH has been employing, the newspapers, which originally treated the subject very cautiously, or evidently shared the popular tendency to believe that there "might be something in it," especially because if there *was* something in it, it would confound the experts (a thing most dear to the lay imagination), have taken heart, and are now pretty generally making the whole business a subject for polished ridicule, delivered with that knowing air which is one of the accomplishments of journalism. Some one of them (the *Evening Post*, for instance, which has the knowingest air of all, and which published some months ago, without venturing any critical comment, a long interview with General DYRENFORTH, in which the concussion theory was alluringly set forth) might have gained some credit by boldly denouncing the humbug at the outset. There is little to be gained now.

So far as I have seen, not one of the daily newspapers has recalled that the appropriation made by Congress for rain-making was first ordered to be expended by Mr. B. E. FERNOW, Chief of the Forestry Division of the Department of Agriculture; that Mr. FERNOW declined to expend it, and, in his annual report, gave conclusive reasons for regarding the proposed experiments as a waste of public money; that the appropriation was thereupon increased, and put into the hands of the Ex-Commissioner of Patents; and, finally, that there is a United States patent covering the process, which Gen. DYRENFORTH has been advertising at the public expense. Even if our newspapers cannot detect a scientific fallacy, they ought to be able to recognize a "job." R. W. R.

THE RECIPROCITY TREATIES.

So far the reciprocity policy of the present administration has resulted in the negotiation of three treaties with states of Latin-America. The first, that with Brazil, went into effect on April 1st; the second, that with Spain, relating to the Islands of Cuba, and Porto Rico, in part on July 1st, and in part on September 1st; and the third, with the Republic of San Domingo, on September 1st. In general, all these treaties follow the same lines. The United States continues to admit free of duty sugar, coffee, hides and molasses, and the other parties to the conventions admit free of duty a long list of the agricultural and manufactured products of this country, and make reductions in the duties upon others. It seems that the United States has got the best of these bargains, for we have really made no reduction in duties, but have simply agreed with these nations not to impose on certain of their products, now admitted free, the import duties authorized by the McKinley act to be so imposed unless reciprocity treaties were made with us.

Three such treaties having been made, the question now is: Will our merchants and manufacturers take advantage of the wider markets which are thus opened to them? Even with the advantages gained, will they be able to dislodge the exporters of Europe from the positions in the South American trade which the latter have occupied so long? It is far too early to answer these questions; but present indications encourage the expectation of a considerable increase in our trade with the countries named.

As we have previously pointed out, the present favorable conditions are not going to enable our producers to capture these markets without a struggle. The manufacturers of Europe have been too long in possession for that, and to compete with them, those of this country must cultivate the South American trade in a manner which they have never done before. Their wants and customs must be studied, as the Hon. E. H. CONGER, the U. S. Minister to Brazil, says in a recent communication to the Department of State, which we reproduce elsewhere. They must not be treated with the neglect and disregard that our consuls at South American ports have been complaining of for so many years. If our manufacturers really desire the trade of these countries they will pay all attention to their demands, and it will then be strange if American enterprise does not push through the opening which has been made for it. The Government has done all in its power; the rest depends upon the people themselves.

An important matter, already explained in our columns, should be recalled to the attention of certain classes of manufacturers, namely, the universal employment of metric weights and measures in the markets thus offered to us, and the pressing importance of furnishing to them machinery, of metrical gauges and dimensions. It will be, in most cases, as difficult to sell in South America machines the parts of which do not correspond with the tools, patterns and gauges there in use, as it would be here to sell machines measurable in millimetres only. The difficulty and cost of all repairs and adjustments in such cases is well-nigh prohibitory. We fancy that some of our manufacturers, who have been most opposed to the revolutionary introduction of metric measures into American shops, will be led, sooner or later, to start metric departments for export trade.

THE PHOSPHATES OF AMERICA.

The phosphate mining industry which within the past few years has attained such great proportions in South Carolina and Florida has been, hitherto, practically without literature, except that which has been published from time to time in the various technical journals. While this has served its purpose the need of a thorough and modern treatise upon the subject of phosphate mining, the manufacture of superphosphates, and their use as fertilizers has long been felt. It is with pleasure therefore that we are able to announce the publication of a work entitled "The Phosphates of America," the advance pages of which have just been placed in our hands, by Dr. FRANCIS WYATT, of New York, a recognized authority upon the subject, and we cannot refrain from expressing to the Scientific Publishing Company, our hearty congratulations upon its opportune appearance. No publishers could offer a more substantial token of a determination to print thoroughly practical, useful, and new technological hand-books, and we accept it as a new addition to the previous well deserved successes of this enterprising concern, which has already given us such works as Peters' "Modern American Methods of Copper Smelting," and Howe's "Metallurgy of Steel," and is intending to give us a standard American treatise for every branch of mining and metallurgy.

There is no exaggeration in the statement that few discoveries of our time have attracted more general attention than these incalculably vast phosphate deposits of our Southern States, promising as they do to confer upon us as a nation the preponderating influence over the entire fertilizer market. There is consequently an absolute necessity for such a work as "The Phosphates of America." That no practical book dealing exclusively with the phosphate industry has yet appeared is not, however, really a cause for wonder. The industry is comparatively new and those in any way familiar with it are aware that the number of specialists or experts who might be equal to the task of satisfactorily writing a treatise upon it, dealing with all its geological and chemical as well as its mining and manufacturing phases, is extremely limited. That the Scientific Publishing Company has succeeded in enlisting the services of a distinguished authority, so eminently fitted for the task as Dr. FRANCIS WYATT, is therefore particularly gratifying, not only on account of his large and varied experience, but because the broad, comprehensive, judicial and altogether impartial sense in which he deals with his subjects and passes his judgments must impress his readers from the outset with an overwhelming sense of security and confidence.

Dr. WYATT has given us a most exhaustive treatise on American phosphates, their occurrence, methods of mining, cost of production, etc.; he does not stop there, however, but proceeds to describe fully the modern methods of sulphuric acid manufacture; and thenceforward follows his raw material through the minutest details of its manipulation, until, in the form of superphosphate, or acid phosphate, it is ready to be handed over to the agriculturist.

His highly interesting and valuable work is closed with a lengthy chapter upon the analysis of phosphatic materials, which of itself will be a veritable boon to analytical chemists, and if we are not greatly mistaken "The Phosphates of America" will soon be in its place upon the bookshelves, not only of every phosphate miner, fertilizer maker, chemist and sulphuric acid manufacturer, but of every intelligent general reader in the world.

BOOKS RECEIVED.

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

A Theoretical and Practical Treatise on the Manufacture of Sulphuric Acid and Alkali; with the collateral branches. By George Lunge, Ph. D. Second edition, revised and enlarged. Vol. 1, Sulphuric Acid. Published by Gurney & Jackson, London, 1891. Pages, 903. Illustrated.

Remington Brothers' Newspaper Manual, Fifth (1891) *Year.* A catalogue of the newspapers of United States and Canada. With supplementary lists of the best agricultural, religious, scientific and trade papers, leading magazines and principal daily and weekly papers. Pages, 496. Published by Remington Brothers' Newspaper Advertising, Pittsburg, Pa., and New York, N. Y. Price, $1.00.

Coal Points. Directory for those engaged in the transportation of anthracite and bituminous coal in the New England States. An index to railroad points with names and systems of branches, together with blanks designed for the compilation of current freight rates from distributing stations to intermediate points. Pages 120. Published by the Case, Lockwood & Brainard Company, Hartford, Conn., 1891.

The Journal of the Iron and Steel Institute. No. 1, 1891. Published by E. & F. N. Spon, London and New York. Pages, 509. 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.
All letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents.

The Outlook of Lead Smelting in Mexico.

EDITOR ENGINEERING AND MINING JOURNAL.

SIR: Some 18 months since, in view of the new rulings of the late Mr. Windom, then Secretary of the Treasury of the United States, regarding the importation of ores of silver containing lead, and also in view of the almost certain fact that a new tariff law would be enacted by Congress that would most likely still further interfere with the import of ores from the Mexican Republic, a company was organized for the construction and operation of lead smelting establishments in Mexico. Within a few months, following this lead, three other companies were organized on practically the same lines and for the same purpose: each obtained special privileges from the General Government and also from the Governments of the various States in which they intended locating their works.

The first result of the publication of these proceedings, in which American capital was very largely interested, were numerous comments in the American press on the loss to the United States of what was at that time quite a profitable business, *i. e.*, the purchase in Mexico of smelting ores for consumption in the United States and the far more serious evil of the transference to Mexico of such a large amount of capital and skill, and the building up in the latter country of an important industry that could and should have been retained north of the Rio Grande. The action of the Administration undoubtedly has injured the United States, and in two ways, since it not only affected seriously an industry already established, but lessened the purchasing power of a neighbor for agricultural products, such as corn, wheat, hay, cotton, live stock, cotton-seed oil, etc. On most articles hitherto imported into Mexico from its northern neighbor, the new tariff of the country, which goes into effect on the 1st of November of this year, has raised the duties materially, and on our cotton-seed oil, now largely imported for use in soap-making, and on horses, cattle, sheep, and hogs, a very heavy increase has been made in the duties levied. This will undoubtedly interfere to a great extent in the importation of those articles.

While the United States has been injured it is worth while inquiring if Mexico will receive as great benefits from its neighbor's action as have been prophesied. For silver lead smelting one would think that the conditions essential to a profitable business would be abundant supply of lead ores of good smelting character, cheap fuel of good character, and easy access to a good market. In addition may be mentioned an abundant supply of fluxes, such as very ferruginous ores, or else straight iron ores, and limestone. Apart from perhaps one or two unimportant districts, there is no point where lead smelting is conducted on a large scale wherein the ores treated, on account of their silicious character, do not need the addition of an iron flux, so that it is likely, in considering a new point as a location for smelting works, one must attend as well to the supply of fluxing material as to the ore supply.

At present the lead supply of Mexico is chiefly derived from the Sierra Mojada, but of the product of this district the bulk of the extraction is in the hands of an American company that is using the ore on the other side of the Rio Grande; a large portion of the remainder is controlled by a company owning the local smelter, which has been running successfully in competition with free export to the United States, and will certainly be able to do so under present conditions, so that it may be considered unavailable. There remains then a very small proportion of the total output available for use in Mexico's new smelters; and even this is not at present available, at least to companies which have selected Monterey as a location, owing to the freight charges on present lines of transportation. Outside of the Sierra Mojada the only available deposits known at present will not completely supply the needs of any one of the four plants, unless, indeed, they calculate on treating lead ores on the same principle that now rules in the United States, *i. e.*, at an absolute loss, so far as intrinsic value goes, trusting to their margins on dry silicious ores for their profit on the business.

Of course it is more than likely that other lead producing districts will be opened up in Mexico, under the stimulus given by the construction of large, well equipped and centrally located smelting plants, and several exceedingly promising districts are now known, on which a small outlay in exploration and development might yield very handsome returns; still the fact remains that several large enterprises have been projected for a certain end without being absolutely sure of a sufficient supply of the material necessary for its accomplishment. This may perhaps account for the extreme conservatism at present governing the movements of several of these new companies.

As with lead ores, so with iron ores; the supply is at present inadequate, and deposits known to exist have not been developed to such an extent as to warrant any certainty in regard to their availability. Fuel (coke) is now being brought to Monterey from the United States for use in the smelters at present in operation, as against the Sabinas coke, made at no great distance from that point. This would indicate that the Sabinas coke possessed less intrinsic value for smelter use, as the foreign article must cost the most money. The market for base bullion must be sought in either the United States or Europe; Mexico uses practically no lead, and a refining works would be at present out of the question, unless smelting works should construct them solely as a means of recovering lead for the purpose of supplying their blast furnaces. This would hardly recommend itself as an economical process, but only as one to resort to when all other means of obtaining a lead supply had failed

It is to be hoped that the four companies now organized may be pushed forward to successful completion and operation, since a failure on the part of any of them would be a serious blow to the country in general; still, it must be confessed that the future is not altogether rose colored for so many competing enterprises. One alone would have done very well indeed; two might have gotten along well enough, but with Mexico's present ability to furnish lead ore that will remunerate both miner and smelter, four large plants seem entirely too many for successful operation, and the development of the mining industry in respect to argentiferous lead ores is certainly not advancing rapidly enough to promise anything better in the near future.

METALLURGIST.

MEXICO, September 10, 1891.

PRODUCTION OF COPPER IN THE UNITED STATES IN 1889.*

By Charles Kirchoff.

Since the census year 1880 the United States has risen to the rank of the largest copper producer in the world, outstripping by far any other country. During the decade Arizona, and, later, Montana have become important producing States, the latter now acquiring and maintaining its rank as the leader. While by far the greater part of the metal produced is obtained from ores carrying only the baser metal, important quantities in the aggregate are derived from ores in which lead, gold, and silver are the principal constituents of value. These quantities are difficult to trace to their source. The ores are purchased by lead and copper smelters in the open market, often in small parcels, indirectly, through sampling works. Sometimes copper is not even present in the original ore in marketable quantity, and becomes a factor only when it appears in a concentrated form in the mattes of lead smelters and refiners

The copper product of the United States was as follows, in pounds, in the calendar year 1889:

	Pounds.		Pounds.
Arizona	31,586,185	California	151,505
Michigan	87,455,675	Wyoming	100,000
Montana	98,222,444	Vermont	72,000
New Mexico	3,686,137	Southern States	18,144
Colorado	1,170,053	Lead smelters and refiners	3,345,442
Idaho	156,490		
Nevada	26,420	Total	226,055,962
Utah	65,467		

These figures include the quantities of copper reported as an incidental constituent of other ores.

The details of the copper mining of the principal producing states during the year 1889 are given in the following table, but do not include those mines fairly to be considered as precious metal mines:

COPPER PRODUCTION IN 1889.

STATES AND TERRTORIES.	Ore produced. Short tons.	Mineral. Lbs.	Black copper. Lbs.	Matte. Lbs.	Fine copper contents. Lbs.
Michigan	2,443,733	17,804,926	.....	.....	87,455,675
Montana	698,837	.....	10,176,744	147,800,590	98,862,064
Arizona	155,586	.....	29,522,493	4,126,000	31,362,685
New Mexico	34,586	.....	4,000	7,620,800	3,883,014
Total	3,322,742	117,804,926	39,713,237	159,547,390	221,569,438

EXPENDITURES.

STATES AND TERRIT'ES.	Total wages.	Office force.	Salaries.	Paid contractors.	Materials and supplies.	Taxes, rent, etc.	Total expenditures.
Michigan	$3,174,363	41	$67,369	$306,627	$2,682,491	$1,247,978	$7,478,828
Montana	2,010,940	10	22,515	2,722	1,029,990	138,288	3,204,455
Arizona	726,021	14	23,762	23,774	325,020	48,242	1,146,819
N. Mexico	184,701	5	7,250	1,320	30,469	8,338	232,078
Total	$6,096,025	70	$120,896	$334,443	$4,067,970	$1,442,846	$12,062,180

NUMBER OF EMPLOYES.

Above Ground.

STATES AND TERRITORIES.	NUMBER EMPLOYED. Foremen.	Mechanics.	Laborers.	Boys.	AVERAGE DAILY WAGES. Foremen.	Mechanics.	Laborers.	Boys.	AVERAGE NUMBER OF DAYS EMPLOYED. Foremen.	Mechanics.	Laborers.	Boys.
Michigan	63	547	1,247	15	$5.31	$2.30	$1.58	$0.75	313	311	301	303
Montana	7	131	162	....	4 86	4.76	3.13	.....	289	300	274	.....
Arizona	11	57	252	5	5.43	3.97	2 63	1.25	276	260	286	305
N. Mexico	3	6	57	.....	5.00	3.75	2.50	.....	269	221	314	.....
Total	84	741	1,718	20	$5.28	$2.88	$1.91	$0.88	305	304	297	304

Below Ground.

Michigan	57	2,101	1,582	83	$4.04	$1.99	$1.67	$0.95	312	314	307	308
Montana	30	1,609	9	....	4.93	3.53	3.00	.....	300	281	129	.....
Arizona	23	408	82	....	4.89	3.19	2.62	.....	274	290	308	.....
New Mexico	4	118	52	....	3.71	2 58	2.25	.....	259	274	293	.....
Total	114	4,236	1,725	83	$4.43	$2.71	$1.74	$0.95	299	298	306	308

STATES AND TERRITORIES.	CAPITAL INVESTED. Total.	Land.	Buildings	Tools.	Cash.	POWER USED. Animals.	Boilers.	Horse power.	Engines.
Michigan	$33,111,253	$22,333,442	$5,449,271	$2,272,622	$3,055,918	191	141	29,545	151
Montana	23,395,000	22,375,000	223,000	797,000	.....	29	52	3,530	82
Arizona	5,490,050	4,960,383	33,409	247,791	248,467	66	21	775	25
New Mexico	626,925	444,500	112,000	69,175	1,250	19	12	540	7
Total	$62,633,228	$50,113,325	$5,817,680	$3,386,588	$3,305,635	305	226	34,390	265

* From Census Bulletin No. 96.

LABOR AND WAGES AT CONCENTRATING MILLS AND SMELTING WORKS.

	Lake Superior.			Montana.			Arizona.		
Class.	Number.	Aver. daily wages.	Aver. number of days employed.	Number.	Aver. daily wages.	Aver. number of days employed.	Number.	Aver. daily wages.	Aver. number of days employed.
Foremen.....	19	$3.68		90	$5.00	355	14	$5.34	281
Mechanics...	128	2 17	317	130	4.08	351	21	4.13	274
Laborers.....	795	1.52	307	1,789	2.91	324	370	2.87	306
Boys.....	87	0.91	307	20	1.75	365	....	....	....

LAKE SUPERIOR DISTRICT.

From an industrial point of view the conditions under which the Lake Superior copper-mining companies work are unique. The occurrence of the metal in the native state created problems for the solution of which experience in older mining regions could furnish no guide. Untrammeled by conventional methods, they have been attacked in a characteristically American manner. After an experience extending over a generation it may well be claimed that the practice of the majority of the mines is entitled to the claim of ranking with the best in this country. By systematic mining, by the liberal introduction of power drills, by the cheap handling of large quantities of rock, and by the development of crushing apparatus of great power, well adapted to the special requirements, it has become possible in the Lake Superior district to profitably extract copper from very low grade rock.

While the district possesses certain great advantages, it is unquestionably hampered by drawbacks. The metal exists in the rock in the native state. The ore needs only to be crushed and washed to leave behind a product called "mineral," consisting of metallic copper. From the fact that the product of 117,804,926 lbs. of mineral yielded 87,455,675 lbs. of ingot, it follows that the average percentage of copper is 74·24. But on the other hand, the amount of native copper in the rock is small in the majority of cases. The total amount of ore hoisted to the surface, not including the few small mines worked by tributers and one of the larger mines, was 2,363,733 short tons. This yielded 86,604,283 lbs. of ingot. The average yield of the principal mines was only 1·83% of ingot. Excluding, however, the two phenomenally rich mines, the Calumet & Hecla and the Tamarack, the others produced from 1,369,180 tons of rock 27,330,536 lbs. of ingot, so that the yield was 0·998, or almost exactly 1% of ingot copper. It follows, therefore, that a large tonnage must be hoisted to produce a moderate amount of copper. This, in turn, means very extensive underground development, and a large investment in plant and machinery for power drills, hoisting, crushing and washing. Since the latter requires a large quantity of water, stamp mills have been located where it is most readily available and where the enormous quantity of sand can be readily disposed of. The result is that the transportation of the rock from the mine to the mill becomes an additional problem.

These conditions impose upon the Lake Superior copper companies a conservative policy, and rob them to some extent of the ability to quickly adapt themselves to rapid fluctuations in the demand and supply. They cannot at short notice respond to calls for increased product, because preparations for an extension of operations involve the expenditure of large sums, extended underground development, and large additions to plant and equipment, with the long time which the execution of such plans requires. They are similarly hampered in any plans for an adjustment to the conditions which an overstocked market imposes. Low costs are based in operations involving the handling of large quantities of rock upon the full employment of equipment and force. Any curtailment means an undue burden of operating expenses and fixed charges upon a diminished product, while total suspension of operations presents the alternative of either providing for a steady outlay for the maintenance of mine and plant, or ultimately, upon resumption, of paying a far larger aggregate sum as a penalty for neglect. It is natural, therefore, that, consciously or not, the managers of the Lake Superior copper companies have usually followed a conservative course.

Another result, which is the outgrowth of the conditions under which mines must be worked, is the full employment given to labor in the district. This is well illustrated in the figures for labor and wages. With the exception of one mine, which was closed down for 50 days on account of the low price of copper, every company ranking as a regular producer has given full employment all the year round, Sundays and legal holidays being the only days of rest, to which must be added the respective holidays of the different nationalities represented. The total wages paid in the mining of copper rock at Lake Superior below and above ground were $3,174,363, including the estimated earnings of tributers at four mines, which have been placed at less than $8,000. The companies, which hoisted 2,363,733 tons of rock and produced 86,604,283 lbs. of ingot, paid in wages $3,004,621, so that the labor cost per ton of rock hoisted was $1.27, while it amounted to 3·47 cents per pound of ingot. It was the lowest in the case of the Atlantic mine, whose labor cost was only 67 cents per ton of rock hoisted. It should be noted that probably an even better expression of the labor cost of mining would be furnished by taking as the basis the tonnage of rock mined, some of the companies rejecting a varying quantity of rock underground. The total cost of mining rock which finally yielded 87,455,675 lbs. of ingot copper, is given in the general table of expenditures.

Stamp Mills.—Reports from 11 stamp mills connected with or working for mines which hoisted 2,363,733 tons of rock, show that 2,137,653 tons were crushed, producing mineral yielding 86,604,283 lbs. of ingot copper. The difference in the tonnage treated is due principally to the fact that many companies find it necessary to reject in the rock houses a part of the material hoisted as too poor to go to the stamp mill. To some extent also a difference in the quantity of rock in stock at the stamp mill of at least one company in the beginning and at the end of the year accounts for the difference.

Like the mines, the stamp mills are operated during the entire year, with stoppages only during Sundays and holidays, so that the men are fully employed. The total wages paid in stamp mills were $514,756.79, so that the labor cost of stamping and washing per ton of rock averaged 21·8 cents, while it amounted to 0·59 cent per pound of ingot.

The stamp mills report expenditures for supplies of $570,724.33. It should be noted, however, that in several instances no accurate separation between mine and mill supplies could be made. Expenditures for salaries were $2,340; there was paid to contractors $2,618.71, and for insurance, rent, etc., $2,935.99, a total of $985,595.11. The outlays for salaries, taxes, insurance, etc., are, however, credited in total to the mining account, a separation being possible only in a few instances.

MONTANA.

The product of those mines in Montana which may be classed as copper mines was 97,868,064 lbs. of fine copper produced from 698,837 tons of rock, thus showing that the yield was 7%.

The total cost involved in mining is given in the general table of expenditures.

It will be observed from the statement of wages paid that those in Montana are, generally speaking, nearly double those paid in the Lake Superior district, but that per ton of product they are considerably less, owing to the higher grade of the ore mined. With the exception, however, of the Bessemerized copper produced by the Parrot Company, the product must be first concentrated and subsequently smelted for matte, which is sold to American and foreign refiners. Concerning the smelting and concentrating operations the following data may be presented: The product of matte was 156,400,590 lbs.; blister, 10,176,744 lbs.; fine copper contents, copper, 102,188,716 lbs. The expenses were: Wages, $2,128,569.89; salaries (24 persons), $50,493.75; paid contractors, $30,106.45; supplies and materials, $3,901,551.05; rent, interest, insurance, taxes, etc., $186,817.45; total, $6,297,538.59.

A part of the product of one establishment was sold to another in the same district. The capital investment of all the mines is not reported, but it may be stated that the works produced in all 108,261,092 lbs. of matte, containing 66,130,647 lbs. of fine copper, and had invested in buildings and fixtures $2,195,000; in tools, implements and machinery, $5,425,700, and in cash, $240,000. The number of animals employed was 29, and the plant included 52 boilers of 3,530 horse power, 5 steam stamps with 250 horse power, and 82 engines.

The product of the concentrating and smelting operations is matte. The cost of transportation to market and the cost for refining must be added. Some of the companies, however, as an offset, draw a considerable revenue from the silver contents of the matte produced. This must be taken into account when dealing with the ability of the mines to compete in the world's markets.

ARIZONA.

The principal advantage of the Arizona mines as competitors in the copper market lies in the fact that the ores are relatively rich, yielding in 1889 a fraction over 10%, and are easily reduced to black copper, being almost exclusively oxidized ores. The expenditures incurred in producing ore which yielded 31,362,685 pounds of fine copper are shown in the general Arizona table.

The smelting and concentrating of the ores involved the following expenditures: Wages, $345,787.11; office force (10), $22,998; paid contractors, $26,686.65; supplies and materials, $816,243.70; rent, interest, taxes, etc., $46,177.41; total, $1,257,892.87. The number of animals employed was 5: steam boilers, 9; steam boilers, horse power, 790; steam engines, 8. The capital employed was as follows: Buildings and fixtures, $176,016; tools, implements, machinery, $280,200; cash, $7,000; total, $463,216.

COPPER REFINING.

Only a part of the furnace material produced in the United States, a small quantity of ore, and nearly all of the mineral from the Lake stamp mills are refined in works, the majority of which are controlled by firms and corporations not directly connected with the mines. In some works copper refining is incidental to the working of other base and precious metals, and in others it is a part of a general chemical business. One concern has failed to report. Returns cover establishments which produced 159,693,252 lbs. of refined copper, valued at $19,686,561.86. The following are the data relating to them: The amount of capital invested was $4,037,593, of which $634,000 was in land, 1,758,856 in buildings and fixtures, $600,214 in tools, implements, etc., and $1,044,523 in cash, etc.

The number of men employed and rates of wages are given in the following table:

Class.	Number.	Average daily wages.	Average number of days employed.
Foremen.....	70	$3.59	314
Mechanics.....	334	2.68	307
Laborers.....	911	1.57	304
Boys.....	9	0.78	313

The expenditures were as follows: Wages, $800,484; salaries (43), $71,720; paid contractors, $19,591; supplies and materials, $737,098; rent, interest, insurance, taxes, etc., $256,368; total, $1,885,261.

Animals, 47; steam boilers, 28; steam boilers, horse power, 2,152, and 30 steam engines represented the power used.

It is interesting to segregate one group of refiners, which treats exclusively high-grade, pure material, like Lake mineral. Arizona bars and Montana blister copper. Works which produced 105,400,664 lbs. of refined copper incurred the following total expenses: Wages, $326,687; salaries, $42,056; paid to contractors, $4,735; supplies and materials, $305,679; rent, interest, etc., $40,462; total, $719,619, or 0·68 cent per lb.

Manufacture of Briquettes from Coal Dust.—W. H. Buckland of South Hayling, and G. Myers of Hampstead, England, have patented a new method of manufacturing briquettes from coal dust. Instead of using pitch as a cementing material substances of a glutinous or farinaceous character, such as are obtained from wheat, barley, rye, or other cereals and vegetables are employed, 5% to 95% of coal-dust being a suitable proportion. The mixture may be kneaded by hand and sets in a short time, so that molding under pressure is unnecessary, though the use of molds may be adopted to aid rapid manufacture.

PROMINENT MEN IN THE MINING INDUSTRY.

Leonard Lewisohn.

Of the men connected with the copper industry of this country there is no class more widely known than the selling agents. Representing the producers, their duties bring them into equally close contact with the consumers, both of this country and Europe. They are all clever, astute business men, for business talent is necessary for success in their line of work, and upon their shoulders rests much of the responsibility of the vast interests of the copper companies. Prominent among the selling agents of the copper producers of this country is the firm of Lewisohn Bros., of New York, which represents some of the most important mines of both the Lake Superior and Montana regions.

Leonard Lewisohn, the senior member of this firm, was born in Hamburg, Germany, October 10th, 1847. He came from a family of merchants established there for over half a century, whose business has been handed down from generation to generation until the present time. His grandfather, Leon Lewisohn, established the house, which dealt in all kinds of feathers, quills (steel pens not having come into use), bristles, etc., before 1790, and his father, S. Lewisohn, Jr., who succeeded to the business in 1833, was conducting it at the time of the birth of the subject of this sketch.

Leonard Lewisohn, who showed remarkable business aptitude at a very early age, received from his father the training which, with his own natural qualifications, formed the basis of his subsequent success. He entered his father's house as a clerk at the age of fourteen, and up to his eighteenth year continued to live in Hamburg. Then he determined to make a start for himself and came to New York, where his father's firm had a branch house. Entering the latter as a clerk, he soon discovered that the business was being mismanaged, a remarkable piece of acuteness considering his youth; at his instigation his elder brother came over to take charge of affairs, and the firm of Lewisohn Brothers was organized in January, 1866, to carry on the business, Leonard entering the firm as senior partner. In 1872 he became a full partner, and since then his elder brother and cousin have successively stepped out of the firm, which is now composed of himself and a younger brother.

LEONARD LEWISOHN.

The new firm at first confined itself to importing feathers, bristles, etc., representing the family house in Hamburg. The two brothers were ambitious and energetic, however, and gradually extended their business in other directions. In 1868 they engaged in large transactions in lead, this being their first venture in the metal trade; successful in this, in 1872 they commenced heavy dealings in copper, thus launching themselves into the market in which they have since acquired such a wide reputation. The firm rapidly expanded this branch of its business, and in the course of a few years became one of the most important copper dealers in the United States. It engaged in especially large transactions in 1879, when Lake copper suddenly rose in this country to 21¼ cents, re-importing large amounts from the stocks held in Europe by the Rothschilds and others.

In 1879 the firm became interested in some copper mines in Butte, joining a syndicate in purchasing the Colusa, Gambetta and Green Mountain properties, this being its first undertaking in mining. The mines thus acquired were transferred to the Montana Copper Company, organized to work them, Lewisohn Bros. holding a controlling interest in the company, of which Mr. Leonard Lewisohn became treasurer. In the following year the company erected a copper smelter at Butte, which was the first plant to be established at that place for the treatment of low grade copper ores, although the Colorado Reduction Company, reducing high grade silver ores, had been recovering and shipping their copper contents, as matte, previously. The Montana Copper Company worked continuously at a good profit for six years, reinvesting all its earnings, however, in increasing its plant and in the acquisition of more mines. During this period it produced between 3,000,000 lbs. and 5,000,000 lbs. of copper per year. In 1886, when the price of lake copper fell to 10 cents, the company decided to supend operations, and for the following year its mines and works were idle.

During this time, however, negotiations were commenced between Lewisohn Bros., representing the Montana Copper Company, and Edward Larrabee, owning adjoining property, including the Larrabee, the famous Mountain View, and other mines, for a consolidation of interests. This was finally consummated in 1887 by the organization of the Boston & Montana Consolidated Silver and Copper Mining Company, with which Messrs. Clark and Bigelow and other Boston capitalists became connected. Mr. Leonard Lewisohn joined the board of directors of the new company, and the firm Lewisohn Bros. was appointed its selling agent. A few months after the consolidation was completed the famous French syndicate was formed, and the price of copper commenced to rise. Operations were resumed in the mines at once, and since that time the company has been increasing its output, year by year, until now it is one of the largest copper producers of the world.

Since the organization of the Boston & Montana Company, Lewisohn Bros. have become the selling agents of all the Clark-Bigelow mines, including the Tamarack, the Osceola and the Kearsarge, of Lake Superior, and the Butte & Boston, of Montana. They also represent the Santa Fe Copper Company, of New Mexico, and the Arizona Copper Company, of Clifton, Arizona. Mr. Lewisohn is largely interested in many of these companies as a stockholder also, and at the present time is a director in the Boston & Montana, Kearsarge, Osceola and Santa Fe companies.

Mr. Lewisohn's other business interests are many and diverse. From 1866 to 1889 the original importing business of Lewisohn Bros was continued, although for many years it had been subordinate to the metal department. In the latter year, however, this department was transferred to the Lewisohn Importing and Trading Company, and since then the old firm has devoted itself exclusively to the metal trade, carrying on large transactions in lead as well as in copper. Mr. Lewisohn is also interested in the Brooklyn and Union elevated railway companies of Brooklyn, being one of the syndicate which reorganized those concerns. He was formerly a director in these enterprises, but has since retired from the boards.

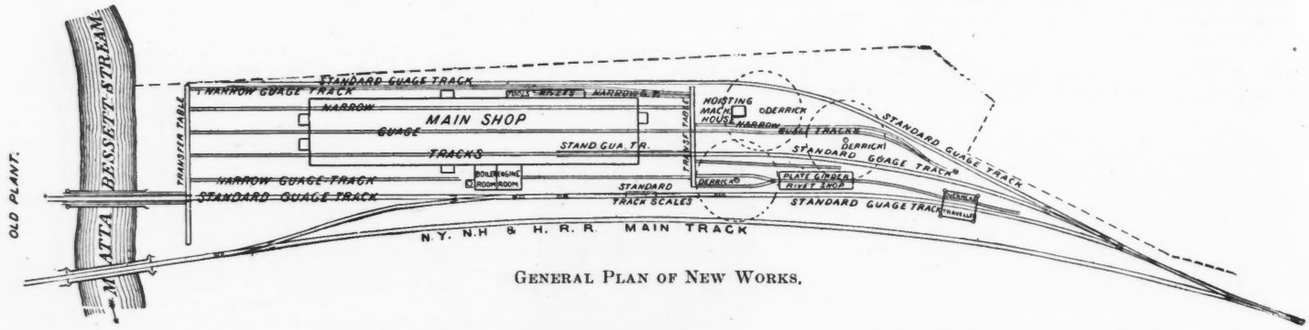
Mr. Lewisohn's business career which we have thus sketched out furnishes the key to his personal characteristics. He is a natural business man; sharp, clever, astute and enterprising. Quick and decisive in action, with untiring energy, he was endowed by nature for the success which he has so fully attained. Personally he is genial and liberal in his views, and while strict and close in his dealings, especially when representing others, he is a free giver to charities and his friends. The fortune which he has acquired in his business is large, and he may be rightfully termed one of the "copper kings" of the United States.

The Destruction of Lead Pipes by Wood Worms.—Recently, when tracing the leaky places in a lead pipe, says K. Hartmann in the *Gesundheits Ingenieur*, a live wood worm was found in one of the leaks, with its head protruding in the wall of the piping. The outer opening of the cavity was of oblong form, measuring 7 mm. by 4 mm., and the inner surface of the same showed fine indentures. Similar cases have occasionally been mentioned. Thus it is said in Kerl and Stohmann's "Handbook of Technical Chemistry" that certain wood worms (*Sirex gigas*) perforate sheet lead, the holes produced showing a rough surface with fine indentures. At the "Muldener Hütte" holes up to 6·5 mm. diameter were caused in sheet lead, the same being affixed to timber work. As the wood worm, which belongs to the family of the *Coleoptera*, works its way from the sap of the timber toward the bark, and from there into the lead, it is proposed to so place the timber that the bark may be furthest removed from the lead. Scheurer-Kestner (*Compt. Rend.* 53, 518) has published a case in which cylindrical holes were found in the lead lining of a beam of a new vitriol chamber, and this only a few days after effecting the covering. In one of the holes the semi developed body of an insect was found, partly in the lead, and head first. The diameter of the perforation corresponded exactly to the body of the insect, so that the latter could not turn round in order to escape.

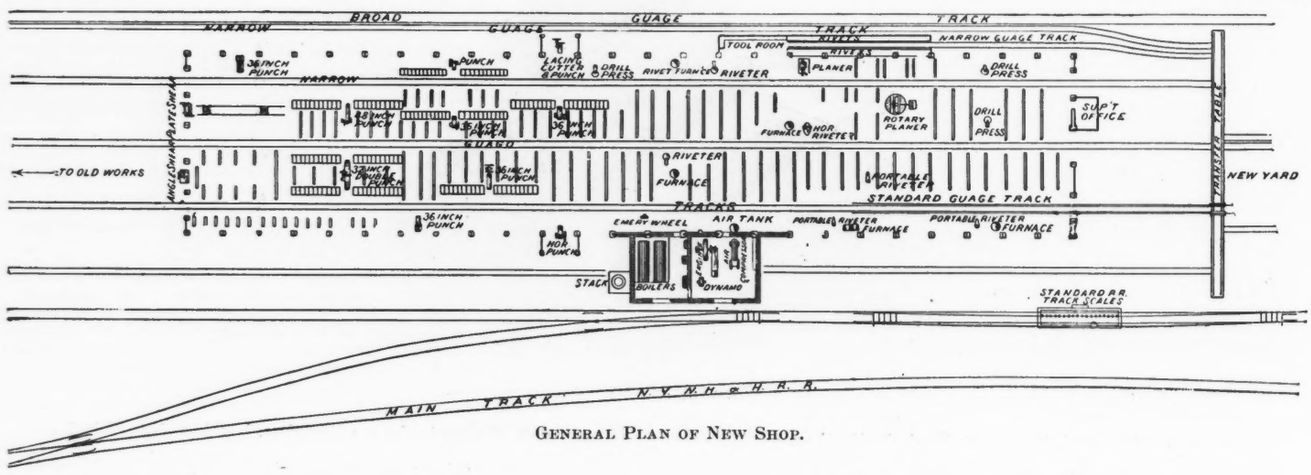
THE NEW PLANT OF THE BERLIN IRON BRIDGE COMPANY.

In the designing and construction of manufacturing plants the great objects are to reduce the first cost of the buildings, the cost of maintenance and repairs, and the cost of manufacturing the product to the absolute minimum. The design and construction of buildings for manufacturing purposes has been a specialty of the Berlin Iron Bridge Company, of East Berlin, Conn., for many years, and examples of its work are to be found in all parts of the country. In the accompanying illustrations we show the general character of a plant which this company has recently erected at East Berlin, Conn., for its own work, and which is probably one of the best designed and best equipped plants for all kinds of structural iron work of any to be found in this country.

The old plant of the Berlin Iron Bridge Company is situated on the west side of the Mattabasset River in the town of Berlin, Conn., and comprises about five acres of land well covered with buildings, but like a large class of the manufacturing plants in this country the buildings were originally designed for but a limited amount of product, and as the business of the company has extended from year to year additions have been made until the original buildings have sunk into insignificance and the additions comprise the greater portion of the plant Owing to the limited amount of land available, the company decided to build its new plant on the east side of the Mattabasset River in the town of Cromwell, connected with the old plant by an iron bridge of sufficient capacity to not only carry the narrow gauge cars which move their material about the premises, but also to carry an ordinary standard gauge locomotive and loaded cars.



General Plan of New Works.



General Plan of New Shop.

The general plan of the company's new plant is shown above, and comprises about three acres of land located along the line of the New York, New Haven & Hartford railroad. The main building is 400 ft. long by 80 ft. wide, constructed entirely of brick, iron and glass. The general features of the construction are shown in the interior view taken from a photograph.

The sides of the building are made of glass for a distance of 10 ft. from the eaves, and below that are constructed of iron sliding doors so arranged that they can be opened and closed quickly in order to allow the material to enter through the sides of the building, when necessary, and in summer they can be removed entirely, thus very materially adding to the comfort of the employés. The roof trusses are of iron, each truss designed to carry 10,000 lbs. at any point along the line of the lower chord. The whole plant is connected together by standard gauge tracks in such a way as to admit of the economical loading of the finished product.

The standard gauge tracks extend the whole length of the plant on each side, and at the front of the building from which the finished product is discharged there are other spur tracks of standard gauge, one of which enters the building for a distance of 120 ft., so as to admit of iron being loaded inside of the building during wet weather. All the tracks are controlled at the front of the building by two jib cranes, so arranged as to work from a four-drum Mundy hoisting engine, so that one man can operate both cranes at one time. The loading facilities are of such a nature that 10 cars can be loaded in an ordinary day of 10 hours.

The building itself is served by three lines of narrow gauge tracks, one on each side and one through the center, the tracks being connected at each end of the building by transfer tables, the transfer tables also connecting these tracks with the tracks in the yard. The raw material is distributed on each side of the main building direct from the cars, and after being sorted is moved by means of the narrow gauge tracks into the north end of the shop—the end shown on the left of the illustration on the opposite page—where it is laid out from templates, trimmed at the shears and prepared for the punches.

The punches are all arranged with a "drop motion" so that the punch can drop down on the work, and thus the operator is able to find the center mark and punch the hole exactly in the proper place. From the punches the material goes to the riveting machines and from the riveters to the planers, drills, etc., and out at the south end of the shop, so that under no circumstances is there any reason for work to pass except in one direction through the shop, the raw material coming in at one end and the finished product passing out at the other.

The interior of the building is lighted, as above noted, by the windows on the sides, and also in each side of the roof the whole length of the building is a skylight 12 ft. long, so that the entire length of the building is so well lighted that the finest work can be done in any part of it.

The building is heated by the well known Sturtevant system of hot air, and all furnaces, both under the boilers and for rivet heating, are equipped with fuel oil burners, so that crude petroleum is used entirely for fuel through the whole plant, although the boilers are so arranged that coal can be used if desired.

The plant is lighted by a Thomson-Houston dynamo, with 250 incandescent lamps and 12 arc lamps, all on the same circuit, the arc lamps being used to light the yard and general light for the shops, with two incandescent lights at each machine.

The whole plant is constructed of iron with no woodwork about it, so that there is absolutely no risk from fire and the company is not obliged to carry any insurance. The construction being of iron the cost of maintenance consists only of painting, so that here we have a plant which seems to combine all the requisites of improved shop practice, as certainly, with the improved facilities, a shop of this kind ought to handle all classes of structural work with the least possible outlay of labor. In a construction of this kind certainly the cost of maintenance, repairs, insurance, and that class of expense is reduced to an absolute minimum.

This class of building seems to be particularly well adapted for blast furnace houses and other metallurgical works, for obvious reasons. Indeed, buildings of this type have already been erected by the Berlin Iron Bridge Company for several of the largest smelting companies of the West. Among others is one erected for the smelting works of the Anaconda Mining Company at Anaconda, Mont., and one now in course of construction at the new works of the Boston & Montana Consolidated Copper and Silver Mining Company at Great Falls, Mont.

Manganese Sulphide as a Pigment—The flesh-colored, hydrated manganese sulphide which is obtained by the addition of ammonium sulphide to a solution of manganese chloride, on standing, or more rapidly on boiling with water, changes color to green. This green sulphide when washed and dried yields a powder of the same color, which is also unstable, being oxidized by mere exposure to air. It is, however, according to P. de Clermont and H. Guiot (*Bull. Soc. Chim.*, 1891, 5, 480), rendered permanent by removing its water of hydration, which is effected by heating it moderately in a current of hydrogen sulphide, carbon dioxide or ammonia. Thus prepared it is suitable for application in paper staining, printing, etc.

A NEW PROCESS FOR THE TREATMENT OF COBALT ORE.

At the works of the Maletra Chemical Company, at Petit Quérilly, near Rouen, France, a new process for the treatment of the cobaltic manganese ore from New Caledonia has been successfully introduced by Herr Herrenschmidt, writes L. Pelleton in *Le Génie Civil*, 18, 1891, p. 373. The composition of the ore, subject to variation in certain of the less valuable constituents, averages: Peroxide of manganese 18·00%, protoxide of cobalt 3·00%, protoxide of nickel 1·25%, peroxide of iron 30·00%, alumina 5·00%, lime and magnesia 2·00%, silica 8·00%, loss in calcination 32·75%, total 100·00.

The operations are entirely performed by the wet way, and the reagents used are to a large extent waste products arising in the treatment of the ore. The order of operation is as follows:

1. *Solution of Ore.*—The ore, which is comparatively soft, is ground to a fine powder under edge-rollers, and is thrown into large pans containing a strong solution of ferrous sulphate, which is boiled by blowing steam through it. This dissolves manganese, cobalt, and nickel as sulphates, while the whole of the iron, including that in the ore, goes down as basic ferric sulphate together with the silica and alumina. The action continues for some hours, fresh ore being added as required, until the liquor when tested with permanganate is found to be free from dissolved iron. The contents of the pan are then blown over to a settling tank, where the clear liquor is separated from the ferruginous precipitate. The latter is then filtered off, dried, and calcined, giving a powder which is sold as colcothar.

The ferrous sulphate employed in the above operation is prepared on the spot from scrap iron and nitre cake, or the residue, consisting of sodium sulphate and sulphuric acid, obtained in the manufacture of nitric acid. This gives, in addition to the green vitriol, sodium sulphate, which salts are separated by crystallizing; the latter may also be utilized at another stage of the process.

2. *Precipitation of Nickel and Cobalt.*—The liquors containing cobalt, nickel and manganese sulphates are transferred to stills made of slabs of the lava from Volvic, in Auvergne, and sodium sulphide is added. This precipitates cobalt and nickel as sulphides, with only a small proportion of manganese, the bulk of the latter metal remaining in solution by reason of the acidity of the liquor. The mixed sulphides when separated are treated with a solution of ferric chloride which dissolves the manganese, giving a mixture of sulphide of nickel and cobalt nearly free from foreign matters. The manganese in the still liquors is converted into chloride by chloride of calcium, and precipitated by lime to be used in the Weldon process.

The sulphide of sodium used in this operation is obtained by decomposing the sulphate of sodium remaining from the ferrous sulphate with alkali waste in a closed vessel under pressure, the final residue of this operation being sulphate of calcium.

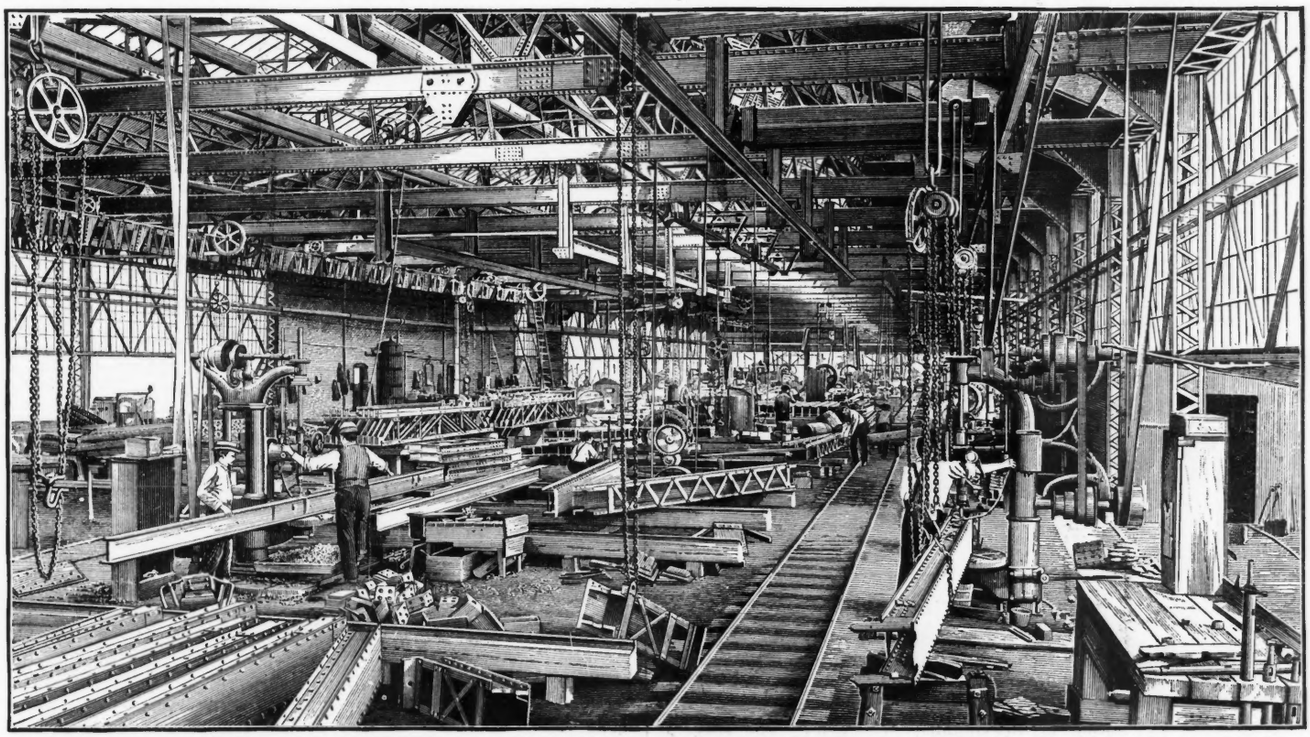
3. *Calcination of Cobalt and Nickel Sulphides.*—The precipitate of mixed sulphides, after the removal of the manganese, is subjected to a very careful roasting in a reverberatory furnace, which, if the operation is successful, results in its complete transformation into sulphates of cobalt and nickel soluble in water.

4. *Separation of Cobalt and Nickel.*—The product of the roasting operation No. 3, when dissolved in boiling water, is treated with chloride of calcium to convert the sulphates into chlorides, after which the liquor is divided. In one portion, *A*, the metals are precipitated as hydrated protoxides with lime, and, after washing to remove the calcium salts, the precipitate is diffused through water and subjected to the joint action of a current of chlorine and of air under pressure, with the result of forming peroxides of nickel and cobalt. A second portion, *B*, of the original protochoride is then added, and the whole is energetically mixed by blowing it up with steam. This has the result of reducing the peroxide of nickel in the *A* precipitate, which redissolves as protochloride with the peroxidation and precipitation of an equivalent proportion of cobalt from *B*, so that only nickel remains in solution, while the cobalt is entirely separated. The proportion of *B* is so chosen that the whole of the precipitated nickel is not dissolved, in order to insure that the liquors contain no cobalt. Further additions of the solution are made in graduated quantities until the cobalt precipitate is completely free from nickel, when it is filtered, dried, and calcined for sale. The various liquors containing nickel are finally collected and treated with lime, the protoxide of nickel precipitated is separated by a filter-press, and after drying and calcination is ready for reduction.

The chlorine required in the operation is obtained from a portion of the ore which is used in the stills with hydrochloric acid, in the same way as an ordinary manganese ore. Cobalt, nickel, and iron pass into solution at the same time; the first two metals are recovered, while the ferric chloride is used in the treatment of the mixed sulphides.

The works as at present arranged are equal to the treatment of about 150 tons of ore per month, which corresponds to a yield of 4,500 kilos. of cobalt oxide and 1,850 kilos. of nickel. The former is worth about 25 frs., and the latter 3·50 frs. per kilo. The annual consumption of cobalt is estimated to be above 200 tons, or a value of about $1,450,000.

The New Caledonian cobalt ore being very bulky it has been proposed, in order to save freight, to convert it into regulus at the mines. Experiments in this direction have been made at the same works, running down the ore with silica and iron pyrites in a water-jacket blast furnace, with the result of producing a regulus with 8% of cobalt, in addition to iron and sulphur, and slags containing all the manganese and only 0·02% of cobalt. This concentrated material it is proposed to treat in the same way, commencing, however, with operation 3, or the calcination of the mixed sulphide.



NEW PLANT OF THE BERLIN IRON BRIDGE COMPANY, EAST BERLIN, CONN.

THE COAL INDUSTRY OF BELGIUM.

The Association of Mining Engineers of Liége, Belgium, has recently prepared the following statistics of the coal industry of Belgium during the past decade, the figures being given in tons:

	Production.	Consumption.	Imports.	Exports.
1880	16,866,000	12,071,000	944,000	5,739,000
1882	17,590,000	12,809 000	1,065,000	5,855,000
1884	18,051,000	13,482,000	1,270,000	5,839,000
1886	17,285,000	12,749,000	1,133,000	5,569,000
1888	19,218,000	14,310,000	1,073,000	5,982,000
1890	20,313,000	16,107,000	1,820,000	6,056,000

The imports of coal did not vary much until 1890; the great increase during that year was due to the general strikes, owing to which the production did not increase in the same ratio as consumption. In the Liége and Mons districts especially stocks of fuel became very low at that time, and manufacturers were obliged to get supplies of coal from abroad. In the Liége district German coal was used principally, and in the Mons French and English coal. English coal, it is said, however, did not give general satisfaction, and German coal has now lost favor on account of the increase in price.

A SAFETY ELECTRIC CABLE FOR COAL MINES.

The use of properly protected electric motors has become now a recognized means of transmitting power, even in fiery mines, but many colliery managers still object to the introduction of electricity into their collieries, owing to the possibility that exists that the cable may be broken by falls of roof or stone, or by the tubs leaving the rails and tearing down the cable, and thus setting fire to the timber or firing the pit. In the accompanying diagrams, for which we are indebted to *Industries*, we illustrate a safety mining cable, invented by Mr. Ll. B. Atkinson. In Fig. 1 A A^1 are the two poles, say, of the generating dynamo, and B B^1 are the two poles of the motor or lamps. These are connected each by two wires, a main conductor L and a subsidiary conductor M. These wires will, of course, carry current simply in proportion to their areas, being of the same length. In each main and each subsidiary conductor are arranged cut-outs proportioned to the carrying capacity of each wire. Suppose the main conductor L be broken, provided that the subsidiary conductor M is not broken, no spark will result at breaking, as the circuit is still closed, but the whole current now traverses the subsidiary conductor, and the fuse at once melts. This fuse allows a weight to fall (see Fig. 2, where W is the weight and P P the switch), and thus instantly disconnects the whole circuit. The practical form of cable to carry this into effect is shown at Fig. 3. A close-wound spiral of tinned copper wire, several wires being for preference arranged in parallel, is braided over, but not heavily insulated. Over this is laid a stranded conductor of the required area, and this in turn properly insulated by any of the usual methods. If the cable is torn down from the roof or broken in any way in tension, this inner conductor extends to an indefinite extent, for as it gets drawn out the diameter of the spiral decreases, and hence it becomes quite loose in its tube. This spiral conductor carries the current, for an instant, till the fuse breaks, when the whole conductor is disconnected from the supply. It may, however, happen that a cable be cut in two by a falling stone, or even by a sharp instrument like a knife or axe. By a small addition to the arrangements already provided this also leads to an instant disconnection of the circuit before it finally breaks, and hence without spark at the point of rupture. Fig. 4 shows the cable thus broken and extended. Fig. 5 shows an arrangement similar to Fig. 1, except that at the further end of the cable from the generator is a resistance R in the circuit of the subsidiary conductor. The effect of this is that the fall of potential along the subsidiary conductor is less than along the main conductor, and that therefore a difference of potential exists between them. If, therefore, the cable is damaged by falling stone driving the inner and outer conductors in contact, or if the cable be cut by a metallic instrument effecting the same result, there is an immediate increase of current in the subsidiary conductor, thus melting its fuse and disconnecting the cable as before. This cable therefore really acts by transferring the electrical rupture of the cable to some point, such as the switchboard at the top of the pit, where it is unimportant, thus making its use safe under all circumstances.

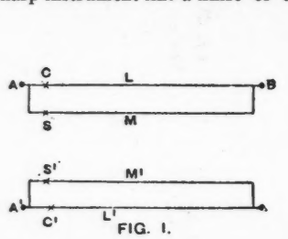


FIG. 1.

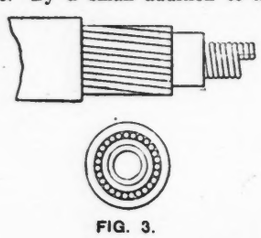


FIG. 3.

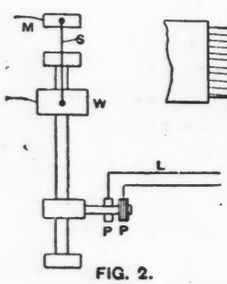


FIG. 2.


FIG. 4.

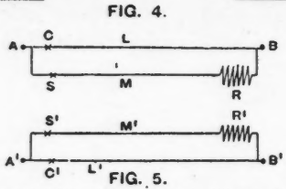
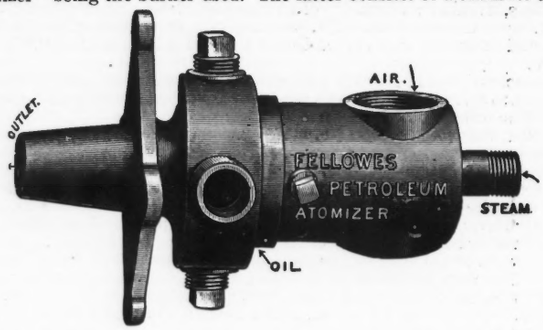


FIG. 5.

New Method for the Quantitative Separation of Zinc and Manganese.—P. Jannasch and J. F. McGregory, *Jour. Prakt. Chem.*, 1891, 43, pp. 402–406, avail themselves of the fact that manganese is completely precipitated by hydrogen peroxide from alkaline solution as hydrated peroxide, in order to separate this metal from zinc. The solution containing the mixed salts is acidified with dilute hydrochloric acid, at least 100 cc. of a 15% to 20% of ammonium chloride solution added, and then 60 cc. to 100 cc. of ammonium hydrate (conc.), so that the whole is strongly alkaline. An excess of hydrogen peroxide (which must be free from barium chloride) is then added; the complete precipitation of the manganese is indicated by the sudden frothing up of the solution, due to the liberation of oxygen. The precipitated hydrate is heated on the water bath for 10 to 15 minutes, filtered, washed first with boiling ammonia water and then with boiling water only, and finally dried and weighed as Mn_3O_4 as usual. The filtrate from the manganese contains the zinc, which can be determined either by precipitating it as sulphide, dissolving the latter in hydrochloric acid and re-precipitating as carbonate, or the solution can be evaporated to dryness, the residue heated for an hour to 125° C. to 150° C. in an air bath and then gently over the free flame so as to drive off the ammonium salts. The residue thus obtained is taken up with water, a few drops of hydrochloric acid added, the solution filtered and precipitated with sodium carbonate.

PETROLEUM FUEL USED IN BRICK BURNING.

Petroleum has been utilized to some extent already as a fuel for boilers, and its use in that direction is increasing. One of the latest applications of petroleum fuel is in brick and tile burning, which is a purpose for which it seems well adapted. The kilns at Isaacs' brick yards at Perth Amboy are now being run in this manner, the "Fellows Petroleum Atomizer" being the burner used. The latter consists of a chamber about



7 in. long and 2½ in. in diameter. Oil under pressure is admitted by means of a half-inch feed pipe, as marked in the illustration, and is led to the center of chamber by means of a reducing nozzle which has an opening of about ¼ in. Oil also enters at a point directly opposite the opening shown, there being a small space between the two jets. Through a ½ in. pipe, in the end of the chamber, steam is admitted. Passing through the chamber, this meets the oil jets at their point of intersection, transforming the oil into a fine spray. At the same time the steam, in passing through the chamber, draws in a current of air through the inlet shown. The mixture of air, oil and steam thus formed is projected through the outlet nozzle, which is ⅜ in. in diameter, and the oil, being perfectly volatized, burns like gas to within a few inches of the nozzle, with a clear, bright flame, the combustion, it is claimed, being nearly perfect.

By changing the relative positions of the oil feed and steam pipes, the nature and form of the flame may be regulated. A flame may be projected 30 ft. from the mouth of the nozzle, while by adjusting the steam and oil feed it may be reduced to act in the same way as an ordinary banked fire, supplying sufficient heat only to maintain low steam pressure on the boiler. In the application of this burner on an ordinary steam boiler it is claimed that there is a saving in the cost of fuel, and in labor, amounting to about 35%. The best results are being obtained by using 90 lbs. steam pressure, but the atomizer may be successfully operated with as low as 15 lbs. Tests made with this burner show an evaporation of 16⅜ lbs. of water with 1 lb. of oil.

At Isaac's brick yard the oil fuel is being used to burn hollow brick in place of coal, used heretofore. The burner is applied in the ordinary fire boxes and the flame carried up through flues, measuring 9 in. × 9 in., to the top of kiln. In burning these kilns the heat is applied at the top and by means of natural draught is carried down through the entire mass and out through the perforated floor to chimney. The comparative statements in using coal, and using oil, for this purpose are given as follows; when used in an 18 ft. kiln containing about 50 tons of hollow fire clay brick, the amount of coal burned was $7\frac{7}{10}$ tons, at an approximate cost per ton of $4.00, the total cost of fuel being $30 80; with the atomizer the amount of oil burned is 1,085 galls., costing approximately per gall. $2\frac{2}{10}$ cts., or a total of $23.83. The saving by use of oil is consequently $6.97. The number of hours consumed in burning a kiln with coal was 72; with oil 52½. The labor saving has not been calculated, as yet. One man is capable of attending to six kilns, however, which formerly required the constant attention of two men to each kiln. The oil tanks being placed some distance away from the works, the rate of insurance on the latter is not affected.

THE HANDY RATCHET SCREW-DRIVER.

Tower & Lyon, of New York, are introducing a novelty in the line of screw-driver, which is illustrated herewith. It is constructed on the ratchet principle, which allows the hand to retain its hold constantly on the handle, the motion being between the handle and a spindle, controlled

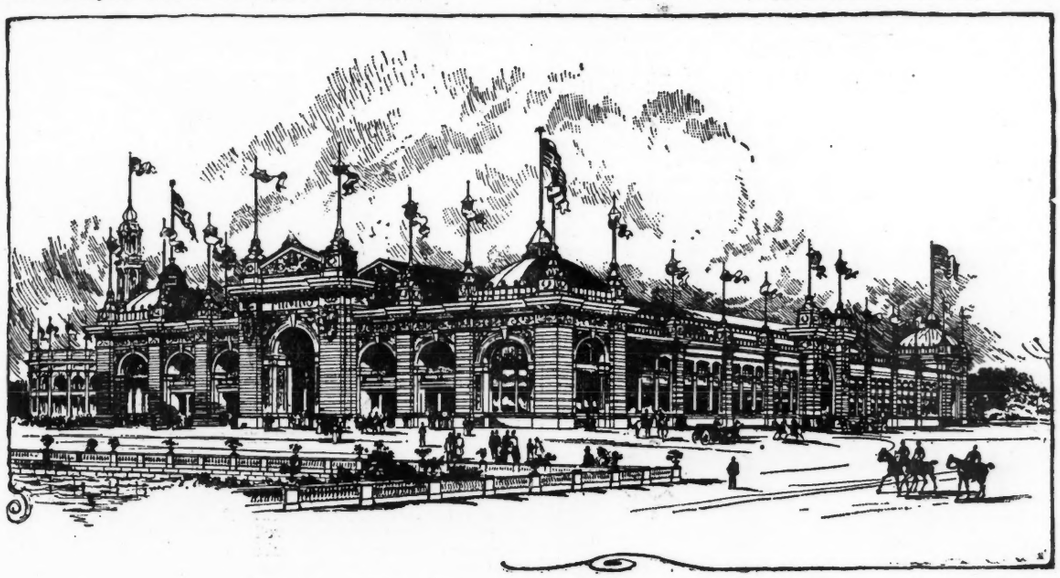
by a movable ratchet, so that a simple movement of the projecting panel, up or down, makes the driver suitable at will for use on either a right or left-hand screw. The internal parts are all of tempered steel, and the combination is a strong, light and rapid action driver. It is made in six sizes, from 1½ in. to 8 in., these sizes relating to length of blade.

Sodium Manganates.—A series of compounds of soda and manganese dioxide are obtained by heating sodium manganate to temperatures from 300° C. to 1,300°, says G. Rousseau, *Comptes Rendus*, 112, p. 525. When crystallized from water they have the following compositions: At 300° C., $8MnO_2 . Na_2O . 5H_2O$; at 800° C., $12MnO_2 . Na_2O . 4H_2O$; at 1,000° C, $16MnO_2 . Na_2O . 8H_2O$; at 1,200°–1,300°, the same as at 300° C., and at white heat the same as at 800° C.

THE MINES AND MINING DEPARTMENT WORLD'S FAIR.

The committee in charge of the Department of Mines and Mining of the Columbia Exposition, at the head of which as chairman is F. J. V. Skiff, of Colorado, is working upon a system that is elaborate, extensive, exhaustive and complete in all its details. The department is one of the thirteen great subdivisions of the fair, and from an insight into the methods employed and ends which are attainable, it promises to take front rank. All the principal mineral-producing states have expressed a determination to make their exhibit in this department as complete as possible. Foreign nations which have signified an intention of participating in the general exposition—and there are many of them, with more to hear from—nearly all lay great stress upon the Mines and Mining Department. It is impossible thus early to outline the character and extent of these proposed exhibits, as requisitions for space, the starting point, have not all been received, while statements of the nature of the exhibit, in many cases, have not been formulated. The Latin-American states have been particularly prompt in arranging for representation, a large portion of which will be of a nature to present their mineral resources The following, showing the amounts of money appropriated, bears testimony of this fact: Mexico, $750,000; Guatemala, $120, 00: Honduras, $20,000; Salvador, $30,000; Nicaragua, $20,000; Costa Rica, $50,000; Colombia, $100,000; Ecuador, $125,000; Peru, $25,000; Chile, $100,000; Brazil, total cities and states. $450,000; British Honduras, $7,000; Jamaica, $10,000; Cuba, $25,000; Trinidad, $10,000; Danish West Indies, $10.000; Bolivia, $150,000, making a total of $1,980,000.

The United States takes first rank among the nations of the world in the development of its mineral deposits and the treatment of most kinds of ores. and its display cannot fail to be instructive. The different states, especially those of the south and west have entered upon the plan of making an exhibit, that in point of detail will give to the uninitiated a most complete idea of the nation's resources.



MINES AND MINING BUILDING. VIEW TAKEN FROM NORTHWEST.

The committee in charge is at present at work upon an allotment of floor space. The classification has been made. The mining department ranks as "E." It is subdivided into groups, which in turn are subdivided into classes. The various departments of the Exposition are designated by letters from "A" to "M" inclusive, the groups from 1 in "A" department, to 172 in "M;" the classes from 1 in "A," to 917 in "M." The different groups in the department are as follows: No. 42, minerals, ores, and native metals; 43, building stone, marbles, ornamental stones, and quarry products; 44, mineral combustibles, coal, petroleum, natural gas, etc.; 45, grinding, abrading, and polishing substances; 46, graphite and its products, clays and other fictile materials and their direct products; asbestos, etc.; 47, limestone, cements, and artificial stone; 48, salts, sulphur, fertilizers, pigments, mineral waters, and miscellaneous useful minerals and compounds; 49, metallurgy of iron and steel, with the products; 50, aluminum and its alloys; 51, copper and its alloys—metallurgy of; 52, placer, hydraulic, and "drift" mining; 53, quarrying and working stone; 54, tools and appliances for underground mining, timbering, and supporting; 55, boring and drilling tools and machinery, and apparatus for breaking-out ore and coal; 56, pumps, engines, and apparatus used in mining for pumping, draining, and hoisting; 57, moving, storing, and delivering ores, coal, etc.; 58, apparatus for crushing and pulverizing; 59, sizing appliances; 60, extraction of gold and silver by milling; 61, extraction of gold and silver by lixiviation; 62, extraction of gold, silver, and lead by fire; 63, metallurgy of tin, tin-plate, etc.; 64, metallurgy of zinc, nickel, and cobalt; 65, metallurgy of antimony and other metals not specifically classed; 66, assaying apparatus and fixtures; 67, history and literature of mining and metallurgy.

The Mining Building, which is 700 ft. long and 350 ft. wide, is situated at the southern extremity of the western lagoon or lake, between the Electricity and Transportation Buildings. Its architecture has its inspiration in early Italian renaissance, but the subject has been freely treated. In plan the building is simple. On the ground floor it embraces on the general exhibit space, spacious vestibules, restaurants, toilet rooms, etc. On each of the four sides of the building are placed the entrances, those of the north and south fronts being the most spacious and prominent. To the right and left of each entrance, on the inside, start broad flights of stairs leading to the galleries. The galleries are 60 ft. wide and 25 ft. high from the ground floor, and are lighted on the sides by large windows, and from above by a high clear-story which extends entirely around the building. The principal fronts display large arched entrances, embellished with sculptural decorations, emblematic of mining and its allied industries. At each end of these fronts are large square pavilions surmounted by domes which mark the four corners of the building, and are lighted by large arched windows. Between the main entrance and the pavilions are decorated arcades, forming an open loggia on the ground floor and a deeply recessed promenade on the gallery floor level. These covered promenades are each 25 ft. wide and 230 ft. long, and from them is had access to the building at numerous points. These loggias on the first floor are faced with marbles of different kinds. This material will be considered as part of the mining exhibit, and so used as to have marketable value at the close of the exposition. The loggia ceilings will be heavily coffered, and decorated in plaster and color.

The ornamentation of the building is massed at the prominent points of the façade. The exterior presents a massive though graceful appearance. The main fronts are 65 ft. high from ground to top of cornice, and the main central entrances are 90 ft. to apex of pediment. The long sides of the building are treated in a simpler manner than the main fronts. Large segmental windows extend through the galleries and are placed between the broad piers, affording an abundance of light to the space beneath. The two-storied portion of the building, of which the gallery forms the upper floor, extends entirely around the structure, and is 60 ft. wide. It is built of wood and iron.

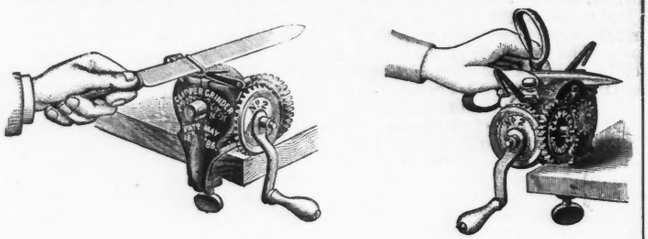
The interior space thus enclosed is one story high, 630 ft. long and 230 ft. wide, with an extreme height of 100 ft. at the center and 47 ft. at the sides. It is spanned by steel cantilever roof trusses, supported on steel columns placed 65 ft. apart longitudinally, and 115 ft. and 57 ft. 6 in. transversely, thus leaving clear space in the center of the building 630 ft. long and 115 ft. wide, with the side divisions, each 57 ft. 6 in. wide and 630 ft. long. This central space is encumbered only with the 16 supporting steel posts. The cantilevers are of pin connection. Their inner and higher ends are 46 ft. apart, and the space between them is spanned by riveted steel trusses, with an elliptical lower chord. These trusses are designed so as to form a clear story 12 ft. high, with a vertical sash extending the entire length of the central space, 630 ft.; said space terminating at each end with a great glass gable, setting back 60 ft. from front ends of the building. The wide spacings of the cantilever necessitated an extensive system of longitudinal purlines of the riveted lattice type. A great portion of the roof is covered with glass. It is said that the cantilever system, as applied to roofs, has not been used heretofore on so large a scale. The building is the only one of the Exposition group, excepting the large domes, that has steel roof trusses. The foundation of the building is built of wood, laid below frost, in the sand. A layer of 3-in. plank is first put down and then crossed with heavy timbers, which receive the posts, each supporting point being broadened to suit the load, admitting not to exceed two tons pressure per square foot on the earth. The exterior of this building, like all the others, will be of "staff," similar to that used in facing the recent Paris Exposition buildings. Up to date the foundation has been placed and the west side of the building has been constructed. A considerable portion of the roof is going on.

It is to be hoped that foreign nations as well as home interests will give this department the attention it deserves. An admirable opportunity is furnished for giving to the people of the world a knowledge of the mineral resources of their respective countries.

Hungarian Mining Statistics.—Hungary possesses rich deposits of iron, copper, lead, quicksilver, gold, silver, nickel, cobalt, antimony, tin, and zinc. After iron, however, only the extraction of copper, lead, gold, and silver forms industries of any importance. Apart from the iron industry, the country may be divided into three metal-working districts, namely, Schemnitz, Nagybanya and Zolatna. The total quantity of fine gold produced in Hungary in 1890 was, according to *Iron*, 2,300 kilos, valued at 3,214,080 florins (the florin is equivalent to 38·1 cents); and of fine silver to 16,660,104 kilos, valued at 1,499,409 fl. The output of lead in Hungary in the year 1890 amounted to 1,067,000 kilos, valued at 188,503 fl.; of litharge, 717,900 kilos were produced, valued at 94,837 fl.; of copper, 266,900 kilos, valued at 169,073 fl.

THE CLIPPER KNIFE AND SCISSORS GRINDER.

Tool grinding in all its branches is work that requires skill and experience, and it is safe to say that not one in one hundred can grind a knife properly; while to grind a pair of scissors is a still more difficult task. Montgomery & Co., of New York, are introducing a grinder possessing the following features, as shown in the cuts presented herewith: The machine, which is so arranged that anyone can use it, is especially arranged for knife or scissors, guides being attached to hold them. It is



novel in its construction, having a compartment in the center designed to hold water, the latter being distributed through the pores of the wheel by centrifugal force, thus insuring uniformity of moisture on the surface, and overcoming the annoyance of flying water. The machine is adapted for grinding all kinds of small tools, and the guides make it possible for any one to use it. The wheel is made of pure sapphire corundum, four inches in diameter and one inch thick, and is so geared that one revolution of the crank turns the wheel six times.

THE DAVID'S COUNTING REGISTER.

A simple form of automatic register has recently been devised by the David's Machine Company, of New York, the interior mechanism of which is shown in Figs. 2 and 3. The unit ring is connected directly to the driving shaft, transferring motion to the next ring by means of a geared section, having two teeth as shown in Fig. 2. The small gear, Fig. 2, also engages with internal gear on the next ring. When the geared section of the latter meets the small gear the ring is turned one-tenth its circumference and then is locked by means of the triangle shown back of the gear in Fig. 2. This triangle is released only at the point where the two gears engage, this being accomplished by a small notch being cut in each ring directly under the two teeth of the geared section. Thus the register is permanent, as this locking device prevents changing, and precludes the possibility of tampering.

The instrument is adjustable, either right or left hand, and can be used to register from 10 to 1,000,000. The instrument may also be used to indicate reciprocating as well as rotary motion, the motion of the reciprocating part being communicated to the spindle by a ratchet. This particular feature makes it specially adapted for use on pumps, where it is desirable to know the work being done. The instrument may also be used to record the number of miles a locomotive may travel, or to indicate the

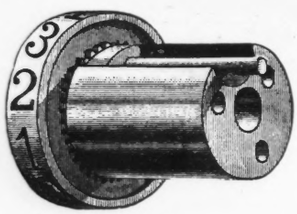
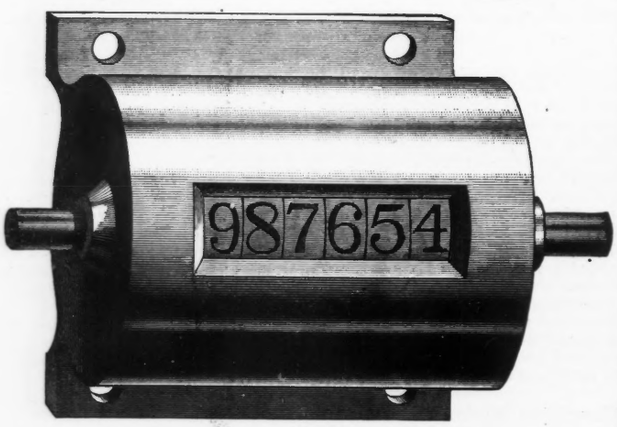


Fig. 3.

Fig. 2

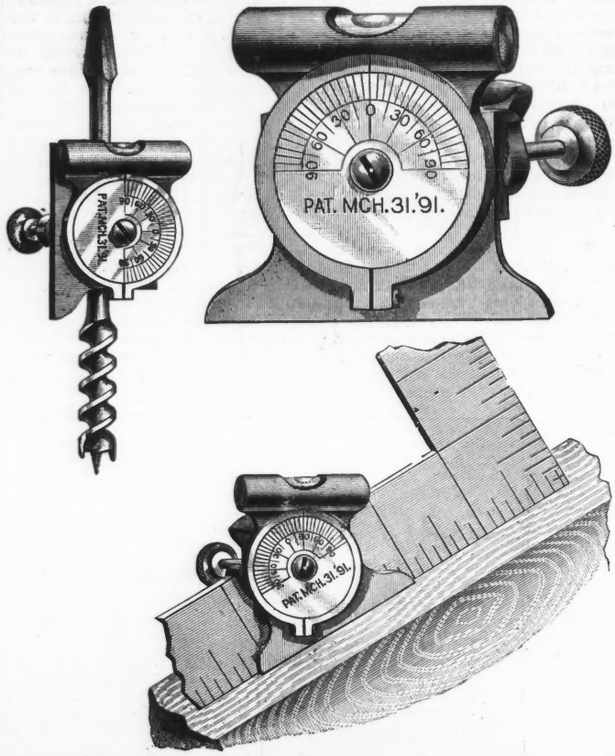


revolutions an engine may be running. It is applicable also to use as a speed indicator, having a working capacity up to 3,000 revolutions per minute, to which point it has been thoroughly tested.

Ozokerite in Oregon.—Mr. Melville Atwood, of San Francisco, reports the discovery of ozokerite in Southern Oregon, says the *Mining and Scientific Press*. The mineral has a very different appearance from that found in Utah. It burns very freely, with a dense smoke but no odor. It is of yellowish white color and is said to be of better quality than that of Utah.

THE TOWER POCKET LEVEL.

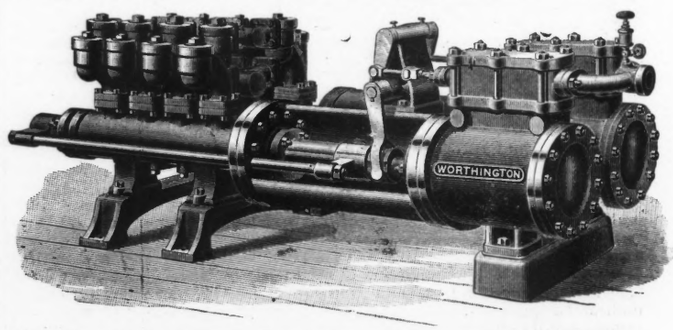
A novel combination of level plumb, bevel contractor and bit guide is the subject of the accompanying illustrations, which show the tool and some of its applications. A graduated dial occupies the center plate as shown; the level is moveable to the right or left at will, the angle being at once indicated by the scale. It is also arranged for application on a straight edge, with which it may be used as a level or plumb, in the latter case the level being set at 90°. The back of level is



also slotted for application on an ordinary bit, and thus a hole may be bored correctly at any desired angle. Further applications of this ingenious tool, which is manufactured by Tower & Lyon, of New York, will suggest themselves.

A NEW WORTHINGTON MINING PUMP.

A new mining pump especially designed to withstand heavy pressure, is now being introduced by Henry R. Worthington, of New York, whose pumps have deservedly achieved a wide reputation. In this new pump the water cylinder parts are subdivided as much as possible, in order to overcome the general objection to the old type of mining pump, viz., that of having to replace the entire water ends in case of fracture or break, through accident or carelessness. This pump has eight suction and eight discharge valves, the strain thus being subdivided. As each



valve may easily be removed, the expense and delay involved in an accident are very slight, as compared with the older type of station pumps. Each valve is separate and distinct, and has a pot chamber of its own.

The machine, illustrated in the accompanying engraving, has a capacity of working against 700 lbs. pressure. It has a steam cylinder 12 in. in diameter with 10 in. stroke, and water cylinders 5 in. in diameter. In all pumps of this new type the valve chambers, plunger packing, etc., are readily accessible, and all working parts are made to gauge, so as to be readily replaced when occasion demands. These pumps are also designed for use with hydraulic rams, on oil pipe lines, etc.

The Gasification of Tar.—By injecting a spray of tar into a red-hot retort half filled with coke, by means of a Körtings jet supplied with superheated steam, says Herr Merkens in *Journal für Gasbeleuchtung* (34, 188), the whole of the tar may be converted into gas without leaving any residue in the retort. The gas has a high candle power, and does not need the use of expensive enriching material.

THE BRADLEY AUTOMATIC DUMPING AND RIGHTING CAR.

The Laughlin & Junction Steel Company, of Mingo Junction, Ohio, is using an automatic dumping and righting cinder car, designed by Mr. W. H. Bradley, superintendent of the company, which is said to be giving great satisfaction. The car frame is composed of longitudinal beams, carrying the axles of the wheels, and having at the ends upright standards, on which is hung the body of the car by means of trunnions, as is shown in Fig. 1. From the main standards extend arms by which the door of the car is pivotally supported by trunnions. The door, at its top, is provided with a projecting arm which is connected with the body of the car by a link.

The car is so hung that the center of gravity is on the side opposite the door when empty, but on the side next the door when loaded, it being prevented from tipping by a suitable catch. To dump the car the catch is loosened, and the car tips into the position shown in Fig. 2, the door being upheld by the standards, and the lever and link connecting it with the body of the car. When the car is in this latter position its center of gravity is on the side opposite the door and as soon as its load is discharged it rights itself.

The change in the center of gravity of the car, loaded and empty, is brought about by the shape of the body, which is wider at the door than at the opposite side. This shape also enables the car to discharge itself more quickly and more cleanly. The cars are made of wood or iron plate according to the use to which they are to be put. At the Laughlin & Junction works these cars have been in service for two years, and it is stated have required practically no repairs.

THE WAYS OF TRADE IN BRAZIL.

The successful reciprocity negotiations have opened the doors of Brazilian trade to wonderful opportunities for our people if they will only properly and intelligently take advantage of them, writes Hon. E. H. Conger, United States Minister to Brazil, from Rio de Janeiro to the Department of State. Diplomacy and legislation have done very much. The American people must now do something for themselves, and it must not be done blindly. The market is here, but it is fixed and controlled by habits which cannot be easily changed nor disregarded. The successful Europeans have always observed these trade customs. They make such goods as this trade demands; they manufacture in such style, quality and quantity as this people desire; they pack them to suit the convenience or tastes of their customers, sell upon such terms as they demand, and adopt the methods of exchange and payment required.

Our people can secure the trade which reciprocity offers them in no other way; but once secured, acquaintance made, and business and confidential relations established, our better methods may undoubtedly be introduced with mutual benefit. This will take some time, patience and expense, but the returns will be sure, ample and not long delayed.

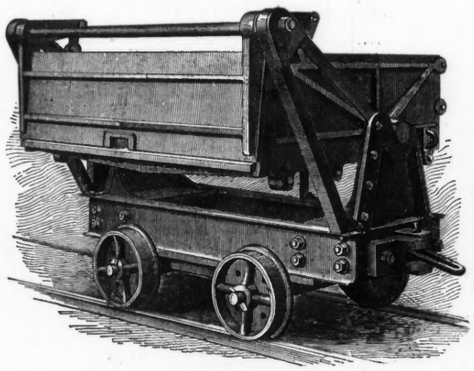
The flour trade is already well understood and established, and now, with free entry, needs only to be pushed in order that our mills may supply the trade which at present is largely controlled by those in Trieste. Bacon and hams are in great demand here, and, while we can, and do, make as good as any in the world, yet little of ours is seen here, except it has crossed the Atlantic and been properly packed for an equatorial voyage and for this climate. They can and should be properly cured and packed at home and come direct. The same may be said of butter, cheese, meal and fish. It is not uncommon to see American butter and bacon in this market which have been shipped to Europe and there packed as our people might and should have done in the first place, and then reshipped and sold here with the necessary cost of second packing and a useless transatlantic voyage added to the price.

The people of Brazil insist upon cotton goods of a particular weight, width, quality and color, and they must be folded and packed exactly as they desire; matters of little import or expense to our people, yet absolutely necessary to secure the trade. Wall paper, which is much used here, pays custom duties by weight, and so must be the thinnest possible. Carriages, harness, saddles, furniture, tools, implements, machinery and manufactures of all kinds, must be of peculiar character and style; but if of satisfactory kind none are more popular than American. American locomotives are almost universally used, and American axes command the highest price; so popular, indeed, are the products of our skill and labor that many European manufacturers mark their goods with American brands in order to facilitate their sale.

Nearly all customs duties here are fixed by gross weight; the rough boards, hoops and nails of which the packing boxes are made pay the same duty per pound as the delicate or valuable merchandise inside. The English and other Europeans early learned this, and now display exceeding cleverness in fashioning light, cheap and durable coverings for their goods. Our people must do likewise.

A knowledge and adoption of the system of credits in vogue here is also indispensable. The merchants here sell on long time, and they must buy in the same way; but they are accustomed and willing to pay liberal interest on their accounts. The reasonable coöperation of our exporters and bankers surely can and should arrange for this with mutual profit.

Several instances of unprofitable and disastrous experience with American products in this market have come to my knowledge, but the failure in every case could be traced to the ignorance or carelessness of our people in the matter of either manufacturing, packing or shipping.



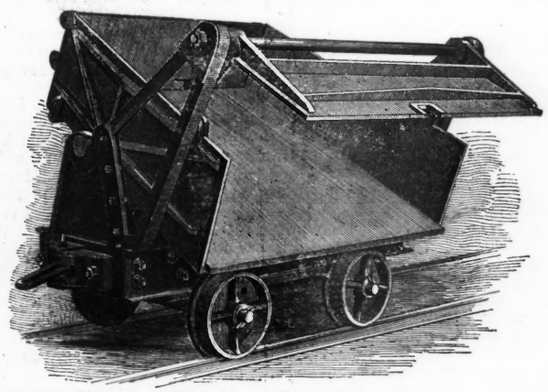


Fig. 1. The Bradley Automatic Dumping and Righting Car. Fig. 2.

THE COMPTOMETER.

The comptometer is a marvellous mechanical computator, enabling one to perform lengthy and complicated mathematical computations by the mere operation of keys as in a typewriter. It is one of the most extraordinary machines ever devised to perform brainwork by machinery. It performs addition, subtraction, multiplication, division and square and cube root, not only in whole and decimal numbers, but also in common fractions. It consists of a series of numeral wheels, each standing for an order of numbers, so arranged that only one of the figures on their periphery can be seen at a time. Acting upon the numeral wheels is a bank of keys, by the operation of which any mathematical computations can be performed without any mental calculation whatever. The answer appears upon the numeral wheels or register.

In the smallest sized machine, which is 14½ in. long, 7½ in. wide and 5 in. high, weighing 8½ lbs., there are eight columns of keys. The first column to the right stands for units (1, 2, 3, etc.; the next column of keys stands for tens (10, 20, 30, etc.); the next for hundreds, and so on up to the eighth column, which stands for tens of millions. Thus there is a key for any number consisting of a digit and one or more ciphers up to 90,000,000. Each key has two figures on its top, a large and a small one. In addition and multiplication the keys are struck with reference to the large figures, which are black, while in subtraction and division, square root, etc., the keys are struck with reference to the small figures, which are red.

The comptometer was invented by Mr. Dow B. Felt, and is manufactured by the Felt & Tarrant Manufacturing Company, 52 Illinois street, Chicago, Ill. It is now in use in many offices, including those of the Coast and Geodetic Survey, where long and difficult mathematical calculations have to be performed.

ELECTRIC TRANSMISSION OF POWER FROM NIAGARA FALLS TO CHICAGO.

The idea of transmitting power from Niagara Falls to Chicago by electricity has been mooted by various electricians, particularly in connection with the proposed electrical display at the World's Fair, and Mr. H. Ward Leonard, the well-known electrical engineer, has made some interesting calculations on this subject which he recently communicated to *Electricity*. The distance between the Falls and Chicago is about 475 miles, or more than four times the distance between Lauffen and Frankfort-on-the-Main, the scene of the experiment in long-distance transmission of power which has just been successfully inaugurated.

Mr. Leonard proposes the use of a potential of 80,000 volts at the generating end of the line. Assuming that difference of potential to be the working pressure adopted, and allowing 40% loss of power in the conductor, the cost of the generating and transformer plant at the Falls would be $55 per H. P. delivered in Chicago, the cost of the conductor would be $110 per H. P. delivered in Chicago, and the cost of the motors and converters at the receiving end would be $33 per H. P. delivered in Chicago. The total cost of the plant would be, therefore, $198 for each unit of power delivered in Chicago.

There is little doubt that it would be practicable to work with a pressure of 80,000 volts. The experiments in Germany with pressure as high as 30,000 volts have been so successful that there is no question that the higher voltage could be easily managed when the necessity for using it arises. Even assuming that a pressure of 30,000 volts could be used, the transmission of power over the greater distance would still be quite possible, but to maintain the loss at 40% a considerable increase in the size of the conductors would be necessary, making the cost for conductors $782 per H. P. instead of only $110 with 80,000 volts.

With regard to the plant required Mr. Leonard considers that it would be perfectly practicable to use alternate current generators, working at a pressure of 1,000 volts, which would be connected by step-up transformers raising the potential to the pressure desired. At the receiving end of the

line, the circuit would be connected to step-down transformers by means of which the pressure would be reduced to the normal of the generating dynamos, viz., 1,000 volts. If found desirable the pressure might be reduced even lower than 1,000 volts at the receiving end of the line. The current thus converted would be used to operate alternating current motors designed to run synchronously with the generators. These motors would have to be set in operation by exterior means at first until the proper speed was obtained, when the current would be turned on and the motor would then be receiving its power from the generators at Niagara Falls.

For flexible distribution of the power developed by the alternate current motors in Chicago the best plan suggested is to couple continuous current generators to the motors. The current obtained from these motor-driven generators could then be utilized in any desired manner for lighting arc or incandescent circuits, for operating small motors, and so on. Mr. Leonard estimates that if a plant of the above description were operated at 40% loss in the conductors a commercial return would be established in Chicago of from 40% to 50% of the original power.

THE OXIDATION OF CHROMIUM ORES AND THE MANUFACTURE OF CHROMATES.

J. Massignon and E. Vatel, in *Bull. Soc. Chim.*, 1891, 5, p. 371–376, describe a new process for the oxidation of chromium ores and the manufacture of chromates; an abstract of this article was published in the *Journal of the Society of Chemical Industry* from which we take the following:

The present method of manufacturing bichromates consists in making an intimate mixture of finely powdered chromium ore with a salt of potassium or sodium and a large excess of lime, and heating it with constant rabbling in a reverberatory furnace to a very high temperature for 6 or 8 hours in presence of a large excess of air. The mass is then cooled, lixiviated with water, and the solution treated with sulphuric acid and crystallized. The disadvantages attached to this process are that it necessitates (*a*), a large consumption of fuel; (*b*), expensive manual labor for rabbling; (*c*), loss of alkalis by volatilization and combination with the gangue, and especially with the silica of the ore, thus rendering poor or silicious ores unfit for treatment; (*d*) loss of ore which escapes oxidation.

The authors have worked out a new method based on an observation made by Pelouze that chromic oxide combines with lime, forming a calcium chromite, which absorbs atmospheric oxygen at the ordinary temperature, and is converted into the corresponding chromate.

The process is conducted as follows: A mixture of the ore and limestone is finely powdered, well mixed, made into a paste with a concentrated solution of calcium chloride, and thoroughly incorporated with a paste consisting of lime slaked in a similar solution of calcium chloride. The lime or limestone is used in a proportion rather more than sufficient to combine with the whole of the chromium when oxidized to the state of chromic acid, and one equivalent of calcium chloride is used for every three equivalents of the total lime present. The mixture made in the manner described sets promptly, and is cut into cakes or bricks which are first partially dried in the open air, and then thoroughly dried and fired in a limekiln until the limestone is completely converted into caustic lime. The calcined bricks are piled in sheds and exposed to the action of the atmosphere for a month or more, according to the temperature and humidity of the atmosphere, the supply of air, etc. If too much calcium chloride is added, the bricks will run together during the calcination instead of remaining open and porous, and the product will be hygroscopic. The presence of a small quantity of aqueous vapor in the air is essential, the oxidation being completely arrested in perfectly dry air; in presence of an excess of water, on the other hand, a retrograde action sets in, part of the chromic acid already formed being reduced to the state of chromic oxide.

When the chromium is completely oxidized the bricks entirely lose their green tint and acquire a yellow coloration. At this stage they contain calcium chromate, calcium chloride, excess of lime, and calcium carbonate, together with the ferric oxide and gangue contained in the ore, part of which also enters into combination with the lime. The bricks are then systematically lixiviated with successive quantities of hot water, by which means the chloride of calcium (which is 100 times more soluble than the chromate) is obtained in a concentrated solution containing only small quantities of the chromate. The residue from this lixiviation is treated with sulphate or carbonate of soda or potash, filtered, and the solution crystallized at once or previously treated with sulphuric acid for the preparation of bichromates. Chromic acid may also be prepared from the residue by direct treatment with sulphuric acid. The chromic acid in the chloride of calcium liquors may be recovered either by again using the liquors in the process of manufacture or by precipitating them with a lead salt and separating the lead chromate (chrome yellow) which is thus obtained in a most economical manner.

The St. Clair Tunnel.—The opening of the St. Clair Tunnel on the 19th ult. was duly celebrated. The tunnel under the river is 6,026 ft. long. It is lined throughout with solid cast iron plates, bolted together in segments, each segment being 5 ft. long, 18 in. wide, and 2 in. thick, with flanges 5 in. deep, the whole lining weighing together 28,000 tons. The bolts and nuts for connecting the segments together weigh 2,000,000 lbs. The permanent way through the tunnel is laid with steel rails. The interior diameter of the tunnel is 20 ft., and ample means have been provided for thorough ventilation and for lighting it throughout, when required, by the electric light. The road is practically level under the river, with approaches at each end on gradients of 1 in 50. The total length of the tunnel and approaches is 11,553 ft.

On the Allotropic Transformation of Metals.—From the experiments of Mons. H. Le Chatelier, it results, according to *Bulletin de la Société Chimique de Paris*, 3, V.. 11., that metals, as regards their molecular transformation, behave exactly like the other bodies studied in chemistry—that is, the transformations either take place abruptly, the metal behaving in that case like all crystalline bodies (definite compounds or isomorphous mixtures, or progressively in the case of alloys which behave like amorphous mixtures (solutions or glasses). The existence of these two states in metals is shown in many cases by a simple inspection of the fracture. The extreme variability of the mechanical properties of metals is explained without the intervention of any special isomerism by remarking that they depend not only on the chemical state of the metal, but on the form and the dimensions of the crystals or granules of metal which are in juxtaposition, and on the manner of distribution of the impurities.

Soldering Iron with Nickel.—Herr Fleitmann's experiments in soldering iron with nickel have yielded some important results with regard to the volatility and atomic penetration of the former metal, says *Iron*. The adhesion of the two metals was so intense that it became impossible to separate them by mechanical action, and chemical analysis proved a perfect assimilation, although the soldering had been effected at a temperature of from 500° to 600° below the fusing point. Other tests established the volatility of iron when heated to cherry redness. Two plates of iron and nickel, superposed, were submitted to the same degree of heat; the iron passed into the nickel to a notable extent without soldering or adhesion of the surfaces resulting. On the whole surface of the sheet of nickel an alloy with the iron was formed, which, in the case of one millimetre sheets, penetrated to 0·05 of their thickness, and contained on the average 24% of that metal, the proportion being naturally stronger on the surface. An important fact is that the passage of the iron to the nickel is not reciprocal. While the combination disclosed itself on the surface of the nickel plate by the argentiferous lustre of an alloy of iron with 20% of nickel, the iron plate remained intact, and preserved the sombre appearance which it had received from the scaling.

DIVIDENDS PAID BY MINING COMPANIES DURING SEPTEMBER AND FROM JANUARY 1ST, 1891.

Name of Company.	Paid in Sept.	Paid since Jan. 1st.	Name of Company.	Paid in Sept.	Paid since Jan. 1st.
Adams, Colo.	$7,500	$52,500	Little Rule, Colo.	$10,000	$90,000
Alaska-Treadwell, Alaska	....	225,000	Maid of Erin, Colo.	139,725	139,725
Alice, Mont.	.....	50,000	Mammoth, Utah	.....	240,000
American, Idaho	.....	100,000	Maryland Coal, Md.	.....	42,000
American Belle, Colo.	.....	50,000	Mayfield, Utah	.....	27,000
American Coal, Md.	45,000	90,000	Mayflower Gavel, Cal.	25,000	75,000
Aspen, Colo.	.....	80,000	May Mazeppa, Colo.	.....	130,000
Atlantic, Mich.	.....	40,000	Mollie Gibson, Colo.	100,000	600,000
Aurora Iron, Mich.	....	100,000	Montana Ltd., Mont.	.....	80,100
Bald Butte, Mont.	.....	40,000	Morning Star, Colo.	.....	50,000
Baliarat-Smuggler, Colo	....	6,000	Morning Star D., Cal.	2,400	19,200
Bannister, Mont.	.....	48,000	Mt. Diablo, Nev.	.....	20,000
Bates-Hunter, Colo.	7,500	45,000	Mt. McClellan, Colo.	.....	12,540
Best Friend, Colo.	10,000	40,000	Napa, Cal.	.....	30,000
Bimetallic, Mont.	70,000	630,000	New Guston, Colo	.....	220,000
Boston & Mont., Mont.	.....	375,000	Newton, Cal.	.....	5,000
Buli-Domingo, Colo.	8,000	29,000	North Banner Cons., Cal.	....	20,300
Calliope, Colo.	....	5,000	North Commonwealth, Nev.	.....	25,000
Calumet & Hecla, Mich	500,000	1,500,000	North Star, Cal	.....	50,000
Centennial-Eureka, Utah	30,000	240,000	Ontario, Utah.	75,000	675,000
Central, Mich.	.....	20,000	Osceola, Mich.	.....	100,000
Champion, Cal.	3,400	32,300	Parrot, Mont.	18,000	378,000
Clay County, Colo.	4,000	36,000	Petro, Utah	.....	25,000
Cœur d'Alene, Idaho.	10,000	60,000	Plumas Eureka.	.....	35,150
Con. Cal. & Va., Nev.	.....	216,600	Quicksilver, Pref., Cal.	.....	118,000
Copper Bell, Mont.	.....	13,500	Quincy, Mich.	.....	400,000
Coptis, Nev.	30,000	55,000	Red Cloud, Idaho.	10,000	83,000
Cortez, Nev.	.....	250,000	Retriever, S. Dak.	.....	20,000
Daly, Utah.	37,500	337,500	Rialto, Colo.	3,750	24,750
Deadwood—Terra, S. D.	10,000	20,000	Richmond Cons., Nev.	.....	33,750
DeLamar, Idaho.	.....	72,000	Rocky Fork Coal, Mont.	.....	100,000
Derbec Blue Gravel	10,000	20,000	Running Lode, Colo.	.....	20,000
Dexter, Nev.	.....	25,000	San Miguel Con. Colo.	....	375,000
Elkhorn, Mont.	100,000	300,000	Sheridan.	.....	60,000
Franklin, Mich.	.....	80,000	Sierra Buttes, Cal.	.....	25,000
Glengarry, Mont	.....	10,000	Silent Friend, Colo.	.....	47,000
Gold Rock, Colo.	3,750	15,000	Silver Glance, Colo	.....	4,500
Granite Mountain, Mont	100,000	1,100,000	Silver Mg. of L. V., N. Mex.	.....	75,000
Hecla Con., Mont.	15,000	135,000	Tamarack, Mich.	.....	600,000
Helena & Frisco, Mont.	....	90,000	Teal & Poe, N. Mex	.....	5,250
Helena & Victor, Mont.	.....	50,000	Whale, Colo.	.....	5,400
Homestake.	12,500	112,500	W. Y. O. D., Cal.	.....	4,500
Horn Silver, Utah.	50,000	150,000	Yankee Girl.	.....	260,000
Idaho, Cal.	6,300	73,150			
Iron Mountain, Mont.	.....	25,000			
Jackson, Nev.	.....	5,000	Total.	1,454,325	12,398,005

PATENTS GRANTED BY THE UNITED STATES PATENT OFFICE

The following is a list of the patents relating to mining, metallurgy, and kindred subjects issued by the United States Patent Office.

TUESDAY, SEPTEMBER 29TH, 1891.

460,108. Manufacture of Seamless Compound Ingots and Wire made therefrom. Levi L. Burdon, Providence, R. I., Assignor to the Burdon Seamless Filled Wire Company, same place.
460,193. Smelting Furnace. William L. Austin, Toston, Mont.
460,226. Coke and Cinder Conveyor. William C. Van Horn, South Pittsburg, Tenn.
460,284. Device for Varying the Speed of Machinery. Conrad M. Conradson, Madison, Wis.
460,305. Amalgamating Apparatus. Homer W. Fiske, New York, N. Y.
460,329. Machine for Boring Soil. James Canan, Port Colborne, Canada.
460,360. Water Motor. Walter B. Higgins, San Francisco, Cal.
460,401. Drilling Machine. Augustus Renetzky, Lincoln, Ill.
460,405. Process of Treating Iron. John A. Stephan and Richard Southerton, Birmingham, England.
460,425. Portable Hoisting Machine Edward Burns, Montello, Wis.
460,460. Speed Indicator. Joseph Boyer, St. Louis, Mo., Assignor to the Boyer Rail way Speed Recorder Company, same place.
460,509. Process of preparing and tempering slurry for Portland cement. George H. Kalteyer, San Antonio, Tex., and George W. Bartholomew, J., Bellefontaine, Ohio; said Kalteyer assignor to Harry S. Bartholomew, Bristol, Conn.
460,512. Excavating machine. Daniel Murphy, Sioux City, Iowa, assignor to himself and Edwin Children, East Dubuque, Ill.
460,514. Electric crane. William A. Stadelman, Philadelphia, Pa.; assignor to the Equitable Engineering and Construction Company, same place.
460,522. Rotary engine. Montague J. Bretherton, Fort Worth, Tex.
460,545. Method of driving tunnels or sinking shafts. Moritz Wolff, Berlin, Germany

PERSONALS.

Mr. John W. Mackay, of San Francisco, Cal., was in the city this week.

Mr. Frederick Neher has been appointed assistant instructor of chemistry at the College of New Jersey, Princeton, N. J.

Prof. E. H. Barbour, Grinnell, Iowa, has accepted the professorship of geology in the State University of Nebraska, at Lincoln.

Mr. W. J. Baldwin, an instructor in the Michigan Mining School, has been appointed professor of mining engineering at the University of Illinois.

Mr. S. E. Raunheim, of New York, general manager of the Tuerto Mountain Gold & Copper Company, of New Mexico, has returned from Santa Fé.

Dr. Alexander Trippel, mining engineer and metallurgist, of Globe, Ariz., is at present in this city, and will probably remain here for several weeks.

Mr. John S. Dodd has resigned the superintendency of the Alhambra mine, at Black Hawk, N. M., and Mr. H. Fitzsimmons is now in charge of the property.

Messrs. Isaac Trumbo and Alex. Badlam, of San Francisco, Cal., who are largely interested in Utah mines, were in that Territory last week inspecting their property.

Mr. Leon P. Feustman, agent of the Consolidated Kansas City Smelting & Refining Company at Catorce, San Luis Potosi, Mexico, was in New York this week.

Mr. Edward Eddy, of Denver, Colo., general manager of the Omaha and Grant Smelting and Refining Company, has returned from a two months' trip to Europe.

Mr. Charles Garnett, of Hot Springs, Ark., will exhibit at the World's Fair his extensive collection of mineralogical specimens, including the famous Hot Springs diamonds.

Mr. T. F. Cole, general manager of the Schlesinger mines, East Negaunee, has been appointed general manager of the Chapin mine, at Iron Mountain, Mich., vice C. H. Cody, resigned.

Mr. L. W. Robinson, of London, England, has been elected secretary of the Ruby Mining Company, Limited of Nevada, Mr. J. Forster Hamilton having resigned the post on account of ill health.

Messrs. W. H. Stevens, of Detroit, Mich., and L. H. Pierce, of Chicago, Ill., directors of the Iron Silver Mining Company, were in Leadville, Colo., last week, inspecting the property of the company.

Mr. Edward Davis, owner of extensive collieries in Wales, is visiting this country for the purpose of making a thorough inspection of the methods employed in mining in the Pennsylvania coal fields.

Mr. G. de la Bouglise, mining engineer of Paris, representing the Société Anonyme des Mines de Lexington, is at present in Montana, making his usual annual visit of inspection to the company's properties at Butte, Mont.

Mr. James F. Beattie, mining engineer, formerly of Newhurgh, W. Va., has been appointed general superintendent of the Gaston & West Fairmount (W. Va.) mines and coke works, with headquarters at Fairmount.

Mr. Verplanck Colvin, for many years at the head of the Adirondack survey, the reports of which we have repeatedly had occasion to commend, is one of the nominees for the office of State Engineer. Mr. John Bogart, the present excellent incumbent of the office, declined a renomination.

Mr. W. C. Wynkoop, mining engineer and editor of the *Mining Industry and Trademan*, of Denver, Colo, is visiting Boston and New York. He will sail for England next week and will then proceed to Mashonaland, South Africa, on professional business in the interest of English capitalists.

Mr. P. A. H. Franklin, of Salt Lake City, Utah, president of the Niagara Mining & Smelting Company, who has been ill for some time past, is in Chicago under medical treatment. He is reported to be improving, hut his physicians state that it will he some time before he will he able to return to Utah.

Sir Henry Wood and Mr. James Dredge, of England, Herr Wermuth, of Germany, and Dr. Emil Meyer, of Denmark foreign commissioners to the World's Fair, are reported as being greatly impressed and pleased at the building plans and extensive preparations for the exposition. Said Mr. Dredge: "I have examined the plans very carefully. They contemplate the erection of magnificent buildings. They are hold, striking, and I may say, far in advance of our anticipations. From an architectural point of view I do not believe they could he improved. And I am assured that the landscape effects will be in harmony with the architectural features. Mr. Olmstead is the greatest landscape engineer in the world. The work he has done for the World's Fair shows that."

Mr. C. F. Von Petersdorf, a description of whose troubles with the Mexican authorities appeared in these columns some months ago, arrived in San Francisco on September 23d. He held a position with the California State Mining Bureau, hut accepted an engagement as superintendent of a mine in Chihuahua, Mex., early in the present year. Much of the time since then he has passed in jail upon a trumped-up charge. After being tried and acquitted on a civil charge he was re-arrested hy the military authorities as a deserter. He contrived to escape and rode to Vera Cruz, and from that city went to Las Penyas. Descending the river hy canoe to San Blas, he was fortunate enough to hoard the steamship Colima without being again molested, and reached San Francisco on the day named. Mr. Von Petersdorf will institute suit against J. Palmer, of Zacatacas, at whose instigation he states he was he was arrested, and also against the Mexican Government. Meantime letters from various consuls, as well as other documentary evidence, have been forwarded to Secretary Blaine.

OBITUARY.

Henry W. Rathbone, president of the Elmira Iron and Steel Rolling Mill Company and for many years one of the best known and most prominent business men in Southern New York, died at his home in Elmira on the 29th inst., aged 77.

E. J. Brickell, died in Spokane, Wash., on the 23d ult., was president of the Spokane Mill Company, Traders' National Bank, Old Dominion Mining Company and Columhia Mining Company, hesides heing identified with various other enterprises.

Wm. Swindell, the senior member of the firm of Swindell Bros., extensive glass manufacturers, died in Baltimore, Md., on the 27th ult., aged 71 years. He was the first manufacturer to suhstitute Cumberland coal for heating purposes in place of rosin in the manufacture of glass.

William West, a metallurgist well-known in the West, died of cancer, in Denver, on the 19th ult. He was metallurgist at the works of the Golden Smelting Company, at Golden, Colo., twenty years ago. Recently he has been engaged in Denver upon experiments with a new process for the treatment of low grade argentiferous zincky ores. His process was described in a communication in the ENGINEERING AND MINING JOURNAL of March 14, 1891.

Edward W. Wynkoop died on the 12th ult. at Santa Fé, New Mexico, at the age of 55 years. He was one of the pioneers of the Pike's Peak region, going thither in the first rush of 1858. He served in the First Colorado regiment during the war, entering the service in 1861 and leaving it with the rank of colonel in 1866. When only a boy he took an active part in the border ruffian troubles in Kansas. In the stirring events of those days, and in the early days in Denver, he was an active figure, making the strongest of enemies and the hest of friends hy his always positive course.

SOCIETIES.

The National Brick Manufacturers' Association has appointed a committee of five to secure an international exhibition of clayworking machinery for the World's Fair, and the committee has issued an address inviting the views of the trade.

The American Society of Mechanical Engineers is discussing the feasibility of a meeting on the Pacific Coast in May, 1892. The trip as outlined would he via Denver and Salt Lake City to San Francisco, where the meeting is to be held. After the meeting the travelers are to go north to Portland, via the Yosemite, returning by the Northern Pacific via Yellowstone Park.

The Executive Council of the American Association of Inventors and Manufacturers held a meeting in Washington, D. C., on the 22nd ult. It was decided to issue an address to the public setting forth the objects of the association, and to take active steps to extend the membership in every state and territory of the Union. Many applications for membership were received, and W. E. Simonds, Commissioner of Patents, and Professor A. Graham Bell were among those elected to membership.

The Engineers' Club of Philadelphia will hold its first fall meeting this evening at the Club House, 1122 Girard street, Philadelphia. The subject for the evening is "Power Transmission," and a paper on "Land-Locked Navigation Through the Bays and Inlets of the Atlantic Coast" is also expected. Early in the year the club was practically reorganized; a new constitution and hy-laws being adopted, hy which many of the duties which heretofore have devolved upon the secretary were transferred to the several committees of the board of directors. Since then the publication committee has issued several numbers of the club proceedings; thereby nearly extinguishing the 12 months of arrears in which it found the publication. The committee on information and entertainment has kept itself in touch with the membership and has done much to increase the interest in the meetings. For that of May 16th, the committee selected the subject o apid transit

burning subject in Philadelphia just now, and the result was one of the largest and most animated meetings the club has held. Shortly after assuming its duties, the present board of directors took up the question of incorporation, and upon its recommendation the club unanimously directed that the necessary steps he taken for this purpose. A. J. Rudderow, Esq., attorney at law, associate member of the club, promptly drew up a form of charter and brought the matter before the proper court.

EXPORT NOTES.

Manuel Morales, Minister from San Salvador to the United States, is in Washington, D. C., as a special envoy to negotiate a reciprocity treaty between this country and San Salvador.

Edward S. Stevens, United States Consul at Pernamhuco, Brazil, reports to the Department of State, under date of August 27th, that the Western Brazilian Cahle Company has just laid a new cahle between Santos and Pernambuco. The cahle steamer "Silvertown" is ahout to lay a cable from Pernamhuco to the island of Fernando do Noronha, and thence to St. Louis Senegal, Africa.

No Japanese goods or exhibitions will be permitted at the Exposition unless they have first received the approval of the Japanese officials in charge of their government exhibit. The Exposition Directory rendered this decision at the request of Japanese Minister Mutsu, who is the Japanese Imperial Commissioner to the Fair. A similar rule will he enforced in the case of other foreign nations.

The total kerosene imported into Bombay in 1889-90, according to the *Board of Trade Journal* (London), was 13,704,072 gallons, against 11,930,739 gallons in 1888-89. Of this amount 10,742,344 gallons came from Batoum, and only 2,961,728 gallons from the United States, or, respectively, 77% and 23%. Four years ago only 1,481,232 gallons came from Russia, and 5,871,588 gallons from the United States, or, respectively, 20% and 80%; so that in four years the positions of the United States and Russia in the Indian oil trade have been practically reversed.

The new Ghilian customs duties act which was promulgated onJune 6th has been received by the Bureau of American Republics. The new act repeals the customs law of May 5th and provides for the gradual substitution of paper currency by specie dollars in payment of customs duties. Another law passed on June 6th decrees that the common class of cotton which under the old law paid 25% duty ad valorem, without surcharge, shall hereafter pay 15% with the surcharge, now amounting to 80% on the duty. This will amount to an increase per yard from 3 to 3¼ cents

The shipments of tin plates and sheets from England during August amounted to 14,574 tons, valued at £213,572, of which 5,629 tons, valued at £79,902, came to the United States. The total shipments in August, 1890, were 35,393 tons, valued at £562,423, and in August, 1889, 34,515 tons, valued at £474,160. In the eight months ending August 31st of this year 337,859 tons were shipped. This total represents a value of £5,584,407, which is far in excess of that for the corresponding periods of the two previous years. Last year the figures for the first eight months were 272,261 tons and £4,140,269. In 1889, in the eight months ending August 31st, 290,832 tons, value £4,027,541, were exported.

The Berlin Iron Bridge Company, of East Berlin, Conn., on the 26th ult. shipped 23 car loads of iron building material at one shipment hy a special train over the N. Y., N. H. & H. R. R. to the *Companhia Nacional de Fojas e Estaleiros*, Rio de Janeiro, Brazil, S. A. This shipment is one of the largest single shipments that ever passed through New England, the combined weight of the 23 cars being nearly 1,000,000 lbs. The shipment went to the Harlem River Station, New York, and was there lightered aboard a Brazilian steamer and shipped direct to Rio de Janeiro. This building is for a car works for the *Companhia Nacional de Fojas e Estaleiros*. Not only the building is to be furnished in this country, but also the tools and machinery for the entire equipment.

Assistant Secretary Spaulding has informed the Collector of Customs at Eagle Pass, Tex., that Mr. L. M. Johnson, general manager of the Mexican International Railroad Company, who resides in Piedras Negras, Mexico, opposite Eagle Pass, and who holds a power of attorney from the company to transact all custom house business in the United States in which it may he interested, can, under said power of attorney, act for the company in the United States. The company, which is organized under the laws of the State of Connecticut, can be a consignee in the United States of merchandise shipped from Mexico, and can make entry and sign bonds in the United States Custom Houses.

The Consul General of Germany at San Jose, Costa Rica, has made an official report to his government under date of June 30th, 1891, in which he says: There is no doubt hut that the extraordinary endeavors which the American industrial world, backed up hy the Government, is making to increase its trade with Spanish-American countries are meeting with success. The differ-

ence in price, if any, is more than compensated for by the attractive and handy get-up of American goods. The German, American and British industrial worlds are now doing their level best to crush each other's trade in ironware of all kinds, cotton shirts, underclothing, biscuits, preserves and the like; this is more especially the case as regards cotton piece-goods. Cheap calicoes at about 4c. per yard and common handkerchiefs cannot be got from Germany owing to the great distance; but in the dearer qualities we compete successfully.

The Chief of the Bureau of Statistics, in his monthly report of the exports and imports of the United States, reports that the total values of the exports of merchandise from the United States during the two, eight and twelve months ended August 31st, 1891, as compared with similar exports during the corresponding periods of the preceding year, were as follows:

	1891.	1890.
Two months ended Aug. 31....	$135,417,805	$110,634,177
Eight months ended Aug. 31..	554,802,256	503,040,366
Twelve months ended Aug. 31.	909,264,438	856,480,061

The values of the imports were as follows:

Two months ended Aug. 31....	$132,936,789	$138,759,744
Eight months ended Aug. 31...	565,582,811	549,887,296
Twelve months ended Aug. 31.	839,039,241	791,215,497

The New York *Herald* publishes the following cable dispatch from Chili: Merchants in Valparaiso are looking forward to a gratifying revival of foreign trade. While the revolution continued the entire importing business and export trade from the northern portion of the country, formerly conducted through Valparaiso, were interrupted. Shipments of breadstuffs and produce were made direct from Iquique and other ports held by the *Junta de Gobierno*. Since the restoration of peace Valparaiso's tradehas revived. The best proof of this is that since Balmaceda's government fell exchange has risen from 15 to 20 pence. With promises of united political action among the party leaders, merchants have no hesitation in believing that trade will soon be established on a firm and enduring basis. Imports to Great Britain, Germany, and other European countries will surely preponderate under the new government, as they did under the old. There does not appear to be much prospect for an increased trade with the United States. Competition in this market by manufacturers in the United States of textile fabrics with similar manufactures in Europe is impossible. Lumber, a few lines of machinery, hardware, kerosene oil and lard are all needed here from the United States, but the exports to that country are almost *nil*, owing to the fact that Chili's products are so nearly like those of that country. A little wool and nitrates in small quantities comprise most of the shipments to American ports, but there appears to be some hope of increasing the nitrate trade. There is also a prospect of extending the shipments of low grade silver ores to the smelting works at Tacoma, Wash.

Among the products of the United States admitted into the Dominican Republic duty free by the terms of the reciprocity treaty which went into effect September 1st, (sugar, molasses, coffee, and hides being admitted into this country from San Domingo) are tallow in cake or melted and oil for machinery, subject to examination and proof respecting the use of said oil; tin-plate and tinware for arts, industries and domestic uses; cordage, rope and twine of all kinds; resin, tar, pitch, and turpentine; coal; mineral waters, natural and artificial; machines, including steam-engines, and those of all other kinds, and parts of the same, implements and tools for agricultural, mining, manufacturing, industrial, and scientific purposes, including carts, wagons, handcarts, and wheelbarrows, and parts of the same; material for the construction and equipment of railways; iron (cast and wrought), and steel, in pigs, bars, rods, plates, beams, rafters, and other similar articles for the construction of buildings, and in wire, nails, screws and pipes; zinc, galvanized and corrugated iron, tin and lead in sheets, asbestos, tar paper, tiles, slate, and other material for roofing; copper in bars, plates., nails and screws; copper and lead pipe; bricks, fire bricks, cement, lime, artificial stone, paving tiles, marble and other stones in rough, dressed or polished, and other earthy materials used in building; windmills; wire, plain or barbed, for fences, with hooks, staples, nails, and similar articles used in the construction of fences; telegraph wire and telegraphic, telephonic and electrical apparatus of all kinds for communication and illumination; wood and lumber of all kinds for building, in logs or pieces, beams, rafters, planks, boards, shingles, flooring, joists, wooden houses, mounted or unmounted, and accessory parts of buildings; gold and silver coin and bullion. Among the articles to be admitted into the Dominion Republic at a reduction of duty of 25% are the following: manufactures of iron and steel, single or mixed, not admitted duty free; manufactures of wood of all kinds not admitted duty free, including wooden ware, implements for household use, and furniture in whole or in part of wood.

The following is a summary of the new Mexican tariff changes, in so far as relates to the mining and metal industries, made by the law which goes into effect November 1: Tallow, formerly taxed at 7 cents per kilo, gross weight, has been raised to 10 cents. Candles have generally been advanced; tallow candles, pressed or unpressed, formerly dutiable at 15 cents per kilo, gross weight, now being 20 cents. Sperm and stearine candles have been raised in the same ratio. Electric light wire (copper) remains free, as are also telegraph and telephone wire and barbed fencing wire. Iron piping, plows, steam-power machinery, and agricultural implements remain on the free list. Pig iron is advanced from 1 cent to 3 cents per kilo—a noteworthy change. Tin plate, admitted free only up to 40 by 30 centimetres will be free up to 55 by 40. Nails, screws, and tacks, dutiable at 10 cents per kilo gross weight, will pay the same on legal weight. Iron wire cloth, now dutiable at 20 cents a kilo gross weight, is to pay 10 cents legal weight. Common and hydraulic lime and Roman or Portland cement remain free. Precious stones, all formerly free, will pay as follows: Diamonds, $5 per carat; emeralds, rubies and sapphires, $3 per carat. All other unmounted stones, $10 per carat. Coal of all kinds remains free; also coke. Unrefined mineral oil, (crude petroleum), now dutiable at 1 cent per kilo gross weight, will pay 2 cents per kilo net weight. The refined article, or kerosene, dutiable at 10 cents a kilo net weigt, will pay the same on legal weight. Machinery driven by steam power remains on the free list, as do coal, iron piping and agricultural implements. Tools for artisans will pay 5 cents a kilo legal weight, against 10 cents gross weight, as at present. Gold watches will pay $7 each instead of $6.75, and silver watches $1 instead of $1.30. Mining powder, dynamite and other explosives for mines remain on the free list, while fine grade gunpowder is reduced from $1 to 50 cents a kilo. Rubber footgear is to pay 60 cents a kilo legal weight instead of 48 cents gross weight. A conspicuous feature of the new tariff is the change, in many hundred instances, from fixing the duty on gross weight to legal weight; that is, the exterior packages are untaxed, although it must be remarked that in compensation the duties have frequently been raised.

INDUSTRIAL NOTES.

The American Ax and Tool Company, of Beaver Falls, Pa., resumed full work with all the old hands on the 28th ult. It was unconditional surrender on the part of the men, it is stated.

World's Fair stock subscriptions have now been paid in to an aggregate exceeding $3,000,000, although only 60% has thus far been called for. The $5,000,000 of city bonds voted by Chicago are now available, and will be put on the market soon.

The Lidgerwood Manufacturing Company, of New York City, has established a branch house in St. Louis, Mo., for the sale of its standard hoisting engines, at 610 North Fourth street and 609 North Third street, under the management of Mr. Chas. W. Melcher.

The Westinghouse Electrical Company is now employing 1,300 men in its factory, and is doing a business of about $3,000,000 per annum. The syndicate which promised to take the $3,000,000 new preferred stock has signed the agreement, but has not yet paid the money, as the new certificates, which are being printed, have not yet been issued.

The Lukens Iron and Steel Company, Coatsville, Pa., has recently finished a gas-making plant, which was tried on 17th ult. and found very satisfactory. The company is now erecting two open-hearth furnaces south of its present mill. The puddle mill has been closed and will be turned into a light sheet mill and the manufacture of iron entirely abandoned.

The Valley Iron Works of Williamsport, Pa., informs us that the statemnt made in our last issue that the Valley Engine and Machine Company of Lynchburg, Va. had succeeded to their business was incorrect, the negotiations between the two companies having fallen through. The Valley Iron Works are still doing business at the "old stand," where, with improved and increased facilities, they are better prepared than ever to care for their patrons.

Charles Himrod & Co., pig iron dealers of Chicago, Ill., have leased for a term of five years, the new furnace recently constructed by the Duluth Iron and Steel Company, at Duluth, Minn. The furnace will make Bessemer pig iron and the out put will be 700 tons weekly. Major A. S. Bertelot, one of the lessees, has been appointed manager in charge of the furnace. The product will be used entirely in the Lake Superior region.

The strike at the Everett, Pa., furnace, inaugurated last week, ended suddenly. The men struck for an advance; then concluded to await the arrival of Manager Thropp from Philadelphia. Word was telegraphed to him. He immediately answered to bank the furnace and stop all work. This rather frightened the strikers, and they went back to work. A shut down would have affected 700 men.

Carnegie, Phipps & Company, Limited, posted notice at the Edgar Thompson Steel Works, at Braddock, Pa., on the 29th ult., that "owing to improved machinery, the product had been so greatly increased that a new scale of wages would be necessary." The old scale, which expires on December 31st, has been in operation three years. A conference of the officials and employés will be held about October 10th. The wording of the notice leads the workmen to think that a reduction in wages is contemplated. About 4,000 men are employed at this plant.

The Department of Transportation of the World's Fair has been offered one of the most valuable relics of the early days of railroading in this country, and will doubtless secure it for an exhibit. The old locomotive "Samson," built in England in "the thirties," by the celebrated Timothy Hackworth, and brought to this country in 1838, is still in existence and in working order. Accompanying it is a quaint old passenger car, built in imitation of a stage coach, both standing on some of the old scolloped or fish-belly rails. The engineer who first ran the locomotive is still alive, and if still living at the time of the World's Fair, may accompany the venerable engine.

The Eco Magneto Clock Company, of New York, is manufacturing an improved form of watchman's clock with peculiar recording mechanism, it being an electric clock without a battery. The current required for the transmission and also for exciting the electro-magnets of the apparatus is generated by means of a magneto machine. A paper dial revolves in this clock in a corresponding movement with the hour hand, and the record is made on the dial by means of a needle attached to the armature of the electro-magnets. The advantages claimed for this system are that no specially skilled person is needed to care for the clocks, there being no batteries, and that the clocks are proof against interference, no record being possible except in the regular way and at each station.

MACHINERY AND SUPPLIES WANTED AT HOME AND ABROAD.

If any one wanting Machinery or Supplies of any kind will notify the "Engineering and Mining Journal" of what he needs, his "Want" will be published in this column, and his address will be furnished to any one desiring to supply him.

Any one wishing to communicate with the parties whose wants are given in this column can obtain their addresses from this office.

No charge will be made for these services.

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, thus enabling the purchaser to select the most suitable articles before ordering.

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.

GOODS WANTED AT HOME.

2,391. A 15-H. P. engine, a 20-H. P. boiler, a 20-in. pony planer, a small wood lathe, a reversible table with cut off and rib-saw, and a borer and mortiser. Michigan.

2,392. A ditching machine for waterpipe ditching in a level, loamy town. Pennsylvania.

2,393. Brick machinery, full plant, lime kiln and lime-working machinery; also machinery for making lime barrels. South Carolina.

2,394. A drill called the marble valve drill, which has a marble in the valve that lets the material excavated pass up the core to the top. Texas.

2,395. A 5 or 10-ton stamp mill; must be in good condition. State particulars, present location and price. New York.

2,396. Hand drills for coal cutting. New York.

2,397. Machinery for cement works. Virginia.

2,399. A portable gold washing machine. New York.

2,400. A 40 H. P. stationary engine. Florida.

2,401. Machinery for drilling an artesian well. Texas.

2,402. A second-hand engine and boiler from 18 to 30 H. P. Georgia.

2,403. Machinery for mining phosphate. Florida.

2,304. A 60, 70 or 80 H. P. boiler; also a blower to carry off sawdust. Florida.

2,405. A windmill for pumping, a furnace for heating green houses. Alabama.

2,406. A diamond drill for prospecting. Virginia.

AMERICAN GOODS WANTED ABROAD.

2,388. Oil stoves of all descriptions. Peru.

2,389. Lamps, burners and chimneys. Peru.

2,390. Foot power machinery. Peru.

2,398. A machine for plaiting cane chair seats. Germany.

2,407. Illustrated catalogues of mining and other machinery. Brazil.

GENERAL MINING NEWS.

Iron ore shipments from two of the Lake Superior ranges for the week ending the 23d ult., were as follows: Gogebic Range, 998,726 tons; Vermilion Range, 619,185 tons.

SOCIETE ANONYME DES MINES DE LEXINGTON, the Old Telegraph mine, at Bingham, Utah, owned by this company, has been leased to a Colorado syndicate. This mine, says the Salt Lake *Tribune*, should be classed as one of the best in Utah, but, for some unaccountable reason, has not been worked to its full capacity within the last year. The lessees have about completed hoisting works, sufficient to hoist from a depth of 1,000 ft. on the vein.

ARIZONA.

MOHAVE COUNTY.

This county took the prize for the best mineral exhibit at the State Fair lately held in Albuquerque, N. M.

ARK.—The new shaft on this mine is now down 110 ft. The ore, at the point where the shaft cut the ledge, says the Mohave *Miner*, assayed over $500 per ton. As soon as the shaft reaches a depth of 150 ft. a cross-cut will be run to the Ark ledge and another to the San Antonio, about 300 ft. away.

DISTAFF.—Another strike has been made at this mine. The north drift has been driven under the old surface chute and its continuation tapped. It is said that the ore is better than any ever taken from the surface. The surface ores, assorted, worked over 600 oz. silver per ton. There are said to be large bodies of ore in the mine ranging in value from 80 to 100 oz. per ton.

DIAMOND JOE.—Now that all litigation against the title of this mine has ceased, work will be started up on a large scale, says the Kingman *Mohave Miner*. The mine has been in litigation since its discovery four or five years ago, and the present owners have spent much money in proving their title. Although the mine has been little worked until the past year, it has produced over $100,000.

PINAL COUNTY.

MAMMOTH GOLD MINES, LIMITED.—The following circular has been sent to the shareholders of this company: The production of bullion in August amounted to $15,300 (from 2,060 tons crushed) exclusive of the amalgam left in the mortars. This production, as well as that for the months of June and July, is below the average, owing to various causes, but principally to the facts that the mill has been standing for holidays and repairs, and that the ore crushed was taken largely from the upper workings, where the quartz is harder than in the lower levels, resulting in a reduced quantity of ore crushed. Extensive development work has been done, and is still proceeding. Negotiations for extension of plant and other improvements having been pending for a considerable time, the secretary has been sent to America to accelerate their conclusion by conferring directly with the American shareholders.

CALIFORNIA.

AMADOR COUNTY.

(From our Special Correspondent.)

QUARTZ MOUNTAIN.—A new company has recently taken hold of this property, which consists of four claims in the Drytown district. The property has been opened by tunnels, giving the mine 300 ft. of back-stoping ground. The old 10-stamp has been repaired, and is operated by water power under a 309 ft. pressure.

SOUTH EUREKA MINING COMPANY.—The property owned by this company was formerly known as the Tanner Hill ground, and consists of nearly 2,000 ft., located along the northern lode and adjoining the old Eureka, which is said to have yielded about $15,000,000 in gold. The property is being rapidly developed and the San Francisco parties who are in control hope within the year to have everything in readiness for carrying on work on an extensive scale. A very complete hoisting plant is being erected, capable of sinking to a depth of 1,500 ft.

BUTTE COUNTY.

According to press dispatches from Oroville the Golden Gate and Golden Feather companies, operating in the bed of the Feather River, which has been diverted from its course (See ENGINEERING AND MINING JOURNAL, Sept. 5th) after many unsuccessful attempts to dam it, are now making large clean-ups. The gravel is said to be literally sprinkled with gold. A large force of men is employed in moving the gravel and cleaning the bed rock. The exact amount that is being taken from the river bed is not made public. The mines are kept dry by large pumps, while both day and and night shifts are busy at work, the diggings being illuminated by electric lights.

EL DORADO COUNTY.

A late dispatch says that a forest fire on the "Georgetown Divide" has wasted a section of country 25 miles long by 20 wide. The little mining town of Pilot Hill has been destroyed. No lives are known to be lost.

PYRAMID.—This mine, 12 miles west of Placerville, is being opened in good shape, and it is reported that a large mill will be erected on the ground. The ledge is large and crops out several feet above the top of the ground, and is prospecting well in free gold.

SAILOR JACK.—This mine in Green Valley district is showing very good ore. A tunnel has been run to tap the vein over 100 ft. from the surface, where it is found to be 2 ft. wide carrying good ore.

NAPA COUNTY.

During August quicksilver shipments from Calistoga to San Francisco were as follows: Napa, 462 flasks; Great Western, 250; Bradford's, 141; Sulphur Bank, 104; total, 957. The Napa mine is producing remarkably well, says the *Calistogian*, and aids in making the total amount for the month unusually large—greater than during any month within the 2½ years ending August 1st last. In January, 1889, the total shipments were 972 flasks or 15 flasks more than in August last. The August product of the four mines above mentioned amounts to 73,210 lbs. and at current prices was worth over $40,000.

NEVADA COUNTY.

ALLISON RANCH.—This mine is now being offered for sale in London. We noted in our issue of September 6th that it had been bonded by Messrs. Carter & Burns for $75,000.

SISKIYOU COUNTY.

It is reported that a rich quartz ledge has been discovered on Six Mile Creek, at South Fork of Scott River, above Callahans, by a man named Short. The discovery has caused considerable excitement at Callahans and vicinity.

COLORADO.

GILPIN COUNTY.

NEW CALIFORNIA, LIMITED.—The August output of the mines was 488 tons, yielding 130 oz. gold, valued at £410. Mining and milling expenses amounted to £860; expenditure on mine development and exploration account, £265.

GUNNISON COUNTY.

SYLVANITE.—A good body of rich silver ore is said to have been opened in this mine, and Mr. Miller, the lessee, expects to begin shipments, shortly.

HINSDALE COUNTY.

GOLDEN FLEECE.—Work has been begun in this property by its new owners. Harry Mouell, of Boulder, has been appointed superintendent.

LAKE COUNTY.

LEGAL TENDER CONSOLIDATED MINING COMPANY.—All the property of this company was sold August 29th to pay its bonded indebtedness. The stock has been stricken from the list of the Denver Mining Exchange.

MAID OF ERIN SILVER MINES, LIMITED.—An adjourned statutory meeting (see ENGINEERING AND MINING JOURNAL, September 12th) was held in London on the 15th ult. It was stated that the net profit from the mines for the month of August was $78,500 and for the first twelve days of September $48,000. A further interim dividend of 1s. per share (£28,750) was declared payable October 1st. Dividend No. 1, paid September 1st, was for the same amount. A good balance is carried forward.

OURAY COUNTY.

Owing to the reckless waste of timber in the Red Mountain country, says the Ouray *Argus*, already complaints are being made about its scarcity for mining purposes. Although mining in the district is just in its infancy, timber for all uses will soon have to be shipped in from other parts.

INDIANA.—A body of rich copper ore is said to have been struck in this mine.

SAN JUAN COUNTY.

BANDORA.—This mine, located on South Mineral Creek, which was recently sold by the Hon. Wm. Sullivan to Colorado Springs parties, has been stocked at $2,000,000. A good wagon road has been built from Silverton to the property. Shipments which have been made so far are said to have run from $100 to $235 per ton.

NORTH STAR.—This mine, on King Solomon Mountain is said to be doing better than ever. Last week a body of ore 6 ft. wide, assaying from 300 to 600 oz. silver per ton, is reported to have been struck on the north workings from the middle tunnel.

SAN MIGUEL COUNTY.

BELMONT CONSOLIDATED MINING COMPANY.—Work on the stamp mill is progressing rapidly and it is expected that it will be ready for operation on November 1st. The capital stock of this company is $350,000 divided into 3,500 shares.

SHERIDAN CONSOLIDATED MINING AND MILLING COMPANY, LIMITED.—At a meeting of the directors of the Mendota and Sheridan mining companies, held in Shanghai, China, on the 21st ult., it was decided to consolidate the two under the name Sheridan Consolidated Mining and Milling Company, Limited. It was also decided not to continue the lease of the mines to Nicholas & Fisher, which terminated October 1st, under which they have been worked hitherto. The new company will henceforth work its property on its own account. The shaft connecting the long crosscut tunnel with the upper level of the Sheridan mine is almost completed. Work is also being pushed on the connection with the Mendota mine,

FLORIDA.

POLK COUNTY.

UNITED STATES PHOSPHATE COMPANY.—This company is now erecting a phosphate plant near Fort Meade. It will have a daily capacity of 100 tons and will cost $25,000.

VIRGINIA-FLORIDA PHOSPHATE COMPANY.—This company has completed its phosphate plant at Wilmot and commenced operations; capacity, 100 tons per day.

IDAHO.

BOISE COUNTY.

While mining matters have been quiet, some progress has been made in the county this year, says the Idaho City *World*. The Washington, in Gambrinus district, has developed into fine property; the Wolverine, at Banner, is turning out large quantities of silver bullion; several prospects in El Dorado district have developed into large and rich mines; the pay chute of the Golden Era, on Summit Flat, has been recovered, and the Boulder, on Elk Creek, is now recognized as one of the great gold mines of Southern Idaho.

KOOTENAI COUNTY.

CABINET MOUNTAIN MINING COMPANY.—The Eldorado, Arlington and Asslin claims, on Clark's Fork, owned by this company, are being steadily developed. The Eldorado is being worked now by a force of six men. The ledge shows on the surface for 3,000 ft. It is 7 ft. wide, and the average value of the ore is said to be $74 per ton. A tunnel has been driven in 35 ft. and a shaft 25 ft. Another tunnel is now being run lower down. The officers of the company are: J. C. Andrews, of Spokane, Wash., president; Calip Freeman, vice-president; A. B. Railton, secretary; M. P. Whitman, treasurer and manager, and Charles Beckel, of Cœur d'Alene, foreman.

TIGER.—A tunnel is now being run in this mine, on Clark's Fork, with the intention of tapping the vein at a depth of 375 ft. The breast is already in 125 ft. It is expected that the tunnel will have to be driven 150 ft. further before reaching the vein. Three men have been at work all the year and an incline shaft has been sunk in the property to a depth of 55 ft., showing an 18-in. streak of mixed ore that will average 17 oz. silver and 35% lead.

OWYHEE COUNTY.

DE LAMAR MINING COMPANY, LIMITED.—Eight bars of bullion, valued at $17,000, were shipped by this company, the result of the usual semi-monthly clean-up. According to the De Lamar *Nugget*, work is fairly under way on the enlargement of the mill. Excavations have been made for the foundation for the big Corliss engine, and masons are now at work on it.

SHOSHONE COUNTY.

ANTIMONY.—The Murray *Sun* says that an English company has bonded this mine on the Thompson road, one mile north of the Mountain House, for six months. The property is owned by Kratzer Brothers. Frank Reed is negotiating the deal.

MORNING.—It is reported that this mine has been finally sold, a syndicate of Milwaukee capitalists having purchased it for $600,000. It is also said that it is to be actively worked at once, and that $100,000 is to be expended on machinery and other improvements.

KANSAS.

CHEROKEE COUNTY.

During the week ending September 26th the output of ore from the mining districts of Galena and Empire City was: Rough ore, pounds milled, 2,703,769; rough ore, pounds sold, 1,096,960; zinc ore, pounds sold, 675,670; lead ore, pounds sold, 142,600. Sales aggregated a total value of $10,548.

AMERICAN SPELTER COMPANY.—This company has been incorporated at Chicago with a capital stock of $200,000, by H. Burkholder, Leon Goldman and S. E. Magill to manufacture spelter. It is proposed to erect works at Galena, which town has donated 80 acres of land and other valuable franchises to the new enterprise. Ground has already been broken for the works.

MICHIGAN.

The Chicago, Milwaukee & St. Paul reports a satisfactory ore traffic business on its Milwaukee & Northern division by way of Gladstone, says the *Iron Ore*. The company had an arrangement with the Iron Mountain & Western line (lately absorbed by the Northwestern), whereby the latter was to receive the ore of the Milwaukee & Northern for so much per ton. Deliveries of the ore were tendered the Northwestern, but the latter refused them. The Northern will endeavor to adjust the difficulty in the courts. It is not yet publicly known whether the company will erect ore docks at Menominee or not. Such a report has gone out, however, but its reliability is questioned.

According to the *Iron Ore* all work upon the Huron Bay Railroad has been stopped. At the docks on the lake shore the finishing touches to keep the property in good condition until another year, or until some time when the work of construction would be taken up again, were completed on the 19th ult. It is said that the contract price for grading the line was $265,000, and that there has thus far been expended or contracted for, about $400,000. Just what the road was intended for remains as much of a mystery to the public as

when work was first commenced upon it. There are many solutions of the problem, the popular one being that it was made to sell. It was thought that the Chicago & Northwestern would want a Lake Superior outlet for their iron ore, or if not, that the Chicago, Milwaukee & St. Paul would make a satisfactory bid.

COPPER.

ATLANTIC MINING COMPANY.—This company's output of mineral for September was 203 tons, 1,500 lbs.

FRANKLIN MINING COMPANY.—Relative to developments in the Franklin mine, the Portage Lake *Gazette* says: "For some time past they have been driving a cross-cut east, in the way of an exploration, from one of the deep levels. Four hundred and fifty feet east of the Franklin lode a conglomerate belt has been reached, the hanging portion of which, as we understand it, was poor, but further toward the foot some good copper has been found. The full value of this find is not as yet known, as the foot wall of the lode has not been reached. Hearing of this new find, we interviewed the management, and were informed the lode would be opened out at once. This lode being only 450 ft. from the Franklin lode, could easily be worked through cross-cuts from the several levels."

TAMARACK MINING COMPANY.—At the annual meeting of this company, on the 1st inst., the old board of directors was elected with the exception of Joseph W. Clark, who was succeeded by Chas. Van Brunt; 36,698 shares were voted. At the meeting of the directors A. S. Bigelow was re-elected president and Thos. Nelson secretary and treasurer.

WOLVERINE MINING COMPANY.—The following concerning this company is taken from the Calumet *News*: "The property originally belonged to Mr. Thomas W. Edwards, and in the year 1882 he, in connection with Richard Uren, formed the Wolverine Mining Company, with a capital of $1,000,000, divided in 40,000 shares, which started work; 10,000 shares of the capital stock were set aside to be sold for working capital; the proceeds of the sale of that stock with the copper produced served to open the mine and build the stamp-mill, miners' dwellings, etc. Owing to financial embarrassments, Messrs. Edwards and Uren retired from the management, and the mine was let on tribute to Messrs. Wilcox and Funkey, who also had to suspend operations, in 1885, owing to the then low price of copper. The product of the mine up to that time was as follows:

	Tons.	Lbs.
1882	12	1,632
1883	349	1,622
1884	400	....
1885	185	925
Total	939	179

"Owing to liens on the property, which no one would release, as there was a flaw in Edwards' title, the mine continued closed. The title was eventually settled, and during the reign of the copper syndicate Mr. Nate Leopold, of Chicago, took an option on the property, but did not take it up. Last year a party of local capitalists, with the aid of Mr. John Stanton, of New York, formed the present company, which has a capital of $1,500,000, in 60,000 shares, and cleared off the old indebtedness; since this time the mine has been opened, the surface plant and stamp-mill put in order, and the mine brought once more to a producing point. The stamp-mill was only started up on the first of September. It is now treating 160 tons of rock per 24 hours."

STONE.

KEWEENAW REDSTONE COMPANY.—This company has completed a stripping of 75 × 100 ft., and is now engaged in quarrying merchantable stone. The quarry is on section 27, town 52 north, of range 33 west, near the village of Baraga, Baraga County. The favorable showing of the outcrop along the face of the bluff which forms the precipitous shore line of Lake Superior at this point, encouraged the development of the property. A bed of redstone 7 ft. thick was well defined along the face of the bluff. In reaching it from the surface five other beds from 4 to 7½ ft. in thickness and of good quality were penetrated. Quarrying is at present confined to the first and second layers. The equipment consists of a 35-ton hoist, a Wardwell channeler and a steam drill, all deriving power from a 65-H. P. boiler. A saw for trimming and cutting stone will soon be added and a dock will be built out to deep water.

IRON—MARQUETTE RANGE.

BLUE IRON MINING COMPANY.—It has been decided to levy an assessment of $1 per share for the purpose of developing and equipping the mine. The assessment is payable in quarterly instalments, one quarter immediately and one quarter on the first of December, March and May, respectively.

IRON—MENOMINEE RANGE.

PAINT RIVER.—This mine has shipped about 40,000 tons of ore and has about 7,000 tons in stock. Shipments for the remainder of the season will depend much on future sales. The daily output is about 400 tons. The working force all told numbers about 55 men. Exploratory work is also being continued.

MINNESOTA.

The Port Arthur, Duluth & Western Railway tracks have reached Sandy Lake, 54 miles from Port Arthur, and ballasting is being carried on night and day. About 12 miles more of the line is graded and ready for the iron, with the exception of the culverts and some small bridges. It is expected the line will reach Gun Flint Lake and possibly the Minnesota boundary before deep snow stops work. It is said that the road will be pushed into the Minnesota iron ranges with a view of carrying out ore for shipment in bond.

MISSOURI.

JASPER COUNTY.

(From our Special Correspondent.)

JOPLIN, Sept. 28.

The lead and zinc mines of this district made a large output during the past week, but the sales of zinc ore were not as heavy as in the previous week. The price remained at an average of $22.50 per ton. Lead ore ruled strong during the week at $25.50 per thousand, with a demand for all that could be got. There are a great many strangers coming into the district and some investments being made, and the mining brokers and real estate operators are looking forward to a good fall trade in mines and mining lands. Following are the sales of ore as far as reported from the different camps:

Joplin mines, 1,394,770 lbs. zinc ore, and 190,120 lbs. lead; value, $20,539.75.

Webb City mines, 711,080 lbs. zinc ore and 120,850 lbs. lead; value, $11,069.75.

Carterville mines 1,538,190 lbs. zinc ore and 124,440 lbs. lead; value, $20,861.

Zincite mines, 127,270 lbs. zinc ore; value, $1,487.

Lehigh mines, 43,370 lbs. zinc ore; value, $520.

Oronogo mines, 79,320 lbs. zinc ore and 25,000 lbs. lead; value, $1,477.50.

Galena (Kans.) mines 675,690 lbs. zinc ore and 142,600 lbs. lead; value, $10,548.

District, total value, $66,503.

Aurora, Lawrence County, mines, silicate, 440,000 lbs. zinc blende, 80,000 lbs. and lead, 221,000 lbs.; value, $8,055.

Lead and zinc belts, value $74,558.

The extreme dry weather of the past month has been a great drawback to many small mines on account of the scarcity of water for washing purposes; in fact many small properties are shut down, but on the other hand the dry weather has been of great benefit to prospectors; this is particularly noticeable in the Gordon Hollow and Roaring Springs district, located about four miles southwest of Joplin. This point is fast becoming a typical mining camp, and is rapidly filling up with miners and prospectors, and new strikes are reported almost every week. The last important strike was made by Colonel Gregg on an 80-acre tract of land, at a depth of 42 ft. the miners broke through the cap rock into a mass of zinc ore occurring in large houlders.

We are pleased to see this particular locality so rapidly opening up, as it will soon fill a gap between the Galena (Kans.) and Joplin (Mo.) districts.

Cooley & Elmore closed a contract last week for the erection of a 35-ton concentrating plant on the Brooks land near East Hollow.

PALERMO MINING COMPANY.—This company, operating on the Bristo land three miles north of Joplin, has just completed a new steam hoisting and large pumping plant, and will now continue sinking its shaft to catch the 30-ft. body of ore recently cut by drilling.

ROARING SPRINGS LAND AND MINING COMPANY.—This company is carrying on the most extensive operations in the Roaring Springs district. It has been pushing development for the past two years, and has in operation one large concentrating plant and two custom crushing mills, which are run to their full capacity. For the past three months the entire property has been in charge of Mr. E. Hedburg, a man of extensive experience as a mine operator, and under his able management the mines on the company's property are now steady producers of lead and zinc ore.

MONTANA.

ANACONDA MINING COMPANY.—All kinds of rumors are in circulation concerning the intentions of this company. Some say that it will resume work at once, and some say that it will not until next spring. As a matter of fact no one knows the truth except the management, and they will not tell. Mr. Haggin maintains his wonted sphinx-like silence concerning the matter. There seems to be a general impression among copper men of this city, however, that the mine will not be reopened for some time, as is indicated by the rising tendency in the copper market.

UNITED SMELTING & REFINING COMPANY.—According to the last annual statement filed with the Secretary of State the capital stock of this company is $4,000,000, of which $1,530,165 was actually paid in. The existing indebtedness was $997,527.

LEWIS AND CLARKE COUNTY.

HELENA MINING AND REDUCTION COMPANY.—The last annual statement filed by this company with the Secretary of State showed its capital stock to be $3,500,000, of which $3,315,955 was actually paid in. The existing indebtedness was $130,400.

HELENA AND LIVINGSTON SMELTING AND REDUCTION COMPANY.—The capital stock of this company is $4,000,000, all paid in. The existing indebtedness is returned to the Secretary of State as $44,063.06.

MEAGHER COUNTY.

DIAMOND R. MINING COMPANY.—This company owns the Moulton mine, which is developed as follows: Tunnel No. 1 is 200 ft. in length, and strikes the vein at 50 ft.. and then drifts along it for 75 ft.; No. 2 tunnel strikes the vein at 50 ft., and drifts along it for 75 ft. In the lower tunnel a winze has been sunk 150 ft., and has drifts at the 75 ft. and 150 ft. levels. The company has been stoping ore at both levels, and has five stopes opened. Five hundred tons of ore have been shipped worth $120 per ton, and there is 160 tons of first-class ore and 1,200 tons of second-class on the dump. The company is not doing much now on account of taking the machinery out of the tunnel and placing it at the large working shaft. This is a three compartment shaft, and is now down 180 ft.; it will be sunk to 300 ft.. and a cross-cut run to the vein. The cross-cut will be about 150 ft. long. A seven-drill Ingersoll compressor is now working at the main shaft. The new machinery ordered for the latter will be 150 of H. P. and of the most improved pattern. The mine is working 35 men.

INGERSOLL.—This mine has a tunnel in 1,000 ft. which struck the Ingersoll lead at a distance of 50 ft. and followed it 750 ft., where the vein forked. The owners are now drifting to the west toward veins that showed well on the surface and which, at a depth of 50 ft., yielded ore that netted $12 per ton.

YELLOWSTONE MINING & SMELTING COMPANY.—At the meeting of this company held on the 21st ult., 420,000 shares out of 500,000 were represented and all voted unanimously for reincorporation. As soon as the legal requirements connected with the dissolution of the old company have been complied with, articles of incorporation will be filed and the mine set to work on a new basis. The articles of incorporation will be filed by Dr. Thomas Hampton, W. R. Baker and John Potter, while Dr. Parberry will be president of the new company, with Charles Mayn as vice president, James T. Wood as secretary and treasurer, and Dr. Parberry, John A. Woodson, Chas. Mayn, J. P. Rhoads and John E. Hensley as a board of trustees. The business office of the new company will be at White Sulphur Springs. A new superintendent will be in charge, and everything will be changed. The shaft is being made ready for a cage, and will be sunk 100 ft. deeper than it is at present, forthwith. New stock will be issued, and it being assessable, an assessment will be levied to cover the liabilities of the company and furnish working capital.

PARK COUNTY.

LIVINGSTON COKE & COAL COMPANY.—The capital stock of this company is $500,000, all paid in. The existing indebtedness is returned to the Secretary of State as $409,365.04.

SILVER BOW COUNTY.

BUTTE & BOSTON MINING COMPANY—The new calciners at this company's smelter were started up on the 22d ult.

BUTTE & MONTANA COMMERCIAL COMPANY—This company was organized, says the Boston *Transcript*, by a syndicate composed principally of Boston & Montana and Butte & Boston people, with their friends, who paid in $12.50 per share on the stock of 40,000 shares, to furnish lumber and timber to the mines of Butte, which had hitherto been paying $20 per M. The promoters of the company thought that there was an opening for a concern to engage in the business and sell the product at a lower figure, say $15 per M, with good profit. This has been done, and it is stated that the price of lumber in Butte has already been materially reduced. Ten thousand shares of the stock of the company were sold to E. Rollins Morse & Brother, to provide adequate working capital to carry on the business. In addition to the great lumber business, the company has secured interests in mining claims and in town site companies, one of which latter, the Kalispell, has already begun the payment of dividends—$20,000 being the Butte & Montana company's share of the $100,000 paid September 1st, it owning a one-fifth interest in the Kalispell company. The Butte & Montana is already carrying on a large business getting out and selling lumber, and while this is its main purpose it has enough of the speculative nature in its other departments to make it attractive in these days of growing Boston interest in mining and land development in Montana. It is confidently expected that the Butte & Montana will pay its first dividend in January next—$40,000, or $1 per share, from profits of the lumber business.

PEABODY.—This mine has yielded another carload of galena ore and lead carbonates, which was shipped to the Kansas City smelter says the Butte *Miner*. The ore averages from 60% to 80% lead, 40 to 70 oz. in silver, and several dollars in gold. It is owned by Dickey Bros., who, since its location by them have taken out over $70,000. The Peabody is in lime formation, and as the ground is very easy, it has been one of the most economical mines in the county, only two boxes of powder having so far been used in extracting the ore and running nearly 2,000 ft. of tunnels.

NEVADA.

BELLE ISLE MINING COMPANY.—The annual meeting of this company was held on the 23d ult., 83,042 shares being represented. The following officers and directors were elected: E. Scott, pres-

ldent; F. A. Berlin, vice-president, and I. J. Shackleford, M. A. Jackson and J. W. Pew. R. M. Catlin was appointed superintendent and J. W. Pew, secretary. The financial report showed that the company had an indebtedness of $4,871.80. The annual report of the superintendent set forth that at the beginning of the year the ore known as the west ore body had been drifted on in what is now called the east ledge, and the showing was deemed of sufficient value to warrant the pumping out of the 450-ft. level, this latter operation having been accomplished. A crosscut was started near the north line of the seam to open up ground on the 450-ft. level beneath the ore developed on the 350-ft. level. A large slip filled with clay holding boulders of vein spar was encountered, which was evidently the detritus from a faulting of the vein. This was finally proved by the south break found on the 350-ft. level; work on the 450-ft. level was then suspended pending further explorations on the 350-ft. level to determine the extent of the throw and direction of the fault. A crosscut driven west on the 350 ft. level, at a point 62 ft. in, encountered another vein of good ore of fairly good size, having a westerly dip and parallel to the first vein. This ore was drifted on 100-ft. and stopes have been started, exposing very fine ore. The main crosscut was then driven west and at 110 ft. encountered a vein of good ore; and a drift south 80 ft. on the ore body still shows high grade in the face. This crosscut, about 60 ft. further west, encountered a broken mass of vein matter, the ore giving high assays. Intermediate drifts run from a winze sunk from the 350-ft. to the 450 ft. level show ore which is of good quality. The openings on the 350-ft. level and the intermediates amounted to 1,118 ft., and on the 450-ft. level, 689 ft.

During the year 321½ tons of first-class ore were extracted. Of this amount 239½ tons of an average assay value of $291 02 were milled at the Union mill, 10½ tons of $652.35 assay value were shipped to Salt Lake City, and 13½ tons of $756 assay value were shipped to San Francisco. There is now on hand ready for reduction 58 tons, of an estimated value of $300 per ton. There were shipped to the concentrator 711 tons of ore, which yielded 76 tons (wet weight) of concentrates of $247 estimated assay value.

The amount of dead work which it was found necessary to do to determine the extent, etc., of the faulting of the veins, has made it evident that the workings on the 450-ft. level are something over 100 ft. from the probable position of the ore on that level. Work will be pushed in this direction, and from the fact that the ore continues of high grade on the lower intermediate level the superintendent is hopeful that during the ensuing year a better showing of ore will be made on the 450-ft. level than has yet been made on the levels above.

NORTH BELLE ISLE MINING COMPANY.—The ore continues high grade in the north drift from the south line, 400-ft. level. The south intermediate above the 500-ft. level, has been extended 5 ft., and is yielding good ore.

EUREKA COUNTY.

(From our Special Correspondent.)

DIAMOND.—From 100 to 200 cars of waste rock are being run out daily from the Diamond mine on Prospect Mountain, from a cave which occurred there about a month ago. This mine is prospecting well and developing into a paying property.

EUREKA CONSOLIDATED MINING COMPANY.—The last bullion shipment was valued at $13,500. Sixty tons of lead were also shipped last week. It is reported that the works will be closed down next week, and that the ore be shipped for reduction.

MORRIS & WHIP-POOR WILL.—This mine, which adjoins the Diamond, has been leased for two years to a party of experienced miners. They have large quantities of low-grade smelting ore in sight. This mine is noted for its great fissures and open ground, and will probably be favorably heard from in the near future.

RUBY MINING COMPANY, LIMITED.—Operations in the Dunderberg mine are nearly suspended. This property has been a large producer, but of late years has been operated mainly by tributers. The "pitches" have become poor, and are nearly deserted. Contrary to most other mines of the district, the shale, which forms the footwall of the ore-bearing zone, dips westward, and is intersected by the boundaries of an adjoining claim, the property of other parties.

THE RICHMOND CONSOLIDATED MINING COMPANY, LIMITED.—This company drafted several men at the Richmond and Williamsburgh mines on the 18th ult. There is some speculation as to changes that may occur, but nothing can be learned at the company's office.

LANDER COUNTY.

AUSTIN MINING COMPANY.—This company, o which mention was made in our last week's issue, will, according to the Austin *Advocate*, soon start the Patriot mine at Yankee Blade. The concentrator has been shut down and a station is being blasted out at the 350-ft. level of the Union to sink the shaft 200 ft. deeper. As soon as the Patriot is started the Frost will also be started. There are now 17 men on the pay roll. The pump has been taken from the Naiad Queen to be used at the Patriot in pumping out the water.

PITTSBURG CONSOLIDATED GOLD MINING COMPANY, LIMITED.—During August 974 tons of ore were milled, yielding $5,370. The manager reports that there is plenty of ore in sight in the mines to run the mills; but the grade of the ore is extremely low. Great difficulty is experienced in running the mills, however, on account of scarcity of water.

LINCOLN COUNTY.

PIOCHE CONSOLIDATED MINING AND REDUCTION COMPANY.—The company now has 425 men on its pay-roll at Pioche, and it is said that the number is to be increased soon.

STOREY COUNTY—COMSTOCK LODE.

(From our Special Correspondent.)

SAN FRANCISCO, Sept. 24.

The following is the weekly statement of ore extracted from Comstock mines, with the battery assay values:

Mine.	Tons extracted.	Tons milled.	Assay Value. Sept. 19.	Sept. 12.
Con. Cal. & Va....	944	980	$19.00	$22.40
Challar.....	417	417	17.65	16.08
Occidental.....	306	306	18.10	17.90
Ophir.....	18	...	20.00	22.50
Savage.....	*502	590	19.10	20.61
Yellow Jacket.....	Not rep't'd.	...	.....	.....

* Cars.

CONSOLIDATED CALIFORNIA & VIRGINIA MINING COMPANY.—Bullion valued at $11,582.17 was shipped to Carson last week, and there remains on hand bullion valued at $12,500. The heavy drop from $22.40 to $19 per ton in the assay value of the output from the mine has been received in San Francisco as the reason of the directors for passing a dividend this month. It is not generally believed, however, that the mine is looking any worse than it has for some time past. The following paragraph hearing on the subject has been published here this week and has been re-echoed elsewhere: "As the ore in the stopes is well cleaned up from week to week, and as good an average as possible is being made by an honest management, it is taken for granted that the ore reserves are gradually deteriorating in value," etc. It would be difficult indeed to find any one on the Street who takes any such thing for granted, or who has the childlike confidence, indicated by the above lines, in the honesty of the management. One can only form an opinion regarding the honesty of the management at the present time hy the past, and since the amalgamation of the two companies years ago the manner in which this company has been managed will not hear investigation any more than other mines on the lode. A northeast lateral drift has been started from the east drift, 1,800 level, 186 ft. east of the winze below the 1,750 level. This drift is followihg an 8-inch streak of ore, but so far no encouraging results are reported.

HALE & NORCROSS MINING COMPANY.—Ore is being taken from near the face of the east crosscut, 1,100 level, on the north boundary. The north drift from the winze at the end of No. 3 east crosscut has connected with the Savage east winze, 1,450 level. This gives ventilation and the work of extracting ore from this section of the mine has commenced.

OCCIDENTAL CONSOLIDATED MINING COMPANY.—There has been received as the proceeds of the sale of 23,000 lbs. of ore concentrates $7,730.58, to the credit of August account. A shipment of bullion valued at $5,550.89 was also made during the current week.

SAVAGE MINING COMPANY.—The management of this corporation rejoice apparently in mystifying the public, and the devious paths which it treads are hard to follow. During the present week there was given to the city press an account of an agreement concluded by the Savage company with the Comstock Tunnel Company, by virtue of which the latter named company would convey all Savage ore and waste to the mouth of the tunnel at a rate of 50 cents per ton. In the event of other companies joining in, this rate was to he reduced to 40 cents per ton. The rate agreed upon was supposed to save to the Savage company about $1.50 per ton. The river mills charge $6 per ton for reduction, 50 cents per ton for transportation through the tunnel, and 25 cents for conveyance from the tunnel to the mill, the total expense amounting, consequently, to $6.75. The rate for crushing the ore at the Nevada mill is $7 per ton; the hoisting expenses are about $1 per ton, and 20 cents per ton is paid for transportation from the mine to the mill. This amounts to $8.20 as compared with $6.75, the new rate. Col. C. C. Thomas, Superintendent of the Comstock Tunnel Company was said to have telegraphed his foreman to receive all ore, etc., from the Savage company, and the agreement had been, according to the Savage people, duly ratified. This morning President Levy took occasion to repudiate any such contract. He somewhat unwillingly conceded that certain negotiations were pending between the tunnel company and certain of the mining companies for removing the waste, and if a 30-cent rate can be obtained it is likely the contract will be made. The companies likely to be party to the arrangement will be the North End and Middle Comstock.

SIERRA NEVADA MINING COMPANY.—It is stated that clay is being cut by the west drift, 630-ft. level, and that the west drift from the main shaft, 900-ft. level of Sierra, Nevada & Union Consolidated, has tapped a strong flow of water, which would seem to indicate that an open fissure is being approached. This drift has been carried for about 1,000 ft. through a porphyritic formation.

WHITE PINE COUNTY.

(From our Special Correspondent.)

A larger number of miners are employed on White Pine Mountain than for a number of years past, and several properties are bonded for sale. The ore at present being mined is principally of a smelting character and is being shipped by way of Elko to Salt Lake and the Selby Works, at Vallejo Junction, Cal.

NEW EBERHARDT COMPANY, LIMITED.—This company is doing considerable development work on Treasure Hill, where in former days large quantities of rich ore were mined, and also in the old Eberhardt tunnel, but nothing of any particular value has yet been discovered.

NEW MEXICO.

From our exchanges we gather that trouble is expected over the Rector group of mines in the Monument district southwest of Deming. The district is in the neighborhood of one of the monuments which mark the boundary between this country and Mexico, and although Mr. Rector has been in possession of this group of mines for ten years, it is claimed that the mines, or at least a part of them, are on Mexican territory, and it is said that a party of Mexicans is on the way to take possession of and work the mines. A number of miners left Deming lately to go down to the camp, and it is certain that any attempt on the part of the Mexicans to take possession of the mines will meet with resistance. The boundary between the United States and Mexico is plainly marked with stone monuments set up at short intervals along the line, yet in the mining districts along the mountains it is sometimes difficult to determine the location of the boundary within a few feet, thus affording opportunities for disputes over the right to valuable mines.

GRANT COUNTY.

MAID OF MONTEREY.—The owners of this mine Messrs. Morehead & Jasper, have sunk 15 ft. in a solid body of ore, since striking it at a depth of 30 ft. The width of the vein is unknown, the workings not disclosing the walls. Assays show value of 16 oz. silver and $3 gold per ton, with a high percentage of lead. A sample has been sent to the Central Ore Smelting Company, at Pueblo, Col., and if a satisfactory contract can be made the ore will be shipped there for reduction and extensive work inaugurated in the mine. The mine is situated near the Houston & Thomas properties on the west side of the Pinos Altos Mountain.

SANTA FE COUNTY.

TUERTO MOUNTAIN COPPER AND GOLD COMPANY.—This company, to the organization of which we referred in our issue of August 15th, has begun operations. The company's property is situated about seven miles from the Cerrillos coal banks and 15 miles from the railroad station. The occurrences of the ore are said to be the same as on the south side of the Tuerto Mountains in the Santa Fe Copper Company's mines. According to reports the ores show partly a honeycombed quartz rock, containing some iron oxide besides free gold (about $6 to $10 per ton) and partly oxidized copper ore, changing as depth is gained into copper pyrites, mixed occasionally with iron pyrites and lime—alumina garnet. The course of the veins of the mines owned by the company is from west of north to east of south, and the dip of these veins is toward the east about 8° from the horizontal. A shaft will be sunk to strike the different veins, and all the mines of the company worked from one central point. The mines are all situated on Government land, joining the south side of the Ortiz grant on the north, and the north side of the disputed Cañon del Agua ground to the south. A smelter site has been selected and located. It will take about six months to open up the mines sufficiently and get a good supply of ore in reserve before works are erected. Reverberatory furnaces will be used to turn the ore into matte. It is stated that coking coal will cost $4 per ton delivered at the proposed plant. The capital stock of the company has been fixed at $1,000,000, divided into 100,000 shares, of which 40,000 shares have retained in the treasury at the disposal of the stockholders should they think it advisable in future to extend the proposed plant's capacity and to erecet elctrolytic refining works, and to connect with the adjacent coal banks by rail. The headquarters of the company are at Santa Fe, with a branch office at 261 Broadway, New York.

NEW YORK.

NEW YORK CONCENTRATING COMPANY.—Material progress is being made in the construction of the Westchester & Putnam Railroad, near Peekskill, and in the operations at the Sunk mine. The surveyors are at work on the road to make changes to meet the objections of some of the landowners. They have also driven the center stakes from the Croft mine to the Sunk mine, and are now engaged in driving the slope stakes. The deeds for the right of way from the Croft mine to the Sunk mine are being drawn and the landowners paid. The road will be constructed this fall as soon

as the surveyors completed their profiles. Mr. Batchelor, general manager of this enterprise, has been in Peekskill for a number of days and announces everything advancing finely. The Westchester & Putnam Railroad was incorporated on the 28th ult. with a capital of $100,000. The directors of the railroad are: Thomas A. Edison, of Orange, N. J.; Charles Batchelor, of New York; Francis Couch, of Peekskill; Samuel Insull, Robert L. Cutting, William S. Perry, Thomas Butler, Sherburne E. Eaton and Albert Wagstaff, president of the Brooklyn Bridge.

OHIO.

COAL.

A strike of the Hocking Valley miners is threatened because mine bosses in Hodley's and Rend's mines have discharged union men.

PENNSYLVANIA.

COAL.

The next mass meeting of the miners of the Scranton region will be held at Oliphant on October 17th.

A fall of coal occurred on the 28th ult., at the Black Diamond mine in Luzerne Borough, whereby one miner was killed.

Miners' mass meetings were held at several points in the Beech Creek region on the 26th inst., at which resolutions were adopted demanding that the Saturday half holiday be made permanent. The operators are opposed to granting the demand, and there is said to be a possibility of a strike.

A general strike of railroad coal miners of the Pittsburg district was begun on the 1st inst., in accordance with the action taken at the convention on the day before. Reports have not been received from all the mines, but it is estimated that nearly 10,000 men left work. They say they will remain out until the 92-cent rate is conceded by all the operators.

The river mines were started in full last week. The operators look for a rise toward the end of October, when it is expected that about 20,000,000 bushels of coal will he sent South. It is reported that the strike of the railroad miners has alarmed the river operators, as they are afraid that the river miners may also break the agreement and go on a strike.

Aurora Coal Company.—A fall of coal occurred in the colliery of this company at Laflin on the 28th ult., causing the death of two men.

Delaware and Hudson Canal Company.—A fire is burning in the lower workings of the Conyngham Colliery at Wilkesbarre, and all efforts to reach or even get within close proximity to the affected section have proved unavailing. The mine is one of the best of the collieries owned by the company, and has been idle in part for several months owing to the water, which had gained control of the gangways and shaft so that the regular pumps could not be utilized. The principal production of coal has been from the Baltimore vein, but this part of the mine will necessarily be flooded to such an extent that the water must reach every part of the vein. The time required to fill the vein and then pump it out will reach nearly to Feb. 1, it is said, and a large force of men will be thrown out of employment unless they are sent to other mines of the company.

Lehigh and Wilkes-Barre Coal Company.—At the Nottingham colliery at Plymouth, the breaker has been changed so that the culm, that was formerly thrown on the dirt bank as refuse, will now be elevated to the loft of this breaker by means of scrapers, and run through the screens that have recently been put in for this purpose. By this method of rescreening the company will save and place in good marketable condition at least 100 tons of coal per day, which was heretofore considered unfit for market after it had once passed through the breaker. The output of this colliery in August was 51,031 tons. The working time for the month was 18 days 8 hours, 23,527 cars of coal being hoisted. In July the working time was 20 days 8½ hours, 26,468 cars of coal being hoisted. Shipments for the month were 57,145 tons. The decrease in output in July and August from the famous June record was due to the less time worked, on account of the numerous picnics attended by the men and the restriction in mining.

Philadelphia & Reading Coal and Iron Company.—The collieries in the Shenandoah Valley operated by this company that have been working but nine hours a day for several weeks have started on full time.

Raystown Branch Coal Company.—State Attorney-General Hensel has refused to ask for a writ of *quo warranto* to forfeit the charter of this company on complaint of Messrs. S. D. and W. C. Housebolder, who alleged that the company is carrying on a "company store."

Rock Hill Iron and Coal Company.—An explosion occurred in this company's colliery No. 2 at Robertsdale, on the 29th ult. One miner was killed.

NATURAL GAS.

The Philadelphia Company on the 29th ult. entered suit at Pittsburg against Carnegie, Phipps & Company, Limited, to recover $551,285 for natural gas furnished, and alleged not to have been paid for. The plaintiff alleges that in 1884 Andrew Carnegie and H. C. Frick contracted with it to supply certain mills, and that the balance stated still remains unpaid. On the other hand, and upon the petition of Carnegie, Phipps & Company, Limited, Andrew Carnegie and H. C. Frick, Judge Stowe has granted a preliminary injunction preventing the gas company from shutting off gas from the Carnegie mills. The Carnegies, it is reported, assisted George Westinghouse to capitalize and materialize his great gas plant with the distinct agreement that Westinghouse's company should forever supply their mills with gas at 75% of the cost of coal. But the supply has diminished constantly for 23 months, and prices have been raised materially.

OIL.

According to a special dispatch to the *Evening Post*, on the 1st inst., the Standard Oil Company is trying to purchase 1,000 acres in the choice part of the McDonald and Noblestown oil fields, in Washington County, 20 miles southwest of Pittsburg. The Standard offers between one and a half and two million dollars. The property belongs to Guffey, Jennings and Murphy, three big producers, and it is said the deal will be closed this week. The Standard apparently desires to shut off the production.

Great excitement prevails in the McDonald field. The flow of gas and oil has reached enormous proportions and the facilities prepared to receive the production of the field is so small in comparison with the great flow, that the greatest consternation reigns among producers and inhabitants. When the Greenlee & Forest No. 1 was struck on the 29th ult., the gas escaping blew the tank to pieces, as if it had been struck by a cyclone. The oil that escaped from this well is estimated at about 8,000 barrels. The greatest fear is that the oil will become ignited and jeopardize life and property. On the 1st inst. the Greenlee & Forest No. 1 was drilled a little deeper and is now doing 500 barrels per hour. The production of the McDonald field is estimated to be a little over 40,000 barrels.

Easton Oil Company.—E. C. Rosenzo, president of this company, of Philadelphia, filed 26 leases in the Recorder's office for land in Wayne and Washington townships on the 26th ult. The company proposes to commence boring for oil and gas on these lands in the near future

SOUTH DAKOTA.

LAWRENCE COUNTY.

The statement recently published by the Homestake and Deadwood-Terra Mining companies has opened the eyes of mining men, says the Deadwood *Pioneer*. They show that for the past year the Homestake ore has only run $3.60 a ton, while the Deadwood Terra only goes $1 40, yet the former has paid 10% ($12,500) dividends every month, and has a surplus of $120,000, while the latter has accumulated a surplus of $300,000, and has paid 5% dividends ($10,000) for the past two months. The success of these mines in making low grade ores pay has stimulated others, and a movement is now on foot, backed by the leading men of the Black Hills, to erect a large custom mill at some point that is reached by railroad connections and can furnish sufficient water power to run the mill. At present Belle Fourche is the point that offers the most favorable opportunities, having a large water power and being connected with the free gold belt by a full railway system. There are large bodies of low grade ores in the vicinity of Central some vertical veins and some flat cement deposits. A careful examination of these has been made, and they are found to average $1.90 per ton. The cost of mining, milling and transportation is estimated at $1 per ton, leaving a profit of 90 cents. The intention is to have 1.000 stamps working on this ore crushing 3.000 tons daily An effort is being made to enlist eastern capital in the scheme.

TENNESSEE.

A letter from Knoxville dated September 27th, says: The penitentiary lease question will now go to the courts, in so far as it relates to the convicts who are worked away from the main prison or, rather, sub-leased. Attorney General Pickle, in an elaborate opinion, held that the convicts could not be sub-leased. Nothing of this came before the Legislature. Now, however, the question goes to the courts. William Warren, a white convict on the barracks at Briceville, has, through his attorneys, filed a petition in the Knox County Criminal Court, before Judge Sneed, praying a writ of habeas corpus. The writ was granted and addressed to the Warden at Briceville, who is called on to show cause why he should not surrender the prisoner. The writ was made returnable on September 30th. This brings the whole question before the court. It is far-reaching and exhaustive. The object is to determine the legality of the sub-lease system, and if it be decided that the convicts cannot be sub-let, then all convicts must be taken from those places where they are now working on sub-contracts. This would remove them from Briceville, Coal Creek, and Oliver Springs. If the petition for habeas corpus is favorably acted upon, it is understood that the lessees will take the case to the Supreme Court of the State, which is now in session here. If they win, those acting for the convicts will take the case up. It is believed that within two months a final decision can be had.

UTAH.

The directors of the Salt Lake Stock Exchange ave sent a circular letter to delinquent members stating that unless the Exchange receives financial assistance it must be closed. It is said that a large number are behind in their dues and that several of the mining companies listed have not paid their fees.

It is said that the company now operating the sulphur mines at Cove Creek has assurances that when the Rio Grand Western makes its extension next year from Salina south, the main extension will be brought to Cove Creek, near the sulphur mines, and will be taken thence southwest across the valley in which Milford is situated, around the point of the mountain south, by Mud Springs to the iron mines in Iron County. A preliminary survey has been made, and a profile map of the route is already in possession of the Rio Grand company. The sulphur mine company has, it is said, assured the railroad a shipment of over 100 tons of sulphur daily.

BEAVER COUNTY.

Horn Silver Mining Company.—The shipments from the Horn Silver mine for the past few weeks have been much below the average maintained throughout the year, says the Salt Lake *Times*. This is not due to any diminution in the supply, but to the poor market for the Horn Silver product. The ore from this mine is of the most rebellious character for smelting of any produced in Utah and the smelters can only use a limited quantity at a time. The production of the mine this summer has been large and it has to an extent glutted the market.

CACHE COUNTY.

La Plata and Sundown Consolidated Mining Company.—This company has given an order for a plant of machinery for the La Plata mine, and is making preparations to work its property throughout the winter. A plant of machinery is now being set up at the Sundown mine. The grade of the ore in both mines is said to be improving with depth.

JUAB COUNTY.

Mr. John A. Shettle, proprietor of the lixiviation mill at Tintic, states that he is now working 15 stamps and treating 40 tons of Mammoth ore a day that runs from 18 to 20 oz. silver per ton. Fifteen stamps more are being put in, making 30 in all, which will be running within the next three weeks, giving the mill a capacity of 75 or 80 tons a day. In the ore treated so far, no difficulty has been experienced in saving the silver contents and as the whole dump is of the same character none is expected. Mr. Shettle has entered into a contract with the Mammoth company to handle no other ore in his mill for the next three years.

Eureka Hill Mining Company.—This company is a close corporation and does not make public statement of its earnings. The Tintic *Miner* is, however, authority for the statement that its dividends in 1890 amounted to $250,000.

Tintic Iron Company.—This company is shipping 1,200 tons of iron fluxing ore per month from the Dragon mine at Tintic.

MILLARD COUNTY.

Yellowstone—A force of five men is working in this mine, which is being opened in a well defined ledge. The shaft is now down 75 ft. Small ore shipments are being made. The ore assays about 50% lead and a few ounces silver.

SALT LAKE COUNTY.

Benton.—The management of this mine at Bingham is making calculations on working 100 men during the winter, and a boarding house to accommodate that number is being built. The Benton and the Nast are worked as one property, and are said to be paying well. The tunnel on the Nast is in 1,200 ft., and has been running on a clean vein of galena for some distance. All of the ore shipped is first class, but a large amount of concentrating stuff, a mixture of lead carbonate, galena and quartz, is being piled on the dump.

Parnell.—This mine, on York Hill, was sold last week for $40,000 to E. B. Colemen, who proposes to put a force of men to work in it at once.

Petro Mining Company—One hundred shares of Petro stock recently sold in Bingham brought $20 per share.

SUMMIT COUNTY.

Mr. R. Mackintosh is increasing the capacity of his sampling works at Park City.

Ontario Silver Mining Company.—On the 1,500-ft. level at No. 2 shaft the cross-cut to the vein is now in 500 ft. The mine is making its regular output of 125 tons of ore per day.

It is not generally known, says the Park *Record*, that the large body of ore encountered on the 1,300-ft. level of the Ontario No. 2 about one year ago is of such character as to enable the mill to do away with bluestone in the reduction of ore and increases the value of the metal extracted nearly 20%. As a result that rich ore body is not being stoped out very rapidly, it being used in the ratio of about one ton in seven.

Silver Key.—The lessees of this mine have cut through a body of low grade ore for a distance of 25 ft. The ore runs 12·6 oz. in silver and 8% lead.

WASHINGTON.

PIERCE COUNTY.

Wilkeson Coal Company—This company has been developing its colliery at Tacoma quite extensively lately, and looks for a largely increased business in the near future. It has decided to re-

duce the price of coal to $4 a ton. It has opened up some new seams in the mine, and by the beginning of next year expects to make a daily output of 1,000 tons.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, Oct. 2.

Heavy Chemicals.—The demand for heavy chemicals during the past week, owing to both special and general trade conditions, has been very good, and prices have been firmly maintained, and in some cases slightly advanced. The Alkali Union by practically regulating the supply is proving to be the back-bone of the market.

Caustic Soda.—Demand is only fair with large stocks in sight for October delivery. 70@74%: as was the case last week this commodity has been rather weak, a condition which has been heightened by a desire to sell; 2·95.@3c. is the average quotation. 76%: The demand has been good, and sales of several hundred dms. were made at 3·20@3·25c, 77%: The situation is strong. Spot is selling at 3⅛ and futures at 3·05c.

Carbonated Soda Ash.—The demand is fair. Mexican shipments continue brisk. We quote: 48%, 1·57@1·65c.; 58%, 1·47½@1·52½c.

Caustic Soda Ash.—There is little doing. 48% is quoted at 1.62½c. spot, and 1.55½@1.60c. for futures.

Alkali.—Very firm both for spot and futures for reasons mentioned in previous reports. B. M. 48% is selling at 1·55@1·60c.; high test B. M. at 1·47½@1·50c.

Bleaching Powder.—The large stocks mentioned in our last report have been absorbed, a fact which has strengthened the market. Spot commands 2·05c. and futures 2·10c.

Sal Soda.—Slight concessions were made during the week in order to place rather heavy arrivals. Spot sold at 1·07c. Since then the market has strengthened to 1·10@1·15c. Futures command 1¼c.

Acids.—The acid market, which commenced a month ago to respond to generally improved industrial conditions, is in most excellent shape. The demand is heavy, and is growing in a way to cause manufacturers to wonder if they will ultimately be able to meet it. As we predicted, prices have commenced an upward course in sympathy. Last week we chronicled an advance in chambers acid to $9@$10.50 per ton. This bas been maintained, and $9.50 and $10.50 are the minimum and maximum figures. This week we note an advance in 66% sulphuric as follows: Lots of 500 cbys., 1½; 100 cbys., 1¼; 10@15 cbys., 1½.

There has been no advance in nitric or muriatic, although in consideration of the firm attitude of nitrate of soda the trade looks for a higher quotation on the former in the near future. The other acids, with the exception of acetic, are active. We quote per 100 lbs. in New York: Acetic, $1.65@$1.75; alum, lump, $1.60@$1.70; muriatic, 18°, 90c.@$1; 20°, $1@$1.12½; 22°, $1.12½@$1.25; nitric, 40°, is selling for $4.50, and from that upward, according to quality, etc.; 42°, $5@$6; oxalic, $7@$7.25; $3.30@$3.40.

Blue Vitriol.—Owing to causes previously set forth the market has made another advance, and 3¼c. and 3⅝c. are the outside figures. It is reported that the Omaha & Grant plant of Omaha, Neb., and the Wharton plant, Philadelphia, Pa., are both putting in electrolytic copper plants.

Brimstone.—The prevailing high market shows plainly the power and grasp of the Sicilian manipulators on this product. There is no spot stock for sale. Second holdings are hid $32.50@$33. Seconds to arrive during October command $29.75 against $29.25 of the first of the week; thirds 60c. less.

We are indebted to Messrs. Parsons & Petit for the following data concerning the Sicilian situation: Shipments in August were somewhat lighter than in July, while production increased. Prices were very fluctuating, and with the least inquiry holders raised their pretensions, and speculators tried to drive prices up by buying for forward delivery from October to April next year. In the course of this month several settlements will have to take place, after which the condition of the article may perhaps become more normal. Buying for shipments abroad is only from hand to mouth. The following table showing exports is in Sicilian cantars, 13 of which are equivalent to the English long ton of 2,240 lbs.

August.	1891.	1890.
Great Britain	16,804	12,066
France S.	33,901	33,206
" N.	10,083	
Holland	782	2,560
Belgium	464	
Germany, Elbe	14,136	13,609
" Balki	510	
Austria	7,685	10,196
Russia	24,098	30,902
Sweden, etc	4,405	5,645
Australia	604	693
Various	1,243	1,105
S. America	60	
Portugal	758	
Greece and Turkey	188	16
Italy	8,009	15,719
United States	113,360	127,400
Total	238,080	253,117
Shipments from January to August..	2,686,244	3,197,021

Stocks, end of	August.	July.
Girgenti, Licuta, Catania, 1891	1,143,000	895,800
" " " 1890	1,239,500	935,500
" " " 1889	1,191,500	1,075,000

Fertilizers.—The market for the week has been rather more quiet. With the exception of the rise on nitrate of soda, it possesses no marked features.

Sulphate of Ammonia.—Demand quiet; 3·05@3·10c. is quoted for spot and 3⅛c. for October shipments. Bone sulphate is in good demand at 3·02½@3·05c.

The stocks of dried blood are light with a fair request, at $2 per unit. Tankage is firm at $19@$21. Azotine is light in stock and quoted at 1 95c. Bone meal, finest, at $21.50@$22.50. Acidulated fish scraps, $11.50.

Double Manure Salts.—Moderate demand. We quote the syndicate price of 1·10@1·12½c. for 48%. For 90% to 95% basis, 90% foreign invoice, weights and lists, 2·07½@2·10c. Lots under 50 tons are proportionately higher.

South Carolina phosphate has experienced a fairly active market. There have been no changes in prices, which are as follows: Land rock $7@$8, wet and dry, respectively, f. o. b. vessels at mines, and $7.25@$8.25 f. o. b. cars. Low grade river rock taken from the marshes is selling at about $7.25.

Florida phosphates are unchanged. (See London letter.)

Couper, Millar & Co., under date of the 16th ult., make the following report upon the English market: We do not look for much activity until quite the end of this year. The advance in freights has had the effect of withdrawing some of the offers of high grade Florida for the present, but there are sellers at late prices for shipment over 1892. Very little new business is reported from South Carolina, raisers there being still busy on their old contracts, and very firm in regard to prices. Consequent upon the re-formation of the Somme Syndicate, or more properly speaking in anticipation of it, prices were advanced five to eight centimes per unit for the higher qualities, and a fair business ensued at the advanced figures, but almost entirely with continental buyers. Mineral phosphates.—Canadian, 60-70% is quoted at 8d. per unit, ex-ship at direct ports. South Carolina land at 10d. per unit, and river rock of good quality at 10½d. Florida, 75%, at 10d. per unit. Peace River at 10½d. Ground Somme phosphate at 11¼d. to 12¼d. per unit for 70%, according to port. Ground osso on a basis of 8d. per unit for 50-55%, and 9d. for 55-60% f. o. b. Antwerp. Ground Belgian, 40-45%, at 5d. f. o. b. Antwerp. Bedford coprolites for delivery after harvest at 27s. per ton, free on rails Potton, and Cambridge coprolites at about 45s. f. o. b.

Kainit is quiet at $8.75@$9.25 according to quantity.

Muriate of Potash—Arrivals during the week were 150 tons, sales 100 tons. The market is steady with a fair demand.

Nitrate of Soda.—This commodity is on the boom; owing to causes previously mentioned as well as the expected increase in the export duty; the price has taken a bound. Spot commands 2·10c. Dealers are refusing to sell later than October and December shipments, for which they now ask 2·05c. Near-by is being bought at 2⅛c. It is claimed by those well posted in the trade that 2·25c. will be reached. The stock on hand comprises 73,000 bags, to which is to be added a cargo of 12,000 bags which arrived this week.

The New York *Herald* says in one of its recent Chilian dispatches: "In relation to the nitrate interests we learn that an agreement now exists between the various companies limiting the annual output to from 18,000,000 to 20,000,000 quintals. This meets the present demand throughout the world. If the demand should increase the nitrate companies would, of course, put a new limit on the amount to be produced. Under the present agreement every company works its beds nine months of each year, each selecting the period for work. Efforts will soon be made to push the sale of nitrates, not only in the United States but also in China and Japan. So far as we can learn the government has no immediate intention of disposing of its nitrate lands in the province of Tarapaca."

Colonel North, the nitrate king, in an interview with a representative of the New York *Herald's* European edition, expressed himself as follows: concerning the Chilian nitrate situation. "Now that the war is over, like other enterprising people, we will soon be extending our interests there. They could not well have been endangered before, but they are safe beyond doubt now and we will be in much better position than before to increase their value. Nitrate prices will improve."

MINING STOCKS.

[For complete quotations of shares listed in New York, Boston, San Francisco, Baltimore, Denver, Kansas City Birmingham, Ala., Pittsburg, St. Louis, London, and Paris, see pages 402 and 404.]

NEW YORK, Friday Evening, October 2.

The mining market during the week just past was exactly what the readers of this column have accustomed themselves to expect. Nothing happened that could be construed by the most optimistic observer as indicating the return of the long-absent activity. But then, as nothing of this nature was anticipated, nobody was disappointed.

However, through all the gloom attendant upon a dull and dispirited market, there is one ray of brightness. A desire is evinced by the best element among the traders to deal chiefly in those stocks which have some intrinsic merit. The trading in Standard Consolidated was the feature of the week, and attests to the truth of our observation.

The "wild-cats"—and, unfortunately, a good many still remain on the lists of the Consolidated Stock & Petroleum Exchange—have suffered a well deserved neglect in the general dullness of the mining market, and it is to be hoped that when activity once more comes to this market—if it ever does come—that it will be confined to the better class of stocks.

The Comstocks have undergone no improvement over last week, either in the number of shares sold or in prices.

Among the stocks dealt in we note the sale of 600 shares of Alta at from 54c. to 60c. Best & Belcher opened at $2.25 and closed at $2.85; Chollar was quiet at $1.60@$1.90. Of Mexican there were 600 shares sold at $2.50@$2.85; Overman, which has not been dealt in for a long time, has a sale this week at $1.20; Potosi had a solitary sale of 100 shares at $3, and Scorpion one of 300 shares at 35c.

Of Union Consolidated 100 shares changed hands, at $2.40, and of Utah, 1,200 shares, at from 70c. to $1.40. Belcher, another stranger, had a sale of 100 shares at $1.65. Consolidated California & Virginia was dealt in but once, 100 shares being sold at $5.63. There was a sale of 900 shares of Comstock Tunnel at 18 @ 20c. The report of this company will be issued next week and the election will be held on the 12th inst.

Occidental had a sale of 300 shares at 75c.; Crown Point shows a decline over last week, only 400 shares having been sold and the price falling off to $1.50; Gould & Curry was quiet at $1.85@$2, and Hale & Norcross shows only a sale of 50 shares at $1.70; Ophir declined to $3.70 and only 300 shares were sold. Of Savage, 275 shares changed hands at $3@$3.15, and of Sierra Nevada 400 shares at $1.80@$2.95; Yellow Jacket was neglected at $1.35@$1.80, only 100 shares were sold.

Of the Tuscaroras stocks there was a sale of 400 shares of Commonwealth at 40c., and one of 500 shares of Nevada Queen at 15c.

Martin White has a sale of 700 shares at $1.10@$1.25.

Among the California stocks, Standard was the feature of the week. There were 1,400 shares sold at from $1.35@$1.50. A lot of 900 shares which had been floating about for some time was picked up to-day. At the close $1.50 was bid for the stock, and it was offered at $1.60. Encouraging reports continue to come from the property. Astoria this week shows sales of 5,500 shares at 2c., and Belmont its customary sales of 1,300 shares at its usual price of 88c. and 90c. During the week 6,200 shares of Brunswick Consolidated were reported to have been sold. Last week our statement in this column concerning this company led some to believe that its mill was a 10-stamp affair, whereas in reality it is a 20-stamp mill, of which only 10 are running. It is expected to have the whole 20 dropping very shortly.

We note a sale of 200 shares of the old time favorite, Alice, at $1.50. Shoshone returned to the Exchange this week with a sale of 2,000 shares at 2c. Castle Creek, another Idaho stock, shows sales of 700 shares at 3c. to 4c.

Horn Silver this week was dealt in to the extent of 500 shares at $3.40@$3.50. In our mining news column will be found some information anent this company. We are informed by one of its officers that the inability of the company to sell a great deal of its ore during the past two months has been due chiefly to the increased transportation rates. The superintendent reports the property to be in excellent condition. Mr. A. C. Washington, the president of this company, left New York on the 28th ult. for Frisco, Utah, to attend the annual meeting of the company, which will be held there on the 6th inst. as announced in this journal last week. It is a foregone conclusion that the present officers of the company will be re-elected. They are: A. C. Washington, president, B. Mc E. Whitlock, vice-president, A. 1. Harrison, secretary and treasurer. E. T. Farnsworth, manager.

Some people must still believe in old Silver King. This week 300 shares were sold at 3c. How are the mighty fallen!

Phœnix of Arizona was in some demand during the week, 6,300 shares being sold from 50 to 56c. Silver Queen, which has not been dealt in for a long time, had a sale this week of 300 shares at 4c.

Among the Colorado stocks we note sales of 700 shares of Adams at $1.90@$2. Five hundred shares of Catalpa were sold at 24c. Very large sales of Freeland are reported.

According to the official lists of sales of the Consolidated Stock and Petroleum Exchange 12,300 shares changed hands during the week at prices ranging from 10c. to 12c.; but these large sales have had no effect upon the price. Old timers look with placid unconcern upon the doings of this eccentric stock and it is even hinted that the sales were not *bona fide*.

Leadville Consolidated has sales aggregating 1,700 shares at 11@12c. Little Chief shows a solitary transaction at 28c. There was a sale of 500 shares of Crescent at 14c.

El Cristo appeared in some demand during the

week, and under sales of 2,100 shares the price advanced from 45 to 60c The usual rumors are afloat concerniug some impending deal in this stock. There is some talk about "An English Syndicate," but nothing definite has been ascertained.

Boston. Oct. 1.

(From our Special Correspondent.)

The week under review has not offered much encouragement to operators in copper stocks for an advance. The declining tendency was quite marked to-day, when stocks came out freely and values went off to the lowest prices for the week. The dealings in the Montana stocks have been moderate, and buyers have not been very anxious to add to their holdings, while considerable stock has been pressed for sale, resulting in a lower level of prices.

Boston and Montana declined $3⅛ to $46 and Butte and Boston went off from $19⅛ to $17¼.

Calumet & Hecla sold early in the week at $275 and to-day at $270 for a single share.

Tamarack sold at $179, declining to $174 in to-day's dealings.

There was considerable buying of Franklin, which advanced to $19, but the advance was not sustained and a decline to $17¼ was the result, with a slight rally to $17½ to-day.

Kearsarge has ruled steady at $15½@$16, selling at the former price in the dealings to-day.

Osceola declined from $40 to $38⅝, but rallied later and sold at $39.

Wolverine has been quiet, and declined from $6¼ to $5½.

Atlantic declined from $16 to $14¼ on sales of 300 shares.

Centennial has been weak, and a good deal of disposition to sell is noted. The closing sale of last week was $19½; to-day it sold at $17½.

Allouez sold at $1⅝@$1⅞ with very little doing in it. Arnold has been quite strong and in quick demand at $2¼. Huron declined to 70c., and Santa Fé was barely steady at 50c. Humboldt sold at 50c. The balance of the list has been neglected.

In silver stocks, Breece was in good demand and advanced from 30c. to 50c. Cœur d'Alene sold at $1.15.

3 P.M.—The market closed weak. Boston & Montana sold at $46; Calumet & Hecla at $269; Centennial declined to $16⅜, and Osceola to $37½.

Denver.

Prices and sales for the week ending Sept. 26th, 1891:

Company.	Opening.	H.	L.	Closing. Bid.	Sales
Mines.					
Aileghany	25a	....		07b	....
Amity	02½b	*03	02½	02¾b	20,700
Bal. Smuggler	60a		....	51b	.....
Bangkok-C.-B.	05¾b	06¼	05¾	06b	1,500
Bates-Hunter	68a	67	66	67b	900
Brownlow	11	†12	10½	10½b	15,500
Cailiope	20a	....	....	15b	.....
Cash	20a	....	....	20a	.....
Clay County	120b	....	....	*123b	.....
Gettysburg	16b	20	18	19½b	7,700
Gold Rock	68b	*70	68	67b	2,000
Leavenworth	07¾b	....	....	08¼b	.....
Little Rule	†110b	....	....	†110b	.....
Matchless	....			275b	.....
May-Mazeppa	*118b	*118	*118	*117b	1,000
Oro	99b	....	....	100b	.....
Pay Rock	02¾b	....	....	02½b	.....
Puzzler	02¾b	*03¼	02¾	*03¼	1,400
Reed National	....	85	85	82b	1,000
Rialto	11 0b	110	110	110a	300
Running Lode	22½b	23¾	22¾	23b	3,000
Whale	12½b	12½	12½	11b	100
Prospects.					
Argonaut	05b	....	....	15a	.....
Big Indian	15a	....	....	15a	.....
Big Six	07¼	07¼	07	07b	600
Century	35b	37	36	36b	2,800
Claudia J	06¾b	*07	06¼	06¼a	5,400
Diamond B	03b	03	02¾	02¾b	1,200
Emmons	45b	*48	45	*48b	8,000
Golden Treas	71b	†80	72	73b	3,200
Ironclad	07½b	*07¾	06½	06½b	14,000
John Jay	04b	04	03¾	03½b	900
Justice	12½b	*14	12¾	13½b	16,000
Morning Glim	....	....	....	50a	.....
Nat. G. & Oil Co	13b	*14	13	12½b	3,800
Park Consolidated	06b	....	....	07b	.....
Potosi	03¼b	*04	03¾	03½b	5,600
Total					116,600

* Buyer 30. † Buyer 60. ‡ Seller 60. § Seller 30. a Asked. b Bid.

San Francisco. Sept. 24.

(From our Special Correspondent.)

The heavy drop in the assay value of Consolidated California & Virginia ore has had the effect of forcing prices down this week. This morning the ruling figure for the leader was $5.87½, declining a point later in the day under the sale of 800 shares. Ophir, that has recently been selling stronger than any other stock has, under the order of things, fallen back to its own place and is quoted at $3.60. Mexican at $2.45 and Sierra Nevada at $2.70 sold fairly well.

Of the middle Comstocks, Savage at $2.60, Potosi at $2.90, Hale & Norcross at $1.40 and Bullion at $1.70, were not in great demand, but the lots offered in the market were readily absorbed.

The Gold Hill group of stocks sold fairly well, the ruling rates being exceptionally low even for them. Caledonia sold for 40c.; Occidental, 75c.; Justice, 55c.; Exchequer, 55c.; Kentuck, 25c.; Overman, $1.25, and Yellow Jacket, $1.20, the last-named being in good demand.

With the heavy tone of the Comstock shares the outsiders received the first attention for several weeks. Of the Tuscaroras, Belle Isle ruled at 60c.; North Belle Isle at 10c. and Grand Prize at 10c. A 200-share lot of Bodie sold for 60c.; Mono was quoted at 35c. Of the Quijotoa stocks, Peerless sold freely to-day, the total sales being 1,100 shares at 5c.; Crocker at 5c. and Peer at 10c. were quiet.

San Francisco, Oct. 2. [By Telegraph.]—The closing prices to-day show pretty much what quotations have been during the week. For the Comstocks, quotations are as follows: Best & Belcher, $2.75; Chollar, $1.35; Consolidated California & Virginia, $5½; Gould & Curry, $1.70; Hale & Norcross, $1.35; Mexican, $2.50; Ophir, $3.55; Savage, $2.80; Sierra Nevada, $2.55; Union Consolidated, $2.40, and Yellow Jacket, $1.55. Of the Tuscaroras, Belle Isle was quoted at 50c. and North Belle Isle at 30c. Of the other Nevada stocks Eureka Consolidated, $2.75. Of the Bodies, Bodie Consolidated at 45c.

St. Louis. Sept. 30.

(From our Special Correspondent.)

Central Silver opened at the old figure, 4c., and closes at 5c. Sales were brisk and the market very steady; 2,700 shares were sold.

Yuma fell off slightly. Opening at 35c., 500 shares were sold. During the rest of the week the stock was very quiet and at the close 33¾c. was the best bid.

Elizabeth was the attraction of the week and sold very well. Opening at $2,. 900 shares sold at $2@$2 15; later, however, there was a decided break in the market and the quotation fell from $2.02½ to $1.92½, 800 shares selling in the fall. Friday the stock was weak at $1.77½ to $1.80, with sales of 900 shares. Saturday the stock was quiet and only 200 shares sold at $1.80. On Monday the stock was slightly stronger at $1.85 and on Tuesday, owing to encouraging reports from the mine it regained its old price of $1.97½@$2.02½, with sales for the two days amounting to 1,900 shares. To-day the quotation is $2.00.

Small Hopes was again dealt in and from an opening figure of 65c., closes at 60c., sales amounted to 500 shares.

Silver Age has improved and is now quoted at 55c., from an opening of 45c. Sales amounted to 400 shares, the greater portion of which were around 50c.

St. Louis & Aspen was again traded in. The opening quotation was 3c., at which 500 shares sold; later the market was quiet, with no sales.

Montrose was slightly weaker and sales were very small, aggregating only 100 shares. The stock opened at 35c., sold up to 36¼c. and closes at 32½c.

Mickey Breen still stands firm at opening figures. Opening at 45c., sales of 200 shares were made and the market closes firm at the same figure.

While Adams is decidedly weaker yet the activity was greater than it has been in the past six months and the amount of stock changing hands was considerable. Opening at $1.90 no sales were made until Monday when they amounted to 3,000 shares at $1.85@$1.92½. To-day the stock is quiet at $1.75.

One hundred shares of American & Nettie at 33¾c. was the single transaction in that stock, with the market closing weak at that figure.

Granite Mountain was quiet as usual all the week. Only one sale of 65 shares at $22.50 was made. The market closed firm at $22.50. The weekly shipments from the mine amounted to 33 bars, containing 44,375 ozs. of silver and 72 ozs. of gold.

Salt Lake City.

Prices and sales for the week ending Sept. 26, 1891.

Name and Location of Company.	Opening.	High-est.	Low-est.	Closing.	Sales.
Alice, Mont	1.60	1.60	1.50	1.50	200
Alliance, Utah	.80	.80	....	.80	....
Anchor, Utah	5.25	5.25	5.00	5.15	....
Apex, Utah	.14	.15	.14	.14	5,500
Barnes Sulphur, Utah	.02	.03	.02	.02	3,500
Big Hole Placer, Mont.	.11	.11	.09	.09	....
Centen'l Eureka, Utah	...	....	....	....	....
Cleveland Cons'l, Utah	....	....	....	....	....
Congo, Utah	.15	.15	.14	.14	13,500
Crescent, Utah	.45	.45	....	.45	....
Dalton, Utah	....	....	....	....	....
Daly, Utah	20.25	20.25	20.00	20.25	....
Glencoe, Utah	....	....	....	....	....
Horn Silver, Utah	3.50	3.50	3.40	3.45	900
Maiad Con., Idaho	.01	.01	....	01	....
Mammoth, Utah	2.90	2.95	2.75	2.75	....
North Eureka, Utah	.08	.08	....	.08	....
Northern Spy, Utah	....	....	....	....	....
Ontario, Utah	39.50	40.00	39.50	40.00	....
Stanley, Utah	.07	.07	.06	.06	10,000
Utah L. & C. Co., Utah	....	....	....	....	....
Utah Oil Co., Utah	....	....	....	....	....
Woodside, Utah	....	....	....	....	....
Total sales					33,600

MEETINGS.

Butte & Boston Mining Company, at Butte City, Mont., on October 7th, at 12 o'clock noon.

Comstock Tunnel Company, at the office of the company, New York City, October 12th, at 1 P. M.

Crescent Mining Company, at the office of the company, McCormick's Bank, Salt Lake City, Utah, October 14th. Transfer books close October 10th.

Elkhorn Valley Coal Land Company, special meeting at the office of the company, New York City, October 13th, at 12:30 P. M.

Eureka Consolidated Mining Company, at the office of the company, San Francisco, Cal., October 19th.

Nevada Queen Mining Company, at San Francisco, Cal., October 14th.

Pleasant Valley Coal Company, at the office of the company, Board of Trade Building, Salt Lake City, Utah, October 5th.

DIVIDENDS.

Big Hole Placer Mining Company, dividend No. 1, of one cent per share, payahle at the office of the treasurer, 110 Main street, Salt Lake City, Utah, October 15th. Transfer books close October 10th.

Mollie Gibson Consolidated Mining & Milling Company, dividend No. 13, $50,000, payahle October 10th, at the office of the company, Colorado Springs, Colo. Transfer books close October 5th and reopen October 11th.

Tamarack Mining Company, dividend of $4 per share, payahle November 1st, payable at the office of the company, Boston, Mass. Transfer books close October 6th and reopen October 16th.

ASSESSMENTS.

Company.	No.	When levied.	D'l'nq't in office.	Day of sale.	Amt. per share.
*Allouez, Mich	..	.....	Oct. 1	....	.50
Bodie Con, Cal	13	Sept.22	Nov. 5	Dec. 9	.25
Brunswick Con., Cal.	2	Sept.11	Oct. 15	Nov. 9	.02
Combination, Mont.	.	Sept.19	Oct. 24	Nov. 21	.03
Con.St.Gothard, Cal.	3	Sept.10	Oct. 14	Oct. 31	.05
Equitable, S. Dak	4	Sept. 9	Nov. 7	Nov. 30	.025
Garden Gravel, Cal.	..	Sept.17	Oct. 17	Nov. 17	.10
Gray Eagle, Cal	25	Aug. 12	Sept. 14	Oct. 6	.05
Imperial, S. Dak	..	Sept.16	Oct. 20	Nov. 7	.0015
Julia Cons., Nev	24	Aug. 12	Sept.16	Oct. 8	.10
Keystone, Cal	1	Sept.14	Oct. 21	Nov. 23	2·50
McDonnell, S. Dak	5	Sept.16	Nov. 2	Nov. 24	.005
Mexican, Nev	43	Aug. 10	Sept.11	Oct. 6	.25
Monte Cristo, Nev.	5	Aug 17	Sept. 22	Oct. 14	.25
Mono	31	Sept.17	Oct. 27	Nov. 30	.25
Morning Star, Nev.	9	Aug. 14	Sept.30	Oct. 30	.01
Mount Terry, S. Dak	3	Aug. 31	Oct. 8	Oct. 29	.001½
North Belle Isle, Nev	18	Aug. 28	Oct. 2	Oct. 30	.25
North Gould & Curry, Nev	13	Sept. 1	Oct. 2	Oct. 19	.10
Peerless, Ariz.	17	Sept.17	Oct. 21	Nov. 15	.10
Pennsylvania, Cal.	10	Sept.10	Oct. 11	Oct. 29	.05
Silver King, Ariz	7	Aug.20	Sept.29	Oct. 27	.20
Taylor Plumas, Cal.	4	Sept. 5	Oct. 5	...	.05
Union, Nev	44	Aug. 31	Oct. 5	Oct. 23	.25
Weldon, Ariz	4	Aug. 25	Oct. 1	Oct. 22	.05
Wood River, Mg. & M. Idabo	3	Aug.20	Sept.28	Oct. 23	.005
Yellow Jacket, Nev.	49	Aug.31	Oct. 2	Nov. 7	.50

*Call on capital stock.

PIPE LINE CERTIFICATES.

(Specially reported by Messrs. Watson & Gibson.)

The oil market has been attracting a slightly enlarged patronage, but it makes no sensational changes and still is a narrow speculation. The new Pennsylvania field is very prolific, though the wells are 2,000 ft. deep and expensive to drill.

CONSOLIDATED STOCK AND PETROLEUM EXCHANGE.

	Opening.	Highest.	Lowest.	Closing.	Sales.
Sept. 26	60⅝	60⅝	60	60	14,000
28	59	59	58¾	58¼	51,000
29	58⅛	58⅛	53¾	57	51,000
30	57	57¼	55⅛	56½	1,600,000
Oct. 1	58	58⅝	57⅛	58⅝	59,000
2	58⅝	61	58⅜	60¼	170,000
Total sales in barrels					1,849 000

NEW YORK STOCK EXCHANGE.

	Opening.	Highest.	Lowest.	Closing.	Sales.
Sept. 26	61	60	60¾	60¾	9.000
28	57¾	59	57¾	59	35 000
29	58¼	58¼	56¼	56¾	46,000
30	57	57½	56½	57	65,000
Oct. 1	58	58	57⅞	57⅞	12,000
2	58	59½	58	59½	37,000
Total sales in barrels					204,000

COAL TRADE REVIEW.

New York, Friday Evening, Oct. 2

Statement of shipments of anthracite coal (approximated) for the week ending September 26th, 1891, compared with corresponding period last year:

Regions.	Sept. 26, 1891.	Sept. 27, 1890.	Difference.
Wyoming Region. Tons	396,487	422,790	Dec. 26,303
Lehigh Region "	120,140	137,744	" 17,604
Schuylkill Region "	250,441	253,197	" 2,756
Total Tons	767,068	813,731	Dec. 46,663
Total for year to date Tons	27,825,293	25,056,804	Inc. 2,768,489

Production of Coke on line of Pennsylvania R. R., for the week ending September 26th, 1891 and year from January 1st, in tons of 2,000 lbs.: Week, 101.485 tons; year 2,991,149 tons; to corresponding date in 1890, 3,926,060 tons.

Production of Bituminous Coal for week ending September 26th, and year from January 1st:

EASTERN AND NORTHERN SHIPMENTS.

			1890.
Phila. & Erie R.R	3,123	131,713	55,842
Cumberland, Md	74,271	3,031,591	2,260,458
Barclay, Pa	3,841	136,139	64,398
Broad Top, Pa	6,771	358,531	240,082
Clearfield, Pa	71,986	27,900,304	2,288,971
Allegheny, Pa	20,583	937,728	586,550
Beach Creek, Pa	51,076	1,757,409	1,111,377
Pocahontas Flat Top	51,271	1,694,462	1,258,595
Kanawha, W. Va.	47,182	1,741,052	1,342,280
Total	330,004	37,688,929	9,228,553

WESTERN SHIPMENTS.

	1891. Week.	1891. Year.	1890. Year.
Pittsburg, Pa.	25,721	911,115	467,392
Westmoreland, Pa.	29,732	1,446,874	1,084,514
Monongahela, Pa.	9,871	443,577	296,440
Total	65,324	2,801,566	1,848,346
Grand total	395,328	39,490,495	11,076,899

Anthracite.

The production for the week ending the 26th ult. was 767,068 tons, a decrease of 46,663 tons, as compared with the corresponding week in 1890. The output for 23 working days of the month and one day in August, as shown by returns, was 3,078,563 tons. At this rate the three days of the month yet to be heard from, minus the one day of August included in the above figures, would give an additional tonnage of 256,546 tons, making a total of 3,335,109 tons, as against an allotment of 3,250,000 tons, or an increase of 85,109 tons for the month.

From these figures, which are only approximate, it will be seen that the companies for the first time in many months practically adhered to their allotment. The fact in itself is one which the pessimist would do well to consider.

At a meeting of the Western sales agents, held upon the 29th ult., it was decided not to make an advance over the ruling circular. It was shown that the Western situation was not in the booming condition that it has been painted. This is particularly true of Chicago, where cut rates have ruled for several months. The advance made in the Western market during the season has been more rapid than that of the Eastern market. The adoption of the ruling circular for October will equalize prices between the two sections. It was also shown that the tonnage received at northern and western points was much in excess of what it was at this time last year, with a prospect of being still further increased. Just at the present time shipments have slacked up to a greater degree than the Eastern trade is willing to acknowledge. At this meeting it was recommended that the month's output, covering the Eastern and Western market be fixed at 3,750,000 tons.

The Eastern sales agents at a meeting held later in the day fixed the output for October at 3,750,000 tons, which include the Pennsylvania Coal Company's and Ontario & Western's products. A thorough canvass of the situation showed that the companies were keeping faith with one another, both as to output and prices.

The companies claim that the allotment made is none too large, that it will be readily absorbed at circular prices and cite as precedent, the October outputs in 1890 and 1889, which were 3,850,000 tons, and 4,250,000 tons respectively. There are other elements of the trade, however, who believe that the amount is too large. They claim that the companies have not left sufficient margin to provide for contingencies. That the amount can only be absorbed at full prices under the most ideal market conditions, among which are plenty of cold weather; a protracted and lamb-like harmony, and a strict adherence to agreements among the companies.

On Thursday, the 1st inst., the new circular went into effect. A canvass of the companies elicited the statement, that each was refusing all orders offered at a lower rate. They claim that though they are losing some business they can afford to do so. They rely upon a good fall demand to reimburse them. Most of the independent operators acknowledge that they are taking the market as they find it. They are without doubt getting more than their proportionate share of the trade, and during the past four weeks have proved a thorn in the companies' flesh. However, with the increased volume of business they will be found not far from the line. Without doubt the companies are showing more resolution than they have manifested for some time. If their staying qualities are good, the beneficial effect will soon be felt.

The demand during the greater part of the month past has not been of a very brisk nature. However, during the past week there has been a marked increase, prompted by the fact that the October circular was soon to take effect. Some of the companies claim to have but few orders on their books; others the usual number. September prices are being quite freely offered. It is too early in the month for the would-be purchaser to bid October prices, so that the trade is simmered down to deliveries on September contracts—which will be continued until the 15th inst.—and sales from quarters where concessions are made.

The Philadelphia & Reading is keeping within its allotment.

Mr. Simon Sterne, of this city, has been retained by the Interstate Commerce Commission to represent it before the United States Court in the Coxe Bro. & Co. Lehigh Valley case. It is said that the hearing will be had very soon.

A certain party is asking for bids on 1,500 tons of anthracite coal for shipment to Antwerp.

Bituminous.

The soft coal trade can be likened unto a highly steady and stationary barometer. The favorable conditions noted from week to week continue to rule in a way that promises an equally stable future. There is perhaps a slight increase in the demands made for contracted tonnage, while the car supply shows a slight falling off owing to demands made upon the railroad motive power by the grain trade. This failure it is believed will have a tendency to grow worse rather than better, a fact which perhaps has a slight influence in increasing the demands made for tonnage. In general it can be said that the trade is fulfilling expectation—a saying which means much—as the coal operator is invariably sanguine and usually entertains exalted ideas as to how things should be. Prices are, of course, unaltered and are firm. The trade looks for neither an advance or falling off during the remainder of the coal year.

The question of allotments has been consigned by mutual consent to innocuous desuetude. It is only occasionally that the operators experience pangs of conscience over the fact that they have exceeded their percentages, and, by a strange coincidence, these periods of remorse are felt about the time their monthly forfeiture checks are sent in to the Seahoard Association.

Ocean freights are steady with a tendency toward an increase. From Philadelphia to Boston 60@65c. is quoted, from Baltimore to Boston 65@70c., from Norfolk to Boston 55@60c., to New York ports 10c. less. The vessel situation, from the shippers' standpoint, seems to be in better shape. The recent slight advance has had a tendency to weaken the determination of vessel owners to "quit the coal trade," and many of those who a month ago would not talk "charter" are now approachable.

Boston Oct. 1.

(From our Special Correspondent.)

The market for anthracite coal rules strong, and there is greater inclination to buy on the part of handlers in this section. The stock here, in middlemen's hands, is not very small, but the good retail demand, which the appearence of cold weather has started, will dispose of this in rapid order. Buyers are conceding the fact that the conditions are favorable to purchasing, and they are slowly moving in this direction. Prices are in harmony with the strength of the general situation, although shading of a small character is reported at some points.

The bituminous has been showing signs of fresh life, and a much better demand is reported. The stock here is fairly large, and in fact is deemed sufficient to last for some little while. The price is somewhat stronger, $3.50 being quoted for lots on cars here.

The freight situation appears to be gaining strength. Rates are considered stronger at most points, and with the present fall weather a change is expected. From New York 45c.@50c. is quoted; from Baltimore 60c.@70c., and from Philadelphia 60c.@65c.

The retail demand has commenced in earnest during the past few days of cold weather, causing a lively movement. Prices are steady and unchanged. Stocks in dealers' hands are fairly large.

The receipts of coal at this port for the week ending September 26th were, 33,897 tons of anthracite, and 13,739 tons of bituminous, against 51,676 tons of anthracite and 7,587 tons of bituminous for the corresponding week last year. The total receipts thus far this year have been 1,422,764 tons of anthracite, and 863,224 tons of bituminous, against 1,248,400 tons of anthracite, and 841,474 tons of bituminous for the same time last year.

Buffalo. Oct. 1.

(From our Special Correspondent.)

There was no change made by the Western agents in the price of anthracite coal at wholesale for the month of October, at the meeting in New York on Tuesday last. Our retail dealers have today made an advance of 25c. per net ton delivered, on all sizes except pea; the same to rule until further notice. There are no special features of interest relative to the trade in anthracite or bituminous coal to report.

Freights on coal by lake continue dull but no further decline was experienced. The quantity of coal shipped by lake westward from Buffalo, from the 24th to the 30th Sptember, both days inclusive, was only 55,170 net tons, distributed about as follows: 20,380 to Chicago; 16,150 to Milwaukee; 3,350 to Duluth; 2,440 to Toledo; 1,600 to Superior; 2,430 to Detroit; 770 to Bay City; 1,300 to Green Bay; 50 to Perry Sound; 700 to Bay Mills; 1,800 to Fort William; 2,200 to Gladstone; 1,000 to Escanaba and 1,000 to Manitowoc. The rates of freight were 40c. to Chicago, Milwaukee, Green Bay, Gladstone, Escanaba and Manitowoc; 50c. to Fort William, Marquette and Bay Mills; 25c.@20c. to Toledo; 20c. to Detroit; 45c. to Sheboygan and 25c. to Duluth, Superior and Bay City. Closing, steady but quiet. The receipts by canal at this port of coal, for fourth week in September were *nil.*; the shipments were 1,804 net tons.

Statistical.—Railroad receipts and shipments at Buffalo of coal are not reported. Receipts by lake of coal thus far this season were *nil.* Shipments by lake westward for the month of September 253,670 net tons, as compared with 326,670 tons in 1890 and 286,290 tons in 1889; for the season to October 1st, 1,687,580 net tons, as compared with 1,435,860 tons in 1890 and 1,584,100 tons in 1889. The receipts of coal by canal for the month of September, were *nil*, as compared with 5,258 net tons in 1890, and 26,568 tons in 1889; the shipments for the month of September 4,406 net tons as compared with 2,477 tons in 1890 and 1,606 tons in 1889. The total receipts by canal of coal this season to October 1st, 625 net tons, as compared with 21,404 tons in 1890 and 68,490 tons in 1889; the shipments, 24,327 net tons, as compared with 8,625 tons in 1890 and 6,780 tons in 1889. The aggregate shipments by lake this year to October 1st show an increase of 251,720 net tons, as compared with 1890, and 148,240 net tons, as compared with 1889.

The rates of freight on coal hence to points named were as follows during September: 40c. to Chicago, Milwaukee, Racine, Green Bay, Gladstone and Saginaw; 30c.@25c. to Duluth and Lake Superior ports; 25c.@20c. to Detroit and Toledo. A year since the rate to Chicago was 60c., and in 1889 50c. per net ton.

The shipments of coal by lake from Buffalo, thus far this season to October 1st, were distributed about as follows:

To	Net tons.	To	Net tons.
Chicago	637,520	Sault Ste. Marie	3,230
Milwaukee	405,255	Pt. Burwell	30
Ludington	1,117	Bay Mills	1,300
Put-in-Bay	250	Hancock	3,085
Kelly Island	510	Fort William	12,760
Serpent River	420	Traverse City	30
Perry Sound	160	Toledo	41,847
Lake Linden	3,780	Duluth	187,910
Owen Sound	1,000	Kincardino	900
Sandusky	200	Escanaba	2,980
Port Arthur	2,680	Menominee	6,770
Manitowoc	2,350	Pt. Rowan	89
Romney	4	Amherstberg	1,030
Gladstone	21,070	Green Bay	25,270
Sheboygan	12,680	Saginaw	21,315
Houghton	4,320	Depere	1,210
St. Clair	600	Detroit	15,890
Superior	119,710	Alpena	1,030
Racine	34,060	Washburne	5,690
Kenosha	8,610	Marinette	1,510
Cheboygan	1,350	Marquette	15,990
Windsor	680	Huron, O.	300
Portage	2,350	Manistique	60
Mackinaw	150	Sundry places by vessels from Tonawanda not reporting at the Custom-House at this port	59,078
Marine City	360		
Port Huron	650		
Ashland	6,150		
Bay City	7,230		
Tawas	240		

Chicago. Oct. 1.

(From our Special Correspondent.)

The sudden fall in the temperature is bringing many consumers into the market. Mail orders for anthracite during the past few days have been more numerous than for some time past, and should the present weather prevail they will continue to increase. The new Eastern price for October went into effect to-day. Stringent orders have been received by agents at this center to maintain the circular rate of $5.25 in yard. As most of the large dealers have contracts with the shippers covering a considerable period—many of them until next May—it is impossible to predict the effect which the advance will have in this market. Retail coal is still being sold by the large shippers and dealers at $5.50@$5.75 delivered within consumers' bins. Contracts are being made to deliver as wanted to consumers at $5.60@$5.75 for the entire season. This is being done by the shippers since the receipt of the action of the meeting in New York City, September 29th. Comment is entirely unnecessary. All-rail coal is comparitively scarce. Small egg is in good demand at fairly remunerative prices, with limited shipments and a very light tonnage on dock or by rail. The market generally speaking is fairly active at $5.15@$5.25 on cars. The scarcity of cars is becoming more pronounced each week, and more so on Western than on Eastern lines. The hard coal market will probably show a more healthy condition by November. At present supplies are ample, though the early close of navigation will cause an entire cessasion of lake shipments.

The poor car service from western mines enables shippers and dealers to obtain circular prices for all grades of soft coal. The railroads, with their immense crops to move along their respective lines, have in all cases increased their orders for coal, and in many instances have doubled them. A cold snap would leave many dealers totally unprepared to fill their orders. Blacksmithing coals are very scarce in round lots and full circular rates are easily maintained, while shippers cannot obtain enough cars to fill orders already in hand.

Coke is in good demand, supply ample, and prices no stronger than they have been.

Prices of anthracite per ton of 2,000 pounds f. o. b. Chicago are: Lehigh lump, $6.75; large egg, $5; small egg, range, and chestnut, $5. Retail prices per ton are: Large egg, $5.75; small egg, range, and chestnut, $5.75.

Prices of bituminous per ton of 2,000 pounds f. o. b. Chicago are: Pittsburg, $3.25; Hocking Valley, $2.90; Youghiogheny, $3.40; Indiana block, $2.35@$2.40; Illinois block, $1.90@$2.

Connellsville coke, 72-hour, per ton f. o. b. Chicago, $5.05; crushed, $4.75; Walston, $5; New River, $5; West Virginia, $4.25@$4.50.

Pittsburg. Oct. 1.

(From our Special Correspondent.)

Coal.—The market remains active with a good demand. Hundreds of families have returned to coal. Prices up to present have not advanced as the demand has increased, but we may look for an advance in the near future. Another strike has been commenced at the railroad mines. On May 2d, a scale was signed for a year at 79c. per ton; the

miners, 10,000 strong, held a meeting on the 30th ult. and decided to demand 92c. per ton. Where the matter will terminate no one knows. The river miners have made no move for an advance. The coal now mined being for local purposes, the boats and barges, being all loaded, will wait for a rise in the Ohio, which is very uncertain.

Connellsville Coke.—The coke market is at a standstill, and if there has been any change during the week it has been for the worse. A change for the better is not looked for soon, although some of the prophets tell us that trade will increase as the year progresses. There was a slight complaint a short time ago of a scarcity of cars, but this demand seems to be well met at present by all roads giving a fair supply.

Considerable banking of stock material at the furnaces, together, with an excess of lay-off days, is responsible for the decrease in shipments of about 600 cars for the past week. The shipments of the week were as follows: To Pittsburg, 2,059 cars; to points east of Pittsburg, 848 cars: Western points, 3,688 cars; total, 6,595; previous week, 7,195.

Prices and freights are unchanged and have been for some months.

METAL MARKET.

NEW YORK, Friday Evening, Oct. 2.

Prices of Silver Per Ounce Troy.

Sept.	Sterling Exch'ge.	Lond'n Pence.	N. Y. Cts.	Sept.	Sterling Exch'ge.	Lond'n Pence.	N. Y. Cts.
26	4.83	45¼	98	30	4.83	44⅞	97⅛
28	4.83	45⅛	97⅝	Oct 1	4.83	45	97⅛
29	4.83	44⅞	97⅝	2	4.83	45	97¼

Owing to a large sale of exchange hy one of the India railways silver receded on quarter of a penny during the week, but rallied again only to be depressed by the action of our Chamber of Commerce.

E. O. Leech, director of the Mint, telegraphs us as follows: "The Treasury department purchased to-day (October 2d) 799,000 ounces of fine silver at 9·75@9·76c. per ounce fine."

The United States Assay office at New York reports the total receipts of silver for the week to be 485,500 ounces.

Silver Bullion Certificates

	Price. H.	Price. L.	Sales.
Sept. 26	98⅛	98⅜	55,000
Sept. 28	98⅛	98	65,000
Sept. 29	97⅝	97⅛	45,000
Sept. 30	97¼	97⅛	52,000
Oct. 1	97⅜	..	92,000
Oct. 2	97⅜	97¼	75,000
Total sales			384.000

Coinage at the Mints of the United States.

The following statement shows the coinage executed at the mints of the United States during September, 1891:

Denominations.	Pieces.	Value.
Double eagles	102,009	$2,040,180.00
Eagles	10,009	100,090.00
Half eagles	12,009	60,045.00
Quarter eagles	19	47.50
Total gold	124,046	$2,200.362.50
Standard dollars	720,100	720,100 00
Half dollars	100	50.00
Quarter dollars	780,100	195,025.00
Dimes	4,650,100	465,010.00
Total silver	$6,150,400	1,380,185.00
Five cents	1,762,400	88,120.00
One cent	3,400,400	34,004.00
Total minor	5,162,800	$122.124.00
Total coinage	11,437,246	$3,702,671 5

Domestic and Foreign Coin.

The following are the latest market quotations for American and other coin:

	Bid.	Asked.
Trade dollars	$ .76	$ .77
Mexican dollars	.76	.77
Peruvian sols and Chilian pesos	.71½	.72½
English silver	4.82	4.85
Five francs	.93	.95
Victoria sovereigns	4.83	4.86
Twenty francs	3.84	3.88
Twenty marks	4.74	4 76
Spanish doubloons	15.55	15.70
Spanish 25 pesetas	4.78	4.83
Mexican doubloons	15.50	15.70
Mexican 20 pesos	19 50	19.60
Ten guilders	3.96	4.00
Fine Silver Bars	.97⅜	.97¾

Foreign Bank Statement.

The governors of the Bank of England at their weekly meeting made no change in the minimum rate of discount, which remains at 3%. In the week the bank lost £512,000 bullion, and the proportion of reserve to liabilities was lowered from 45·88 to 41·14%, against a reduction from 41 to 33·51% in the corresponding week last year, when its discount rate was unchanged at 5%. The weekly statement of the Bank of France shows a decrease of 17,975,000 francs gold, and a gain of 875,000 francs silver.

Copper.—The demand continues satisfactory and prices are fully upheld. There is hardly any Lake copper obtainable at less than 12½c., at which price fair quantities have been marketed, although at the close there is, perhaps, a slightly easier feeling, and prices might possibly be shaded a trifle. Casting copper continues exceedingly scarce, and is, comparatively, very firmly held at 11⅝@11¾c., according to brand and quantity. Of Arizona copper the market is almost bare, and all the arrivals of this desciption from the West are promptly shipped to Europe. We have also to notice that large quantities of furnace material are being shipped to England, where, evidently, there is a very good demand for this description.

In contrast, the foreign market has been very weak throughout, and prices for G. M. B. copper have given way about £1 10s., being quoted lower from day to day, until the present, when prices are up 5s. This depression appears to he due mainly to the absence of consumers' orders, as also to the fear of dear money.

Cables received to-day report an increase of 500 tons in the supplies.

The exports of copper from the port of New York during the past week were as follows:

To Liverpool—	Copper Matte.	Lbs.	
S. S. Italy	1,750 bags	221,780	$15,500
" Servia	6,412 bags	705,320	49,000
" Phidias	5,912 bags	563,923	40,000
To Havre—	Copper.	Lbs.	
S. S. La Champagne.	30 casks.	37,500	$5,000
" "	873 plates.	41,816	5,500
" "	253 bars.	82,628	9,089
To Hamburg.—	Copper.	Lbs.	
S. S. Dania	45 casks.	56,250	$7,000
" "	214 pigs.	56,074	7,000
To Rotterdam—	Copper	Lbs.	
S. S. Werkendam	180 barrels.	225,000	$29,250
"	45 casks.	56,250	7,000
"	170 bars,	22,431	2,750
To Antwerp—	Copper.	Lbs.	
S. S. Rhynland	90 casks.	.....	$15,000

Tin.—Tin has heen rather languid, and business has been more of a retail character with a fair demand, but on neither side has there been much disposition to operate, and prices are about the same as at the last report, 20·15c. for spot, 20·20c. for October, 20·25c. for November, 20·25c. for December. Fair quantities are due during the next fortnight, hut with a steady consumptive demand, will hardly influence the market.

In London prices for this article have followed in about the footsteps of those for copper, daily giving way, though to-day there has heen a decided reaction, values advancing 10s., and the market closes at from £91 12s. 6d. to £91 15s. for spot and from £92 2s. 6d. to £92 5s. for three months. Stocks are advised as having decreased 600 tons, shipments from the East during the second half of Septemher having heen rather light.

Lead.—Lead is very well held, with spot comparatively scarce. The business done, however, has not heen large, as consumers are rather obstinate about paying present asking prices, while on the other hand holders do not give way. We quote 4·57½ @ 4·62½c. for spot, Octoher and November deliveries.

The English market is somewhat firmer at £12 5s. for Spanish and £12 7s. 6d. for English.

Chicago Lead Market.—Messrs. Everett & Post telegraph us: This market has heen fairly active during the past week, and sales for that time will foot up in the neighborhood of 700 tons at prices ranging from 4·35 to 4⅜c., according to deliveries; at the close the above prices are firmly maintained.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: "Lead is steady at 4·35c. The demand is moderate and offerings are fairly liberal. A few special lots have sold quickly at 4⅜c., but we quote at the close 4·35c. as the nominal value.

Spelter.—Spelter is again very quiet, with hnt little doing. We have still to quote 5·10@5·15c. Hardly anything is offering from the West, and smelters seem to be quite well sold ahead.

The foreign market is slightly easier, with specials quoted at £23 10s. and ordinaries at £23 15s.

Antimony.—There has been a sudden and marked advance. During last week quite a large husiness was doing in Hallett's at from 9½c. to 9¾c., hut prices quickly advanced, only small quantities being available even at the higher prices. It now appears that the decline had heen carried too far. We understand that most English makers are entirely sold out up to the end of the year, and that it is not unlikely that prices will go even higher. Our quotations are: For Hallett's 10½@10⅝c.; L. X., 11¼c., and Cookson's, 12c.

Quicksilver.—There has heen a slight advance in London. The quotation is £7 10s. against £7 7s. 6d. of last week. Locally, $43 is quoted.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Oct. 2.

The iron market for the week under review presents no new features. Ahout the same amount of husiness continues to he done quietly, at unchanged low prices. The disinclination on the part of the producers to contract for future shipments is a fact which in itself portrays the belief that more favorable conditions will soon rule. The eastern market has not to any perceptible extent felt the effect of the general improved industrial conditions of the country. From certain points in the West, however, we hear that the situation is somewhat brighter. The general demand is better at sustained prices, while the sales have increased in volume.

American Pig Iron.—In certain quarters a good demand is reported, in others a dearth of orders. The general run of prices is unchanged as follows: Northern, No. 1 X $17@$18; No. 2 X, $16@$16.50. Southern, No. 1 X, $16.50@$17.50; No. 2 X, $15.50@$16.50.

Spiegeleisen and Ferro-Manganese.—A large sale of 20% spiegeleisen is reported to have occurred during the week, while two additional sales of a lower grade, each of which were of large proportions, were contracted. Quotations for 20% remain at $27.50@$28. Ferro-manganese is less firm, owing to a disposition on the part of Western dealers to cut, and an inclination on the part of foreign holders to meet the ruling rates. The nominal quotation is $64.50.

Steel Rails.—The Maryland Steel Company, hy a general arrangement, has been brought into the rolling mill combination. The company has heen given an allotment of 8%, to make, which it is understood, each of the companies having more than an 8% allotment, made a surrender of a pro rata percentage. The arrangement, it is said, is in the main satisfactory to all parties, and will in itself tend to strengthen the market. Reports are that there is considerable inquiry hut few sales of large lots. The Western demand leads. Prices are firm at $20 for standard sections at the mills and $30.75 at tide water.

Rail Fastenings.—On the whole the demand has been very quiet. Spikes, angle plates and holts are reported firmer, the other sizes are unchanged. We quote: Fish and angle plates, 1·75@1·80c.; spikes, 2·10@2·15c.; holts and square nuts, 2·75@2·80c.; hexagonal nuts, 2·80@2·85c.

Tubes and Pipes.—The market is reported to be weak, owing to an inclination to shade prices. At a meeting held in this city yesterday the following discounts were established: Butt. black, 57½%; butt. galvanized, 47½%; lap, black, 67½%; lap, galvanized, 55%; hoiler tubes under 3 in., and over 6 in., 55%; 3 in. to 6 in., 60%.

Merchant Steel.—There is no change to note. The slight improvement mentioned last week has harely held its own. Quotations, which remain unchanged, are as follows: R. Mushet's special, 48c.; English, tool, 15c., net; American tool steel, 7@8c.; special grades, 13@20c.; crucible machinery steel, 4·75c.; crucible spring, 3¾c.; open-hearth machinery, 2·50c.; open-hearth spring, 2·50c.; tire steel, 2·50c.; toe calks, 2·50c.; first quality sheet, 10c.; second quality sheet, 8c.

Structural Iron and Steel.—There is reported to he a good demand in the West. Locally the demand is light. We quote: Universal plates, $2.20; bridge plates, $2 10; beams, $3.10.

NOTES OF THE WEEK.

Moorehead, McCleane & Co., the embarrassed Pittsburg iron firm, have heen granted an extension of five years hy their creditors. The liahilities, which are about $1,400,000. will he paid in instalments of 10% the first year, 15% the second year and 25% the last three years. The plant is in full operation.

The new pig iron freight rates from Pittsburg went into effect on the 24th ult. The new rates are as follows: To New York, $2.80 per gross ton; to Philadelphia, $2.40; Baltimore, $2.20; Albany, N. Y., $2.80; Oswego, N. Y., $2.40; Utica, $2.40; Syracuse, N. Y., $2.25; Rochester, N. Y., $2. The reduction is a uniform one of 20 cents a ton to all points named except Rochester. To that place it is a reduction of 25 cents a ton.

Chicago. Oct. 1.

(From our Special Correspondent.)

In crude iron business is of a more satisfactory nature, the only exception being that for Lake Superior charcoal iron, hut even in this grade the demand appears to he improving, and though values are no stronger there are fewer weak spots. Most of the coke furnaces in this locality are firmer in their views for forward delivery. But the whole situation in crude iron hinges upon the demand for steel rails; if the railroads buy freely for delivery next year some of the furnaces now running on coke foundry will be turned on to Bessemer, and there will be more inquiry for charcoal and foundry grades, which will soon ahsorh accumulated stock. Bar iron is not as active as it was a week or ten days ago, but there is no apparent weakness on the surface, and in the face of prospective heavy demand, any shading in prices would he only temporary. Plates are more active, and some mills have advanced prices $1 and $2 per ton. There is less actual demand for structural iron, though inquiry continues above the average for the season. Galvanized sheet iron is very active, but black sheets are quieter. Steel rail orders for both light and heavy sections are more numerous. Demand for iron rails is light and offerings large; old car wheels are in active demand. Scrap is dull and featureless.

Pig Iron.—Northern coke is firmer and more active and the market is stronger for this grade,

and for forward scattered delivery an advance of 50c. to $1.00 per ton is asked. Some good orders have been placed during the week, from 500 to 1,000 tons, for quick shipments, at good prices. There is, however, one furnace near here which is still making low prices. Indications all point toward a heavier and more active demand in the near future. Lake charcoal is still ratner quiet, though some good inquiries are now reported, and most of the weak spots have been eliminated. Southern coke iron shows a fair degree of activity for Nos. 2 and 3 foundry, and grey forge, though prices have ranged below what was considered bottom. Some of the lots sold have been for scattered delivery extending to October, 1892. There is some scarcity in No. 2 soft iron, which is now held at 50c. a ton higher than No. 3 foundry. Inquiries have been received in this market from such remote points as Wheeling and Cincinnati, showing that buyers want to purchase as cheaply as possible.

Quotations per gross ton f. o. b. Chicago are: Lake Superior charcoal, $17.25@$18; Lake Superior coke, No. 1, $15.25@$15.75; No. 2, $15@$15.25; No. 3, $14@$14.50; Lake Superior Bessemer, $17; Lake Superior Scotch, $17@$17.50; American Scotch, $17.75@$18.25; Southern coke, Foundry No. 1, $15.75; No. 2, $15.25; No. 3, $14.50; Southern coke, soft, No. 1, $15.50; No. 2, $14.50; Ohio silveries, No. 1, $18; No. 2, $17; Ohio strong softeners, No. 1, $18; No. 2, $17; Tennessee charcoal, No. 1, $18; No. 2, $17.50; Southern standard car wheel, $21@$21.50.

Structural Iron and Steel.—The iron and steel for several important alterations in buildings will be given out shortly, the aggregate tonnage of which is large. There are many unfinished large structures, and contractors are rushing work to get them under cover before snow flies. Quotations for car lots f. o. b. Chicago are as follows: Angles, $2@$2.10; tees, $2.60@$2.70; universal plates, $2.35@$2.45; sheared plates, $2.20@$2.30; beams and channels, $3.20.

Merchant Steel.—As foreshadowed in our review last week, manufacturers have advanced prices on several items of miscellaneous steel, $1 or $2 per ton, and are now quoting for prompt acceptance only, as further advances are looked for. Tool steel is in good demand. Tool steel, $6.75@$7 and upward; tire steel, $2.30@$2.50; toe calk, $2.50@$2.65; Bessemer machinery, $2.20@$2.30; Bessemer bars, $2@$2.10; open-hearth machinery, $2.60@$2.75; open hearth spring, $2.75@$3; crucible spring, $3.75@$4.

Plates.—Bessemer continues good from warehouse and mill, and some of the latter have advanced their figures 1-10c. to 3-10c. Some mill orders from boilermakers have been quite large. Store prices are now very firm. Steel sheets, 10 to 14, $2.70@$2.80; iron sheets, 10 to 14, $2.60@$2.70; tank iron or steel, $2.50@$2.70; shell iron or steel, $3@$3.25; firebox steel, $4.25@$5.50; flange steel, $3.25@$3.40; boiler rivets, $4.25; boiler tubes, 2¾ in. and smaller, 55%; 3 to 6 in., 60%; 7 in. and upward, 55%.

Steel Rails.—Some fair sized inquiries are reported for light sections and several orders aggregating 1,500 tons were placed last week with local mills. Orders and inquiries for standard sections are coming forward more freely, some of them for a good round tonnage. Rumor has it that an extension to a Northwestern road will require some 40,000 to 50,000 tons for the coming season, to be delivered in blocks of 10,000 tons a month. Local mills are very firm at $31.50@$33. Bolts, splices, and spikes are in good demand. Regular quotations are: $1.95@$2 for steel, and $1.85@$1.90 for iron; spikes at $2.20@$2.25 per 100 lbs.; track bolts, hexagonal nuts, $2.80.

Galvanized Sheet Iron.—Demand is very heavy; stocks in warehouses badly broken and mills refuse to accept new business at old prices. Discounts steady at 67½% off on Juniata and 67½% and 5% off on charcoal in small lots.

Black Sheet Iron.—Orders are now limited to carloads for sorting up stock, and will remain easy until latter part of month. Mill quotations are steady at 2·80@2·85c. for No. 27 common. Dealers quote 3·10@3·20c. for same gauge from stock, according to quantity.

Bar Iron.—With the exception of a few jobbers' and manufacturers' specifications, demand is light and the market is less strong; not that there is any radical weakness, for mills are well backed up for 60 to 90 days and are in a position to stand a short lull in demand. Local mills still quote 1·75c. Valley mills quote 1·60c., half extras at mill, though these figures are shaded on fancy merchant specifications for prompt dealings. Dealers quote 1·80@$1·90c. rates on small orders from stock.

Nails.—Steel cut are in fair demand but prices continue low and irregular, the difference sometimes as high as 7½c. rates on same average on 1,000 kegs. The general quotation is about $1.65@$1.67½ regular average. Wire nails are in fair inquiry but prices are easy at $1.80 mill. A convention of the wire nail manufacturers is being held to-day in this city to consider the situation. Jobbing prices for steel cut are $2.75@$2.10 for wire from stock.

Scrap.—The market is flat, prices nominal, and dealers more or less discouraged. Dealers quote: No. 1 railroad, $19; No. 1 forge, $18.50; No. 1 mill, $14; fish plates, $22.50; axles, $23; horseshoes, $18.50; pipes and flues, $11; cast borings, $7.50; wrought turnings, $9.50; axle turnings, $12.50; machinery casting, $12; stove plates, $7.50; mixed steel, $11; coil steel, $14.50; leaf steel, $15.50; tires, $15.50.

Old Rails and Wheels.—Iron rails are being offered in larger quantities, and as consumptive demand is light, prices have receded to $22.25@$22.50. Old steel rails are featureless, and inquiry very light. Nominal prices $14@$16. There is a heavy inquiry for car wheels, five or six of which aggregated 5,000 tons. Offers of $15.75@$16 are freely made, but holders want 25@50c. more.

Louisville. Sept. 26.

(Special Report by HALL BROTHERS & Co.)

A quiet market had ruled for the past week, although the general tone of the market is good and the prospects for a steady improvement in business are promising. Some contracts for delivery extending into the middle of next year are reported at improved prices. Railroads are placing more orders for cars, which means increased business for pig and bar iron, as well as for other iron products. The heavy exports of grain and arrivals of large amounts of gold, together with large foreign orders for American securities, are encouraging features and contribute largely to the general improvement already noted.

The general foundry trade reports an improvement, and the bar iron mills in this vicinity are running on full time, and say the outlook is encouraging. Shipments on old orders are being rushed forward as fast as car supply will admit, and in some cases buyers are calling for the iron before it is done. We quote:

Hot Blast Foundry Irons.—Southern coke No. 1, $14.25@$14.50; No. 2, $13.50@$14; No. 3, $13@$13.25. Southern charcoal, No. 1, $16@$17; No. 2, $15.50@$16. Missouri charcoal, No. 1, $17@$17.50; No. 2, $16.50@$17.

Forge Irons.—Neutral coke, $12.50@$12.75; cold short, $12.25@$12.50; mottled, $11.75@$12.

Car Wheel and Malleable Irons.—Southern, standard brands, $19@$19.50; Southern, other brands, $17@$18. Lake Superior, $20@$21.

Philadelphia. Oct. 1.

(From our Special Correspondent.)

Pig Iron.—There is not a sufficient change in the situation from a week ago to justify the assertion that an improvement has set in. Prices in some cases are quotably higher; certain makes of iron which could be had at 30 to 60 days delivery at certain prices cannot be had as readily this week. Yet there is no pronounced scarcity, nor in fact any approach to it. A good deal of iron is selling, and inquiries are more numerous. Founders are buying quite freely, but not in large lots. Mill owners are talking over terms and may conclude to buy soon. Every consumer has his ear set to catch the first rustling of the leaves, and yet none are frightened over the possibility of a sudden advance. No. 1 is held at $17.50@$18.25; No. 2 at $16.50@$17; forge, at $14@$15; cold blast charcoal, at $25.50.

Ferro-manganese.—Several large orders have been closed in both imported and domestic.

Steel Billets.—Opinions, so far as they have been expressed since Monday, show a wide difference in views of manufacturers. In two or three instances this week's sales have been made on a basis of quotations made a month ago. One or two makers have advanced quotations.

Muck Bars.—Better quotations are made, and no good bars have been offered this week at less than $27.

Merchant Iron.—It might and might not be correct to say there has been an increase of business this week. Certainly there has been no falling off. Quotations continue at $1.60@$1.75.

Nails.—Through the persistence of agents, a good deal of stock has been worked off during the past week.

Skelp.—Small lots have sold at $1.65@$1.85.

Wrought Iron Pipe.—There has been undue competition for the small volume of business to be had and to-day's meeting will either make matters better or worse. Some members of the combination would prefer to start out on a scalping tour.

Sheet Iron.—Card rates are pretty well maintained because the volume of business done is retail. The large buyers are holding back for an improbable concession.

Plate and Tank.—Boiler makers and bridge builders have been for several weeks giving the plate market all the strength it has had. A fair volume of business continues to come in.

Structural Material.—The general conditions continue. Business is good, considering the reasons which buyers and holders imagine they have to give for delay. The probabilities are that some of them will be caught before November on an advancing market on angles and sheared plates, for some very low prices have been named on these.

Steel Rails.—Rail men assert that certain railroad companies will be in the market this month for large lots of rails, and that bottom mill prices will be $30 for standard sections. This week's business has been mainly in small lots.

Old Rails.—Quotations to-day are given at $22@$23. Steel rails, $18.

Scrap.—No. 1 railroad, $20@$21.

Pittsburg. Oct. 1.

(From our Special Correspondent.)

The market since our last has exhibited but few changes. Dealers generally continue to put off the purchase of large blocks of iron and other descriptions of material, seemingly waiting for developments that have not yet matured. Prices for most kinds show scarcely any alteration, any changes that have taken place being in favor of holders, particularly in the purchase of small amounts.

A few days since, owing to a labor dispute in the Sharpsville region, seven furnaces were banked, so to remain until matters can be adjusted. The rolling mills are filling up with work and many of them are on double time. It is reported that the steel rail trade is regaining in customary activity, and orders are coming in more freely from the railroads. Viewing the iron trade as a whole, the present conditions are certainly more satisfactory and the out look more encouraging than they were two weeks ago. This is due, undoubtedly, in a large measure to the generally helpful influence of the big crops. Everybody feels that current prices are safe prices, but no one feels bold enough to say how long it will be before an advance will set in. The action of buyers during the past few days gives evidence that they are willing to invest in favorite brands at about current rates, or those less favorably known at such concession as have previously been offered to them; but they have not reached a point at which they are willing to pay a clean advance.

In conversation with a valley furnace man this week, he said, "Trade in the Shenango and Mahoning valleys is in good shape. Most furnaces are well sold up." He was firmly of the opinion that an advance in pig iron was not far off. As we have before stated, there are certain furnaces that refuse to sell either Bessemer or grey forge at present rates; as they are able to hold on they propose to do so.

The stock of raw iron on hand is fully up with the requirements of the trade. In Bessemer pig, prices have been maintained with a fair amount of sales reported. Grey forge shows no decline in values; sales have not been large in steel slabs and billets, sales have been liberal for some time past; skelp iron is in fair demand; narrow and wide grooved maintains prices; sheared iron declined 2½ cents. Old iron and steel rails are scarce, particularly the former. Muck bar is steady; prices unchanged. Steel wire rods declined a shade. The scrap material market is active. New steel rails are selling at last week's prices.

Coke-Smelted Lake and Native Ores.

2,500 Tons	Bessemer, Wheeling delivery	$15.65 cash.
2,500 Tons	Bessemer, Oct., Nov., Dec	15.70 cash
2,000 Tons	Bessemer, immediate	15.50 cash.
2,000 Tons	Bessemer, Wheeling, Oct	15.40 cash.
2,000 Tons	Grey Forge, Oct., Nov., Dec	13.80 cash.
1,500 Tons	Bessemer, Oct., Nov	15.45 cash.
1,500 Tons	Bessemer, Wheeling	15.60 cash.
1,000 Tons	Grey Forge, Oct., Nov	13.80 cash.
1,000 Tons	Grey Forge	14.00 cash.
700 Tons	Grey Forge, Oct. Nov	13.75 cash.
500 Tons	Bessemer, Oct	15.50 cash
500 Tons	Grey Forge	14.00 cash.
500 Tons	Grey Forge, at Valley Furnace	13.75 cash.
300 Tons	Grey Forge	13.90 cash.
300 Tons	Grey Forge	13.85 cash.
250 Tons	No. 2 Foundry Southern	15.00 cash.
250 Tons	Grey Forge	13.85 cash.
200 Tons	Grey Forge	13.90 cash.
100 Tons	No. 1 Foundry	16.00 cash.
100 Tons	No. 2 Foundry	15.00 cash.
100 Tons	Open Grey	14.25 cash.
100 Tons	No. 2 Foundry, all ore	16.25 cash.

Steel Slabs and Billets.

5,000 Tons	Billets, City furnace Oct. Nov. Dec.	25.25 cash.
5,000 Tons	Billets at Makers' Mills	25.00 cash.
3,000 Tons	Rod Billets, Oct., Nov	24.60 cash.
1,500 Tons	Billets	25.00 cash.
1,000 Tons	Billets	24.90 cash.
500 Tons	Nail slabs	24.75 cash.
2,000 Tons	Billets. Dec. and Jan. at works	25 50 cash.

Muck Bars.

1,000 Tons	Neutral	26.75 cash.
1,000 Tons	Neutral, Oct., Nov., Dec	26.75 cash.
500 Tons	Neutral, Oct., Nov	26 75 cash.
500 Tons	Neutral, Oct	26.50 cash.
400 Tons	Neutral	26.25 cash.

Ferro-Manganese.

125 Tons	80%, domestic Pittsburg	66.50 cash.
50 Tons	80%, imported	66.00 cash.

Old Iron and Steel Rails.

300 Tons	Old Steel Rails, short pieces	17.00 cash.
275 Tons	Old Iron Rails	24.00 cash.
125 Tons	Long Steel Rails	18.50 cash

Skelp Iron.

1,500 Tons	Sheared Iron	1.95 4 m.
1,400 Tons	Narrow Grooved	1.72½ 4 m.
900 Tons	Wide Grooved	1.75 4 m.

Steel Wire Rods.

875 Tons	at Operators' Mill	33.80 cash.

Bloom, Beam, Rail and C Ends.

1,800 Tons	Bloom and Rail Ends	17.25 cash.
500 Tons	Billet Ends	16.60 cash.
200 Tons	" "	16.80 cash.

Scrap Material.

380 Tons	No 1 R. R. Wrought Scrap, net	20.00 cash.
300 Tons	Old Car Wheels, gross	15.50 cash.
300 Tons	Cast Scrap, gross	13.50 cash.
200 Tons	Leaf Steel, gross	22.00 cash.
200 Tons	Soft Steel, Nail Butts, gross	18.00 cash.
200 Tons	No. 1 R. R. Wrought Scrap, net	19.50 cash.
125 Tons	Old Steel Rails, long lengths, gross	18.50 cash.
100 Tons	Cast Borings, gross	11.00 cash.
100 Tons	Old Steels Rails, short, gross	17.00 cash.
100 Tons	R. R. Cast Scrap, gross	12 25 cash.
75 Tons	Soft Steel, gross	20.00 cash.

NEW YORK MINING STOCKS QUOTATIONS.

DIVIDEND-PAYING MINES.

Name and Location of Company.	Sept. 26. H.	Sept. 26. L.	Sept. 28. H.	Sept. 28. L.	Sept. 29. H.	Sept. 29. L.	Sept. 30. H.	Sept. 30. L.	Oct. 1. H.	Oct. 1. L.	Oct. 2. H.	Oct. 2. L.	Sales.
Adams, Colo			2.00						1.90				700
Alice, Mont									1.50				200
Argenta													
Atlantic, Mich													
Belcher, Nev							1.65						100
Belle Isle, Nev													
Bodie Cons., Cal													
Bos. & Mont., Mont													
Breece, Colo													
Bulwer, Cal													
Caledonia, S. Dak													
Catalpa	.24												500
Chrysolite, Colo	6.00												20
Colorado Central, Colo													
Commonwealth, Nev	.40												400
Comstock T. bonds, Nev.													
" scrip., Nev													
Cons. Cal. & Va., Nev						5.63							100
Crown Point, Nev	1.70				1.70						1 55	1.50	400
Deadwood, Dak													
Eureka Cons., Nev													
Father de Smet, S. Dak													
Franklin, Mich													
Freeland, Colo	.10					.11		.11		.12		.10	12,300
Gould & Curry, Nev	2.00				1.90			1.85					350
Granite Mountain, Mont													
Hale & Norcross, Nev								1.70					50
Homestake, Dak													
Horn-Silver, Utah	3.50				3.40								600
Independence, Nev													
Iron Silver													
Leadville Cons., Colo	.12					.12	.11						1,740
Little Chief, Colo										.28			200
Martin White, Nev			1.10		1.20	1.15	1.25						700
Mono, Cal													
Mt. Diablo, Nev													
Navajo, Nev													
N. Belle Isle, Nev													
Ontario, Utah													
Ophir, Nev	4.00				4.10		3.70						300
Osceola, Mich													
Plymouth, Cal													
Quicksilver, Pref., Cal													
" Com., Cal													
Quincy, Mich													
Robinson Cons., Colo													
Savage, Nev	3 00				3.15			3.00					275
Sierra Nevada, Nev	2.95		1.80				2.75	2.65					400
Silver Cord, Colo													
Silver King, Ariz	.03												300
Silver Mg. of L. V., N.M.													
Small Hopes, Colo													
Standard			1 35		1.35						1.50	1.40	1,400
Yellow Jacket, Nev					1.35						1 80		100

NON-DIVIDEND-PAYING MINES.

Name and Location of Company.	Sept. 26. H.	Sept. 26. L.	Sept. 28. H.	Sept. 28. L.	Sept. 29. H.	Sept. 29. L.	Sept. 30. H.	Sept. 30. L.	Oct. 1. H.	Oct. 1. L.	Oct. 2. H.	Oct. 2. L.	Sales.
Alpha, Nev													
Alta	.55			.60		.55		.54		.55			600
American Flag, Colo													
Andes, Cal											1.35		100
Astoria, Cal	.02					.02		.02		.02			5,500
Augusta, Ga													
" bonds													
Barcelona, Nev													
Belmont, Cal	.88			.90	.88	.90	.89	.90		.90		.90	1,300
Best & Belcher, Nev						2.25		2.86		2 85			300
Bonanza King, Cal													
Brunswick, Cal	.09			.09		.18		.08	.07				6,200
Bullion, Nev													
Butte & Bost., Mont													
Castle Creek, Idaho	.04	.03											700
Challar	1.90			1 70						1.60			400
Comstock T., Nev				.20	.18								900
Con. Imperial, Nev													
Con. Pacific, Cal													
Crescent, Colo	.14												500
Del Monte, Nev													
El Cristo, Rep. of Col	.49	.45	.55	.45	.50			60		.60	.55	.60	3,100
Emmett													
Exchequer, Nev													
Hollywood, Cal													
Huron, Mich													
Julia													
King, & Pembroke, Ont													
Lacrosse, Colo													
Lee Basin, Colo													
Mexican, Nev	2.70		2 50		2.85		2 65						600
Middle Bar, Cal													
Monitor, Colo													
Mutual S. & M. Co., Wash													
Nevada Queen, Nev	.15												
N. Standard, Cal													500
N. Commonwealth, Nev													
Occidental, Nev	.75												
Overman													300
Phœnix Lead, Colo											1.50		100
Phœnix of Ariz	.55	.50	.56	.50	.55	.50	.52						6,300
Potosi, Colo	3.00												100
Rappahannock, Va													
S. Sebastian, S. Sal													
Santa Fe, N. M													
Scorpion, Nev													
Seg Belcher, Nev											.25		300
Shoshone, Idaho								.02					
Silver Queen											.04		1,000
Sullivan Con., Dak													300
Sutro Tunnel, Nev													
Syndicat e													
Tornado Con., Nev													
Union Cons., Nev	2.40												
Utah, Nev	1.40	.75	.75		.80	.75	.70						100
													1,200

*Ex. dividend. †Dealt at in the New York Stock Ex. Unlisted securities. ‡Assessment paid. §Assessment unpaid. . Dividend shares sold, 21,095. Non-dividend shares sold 30,400.
Total shares sold 51,495.

BOSTON MINING STOCK QUOTATIONS.

Name of Company.	Sept. 25.		Sept. 26.		Sept. 28.		Sept. 29.		Sept. 30.		Oct. 1.		Sales.
Atlantic, Mich					15.50		15.50				15.00	14.50	300
Bodie, Cal													
Bonanza Development													
Bost. & Mont., Mont	48.50		49.00		49.50	48.63	49.00	48.50	48.50	47.50	47.50	45.00	2,410
Breece, Colo			42½	.40	.45		.50	.47	.49		.50		2,300
Calumet & Hecla, Mich	275	273									270	269	42
Catalpa, Colo													
Central, Mich													
Coeur d'Alene, Id							1.15						500
Con. Cal. & Va., Nev													
Dunkin, Colo													
Eureka, Nev													
Franklin, Mich	18.75	18.00	19.00	18.50	19.00	18.50	18.25		18.25	17 25	17.50		4,585
Honorine, Utah													
Horn Silver, Utah													
Kearsarge Mich	15.50		16 00		15.75				16.00		15.50		1,120
Little Chief, Colo													
Little Pittsburg, Colo													
Minnesota Iron													
Napa, Cal													
Ontario, Utah													
Osceola, Mich			38.50	38.37	39.00		38.75	38.50	39.00		37.50		340
Quincy, Mich													
Ridge, Mich													
Sierra Nevada, Nev													
Silver King, Ariz													
Stormont, Utah													
Tamarack, Mich			178	176	179		179		176	175	175	174	131
Tecumseh, Mich													

Name of Company.	Sept. 25.		Sept 26		Sept. 28.		Sept. 29.		Sept. 30.		Oct. 1.		Sales
Allouez, Mich						1.87	1.63			1.87	1.75		475
Arnold, Mich	2.25		2.25		2.25	2.20				2 25			2,495
Aztec, Mich													
Brunswick, Cal													
Butte & Boston, Mont	19.25	19.00			19.50		19.00	18.50	18.50	18.00	18.00	17 25	2,100
Centennial, Mich							18.75	18.63			18.00	16.75	305
Comstock, T., Nev													
Copper Falls, Mich													
Crescent, Colo													
Dana, Mich													
Don Enrique, N. M													
El Cristo, S. A													
Hanover, Mich													
Humboldt, Mich										.50			100
Hungarian, Mich													
Huron, Mich	.70					.75		.60			.70		675
Mesnard, Mich													
National, Mich													
Native, Mich													
Oriental & M., Nev													
Phoenix, Ariz													
Pontiac, Mich													
Rappahannock, Va													
Santa Fe, N. Mex						.50		.50		.50			3,510
Shoshone, Idaho													
South Side, Mich													
Star, Mich													
Washington, Mich													
Wolverine	6.65	6.50	6.50		6.37	6.00		6.00	5.87	5.87	5.50	5.63	2,285
												5.50	

Dividend shares sold, 11,728. Non-dividend shares sold, 11,945. Total shares sold, 23,673.

COAL STOCKS.

Name of Company.	Sept. 26. H.	Sept. 26. L.	Sept. 28. H.	Sept. 28. L.	Sept. 29. H.	Sept. 29. L.	Sept. 30. H.	Sept. 30. L.	Oct. 1. H.	Oct. 1. L.	Oct. 2. H.	Oct. 2. L.	Sales.
American Coal													
Cambria Iron									77½				44
Cameron Coal & I. Co													
Ches. & O. R. R			27⅝	25¾	27¼	25	26⅝	25¾	27	26	26	25¾	27	25¾	37,546
Chic. & Ind. Coal R. R													
Do. pref													
Col. C. & I			38⅜	37¾	38	37¾	37	36			36	35¾	37	35¼	3,180
Col. C. & Hocking C. I					16¾	16									200
Consolidation Coal															
Del. & H. C			136¾	133½	136¾	134½	136	135¾	135	133½	133⅝	133	136	133¼	6,165
D., L. & W. R. R			144	141½	144½	143½	144	142¾	141¾	140½	141¼	139¾	141¾	139¾	37,269
Hocking Valley			32½	31	34⅜	31¼	34¾	33	33⅝	32¾	33	32	33¾	31¾	40,281
Hunt & Broad Top			26	25½	26		25¾		25		25¼	24½			720
Do. pref							48	47¾							168
Illinois C. & Coke Co															
Lehigh C. & N			49⅝	49⅝	49⅝	49½	49¾	49½	49¾		49½	48⅝			257
Lehigh Valley R. R			51¼	51	51		51	50⅜	51¾	51	51	50⅝			1,555
Lehigh & Wilk. Coal															
Mahoning Coal															
Do. pref															
Maryland Coal							23								
Morris & Essex															
New Central Coal												12			110
N. J. C. R. R			119½	119			118¾	118¾	118	117					1,000
N. Y. & S. Coal															
N. Y., Susq. & West			11¼	10¾	11¾	11	11¾	11	11¾	11	11¼	11	11¾	11	19,892
Do. pref			38¾	37	4 ¼	38	41	39	41¾	39¾	41¼	39¾	41¾	40¾	33,408
N. Y. & Perry C. & I															
Norfolk & West. R. R					18½	17¾	18		18¼	17¾			18		1,835
Do. pref					56⅝				55⅝		55				300
Penn. Coal															
Penn. R. R			54⅞	54⅝	54¼	54⅜	54¾	54½	54⅝	54¼	54⅝	54½			
††Ph. & R. R. R			42¾	41½	42¼	40¾	40¾	39½	40¾	39¾	40¼	38¾	40¾	38	88,539
Sunday Creek Coal															
Do. Pref															
Tennessee C. & I. Co			37	36¾	37¼	36⅝	37¼	36	36¾	36	36¾	36	37	36	7,235
Do. pref															
Westmoreland Coal					66										15

††Sales in New York, 52,422. In Philadelphia, 36,117. Total shares sold, 322,062.

San Francisco Mining Stock Quotations.

Names of Stocks.	Closing Quotations. Sept. 25.	Sept. 26.	Sept. 28.	Sept. 29.	Sept. 30.	Oct. 1.
Alpha	.55	.50	.45	.45	.45	.45
Alta						
Belcher	.50	.50	.50	.55	.55	
Belle Isle	2.95	2.80	2.90	2.70	2.70	2.75
Best & Belcher	.55	.55	50	.50	.50	.45
Bodie	.20	.20	.20	.20	.20	.15
Bulwer	1.75	1.55	1.65	1.50	1.50	1.40
Caledonia	.30	.25	.20	.25	.25	
Challar	5.62½	5.62½	5.87½	5.62½	5.62½	5.62½
Commonwealth						
Cons. Cal. & Va	1.55	1.50	1.55	1.45	1.45	1.30
Cons. Pacific						
Crown Point						
Del Monte, Nev						
Eureka C						
Gould & C	1.85	2.85	1.80	1.70	1.70	1.75
Hale & Norcross	1.75	1.65	1.65	1.55	1.55	1.45
M. White						
Mexican	2.50	2.3	2.70	2.50	2.50	2.50
Mono	.30	.30	.25	.15	.15	.10
Mt. Diablo						2.50
Navajo	.10		.10	.10	.10	
Nev. Queen	.10	.10	.10	.10	.10	
N. Belle Isle	.10	.10	.20	.30	.30	
N. Commonwealth						
Ophir	3.80	3.70	3.70	3.65	3.65	3.65
Potosi	2.80	2.90	2.85	2.75	2.75	3.60
Savage	3.00	2.90	3.00	2.80	2.80	2.80
Sierra Nev	2.80	2.65	2.80	2.60	2.60	2.50
Union Con	2.25	2.15	2.30	2.15	2.15	2.35
Utah	.65	.65	.65	.60	.60	.50
Yellow Jack	1.25	1.15	1.20	1.10	1.10	1.35

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par	Assessments. Total levied.	Date and Amount of last			Dividends. Total paid.	Date & amount of last.		
1	Adams, s. l. c.	Colo.	$1,500,000	150,000	$10	*	.....	...	.....	$600,000	Aug.	1891	.05
2	Alice, s.	Mont.	10,000,000	400,000	25	*	.....	...	.....	945,000	Aug.	1891	.06¼
3	Alma & Nel Wood., G	Idaho	300,000	30,000	10	*	.....	...	.....	60,000	Jan.	1889	50
4	Amador, G.	Cal.	1,250,000	250,000	5	*	.....	...	.....	31,250	Aug.	1890	.12½
5	American Belle, s. G. C	Colo.	2,000,000	400,000	5	*	.....	...	.....	50,000	April	1891	.12½
6	Americ'n & Nettie, G. S	Colo.	....	300,000	..	....	.....	...	.....	150,000	Nov.	1889	.10
7	Amy & Silversmith, s.	Mont.	....	341,419	...	....	.....	...	.....	247,530	Aug.	1887	.12½
8	Atlantic, C.	Mich.	1,000,000	40,000	25	$280,000	April	1875	$1.00	700,000	Feb.	1891	1.00
9	Argenta, s.	Nev.	10,000,000	100,000	100	335,000	July.	1889	.10	40,000	Feb.	1880	.20
10	Aspen Mg. & S., s. L.	Colo.	2,000,000	200,000	10	*	.....	...	.....	660,000	May.	1891	.10
11	Aurora, I.	Mich.	2,500,000	100,000	25	....	.....	...	.....	155,000	April	1891	1.00
12	Badger, s.	Ont.	250,000	50,000	5	*	.....	...	.....	37,500	Mar.	1890	.25
13	Bangkok Cora-Bell, s.	Colo.	600,000	600,000	1	*	.....	...	.....	44,510	Aug.	1890	.00½
14	Belle Isle, s.	Nev.	10,000,000	100,000	100	190,000	Dec.	1889	.15	300,000	Dec.	1879	.25
15	Belcher, s. G.	Nev.	10,400,000	104,000	100	2,978,000	Feb,	1891	.50	15,397,000	April	1876	1.00
16	Bellevue, Idaho, s. L.	Idaho	1,250,000	125,000	10	120,000	Dec.	1889	.25	200,000	Jan.	1890	.10
17	Bi-Metallic, s. G.	Mont.	5,000,000	200,000	25	....	.....	...	.....	760,000	June	1891	.35
18	Bodie Con., G. I.	Cal.	10,000,000	100,000	100	550,000	June	1890	.25	1,602,572	April	1885	.50
19	Boston & Mont., G.	Mont.	2,500,000	250,000	10	*	.....	...	.....	520,000	June	1886	.15
20	Boston & Mont., C. S.	Mont.	2,500,000	100,000	25	*	.....	...	.....	1,950,000	Aug.	1891	1.00
21	Breece, I.	Colo.	5,000,000	200,000	25	*	.....	...	.....	2,000	Feb.	1880	.01
22	Brooklyn Lead, L. S.	Utah	500,000	50,000	10	....	.....	...	.....	127,000	July.	1887	.05
23	Bulwer, G.	Cal.	10,000,000	100,000	10	130,000	Aug.	1889	.25	175,000	Jan.	1884	.10
24	Bunker Hill & S. s. L.	Idaho	3,000,000	300,000	10	*	.....	...	.....	150,000	Oct.	1883	.06⅜
25	Caledonia, O.	Dak.	10,000,000	100,000	100	505,000	May.	1885	.15	192,000	Oct.	1890	.08
26	Calliope, s.	Colo.	1,000,000	1,000,000	....	....	.....	...	.....	140,000	Jan.	1891	.00½
27	Calumet & Hecla C.	Mich.	2,500,000	100,000	25	1,200,000	.....	...	.....	36,350,000	Sept	1891	5.00
28	Catalpa, s. L. I.	Colo.	3,000,000	300,000	10	*	.....	...	.....	270,000	May.	1884	10
29	Centen'l-Eureka, s. L	Utah.	1,500,000	30,000	50	....	.....	...	.....	352,500	July.	1891	2.00
30	Central, C.	Mich.	500,000	20,000	25	100,000	Oct.	1861	.65	1,970,000	Feb.	1891	1.00
31	Chrysolite, s. L.	Colo.	10,000,000	200,000	50	*	.....	...	.....	1,650,000	Dec	1884	.25
32	Clay County, G.	Colo.	200,000	200,000	1	*	.....	...	.....	40,000	July.	1891	.02
33	Cœur D'Alene, s. L.	Idaho	5,000,000	500,000	10	....	.....	...	.....	290,000	Oct.	1891	.02
34	Colorado Central, s. L.	Colo.	2,750,000	275,000	10	*	.....	...	.....	406,250	Aug.	1889	.05
35	Commonwealth, s.	Nev	10,000,000	100,000	100	170,000	Nov.	1888	.50	20,000	Nov.	1890	.20
36	Confidence, s. L.	Nev.	....	24,960	..	328,880	May.	1890	.75	199,680	April	1889	1.00
37	Cons. Cal. & Va., s. G.	Nev.	21,600,000	216,000	100	108,000	Jan.	1885	.20	3,682,800	Aug.	1891	.50
38	Contention, s.	Ariz.	12,500,000	250,000	50	....	.....	...	.....	+2,587,500	Dec.	1884	.25
39	**Cop. Queen Con., C	Ariz.	1,400,000	140,000	10	....	.....	...	.....	210,000	Feb.	1889	.50
40	Cortez, s.	Nev.	1,500,000	300,000	05	*	.....	...	.....	481,000	Feb.	1891	.46
41	Crescent, s. L. G.	Utah	15,000,000	600,000	25	*	.....	...	.....	228,000	Oct.	1888	.03
42	Crown Point, G. S.	Nev.	10,000,000	100,000	100	2,425,000	Sept.	1889	.50	11,588,000	Jan.	1875	2.00
43	Cumberland, L. S.	Mont.	5,000,000	500,000	10	*	.....	...	.....	15,000	Nov.	1889	.03
44	Daly, s. L.	Utah	3,000,000	150,000	20	....	.....	...	.....	2,062,500	Aug.	1891	.25
45	Deer Creek, s. G.	Idaho	1,000,000	200,000	5	*	.....	...	.....	20,000	June	1889	.05
46	Deadwood-Terra, G.	Dak.	5,000,000	200,000	25	*	.....	...	.....	1,020,000	Sept.	1891	.05
47	DeLamar, s. G.	Idaho	2,000,000	400,000	5	....	.....	...	.....	72,000	July.	1891	.13
48	Derbec B. Grav., G.	Cal.	10,000,000	100,000	100	90,000	Dec.	1881	.10	240,000	Oct.	1890	.10
49	Dunkin, s. L.	Colo.	5,000,000	200,000	25	*	.....	...	.....	390,000	Oct.	1889	.05
50	Dunstone, G. S. L.	Mont.	1,000,000	200,000	5	*	.....	...	.....	6,000	Nov.	1888	.03
51	Eclipse, L. S.	Colo.	100,000	100,000	1	....	.....	...	.....	20,000	Nov.	1887	10
52	Elkhorn, s. L.	Mont.	1,000,000	200,000	5	*	.....	...	.....	¶396,000	June	1891	1.00
53	Enterprise, s.	Colo.	100,000	10,000	10	*	.....	...	.....	40,000	May.	1888	1.00
54	Eureka Con., s. L. G.	Nev.	5,000,000	50,000	100	550,000	June	1889	.50	4,892,500	Oct.	1890	.25
55	Evening Star, s. L.	Colo.	500,000	50,000	10	*	.....	...	.....	1,450,000	Dec.	1889	.25
56	Father de Smet, G.	Dak.	10,000,000	100,000	100	200,000	Nov.	1878	1.00	1,125,000	Dec.	1885	.20
57	Franklin, C.	Mich.	1,000,000	40,000	25	220,000	June	1871	.....	1,046,000	July.	1891	2.00
58	Freeland, s. G.	Colo.	5,000,000	200,000	25	*	.....	...	.....	190,000	July.	1886	.10
59	Garfield Lt., O. S.	Nev.	500,000	100,000	5	....	.....	...	.....	90,000	April	1888	.12½
60	Gould & Curry, s. G.	Nev.	10,800,000	108,000	100	3,988,800	Sept.	1890	.25	3,826,800	Oct.	1870	10.00
61	Grand Prize, s.	Nev.	10,000,000	100,000	100	785,000	Jan.	1890	.30	495,000	Mar.	1884	.25
62	Granite, s. L.	Idaho	500,000	500,000	1	*	.....	...	.....	28,400	Oct.	1889	.02
63	Granite Mountain, s.	Mont.	10,000,000	400,000	25	....	.....	...	.....	11,300,000	Sept.	1891	.25
64	Green Mountain, O.	Cal.	1,250,000	125,000	10	*	.....	...	.....	212,000	Nov.	1881	.07½
65	Hale & Norcross, G. S.	Nev.	11,200,000	112,000	100	5,142,800	April	1890	.50	1,822,000	Aug.	1888	.50
66	Hecla Con., s. O. L. C.	Mont.	1,500,000	30,000	50	....	.....	...	.....	1,680,000	Aug.	1891	.50
67	Hel'a Mg. & Red, s. L. G.	Mont.	3,315,000	663,000	5	*	.....	...	.....	197,970	July.	1886	.06
68	Holmes, s.	Nev.	10,000,000	100,000	100	370,000	May.	1890	.25	75,000	April	1886	.25
69	Homestake, G.	Dak.	12,500,000	125,000	100	200,000	July.	1878	1.00	4,731,750	Aug.	1891	.10
70	Honorine, s. L.	Utah	500,000	250,000	2	37,500	April	1889	.05	125,000	Sept.	1887	.05
71	Hope, s.	Mont.	1,000,000	100,000	10	*	.....	...	.....	233,252	April	1888	.25
72	Horn-Silver, s. L.	Utah	10,000,000	400,000	25	*	.....	...	.....	4,300,000	June.	1891	.12½
73	Hubert, G.	Colo.	1,000,000	1,000,000	1	*	.....	...	.....	247,000	Dec.	1889	.00½
74	Idaho, G.	Cal.	310,000	3,100	100	....	.....	...	.....	2,303,750	July.	1891	3.00
75	Illinois, s.	N. M.	100,000	100,000	1	*	.....	...	.....	45,000	April	1889	.20
76	Iron Hill, s.	Dak.	2,500,000	250,000	10	134,000	July.	1889	.03	156,250	Nov.	1887	.07½
77	Iron Mountain, S.	Mont.	500,000	500,000	1	*	.....	...	.....	120,000	Feb.	1891	.05
78	Iron-Silver, s. L.	Colo.	10,000,000	500,000	20	*	.....	...	.....	2,500,000	April	1889	.20
79	Jackson, O. S.	Nev.	5,000,000	50,000	100	237,500	Nov.	1880	.20	60,000	Jan.	1891	.10
80	Jay Gould, G. S.	Mont.	2,000,000	40,000	5	*	.....	...	.....	459,000	May	1890	.04
81	Kearsarge, C.	Mich.	1,000,000	40,000	25	190,000	Oct.	1887	1.00	80,000	Jan.	1890	2.00
82	Kentuck, s. G.	Nev.	3,000,000	30,000	100	417,439	Dec.	1890	.35	1,350,000	Dec.	1886	.10
83	La Plata, s. L.	Colo.	2,000,000	200,000	10	*	.....	...	.....	610,000	Sept.	1882	.30
84	Leadville Con., s. L.	Colo.	4,000,000	400,000	10	*	.....	...	.....	423,000	April	1887	.05
85	Lexington, G. S.	Mont.	4,000,000	40,000	100	*	.....	...	.....	565,000	Jan.	1885	2.00
86	Little Chief, s. L.	Colo.	10,000,000	200,000	50	*	.....	...	.....	820,000	Dec.	1890	.05
87	Little Rule, s.	Colo.	500,000	500,000	1	....	.....	...	.....	170,000	July.	1891	.02
88	Mammoth, s. L. C.	Utah	10,000,000	400,000	250	110,000	.....	1882	.25	960,000	June	1891	.10
89	Martin White, s.	Nev.	10,000,000	100,000	100	1,225,000	Oct.	1890	.25	140,000	Dec.	1886	.25
90	Mary Murphy, s. G.	Colo.	350,000	3,500	101	*	.....	...	.....	175,000	May.	1888	5.00
91	Matchless, s. L	Colo.	500,000	500,000	1	*	.....	...	.....	15,000	Feb.	1890	.00½
92	May Mazeppa, s. L.	Colo.	1,000,000	100,000	1	....	.....	...	.....	168,000	July.	1891	.01¼
93	Minas Prietas, O. S.	Mex.	1,000,000	100,000	10	*	.....	...	.....	350,000	Dec.	1890	.50
94	Minnesota, C.	Mich.	1,000,000	40,000	25	420,000	April	1886	1.00	1,820,000	Mar.	1876	.....
95	Mollie Gibson, s.	Colo.	5,000,000	1,000,000	5	*	.....	...	.....	550,000	Sept.	1891	.05
96	Monitor, G.	S. Dak	2,500,000	250,000	10	....	.....	...	.....	45,000	Oct.	1890	.03
97	Mono, G.	Cal.	5,000,000	50,000	100	760,000	Sept.	1890	.25	12,500	Mar.	1886	.25
98	Montana, Lt., G. S.	Mont.	3,300,000	660,000	5	*	.....	...	.....	2,619,075	June.	1891	.12½
99	Morning Star, s. L.	Colo.	1,000,000	100,000	10	....	.....	...	.....	925,000	April	1891	.25
100	Moulton, s. G.	Mont.	2,000,000	400,000	5	‡	.....	...	.....	380,000	Dec.	1887	.07½
101	Mount Pleasant, G.	Cal.	150,000	150,000	1	*	.....	...	.....	150,000	Feb.	1887	.30
102	Mt. Diablo, s.	Nev.	5,000,000	50,000	100	137,500	June	1880	2.00	180,000	Sept.	1890	.40
103	Napa, Q.	Cal.	700,000	100,000	7	....	.....	...	.....	420,000	July.	1891	.10
104	Navajo, G. S.	Nev.	10,000,000	100,000	100	500,000	April	1890	.15	229,950	April	1889	.10
105	New California, G.	Colo.	800,000	160,000	5	*	.....	...	.....	48,800	May.	1830	12½
106	New Guston, s.	Colo.	550,000	110,000	5	....	.....	...	.....	785,000	April	1891	1.00
107	N. Hoover Hill, G. S.	N. C.	300,000	120,000	2½	*	.....	...	.....	30,000	Dec.	1885	.06½
108	Northern Belle, s.	Nev.	5,000,000	50,000	100	425,000	Jan.	1884	8.00	2,400,000	April	1883	.50
109	North Belle Isle, s.	Nev.	10,000,000	100,000	100	395,000	April	1890	.20	230,000	May.	1888	.50
110	North Star, G.	Cal.	1,000,000	100,000	10	....	.....	...	.....	300,000	April	1889	.50
111	Ontario, s. L.	Utah	15,000,000	150,000	100	....	.....	...	.....	12,125,000	Aug.	1891	.50
112	Ophir, G. S.	Nev.	10,000,000	100,000	100	4,210,640	April	1890	.50	1,595,800	Jan.	1880	1.00
113	Original, s. C.	Mont.	1,500,000	60,000	25	*	.....	...	.....	138,000	Jan.	1889	.05
114	Oro, s. L. G.	Colo.	500,000	100,000	5	....	.....	...	.....	95,000	July.	1890	.20
115	Osceola, C.	Mich.	1,250,000	50,000	25	480,000	April	1876	1.60	1,547,500	July.	1891	1.00
116	Parrot, C.	Mont.	1,800,000	180,000	10	....	.....	...	.....	850,000	May.	1891	.10
117	Peacock, s. G. C.	N. M.	2,000,000	200,000	10	*	.....	...	.....	60,000	Nov.	1886	.....
118	Plumas Eureka, G.	Cal.	1,406,250	140,625	10	....	.....	...	.....	2,548,000	Oct.	1889	.37½
119	Plymouth Con., G.	Cal.	5,000,000	100,000	50	*	.....	...	.....	2,280,000	Feb.	1888	.40
120	Quicksilver, pref., Q.	Cal.	4,300,000	43,000	100	....	.....	...	.....	1,770,161	Jan.	1891	1.50
121	" com., Q	Cal.	5,700,000	57,000	100	....	.....	...	.....	643,867	July.	1882	.40
122	Quincy, C.	Mich.	1,000,000	40,000	25	200,000	Dec.	1862	.....	5,970,000	Aug.	1891	5.00
123	Reed National, s. G.	Colo.	500,000	500,000	1	*	.....	...	.....	50,000	Dec.	1890	.01
124	Rialto, G.	Colo.	300,000	300,000	1	*	.....	...	.....	13,500	July.	1891	.01¼
125	Richmond, s. L.	Nev.	1,350,000	54,000	25	*	.....	...	.....	4,332,887	Jan.	1891	.62½
126	Ridge, C.	Mich.	500,000	20,000	25	219,939	Mar.	1886	.50	99,785	Feb.	1880	.50
127	Robinson Con., s. L.	Colo.	10,000,000	200,000	50	*	.....	...	.....	585,000	Mar.	1886	.05
128	Running Lode, O.	Colo.	1,000,000	1,000,000	1	*	.....	...	.....	15,000	June	1891	.00½
129	Savage, s.	Nev.	11,200,000	112,000	100	6,604,000	Nov.	1889	.50	4,460,000	June	1869	3.00
130	Sheridan, s. G.	Colo.	300,000	3,000	100	*	.....	...	.....	225,000	Dec.	1890	3.33⅓
131	Shoshone, G.	Idaho	150,000	150,000	1	....	.....	...	.....	7,500	April	1883	.01
132	Sierra Buttes, O.	Cal.	2,225,000	122,500	10	....	.....	...	.....	1,492,557	April	1888	.12½
133	Sierra Nevada, s. G.	Nev.	10,000,000	100,000	100	6,296,910	May.	1890	.50	102,000	Jan.	1871	1.00
134	Sierra Nevada, s. L.	Idaho	1,000,000	1,000,000	1	*	.....	...	.....	40,000	May.	1889	.02
135	Silent Friend	Colo.	500,000	500,000	1	....	.....	...	.....	32,500	April	1891	.02½
136	Silver Cord, s. L. G.	Colo.	4,500,000	450,000	10	....	.....	...	.....	265,000	April	1889	10
137	Silver King, s.	Ariz.	10,000,000	100,000	100	130,000	Nov.	1890	.30	1,950,000	July	1887	.25
138	Silver Mg. of L. V., s. L.	N. M.	500,000	500,000	1	....	.....	...	.....	375,000	May	1891	.05
139	Small Hopes Con., s.	Colo.	5,000,000	250,000	20	*	.....	...	.....	3,162,500	Oct.	1890	.10
140	Spring Valley, G.	Cal.	200,000	200,000	1	50,000	Oct.	1886	.25	50,000	Jan.	1881	.25
141	Standard, G. S.	Cal.	10,000,000	100,000	100	100,000	June	1890	.50	3,595,000	June	1888	.05
142	Stormont, s.	Utah	500,000	500,000	1	*	.....	...	.....	155,000	Nov.	1881	.05
143	St. Joseph, L.	Mo.	1,500,000	150,000	10	*	.....	...	.....	1,974,000	Dec.	1890	.02
144	Tamarack, C.	Mich.	1,250,000	50,000	25	520,000	April	1885	3.00	2,090,000	Aug.	1891	4.00
145	Tombstone, G. S. L.	Ariz.	12,500,000	500,000	25	*	.....	...	.....	1,250,000	April	1882	.10
146	United Verde, C.	Ariz.	3,000,000	300,000	10	*	.....	...	.....	127,500	May.	1890	.10
147	Viola Lt., s. L.	Idaho	750,000	150,000	5	....	.....	...	.....	337,500	Nov.	1888	.37½
148	Ward Con., s.	Colo.	2,000,000	200,000	10	....	.....	...	.....	20,000	Dec.	1889	.05
149	Woodside, s. L.	Utah.	100,000	100,000	10	....	.....	...	.....	25,000	Oct.	1889	.25
150	W. Y. O. D.	Cal.	30,0,00	15,000	2	11,250	Feb.	1890	.10	4,500	May.	1891	.10
151	Yankee Girl, s.	Colo.	2,500,000	250,000	10	....	.....	...	.....	1,405,000	April	1891	.50
152	Yellow Jacket, G. S.	Nev.	12,000,000	120,000	100	5,508,000	Mar.	1889	.50	2,184,000	Aug.	1871	2.50
153	Young America, G.	Cal.	....	....		....	.....	...	.....	175,000	Jan.	1889	.10

NON-DIVIDEND PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par	Assessments. Total levied.	Date and am't of last.		
1	Allegheny, s.	Colo.	$5,000,000	500,000	$10	*	.....	...	.....
2	Alliance, s. G.	Utah.	100,000	100,000	1	$120,000	Feb.	1891	.2
3	Allouez, C.	Mich.	2,000,000	80,000	25	737,000	Jan.	1890	.70
4	Alpha Con., G. S.	Nev.	3,000,000	30,000	100	112,500	Sept.	1890	.25
5	Alta, s.	Nev.	10,080,000	100,800	100	3,359,800	Sept.	1890	.5
6	American Flag, s.	Colo.	1,250,000	125,000	10	300,000	June	1887	
7	Amity, s.	Colo.	250,000	250,000	1	....	.....	...	
8	Anchor, s. L. G.	Utah.	3,000,000	150,000	20	410,000	June	1890	.20
9	Anglo-Montana, Lt.	Mont.	600,000	120,000	5	....	.....	...	.....
10	Astoria, G.	Cal.	200,000	100,000	2	....	.....	...	.....
11	Barcelona, G.	Nev.	5,000,000	200,000	25	*	.....	...	.....
12	Bechtel Con., G.	Cal.	10,000,000	100,000	100	173,500	.....	1883	.10
13	Belmont, G.	Cal.	500,000	500,000	1	*	.....	...	.....
14	Belmont, s.	Nev.	5,000,000	50,000	100	735,000	April	1886	.10
15	Best & Belcher, s. G.	Nev.	10,080,000	100,800	100	2,279,275	Aug.	1890	.25
16	Black Oak, G.	Cal.	3,000,000	300,000	10	*	.....	...	.....
17	Boston Con., G.	Cal.	10,000,000	100,000	100	170,000	Nov.	1883	.25
18	Bremen, s	N. M.	5,000,000	500,000	10	*	.....	...	.....
19	Brownlow, G.	Colo.	250,000	250,000	1	....	.....	...	.....
20	Brunswick, G.	Cal.	2,000,000	400,000	5	*	.....	...	.....
21	Buckeye, s. L.	Mont.	1,000,000	500,000	2	....	.....	...	.....
22	Bullion, s. O.	Nev.	10,000,000	100,000	100	2,790,000	Dec.	1889	.25
23	Butte & Boston, C. S.	Mont.	5,000,000	200,000	....	....	.....	...	.25
24	Calaveras, G.	Cal.	500,000	500,000	1	*	.....	...	.....
25	Carisa, G.	Wy.	500,000	100,000	5	*	.....	...	.....
26	Carupano, G. S. L. C.	Ven.	200,000	100,000	2	*	.....	...	.....
27	Cashier, G. S.	Colo.	500,000	250,000	2	*	.....	...	.....
28	Cherokee, G.	Cal.	1,500,000	150,000	10	....	.....	...	.....
29	Chollar, s. G.	Nev	11,200,000	112,000	100	1,540,000	Nov.	1889	.50
30	Cleveland, T.	Dak.	1,000,000	500,000	2	*	.....	...	.....
31	Colchis, s. O.	N. M.	500,000	50,000	10	....	.....	...	.....
32	Colorado Silver	Colo.	1,625,000	325,000	5	....	.....	...	.....
33	Comstock Tun.	Nev.	10,000,000	100,000	100	35,000	Mar.	1887	.15
34	Con. Imperial, G. S	Nev.	5,000,000	50,000	100	1,875,000	July.	1890	.05
35	Con. New York, s. G.	Nev.	5,000,000	100,000	50	70,000	Nov.	1890	.15
36	Con. Pacific, O.	Cal.	6,000,000	60,000	100	198,000	June	1890	.10
37	Con. Silver, s.	Mo.	2,500,000	250,000	10	....	.....	...	.....
38	Crescent, s. L.	Colo.	3,000,000	300,000	10	*	.....	...	.....
39	Crocker, s.	Ariz.	10,000,000	100,000	100	110,000	June	1890	.15
40	Crowell, G.	N. C.	500,000	500,000	1	....	.....	...	.....
41	Dahlonega, G.	Ga.	250,000	250,000	1	*	.....	...	.....
42	Dandy, s.	Colo.	5,000,000	500,000	10	....	.....	...	.....
43	Decatur, s.	Colo.	1,500,000	300,000	5	*	.....	...	.....
44	Denver City, s.	Colo.	5,000,000	500,000	10	*	.....	...	.....
45	Denver Gold, O.	Colo.	300,000	60,000	5	....	.....	...	.....
46	Dickens-Custer, s.	Idaho	2,100,000	420,000	5	....	.....	...	.....
47	Durango, G.	Colo.	500,000	500,000	1	*	.....	...	.....
48	Eastern Dev. Co., Lt.	N. S.	1,500,000	150,000	10	990,000	Mar.	1886	1.00
49	El Cristo, G. S.	U.S.C.	1,000,000	500,000	2	....	.....	...	.....
50	El Dorado, G.	Cal.	1,000,000	250,000	4	*	.....	...	.....
51	El Talento, G.	U.S.C.	1,000,000	500,000	2	....	.....	...	.....
52	Emmons, s. L.	Colo.	2,000,000	2,000,000	1	....	.....	...	.....
53	Empire, s.	Utah	10,000,000	100,000	100	....	.....	...	.....
54	Eureka Tunnel, s. L.	Nev.	10,000,000	100,000	100	*	.....	...	.....
55	Exchequer, s. O.	Nev.	10,000,000	100,000	100	865,000	July.	1890	.25
56	Found Treasure, G. S.	Nev.	10,000,000	100,000	100	81,500	May.	1890	.25
57	Gogebic I. Syn., I.	Wis.	5,600,000	200,000	25	....	.....	...	.....
58	Gold Cup, s.	Colo.	500,000	500,000	1	*	.....	...	.....
59	Golden Era, s.	Mont.	2,000,000	200,000	10	*	.....	...	.....
60	Gold Rock, G.	Cal.	1,000,000	500,000	2	*	.....	...	.....
61	Goodshaw, G.	Cal.	10,000,000	100,000	100	*	.....	...	.....
62	Grand Belt, C.	Tex.	12,000,000	120,000	100	....	.....	...	.....
63	Grand Duke	Colo.	800,000	80,000	10	....	.....	...	.....
64	Great Remance, O.	U.S.C.	1,000,000	500,000	2	*	.....	...	.....
65	Gregory Con., G.	Mont.	3,000,000	300,000	10	....	.....	...	.....
66	Harlem M. & M. Co., O.	Cal.	1,000,000	200,000	5	....	.....	...	.....
67	Hartery Con., O.	Cal.	1,000,000	100,000	10	22,000	Oct.	1890	.05
68	Head Cent. & Tr., s. G.	Ariz.	10,000,000	100,000	100	....	.....	...	.....
69	Hector, G.	Cal.	1,500,000	300,000	5	45,000	Jan.	1889	.15
70	Highland, C.	Mich.	500,000	25,000	20	....	.....	...	.....
71	Holywood	Cal.	200,000	100,000	2	....	.....	...	.....
72	Hortense, s.	Colo.	2,000,000	200,000	10	....	.....	...	.....
73	Huron, C.	Mich.	1,000,000	40,000	25	280,000	May.	1887	3.00
74	Iron, Gold & Silver, s.	N. M.	2,000,000	200,000	10	*	.....	...	.....
75	Ironton, I.	Wis.	1,000,000	40,000	25	....	.....	...	.....
76	Iroquois, C.	Mich.	1,250,000	50,000	25	....	.....	...	.....
77	J. D. Reymert, s.	Ariz.	10,000,000	100,000	100	....	.....	...	.....
78	Julia Con., G. S.	Nev.	11,000,000	110,000	100	1,463,000	Jan.	1889	.10
79	Lacrosse, G.	Colo.	1,000,000	100,000	10	*	.....	...	.....
80	Lee Basin, s.	Colo.	5,000,000	500,000	10	*	.....	...	.....
81	Madeleine, G. S. L.	Colo.	750,000	750,000	1	*	.....	...	.....
82	Mammoth Gold, G.	Ariz.	245,000	49,000	5	*	.....	...	.....
83	Mayflower Gravel, G.	Cal.	1,000,000	100,000	10	585,000	Mar.	1890	.56
84	Medora, G.	Dak.	250,000	250,000	1	....	.....	...	.....
85	Merrimac Con., G. S.	Colo.	5,000,000	500,000	10	*	.....	...	.....
86	Mexican, G. S.	Nev.	10,000,000	100,000	100	2,791,960	Oct.	1890	.25
87	Middle Bar, G.	Cal.	400,000	200,000	2	*	.....	...	.....
88	Mike & Starr, s. C.	Colo.	1,000,000	200,000	5	*	.....	...	.....
89	Milwaukee, s.	Mont.	500,000	500,000	1	12,500	May.	1891	.01
90	Monitor, G.	Colo.	100,000	1,000,000	1	*	.....	...	.....
91	Mutual Mg. & Sm.	W'sh.	100,000	100,000	1	*	.....	...	.....
92	Native, C.	Mich.	1,000,000	40,000	25	....	.....	...	.....
93	Neath, G.	Colo.	1,000,000	100,000	10	....	.....	...	.....
94	Nevada Queen, s.	Nev.	10,000,000	100,000	100	200,000	Oct.	1889	.25
95	New Germany, O.	N. S.	100,000	100,000	1	*	.....	...	.....
96	New Pittsburg, s. L.	Colo.	2,000,000	200,000	10	*	.....	...	.....
97	N. Commonw'h, s.	Nev.	10,000,000	100,000	100	85,000	April	1890	.25
98	North Standard, G.	Cal.	10,000,000	100,000	100	20,000	Nov.	.....	.....
99	Noonday	Cal.	600,000	60,000	10	208,000	Dec.	1881	.10
100	Oneida Chief, G.	Cal.	500,000	125,000	100	*	.....	...	.....
101	Oriental & Miller, s.	Nev.	10,000,000	400,000	25	....	.....	...	.....
102	Osceola, G.	Nev.	5,000,000	500,000	10	*	.....	...	.....
103	Overman, G. S.	Nev.	11,520,000	115,200	100	3,832,800	Dec.	1889	.25
104	Park, s.	Utah	2,000,000	200,000	10	....	.....	...	.....
105	Peer, s.	Ariz.	10,000,000	100,000	100	165,000	Oct.	1890	.10
106	Peerless, s.	Ariz.	10,000,000	100,000	100	405,000	Oct.	1890	.15
107	Phœnix	Ariz.	500,000	500,000	1	*	.....	...	.....
108	Phœnix Lead, s. L.	Colo.	100,000	100,000	1	*	.....	...	.....
109	Pilgrim, G	Cal.	600,000	300,000	2	*	.....	...	.....
110	**Pioche M.&R., s. G. L.	Utah.	20,000,000	2,000,000	10	....	.....	...	.....
111	Potosi, s.	Nev.	11,200,000	112,000	100	1,573,000	Mar.	1890	.50
112	Proustite, s.	Idaho	250,000	250,000	1	*	.....	...	.....
113	Puritan, s. G.	Colo.	1,500,000	150,000	10	*	.....	...	.....
114	Quincy, C.	Colo.	3,000,000	300,000	10	....	.....	...	.....
115	Rappahannock, G. S.	.....	250,000	250,000	1	*	.....	...	.....
116	Red Elephant, s.	Colo.	500,000	500,000	1	*	.....	...	.....
117	Red Mountain, Ltd., s	Colo.	300,000	60,000	5	*	.....	...	.....
118	Ropes, G. S.	Mich.	2,000,000	80,000	25	147,200	July.	1887	.50
119	Ruby & Dun., s. L. O.	Nev.	25,300	506	50	*	.....	...	.....
120	Russell, G.	N. C.	1,500,000	300,000	5	....	.....	...	.....
121	Sampson, G. S. L.	Utah.	10,000,000	100,000	100	288,157	July.	1888	1.08
122	San Sebastian, G.	San S.	1,600,000	320,000	5	*	.....	...	.....
123	Santa Fe, G	N. M.	5,000,000	500,000	10	....	.....	...	.....
124	Santiago, G	U.S.C.	400,000	200,000	2		.....	...	.....
125	Silver Age, s. L. G.	Colo.	2,000,000	200,000	10		.....	...	.....
126	Silver Queen, C.	Ariz.	5,000,000	200,000	25	*	.....	...	.....
127	South Bulwer, G	Cal.	10,000,000	100,000	100	100,000	May.	1881	.25
128	South Hite	Cal.	10,000,000	100,000	100	[illegible]	Jan.	1883	.05
129	South Pacific	Cal.	500,000	100,000	5	....	.....	...	.....
130	Stanislaus, G.	Cal.	2,000,000	200,000	10	....	.....	...	.....
131	St. Kevin, s. O.	Colo.	100,000	100,000	1	*	.....	...	.....
132	St. Louis & Mex., s.	Mex.	,000,000	500,000	10	*	.....	...	.....
133	St. Louis & St. Elmo	Colo.	,000,000	200,000	10	....	.....	...	.....
134	St. L. & St. Felipe, G. S.	Mex.	,500,000	150,000	10	....	.....	...	.....
135	St. L. & Sonora, G. S.	Mex.	1,500,000	150,000	10	....	.....	...	.....
136	St. Louis-Yavapai	Ariz.	3,000,000	300,000	10	*	.....	...	.....
137	Sunday Lake, I.	Mich.	250,000	50,000	25	....	.....	...	.....
138	Sullivan Con., G.	Dak.	600,000	200,000	3	*	.....	...	.....
139	Sylvanite, s.	Colo.	5,000,000	500,000	10	*	.....	...	.....
140	Taylor-Plumas, G.	Cal.	1,000,000	200,000	5	10,000	Feb.	1888	.10
141	Tioga Con., G.	Cal.	10,000,000	100,000	10	295,000	May.	1888	25
142	Tornado Con., G. S.	Nev.	100,000	100,000	1	*	.....	...	.....
143	Tuscarora, s.	Nev.	10,000,000	500,000	20	15,000	Oct.	18[illegible]	.10
144	Union Con., G. S.	Nev.	10,000,000	100,000	100	2,310,000	July	1890	.25
145	Utah, s.	Nev.	10,000,000	100,000	100	245,000	Aug.	1890	.25
146	Ute & Ulay, s. L.	Colo.	500,000	100,000	5	*	.....	...	.....
147	Whale, s.	Colo.	500,000	500,000	1	....	.....	...	.....
148	Washington, C.	Mich.	1,000,000	40,000	25	....	.....	...	.....
149	West Granite Mt., s.	Mont.	5,000,000	500,000	10	*	.....	...	.....
150	Yuma, C. S. G.	Ariz.	10,000,000	400,000	25	....	.....	...	.....
151	Zelaya, G. S.	C. A.	[illegible]	300,000	2	*	.....	...	.....

G. Gold. S., Silver. L., Lead. C., Copper. * Non-assessable. + This company, as the Western, up to December 10th, 1881, paid $1,400,000. ‡ Non-assessable for three years. § The [Dead]wood previously paid $275,000 in eleven dividends and the Terra $75,000. Previous to the consolidation in August, 1884, the California had paid $31,320,000 in dividends, and the Con. Virginia 40,000,000. ** Previous to the consolidation of the Copper Queen with the Atlanta, August, 188[illegible] the Copper Queen had paid $1,350,000 in dividends. ¶ This company paid $190,000 before reorganization in 1890. **This company acquired the property of the Raymond & Ely Company which had paid $3,075,000 in dividends.

STOCK MARKET QUOTATIONS.

Aspen. Sept. 25.

The closing quotations were as follows:

	H.	L.
Argentum Juniata	$1.35	$1.14
Aspen Deep Shaft	....	.15
Aspen Favorite	....	....
Best Friend	.20	.25
Bushwacker	.40	.38
Della S	....	....
Homer & Alta	....	....
Justice	.20	....
Little Annie	.20	....
Mollie Gibson	6.00	4.20
Nolan Creek	.10	....
Park, Mamie & Queen	....	....
Pontiac	.13½	.12½
St. Joe & Mineral Farm	.20	.18

Baltimore, Md. Oct. 1.

Company.	Bid.	Asked.
Atlantic Coal	$ ...	$1.30
Balt. & N. C.	.03	.03
Big Vein Coal	....	....
Conrad Hill	....	....
Cons. Coal	.26	.30
Diamond Tunnel	....	....
George's Creek Coal.	1.06	1.15
Lake Chrome	.10	.40
Maryland & Charlotte	....	
North State	....	....
Silver Valley	.51	.71

Birmingham, Ala. Sept. 29.

Company.	Bid.	Asked.
Ala. Coal & Iron Co	$102	$102½
Ala. Con. C. & C. Co.	....	$23
Ala. Roll. Mill Co.	$100	$105
*Alice Furnace	$100	....
Anna Howe G. Mg. Co.	$⅜	$⅝
Bessemer Land	$26½	$29
Bir. Mg. & Mfg	....	$35
Cahaba Coal Mg. Co.	....	$61
Camille Gold Mg. Co.	$¾	$1
De Bardeleben Coal & Iron Co	$81½	$91½
Decatur L. & Imp. Co.	$83¾	$91½
Decatur Min. L.	....	$19
Ensley Land	$7½	$9
*Eureka	....	....
Florence L. & Mg. Co.	$143¾	$161½
Gadsen Land	$3⅜	$3⅝
Hecla Coal Co.	....	....
Hen. S. & M. Co.	$2¾	$4¼
Jagger-Townl'y C. & C. Co.	$8½	$10
Mag-Ellen	$100	....
Mary Lee C. & R. Co.	....	$25
Sheffield C. & I. Co.	$52½	$55
Sloss I. & S	$19	$23
‡Sloss I. & S	$85	$87
‡‡ Sloss I. & S.	$49	$52½
Ten. C. & I. Co.	$33	$34
" pref.	$86	$88
Tuscaloosa Coal, Iron & Land Co.	$23	$25
Vulcan C. & C. Co	$5	$7½
Woodstock Iron Co.	$28	$29

* Bonds. † First mortgage bonds. ‡‡ Second mortgage bonds.

Helena, Mont.

(Special report by SAMUEL K. DAVIS.)

Prices highest and lowest for week ending Sept. 19, 1891:

	L.	H.
Bald Butte (Mont.)	2.00	2.50
California (Castle), Mont.	....	....
Champion (Ora Fino), Mont.	....	
Cleveland & Anchor, Idaho	....	....
Combination (Phillipsh'g), Mont	.65	1.00
Copper Bell (Cataract), Mont.	.10	.12½
Cumberland (Castle), Mont.	2.25	3.00
Elizabeth (Phillipsburg), Mont.	....	....
Florence (Neihart), Mont.	....	....
Fourth of July, Wash	....	....
Glengary (Butte), Mont.	1.10	1.50
Great Eastern (Castle), Mont.	....	....
Helena & Victor, Mont.	1.75	2.50
Hiawatha (Cataract), Mont.	.02	.05
Iron Mountain (Missoula), Mont	.75	1.00
Jersey Blue (Butte)	....	....
Judge (Castle), Mont.	....	....
Jumbo (Castle), Mont.	....	....
Lone Pine (Vipond), Mont.	....	....
Mac (Unionville), Mont	.15	.20
Milwaukee (Butte), Mont.	.02	.07
None Such (Unionville), Mont.	....	....
O. R. & N. (Missoula), Mont.	.03	.06
Poorman (Cœur d'Alene), Idaho	.05	1.25
Queen of the Hills (Neihart)	....	....
Silver Arrow (Cataract), Mont.	....	....
Silver Crown (Ora Fino), Mont.	....	....
Southern Cross (Deer Lodge), Mont	20	.30
Wall Street (Elliston), Mont.	....	....
West Cumberland (Castle), Mont.	....	....
Yellowstone (Castle), Mont.	....	....

Trust Receipts.

Sales at the New York Stock Exchange for week ending Oct. 2:

	Sales.	Price H.	Price L.
American Cotton Oil	....	....	....
National Lead	5,831	17	16½

Trust Stocks. Oct. 2.

Special report by C. I. Hudson & Co., members New York Stock Exchange. The following are the closing quotations:

CERTIFICATES.

Am. Cotton Oil, Com	$24¾	@$25¼
" " " Pfd	47	@ 48
Am. Sugar Refineries, Com	87	@ 87⅝
" " " Pfd	94½	@ 95
Distillers' & Cattle Feeders'	93¼	@ 93¾
Linseed Oil	100	@102
National Cordage, Com	52¼	@ 52¼
" " Pfd	25	@ 26
National Lead	157	@158
Standard Oil	16½	@ 16¾
W. U. Beef Co	12½	@ 14

St. Louis. Sept. 30.

CLOSING PRICES.

Company.	Bid.	Asked.
Adams, Colo	$1.70	$2.25
American & Nettie, Colo	28¾@.33¾	.32½@.38¾
Aztec, N. Mex	.03	....
Bi-Metallic, Mont.	34.50	35.50
Central Silver	03½	.05
Cleveland, Colo	....	....
Elizabeth, Mont.	1.85	1.92
Four Mile	....	....
Gold King, Colo	....	....
Granite Mountain, Mont	21.50@22.50	23.00@.23.25
Hope, Mont	....	2.00
Ingram, Colo	....	....
L. X. L., Colo	....	....
La Ualon	....	....
Little Albert	....	....
Major Budd, Mont	....	....
Mexican Imp	....	.09
Mickey Breen, Colo	35@.45	.48¾@.50
Montrose Placer, Colo	36.25	40.00
Mountain Key	....	.17½
Nellie	....	....
Old Colony	....	....
Pat Murphy, Colo.	.02½	.05
Puzzle	....	....
Richmond Hill, Colo.	....	....
St. Louis & Aspen, Colo.	.02½	.04
Samoa	....	....
Silver Age, Colo	.40@.55	.50@.60
Small Hopes, Colo.	.60@.61¼	.75
Tourtelotte	....	....
West Granite. Mont.	....	....
Wire Patch, Colo.	....	....
Yuma, Ariz.	.33¾@.35	.38¾@.40

Pittsburg, Pa. Oct 1.

Company.	Bid.	Asked.
Allegheny Gas Co	$	$.
Bridgewater Gas Co.	....	....
Chartiers Val. Gas	4.50	6.00
Columbia Oil Co.	....	....
Consignee Mining Co.	....	....
Consolidated Gas Co.	....	....
East End Gas Co	....	....
Forest Oil	....	....
Hazlewood Oil Co	....	....
Hidalgo Mining Co.	....	....
La Noria Mining Co.	.37	.50
Luster Mining Co.	12.00	12.25
Mansfield C. & C. Co.	....	....
Manufacturers Gas Co.	....	....
Nat. Gas Co. of W. Va	....	....
N. Y. & Clev. Gas Coal Co	36.50@37.00	41.00
Ohio Valley Gas Co	....	....
Pennsylvania Gas Co.	....	....
People' Natural Gas Co.	....	....
People's N. G. & P. Co.	7.50	....
Philadelphia Co	11.50	11.75
Pine Run Gas Co.	....	....
Pittsburg Gas Co.	....	....
Red Cloud Mining Co	2.75	3.25
Silverton Mining Co.	....	....
South Side Gas Co.	....	....
Sterling Silver Mining Co.	....	....
Tuna Oil Co	....	....
Union Gas Co.	....	....
Washington Oil Co.	....	....
Wmoreland & Camb.	....	....
Wheeling Gas Co.	20.50	21.50

Foreign Quotations.

London. Sept. 22.

Company.	Highest.	Lowest.
Amador, Cal.	5s. 3d.	4s. 9d.
American Belle, Colo.	10s. 3d.	9s. 9d.
Appalachian, N. C.	1d.	3d.
Colorado, Colo.	2s. 6d.	1s. 6d.
Cons. Esmeralda, Nev.	....	....
De Lamar, Idaho	£1 8s.	£1 4s.
Dickens Custer, Idaho.	2s. 3d.	2s.
East Arevalo, Idaho.	....	....
Elkhorn, Mont.	£1¾	£1¼
Elmore, Idaho	1s. 3d.	9d.
Emma, Utah	2s.	1s. 6d.
Flagstaff, Utah	5s. 9d.	5s. 3d.
Garfield, Nev	2s.	1s. 9d.
Golden Feather	18s. 3d.	17s. 9d.
Golden Gate, Cal.	£1 9-16	£1 7-16
Golden Leaf, Mont	4s. 3d.	3s. 9d.
Golden River, Cal.	....	....
Jay Hawk, Mont.	....	....
Josephine, Cal.	....	....
Kohinoor, Colo.	....	....
La Luz, Mex	....	....
La Plata, Colo.	1s. 3d.	1s.
La Valera, Mex.	3s. 6d.	2s. 6d.
Maid of Erin, Colo.	£1 7-16	£1 5-16
Mammoth Gold, Ariz.	2s. 3d.	2s.
Montana, Mont.	8s.	7s.
New California, Colo.	3s. 3d.	2s. 9d.
New Consolidated	1s.	6d.
New Eberhardt, Nev.	....	½d.
New Gold Hill, N. C.	1s. 3d.	9d.
New Guston, Colo.	£3½	£3¼
New Hoover Hill, N.C.	....	....
New Russell, N. C.	9d.	6d.
New Viola, Idaho	9d.	6d.
Old Lout, Colo	....	....
Parker Gold, N. C.	1s. 3d.	9d.
Pittsburg Cons., Nev	4s.	3s.
Richmond Con., Nev.	£1½	£⅞
Ruhy. Nev.	6d.	3d.
Sam Christian, N. C.	....	....
Sierra Buttes, Cal.	6s.	5s.
" Plumas Eur., Cal.	....	....
United Mexican, Mex.	....	....
U. S. Placer, Colo.	....	....
West Argentine, Colo.	1s. 3d.	9d.
Yankee Girl, Colo.	16s. 3d.	15s. 9d.

Paris. Sept. 17.

	Francs.
East Oregon, Ore	4.00
Forest Hill Divide, Cal.	....
Golden River, Cal.	130.00
" " parts	30.00
Laurium	787.50
Lexington, Mont	95.00
" parts	2.50
Nickel	827.50
Rio Tinto, Spain	583.12
" " ohlig.	510.00
" " "	512.50
Tharsis, Spain	163.75
Ucille-Montagne	516.25

CURRENT PRICES.

Those quotations are for wholesale lots in New York unless otherwise specified.

CHEMICALS AND MINERALS.

Acid—Acetic, No. 8, pure, 1,040, ℔ lb. .05
Commercial, in hhls. and cbys. 01¾@.02¼
Carbonic, liquefied, ℔ lb. .30
Chromic, chem pure $1.00
for batteries .50
Hydrobromic, dilute, U. S. P. .35
Hydrocyanic, U. S. P. .55
Hydrofluoric .30

Alcohol—95%, ℔ gall. $2.30@$2.40
Absolute $4.00
Ammoniated $3.00

Alum—Lump, ℔ lb. .015@.016
Ground, ℔ lb. .0153@.0165
Powdered .04½@.05
Lump ℔ ton, Liverpool £5

Aluminum—℔ lb. .50

Aluminum Chloride—Pure, ℔ lb. $1.25
Amalgamating solution, ℔ lb. .60
Sulphate .01¾@.03

Ammonia—Sul., in hhl. lots, ℔ lb 03 1-16
Carbonate, ℔ lb. .14
Muriate, white, in hhls., ℔ lb. .08½
Aqua Ammonia—(in cbys) 18° ℔ lb .03¾
20°, ℔ lb. .04¾
26°, ℔ lb .07½

Antimony—Oxymur, ℔ lb. .04¾
Ore
Regulus, ℔ ton, London $40@$41

Argols—Red, powdered, ℔ lb. .15

Arsenic—White, powdered ℔ lb. 02¾@.03
Red ℔ lb. .05@.06½
Yellow .08@ 09
White at Plymouth, ℔ ton £12 2 6

Asbestos—Canadian, ℔ ton $50@$300
Italian, ℔ ton. c. i. f. L'pool £18@£60

Ashes—Pot, 1st sorts, ℔ lb. .05½
Pearl .06@.06½

Asphaltum—
Prime Cuban, ℔ lb .04@.05½
Hard Cuban, P ton $28.00
Trinidad, refined, ℔ ton $30.00
Egyptian, ℔ lb. .08@.09
Californian, at San Francisco, ℔ ton. $9.50

Barium—Carbonate, pure, ℔ lb. .45
Carbonate, commercial, ℔ lb .03@.10
Chlorate, crystal. ℔ lb. .75
Chloride, commercial, ℔ lb. .05@.10
pure, ℔ lb. .16
Iodide, ℔ oz. .40
Nitrate, powdered, ℔ lb. .15
Sulph., Am. prime white, ℔ ton. $21@$23
Sulph., foreign, floated, ℔ ton $21.5@$23.50
Sulph., off color, ℔ ton $11.50@$14.00
Carb., lump, f. o. h. L'pool, ℔ ton £6
No. 1, Casks, Runcorn, " " £4 10 0
No. 2, bags, Runcorn, " " £3 15 0

Bauxite—℔ ton $10.00

Bichromate of Potash—Scotch, ℔ lb .10@.12
American, ℔ lb. .09½@.10

Bichromate of Soda—℔ lb. .08½@.11½

Borax—Refined, ℔ lb., in car lots,
San Francisco .08
Concentrated, in car lots .08
Refined, Liverpool ℔ ton £29

Bromine—℔ lb. .40

Cadmium Minion—℔ lb. $2.00

Cadmium Iodide—℔ lb. $5.50

Chalk—℔ ton $1.75
Precipitated, ℔ lb. .05@.06

China Clay—English, ℔ ton $13½@$21.00
Southern, ℔ ton $13.50

Chlorine Water—℔ lb. .10

Chrome Yellow—℔ lb. .10@.25

Chrome Iron Ore—℔ ton, San Francisco $10.00

Chromalum—Pure, ℔ lb. .40
Commercial, ℔ lb. .12

Cobalt—Oxide, ℔ lb. $2.50@$2.90

Copper—Sulph. English Wks. ton £20@£21
Vitriol (blue), ordinary .3¼
" " extra .04
Nitrate, ℔ lb. .40

Copperas—Common, ℔ 100 lbs. .85
Best, ℔ 100 lbs. .85@$1.00
Liverpool, ℔ ton, in casks £2

Corundum—Powdered, ℔ lb. .04½@.09
Flour, ℔ lb. .03

Cryolite—Powdered, ℔ lb., hhl. lots, .08

Emery—Grain, ℔ lb. (℔ kg.) .04½@.05
Flour, ℔ lb. .02½@.10

Epsom salt—℔ lb. .01½

Feldspar—Ground, ℔ ton $20.00

Fluorspar—Powdered, No. 1, ℔ ton. $30.00

French Chalk—

Fuller's Earth—Lump, ℔ hhl. .90@.95

Glauber's Salt—in hhls., ℔ lb. .0075

Glass—Ground, ℔ lb. .10

Gold—Chloride, pure, crystals, ℔ oz. $12.00
pure, 15 gr. c. v., ℔ doz. $5.40
liquid, 15 gr., g. s. v., ℔ doz. $5.50
Chloride and sodium, ℔ oz $6.00
15 gr., c. v., ℔ doz. $2.88
Oxide, ℔ oz. $27.25

Gypsum—Calcined, ℔ hhl. $1.25@$1.50
Land Plaster

Iodine—Resublimed $3.35@$4.00

Iron—Nitrate, 40°, ℔ lb. .01½
47°, ℔ lb. .02½

Kaolin—*See China Clay.*

Kieserite—℔ ton $9@$10

Lead—Red, ℔ lb. .06¾@.07¼
White, American, in oil, ℔ lb. .06½@.07¼
White, English, ℔ lb. .08¾@.09
Acetate, or sugar of, white .12@.13
Granulated
Nitrate .09@.10

Lime Acetate—Am. Brown, $1.10@$1.20
" Gray. $2.00@$2.15

Litharge—Powdered, ℔ lb. .06½@.07¼
English flake, ℔ lb. .09@.09½

Magnesite—Crude, ℔ ton of 1,015 kilos $14.75
Calcined, ℔ ton of 1,015 kilos. $23.75
Brick, ℔ ton of 1,015 kilos. $50.00

Manganese—Ore, per unit. .23@.28
Oxide, ground, per lb. .02½@.06¾

Marble Dust—℔ hhl $1.25

Mercuric Chloride—(*Corrosive Sublimate*) ℔ lb. .84
Powdered, ℔ lb. .94

Metallic Paint—Brown ℔ ton. $20@$25
Red $20@$25

Mineral Wool—Ordinary slag .01½
Ordinary rock .02½
Ground, ℔ ton

Mica—In sheets according to size.
1st quality, ℔ lb. .25@$6.00

Naphtha—Black

Nitre Cake—℔ ton $10.00

Ochre—Rochelle, ℔ lb. $1.35@$1.81
Washed Nat Oxf'rd, Lump, ℔ lb. 06½@.06¾
Washed Nat Oxf'rd, Powder, ℔ lb. 07@.07½
Golden, ℔ lb. .03¾@.04
Domestic, ℔ lb. .0½@.01½

Oils, Mineral—
Cylinder, light filtered, ℔ gal. .15@.20
Dark filtered, ℔ gal. .11@.15
Extra cold test, ℔ gal. 18@.20
Dark steam refined, ℔ gal. 11@.18

Phosphorus—℔ lb. .55@.60
Precip., red, ℔ lb .88
white, ℔ lb. .93

Plumbago—Ceylon, ℔ lb. .04@.05
American, ℔ lb. .05@.07

Potassium—Cyanide, ℔ lb., C. P. .70
67%, ℔ lb. .45
50%, ℔ lb. .40
Bromide, ℔ lb .4@.25
Chlorate, English, ℔ lb. .10½@.11
Chlorate, powdered, ℔ lb. .13@.14
Carb, ℔ lb., by casks. 82%. .05½
Caustic, ℔ lb., pure slick .35@.40
Iodide, ℔ lb. $2.65@$2.70
Nitrate, refined, ℔ lb. .06@.08
Bichromate, ℔ lb .10½@.11
Yellow Prussiate, ℔ lb. .23½@.24
Red Prussiate, ℔ lb. .40@.45

Pumice Stone—Select lumps, lb. .04
Original cks., ℔ lb. .01¾@.02
Powdered, pure, ℔ lb. .02@.02¾

Pyrites—Non-cupreous, p. units. .12@.15

Quartz—Ground, ℔ ton. $14.00@$16.00

Rotten Stone—Powdered, ℔ lb. .03½
Lump, ℔ lb .5½@.15
Original cks., ℔ lb. .01½@.05½
Rubbing stone, ℔ lb .07

Sal Ammoniac—in hhls., ℔ lb. .10¾

Salt—Liverpool, ground, ℔ sack. .70
Domestic, fine, ℔ ton $7@$7.50
Common, fine, ℔ ton $4.50@$5
Turk's Island, ℔ bush. .26@.28

Salt Cake—℔ ton $10 00

Saltpeter—Crude, ℔ lb. .02½@.03

Soapstone—

Sodium—Prussiate, ℔ lb. 17½@.18
Phosphate, ℔ lb. .07@.18
Stannate, ℔ lb. .08@.15
Tungstate, ℔ lb.
Caustic, ℔ lb.
Hyposulphite, ℔ lb., in casks .024

Strontium—Nitrate, ℔ lb. .09½@.10

Sulphur—Roll, ℔ lb. .02½
Flour, ℔ lb. .02½@.02¾

Sylvinit, 23@27%, S. O. F., per unit. 40c. 42½

Talc—Ground French, ℔ lb. .01¼@ 01½

Terra Alba—French .90@$1.00
English .75@.80
American, No. 1
American, No. 2 .40@.50
Domestic, ℔ ton $18@$20
c. i. f. Liverpool, ℔ ton £4 5s.

Tin—Crystals, in kegs or hhls. .15
feathered or flossed. .25
Muriate, single .07
Double or strong, 51° B. .09
Oxy. or nitro .10

Tin Plates, ℔ box, Swansea, best charcoal .18@.19
best coke .15@.16

Vermillion—Imp. English .90 @ .95
Am. quicksilver, hulk .67 @—
Am. quicksilver, bags .68 @ .71
Chinese .95 @$1.00
Trieste .90 @ .95
American .11½@ .12
Artificial .08 @ .35

Zinc White—Am., Dry, ℔ lb. .04½
Antwerp, Red Seal, ℔ lb. .07¼
Paris, Red Seal, ℔ lb .08¾
Muriate solution .06
Sulphate crystals, in bbls., ℔ lb. .03¾

THE RARER METALS.

Arsenic—(Metallic), per lb. .40
Barium—(Metallic), per gram $1.00
Bismuth—(Metallic), per lb. $2.40
Cadmium—(Metallic), per lb. $1.00
Calcium—(Metallic), per gram $10.00
Cerium—(Metallic), per gram. $7.50
Chromium—(Metallic), per gram. $1.00
Cobalt—(Metallic), per lb. $6.00
Didymium—(Metallic), per gram. $9.00
Erbium—(Metallic), per gram $7.50
Gallium—(Metallic), per gram $140.00
Glucinum—(Metallic, per gram $12.00
Indium—(Metallic), per gram $9.00
Iridium—(Metallic), per oz. $7.00
Lanthanum—(Metallic), per gr. $10.00
Lithium—(Metallic), per gram $10.00
Magnesium—(Powdered), per lb. $1.00
Manganese—(Metallic), per lb. $1.10
Chem. pure, per oz. $10.00
Molybdenum—(Metallic), per gm .50
Niobium—(Metallic), per gram $5.00
Osmium—(Metallic), per oz. $65.00
Palladium—(Metallic), per oz. $35.00
Platinum—(Metallic), per oz., $16.50@$20.00
Potassium—(Metallic), per lb. $28.00
Rhodium—(Metallic), per gram $5 00
Ruthenium—(Metallic), per gm. $5.50
Rubidium—(Metallic), per gram. $2.00
Selenium—(Metallic), per oz. $1.80
Sodium—(Metallic), per lb. $2.50
Strontium—(Metallic), per gm .60
Tantalum (Metallic), per gram. $9.00
Telurium—(Metallic), per lb. $5.00
Thallium—(Metallic), per gram .20
Titanium—(Metallic), per gram $2.20
Thorium—(Metallic), per gram $17.00
Tungsten—(Metallic), per lb. $1.00
Uranium—(Oxide), per lb. $5.00
Metallic, per gm .20
Vanadium—(Metallic), per gm $22.00
Yttrium—(Metallic), per gram $9.00
Zirconium—(Metallic), per oz. $65.00

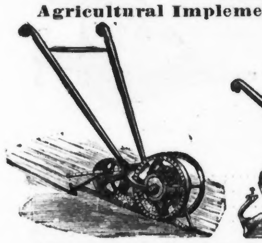
NEW YORK PRICES CURRENT OCTOBER 3, 1891.

In the interest of the extension of the markets for American manufactures the ENGINEERING AND MINING JOURNAL has secured the services of gentlemen thoroughly acquainted with the export trade and with foreign markets, and it offers its services to foreign buyers who may desire information concerning any article whatever of American manufacture. No charge will be made for these services, either directly or indirectly through commissions on goods purchased. The proprietors of the ENGINEERING AND MINING JOURNAL are neither commission merchants nor exporters, but they have many sources of information, both at home and in foreign countries, and place these at the service of manufacturers and exporters here and of importers and consumers in other countries.

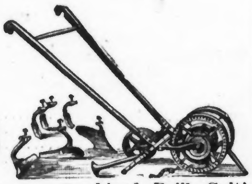
The names and addresses of the manufacturers of goods quoted in this list can be obtained by applying at this office.

Discounts are for Wholesale Export Only.

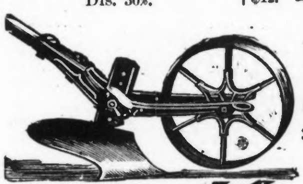
Agricultural Implements.



"Planet, Jr." No. 2 Seed Drill, $9.
Dis. 30%.



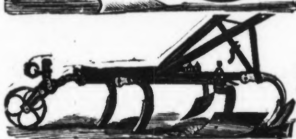
Combined Drill Cultivator Rake, Plow, etc., $12. Dis. 30%.



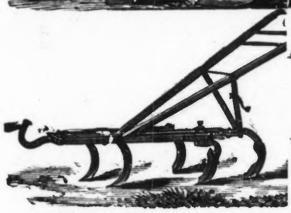
"Fire Fly" single-wheel Hoe, Cultivator and Plow, $5.

"Fire Fly" Hand Plow, $2.50.

30 % discount, f.o.b. New York.



All Steel Horse Hoe and Cultivator combined, with wheel, $6 75-100 net.



All Steel Plain Cultivator.

With wheel, $4.50; without wheel. 60c.

HAY FORKS.

Standard Spading Forks.
Solid Steel Shanks, Gold Bronze Finish, Patent Overcaps.
Per doz.

8 D 4 light angular tine, iron D, plain ferrules, $17.00.
8 D S 4 light angular tine, iron D, strapped ferrules, $18.50.
11 D 4 light angular tine, iron D, plain ferrules, blue, half polished, $16 00.
13 D 4 light angular tine, iron D, strapped ferrules, blue, half polished, $17.50.
15 D 5 tine, angular tine, iron D, plain ferrules, $24.00.
17 D 5 tine, angular tine, iron D, strapped ferrules, $25.50.

Flat Tines.

D 4 tine spading fork, flat tine, iron D, plain ferrules, $17.00.
D S 4 tine spading fork, flat tine, iron D, strapped ferrules, $18.50.

74 4 tine spading fork, flat tine, 4 ft. handles, plain ferrules, $16.00.
74 S 4 tine spading fork. flat tine, 4 ft. handles, strapped ferrules, $17.50.
Dis., 65 and 5% and 2½.

Manure Forks.

4 D, oval, 4 tine, 13 in. tine, iron D, plain ferrules, $13.50.
4 D S, oval, 4 tine, 13 in. tine, iron D, strapped ferrules, $15.00.
5 D, oval, 5 tine, 13 in. tine, iron D, plain ferrules, $20.50.
5 D S, oval, 5 tine, 13 in. tine, iron D, strapped ferrules, $22.00.
6 D oval, 6 tine, 13 in. tine, iron D, plain ferrules, $23.50.
6 D S, oval, 6 tine, 13 in. tine, iron D, strapped ferrules, $25.00.
Dis., 65 and 5% and 2½.

PLOWS.

Reversible Oneonta Clipper.

16. Oneonta Clipper, Reversible, Iron beam Cutter	$14
" Oneonta Clipper, Reversible, Iron Wheel and Cutter	15
18. Oneonta Clipper, Reversible, Iron Beam Cutter	15
" Oneonta Clipper, Reversible, Iron Beam, Wheel and Cutter	16
Hard Metal, Reversible, Iron Beam Cutter	
17. Hard Metal, Reversible, Iron Beam, Wheel and Jointer	17
19. Hard Metal, Reversible, Wood Beam Cutter	16
" " " " " Wheel and Jointer	17
20. Steel Mould Board, Reversible, Wood Beam Cutter	15
" " " " " " Wheel and Cutter	16

Iron Beam Plows.

Two-horse Sod and Stony Land	8.50 plain.
Curtis's Sod Two horse	11.50 "
" " " "	13.00 cutter.
" " " "	14.25 wheel & cutter.

Subsoil Plows.

Two-horse 9.50 Draft Rod.
" " 11.00 Wheel and Draft Rod.

Hitchcock's Potato Digger and Shovel Plow.

Improved adjustable handle shovel plow	7.00
Hitchcock's Potato Digger	8.00
" " " and shovel plow	10.50

Dis. 30%.

HOES.

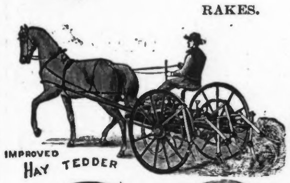
Blade Solid Shank Hoes.

Field,	7 × 5 in., selected handles	$8.00
"	7½ × 4½ " " "	8.00
"	8 × 4¾ " " "	8.00
"	8½ × 4½ " " "	8.00
"	8 × 5 " " "	8.00

Field Socket Hoes $9.00

Dis., 65% and 5%.

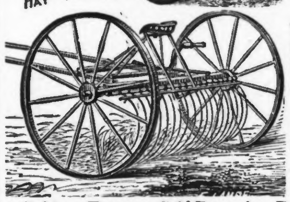
RAKES.



The S. R. N. Improved.

20 Teeth	$28.00
22 "	29.00
24 "	30.00
26 "	31.00

Dis., 33⅓%.



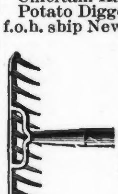
Chieftain Lock Lever

No. 1	$16.00
No. 2.	16.00
No. 5.	15.00

Iron wheels, $1 extra.
With Pole, Double Tree and Neck Yoke, $1 extra.
22 cubic feet packed, 400 lbs. gro., 225 lbs. net.

Golden Farmer Self-Dumping Rake, $19.00; 22 cu. ft., 430 lbs. gro., 250 lbs. net.
Chieftain Hay Tedders, $27.00; 700 lbs. gro., 450 lbs. net.
Potato Diggers, $5.00; 100 lbs. gro., 60 lbs. All net cash, f.o.b. ship New York or Boston.

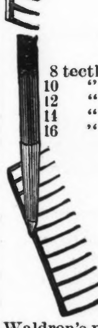
RAKES (GARDEN).



Malleable Iron Garden Rakes, Per Doz.

	Plain.
8 teeth, 6-ft. handles, straight shank	$5.00
10 " " " " "	5.50
12 " " " " "	6.00
14 " " " " "	6.50
16 " " " " "	7.00

For braced goods, add 50 cents per dozen to list.



Cast Steel Garden Rakes, Per Doz.

	Plain.	Braced.
8 teeth, 6-ft. handles	$8 00	$9.50
10 " " "	9.00	10.50
12 " " "	10.00	11.50
14 " " "	11.00	12.50
16 " " "	12.00	13.50

Lawn Rakes and Gravel Rakes same price as Garden Rakes.
Discounts on Rakes from list.
The P. H. & M. Co., 60 and 10%.
W. & C. Mfg. Co., 70%.
S. F. & T. Co., 70 and 5%.
G. T. Co., 70 and 5%.
Phila. S. H., 60, 10 and 5%.

SCYTHES (GRASS).

Waldron's pattern, oiled	$8.50
Silver steel, painted	8.50
Western dutchman, bronzed and painted	9.00
Clipper, polished web	9.00
Fine cutlery steel, full polished	10.00
All steel, full polished	11.00

Grain Scythes.

Waldron's pattern, oiled	11.25
Silver steel, painted	11.25
Clover, oiled	11.25
Clipper, bronzed and painted	11.50

Lawn Scythes.

Clipper, bronzed and painted	9.0

Dis., 40and 10%.

SOWER, BROADCAST SEED.

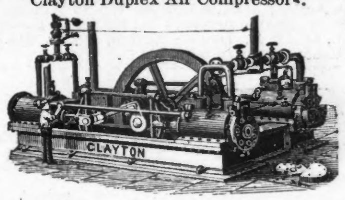
Per dozen............ $30 f.o.b

Gross wt., 110 pounds per dozen

Net wt., 75 pounds per dozen.

Air Compressors.

Clayton Duplex Air Compressors.



Special design for export. Shipping weight, 8,000 lbs. No one piece weighing over 300 to 400 lbs. Size No. 3½. Steam cylinders, each 12 in. diameter; air cylinders, each 12 in. diameter, and stroke, 13 in.; capacity, six 3 in. rock drills. Price, $3,000 f.o.b. New York. Dis., 20%.

Anvils. Eagle anvils.

	Weight about			Weight about	
No. 000	½ lb.	$1.00	No. 4	40 lbs.	$4.25
" 00	4 "	1.75	" 5	50 "	5.00
" 0	10 "	2.25	" 6	60 "	5.50
" 1	15 "	2.75	" 7	70 "	6.00
" 2	20 "	3.00	" 8	80 "	7.00
" 3	30 "	3.75	" 9	90 "	8.00

Anvils weighing 100 to 800 lbs., 10 cts. per lb. Discount 15 and 10 %.

Arms and Ammunition.

Wood Powder.

	Kegs, 25 lbs.	½ keg.	¼ kegs. 6¼ lbs.	cans
Trap for first quality arms only	$19.50	9.85 trap. 8.60 let'd grades.	5.00	.85
A, for large bore; C, for general use; D, fine for small bore and rifles; E, very fine for small bore rifles and gallery shooting	17.00		4.35	.75

Dis., 20-5 and 5%

			Discount. Per cent.
Bullet Breech Caps	per lb.	1.60	10
Conical Bullet Caps	"	1.75	10

		Discount. Per cent.
Rim Fire Cartridges	60	10
Military Rim Fire Cartridges	15	10
Central Fire Pistol and Rifle Cartridges	40	10
Central Fire Metallic Cartridges for Target and Sporting Rifles	30	10
Military Cartridges, Central Fire	30	10
Lefaucheux Cartridges		60

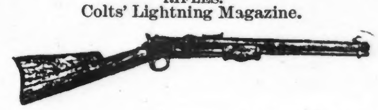
Gatling Cartridges		Specia
Primed Shells and Bullets	25	
Friction Cannon Primers	20	
Primers		
Percussion Caps, F. C ....per M.	33c.	
U. M. C. "	42½c.	
Musket "	45c.	
Brass Shot Shells, U. M. C., 1st qual.	60	
Club brand	65	

Paper Shot Shells.

14, 16 and 20 ga. First quality, 30, 10 and 10 per cent; 4, 8, 10 and 12 ga., First quality, 25, 10 and 10 per cent.
14, 16 and 20 ga. Club brand, 30. 10 and 10 per cent.
10 and 12 ga. Club brand, 33⅓, 10 and 10 per cent.
Gun Wads, 20 and 10 per cent.

RIFLES.

Colts' Lightning Magazine.



Discount 10 per cent

40/60 and 45/60 calibre octagon barrel	10	lbs.	$15.38
" " " " round	9¾	"	14.25
" " " " carbine	9	"	14.25
32, 38, and 44 calibres, octagon	7¼	"	13.50
" " " " round	6¾	"	12.38
" " " " carbine	6¼	"	12.38
" " " " baby carbine	5¼	"	12.38
22 calibre, rim fire, octagon barrel			15.38
" " round			14.25

Remington Light (Baby) carbines. 44 cal., blue, $8; nick., $8 50. Dis., 5%.

MARLIN RIFLE. MODEL, 1889.

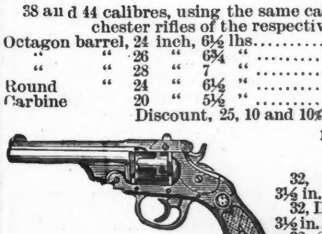
The best in the market, embodying all latest improvements.

38 and 44 calibres, using the same cartridges as Winchester rifles of the respective sizes.

Octagon barrel,	24 inch,	6½ lbs		$19.50
" "	26 "	6¾ "		21.50
" "	28 "	7 "		23.50
Round "	24 "	6½ "		18.50
Carbine	20 "	5½ "		17.50

Discount, 25, 10 and 10%.

REVOLVERS.
S & W.



32, Single Action, 3, 3½ in., $8.00.
32, Double Action, 3, 3½ in., $9.35.
32, Safety Hammerless, 3, 3½ in., $ .00.

38, Single Action, 3¼ in., $9.40; 38, Single Action 4 in., $9.65; 38, Single Action, 6 in., $10.00; 38, Double Action, 3¼ in., $10.40; 38, Double Action, 4 in., $10.65; 38, Double Action, 5 in., $11.00; 38, Safety Hammerless, 3¼ in.,

$12.00; 38, Safety Hammerless, 4 in., $12.25; 38, Safety Hammerless, 5 in., $12.50; 44, Single Action, 4 in., $11.50; 44, Single Action, 5 in., $11.75; 44, Single Action, 6, 6½ in $12.00; 44, Double Action, 4 in., $12.50; 44, Double Action, 5 in., $12.75; 44, Double Action, 6½ in., $13.00; 44, D uble Action Favorite, 5 in., $12.75.

Colts.

Discount, 10 per cent from following prices.

Double Action Army, 44 and 45 calibre, 4¾, 5½, 7½ inch bbl., $13.00.
Double Action, 41 calibre, 2½ to 6 inch bbl., $11.20.
" " 38 " 2½ to 6 " " $10.00.
Single " Army, 45 calibre, 4¾, 5½, and 7½ inch bbl., $12.00.
Single Action Army, 44 calibre, "Frontier," 4¾, 5½, and 7½ inch bbl., $12.00.
New Line 32, $4.00.
" " 30, 2.00.
" " 22, half or full plate, 2.10.
Old Model, 22 calibre, by the hundred, half or full plate, $1.50.
Colt Deringer. 41 calibre, per pair half or full plate, 5.50.
National Deringers. 41 calibre, per pair, half or full plate, $4.00.
New Police, 38, 4½ in., nickeled, $6.66.

American Bull Dog

Double Action 32, 38 and 44 calibre, 2½ inch barrel, $1.60; Double Action 32, 38 and 44 calibre, 4½ inch barrel, $1.85; Double Action 32, 38 and 44 calibre. 6 inch barrel, $2.10 net.

F. & W. British Bull Dog revolvers, 32 and 38 calibre 2½ inch bbl., $1.85 net.
F. & W. Automatic revolver, 32 and 38 calibre, 3¼ inch bbl. $4.00 net.
H. & R. Automatic revolver, 32 and 38 calibre, 3¼ inch bbl., $3.75 net.

Net.
Defender revolvers, Single Action, 22, wood handle, 65.
" " " " 22, rubber " 70.
" " " " 32, wood " 85.
" " " " 32, rubber " 90.
Remington Army revolver, Single Action, 44 cal., frontier cartridge, 5¾ inch barrel, $6.50.
Remington Army revolver, Single Action, 44 cal., frontier cartridge, 7½ inch barrel, $6.00.
Remington Double Deringers, 41 cal., rim fire, $4.05.

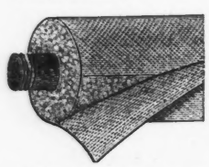
Asbestos Goods.

THE PATENT "AIR-SPACE" COVERING.

Patent air-space coverings. Per sq. ft., 25c. Discount, 20%.

Wick packing, per pound, 45c.
Discount, 10%.

Removable pipe coverings. } See list. Sq. ft. 20c. Disc., 25%.



Fire felt covering for steam pipes. Per sq. ft., 25c. See list. Discount, 25%.
Piston Packing. Per pound, 45c. Discount, 10%.

Asbestos Fibre for filtering	per	lb.	40c.	disc 20%
" Cord 95c., and Sewing Twine, $1.35				
Asbestos cloth, 36 inches wide	per	yard	2.25	" 10%
" cement for boilers	per	bbl.	3.25	" 10%
" sheathing	per	lb.	.12½	" 10%
" building felt	"	"	.10½	" 10%
" hair felt for hot and cold water pipes	per	sq. ft.	See spec. list.	
Asbestos mill board	per	lb.	.12½	" 10%
" soldering blocks	per	doz.	See list.	

Assay Furnace.

Hydro-Carbon Blow-Pipe Assay Furnace.

No. 2, Muffle Furnace taking C Battersea Muffle 8x4¾x3 in. $10.00
No. 3, taking F Muffle, 10x6x4 in. 15.00
No. 1, Crucible Furnace, taking Battersea, U or Colorado B Crucible, 4 in. dia. 5½ deep.. 4.00
No. 2 taking Battersea E round, 5 in. dia., 6¼ deep $5.00
Blow-Pipe No. 2, with half gallon tank, made entirely of seamless brass 23.00
Blow-Pipe No. 3, with one gallon tank, otherwise same as No. 2 ..... 26.00
Blow-Pipe No. 2, Muffle Furnace No. 2, and Crucible Furnace No. 1 ..... 37.00
Blow-Pipe No. 3, Muffle Furnace No. 3, and Crucible Furnace No. 2 ..... 46.00
25% f. o. b. New York on wholesale orders.

Axes, etc.

Axes, Handled.

Brands,	Collins. doz.	Sharp. doz.	Pecks. doz.
Dis., %	10	35	Net
3½@4½ lbs.	$10.75	$15.00	9.50
4½@5½ lbs.	11.00	15.50	9.50
4½@6 lbs.	11.50	16.00	10.00
5@7 lbs.	12.50	17.50	11.00

Brands.	Hurd. doz. Net	American Ideal. doz. Net	Blair. doz. Net.	Freeman. doz. Net
3½@4½ lbs.	$8.50	$11.00	$8.00	$6.50
4¼@5¼ lbs.	8.50	11.00	8.00	7.00
4½@6 lbs.	8.75	11.25	8.25	7.00
5@7 lbs.	9.00	11.50	8.50	7.50

Brands,	Collins. doz.	Sharp. doz.	Pecks. doz.
Dis., %	10	50	50 & 5
Three-quarter axe	$8.00	$13.50	$13.50
Boys' axe, No. 2	8.00	13.50	13.50
Half axe	7.00	12.50	13.00
Quarter axe	6.50	10.00	11.00

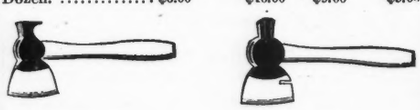
Brands,	Collins. doz.	Hurd. doz.	Freeman. doz.
Dis., %	60 5	50 5	25
Three-quarter axe	$13.50	$13.50	$7.50
Boys' axe, No. 2	13.50	13.50	7.50
Half axe	12.50	12.50	6.50
Quarter axe	12.00	12.00	6.00

Hatchets, with handles.

AXE PATTERN. HUNTER'S.

Both patterns, same price.

	Collins.	Sharp.	Pecks.	Simmons.
Dis., %	10	50	50 & 5	50
Dozen	$6.00	$10.00	$9.00	$9.00



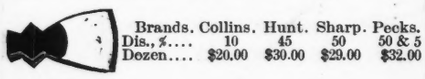
SHINGLING. CLAW.

Shingling.

Brands,	Collins.	Sharp.	Pecks.	Mann
Dis., %	10	50,5	50 & 5.	50,5
No. 1 Doz	$4.75	$8.00	$8.00	$8.00
No. 2 "	5.25	8.50	8.50	8.50
No. 3 "	5,75	9.00	9.00	9.00

Claw.

Brands.	Collins.	Sharp.	Blair.	Mann
Dis., %	10	50, 5	60, 5	50, 5
No 1. Doz	$5.25	$9.00	$9.00	$9.00
No. 2. "	5.75	9.50	9 50	9.50
No. 3. "	6.25	10.00	10.00	10.00



Brands.	Collins.	Hunt.	Sharp.	Pecks.
Dis., %	10	45	50	50 & 5
Dozen	$20.00	$30.00	$29.00	$32.00

YANKEE, OR OHIO. PENNSYLVANIA. NEW ORLEANS.

Brands.	Collins.	Sharp.	Pecks.	Blair.	Mann.
Dis., %	10	50	50 & 5	60, 10	50
Dozen	$19.00	$32.00	$32.00	$32.00	$32.00

Handled, extra, $4.

Adzes.

RAILROAD. SQUARE HEAD. SHIP CARPENTER'S

Brands.	Collins.	Hunt.	Sharp.	Pecks.	Hurd
Dis., %	10	45	50	50	50, 50
Railr'd, heavy, doz.	$14.00	$26.00	$26.00	$26.00	$26.00
Flat bead "	15.00	24.00	24.00	24.00	24.00

Brands.	Collins.	Hunt.	Sharp.	Pecks.	Hurd.
Dis., %	10	45	50	50	50, 100
Square head, doz.	$12.50	$24.00	$24.00	$24.00	$24.00

Brands.	Collins.	Hunt.	Sharp.	Pecks.
Dis., %	10	45	50	50
Ship Carpenter's or Spur Head, doz	$13.00	$25.00	$25.00	$25.00

Brands.	Collins.	Hunt.	Sharp.
Dis., %	10	45	50
Cooper's, handled and bolted, doz.	$16.00	$27.00	$25.00

Axle Grease.

Frazer's (2-lb. tins), per gross	$18.00
2-lb. wooden boxes, "	12.00

Discount, 25 and 5 %.

Dixon's Everlasting, boxes 1 lb., per doz			$1.20
" " " 2 lbs.	"		2.00

See Oils, page 10.

Bellows.

Miner's Bellows 24 in., $8.50; 26 in., $9.75; 28 in., $11.00; 30 in. $11.25; 32 in., $13.50.
60 and 5% dis.
Standard, each: 18 to 24 in., $10; 28 in., $12; 32 in., $14; 34 in. $16; 36 in., $18; 38 in., $20; 40 in., $23; 42 in., $27; 44 in., $32
60 and 5% dis.
Hand Bellows, per doz.: 6 in., plain, $10; fancy, $20; 7 in., plain, $12; fancy, $24; 8 in., plain, $14; fancy, $28; 9 in. plain, $16; fancy, $32; 10 in. plain, $18; fancy, $36.
50% dis.

Belting.

LEATHER BELTS.
Standard Manufacturers List.
Single belts per foot.

Width.		Width.		Width.	
1 inch	.10	6 inch	.76	20 inch	2.84
1¼ "	.13	7 "	.90	21 "	3.02
1½ "	.17	8 "	1.02	22 "	3.20
1¾ "	.20	9 "	1.15	23 "	3.37
2 "	.23	10 "	1.29	24 "	3.54
2¼ "	.26	11 "	1.42	26 "	3.92
2½ "	.30	12 "	1.55	28 "	4.30
2¾ "	.33	13 "	1.68	30 "	4.64
3 "	.36	14 "	1.82	32 "	5.00
3½ "	.43	15 "	1.98	34 "	5.35
4 "	.50	16 "	2.14	36 "	5.70
4½ "	.56	17 "	2.31	40 "	6.40
5 "	.63	18 "	2.49	44 "	7.10
5½ "	.70	19 "	2.66	48 "	7.80

Double belts twice the price of single.
Dis. single and double belts, cemented, 50 and 5%.
Dis. single and double belts, riveted and cemented, 50 and 5%.
Dis. single belts, cemented and lacesewn, waterproofed, 50%.
Dis. double belts, cemented and lacesewn, waterproofed, 45%.

Belt Clamp.

For Drawing Belts Together for the purpose of Lacing them.

8 inch	$14.00
12 "	18 00
16 "	10 00
20 "	20 00
24 "	30.00
28 "	34.00
32 "	38.00
36 "	44.00

Discount, 30% and 10%.

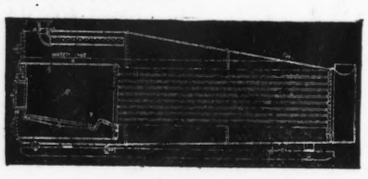
Blowers and Disc Fans.

12 inches	$30	42 inches	$10
18 "	40	48 "	125
24 "	50	54 "	160
30 "	65	60 "	200
36 "	85		

Discount 35% and 2½ for cash.

Boiler (Scotch Flue).

Self-contained. Portable. Economical. Durable.



Horse power	8	10	15	20	25	30	35
Diameter	28"	32"	32"	36"	40"	40"	44"
Length, feet	9½	10	12½	13½	14¾	16¼	16¾
Weight, pounds	3500	4000	4500	5 00	6500	6900	7500
Price, $	....	....	387	487	580	634	767

Horse power	40	45	50	55	60	70	80
Diameter, inches	44	48	48	52	52	56	56
Length, feet	17½	16½	18	17½	18½	18	19
Weight, pounds	8000	8500	8800	9500	10,000	11,000	12,00
Price, $	827	920	1027	1147	1227	1387	1500

Discount 15%.

Elevator Boots with Sprocket Wheels or Pulleys.

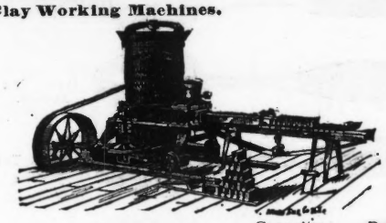
Diam. of pulley.	Length of bucket.	Price of cast iron boot.	Price of hard-wood boot.
12	5	$28.00	$28 00
12	6	30.00	30.00
14	7	25.00	35.00
14	8	40.00	40.00
16	9	45.00	45.00
16	10	50.00	50.00
18	12	60.60	60.00
18	14	66.00	66.00
18	16	70.00	70.00
20	18	85 00	85.00
20	20	90.00	90.00

Prices will be quoted on sizes not listed above.
Discount, 35%.

Brick Machinery.

Heavy Steam Power Machine	$525.00
Horse-Power Machines	300.00
Additional Horizontal Pugmill	22
Brick Moulds	$2.50 to $3.00
Brick Trucks	5.00 to 13.50
Brick Barrows	7.25
Brick Barrows with Springs	8.20
Sand Barrows, steel tray	6.40

Clay Working Machines.



	Capacity.	Price.
No. 20 A brick machine	60,000 to 80M	$3,500
No. 20 B " "	50,000	2,500
No. 15 D " "	40,000	1,800
No. 10 D " "	40,000	1,500
No. 15 S " "	30,000	1,400
No. 10 S " "	25,000	1,200
Upright stock brick machine	25,000 to 30M	1,200
No. 7 S brick machine	20,000	650
No. 6 S " "	15,000	575
No. 2 E " "	H. P. 5,000 to 8,000	400

Brushes.

PAINT BRUSHES.
Intermediate prices not quoted.
Prices per dozen.

	No. 6.	4.	2.	0.	3-0.	5-0.	7-0.	Dis
X	$1.15	$1.80	$2.50	$3.15	$4.00	$5.25	$6.75	25%
Atlantic	1.25	2.15	3.80	5.25	7.00	10.00	13.00	25%
Standard	1.60	2.60	4.00	6.00	8.00	11.00	16.00	25%

VARNISH OVAL.

	No. 6.	4.	2.	0.	3-0.	5-0.	7-0.	Dis.
Globe	$1.15	$1.80	$2.50	$3.25	$4.60	$6.00	$8.00	25%
Crown	1.25	2.00	2.75	4.00	5.25	7.00	10.00	25%

VARNISH FLAT.

	No. 1.	1½.	2.	2½.	3.	Dis.
X	$0.48	$0.72	$0.96	$1.20	$1.40	25%

SASH BRUSH.

	No. 1.	3.	5.	7.	9.	Dis.
X	$0.25	$0.40	$0.60	$0.85	$1.20	25%
XX	0.40	0.75	1.10	1.40	2.00	25%

WHITE-WASH.

	No. 6.	7.	8.	Dis.
Brown	$1.25	$1.60	$2.00	25%
Pure	2.40	4.00	6.00	25%

SHOE.
Per gross.

E.	9.	25.	15.	26.	Dis.
10	$11.50	$12.50	$15	$18	25%

Per gross dis., 25%.

27.	32.	29.	35.
$20.00	$24.00	$28.00	$30.00

HORSE.
Patent.
Per gross, dis., 25%.

$18.00	$20.00	$24.00	$30.00

Per gross, dis., 25%.
Wood back $12 $15 $18 $24
Per gross, dis. 25%.
Leather back.$24 $31 $30 $42 $54

SCRUB.
Patent.
Per gross, dis., 25%.

$12.00	$16.00

Per gross, dis., 25%.

$6.50	$8.50	$12	$14	$18

SHAVING.
Per doz., dis., 25%.

$0.36	$0.60	$1.00	$1.50	$2.50

COUNTER.

Per doz., dis., 25%.

$3.00	$4.00	$5.00

Elevator Buckets.

Malleable Iron Buckets. Suitable for Extra Heavy Work. For Coal, Ore, Broken Stone, etc.

Length.	Width.	Capacity in pints.	Price.
4½	3	¾	$0.40
6	4	1¼	.50
7	4½	2¼	.65
8	5	3¼	.80
10	6	5½	1.10
12	7	8	1.50
14	6	9½	1.60
16	7	11½	2.00
16	8	13¾	2.25

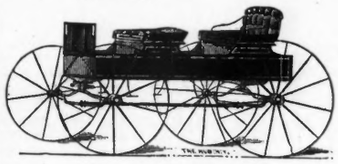
Discount, 45%.

Carriages, Etc.

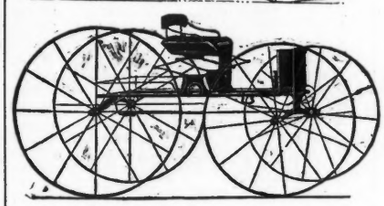
Windsor Surrey. Open, $120. Canopy top, $145. Leather extension top, $185. Pole or shafts.

Cut under Surrey. Canopy top, $185. Leather extension top, $220.

Brewster Spring. Open, $55. Rubber top, $76. Leather top, $100.



Runabout, $65.



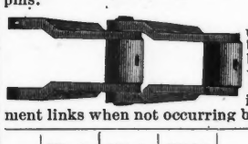
Buckboard. $90 : shafts.

No. 0. Cart, top and fenders	$150
No. 1. Cart, top and fenders	90
No. 2. Cart, one man cart, open	65
No. 2. Cart, one man, top	86
No. 2. Cart, one man, top and fenders	90
No. 3-H. Cart, two man, open	54
No. 4. Cart, two man, top	86
No. 5. Cart, two man, top and fenders	90
No. 6. Cart, two men, top and fenders	90
No. 7. Two man combination cart	110

Wide track 5 feet.
Narrow track 4 feet 8 inches.
Discount 33⅓ per cent. off.

Roller Chains.

Made of malleable iron, with malleable iron and steel pins.



These chains are made up with riveted pins, but coupling pins can be inserted at any interval desired.

The price of the chain includes the attachment links when not occurring but once in every foot.

No.	Working strain.	Pitch of link.	Width of link.	Size pin.	Price per foot.
52	500	1¼	1⅝	15/16 Malleable iron	$0.35
55	500	1 3/5	1⅜	6/16 " "	.35
77	800	2¼	2	⅜ " "	.45
0	800	2	1½	8/16 " "	.45
9	700	3	1¾	⅜ " "	.50
88	1,200	2⅝	2⅜	7/16 " "	.65
17	1,200	2 9/16	2	7/16 " "	.70
18	1,400	3	2	½ " "	.80
12	1,500	3½	2 7/16	½ " "	.90
1	2,000	3	3	⅝ Steel.	1.20
2	1,600	3 11/16	2⅞	⅝ "	1.10
126	2,500	6	3⅛	11/16 "	1.30
103	1,800	3⅛	2¾	⅝ "	1.20
3	2,000	4	3¼	11/16 "	1.30
114	2,000	4⅜	3⅛	11/16 "	1.30
124	2,900	4	3⅝	¾ "	1.70
5	3,000	5	3¾	⅞ "	1.85

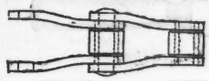
Discount, 45%.

Roller Carrier Chains.

No.	Working strain.	Pitch of link.	Size pin.	Price per foot.
21	700	2½ "	3/8 Malleable.	$ 40
22	1,000	3⅛ "	7/16 Steel.	65
23	1,400	4 "	½ "	90
24	2,800	6 "	⅝ "	.25

Disc., 20%.

STEEL THIMBLE ROLLER CHAIN.



Is used extensively fo heavy driving purposes.

No.	Work'g strain.	Sizes. Width of steel.		Thickness.		Pitch of link.		Pin.	Price
17	1,800 lbs.	1⅛	x	¼	x	2⅝	ins.	⅛ in.	$1.65
14	3,500 "	1⅛	x	⅜	x	3½	"	⅜ "	2.15
112	6,000 "	2	x	½	x	4	"	¾ "	3.00
115	6,000 "	2	x	½	x	5	"	¾ "	3.00
116	6,000 "	2	x	½	x	6	"	¾ "	3.00

Disc., 20%.

MEY-OBORN DETACHABLE CHAIN BELTING.

Made in 22 sizes to work on Standard Sprocket Wheels.

No.	Links per foot.	Size pin.	Working strain.	Price per foot.	No.	Links per foot.	Size pin.	Working strain.	Price per foot.
25	13.3	3-16	75	.13	67	5.02	11-32	700	.30
33	8.6	7-32	200	.12	75	4.6	3-8	800	.35
34	8.6	7-32	225	.13	77	5.02	3-8	800	.35
35	7.4	15-64	250	.14	78	4.6	27-64	1,000	.40
42	8.75	1-4	300	.16	83	3.	33-64	1,200	.45
45	7.4	1-4	350	.16	85	3.	31-64	1,300	.50
50	12.	3-16	200	.17	88	4.6	13-32	1,200	.50
52	8.	19-64	500	.25	103	4.	37-64	1,800	.75
55	7.4	19-64	450	.22	108	2.55	5-8	2,000	.80
57	5.02	5-16	600	.24	146	2.	13-16	2,800	1.40
62	7.03	11-32	950	.30	124	3.	3-4	2,500	1.30

Disc. 25%.

Crucibles.

Battersea Crucibles, Triangular.

No.	Height. Inches.	Width. Inches.	Crucibles. Per doz.	Covers. Per doz.
S	4½	4½	$1.00	$0.50
T	4	3¾	0.80	0.50
U	3½	3¼	0.60	0.40
V	3¼	2⅞	0.45	0.40
W	2⅞	2⅝	0.35	0.30
X	2½	2¼	0.30	0.30
Y	2⅛	2⅛	0.25	0.30
Z	1¾	1¾	0.20	0.30

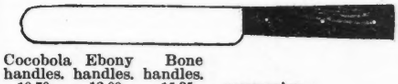
Battersea Muffles, any size, made to order.
See Illustration in advertisement.

No.	Long. Inches.	Wide. Inches.	High. Inches.	Price. Each.
A	7	3½	2½	$ .60
B	7½	4⅜	2⅞	.75
C	8	4¾	3	.85
D	8½	5	3¼	1.00
E	9	5½	3⅜	1.15
F	10	6	4	1.25
G	11	4	3½	1.00
H	10½	5¼	3⅜	1.00
J	12	6	4	1.25
K	14	8	5	1.75
L	15	9	6	2.00

Export discount 15%.

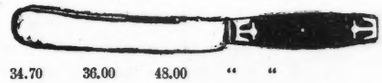
Cutlery.

KNIVES—TABLE.

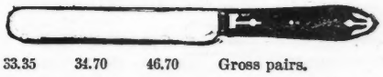


Japanned iron handles, $10.70 per gross pairs.

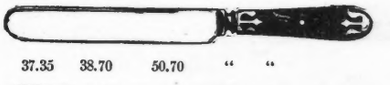
Cocobola handles.	Ebony handles.	Bone handles.	
10.70	12.00	15.35	gross pairs.



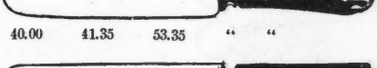
32.00	33.35	38.00	" "



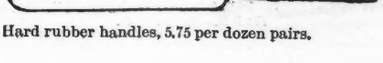
34.70	36.00	48.00	" "



33.35	34.70	46.70	Gross pairs.



37.35	38.70	50.70	" "



40.00	41.35	53.35	" "

Hard rubber handles, 5.75 per dozen pairs.

Solid bone handles, 4.80 per dozen pairs.

Celluloid handles, 7.35 per dozen pairs.
Forks are made to match all above patterns, with either three or four prongs.

Discount 25 %.

BUTCHERS'—COCOBOLA HANDLES.

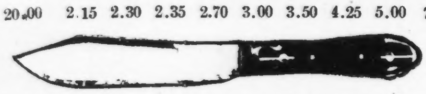
Per dozen.

4 and 4½ in.	5 in.	5½ in.	6 in.	6½ in.	7 in.	8 in.	9 in.	10 in.	
1.15	....	....	1.20	....	...	....	....	....	...

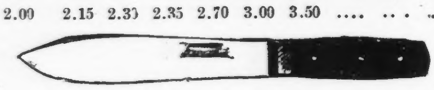
1.15 1.20 1.30 1.40 1.70 1.90 2.35 3.00 3.70 5.00

.... 1.45 1.60 1.70 2.00 2.35 2.80 3.25 4.00 6. 0

20.00 2.15 2.30 2.35 2.70 3.00 3.50 4.25 5.00 7.50



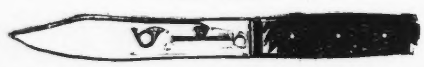
2.00 2.15 2.30 2.35 2.70 3.00 3.50 ....



Discount 25 and 10 %.

HUNTING—EBONY HANDLES.

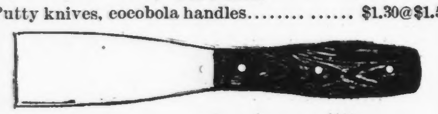
5½ in. 6 in. 6½ in. 7 in. 8 in. 9 in.
Per Dozen.



2.70 3.00 3.30 3.55 4.00 5.00

2.55 2.70 3.00 3.30 3.55 4.00 5.00
Discount, 25 and 10 %.
Per Dozen.

Putty knives, cocobola handles............ $1.30@$1.50



SHEARS.

TAILORS'—JAPANNED OR NICKEL HANDLES.

Per pair.

12 in................ 6.00
12½ in............... 7.00
13 in................ 8.00
13½ in............... 9.00
14 in................ 10.00
14½ in............... 11.00
5 in.................. 12.00 | 16 in.................. 14.00

Discount, japanned, 60 %; nickle, 45 %.

BENT TRIMMERS.

Per dozen.

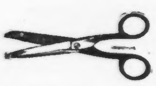
6 in...... 13.00 | 10 in..... 27.00
7 in...... 15.00 | 11 in..... 30.00
8 in...... 17.00 | 12 in..... 33.00
9 in ..... 22.00 |

STRAIGHT TRIMMERS.

Per dozen,

6 in.......... 12.00 | 10 in...... 25.00
7 in.......... 14.00 | 11 in........ 30.00
8 in.......... 16.00 | 12 in........ 33.00
9 in.......... 19.00 |

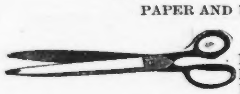
LADIES' SCISSORS.



Per dozen.

4½ in....... 10.00 | 6 in. 11.00
5 in......... 10.00 | 6½ in....... 12.00
5½ in....... 10.50 | 7 in......... 13.00

PAPER AND BANKERS'.



Per dozen.

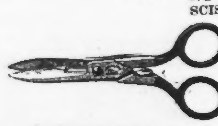
9 in...18.00 | 13 in....36.00
10 in...25.00 | 14 in....42.00
11 in...27.00 | 16 in....54.00
12 in...32.00 | 18 in ...20.00

BARBERS—Per dozen.

7½ in...... 15.00 | 9 in........ 18.00
8 in........ 16.00 | 9½ in...... 20.00
8½ in ..... 17.00 |

SCISSORS.

BUTTON-HOLE.



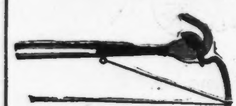
5 and 5½in., 14.00 per dozen.

Discount, japanned, 70 and 10 % nickel, 60 and 10 %

PRUNING.

1 B., 9 in., 24 per dozen; 2 B. 3½ in., 21; 3 B., 7¾ in., 19.80.

No. 110, 10 in., $30 per doz Dis., 40 and 5%.

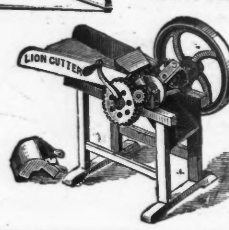


PRUNING SHEARS FOR LONG HANDLES.

No. 1, $36 per dozen; No. $30 per dozen.
Discount, 40 and 5%.

Cutters.

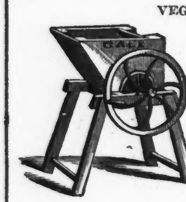
FEED.



No. of cutter.	No. of knives.	Length in inches of knives.	Length in inches of feed cut.	Price.
1	2	6¼	½, ¾ and 1⅛	$18.00
2	2	7¼	½, ¾ and 1⅛	21.00
2½	1	7¼	⅝, ⅞, 1¼ and 1¾	21.00
2½	2	7¼	5/16, 7/16, ⅝ and ⅞	23.00
3	1	8½	⅝, ⅞, 1¼ and 1¾	25.00
3	2	8½	5/16, 7/16 ⅝ and ⅞	27.00
4	1	10	⅝, ⅞, 1¼ and 1¾	30.00
4	2	10	5/16, 7/16, ⅝ and ⅞	33.00
5	2	10	7/16, ⅝, ⅞ and 1¼	35.00
6	2	11	7/16, ¾, 1¼ and 2	45.00
6½	2	11	7/16, ¾, 1¼ and 2	45.00
7	2	13	7/16, ¾, 1¼ and 2	60.00
7½	2	13	7/16, ¾, 1¼ and 2	60.00
10	2	16	7/16, ¾, 1¼ and 2	80.00
12	2	20	7/16, ¾, 1¼ and 2	100.00
11	2	11	7/16, ¾, 1¼ and 2	45.00
13	2	13	7/16, ¾, 1¼ and 2	60.00
16	2	16	7/16, ¾, 1¼ and 2	80.00
20	2	20	7/16, ¾, 1¼ and 2	100.00

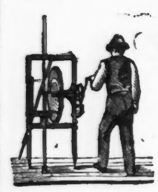
The knife arbors for all sizes are made of machinery steel. 30 per cent. dis.

VEGETABLE—GALE'S.



Size.	Weight of Fly Wheel. Pounds.	Will cut per hour. Pounds.	Price
No. 1½	20	1,500	$12
No. 2½	32	1,700	15
No. 3½	32	1,700	15
No. 4	42	2,000	18
No. 5	50	3,000	25
No 10	65	8,000	35

30% dis.

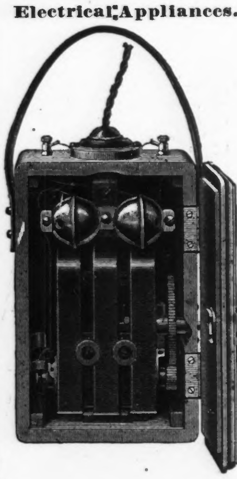


Drill—Portable Hand Rock.

Price, $225.

Dis., 25 and 2½%.

Electrical Appliances.



20,000 ohm Testing Generator...... $10.00
Pony Ma—eto Bell 6.00
Standard Magneto Bell 7.50
Standard Extension Bell 4.00
Pony Extension Bell............ 3.00
Discount 40 per cent.

Electroplate.

	Extra plate, per doz.	Double plate, per doz.	Triple plate, per doz.
Oyster forks..................	7.00	9.00	11.00
Sugar shells..................	9.00	11.00	13.00
Sugar tongs	25.50	31.50	37.50
Butter knives, twist or reversed handles............	10.50	12.50	14.50
Nut picks....................	4.75	6.00	7.25
Pie knives, engraved blades.	42.00	51.00	60.00
Soup ladles	48.00	60.00	72.00

Dis, 60 and 2%.

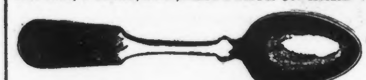
Aesthetic medium fork.

Tea spoons.	Table spoons.	Medium forks.
7.50	15.00	15.00 per gross.

Discount, 30 and 5 %.

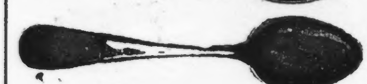
Children's sets *on cards.*	3 pcs.	4 pcs.	
Leader pattern, as per cut....	21.00	24.00 doz.	60 and 5 %
Aesthetic pattern, as per cut..	5.75	7.25 doz.	30 and 5 %

SPOONS, FORKS, ETC., BEST PLATE ON HARD WHITE METAL

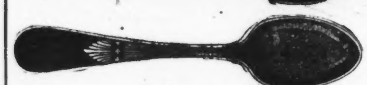


Tipped Tea Spoon.

Oval Tea Spoon.



Perfect Tea Spoon,



Leader Tea Spoon.

	5 oz. or extra plate Tipd	Oval.	Perfect and Leader.
Tea spoons.	4.25	4.50	4.75 per doz
Dessert spoons.	7.50	8.00	8.50 " "
Table spoons...	8.50	9.00	9.50 " "
Coffee spoons...	4.25	4.50	4.75 " "
Dessert forks...	7.50	8.00	8.50 " "
Medium forks..	8.50	9.00	9.50 " "

Discount, 60 and 5%.

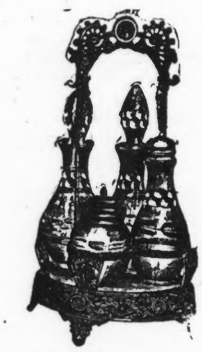
Spoons and forks, German silver, tipped pattern.

Tea spoons.	Table spoons.	Medium forks.
22.50	45.00	45.00 per gross.

Discount, 60 and 2½%.

Spoons and forks, made from brass, and silver plated or a coating of hard, white nickel.

CASTERS.



1,200—Dinner. Dis., 60 and 5%. 232—Breakfa

No. 146.

PICKLE DISHES.

No. 144. 12 in. high, $3.5
No. 66. 10½ in. high, $2 sorted colored glass.
No. 155. 12 in. high, $4; sorted colored glass.
No. 146. 12½ in. high, $9; ha decora ed glass.
No. 156. 12½ in. high, $6; hand decorated glass.

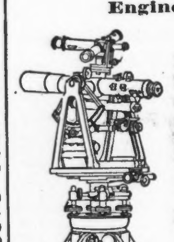
No. 255.

TEA SETS.

No. 255. 6 pieces, $35, quadruple plate.
No. 301. 4 pieces, $23, quadruple plate.
No. 1847. 6 pieces, $42, quadruple plate.

Dis., 60 and 5%.

Engineering Instruments.



Full Engineer's Standard Transit.

7 in. graduated circle............$255
6 in. " " 245
5 in. " " 235
4 in. " " 225

Standard Engineer's Level, improved centre and seat attachment, 18 in. telescope..........

Plain railroad level, 18 in. telescope............................

Dis., 5%.

Explosives.

Dynamite, 75%	Nitro-Glycerine, per lb	.32
" 60%	" " "	.25
" 40%	" " "	.20
Blasting powder A, per keg 25 lbs		$2.40
" " B, " " "		1.90
Sporting powder, standard brands per keg 25 lbs		5.00
" " " " "	12½ lbs.	2.75
" " " " "	6¼ lbs.	1.50
" " high grades	" 6¼ lbs.	3.00
" " " "	per can 1 lb	.60
" " fancy brands	" 1 lb	1.00

Discounts special for quantity.

Safety fuse, cotton, 12 M ft. in case	$2.85 per M ft
" " single tape, 6 M ft. in case	3.85 " "
" " double tape " "	4.85 " "
" " triple tape " "	5.60 " "

Discount 17½%.

Detonating caps, triple force, 25 M. in case	$5.00 per M.
" " quintuple force, 25 M. in case	7.50 per M.
Electrical exploders, 4 ft. wires	$3.00 per 100
" " 6 "	3.54 "
" " 8 "	4.08 "
" " 10 "	4.62 "

Discount 15%. Long lengths to order.

	No.	Capacity.	
Magneto Blasting Machines	1 V.	8 holes	$17.00
" " "	2 V.	20 "	25.00
" " "	3 L.	20 "	25.00
" " "	3 V.	30 "	30.00
" " "	4 V.	60 "	50.00

Discount 15%.

Blasting cables	$5.00 each, discount 40%
" reels	5.00 " " 20%

Flouring Mill Machinery.

20-inch New Era Mill for Wheat, Corn, and Middlings.

Size. Inch.	Power. H. P.	Pulley. Inch.	Capacity Bush.
20	4 to 10	14×7	12 to 40

Speed.	Weight. Lbs.	Price.
500 to 800	660	150

Farm and Plantations Mills.

Diameter of burrs.	Power to drive.	Size of pulley.	Capacity per hour.	Revolutions per minute.	Weight.	Price.
	H. P.					
14 in.	2 to 4	9×5½	4 to 14 bushels	600 to 1200	370 lbs.	$100
18 in.	4 to 10	11×6½	8 to 40 bushels	400 to 700	600 lbs.	130

The Dixey Mill—Stiff Spindle Style.

Size.	Power.	Capacity.	Weight. Pulley.	Weight. Geared	Pulley.	Iron gear.	Mortise gear.
18	4 to 6 H.P.	8 to 25 bu	560 lbs	650	$130	$165	
22	6 to 8 "	12 to 30 "	800 "	1000	165	200	
26	8 to 12 "	16 to 40 "	1100 "	1500	185	220	
30	10 to 15 "	25 to 60 "	1300 "	1700	215	255	

GRINDING MILLS.

"Daisy," without Shaking Bolt, 170 pounds, 9 cubic feet, $40.

"Daisy," with Shaking Bolt, 185 pounds, 9 cubic feet, $48.

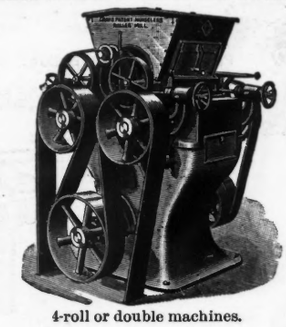
} Discount 25 per cent.

"The Union Mill."

Diameter of Buhr Stones	Size of Pulleys. Diam.	Face.
12 in.	8 in.	6¼ in.
16 "	9 "	7½ "

Horse Power	Capacity in B'sh's	Speed	Without Bolt	With Bolt	Sacking Elevator, Extra	Extra Metal Buhrs
8 to 10	12 to 30	1200 to 1500	$90.00	$105.00	$15.00	$1.20 pair
10 to 15	20 to 50	1000 to 1600	160.00	178.00	17.50	1.50 "

NOISELESS ROLLER MILLS FOR FLOUR MILL USE.



4-roll or double machines.

Size, inches.	Weight, lbs.	Price in New York, net. All smooth.	1 pair smooth, 1 pair corrugated.	All corrugated.
6×12	1,480	$302	$307	$312
6×16	1,680	334	339	344
6×20	1,860	367	372	377
9×14	2,800	377	383	390
9×18	3,500	406	414	422
9×24	4,150	455	406	477
9×30	5,850	510	525	539

NOISELESS ROLLER MILLS FOR CORN-GRINDING ONLY.

Size inches.	Weight lbs.	Capacity per hour bushels.	Price in New York
9 × 14	2,600	20 to 35	$390.
9 × 18	3,050	30 " 50	422.
9 × 24	3,350	40 " 80	477.

6 × 8 Corn Meal Roller Mill.....$85

COMPLETE FLOUR MILLS ON MILLSTONE SYSTEM.

Size of stone ins.	Power needed.	Capacity flour per hour lbs.	Weight boxed.	Price net in New York
20	6 h. p.	200	4,500 lbs.	$550.
26	7 "	250	4,500 "	650.
30	10 "	300	5,500 "	750.
36	11 "	375	6,500 "	850.
42	12 "	450	8,000 "	950.

COMPLETE FLOUR MILLS ON THE ROLLER PROCESS.

Capacity in flour in 11 hours.	Power needed.	Weight approx. in lbs.	No. of estimate.	Net price in New York.
25 bbls.	20 h. p.	14,000	15	$2,200
40 "	22 "	22,000	D	2,400
50 "	25 "	32,000	C	3,200
75 "	35 "	48,000	B	4,700
100 "	45 "	60,000	A	5,500

The Nordyke Bradford Portable Mill.

Size of stones, In.	Grinding capacity. Corn, bu. per hour.	Wheat bu. per hour.	Horse-power.	Weights. Sing'l gear.	Double gear.	Pulley mill.	Geared mills. Iron wh'ls.	Mortise wh'ls.
18	8 to 10	.....	4	550	625	$130	$165	$180
20	10 to 12	.....	5	600	700	140	175	190
22	12 to 15	.....	5	700	850	160	190	210
24	15 to 18	.....	6	900	1050	175	210	225
26	18 to 20	8 to 10	8	1200	1400	185	225	250
30	20 to 25	10 to 12	10	1500	1700	225	265	290
36	25 to 30	14 to 17	12	1800	2100	315	355	380
42	35 to 40	19 to 21	15	2000	2300	390	435	460

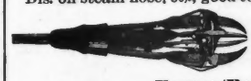
Driving pulley.	Revolutions per minute.	Length of belt above floor.	Approximate shipping weight	Price.
10" × 5¼"	400 to 500	14'	.....	$500.00
14" × 6¾"	350 to 450	18'	2600 lb.	600.00
14" × 7¼"	350 to 450	18'	3050 lb.	650.00
14" × 8¾"	350 to 450	18'	3350 lb.	735.00

Flue Cleaner.

Hurley's Automatic Steam Flue Cleaner.

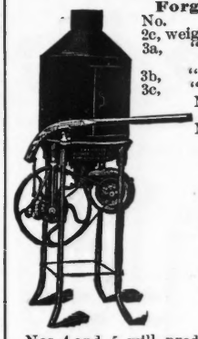
No.	Outside diam. of tubes.	With hose clamps.	Globe Valves.	Best 4-ply steam hose. Per foot.
1	1½ to 2	$5.00	¼, 95 cents	¾, 67 cents.
2	2 to 2½	6.25	½, 95 cents	¾, 67 cents.
3	2½ to 3	7.50	¾, $1.30	¾, 67 cents.
4	3 to 3½	8.75	1, 1.75	1¼, 83 cents.
5	3½ to 4½	10.00	1¼ 2.90	1¼, $1.04

Dis. on flue cleaners, 60 and 70%.
Dis. on steam hose, 50%, good to 90 lbs steam.



Tube cleaner, "The National," Per inch, $1. Discount, 60%.

Forges (Portable).



No.				
2c,	weight, 155 lbs.	21×27 hearth	..	$42.00
3a,	" 80 "	18 in. diam. hearth	.....	27.00
3b,	" 75 "	18 "	.....	24.00
3c,	" 85 "	18 "	.....	30.00

No. 6a, weight 45 lbs., 14 in. diam. hearth..... 18.00
No. 6B, weight 45 lbs. 14 in. diam. hearth..... 16.00
Dis. 60%.

No. 1, half open hood; height 29 in.; fan, 10 in.; hearth, 21×27 in.; weight, 140 lbs.; price, $40.

No. 2, closed hood; capacity same as No. 1; weight, 150 lbs.; price, $42.

No. 4, half open hood; height, 33 in.; size of hearth, 18 in. diameter; weight, 75 lbs.; price, $27.

Nos. 4 and 5 will produce a welding heat on iron 1½ inches in diameter in five minutes, and do heavier work if required, but on account of size of fire place and general capacity, are specially recommended for use of die sinkers, model and tool makers, plumbers, tinsmiths, jewelers, dentists, locksmiths and small hardware manufacturers, for heating and tempering tools of all kinds.

No. 5, same size and capacity as No. 4; weight, 60 lbs. Price, $24.

Discount on application.

Fruit Evaporator.

No. 1. Evaporator..... $30
No. 2. Fruit Drier and Baker, with Bleacher attachment. Weight, 225 lbs. Capacity, 5 to 7 bushels apples per day; 24 in. deep, 26 in. wide, 5½ ft. high; 12 trays, 22 × 22; 40 square feet drying surface. Complete..... $50
No. 3. Capacity, 15 to 20 bushels per day..... 100
No. 4. Capacity, 20 to 30 bushels per day..... 165
Dis., Nos. 1 and 2 = 25%. Nos. 3-4 = 20%.
Boxing, extra:
No. 1, $3.00; No. 2, $5.00; No. 3, $7.50; No. 4, $12.50.
Freight to New York:
No. 1, $4.00; No. 2, $6.00; No. 3, $12.00; No. 4, $18.00.

Gaskets.

Corrugated Copper.

Price, 2 cents per square inch, less 30 per cent. discount for home trade.

Less 60% discount for export trade.

Glass Tube Cutters.

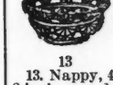
One Arm Carries Rotary Cutter Price, $2.50 each.

Glassware.

Dis. 5%.

6-in. bowl and cover, per doz.			$2.75
7-in	"	"	3.75
8-in.	"	"	5.00
9-in.	"	"	7.00
10-in.	"	"	9.00

12



13

15

13. Nappy, 4½-inch., per doz., 50c.; 6-inch., per doz., $2; 8-inch., per doz., $4.

14. Cream Pitcher, 1 pint, per doz., $1.25; one quart per doz., $2.75; 3 pints, per doz., $4.00.

15. Pint Pitcher, per doz., $1.50; quart pitcher, per doz. $2; 3 pint pitcher, per doz., $3.00.

16

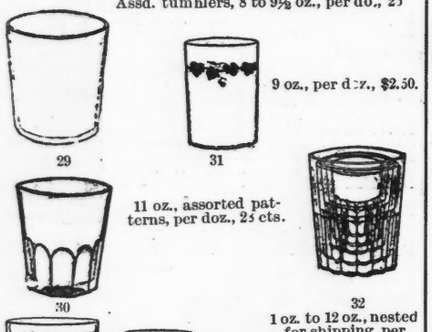
17

16. Flange Butter and Cover, per doz., 1.50.
17. Wateer Set, per doz., sets of 60 pieces, $7.50.

18. Cheese Dish and Cover, 8 in. per doz., $4.50.
20. Quart Water Bottle, per doz., $4.50.
19. Ind. Salts; per gross, $2.00. Assorted patterns.
21. 4 Bottle Castors, per doz., $6.50; 3 bottle, per doz. $4.50.

22. Berry Dish, 4½-inch, per doz., 50c.; 10-inch, per doz. $4.
23. Butter Dish and Cover, per doz., $1.25.
24. Butter Dish and Cover, per doz., 75c.

25. Candlesticks, per doz., $1.75. 26. Glass Slipper and tray for Flowers, per doz., $1. 27. Jam Jar and Cover 1 qt., per doz., $2.50; ½ gal., per doz., $3.25; ¾ gal., per doz., $4; 1 gal., per doz., $5; 1½ gals., $9; 2 gals., per doz., $12. 28. Pocket Flask, 1 pint, $1.



Assd. tumblers, 8 to 9½ oz., per do., 25
9 oz., per doz., $2.50.
11 oz., assorted patterns, per doz., 25 cts.
1 oz. to 12 oz., nested for shipping, per doz. nest, $2.

9. Goblets, banded, per doz., 65 cents: plain, 50c.
9. Claret to match, per doz., 55 cents; plain, 45.
9. Wines, to match, per doz., 50 cents; plain, 35c.
9. Cordials, to match, per doz., 45 cents; ploin, 35c.

No. 10.
Goblets, per doz., 50 cts.
Claret, " 45 "
Wine " 35 "

No. 8.
Banded, open, hollow stem.
Champagne, per doz., $1.25.

11. ½ Pt. tumbler, per doz. .50 cts.
½ Pt. mug to match, " .65 "
10. Goblet, " " .50 "
Spoon holder, cream pitcher, sugar bowl or dish to match.
Sets of 4 pieces, per doz. sets, 48 pieces, $3.50.

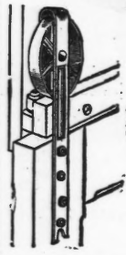
Hand Carts

No. 0 42 wheel, in. tread, 1 in. axle box 48x28x10 deep, $10.50.
No. 1, 36 wheel, 1 in. tread, ⅞ in. axle, box 40x23x10 deep, $9.00.
No. 2, 30 wheel, ¾ in tread, ¾ in. axle, box 32x20x9 deep, $8.25.
With Wagon-Seat Spring.
No. 6, same sizes as No 0.....$12.00
" 7, same sizes as No. 1..... 10.50
" 8, " " " No. 2..... 9.75
With Third Wheel, Without Sprin
No. 3, same sizes as No. 0.....$12.00
" 4, " " No. 1..... 10.50
" 5, " " No. 2..... 9.50

Hardware Specialties.

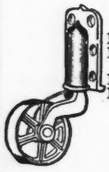
AUGERS.
Patent Adjustable Hollow. No. 3.
Cuts from ¼ to 1¼, pivoted jaws, graduated scale to 1-16ths, per doz., $60.00
Discount, 15 and 10%.

BENCH HOOK.
Patent, adjustable and reversible
List $9 dozen, ½ dozen in box.
Discount, 30 and 10%.



BARN DOOR HANGER.
4 in., per doz. pairs.....$12.00
5 " " " 14.40
Track, per foot..... .08
One dozen pairs in case.
Dis., 50 and 10%.

BLACKSMITH'S TONGS.
Swivel Jaw.
No. 1, 16 in., per doz.....$10.00
" 2, 18 " " 10.00
Dis. 20 and 10%.

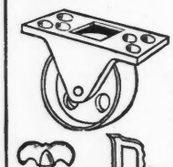


CASTERS.
Swivel Store Truck
No. 20, japanned, 4 in. wheel, each..... .55
No. 25, " 5 " " " ..... .75
Noiseless turned wheel.
No. 30, japanned, 4 in. wheel, each..... 1.30
No. 35, " 5 " " " 1.60
Discount, 60%.

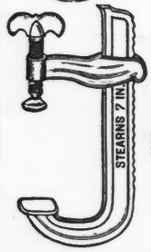
JACK SCREWS.
New pattern wrought iron screw.

No.	Rise of screw.	High.	Diameter screw.	Price.
20	4½ in.	10 in.	2 in.	$4.50
25	6½ "	12 "	2 "	5.25
30	8½ "	14 "	2 "	5.75
35	11½ "	16 "	2 "	6.50

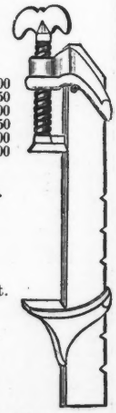
Discount, 40%.

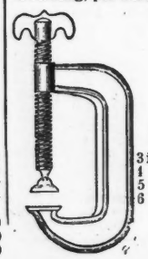


Store Truck, stationary.
No. 50, 5-inch wheel, 1½ inch wide each, $1.05.
No. 60, 5-inch, extra heavy, 1½ inch wide, each $1.50.
Discount, 25%.



SCREW CLAMPS.
Adjustable.
3 in., per doz.....$4.00
5 " " 6.50
7 " " 9.00
9 " " 10.50
12 " " 15.00
16 " " 20.00
½ doz. in box.
Discount, 20 and 10%.



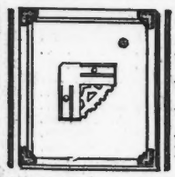


CLAMPS.
New Door Frame.
3 ft. long, per doz., $8 list; $5 per doz. net.

Malleable Iron Screw Clamps.

Per Doz.		Per Doz.	
3 in.	$7.00	7 in.	$20.00
4 "	10.00	8 "	25.00
5 "	12.00	9 "	27.50
6 "	16.00	10 "	30.00

3, 4, 5, 6 in., ½ doz. in box, Dis., 70%.



WINDOW SCREEN FRAMES.
Patent Japanned Corners.
No. 25, 36 by 36 corners and screws, without bead, per doz., $2.50.
No. 25, 36 by 36 corners and screws, with bead, per doz., $2.90.
No. 35, 42 by 42 corners and screws, without bead, per doz., $2.90.
No. 35, 42 by 42 corners and screws, with bead, per doz., $3.30.
Black satin stain, sticks ⅞ by 1 in.
Dis., 25, 10 and 5%.

PULLEY HOOK (New Floor.)
Deep cut thread, forged point.
Per doz.
¾ in. wrought iron, 8 in. long, list..... $1.90
net..... 1.00

WELL WHEEL.
New pattern.
Japanned.

In.	8	10	12	14	16
Pr.d.	7.00	9.50	12.50	20.00	30.00

Discount, 70%.

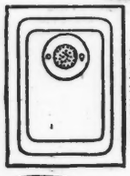
PULLEYS.
Side, No. 45, Japanned.

Inches...	1	1½	2	2½	3	4	5
Per doz..	.90	1.00	1.60	2.40	3.50	9.00	15.00

2 inch and under, 2 dozen in box: 2½, 3 and 4, 1 dozen in box; 5 inch, ½ dozen in box.
Discount, 70%.

HAY FORK PULLEY.
New pattern.
No. 15, 5 in. iron wheel.....per doz. $4.00
25, 5 in. wood " ..... " 4.50
66, 6 in. " " ..... " 6.00
4 dozen in case, 8 dozen in barrel.

No. 15, per dozen, $1.75 net.
SHEAVES.
Patent Common
Turned and polished iron wheels, round corners, brass pin, one set in box.
2½ inch.....$1.50
3 " 1.60
4 " 2.00
5 " 2.60
Discount, 60%.



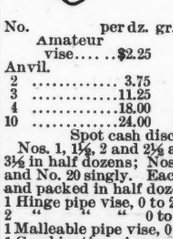
SINKS.
All 6 inch deep.

14 × 20 in....	$1.50	18 × 30 in....	$2.50
15 × 25 in....	1.75	18 × 32 in....	3.00
15 × 27 in....	2.00	18 × 36 in....	3.00
16 × 24 in....	1.80	20 × 30 in....	3.00
16 × 28 in....	2.10	20 × 36 in....	3.70
17 × 30 in....	2.25	20 × 40 in....	4.00
18 × 24 in....	2.10		

Discount, 60 and 10%.

SPOKE POINTERS.
Per doz.
No. 1, points 1⅞ in. diameter, $9.00
No. 2, points 2⅝ in. diameter, $15.00
Discount, 15 and 10%.
½ dozen in box.

VISE.
(Bench Vise, Steel Jaws.)
3½ in. opens 5 in., weight 12 lbs.
List price, each $4.00
Net " " .. 1.60

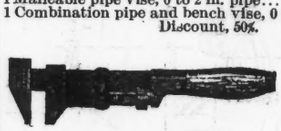


Silent Saw Vise.
No. 10., 10 in. jaw, per doz....$15.00
Dis., 33⅓%.

No.	per dz.	gr., lbs.
Amateur vise	$2.25	70
Anvil.		
2	3.75	200
3	11.25	615
4	18.00	1,350
10	24.00	1,675

No.	per dz.	gr., lbs.
Clamp.		
1½	3.00	80
2½	5.00	220
3½	14.25	700
4½	21.00	1,425
Combination hand	5.25	85

Spot cash discount, 33, 20 and 2, f.o.b.
Nos. 1, 1½, 2 and 2½ are packed in dozens; Nos. 3 and 3½ in half dozens; Nos. 4, 4½ and 10 in quarter dozens, and No. 20 singly. Each hand vise is put up in neat box and packed in half dozen lots.
1 Hinge pipe vise, 0 to 2 in. pipe.....Each $10.00
2 " " " 0 to 4 in. pipe..... 20.00
1 Malleable pipe vise, 0 to 2 in. pipe..... 8.00
1 Combination pipe and bench vise, 0 to 2 in. pipe...16.00
Discount, 50%.



WRENCHES.
Cces Wrenches.

BLACK.
Knife Handle.

Size.	₱ doz.	Size.	₱ do	₱ doz.
6 inch	$9.00	10 "	12.00	15 inch 24.00
8 "	10.00	12 "	14.00	18 " 30.00
				21 inch 36.00

BRIGHT.

Knife Handle.

4 inch.....$10.00	10 inch..... 14.00	18 inch 32.00	
6 " 10.00	12 " 16.00	21 " 38.00	
8 " ...., 11.00	15 " 26.00		

Discount, 55, 10, 7½ and 3 %.

Coes Mechanics' Screw Wrenches, same list, less 50, 10, 10, 7½ and 3 %.

Patent Screw Wrench, same list. Dis, 50, 10, 7½ and 3%.

Ice Machines (Famfly).

No. 1, Ice machine, ice and ice cream molds, 1 lb. ice, $15.00.

No. 2, Ice machine, ice and ice cream molds, 1½ lbs. ice, $20.00.

No. 3, Ice machine, ice and ice cream molds, 1 carafe 1 bottle holder, 2 lbs. ice, $26.50.

No. 4, Ice machine, ice and ice cream molds, 2 carafe 1 bottle holder, 4 lbs. ice, $33.00.

No. 5, Ice machine, ice and ice cream molds, 3 carafe 1 bottle holder, 6 lbs. ice, $40.00.

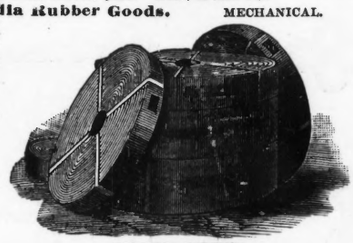
No. 6, Ice machine, ice and ice cream molds, 4 carafe, 1 bottle holder. 9 lbs. ice, $46.50.

No. 7, Ice machine, ice and ice cream molds, 5 carafe, 1 bottle holder, 12 lbs. ice, $60.00.

Siberia, 18 lbs., $120. Dis., 20 and 10%.

India Rubber Goods.

MECHANICAL.



RUBBER BELTING.

Inches.	2 ply per foot.	3 ply per foot.	4 ply per foot.	5 ply per foot.	6 ply per foot.
1	$0.07	.....	.....	.....	.....
1¼	0.09	.....	.....	.....	.....
1½	0.11	.....	.....	.....	.....
2	0.15	$0.17	$0.21	.....	.....
2½	0.18	0.22	0.26	.....	.....
3	0.22	0.26	0.31	.....	.....
3½	0.26	0.30	0.37	.....	.....
4	0.30	0.34	0.42	.....	.....
4½	0.33	0.39	0.47	.....	.....
5	0.36	0.43	0.52	.....	.....
6	0.43	0.52	0.62	.....	.....
7	0.51	0.60	0.73	.....	.....
8	0.59	0.70	0.84	$1.05	$1.25
9	0.67	0.80	0.95	1.18	1.42
10	0.75	0.90	1.07	1.33	1.60
11	0.83	1.00	1.18	1.47	1.77
12	0.91	1.08	1.30	1.62	1.95
13	1.00	1.18	1.42	1.77	2.13
14	1.08	1.28	1.54	1.92	2.31
15	1.16	1.38	1.36	2.07	2.49
16	1.25	1.50	1.78	2.22	2.67
18	1.41	1.70	2.02	2.52	3.03
20	1.58	1.90	2.26	2.82	3.39
22	1.76	2.12	2.52	3.15	3.74
24	1.96	2.36	2.80	3.50	4.20
26	2.18	2.60	3.08	3.85	4.62
28	2.42	2.84	3.36	4.20	5.04
30	.....	.....	3.64	4.55	5.46
32	.....	.....	3.92	4.90	5.88
34	.....	.....	4.20	5.25	6.30
36	.....	.....	4.48	5.60	6.72
38	.....	.....	4.76	5.95	7.14
40	.....	.....	5.04	6.30	7.56
42	.....	.....	5.32	6.65	7.98
44	.....	.....	5.60	7.00	8.40
46	.....	.....	5.88	7.35	8.82
48	.....	.....	6.16	7.70	9.24
50	.....	.....	6.44	8.05	9.66
52	.....	.....	6.72	8.40	10.08

Dis. Reliance, 60 and 5. Dis. Royal, 60, 10 and 10. Dis Manhattan. 70 and 5. See Leather Belting, page 3; Link Belting, page 9.

PACKING.

Piston Packing.

Round Piston Packing Per lb. 85c.
Discount, 60, 10 and 5 per cent.

Square Piston Packing.

Price same as above. Round and square piston packing is made in lengths of twelve or twenty-four feet.

Steam Packing.
Cloth Insertion, Rubber Outside
Cloth Insertion, Cloth on one or both sides.

Thickness.	1-Ply.	2-Ply.	3-Ply.	4-Ply.
1-64 inch	70 cts.	.....	.....	.....
1-32 "	65 cts.	.....	.....	.....
1-16 "	60 cts.	63 cts.	66 cts.	.. ....
3-32 "	55 cts.	58 cts.	61 cts.	.....
1-8 "	55 cts.	55 cts.	58 cts.	61 cts.
3-16 "	55 cts.	55 cts.	55 cts.	58 cts.
1-4 "	55 cts.	55 cts.	55 cts.	55 cts.

One-ply of cloth to every 1-16 inch thickness.

Three cents per pound additional will be charged for each extra ply of cloth. Each cloth, whether insertion or on outside, to count as one ply.

All cloth insertion or plain packing is one yard wide, and any length desired.

Wire insertion packing, all thicknesses, per lb, 50 cents.

Discounts: Reliance, 70 & 10; Royal, 60, 10 & 10; Manhattan, 60 per cent.

Square Piston Packing. Rubber back, per pound $1. Discount 60 per cent. Best only.

Square piston packing rubber back is made in lengths of twenty feet.

HOSE.

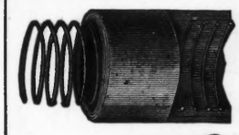
Improved "Smooth Bore" Rubber Suction Hose.

On spiral flat or round tinned steel wire.

Int. Diam.	Per ft.
2 inch.....	$2.60
2½ "	3.50
3 "	4.00
3½ "	5.50

In. Diam.	Per ft.	Per. Diam.	Per ft.
inch....	6.50	7 inch.....	$13.50
4½ "	7.50	7½ "	15.00
5 "	8.50	8 "	16.50
5½ "	9.50	9 "	19.50
6 "	10.50	10 "	22.50
6½ "	12.00	12 "	27.50

Suction hose discount: Reliance, 50 and 10%; Royal, 60, 10 and 5%; Manhattan, 70 and 5%.



SUCTION HOSE.

On spiralbrass or ironwire

Int. Diam.	Per. ft.
¾-inch....	$ .77
1 "	1.00
1¼ "	1.25
1½ "	1.65
1¾ "	2.10
2 "	2.50

RUBBER HOSE.

Conducting Hose—Two-ply.

Int. diam.	Per ft.	Int. diam.	Per ft.	Int. diam.	Per ft.
⅛ in.....	$0.20	2 in.....	$0.66	5 in.....	$1.65
¾ in.....	25	2¼ in.....	75	6 in.....	1.98
1 in.....	33	2½ in.....	83	7 in.....	2.31
1¼ in.....	42	2¾ in.....	92	8 in.....	2.64
1½ in.....	50	3 in.....	99	9 in.....	2.97
1¾ in.....	58	4 in.....	1.32	10 in.....	3.33

HYDRANT HOSE—THREE-PLY.

⅛ in.....	$0.25	1½ in.....	$0.60	2½ in.....	$1.00
¾ in.....	30	1¾ in... ..	70	2¾ in.....	1.10
1 in.....	40	2 in.....	80	3 in.....	1.20
1¼ in.....	60	2¼ in.....	90	3½ in.....	1.40
				4 in.....	1.60

Discount—Reliance, 60; Royal, 70; Manhattan, 70 and 10 per cent.

GASKETS AND RINGS.

Fibrous.

⅛ inch thick, or less, per lb..... .....$0.90

5-32 inch thick, and upwards, per lb.....$0.80

Cloth Insertion.

1-16 inch thick, or less, per lb.....$1.25

3-32 inch thick, and upwards. per lb.....$1.00

There is one ply of cloth to every 1-16 in thickness.

Five cents per pound additional for each extra ply of cloth. Dis., 60, 10 and 5%.

CORRUGATED RUBBER MATTING.

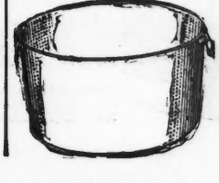
Rolls 1 yard wide, 30 yards long, cut to any size required.

Indurated Fibre Ware.

SPITTOONS.

	Doz.
16 in. dia., 8 in. high....	$24.00
12½ in. dia., 5½ in. high	10.80
9 in. dia., 5 in. high	7.80

WASH TUBS.



No. 0, 23 in....	½	12	27.00
No. 1, 21 in....	½	10½	24.00
No. 2, 19½ in..	½	9	21.00
No. 3, 18½ in..	½	9	18.00
Nos. 0, 1, 2 and 3, nested....	1	n. 3½	7.50
Nos. 1, 2, and 3, nested....	½	9¾	5.25

CHAMBER PAILS.

12 in. dia., 9 in. deep, 3 gal,..... 16.00

WATER COOLERS.

	Doz.
2 gal.....	$32.00
4 "	40.00
5 "	44.00
6 "	48.00
8 "	64.00
10 "	80.00
12 "	96.00
15 "	120.00

Dis. on all 40%

Pails.	No. doz. in crate.	Cubic feet.	Price per doz.
Ladies' or Weaver's pails, 6 qt.....	1	2¾	$5.35
Half or buggy pails, 6 qt.....	1	3	4.80
Star pails (standard plain), 12 qt., stenciled "for fire only" without extra charge.....	1	3½	5.40
Deck or Mason's pails (same size as Star, but heavier, with heavy wire bail).....	1	4	.60
Railroad or fire pails, 14 qt. (also stenciled "fire" without extra charge).....	½	3	7.80
Fire pails, round bottoms.....	1	4	7.80
Milk pails, 14 qt.....	1	4	7.80
Stable pails, flush bottom, heavy wire bail, 14 qt.....	1	4	7.80
Stable pails, 16 qt., same as above.....	½	3½	8.40
" 18 " "	½	3¾	10.70
" 20 " "	½	4	12.00
Covers for fire or star pails.....		1	3.35

KEELERS

		Doz
A—20 in.	7 in. deep	16.20
B—19 "	" "	15.00
C—18½ "	" "	14.00
1—17½ "	" "	13.20
2—15½ "	6 in. "	12.00
3—13½ "	5 in. "	10.20
4—12 "	4 in. "	9.00

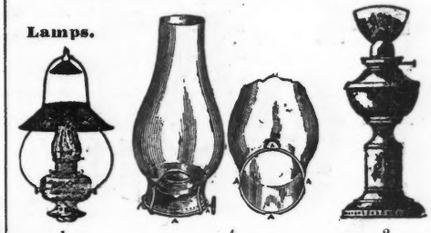
MILK OR VEGETABLE PANS.

13½ in. dia 3¼ in. deep, 6 quarts, $3.60 per doz.

WASH BASINS.

	Doz.
12½ in.....	$3.60

Lamps.



1 4 2

3

1. Drummond Electric Hanging Lamp, 300 candle power, complete. doz., $42.00.

3. The electric lamp, 60 candle-power. With decorated shades, nickel, per doz. $22.00

With opal plain shades, nickel, per doz. 18.00.

With decorated shades, brass, per doz. 21.00.

With opal plain shades, brass, per doz 17.00.

4. Lamp chimney patent for Sun burners.

Per doz. No. 0, 40 cents. No. 1, 50c. No. 2, 65c.

2. Hitchcock nickel table lamp (No. 654), each $3.25
" " hanging " 656 3.50
" " bracket " 651 " 3.50
" " " with reflector 653 " 3.75
" French bronze bracket, with reflector, No. 653, each $3.75.

5. Hanging lamp. $12 per doz.
6. Clock night lamp. $21 per doz.
7. Hand lamp. $1.50 per doz.

Miners'.

Brass, Collar and Breast in one piece, Spout and Body in one piece.

Price, $8 per gross net.

Demmler Bros. Doz.
"Cherry" Miners' Lamps, double spout..... $2.00
" " Drivers' " " 2.70
" " " single " 2.50

Harp, complete, with square tin shade, per doz., $9.50.
Complete, with Burner and chimney, per doz., $1.50.
Hurricane lanterns 25 cents extra with guards.
875, ⅜ wick, without guards, per doz., $5.00.
876, square safety lifting globe, per doz., $5.50.
877, ½ wick, safety lifting globe, per doz., $6.75.
Nickel plated diamond reflector road ing lamp, 30 candle-power, $13.50 per doz., net.
Illuminated night clock, $27, per doz.

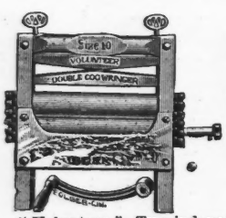
PAPER LAMPS.

Lined with oil proof composition.

No. 0.	Height, 2½ in.,	per doz.		$1.00
No. 1.	"	3	"	.85
No. 2.	"	3¾	"	1.25
No. 3.	"	5	"	1.50
No. 4.	"	6½	"	1.75

33

Laundry Appliances.



Rolls.

"Volunteer." Length, 10 in.x1¾ in. dia. $40 doz.

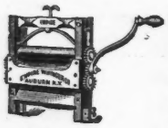
"Volunteer." Length 11 in.x1¾ in. dia. $50 per doz.

"Volunteer." Length 12 in.x1¾ in. dia. $60 per doz. Dis., 40%.

"Volunteer." Two independent pressure screws,

"Daisy." Length, 10 in.x1¾ in. dia. $30 per doz.

"Daisy." Length, 12 in.x1¾ in. dia. $18 per doz. Dis., 40%.



"Empire." Length, 10 in.x1¾ in. dia. $63 per doz.
"Empire." Length, 11 in.x1¾ in dia. $74 per doz.
"Empire." Length, 12 in.x1⅞ in. dia. $84 per doz.
"Empire." Length, 12 in.x1⅞ in. dia. $87 per doz.
"Empire." Length, 14 in.x2¼ in. dia. $156 per doz.
"Empire." Length, 14 in.x2¼ with pulleys. $220 per doz.
"Empire." Length, 16 in.x2½ with pulleys. $360 per doz.
Dis., 40%.

EMPIRE CLOTHES DRYING BARS. $10 per doz. Dis., 40%.

Closed. Open for use.

Lawn Mowers.

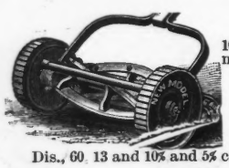
Forward Cut Mowers.

In.	Lbs.		In.	Lbs.	
0	Weight, 30¾	$13.00	16	Weight, 38	$19.00
2	" 31½	15.00	18	" 41	21.00
4	" 36	17.00	21		34.00

Dis. 60 and 5%.

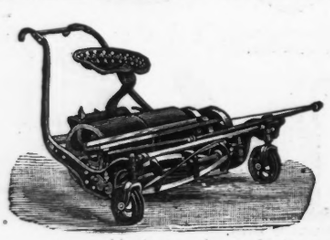
10 in.	12 in.	14 in.
$13.00	$15.00	$17.00
16 in.	18 in.	20 in.
$19.00	$21.00	$23.00

24 in., $30.00.
Geared at both ends.
Dis. 60 and 10 and 5 and 5%.



10 in. Croquet, 18 pound, mower..... $11.00
10 in..... 13.00
12 in..... 15.00
14 in..... 17.00
16 in..... 19.00
18 in..... 21.00
20 in..... 23.00

Dis., 60 13 and 10% and 5% cash f.o.b. New York.



New Excelsior Horse Lawn Mower.

15 in. cut, without shafts or seat..... $85.00
20 " with shaft and seat..... 110.00
35 " " " " " 135.00
40 " " " " " 170.00
Horse boots, per set..... 12.00

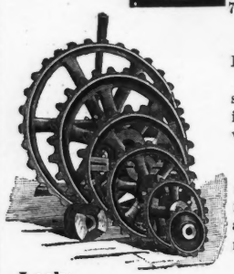
Dis. 50%.

Excelsior Three-Blade Mower and Roller.
8 in., $11.00; 1 in., $13.00; 12 in., 15.00; 14 in., $17.00; 16 in., $19.00; 18 in., $21.00; 20 in., $23.00.
Dis. 60% and 5% cash 30 days f.o.b. New York.

Link Belting.

Price per running foot, net.

No.	Price.	No.	Price
25	$0.13	78	$0.40
32	.13	83	.45
33	.12	85	.50
34	.13	88	.50
35	.14	95	.60
42	.16	103	.75
45	.16	105	.70
51	.20	106	.90
52	.25	107	.80
55	.22	108	.80
57	.24	109	.90
62	.30	114	1.10
66	.30	122	1.50
67	.30	124	1.30
75	.35	146	1.40
77	.35		



Sprocket Wheels.

Bored, Set-Screwed or Key-Seated.

In ordering always state which are the driving, and which the driven wheels.

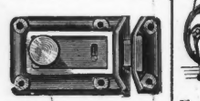
Wheels made in halves split) or with large hubs, and solid webs, can be furnished, for which an additional charge is made.

Discount, 40%.

Locks.

YALE PATENT.
RIM STORE LATCH.

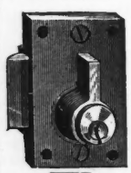
	Per doz.
3 × 5 in., 4 keys	$48.00
2½ × 4 in., 3 keys	39.00



RIM NIGHT LATCH.
Spring lock, 3 keys..... 18.00
Dead lock, 3 keys..... 25.00

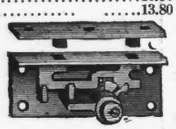
NIGHT LATCH.
Escutcheon..... 39.00
" 36.00

MORTISE DEAD LOCK.
4⅝ × 3½..... 45.00
2¾ × 3½..... 24.00



CUPBOARD LOCKS.
Plated Nose..... 13.20
Brass Nose..... 12.00

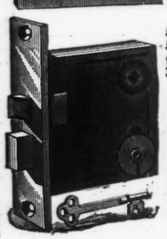
CUPBOARD
Dead Lock..... 10.80
Spring Lock..... 13.80



CHEST LOCKS.
Plated nose..... 19.20
Brass " 18.00

DRAWER LOCK.
Plated nose..... 10.20
Brass " 9.00

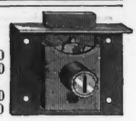
KNOB LOCKS.
5 × 3⅜..... 22.50
5 × 3⅜..... 20.00
4¼ × 3⅜..... 13.25
3½ × 3⅜..... 10.50



STANDARD LATCHES.
Dead locks.
3¾ × 2¾....24.00
2½ × 3⅜....14.00
1¾ × 2⅜....12.00

NIGHT LATCHES.
3¼ × 3⅜ .. 20.00
2½ × 3¾....18.00

DRAWER LOCKS.
2 × 1⅝, two tumblers.
Plated nose..... 7.50
Brass " 6.00
Three tumblers.
Plated nose..... 9.00
Brass " 7.50



RIM FLUSH DRAWER LOCK.

	2 in. diameter. 2 tumblers.	3 tumblers.
Plated nose	7.50	9.00
Brass "	6.00	7.50

BRONZE SPRING PADLOCK.
2 flat steel keys.

In.	
1	
1½	11.00
1¾	12.00
1½	13.50
2¾	14.50
2	16.00
2¼	17.50

Subject to special net prices; no discount.

YALE KEYS.

Machinery—Foot Power.

Engine Lathes

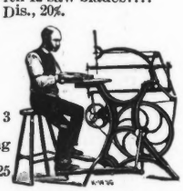
8 in. swing, 20 in. bet. centers, 36 in. bed, 240 lbs. weight, $60.
8 in. swing, 30 in. bet. centers, 46 in. bed, 260 lbs. weight, $70.
8 in. swing, 36 in. bet. centers, 52 in. bed, 280 lbs. weight, $75.

Boxing for export, $2.50 extra; f.o.b. at Cincinnati, 25 % dis.

SAWS AND LATHES

Victor Scroll Saw, Cuts to 3 Inches.

24-inch swing, with 12 saw blades.... Dis., 20%.



Empire Scroll Saw, Cuts to 3 Inches.
24-in. swing, drill and tilting table.
Price, boxed..... $25
Dis., 20%

The Acme Combination Saw.

Hand or steam power.
Adjustable table and gauges.
Price, boxed..... $40
Scroll saw attachment..... 10
Boring attachment..... 10
Moulding attachment..... 10
Dis., 20%.

Paragon Self Feed Rip Saw.
Two changes of speed; three changes of feed.
Price, with one 10 in. saw, $50.00
Dis., 20%.

Diamond Mortising Machine.
Will mortise ¼ to 1 in. wide, 3 in. deep.
" cut tenons ¼ to ¾ thick, 3 in. wide.
Price, with 3 chisels..... $25.00
Dis., 20%.

The "Star" Lathe.
Swings 9 × 25 in., back geared screw cutting.
Feeds in or out, right or left. Adjustable Tail Stock for Tapers.
Price, No. 1..... $75.00
Dis., 20%.

The Crown Lathe.
Swings 8 × 24 in.
Price, boxed, No. 1..... $30.0
Compound slide rest... 10.0
Countershaft..... 10.0
Dis., 20%.

Rival Scroll Saw, with six extra saw blades, twist drill and wrench.
Price.....$10.00
Lathe attachment.....$3.00
Dis., 25%.

Rival.

Challenge.

The Challenge Scroll Saw, for shell, bone wood, or metal.
Nickel Plated, with six extra saws twist drill and wrench.
Boxed.....$20.00
With lathe attachment.....$5.00
Dis. 25%.

Hand Circular Rip Saw.

Cuts 3¾ thick, 19 in. wide.

[Price $50.00.]

Dis.

Scroll and Circular saw Combined
Combined Machines.

Combined circular scroll saw and boring attachment—2 circular saws, 12 assorted scroll saws, boring attachment, and self-centering drill chuck.....$50.00
Combined circular and scroll saw—2 circular and 12 scroll saws.....40.00
Circular saw—1 extra rip and 1 cross-cut saw.....35.00
Counter shaft for steam power.....10.00
Dis., 35%.

Foot Power Former.
$20.00; Knives extra, $1.00 each.
Dis., 35%.

Mortising Machine.
$22.00; Chisels, $1.00 each.
Dis., 35%.

Blind Slat Chisels, 3 set bits, $5.00.
Dis., 20%.

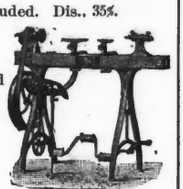
Tenoning Machine,
Price, $25.
Dis., 35%.

Velocipede Scroll Saw,

Without boring attachment.....$20.00
With " " 23.00
1 doz. saw blades, 1 3-16 bit. } Included. Dis., 35%.

Lathe.

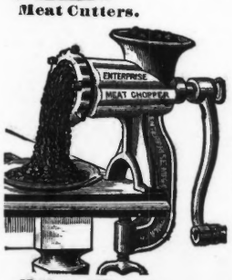
centres, 1 spur, 2 tool rests and sockets, 1 turned face-plate, $35.
Dis., 30%.



Lathe.

One turned face-plate, two pointed and one spur center, two rests, with sockets and plate for hand tools, slide rest wrench, belting, etc., $40.
Dis., 25%.

Meat Cutters.



5, each $2.00
10, " 3.00
22, " 4.00
41, " 50.00
This is a power machine.
Dis., 50%.

Motors (Water).

Size No. 8, for Sewing Machines, etc, $18 each.

No. 9, ⅛ horse-power (30 lbs. pressure), ¼ h. p. (50 lbs.), ½ h. p. 100 lbs.), ¾ h. p. (150 lbs.), 1 h. p. (200 lbs.), $30.
No. 10, ¼ horse-power (30 lbs. pressure), ½ h. p. (50 lbs.), 1 h. p. (100 lbs.), 1½ h. p. (150 lbs.), 2 h. p. (200 lbs.), $50.
No. 10½, ½ horse-power (30 lbs. pressure), 1 h. p. (50 lbs), 2 h. p. (100 lbs.), 3 h. p. (150 lbs.), 4 h. p. (200 lbs.), $75.

No. 11, 1 horse-power (30 lbs. pressure), 1½ h. p. (50 lbs.), 3 h. p. (100 lbs.), 4½ h. p. (150 lbs.), 6 h. p. (200 lbs.), $100.
No. 12, 2 horse-power (30 lbs. pressure), 3 h. p. (50 lbs.), 6 h. p. (100 lbs.), 9 h. p. (150 lbs.), 12 h. p. (200 lbs.), $175.
No. 13, 3 horse-power (30 lbs. pressure), 5 h. p. (50 lbs.), 10 h. p. (100 lbs.), 15 h. p. (150 lbs.), 20 h. p. (200 lbs.), $285.
Dis., 30%.
Governors for 11 and 12, $25 extra; for No. 13, $35 extra.

Price	$120	$160	$200	$250	$300
MINING WHEELS	16	18	20	22	24

Power according to pressure:
3 to 50, 10 to 100, 15 to 150, 20 to 200, 30 to 300 H. P.

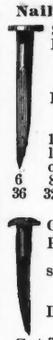
Concentrating Machinery.

Blake Improved Crusher: 10x7, weight 7,500; $410.00.
Blake Improved Crusher: 15x9, weight 9,000; $580.00.
Discount 25%.

Cornish Crusbing Rollers: 20 diameter, 10 face, weight 5,400; $450.00.
Cornisb Crusbing Rollers: 20 diameter, 14 face, weight 6,000; $500.00.
Cornish Crusbing Rollers: 22 diameter, 14 face, weigbt 9,500; $625.00.
Cornish Crusbing Rollers: 27 diameter, 14 face, weigbt 13,000; $750.00.
Cornish Crusbing Rollers: 30 diameter, 14 face, weigbt 15,000, $850.00.
Discount 25%.

Complete Sizing Arrangement, consisting of Revolving Screens of Steel Sbeet and Hydraulic Classifier.
For Concentrator, 25 tons capacity, $250; 50 tons capacity, $350; 75 tons capacity, $450; 100 tons capacity, $600. Discount, 10 per cent.
Automatic working Jig Machines, all complete, wood work included, with slide motion: 2 sieves, $310; 3 sieves, $360; 4 sieves, $450.
With Eccentric Motion, all complete, woodwork included: 1 sieve, $200; 2 sieves, $270; 3 sieves, $320; 4 sieves, $330.
Automatic working Double Jig Machines, all complete, woodwork included: 4 sieves, $210; 6 sieves, $335; 8 sieves, $425. Discount, 25 per cent.
Single Rittinger Percussion Tables, all the iron parts, $350; Double Rittinger Percussion Tables, all the iron parts, $500. Discount, 10 per cent.
Improved Rotary Tables, all the iron parts and pipes, $200. Discount, 25 per cent.

Nails and Tacks.



Swedes.

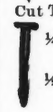
Tacks. Per doz.	½	¾	1	1½	2	2½	3	
½ wt..	35	40	46	50	55	60	65	75
	6	8	10	12	14	16	18	20	24 oz.
	85	1.00	1.20	1.40	1.60	1.75	1.85	2.15	2.55	
Doz. full wt.	½	¾	1	1½	2	2½	3	4
	60	70	80	90	1.00	1.10	1.20	1.40
	6	8	10	12	14	16	18	20	24 oz.
	1.60	1.90	2.30	2.70	3.10	3.40	3.80	4.20	5.00	
lb., bulk	½	¾	1	1½	2	2½	3	4
or paper	1.60	1.25	1.00	80	66	58	52	46
	6	8	10	12	14	16	18	20	24	
	36	32	31	30	29	28	28	28	28	

Discount, 67½, 10 and 2%.

O. H. Swedes.
Price, same as Swedes.
Swedes steel tacks same list price as iron.
Discounts, 72½, 10 and 2%.

Upholsterers.
Price, same as Swedes.

Cut Tacks. Price per dozen ounces.



	1	1½	2	2½	3	4	6	8	10
¼ wt.....	..	..	..	..	..	35	40	45	50	55
	12	14	16	18	20				
	60	70	80	90	1.00				
½ wt.....	1	1½	2	2½	3	4	6	8	10
	45	50	50	55	60	65	70	80	95
	12	14	16	18	20				
	1.10	1.25	1.40	1.55	1.70				
Full wt ..	1	1½	2	2½	3	4	6	8
	80	90	90	1.00	1.10	1.20	1.30	1.50
	10	12	14	16	18	20		
	1.80	2.10	2.40	2.70	3.00	3.30		

Discount, 70, 10 and 2%.

Carpet Tacks, flat and oval heads.

Blued, doz. oz.	4	6	8	10	12	14	16	18	20
¼ wt.	35	40	45	50	55	65	75	85	95
	22	24							
	1.05	1.15							
" ½ wt.	4	6	8	10	12	14	16
	65	70	80	95	1.10	1.25	1.40
	18	20	22	24			
	1.55	1.70	1.85	2.00			
Tinned, doz. ¼ wt.	4	6	8	10	12	14	16
	50	55	60	75	85	1.00	1.10
	18	20	22	24			
	1.20	1.35	1.45	1.60			
Tinned, doz. ½ wt.	4	6	8	10	12	14
	95	1.05	1.15	1.40	1.60	1.85
	16	18	20	22	24	
	2.10	2.35	2.60	2.85	3.10	

Discount, 72½, 10 and 2%.

Finisbing Nails.

Inch....	⅜	3½-8	4-8	4½-8	⅝	5½-8	6-8	7-8	1
Per lb...	48	40	32	28	26	24	22	20	18

1⅛ and larger.
16
Discount, 60, 10 and 2%.

Chair Nails.
Doz. ½ wt.; doz. full wt.; pound B. or P.

Inch..	⅜	3½-8	4-8	4½-8	⅝	5½-8	6-8	7-8
Per lb.	51	43	35	31	29	27	25	23
	1	1⅛						
	21	19						

Discount, 60, 10 and 2%.

Common and patent brads.

incb.	Price per doz. ½ wt.	Price per doz. full wt.	Price per lb. in papers or bulk.
2-8.....	.50	1.00	1.25
3-8.....	.60	1.20	.80
4-8.....	.65	1.30	.58
5-8.....	.72	1.44	.48
6-8.....	.80	1.60	.36
7-8.....	.90	1.80	.30
1.....	1.00	2.00	.26
1½.....	1.12	2.24	.25
1¼.....	1.26	2.52	.24
1½.....	1.82	3.64	.22
1¾.....	2.25	4.50	.20
2.....	2.43	4.86	.18

Dis. 60, 10 and 2%.

Oils. LUBRICATING.

Lubroleine A cylinder oil 50 in. barrels.
Lubroleine D cylinder oil 40 in. barrels.
Lubroleine A machine oil 45 in. barrels.
Lubroleine B machine oil 35 in. barrels.
Lubroleine A engine oil 50 in. barrels.
Lubroleine B engine oil 40 in. barrels.
In cases 5c gal. extra.
Crescent Axle Grease.—Barrels, 3c per lb; 100-lb. kegs 3½c lb.; 2-lb. decorated tins, $12, gross less 5 per cent.
Texas Star Axle Grease.—Barrels, 2½c per lb.; 100 lb kegs, 3c per lb.
See Axle Grease, page 2.

Packing.

Eureka, 75c. per lb. Dis., 40%.
Soapstone—Standard, 8c. per lb.
XX. 11c. per lb.
Crown—No. 1, 23c. per lb.
No. 2, 26c. per lb.
Climax, 9c. per lb. Net.
SELDEN'S PATENT.
For Steam, Air, Water and Ammonia.
With Rubber Core, 60 cents per lb.
Dis., 25 and 5%.
With canvas core, 50 cents per lb.
Dis., 30 and 5%.

Paper, Waxed.

White.	Per ream.
XX, 24 × 36	$2.20
"Sparks' A No. 1 Brand," 24 × 36	2.10
"Progress No. 2," 24 × 36	1.80
"Climax," 24 × 36	1.60
" 24 × 36	1.36
FF, or B. F., 24 × 36	4.90
Colored.	
A, 24 × 36	2.40
B. 24 × 36	2.00
Manilla.	
A, 24 × 36	1.88
"Climax," 24 × 36	1.40

Discount, 5%.

Manilla. No.	Flat bags. Per M.	Sq. bags. Per M.	White. No.	Flat bags. Per M.	Sq. bags. Per M.
¼	$1.25	$1.40	¼	$1.70	$1.90
2½	1.50	1.75	½	2.05	2.25
	1.85	1.85	1	2.60	2.85
3½	2.00	2.30	1½	2.80	3.15
	2.25	2.60	2	3.12	3.45
	2.70	3.10	3	3.70	4.10

Mikado. No.	Per M.	Mikado. No.	Per M.
¼	$1.40	1½	$2.30
½	1.75	2	2.60
1	1.85	3	3.10

Discount, 10%

The Eureka Pen Cleaners.

Single pen cleaner, $3 doz.

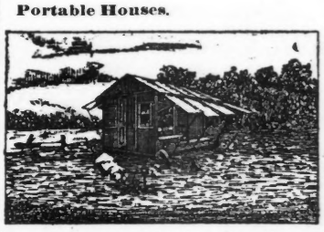
Double pen cleaner, $6 doz.

Pen cleaner with single ink well, $12 doz.

With double ink wells, $18 doz.

40% disc't.

Portable Houses.



Weight. 4[illegible] lbs.
Price, $150.
Closes securely.
Dis., 10%.

F. o. b. Cars Chicago or New York

Size.	Doors.	Windows.	No. porch.	End porch	Side porch.
7 × 9	1	2	$64.00	$71.00	$73.00
7 × 12	1	2	75.00	82.00	87.60
7 × 16	1	2	90.00	97.00	106.00
7 × 19	2	4	117 00	124.00	136.00
10 × 9	1	2	70.00	80.00	79.00
10 × 12	1	2	92.00	102.00	104.00
10 × 16	1	4	108.00	118.00	124.00
10 × 19	2	4	134.00	144.00	153.00
10 × 26	2	4	172.00	182.00	198.00
10 × 32	2	6	203.00	213.00	235.00
12 × 12	1	2	102.00	114.00	114.00
12 × 1 ·	2	4	138.00	150.00	154.00
12 × 19	2	4	160.00	172.00	179.00
12 × 26	2	4	193.00	205.00	219.00
12 × 32	2	6	245.00	257.00	277.00

Post Hole Diggers.

Little Giant..... $36.00 doz 11 cu.ft.
Hercules..... 30.00 " " " "
New Champion.... 20.00 " " " "
Scheidler..... 36.00 " " "

Dis. 40 .o.b. New York or Boston.

Presses.

41, 42, 43, 44, 45.

Combined press for cutting, forming, horning and seaming.

Particulars of flat front presses, including beds, slides, bolsters, plates, etc.

Prices are net, delivered on steamers in New York, including insurance, etc.

	41	42	43	44	45
Nominal size of press					
Price, including et ceteras	$140	$220	$300	$420	$700
Weight, about...lbs	600	1050	1900	3600	7200
Greatest diameter that can be wired...ins	5	7	10	14	20
Greatest depth that can be wired...ins	8	10	13	16½	20
Hole through bed—circle intersecting...ins	4½	6	8½	12	17
Hole through back—width...ins	8	9½	12	15½	20¼
Width between die clamps—clear...ins	8	11	15	20	27
Distance back from center of slide bar...ins	4½	5½	7	9	12
Height to slide-bar, when up..ins	5¼	6½	7½	8½	9
Stroke of slide-bar...ins	1	1¼	1½	1¾	2
Adjustment of slide-bar...ins	1	1¼	1½	1¾	
Diameter of fly-wheel...ins	20	26	32	38	44
Width of fly-wheel...ins	3	4	5	6	7
Weight of fly-wheel, about...lbs	125	250	420	725	1100
Speed per minute, about...rev	120	110	100	90	80
Cubic feet boxed, about	30	40	50	60	70

Printers' Sundries.

Wood rules, 12 cents per yard.
Wood rules, on end wood, 15 cents per foot.

EUREKA STAND.

12 full cases.

rice without cases...$12.00
oxing and cartage... 1.25

SHOOTING STICKS.

Each.
No. 1, 75c.
No. 2, $1.
No. 4, 45c., black.
No. 4, 60c., bright.
No. 5, 60c., black.
No. 5, 75c., bright.

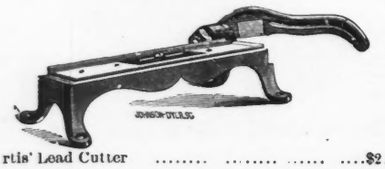
GAUGE PINS—ALL SIZES.

Brass, 40c. doz. | Steel, 60c. doz.
Wire, 25c. doz. | Golden, 40c. doz.

MITRE BOXES.

Regular size, 2 in., 50c. each.
Extra size, 3½ in., 75c. each.

LEAD CUTTER.

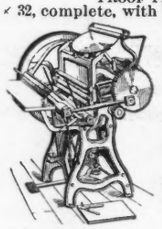


rtis' Lead Cutter ... $2.00

PROOF PRESS, "OUR OWN."

× 32, complete, with Brayer... $28.00

THE GLOBE PRESS.



8 x 12 in. inside clear, with throw-off... $150.00
9 x 13 in. inside clear, with throw-off... 175.00
10 x 15 in. inside clear, with throw-off... 200.00
11 x 17 in. inside clear, with throw-off... 250.00
Steam fixtures... 15.00
Fountain... 12.50

Dis. 20%.

THE "LIBERTY" JOB PRINTING PRESS

Size of chase.
No. 2 — 7 × 11... $200
2a— 9 × 13... 250
3 —10 × 15... 300
3a—11 × 17... 350
4 —13 × 19... 400
5 —14½ × 22... 500

Dis., 12½ and 5%.

Two sizes built extra strong for boxmakers, embossing, etc.
No. 3a—11 × 17... $375
4 —13 × 19... 425

Dis., 12 and 5%.

Fountains, either size, $25 extra, if ordered with press.
Steam fixtures, either size, $15 extra.

THE AMERICAN CARD AND BILL HEAD PRESS.

No. 5—4 × 6... $10
7—6 × 9... 30
8—8 × 12... 60

Dis., 20% and 5%.

THE "LIBERTY" PAPER CUTTER.

Cuts 30 inches... $140.00
Extra knife... 18.80

Dis., 12½ and 5%.

CASE STANDS AND RACKS.

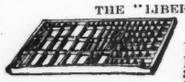
Stands.
Single, without racks ..$3.75
" with racks for 8 full cases... 4.00
Single, with racks for 10 full cases... 4.20
Single, with racks for 12 full cases... 4.50
Single, with racks for 14 full cases... 4.75
Double, without racks... 4.25
" with racks for 8 full cases... 4.50
Double, with racks for 16 full cases, and gal. rest 6.25
Double, with racks for 20 full cases and gal. rest.... 6.50
" " " " 24 " " " 6.75
" " " " 24 2/3 cases ... 5.25
" " " " 8 full and 8 2/3 cases ... 5.00
" " " " 8 " " 8 2/3 " ... 5.25
" " " " 10 " " 12 2/3 " ... 5.55
" " " " 12 " " 16 2/3 " ... 5.70
" " " " 12 " " 16 3/4 " ... 6.05
Stands with closed ends, extra... 2.00
Extra slides for stands, each... .05

GALLEY RACKS.

From $3 up.

LEAD CUTTERS,
From $2 up.
Dis., 20 and 5%.

THE "LIBERTY" TYPE CASES.



Name.	Outside Measurements.
Full size...	32¼x16½x1 9-16
Rooker size...	28½x14¼x1 9-16
¾ size...	26x16½x1⅝
⅔ size...	22⅝x16½x1⅝
Enlarged size...	32¼x23x2 3-16
Wood type " ...	32¼x23x1 9-16
Mammoth " ...	44x23x1 9-16

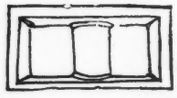
Cabinet case sides extend 1½ to 3 inches. In ordering cabinet cases, state whether high or low fonts are wanted.

30 and 5%.

THE "LIBERTY" STEEL SHOOTING STICKS.

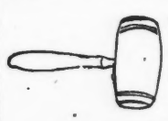
Bright, $1 each.
Nickelplated, $1.25 each.
Dis., 40%.

STANDARD METAL FURNITURE



25c. a pound.
In fonts of 25, 50, 75 and 100 lbs.
Dis., 15%.

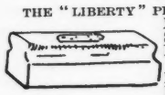
THE "LIBERTY" MALLETS.



Hickory, small... $ .20
" medium... .25
" large... .30
" iron bound... 1.00
Lignum Vitæ, No. 4... .30
" " No. 3... .40
" " No. 2... .50
" " No. 1... .70

Dis. 20 and 5%.

THE "LIBERTY" PLANERS AND PROOF PLANERS.



Midget planer... 10c.
Small Maple... 20c.
Large " ... 25c.
" b'k'd with leather... 30c.
Midget " " " ... 12c.
Proof planer, faced with cloth, 50c.

Dis., 40%.

COMPOSING STICKS.

GROVER'S PATENT AND UNION.

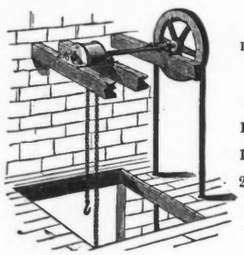
	Screw or News.
6 in.	1.10... $ .90
8 "	1.20... 1.10
10 "	1.40... 1.20
12 "	1.60... 1.40
14 "	1.80... 1.60
16 "	2.00... 1.80
18 "	2.20... 2.00
20 "	2.40... 2.20

Compo ing rules, 14 ems pica and under, 25 cents.

Pulley Blocks.

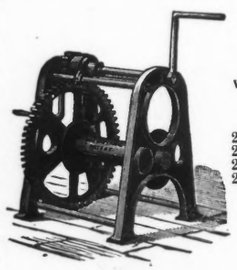
WESTON DIRECT.

	Each.
⅛ ton...	$10
¼ ton...	13
½ ton...	15
1 ton...	20
1½ tons...	25
2 tons...	30
3 tons...	40
Geared.	
1 ton...	34
2 tons...	55
3 tons...	60
4 tons...	80
5 tons...	110
6 tons...	150
8 tons...	210
10 tons...	250



DOUBLE LIFT HOISTS FOR HATCHWAYS, ETC.

500 lbs... $25.00
1000 " ... 50.00
1500 " ... 65.00
2000 " ... 80.00
500 " ... 30.00



WESTON CRAB SAFETY BRAKE, HANDLES CANNOT FLY BACK.

	Each.
21...	$35.00
22...	45.00
23...	65.00
25...	100.00

Pumps.

Fig. 199. Fig. 202½. Fig. 205.

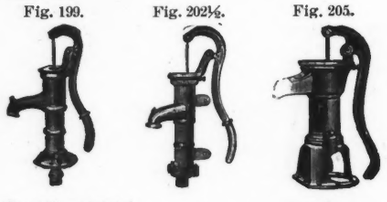


Fig. 199 and 202½.

	No 0	1	2	3	4	5	6	8
Iron	$3.50	$4.00	$4.50	$5.00	$5.50	$6.50	$8.00	$10.00
	14/4	16/8	18/9	20/10	22/11	27/1	33/4	41/5
	$	$	$	$	$	$	$	$
Brass cyl	5.50	6.00	7.00	8.00	10.00	13.00	18.00	25.00
	22/11	25/0	29/2	33/4	41/8	54/2	75/0	104/2
	$	$	$	$	$	$	$	$
Brass	7.75	8.75	10 50	14.00	17.00	21.00	27.00	35.00
	32/3½	36/5½	43/9	58/4	70/10	87/6	112/6	145/10

Iron, 65%; Brass and Brass Cyl., 60%.

Fig. 205.	No. 1	2	3	4
	$4.25	$4.75	$5.25	$5.75
65%.	17/8½	19/9½	21/40½	23/11½

Fig. 390. Fig. 394. Fig. 442.

Fig. 390—Hand Force.

Diam.,	2 in.	2½ in.	3 in.	3½ in.	4 in.
Iron	$8.00	$9.50	$11.00	$17.00	$18.00
	33/4	39/7	45/10	70/10	75/
Brass cylinder	$13.50	$14.00	$15,00	$24.00	$30.00
	56/3	58/4	62/6	100/	125/
Brass	$20.00	$21.00	$32.00	$38.00	$47.00
	83/4	87/6	133/4	158/4	195/10

Iron 55%; Brass and Brass Cylinder, 50%.

Fig. 394—Hand Force Pump.

Diam.,	2½ in.	3 in.	3½ in.	4 in.
Iron	$12.50	$14 50	$21.50	$22.50
	52/1	60/5	89/7	93/9
Brass cylinder	$18.00	$19.50	$29.50	$35.50
	75/	81/3	122/11	147/11

Iron, 55%; Brass Cylindor, 50%.

Fig. 442.	No. 0	2	3	4	5	6
Iron	$18.00	$19.00	$20.00	$22.00	$26.00	$28.50
	75/	79/2	83/4	91/8	108/4	118/9
Brass cyl	$27.00	$28.00	$29.00	$30.00	$33.00	$37.50
	112/6	116/8	120/10	125/	137/6	156/3
Brass	$35.00	$37.00	$40.00	$42.00	$49.00	$56.00
	145/10	154/2	166/8	175/	204/2	233/4

Ison, 50%; Brass and Brass Cylinder, 45%.

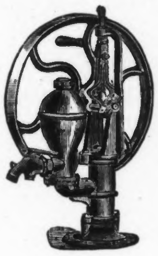


Fig. 898.

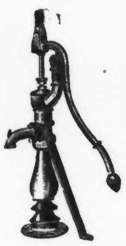


Fig. 236.

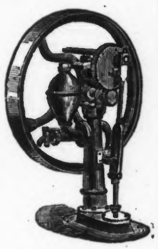


Fig. 888.

Fig. 898—Suction and Force Pump, with Crank Shaft and Fly-Wheel.

No. 2—$20.50, 85/5 No. 4—$22.50, 93/9. 50%.

Fig. 236.

Standard, complete, 1½-in. pipe, $10.00, 41/8. 55%.

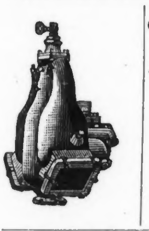
Fig. 888—Combined Hand and Power Pumping Apparatus, with Gear and Pinion.

No. 1—$70.00, 291/8. 40%.

For Cylinders, see catalogue or application.

Pulsometer Pump.

No.	Height.	Space occupied. In.	Size of steam pipe	Size of suction pipe.	Size of discharge pipe.
1	14 in.	9 × 7	⅛ in.	1 in.	1 in.
2	20 "	15 × 12	¼ "	1½ "	1½ "
3	23 "	1 × 14	⅜ "	2 "	2 "
4	30 "	21 × 16	½ "	2½ "	2½ "
5	34 "	24 × 20	½ "	3 "	3 "
6	40 "	28 × 22	¾ "	3½ "	3½ "
7	43 "	30 × 24	¾ "	4 "	4 "
8	54 "	33 × 29	1 "	5 "	5 "
9	61 "	37 × 31	1½ "	7 "	6 "
10	80 "	52 × 45	2 "	8 "	8 "



Gal. per minute.	Weight.	Net price.	Size boiler.
10	35	$50	....
20	125	75	3
60	210	100	5
100	355	150	6
175	475	175	8
300	695	225	12
425	850	275	15
700	1,600	400	20
1,000	2,000	500	3[illegible]
2,000	5,000	1,000	40

Rat Traps.

1 doz. in box.

1 gross n case.

$30 per gross.

Dis. 50 and 10%.

Roofing.

CORRUGATED IRON.
2½ inch corrugations.

Gauge.	Per square
No. 18, painted red	$9.10
No. 20, " "	7.60
No. 22, " "	6.50
No. 24, " "	5.35
No. 26, " "	4.65
No. 27, " "	4.35
No. 28, " "	4.00
No. 18, galvanized	13.30
No. 20, "	10.60
No. 22, "	9.10
No. 24,	7.45
No. 26,, galvanized	7.05
No. 27 "	6.95
No. 28 "	6.75

Dis., 10%. F. o. b. N. Y.

Railroad Dumping Cars and Carts.

Cars.	Gauge.	Cap.	Net	Cap.	Net	Cap.	Ne
Side Dumping	24"	1 c. y.	$55	2 c. y.	$65	3 c. y.	$75*
End "	"	"	55	"	65	"	75*
Revolving "	"	"	70	"	80	"	90*
Bottom "	"	"	80	"	90	"	100*
Tunnel.	"	"	55	"	65	"	75*
Mine	"	"	50	"	60	"	70*
Plantation	30"		43				
Logging.	36"		170				
"	4' 8½"		185				
Hand	36"		45				
"	4' 8½"		50				
Push	36"		40				
"	4' 8½"		45				
R.R. Construction	36"		60				
"	4' 8½"		65				
Carts.							
Plantation and Railroad			45 to 75				
Wagons.							
McEwen Patent Dumping		1 "	175	1½ "	200		

*These cars built of any gauge from 18" to 56½" and of any capacity from ½ to 6 cu. yd.

Sash Chains.

No. A. "Giant" metal, 15c. ft., wts. not over 125 lbs.

No. 1. "Giant" metal, 12c. p. ft., wts. not over 75 lbs.

No. 2. "Giant" metal, 10c. pr. ft., wts. not over 40 lbs.

No. 0. "Giant" metal, 8c. pr. ft., wts. not over 25 lbs.

No. 1. Red metal, 10c. pr. ft., wts. not over 40 lbs.

No. 2. Red metal, 8c. pr. ft., wts. not over 30 lbs.

No. 0. Red metal, 6c. pr. ft. wts. not over 15 lbs.

No. 1. Steel, 8c. pr. ft., wts. not 75 lbs.

No. 2. Steel, 6c. pr. ft., wts. not over 30 lbs.

No. 0. Steel, 4c. pr ft., wts. not over 15 lbs.

No. 1. Steel, black enameled, 9c. pr. ft., wts. not over 75 lbs.

No. 2. Steel, black enameled, 7c. pr. ft., wts. not over 30 lbs.

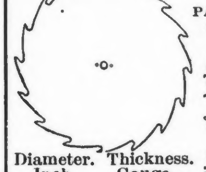
No. 0. Steel, black ena'd. 5c. pr. ft., wts. not over 15 lbs.

Fastenings for hanging a window of 2 sashes for Nos. 1 and 2 chains, consisting of 4 hooks, 4 rings, 4 sash irons, a set, 18c. per set.

Fastenings for hanging a window of 2 sashes for No. 0 chains, 14c. per set.

Dis. on "Giant" metal chain	40	10	10%	
" " Red metal chain	40	10	10	10%
" " Steel " "	40	10	10	10%
" " Fastenings	40	10	10%	

Saws.



PATENT GROUND AND TEMPERED SOLID TOOTH CIRCULAR SAWS.

Diameter. Inch.	Thickness. Gauge.	Size of hole—Inch.	Price each.	Extra for each additional gauge, heavier.	Prices for beveling new saws (grinding or beveling old saws, extra).—Per gauge.
1	24	⅜	$0.50	$0.01	$0.06
2	23	⅜	.60	.01½	.08
3	21	½	.70	.02½	.10
4	19	¾	.90	.03	.14
6	18	¾	1.30	.05	.18
8	18	⅞	1.75	.08	.22
10	16	1	2.30	.12	.28
12	15	1	3.00	.17	.35
16	14	1⅛	5.50	.25	.50
20	13	1 5-16	8.50	.35	.70
24	11	1⅜	12.00	.55	.90
28	10	1½	16.00	.80	1.20
32	10	1⅝	20.00	1.00	1.40
36	9	1⅝	25.50	1.40	1.70
40	9	2	35.00	2.00	2.00
44	8	2	52.50	3.00	2.40
48	8	2	70.00	4.00	2.80
52	7	2	90.00	5.00	3.25
56	7	2	115.00	7.00	3.75
60	6	2	145.00	9.00	4.25
64	6	2	180.00	12.00	5.00
68	5	2	225.00	18.00	5.75
72	5	2	290.00	24.00	6.55
76	5	2	375.00	30.00	7.50

Circular saws to cut metal or ivory, 50% advance. No extra charge for saws one gauge thicker than list. Circular saws beveled one gauge without extra charge up to 44 inches; 44 inches and larger, beveled two gauges without extra charge. Dis., 45%.

Hand--London Spring Steel four brass screws.
26 in. $30.00 per doz. Dis., 20%.

Hand--Skew Back Saw, Apple Handle; 5 screw.
26 in. $22.00 per doz.

Hand--Grained Blade, Beec handle, polished edge: 4 screws.
26 in. $20.00 per doz.
Dis,, 20%.

One man Cross-Cut—Supplementary Handle.

	3 ft.	3½ ft.	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.
Great American,	$2.75	$3.00	$3.50	$4.00	$4.50	$5.00	$5.50
Champion Tooth,	2.35	2.60	3.15	3.50	3.85	4.25	4.65

One man cross cut handles, $4.50 per doz. Dis., 45%.

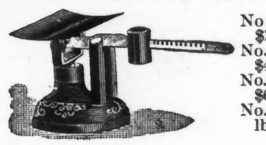
Saw Set.

Adjustable ball and socket saw clamp,

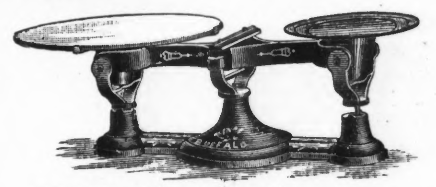
Japanned, $14 per doz.

Scales.—Discount on scales, 50, 10 and 5 per cent.

Postal scales.



No 1, capacity ½ to 9 oz. $3.00.
No. 2, capacity ½ to 12 oz. $4.00.
No. 3, capacity ½ to 34 oz. $6.00
No. 4, capacity ½ oz. to lbs., $8.00



Butter Trip Scales, slab, weights and scoop.

No. 7, ½ oz. to 10 lbs., 10 in. slab,	without side beam	$10.50
" " " " " "	with "	11.50
" 8 " " 20 lbs., 12 in. "	without "	12.50
" " " " " "	" "	13.50

Tea Scales—All Seamless Scoops.

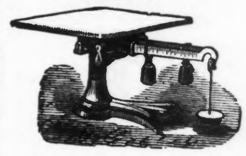
Capacity.	Scoop.		Capacity.	Scoop.	
¼ oz. to 10 lbs.	Tin	$8.00	¼ oz. to 10 lbs.	Brass	9.00

Druggists.

Capacity.	Scoop.		Capacity.	Scoop.	
1-16 oz. to 8 lbs.	Tin	$10.00	1-16 oz. to 8 lbs.	Brass	$11.00

Even balance trip scales, seamless scoop, with weights.

No. 1, capacity ½ oz. to 2 lbs., tin scoop, $5.50 brass scoop, $6.50.
No. 2, capacity ½ oz. to 4 lbs., tin scoop, $6.50; brass scoop, $7.50.
No. 2½, capacity ½ oz. to 18 lbs, tin scoop, $11; brass scoop, $12.50.



Counter.

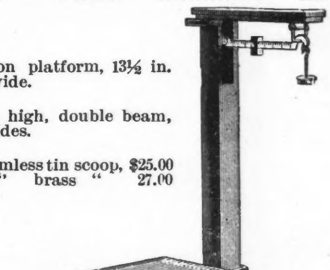
Capacity.	Scoop.		Capacity.	Scoop.	
½ oz. to 36 lbs.	Tin	$10.00	½ oz. to 36 lbs.	Brass	$12.00

Grocer.

Capacity.	Scoop.		Capacity.	Scoop.	
½ oz. to 62 lbs.	Tin	$12.00	½ oz. to 62 lbs.	Brass	$14.00

Meat or Butter Scales, with Slab.

½ oz. to 62 lbs., with Single Beam..................$14.00
" " " " Double " 15.00



Patent Boston platform, 13½ in. long by 10 in. wide.

Pillar, 18 in. high, double beam, marked both sides.

With large seamless tin scoop, $25.00
" " " brass " 27.00

Platform scales.-Without Wheels.

No.	Capacity.	Platform.	Price.
	400 lbs.	21½ by 15 inches.	$23.00
	600 lbs.	25 by 16 "	30.00
	800 lbs.	25 by 17 "	34.00
	1,000 lbs.	26 by 17 "	39.00
	1,200 lbs.	28 by 20 "	45.00
	1,600 lbs.	29 by 21 "	55.00
	2,000 lbs.	32 by 23 "	70.00

With Wheels.

No.	Capacity.	Platform.	Price.
1	400 lbs.	21½ by 15 inches.	$26.00
2	600 lbs.	25 by 16 "	33.00
3	800 lbs.	25 by 17 "	38.00
4	1,000 lbs.	26 by 17 "	43.00
5	1,200 lbs.	28 by 20 "	49.00
6	1,600 lbs.	29 by 21 "	60.00
7	2,000 lbs.	32 by 23 "	75.00

Brass sliding poise at same price if so specified in order

No.	With Wheels and Drop Lever. Capacity.	Platform.	Price.
4	1,000 lbs.	26 by 17 inches.	$51.00
5	1,200 lbs.	28 by 20 "	59.00
6	1,600 lbs.	29 by 21 "	70.00
7	2,000 lbs.	32 by 23 "	82.00
8	2,500 lbs.	33¼ by 24¾ "	94.00
9	3 000 lbs.	38 by 30 "	125.00

Shears. The Patent "Eureka

No. 1 cuts round metal up to ¼ in. steel to ⅛, $12.

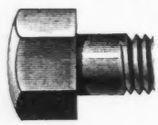
No. 2 cuts round metal up to ⅛ in., steel to 3-16, $20.

Discount, 25%.

Steel Wire Mats.

Galvanized Steel Wire.			(Style A) "Hartman Flexible."
No. 2	Size	16x24.	Each . $1.50
No. 3.	"	18x30.	" 2.00
No. 4.	"	22x36.	" 3.00
No. 5.	"	26x48.	" 4.50
No. 6.	"	30x48.	" 5.25
No. 7.	"	36x48.	" ... 6.50
No 8.	"	36x60.	" 8.00
No. 9.	"	36x72.	" 10.00

Brass mats "list" double the price of galvanized Style A) for similar sizes.
3 doz. lots, dis. 33⅓%.
6 doz. lots, dis. 40%.
12 doz. lots. dis. 40 and 5%.



Screws.

STEEL SCREWS ADD 50% TO LIST.
Prices are per 100.
Hexagon Cap Screws.
Heads on Steam-tight Screws not polished, unless so ordered. Can make these 12 inches long.

Diam. head.	7-16	½	9-16	⅝	¾	13-16	⅞	1	1⅛	1¼	1⅜
Length head.	¼	5-16	⅜	7-16	½	9-16	⅝	¾	⅞	1	1⅛
Diam. screw.	¼	5-16	⅜	7-16	½	9-16	⅝	¾	⅞		1⅛
¾	3.00	3.25	3.75	4.40	5.50	7.00					
1	3.25	3.50	4.00	4.70	5.70	7.00	9.50				
1¼	3.50	3.75	4.25	5.00	6.00	7.50	9.50	12.20			
1½	3.75	4.00	4.50	5.30	6.30	8.00	10.00	12.20	16.00		
1¾	4.00	4.25	4.75	5.60	6.60	8.50	10.60	12.80	16.60	21.20	
2	4.25	4.60	5.05	5.95	7.00	9.10	11.20	13.40	17.20	22.30	29.00
2¼		5.00	5.40	6.35	7.50	9.70	11.90	14.10	17.90	23.60	30.50
2½			5.80	6.80	8.00	10.40	12.70	14.90	18.80	25.10	32.30
2¾				7.30	8.60	11.20	13.60	15.90	20.00	26.90	34.40
3					9.30	12.10	14.70	17.00	21.80	29.00	37.00
Thread to in.	20	18	16	14	12	12	11	10	9	8	7
Add for each ¼ in.	30	40	50	60	80	1.00	1.30	1.60	2.00	2.40	3.00

Dis., heads ground, 60 and 10%; dis., heads black, 60, 10 and 5%; dis., heads extra finish, 50 and 10%; dis., heads case-hardened, 55% and 10 dis.; dis., heads polished after hardening. 45 and 10%.

SQUARE CAP SCREWS.

Diam. head.	⅜	7-16	½	9-16	⅝	11/16	¾	⅞	1⅛	1¼	1⅜
Length head.	¼	5-16	⅜	7-16	½	9-16	⅝	¾	⅞	1	1⅛
Diam screw.	¼	5-16	⅜	7-16	½	9-16	⅝	¾	⅞	1	1⅛
¾	2.40	2.75	3.20	3.80	4.40	5.75					
1	2.60	2.95	3.40	4.00	4.70	5.75	7.70				
1¼	2.75	3.10	3.65	4.20	4.95	6.05	7.70	10.50			
1½	2.90	3.30	3.85	4.45	5.25	6.35	8.25	10.50	14.00		
1¾	3.05	3.50	4.10	4.70	5.55	6.65	8.80	11.10	14.80	18.00	
2	3.25	3.70	4.35	4.95	5.90	7.05	9.40	11.80	15.70	19.00	22.50
2¼		4.00	4.65	5.25	6.30	7.55	10.10	12.60	16.70	20.20	24.00
2½			5.00	5.60	6.75	8.15	10.90	13.50	17.90	21.50	25.80
2¾				6.00	7.25	8.85	11.80	14.60	19.10	23.10	27.90
3					7.80	9.65	12.80	15.90	20.60	25.00	30.50
Thread to in.	20	18	16	14	12	12	11	10	9	8	7
Add for each ¼ in.	25	35	45	55	65	90	1 20	1.50	1.80	2.30	3.00

Dis., heads ground, 65 and 10%; dis., heads black, 65,s and 5%; dis., heads extra finish, 55 and 10%; dis., head case hardened, 60 and 10%; dis., heads polished-bard ened, 50 and 10%.

MILLED HEADS, COLLAR SCREWS
25 and 10% discount.

Diameter of Collar.	¼	11/32	7/16	½	5/8	11/16	13/16	15/16	1	1¼
Diameter of Screw.	⅛	3/16	¼	5/16	⅜	7/16	½	9/16	⅝	¾
Length under Hea to Point, ¾	2.50	2.80	3.10	3.75	4.40	5.00	6.25			
1	2.80	3.10	3.40	4.05	4.70	5.30	6.60	8.25		
1¼	3.10	3.40	3.70	4.35	5.00	5.60	7.00	8.60	11.25	
1½	3.45	3.70	4 00	4.70	5.30	5.95	7.40	9.00	11.90	15.00
1¾		4.05	4.35	5.05	5.65	6.35	7.80	9.45	12.60	15.60
2			4.70	5.45	6.25	6.85	8.40	10.00	13.35	16.25
2¼				5.95	6.85	7.40	9.00	10.60	14.15	17.10
2½					7.50	8.10	9.60	11.25	15.00	18.00
2¾						8.75	10.30	11.90	15.90	19.00
3							11.00	12.60	16.85	20.00
Threads to inch	40	30	20	18	16	14	12 or 13	12	11	10
Add for each ¼ inch	30	40	50	60	80	1.00	1.30	1.60	2.00	2.40

MILLED FROM SOLID BAR.

Fillister.				Bevel Head.				Button Head	
Diam. Head	3-16	¼	⅜	7-16	9-16	⅝	¾	13-16	⅞	1
Length Head	⅛	3-16	¼	5-16	⅜	7-16	½	9-16	⅝	¾
Diam. Screw	⅛	3-16	¼	5-16	⅜	7-16	½	9-16	⅝	¾
¾	2.00	2.25	2.50	3.00	3.50	4.00	5.00			
1	2 25	2.50	2.75	3.25	3.75	4.25	5.30	6.60		
1¼	2.50	2.75	3.00	3.50	4.00	4.50	5.60	6.90	9.00	
1½	2.75	3.00	3.25	3.75	4.25	4.75	5.90	7.20	9.50	12.00
1¾		3.25	3.50	4.00	4.50	5.00	6.20	7.50	10.00	12.50
2			3.75	4.35	5.00	5.50	6.75	8.00	10.75	13.00
2¼				4.75	5.50	6.00	7.25	8.50	11.50	13.75
2½					6.00	6.50	7.75	9.00	12.00	14.50
2¾						7.00	8.25	9.50	12.75	15 25
3							8.75	10.00	13.50	16.00
Threads to inch.	40	30	20	18	16	14	12	12	11	10

Length under Head.

Head on Bevel and Button Head Screws, 1-16 larger in diameter than above specifications.
Price, according to size of head.
Discount, 50 and 10%; case hardened, 45 and 10%; case hardened and polished, 35 and 10%.

Spades and Shovels.

JONES

Patent plain black solid cast-steel shovels and spades.

Patent solid steel shovel.

No.			Per Doz. Black.	Per Doz. Pol's'p
20.	D. or long handle sq.-point shovels.	2	$15.50	$16.50
21.	" " " " "	3	16.25	17.25
22.	" " " " "	4	17.00	18.50
23.	" " " " "	6	17.50	19.00
24.	" " " " charcoal.	8	20.50	22.00

Pt. plain back solid cast steel shovel.

25.	D or long handle round-point shovels.	3	16. 5	17.25

Patent solid cast steel spade.

28.	D or long handle spades	2	6.00	17.0
29.	" " " "	3	16.50	18.0

Patent plain back solid cast steel.

26.	Long round joint shovel No. 2		...15.50	16.50
27.	" square " " No. 2		.....15.50	16.50
32.	D. handle square-point molders' shovels	2	.....	17.00
33.	D. handle square point railroad, extra heavy	2	15.75	
34.	D. handle round point railroad, extra heavy	3	16.50	
35.	L. handle round point shovel, with foot cap	2	16.00	17.00

GRAY'S CAST.

Patent plain back solid-steel shovels and spades.

50.	D. or long handle sq.-point shovels.	2	$12.00	$13.00
51.	" " " " "	3	12.75	14.00
52.	" " " round point "	3	12.75	14.00
55.	D. handle spades	2	12.25	13.25
56.	" " "	3	13.00	14.25

Patent solid corrugated cast steel scoop.

SCOOPS.

Jones' patent plain back solid corrugated cast steel scoops.

90.	D. or long handle solid cast steel	2	$13.50	$14.50
91.	" " " " "	4	14.50	15.50
91½.	" " " "	6	16.50	17.50

Jones' riveted scoops.

92.	Cast steel D. or long handle	2	13.50	14.50
93.	" " " "	4	14.50	15.50
94.	" " " "	6	16.50	17.50
			Half polished.	
95.	" " "	8		$20.00
96.	" " "	10		22.50
97.	" " " Locomotive or coal (heavy)	6	17.50	
98.	" Long or D. handle for salt heavy)		17.50	
99.	" D. handle flour and house furnace		10.50	
100.	" D. handle r'd-pt. for coal (extra heavy)	6	20.00	
101.	" ash pit, furnace L. handle	2		Polished. 13.00
102.	" " " 32 in. D.	2		13.50
103.	" " " 42 " iron D. handle	2		14.00

Ditching spade.

124.	D handle ditching (flat)	....18.00	19.50
125.	D handle post hole (concave)	....18.00	19.50
126.	D handle Alcock (for clay and brick)	....16.00	17.00

Discount on shovels and spades, 50 and 10.
" " scoops, 50.
Boxed f.o.b. New York, Boston or Montreal.
The solid shovels, spades and scoops are made from cast steel bars by a recently patented process, the blade and strap being in one piece, not welded. All goods are American patterns.

Stencil Inks.

Black.

No.	Per can.	Per cake.	No.	Per can.	Per cake.
1.	7 cents	3 cents	3.	20 cents	12 cents
2.	10 "	5 "	4.	30 "	20 "

Blue.

	10 cents	6 cents	3.	30 cents.	22 cents
	15 "	9 "	4.	50 "	40 "

Red and Green.

1.	12 cents	8 cents	3.	50 cents.	42 cents
2.	20 "	15 "	4.	90 "	80 "

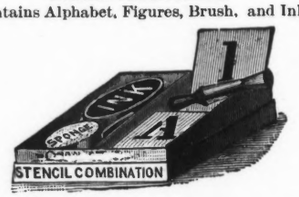
Per doz. cans or cakes, net, per gross, 20% less.

Indelible Ink.

Small bottles per	100	$2.75
" "	500	12.00
" "	1,000	20.00

STENCIL COMBINATIONS.

Contains Alphabet, Figures, Brush, and Ink.



½ inch, per doz		$4.80
¾ " "		5.40
1 " "		5.40
1¼ " "		7 50
1½ " "		8.40
1¾ " "		10.00
2 " "		10.00
2½ " "		15.00

Dis., 20%.

Tools. ARTISANS.

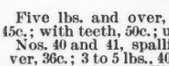
Chisel (Mason).

Stone, 5 and 8c. lb., net.

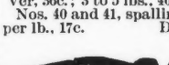
Mill Picks.
Cast steel. 2 to 3 lb. $22 per doz.
Dis., 60 and 5%.

Stone Axes, Cast Steel.
All sizes, 50c. per lb.
Dis., 70 and 10%.

Five lbs. and over, 40c.; with teeth, 45c.; 3 to 5 lbs., 45c.; with teeth, 50c.; under 3 lbs., 50c.; with teeth, 55c.
Nos. 40 and 41, spalling or stone hammer, 5 lbs. and ver, 36c.; 3 to 5 lbs., 40c.; under 3 lbs., 45c. per lb.
Nos. 40 and 41, spalling hammers, 9 to 20 lbs., steel face per lb., 17c. Dis., 70 and 10%



Ship or Top Mauls, Steel Face
4 to 8 lbs., 28c. per lb.
Dis., 50, 10 and 5%.



Steel Wedges, wood, 1s qual., 5c. lb.

Cooper Frees.

8 in.	doz.	$13.0
10 in.	doz.	13.5
12 in.	doz.	14.00
14 in.	doz.	14.56
16 in.	doz.	15.00

Discount, 60%.

d: ys, 2% 10 days.

Vise.

No 1. Solid Box Vises.

		Each.
No. 25, 3⅜ in.	Jaw	$12.00
" 30, 3½	"	11.00
" 55, 3⅞	"	10.00
" 40, 4	"	10.50
" 45, 4¼	"	11.00
" 50, 4½	"	11.50
" 55, 4½	"	12.00
" 60, 4½	"	13.00
" 65, 4¾	"	14.00
" 70, 5	"	15.00
" 75, 5	"	16.00
" 80, 5¼	"	17.50
" 85, 5¼	"	18.50
" 90, 5½	"	20.00
" 95, 5¾	"	21.00
" 100, 6	"	22.00
" 105, 6	"	23.00
" 110, 6¼	"	24.00
" 115, 6¼	"	25.00
" 120, 6½	"	26.00
" 125, 6½	"	27.50
" 130, 6¾	"	29.00

		Each.
No. 135, 6¾ in.	Jaw	$31.50
" 140, 7	"	33.00
" 145, 7	"	35.00
" 150, 7	"	36.00
" 160, 7¼	"	41.50
" 170, 7¼ in.	Jaw	$44.50
" 180, 8	"	47.00
" 190, 8	"	53.00
" 200, 8	"	56.00

Dis., 60 and 10%.

MINERS.

Adze Eye Coal Picks.
Same list and dis. as No. 16.

Anthracite Coal Picks.
Same list and dis. as No. 16.

Stone Picks, per doz.
No. 18, 6 to 7 lbs...$16.50.
No. 18, 7 to 8 lbs... 17.50.
No. 18, 8 to 9 lbs... 18.50.
Dis., 60 and 10%.

Coal Picks.

No.			Per doz.
16,	Weight, 2	lbs	$8.50
16,	" 2½	"	9.00
16,	" 3	"	9.50
16,	" 3½	"	10.00
16,	" 4	"	10.50
16,	" 4½	"	11.00
16,	" 5	"	11.50
16,	" 5½	"	12.00
16,	" 6	"	12.50
16,	" 6½	"	13.00
16,	" 7	"	14.00

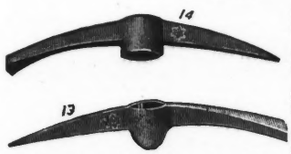
Packages charged at cost. Dis., 60, 10%.

Adze Eye Miners Picks—Surface, Drifting and Poll.

No.			Per doz.
19,	Surface.	No. 1, 4 lbs.	$14.00
19,	"	No. 2, 4½ "	15.00
19,	"	No. 3, 5 "	16.00
19,	"	No. 4, 5½ "	17.00
19,	"	No. 5, 6 "	18.00
19,	"	No. 6, 6½ "	19.00
19,	"	No. 7, 7 "	20.00
20,	Drifting,	No. 1, 3 "	12.50
20,	"	No. 2, 4 "	14.00
20,	"	No. 3, 4½ "	15.00
29,	"	No. 4, 5 "	16.00
20,	"	No. 5, 6 "	17.50
21,	Poll,	No. 1, 3½ "	15.00
21,	"	No. 2, 4 "	16.00
21,	"	No. 3, 4½ "	17.00
21,	"	No. 4, 5 "	18.50
21,	"	No. 5, 6 "	20.00
21,	"	No. 6, 6¾ "	21.50

Dis., 60, 10 and 5%.

Tamping Picks.



Adze eye, 6 to 7 lbs., per doz., $17.
Adze eye, 7 to 8 lbs., per doz., $18.
Adze eye, 8 to 9 lbs., per doz., $19.
Hunt eye, 6 to 7 lbs., per doz. $17.
Hunt eye, 7 to 8 lbs., per doz., $18.
Hunt eye, 8 to 9 lbs., per doz., $19.
Dis., 60, 10 and 5%.

Ore Picks.

No.			
54,	Adze Eye,	5 to 6 lbs.	per doz. $12.00
54,	"	6 to 7 "	" $13.00
54,	"	to 8 "	" $14.00

56, Steel Lake Superior Mining Pick

(Special Price and Quality.)

Dis, 60, 10 and 5%.

Steel Face Hammers.

No. 43, hand drilling hammers, 2 to 5 lbs.; No. 45, napping hammers, 2 to 5 lbs.; No. 39, mason hammers, 3 to 8 lbs.; No. 42, smiths' hand hammers, 2 to 5 lbs.; No. 44, smiths' striking hammers, 2 to 5 lbs., all steel face, per lb., 26c. Dis., 70, 10 and 5%.

No. 43, hand drilling hammer, 5 lbs. and over, 36c.; 3 to 4 lbs., 40c.; under 3 lbs., 45c. per lb.
Dis. 70, 10 and 5%.

Cast Steel.

No. 42, blacksmiths hand hammer, 5 lbs. and over 30c.; 3 to 5 lbs., 34c.; under 3 lbs., 45c. per lb.
No. 44, drilling or striking hammer, 5 lbs. and over, 30c.; 3 to 5 lbs., 36c.; under 3 lbs., 45c. per lb.
No. 45, napping hammer, 5 lbs. and over, 30c.; 3 to 5 lbs. 35c. under 3 lbs., 45c. per lb.
Dis., 70 and 10% 5.

Steel Face Sledges.
No. 34. Smiths' sledges, 6 to 30 lbs., steel face, 17c. per lb.
No. 35. Stone sledges, 6 to 30 lbs., steel face, 17c. per lb.
No. 36. Striking sledges, 6 to 30 lbs., steel face, 17c. per lb.
No. 37. Coal sledges, 5 to 10 lbs., steel face, 18c. per lb.

Cast Steel Sledges.
No. 34. Blacksmiths' sledge. 5 lbs. and over, 30c.; 3 to 5 lbs., 36c.; under 3 lbs., 45c. per lb.
No. 35. Stone sledge, 5 lbs. and over, 30c.; 3 to 5 lbs., 36c.; under 3 lbs., 45c. per lb.
No. 36. Striking sledge, 5 lbs. and over, 30c.; 3 to 5 lbs., 36c.; under 3 lbs., 45c. per lb.
No. 37. Coal sledge, 5 lbs. and over, 30c.; 3 to 5 lbs. 36c.; under 3 lbs., 45c. per lb.

RAILROADS.

Railway Track Punch

Round Point.
15c. lb., net.

Track Wrench.

7¾ lb., net.

Ra Fork.

9c. lb. net.

Crow Bars.
Wedge Points,
3½c. lb., net.
Pinch Point,
3 ½c. lb., net.

65 Tamping Bar,
6c. lb., net.

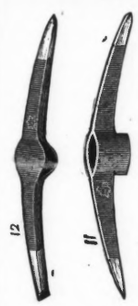
66 Claw Bar,
7c. lb., net.

Railroad Spike Mauls
6 to 16 lbs., Steel Face
18c. lb.

Dis., 50, 10, and 5%.

Steel Track Chisel,
15c. per lb., net.

Railroad or Clay Picks.



No.			Per doz.
11,	Adze eye,	4 to 5 lbs	$11.00
11,	"	5 to 6 "	12.00
11,	"	6 to 7 "	13.00
11,	"	7 to 8 "	14.00
11,	"	8 to 9 "	16.00
11,	"	9 to 10 "	18.00
12,	Hunt eye,	4 to 5 "	11.00
12,	"	5 to 6 "	12.00
12,	"	6 to 7 "	13.00
12,	"	7 to 8 "	14.00

Dis., 60, 10 and 5%.

Mattocks—Price per doz.

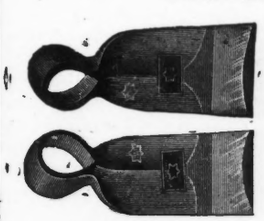
2, Adze Eye, Long Cutter, 6 lbs., $16.00.
3, Adze Eye, Short Cutter, 5½ lbs., $15.50.
2, Adze Eye, Long Cutter, Light, $15.00.
3, Adze Eye, Short Cutter, Light, $15.00.
4, Hunt Eye, Long Cutter, 6 lbs., $16.00.
5, Hunt Eye, Short Cutter 5½ lbs., $15.50.

Adze Eye Pick Mattocks.....$16.

Hunt Eye Pick Mattocks... .....$16

Dis., 60, 10 and 5%

Grub Hoes.



Western Pattern, No. 0, 3 lbs., ₱ doz., $10.50.
Western Pattern, No. 1, 3½ lbs., ₱ doz., $11.
Western Pattern No. 2, 4 lbs., ₱ doz., $11.50.
Western Pattern, No. 3, 4½ lbs., ₱ doz., $12.
Baltimore Pattern, No. 1, 3½ lbs., ₱ doz., $11.
Baltimore Pattern, No. 2, 4½ lbs., ₱ doz., $11.75
Baltimore Pattern, No. 3, 5 lbs., ₱ doz., $12.75.
Baltimore Pattern, No. 4, 5¾ lbs., ₱ doz.. $13.75.
Dis., 60 and 10%, 5.

CARPENTERS'.

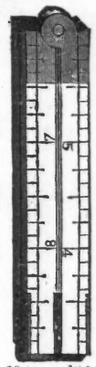
BEADER (Universal Hand.)

For Beading, Reeding, Fluting, or for light Rou cribg.
No. 66 Iron Stock, with seven Steel Cutters, 1.00.

BOXWOOD RULES.

Two feet, four-fold, 1 inch wide.

Plate.	Middle.	Edge.	Bound.
Round joint	$4	...	...
Square "	5	$7	$15
Arch "	6	8	16



Two feet, four-fold, 1⅜ inches wide.

Plate.	Middle.	Edge.	Bound.
Square joint	$7	$9	$18
Arch "	9	11	20

Two feet, two-fold, 1½ inches wide.

Square joint.	Arch.	Arch Bound.
$5	$7	$16
12	14	24

Gunter's Slide.
Dis. 80, 10 and 10%.

LEVELS.

	10 to 16 in.	18 to 24 in.
Arch top plate, 2 side views	$9.00	$12.00

PLUMBS AND LEVELS.

Arch top plate, 2 side views.

	12 to 18 in.	18 to 24 in.	24 to 30 in.
Polished	$14.00	$16.00	$18.00
Mahogany	...	16.50	22.50
Mahogany tr'd and lp'd	27.00	...	...
Polished and l pped	...	...	24.00
Polished and tipped	...	...	28.00
Polished, lip'd and tip'd	...	...	35.00

	in.	
Mason's level, 2 plumbs, polished,	36,	$30.00
Mason's level, 2 plumbs, p'd and t'd,	36,	36.00
Mason's level, 2 plumbs, polished,	42,	36.00

PATENT ADJUSTABLE PLUMBS AND LEVEL.

Arch Top plate, 2 side views	26 to 30 in.
Polished and lipped	$27.00
Polished and tipped	30.00
Polished, lipped and tipped	39.00
Mahogany	27.00
Mahogany, lipped	33.00
Mahogany, lipped and tipped	48.00
Polished, triple stock, lipped and tipped	48.00
Mahogany " " " "	60.00
Rosewood, lipped and tipped	90 00

Dis., 70, 10, 10%

POCKET LEVELS.

Iron top, Japanned	2 00
Brass top	3.00

Dis., 70, 10, 10%.

BAILEY'S PATENT WOOD PLANES.

Smooth.	Handle smooth.	
9 × 3¾ in.	8 × 2 in.	9 × 2 in.
$2	$2	$2.50 each

Jack.	Fore.	Jointer.
15 × 2⅛ in.	20 × 2⅜ in.	26 × 2⅜ in.
$2.50	$2.75.	$3.25 each

Dis., 40, 10 and 10%.

PLANES, BAILEY'S PATENT IRON.

With pat. lateral adjustment.

Smooth, 8 n. × 1¾ in., $3; in. × 2 in., $3.25; 10 in. × 2⅜ in., $3.75 each.
Jack, 14 in. × 2 in., $3.75.
Fore, 18 in. × 2⅜ in., $4.75
Jointer, 24 n. × 2⅜ in., $6.50 each.
Dis., 40, 10 and 10%.

STANLEY'S BEADING, RABBET, SLITTING AND MATCHING PLANE.

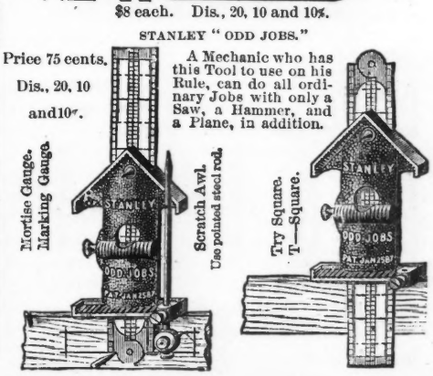
Eighteen Tools, Bits, etc.

$8 each. Dis., 20, 10 and 10%.

STANLEY "ODD JOBS."

Price 75 cents.
Dis., 20, 10 and 10%.

A Mechanic who has this Tool to use on his Rule, can do all ordinary Jobs with only a Saw, a Hammer, and a Plane, in addition.



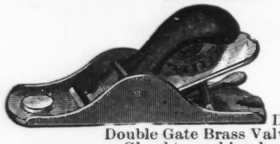
STANLEY IRON BLOCK PLANES.

3½ × 1 in. 20c.

5½ × 1¼ 40c.

7½ × 1¾ in. 60c. each

ADJUSTABLE



5½ × 1¼ in. 60c.

7½ × 1¾ in. 85c. each

Dis., 40, 10 and 15%.

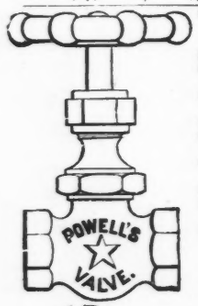
Double Gate Brass Valves.
Gland in packing box.

Size.	Screw socket.	Flange.	Diameter of Standard Flange.	Face to face of Screw socket	Face to face of Flanges.	Extra for slide stem and lever subject to discount.
In.	$	$	In.	In.	In.	
½	1.25	.....	.....	2¼	.....	$1.00
¾	1.65	.....	.....	2½	.....	1.00
1	2.15	.....	.....	2⅞	.....	1.00
1¼	3.15	.....	.....	3⅜	.....	1.00
1½	4.25	.....	.....	3¾	.....	1.00
2	6.25	11.50	6	4½	4⅝	1.00
2½	11.50	18.00	6½	4 13-16	5⅜	1.25
3	16.00	22.00	7	5	6¼	1.25
3½	21.00	31.00	7½	.....	.....	1.25
4	35.00	43.00	9	.....	7 1-16	1.25
5	52.00	64.00	10	.....	.....	1.25
6	78.00	90.00	11	.....	9	1.25
8	.....	.....	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....

Rubber-Faced Slide Gate Fire Hydrant.

Dia meter of pipe connection.	Dia meter of stand pipe.	Dia meter of sent ring.	One 2½ nozzle.	Two 2½ nozzles.	Three 2½ nozzles.	Four 2½ nozzles.	Six 2½ nozzles.	One steamer nozzle.	One steamer and one 2½ nozzle.	One steamer and two 2½ nozzles.	Frost case, standard length.
Inches.	Inches.	Inches.									
3 or 4	4½	3	$28	.....	.....	.....	.....	.....	.....	.....	$4.50
3–4–6	5¾	4	31	$33.00	$35.00	.....	.....	$33.00	$35.00	$37.00	5.00
4 or 6	7	5	.....	38.50	40 50	.....	.....	38.50	40 50	42.50	6.50
6 or 8	8	6	.....	49.00	51.00	$53.00	.....	49.00	51.00	53.00	7.50
8 or 10	10	8	.....	.....	.....	.....	.....	.....	.....	.....	.....

For each 6 inches more or less than standard length of stand pipe, add or deduct from list.	For each 6 inches more or less than standard length of frost case, add or deduct from list.	Extra charge for hub.	Independ't nozzle gates each.
$0.60	$0.44	.....	.....
.75	.50	6 in. $0.50	$3.50
.85	70	No ch'ge	3.75
1.00	.90	8 in. $1.25	3.75
.....	.....	.....	4.50



Star Globe, Angle and Check Valves.

Size, inches.	⅛	¼	⅜	½
Globe and angle	.80	.85	.90	1.20
Check V	.70	.70	.75	.95
Size	¾	1	1¼	1½
Globe and angle	1.55	2.00	3 00	4.00
Check V	1.20	1.65	2.50	3.25
Size	2	2½	3	
Globe and angle	6.50	12 50	19.00	
Check V	5.00	11.00	15.00	

Dis., 60%

Also made heavy and extra heavy for special uses.

Star Sight Up-Feed Lubricator.

Class A.

	½ pt.	½ pt.	1 pt.	1 qt.	½ gal
Capacity.					
Finished	5.60	7.00	8.75	11.25	16.25
Plated	6.25	7.50	9.50	12.50	17.50

Dis., 50%.

Signal Sight Feed Oiler.

Numbers	0	1	1½	2
Diameter of glass, inches	1¼	1½	1¾	2
Height of glass, inches	1⅜	1⅝	1⅝	1⅞
Capacity	½ oz.	¾ oz.	1 oz.	oz
Size of shank, pipe thread, inches	¼	¼	⅜	⅜
Signal Sight Feed Oiler, each	$3.00	$3.25	$3.50	$3.75
Signal Sight Feed Oiler, nickel plated, each	3.50	3.75	4.00	4.25
Numbers	3	4	5	6
Diameter of glass, inches	2¼	2⅛	3	3½
Height of glass, inches	2⅛	2¼	2¾	4
Capacity	¼ pt.	½ pt.	½ pt.	1 pt.
Size of shank, pipe thread, inches	⅜	½	½	½
Signal Sight Feed Oiler, each	$4.25	$5.25	$7.25	$9.25
Signal Sight Feed Oiler, nickel plated, each	4.75	5.75	8.00	10.25

Less 6% dis

EDDY VALVES

Class 1. Class 2. Class 3 and 4.

Class 1. Brass valves, steam metal. Size in inches.	Screw ends.	Flange ends.	Class 2. Iron, brass mounted. Size.	Screw, or flange ends	Add for S S&L	Class 3. All iron for gas. Hub. ends	Class 4. Water works valves. Hub ends.
½	$1.30	.....		$7.00	$1.00	$8.00	$10.00
¾	1.70	.....	2½	10 50	1.30	.....	.....
1	2.20	.....	3	13.00	1.40	10.00	15.00
1¼	3.20	.....	3½	16.50	1.50	.....	.....
1½	4.20	$7.50	4	18.00	1.70	15.00	18.00
2	6.20	9.00	4½	22.00	1.80	.....	.....
2½	11.50	15.00	5	25.00	2.00	20.00	25.00
3	16.00	20.00	6	31.00	2.30	25.00	31.00
3½	22.00	28.00	7	37.00	2.70	30.00	37.00
4	35.00	42.00	8	45 00	3.00	35.00	45.00
5	50.00	60.00	10	60.00	3.50	48 00	60.00
6	80.00	90.00	12	80.00	4.00	65.00	80.00
8	130.00	130 00					

All Iron Valves, Class 2. 10 per cent. less than Brass Mounted

Varnish.

E. S. 1827 & Co.

For Finishing Coats.	gal.
Wearing body varnish	$5.50
Medium drying body	5.50
One coat coach varnish	4.50
Wearing carriage	4.50
Heavy gear varnish	4.00
Coach body "	4.00
No. 1 coach "	2.25

For Under Coats.			
Hard drying body	$4.50	Black rubbing varnish	$4.00
Rubbing body varnish	4.00	Priming (1st coat)	2.50
Quick rubbing "	3.50	Filling (2d coat)	2.50
		Rough stuff	2.50

For Inside Work.			
Best flowing varnish	$4.50	Hard oil finish light	$2.75
Best polishing "	4.50	" dark	2.25
Cabinet "	3.00	White copal	4.05

Dryers.			
Japan gold size	$3.50	Brown japan	$1.25
Coach japan	1.75	Liquid dryer	1.25

Discount, 40 per cent. f.o.b. N. Y.

Preservative Coatings.			
Spar coatings	$4.00	Exterior car coating	$4.00
I. X. L. No. 1	2.50	Interior car coating	3.25
I. X. L. No. 2	4.00	Locomotive coating	4.00
Floor finish	2.50		

Discount, 35 per cent, f.o.b. N. Y.

Wheelbarrows.

Climax Bolted Barrow, with Wood Wheel per doz. $22.50.
" 1½ tire of iron,
Common Nailed Barrow per doz. $18.50.
" Bolted " " 18.75.
Iansing's Patent Iron-Bolted Barrow, per doz., $25.50
Capital Patent Bolted Dirt " " " 30.00
Red oak or Government " " " 40.50
Wharf " " " 72.50
Mortar " " " 30.00
Bent Handle Stone " " " 48.00
Coal or Ore " " " 31.50
Pig Metal or Casting " " " 40.50
Brick Yard 20 inch Iron Wheel " " 10 50

Globe Patent Bolted Garden Barrow, Box 30 by 24 by 12 deep, wood wheel } per doz., 42.50.

Capita Patent Barrows

With Iron Tray, A, per doz., $39.00
" " " B, " " " 42.00

The Leader Iron and Steel Barrows.
Gas-pipe Legs and Handles in one price.

No. 1 Tray of 16 iron, capacity 3 cu. ft. of earth, each $12.
No. 2 " 14 " " 5 " " " " "
or 250 lbs. of coal " 15
Galvanized 18 iron, capacity same as No. 2 " 15

Water Wheels. Pelton.

	Under pressure of 30 Lbs.	60 Lbs.	100 Lbs.
No 1. $25	½ H. P.	1 H. P.	2 1-10 H. P
No. 2. $50	¾ "	2⅛ "	5 "
No 3. $100	1½ "	4 "	8½ "
No. 4. $1.0	2½ "	7 "	14¾
No. 5. $2.0	4½ "	12½ "	26

Dis. 20%.

Whiffletree.

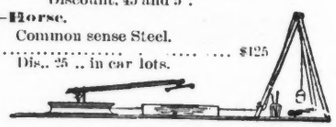
Willson spring Jeffery Manufacturing Company).

	Single.	Dot. ble.
No. 1, 34 or 36 inches long	$1.25	$2.50
No. 2, " " " "	1.40	2.75
No. 3, " " " "	1.50	3.00
No. 4, " " " "	1.65	3.25

Including either steel hooks or rings
Discount, 45 and 5 .

Whips—Horse.

Common sense Steel.
F. O. B $125
Dis., 25 .. in car lots.



Windmills.

10 ft. pumping	$75	Plus cost of packing.
12 ft. "	95	
14 ft. "	140	
16 ft. "	225	

Dis., 50 per cent.
Delivered on board of vessel at New York packed for export.
Dis., 45%.

"Stover" Pumping Windmills (no tower).

Size wheel.	Wt. packed.	Cubic ft.	Price.
10 ft.	650	50	$80.00
12 ft.	750	58	100.00
"Zenith Pumping Windmills (no tower).			
10 ft.	650	48	85.00
12 ft.	750	57	110.00
Dis., 50 per cent.			
14 ft.	1,400	108	160.00
16 ft.	1,600	114	250.00
Dis., 45 per cent.			
20 ft.	2,950	220	400.00
25 ft.	4,225	280	600.00
Dis., 40 per cent.			
"Zenith" Geared Windmill (no tower).			
14 ft.	1,550	178	260.00
16 ft.	1,780	198	300.00
20 ft.	3,170	216	500.00
Dis. 40 per cent.			

Prices include upper set of Gears and about 5 feet vertical extra heavy shaft in windmill head.

Wire Rope.

Circumference in inches.	Diameter in inches.	Price in cents per foot best crucible cast steel rope. 19 wires to strand.	7 wires to strand.	Price in cents per foot best bright iron rope. 19 wires to strand.	7 wires to strand.	Price in cents per pound galvanized iron rope. 12 wires to strand.	7 wires to strand.
5½	1¾	100	.....	69	.....	11	10½
5¼	.....	90	.....	64	.....	"	"
5	1⅝	80	.....	58	.....	11½	"
4¾	1½	71	.....	53	.....	"	"
4½		65	.....	48	.....	"	"
4¼	1⅜	60	60	43	39	"	"
4	1¼	50	50	36	34	"	"
3¾		46	.....	33	.....	"	"
3½	1⅛	41	40	29	27	12	10¾
3¼		.....	.....	.....	.....	"	11
3⅛	1	34	32	26	23	.....	.....
3	.....	33	.....	24	.....	"	11
2¾	⅞	27	25	20	19	.....	12
2½		23	.....	18	.....	.....	13
2¼	¾	21	19	16	14	.....	
2	⅝	18	14	14	10½	.....	
1¾	9-16	17	11	12	8	.....	
1½	½	15	8	10	7	.....	
1¼	⅜	.....		8	5	.....	
1	5-16	.....		.....	4	.....	

Discounts, for export in bond, requiring from six weeks time, 55%.