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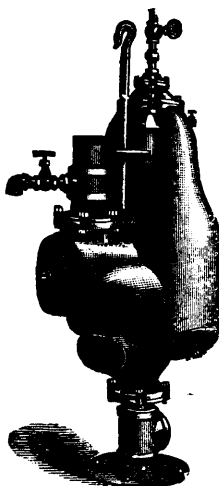
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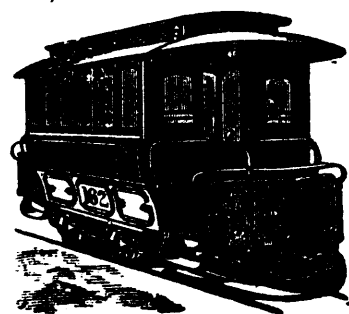
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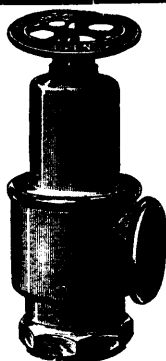
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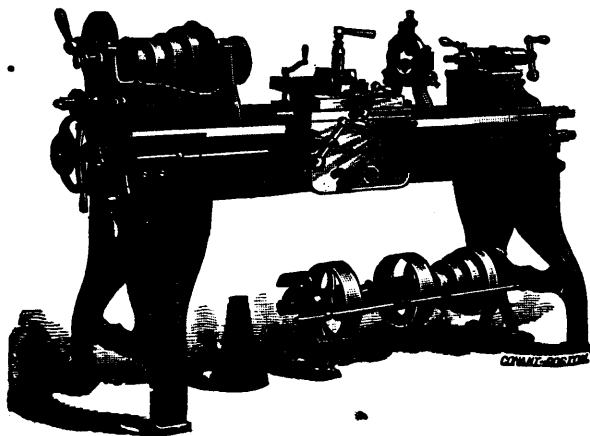
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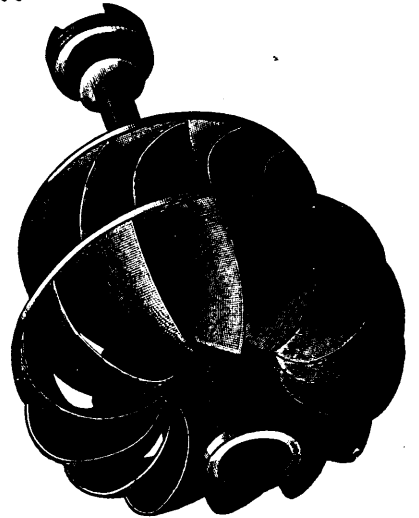
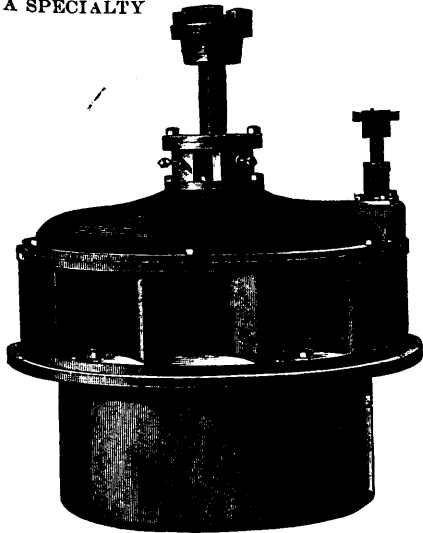
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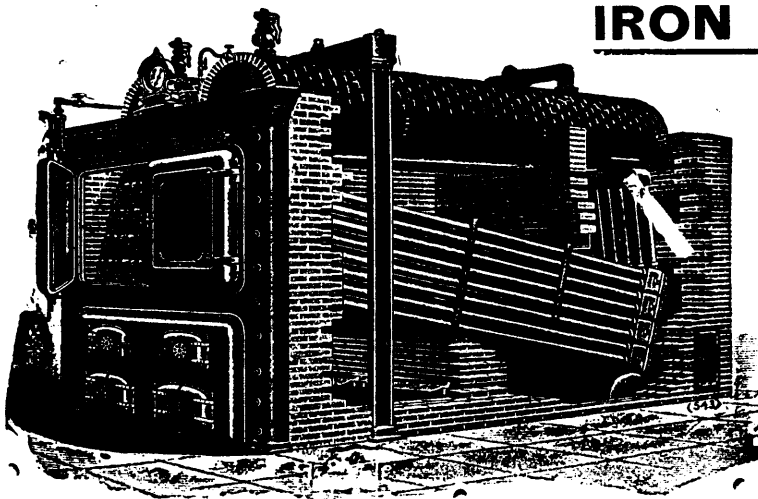
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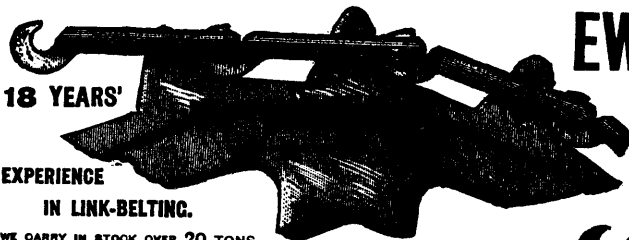
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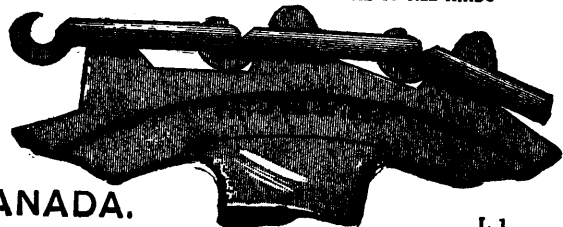
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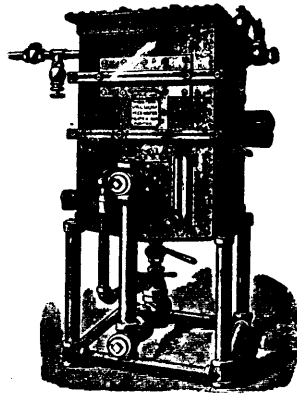
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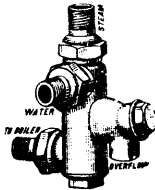
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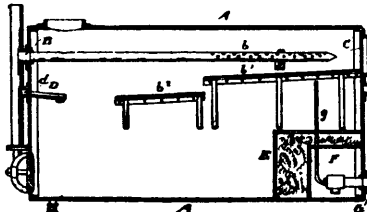
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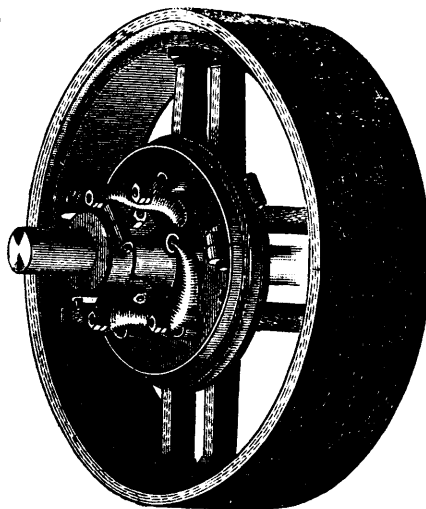
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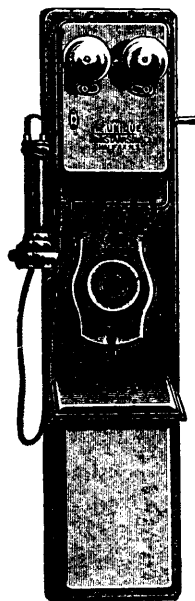
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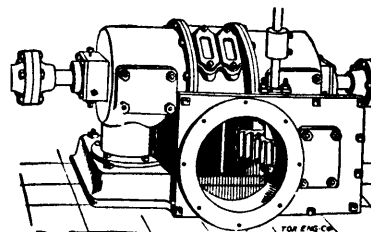
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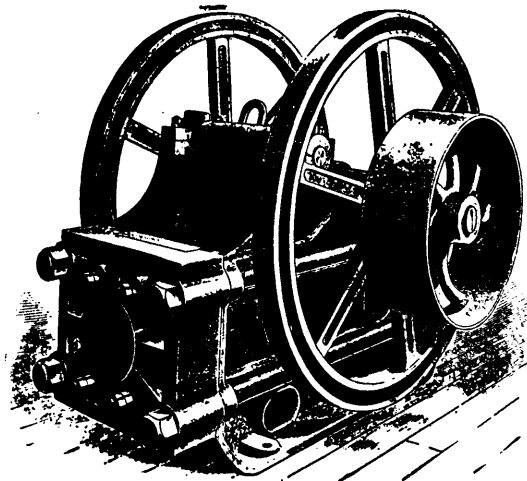
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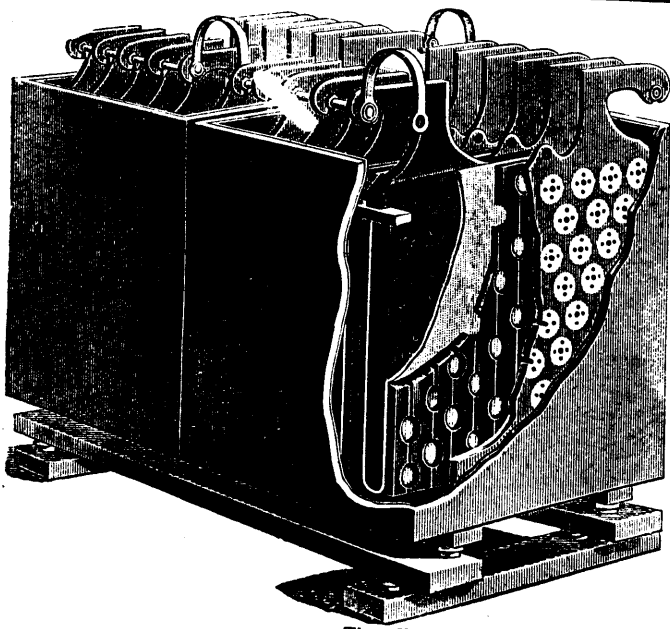
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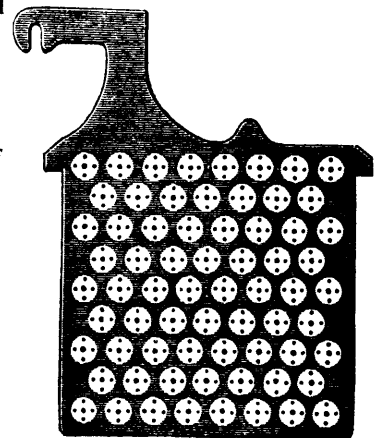
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PROTECTED OUT OF EXISTENCE.

The United States Government has put a dime tax on international ferries, which is intended to make such boats as the Maid of the Mist become of American register. This is how that great nation proposes to restore a maritime power protected out of existence.— The Globe.

In our opinion the action of the United States authorities in imposing a tax on international ferries, as alluded to by The Globe, is unspeakably mean, and quite in keeping with many other acts intended to retard Canadian enterprise; but when The Globe intimates that the ship-building industry of the United States has been protected out of existence it is oblivious of most palpable and tangible facts. This journal has frequently pointed out that whatever may be said of the

international shipping interests of the United States, where ships from all countries are engaged in the carrying trade to and from that country, the policy that has for so many years prevailed there, which forbids the ships of any other country from participating in the domestic carrying trade—that confines the traffic between United States ports strictly to ships sailing under the American flag—has served to build up a merchant marine of immense proportions, and which includes as fine, large, useful and beautiful vessels as float under any other flag. Under that system of protection the United States has fleets of steamers, employed exclusively in coast-wise and internal traffic, that meet all demands of the commercial interests of the country; that have reduced the cost of transportation to a minimum, and that afford the maximum of comfort and speed to all who use them, but which would undoubtedly be to a greater or less extent deficient in these essentials if they were liable to the unrestricted competition of the shipping of other nations. These fleets of staunch, swift, commodious and comfortable steamers are without doubt the direct result of that policy, and the evidence of a maritime power that The Globe says has been protected out of existence. We all know that at the breaking out of the war of the rebellion in 1860, the navy of the United States was of most insignificant proportions and efficiency, and that even of this small navy quite a number of ships fell into the hands of the confederate rebels. Under these circumstances, and considering the great extent of sea coast to be blockaded, and the armies that had to be transported by water, the very existence of the nation would have been in much greater peril than it really was had it not been for the fleets of merchantmen that were so promptly placed at the disposal of the Government, and that did such efficient service as transports, gun boats and blockaders. The belief is well founded that had it not been for the auxilliary navy, and the fleets of transports organized out of the merchant marine that The Globe tells us had been protected out of existence, the invasion of the South by the Northern army would have been an impossibility.

The Cleveland Marine Review, speaking of the ship building industry along the United States side of the great lakes, gives a table showing that the capacity of new vessels to be built in 1896 will eclipse the record of 1891, when vessels aggregating over 111,000 tons carrying capacity were launched from lake ship-yards. It tells us that the fall period when orders for new ships are placed has hardly been reached, but the situation has been anticipated and thirteen steel vessels are already under contract. Two of these will not be freight carriers, but the others will have a combined carrying capacity of 49,500 net tons, the valuation of all the thirteen vessels to be about \$2,800,000. On December 1st of last year, when orders were well covered, the capacity of freight vessels under contract was but 30,250 tons, and their valuation, exclusive of a very large passenger steamer, then contracted for, and a very large transport steamer not then contracted for, but subsequently built, was only \$1,870,000. It will be seen that the value of the tonnage already contracted for this year, exceeds the value of the ships built last year about \$1,000,000.

The same authority tells us that the passenger steamer business of the lakes is yet in its infancy, an impetus to which has been imparted by the building of the elegant steamers North West and North Land, and that negotiations for other vessels of equal magnitude are actually under way. This de-

mand for large passenger steamers must ultimately develop to very large proportions.

In addition to the contracts noted by the Marine Review, it announces that there is enough more work in view to fill up all lake ship-yards until next spring; that a Detroit concern have representatives in St. Petersburg closing up a contract with the Russian Government that is said to amount to \$2,000,000 for car ferry steamers; that a Cleveland concern have decided to build four steel steam canal boats and twenty consortships for their Lake Erie—Erie canal trade; that a transportation company will place orders for several wooden passenger steamers, and that there is much other similar work in sight.

Merchant ship building in Atlantic ports is also in a flourishing condition. At Newport News, Va., three passenger steamers are in course of construction that will aggregate in value \$1,500,000. In Philadelphia three steamers are approaching completion the total value of which will be about \$1,300,000; at Chester, Penn., two large freight steamers are being built; and a Brooklyn concern are building a palace steamer for the Hudson river traffic that will cost \$1,000,000.

These allusions are chiefly to large vessels, but the industry generally throughout the country is in a most flourishing condition. And this is the maritime power that the free trade Toronto Globe tells us has been protected out of existence.

There is no good reason why the ship building industry should not be in as flourishing condition in Canada as it is in the United States. Under the protection given the industry more American tonnage passes through the St. Mary's canal during the eight months' it is free from its icy fetters than the tonnage of the whole world through the Suez canal; and more American tonnage passes by the port of Detroit during a similar time than the tonnage of all nations that is entered and cleared at the ports of both London and Liverpool.

CANADIAN RAILWAY STATISTICS.

Some interesting figures have been compiled by Mr. Geo. Johnson, the Government Statistician, regarding the railway business of Canada during the late depression. The year 1894 was a very trying year for the railway interests of this continent, but the facts show that the railways of Canada suffered less proportionately than did those of the United States, as indeed did nearly all the other interests. The analysis of the figures shows that, while the United States had an increase of only 1.2 per cent in the number of miles in operation in 1894, compared with 1893, Canada's increase was 4 per cent.; that in the number of passengers carried the United States railways experienced a very considerable decrease and the Canadian railways a substantial increase; that while the United States railways received for passengers carried 11½ per cent. less money in 1894 than they did in 1893, Canadian railways received more money by 2.4 per cent in 1894 than they did in 1893. Tested by the number of passengers carried per mile of railway, Canadian railways show a gain of 2 per cent., while the United States railways show a loss of 8.3 per cent. When the receipts per train mile run are considered, it is shown that the Canadian railways lost ground to the extent of 1.8 per cent., but the United States railways decreased to the extent of more than four times the loss sustained by the Canadian railways. In the matter of freight carried, the

United States railways lost in 1894 nearly one-ninth of the business of 1893, while the Canadian railways lost about one-seventeenth. The earning from freight decreased in both cases, but more in proportion in the case of the United States railways than in the case of the Canadian railways. All the facts point to the same general conclusion, viz., that the United States railways suffered more than the Canadian railways. Putting the two into statistical form, if 100 represent the decrease in the United States railways 64.56 would represent the decrease in the Canadian railways, judged by gross receipts.

TRADE JOURNALS THAT MANUFACTURERS DECLINE TO READ.

Recently the Canadian Journal of Fabrics undertook to lecture the manufacturers of woollen goods because they do not conduct their business according to the idea of our esteemed contemporary, which denounced them as "invertebrates." The Canadian Dry Goods Review, another journal that imagines it has capacity not only to operate woollen mills but also to direct how the marketing of their products should be done, quoting the word "invertebrate" as applied to the manufacturers by the Journal of Fabrics, announces that it had several times said strong things about them, but withdrew all previous expressions, yielding up the palm to its competitor.

From which it seems that these two journals were in competition as to which could apply the most objectionable epithet to the woollen manufacturers.

The Dry Goods Review, however, although it yields the palm to the Journal of Fabrics as the boss applicer of epithets, hastens to renew its lecture to the manufacturers, instructing them how to conduct their business, and berating them because they do not follow its advice. It says:—

It seems a waste of time to tell these woollen workers exactly what you think of them, because, as a rule, they are either too penurious or backwoodsy to take a trade paper. Even if we sent them a free copy they wouldn't read it. We like the Canadian woollen manufacturers but we despise the way they do business in most cases. They are slow, dead slow. If we could devise any method whereby they would be led to a proper sense of their own position and their own importance we would be glad.

In the eyes of the Journal of Fabrics and the Dry Goods Review the manufacturers are offensive because of their "utter inability to size up a market"; because they cut prices, and because, as it says, they allow the wholesale buyers to "pull their legs," "twist their noses," and "do several other funny little things" with them.

The wailings of these journals are, to the manufacturers like the southing breezes of these autumnal days that pass unheeded by. It is not at all probable that even if the manufacturers perceived that they were not making money by their occupation, and that some other methods of transacting their business were necessary, they would ask these abusive concerns to become their school masters and teachers. Not much.

But it is more or less interesting to observe the spitefulness they display because their importance is not recognized. The manufacturers are denounced as "invertebrates"; they are declared to be "penurious," and are too "backwoodsy" to take a trade paper; and the assertion is made that even if free copies of these journals were sent to them they would not be

read. Of course they would not be read. Why should manufacturers, whose time is valuable, waste it in reading journals that devote their columns to denouncing them in scurrilous and insulting language? Why should it be expected that manufacturers who decline to take time to read them should invest their good money in subscribing for them? Who wants to pay people who are scolds?

The Dry Goods Review proposes a remedy for the ills which it supposes the manufacturers suffer, and to cure them of their obtuseness in not appreciating its value as an educator in the production and sale of woollen goods. Its proposition is that there shall be "a Woollen Manufacturers' Association to educate the trade and introduce an esprit de corps that would help maintain paying prices." Wonderful! Where has the sleepy-head been that it has not discovered that a Woollen Manufacturers' Association has been in active existence for many years; has regular meetings and special meetings whenever the same may be necessary? These journals aspire to be the moulders of thought for the manufacturers, professing to be devoted to their interests, and watchful over their welfare, and yet they know so little of the people they profess to serve as to be ignorant of the fact that they have a real live active organization. But they give themselves away entirely when they confess that the manufacturers do not subscribe for them and really would not read them even if sent to them free.

IN UNION IS STRENGTH.

Speaking of the recently organized association of manufacturers of the United States, The Manufacturer of Philadelphia, says:—

When the National Association of Manufacturers of the United States was organized in Cincinnati in January last, provision was made that the first annual meeting of the body should be held in Chicago in October. For several reasons, one of which is that a little more time is required for perfecting the organization, it has been determined to postpone the Convention until November. The officers of the body are now earnestly engaged in the task of enlarging the membership of the Association, and the hope is entertained that the meeting in Chicago will in a very large sense represent the manufacturing interests of the United States. There is perhaps some significance in the fact that this important meeting will be held but a few days before the first assemblage of a Congress elected by the nation that it might stand firmly by the protective system which is vitally important to American manufacturers. We do not pretend to foretell the action of the Association upon any subject; but it will be strange indeed if this imposing organization, speaking with authority for the manufacturing interests, shall not call upon Congress to provide additional revenue for the Treasury, not by imposing new and oppressive internal taxes, but by increasing customs duties in one degree or another. It may happen that Congress, plainly called upon to pursue a policy to which the President is openly antagonistic, may find some inspiration in the action of the Association to stand firmly by protective principles.

While the manufacturers are forming associations for the detection and prevention of fraudulent undervaluation of imports, it may be worth while to consider if there be not indeed a more effective method of checkmating this kind of rascality. It is gravely wrong that citizens who pay their full share of taxation should be required to contribute to private funds for the purpose of helping the government of the United States to enforce its own laws. And, besides, the best that can be accomplished by such means must be far from adequate for the

suppression of the evil. Some years ago a law existed which permitted an informer in cases of fraudulent undervaluation to obtain one-half the penalties. This was known as "the moiety system"; and, upon the whole, it worked well. It was abolished because some small abuses were developed in the operation of the system; but the assertion is a safe one that no innocent man ever lost a dollar by it. What it did was to make dishonest importers wary, because the rewards of the informer were great enough to tempt, sometimes, even the confidential agents of the rogues. The system had the advantage, also, that it was largely automatic, while it was not costly. Instead of respectable manufacturers being compelled to pay for watching the Customs houses, the total costs were paid by detected law-breakers. There is some reason for believing that we might profitably restore this system now that the custom of undervaluing goods has become more general, if report is to be believed, than it was at any other time in our history.

The objects of this American Association, and the stand it has taken not only in shaping the tariff of their country, and in maintaining the policy of tariff protection, but also in a true and just interpretation of the customs laws, and the suppression of the curse of undervaluation quite as prevalent in that country as in this, commend themselves most strongly to the manufacturers of Canada. If it is essential to the best interests of American manufacturers that they should be earnestly engaged in the task of enlarging the membership of their association, certainly it is none the less essential to the interests of Canadian manufacturers that they should be active in the same direction.

EDITORIAL NOTES.

Jacob Schaefer is harvesting a seven-acre field of beets at his home place east of town that is giving returns which cannot be excelled in many parts of the world, either with sugar beets or any other farm crop. He is harvesting about 26 tons per acre from the field, and the factory analyses show them to contain 15 per cent. sugar. This pays at the rate of \$4.25 a ton, or about \$110 per acre. As Mr. Schaefer and his boys do most of their work themselves, this amount will be largely clear profit to them.—Chino (Cal.) Champion.

The durability of wet timber is something remarkable. Recently, according to a Vienna paper, one of the piles supporting the bridge built across the Danube by the Emperor Trajan, was taken up. Although driven seventeen centuries ago, it showed no change, save that it was petrified to the depth of three-quarters of an inch. The chestnut, beach, elm and oak piles on which stand the Savoy Palace, London, are undecayed. They were put in place in the latter part of the thirteenth century.

Following is a table of the Exhibition earnings of the Toronto Railway Company for the past five years:

1891	\$50,710 29
1892	49,243 98
1893	53,338 06
1894	61,732 15
1895	64,573 38

From the above substantial increase each year it is easily to be seen that the extra arrangements made for the accommodation of their patrons during the fair time result profitably to the company.

We understand that certain arrangements are being perfected between the principal incandescent lamp manufacturing companies of the country which, it is hoped, will result in putting the business more securely on its feet than has ever been the case before. The prices for incandescent lamps are absurdly low, and it is certainly time to adopt measures by which the price can be raised so as to afford the manufacturer a living profit. We understand that the arrangements referred to are designed to accomplish this result as well as other things.—Electrical Review.

The British Fair Trade Association has re-opened the agitation in favor of protection. At a meeting recently held at Westminster, with the Right Hon. James Lowther in the chair, and thirty Conservative notables, largely members of the Carlton Club, in attendance, it was agreed that the moment had come to test public opinion in regard to the reform of the fiscal policy, and to try to obtain the imposition of duties upon all imported goods which come into competition with those produced by home industries. A propaganda committee was also appointed. The resurgence of the Association is due to the existence in the New House of Commons of a Conservative majority.

The attention of the Department of Trade and Commerce has been drawn to the fact that the colony of Victoria, Australia, has made a material reduction in the duty on Oregon pine or Douglas fir imported into that country. On sizes less than 7 inches by 2½ inches, the duty heretofore being 5s. per 100 feet, b.m., will be 4s., according to the new Legislation; on 7 inches by 2½ inches, and less than 12 inches by 6 inches, heretofore 2s. 6d., will be 2s.; and on 12 inches by 6 inches and upwards, heretofore 1s. 6d., will be free. The new Act comes into force on January 1st next. The result of this reduction will be an increased importation of that timber into Victoria from British Columbia. Victoria was always a highly protected country, as far as timber is concerned, and the reduction it has now made will be greatly appreciated by the whole lumber trade of the West coast.

It is possible that a live lioness really did escape from a show in Sohmer Park, and rip and tear through the Montreal streets, but the collapse of the sea serpent has shaken public confidence in the natural history of that region. We want affidavits showing that it was not an upholstered lioness.—Toronto Globe.

We know for a certainty that the Montreal Back river sea serpent was only a vagary of the Herald of that city, which is as great a crank on the free trade question as The Globe. Protection to the Herald is as a red rag to an enraged masculine bovine, and it was while in one of its spells that it discovered the serpent and produced a likeness thereof in its columns. Originating as it did in such a journal, no sensible person gave any credence to the scare article, even as sensible persons give no credence to the scare free trade articles of either the Herald or the Globe. The public never had any confidence in the sensationalism of either of those journals to be shaken. Perhaps the escaped lion was of similar character to the Herald's sea serpent.

Not long ago a well-known and supposedly solid dry-goods house in New York failed. In making the assignment the firm stated that it had not suffered from any appreciable falling off in sales, but there having been a great increase in trade on low-priced, unprofitable goods, there had been a corresponding shrinkage in the consumption of those yielding a decent margin. Expenses could not be reduced proportionately. This statement has been the cause of much discussion among the trade, which has gradually fallen into the habit of offering its cheapest goods at the outset and harping upon the price with the idea of first creating a notion of low values. This is a piece of meat to bait the hook. Of course, in times of financial depression there is a general turning to low-priced goods, which cannot be ignored or, in a large measure, avoided. At the same time, however, merchants themselves are largely at fault for the cheap goods era, now happily on the wane. The majority of dealers have made no adequate attempt to cultivate tastes or present the relative merits of the better classes of goods. It is true that many dealers do business too much by impulse, too little by calculation. If a merchant is so blind to his own welfare as to push his least profitable goods the most, he cannot be expected to have much consideration for the manufacturer, who would be glad to educate desires but lacks direct contact with consumers.—Textile World.

Referring to the constantly increasing trouble which convict labor is making in various lines of industry in the United States, the American Manufacturer says:—

In some of the southern States the coal trade is affected, and in Texas the iron foundry interests are suffering badly from their enforced competition with convict labor in state institutions. An address recently made before an organization interested in highway improvement contained considerable information relative to one way in which it would seem that convict labor may be utilized and at the same time result in no detriment to free labor. This is to employ it in building public roads. At the meeting referred to it was shown that the State of North Carolina has had an extended experience in thus employing convict labor. The use of convict labor has led the various counties to vote a tax for the improvement of the public roads, and the result of the experiment in this state has been altogether favorable to the system both in point of efficiency and economy, and the health of the convicts. The returns from eighty counties in the state show that the average cost of convicts when they are confined in the county jail is a little more than 30 cents per day, whereas, the average cost per day per convict, including feeding, clothing, medical attention and guarding, when they are employed on the public roads, is about 24 cents. Moreover the health of the convict has been much better when at work on the road than formerly when imprisoned in jail. In Lenoir county only short term convicts are employed on the roads. These are offered certain inducements in the way of reward or shortening of term if they remain at their post and faithfully discharge their duties. They are employed very much as hired labor would be, under the control of a superintendent or foreman, but without any guard. This experiment has been in operation for a year, and not a convict has attempted to escape or decline to labor faithfully. This manner of settling the convict labor question has on various occasions been brought to the attention of the country at large, and it is singular that its adoption has not been more general.

The manufacture of paper bags and boxes, among other articles, is carried on merrily by prison labor on the Continent, says an English exchange. In a consular report on Austria-Hungarian trade, the competition of prison-made goods with the results of independent labor receives attention. "The iniquity of this convict labor, so stoutly denounced in England as an unhealthy competition for the products of British labor, is equally condemned in Austria," the Consul General tells us, "for the same reason that the goods are made in prison, by the aid of the taxpayers' money, to be thrust on the market at low prices in rivalry with the productions of the taxpayer himself. Great circumspection is supposed to be exercised by the authorities in not leasing to contractors such prison labor as might openly bring about the result of arousing the anger of the Austrian working classes." Truly, in that case, the Austrian authorities are more considerate of the working classes than has been supposed. The British workman, however, is scarcely likely to take a generous view of this circumspection when he finds that this charity, if it begins, does not end at home.

Notwithstanding all that has been said of a probable levy of tolls on the new Canadian canal at Sault Ste. Marie, and rumors that the Government would never put the canal into full operation but simply keep it as a reserve passage to and from Lake Superior, the canal has been opened, free of any disadvantages to vessels of the United States, and the opening has occurred at a time when the relief afforded to the overcrowded American lock will represent thousands of dollars in increased commerce. When it is understood that practically the entire commerce of Lake Superior is carried on in vessels of the United States, this action of the Dominion Government is the more welcome and more surprising. Heavy charges are involved in the maintenance of the canal but vessel masters all report that the service at the lock is of the highest efficiency. People on this side wonder why Canada has undertaken the expense of this canal, but the disposition in England is to encourage the Dominion authorities. All of the London papers contained extended notices of the opening of the canal. The following from the London Post is indicative of the feeling in the mother country: "Although Lake Superior commerce is now carried on very largely in vessels of the United States, Port Arthur and the district surrounding it is rapidly rising in importance and it would seem suicidal for Canada to permit the possibility of a great trade route from Lake Superior outward being at any moment closed against her by the jealous tariff of a foreign and commercially hostile canal, and she has done wisely to keep the path open for herself."—Cleveland, Ohio, Marine Review.

The opening of our new ship canal has revolutionized marine matters at the Michigan side of the river, and "the good old times" are things of the past. The river shore is no longer lined with delayed fleets waiting their turn to enter the lock. The docks are no longer alive with men forced to many weary hours of delay; supply stores are at a stand-still; the great mercantile fleet has got a move on, and the heaviest carriers upon the lakes make a bee-line for "the Canadian ditch," is locked through in less time than he usually took to

put in supplies, and is on his way to the lakes without losing one hour of time or spending one cent of money. The American passenger boats, too, are hustling this way because the Canuck Government has given right of way to all vessels with passengers or mail. The channel gives a clean swing twenty feet deep; the lock is 900 feet long, so that barge and tow of three or four heavily laden schooners enter together in line and are locked through inside of ten minutes without a hitch or delay of any sort. Superintendent Boyd is on hand with a cheery "How are you Cap.?" and the Yankee finds a brother true in every Canuck. So different, you know, to what they were led to expect. The saving of time alone will effect a clear gain of thousands of dollars, to say nothing of the bigger loads and the freedom of a twenty-foot channel. Already the Sault begins to feel the throbbing pulse of a new and greater life; the canal is doing its part. The C.P.R. employees and a swinging lot of live business is here; and Clergue, the enterprising, level-headed conqueror of the water-power, is also here to stay, and the Sault pulsates with awakened energy and springs into active life on every hand. Another of the great enterprises advocated many years by The Pioneer is an accomplished fact and the world made better by its coming.—Sault Ste. Marie Pioneer.

Mr. Archibald Blue, Director of the Ontario Bureau of Mines, who has just returned from a trip through Western Ontario, being asked about the iron ore of that part of the province, said:—

I was never sure of there being a large supply of the red ore of iron in Ontario, but I have no doubt now. The range is said to extend from Hunter's Island to the Kaministiquia river, and beyond it, and it is thought to be a continuation of the famous vermilion range of Minnesota. We got upon it near Greenwater lake, south of Lake Shebandowan, where there is a deposit of solid ore of fine quality fifty feet wide. The northern exposure is a bluff thirty feet high, and Mr. Hammond told us that it has a length of nearly half a mile. Twelve or fifteen miles farther east, in the Mattawan valley, we came upon the range again. There it appears as a little mountain over 100 feet high, 400 to 450 feet wide, and about a quarter of a mile long. A mile eastward is another mountain, higher, wider, and longer, but showing more jasper, especially on the western slope. There are eight of these hills in succession down to and beyond the Mattawan river, and I do not believe that either the Vermilion or the Mesaba ranges of Minnesota can show any ore bodies larger or better. No, I have no fears now of a scarcity of hematite iron ores in Ontario, the director said in his quiet way, and fifteen to twenty miles of the new railway would connect the locations with the C. P. R., or the Port Arthur, Duluth and Western road. There are very large deposits of magnetic iron ore, he said, on the Atik-oka river; the largest, no doubt, that we possess in Ontario. But they are fifty miles from a railway, and for some time to come it is hardly likely that the price of ores will warrant the cost of a railway to reach them. But they have kept a long time, and when wanted they will be there. Let the United States produce 15,000,000 tons of pig iron a year, and good authorities say they will begin to do so by the beginning of the twentieth century, and how long do you suppose it will be before necessity compels an opening of iron mines in Ontario? For my own part, however, I should greatly prefer to see our ores smelted at home. With so much raw material we ought to have an iron industry of our own, instead of importing nine-tenths of all the iron and steel we require from Great Britain and the United States.

GEO. WHITE-FRASER,

C.E., D.T.S., A. AM. I.E.E.

CONSULTING ELECTRICAL ENGINEER TO
Corporation of Town of Gollingwood
Guelph Electric Railway Co., &c.

Electrical Engineer.

Estimates, Plans, Specifications, Construction,
Surveys, Electric Lighting, Electric Rail-
ways, Electric Mining Plants, Electric
Treatment of Ores.

*Special attention paid to Multi-phase transmission of power, from water power sources for all
Industrial purposes.*

Electric Lighting and Railway Plants superintended; advice as to operation.

IMPERIAL LOAN BUILDING.

Toronto, Sept. 25th 1895.

*The Editor
Canadian Manufacturer*

*Sir
Kindly continue my adⁿ until further notice.
I have pleasure in stating that more business
has come to me through my adⁿ in your paper -
than through any other similar source.*

Yours truly

George White-Fraser

It is related in classic story that the mighty Theseus in seeking for a bride for his friend Pirithous, descended into Hades that he might abduct therefrom the fair Proserpine who was considered the choicest flower of Pluto's dreary realm. Passing by without attack from him, the three-headed Cerberus at the gates of Hades, and then in succession the snakes of the Furies, and all the other monsters that were placed along the passages to this subterranean cavern for the torturing of each new-comer, Theseus began to imagine that he must be of lordly extraction, since the very devils in hell were not allowed to touch him. And thus reflecting he seated himself on a stone by the way, to rest himself for a while and to meditate on his own greatness. And there he sat and rested in full-browed contemplation, until essaying to rise that he might continue his search, he found that he could not do it. Only that and nothing more! There was no torture in his situation—no devouring fire or flaming spirits to rend him. He simply could not get up and go about his business. And there the story leaves him—sitting forever in hell and meditating upon his own greatness. How like the situation of many once prosperous and leading firms of manufacturers, who, puffed up with the idea that "everybody knows us," and confident in the selling qualities of once standard goods, verily "sit down to meditate on their own greatness." Sometimes, they, too, are unable to rise when they awaken to the fact that other concerns are greater and more powerful than they are, and have attained that position by taking advantage of the modern helps to prosperity, among which advertising in the trade papers is not the least.—Manufacturing Jeweler.

It is significant of the progress which the sentiment for tariff protection is making in Great Britain, that such an important commercial journal as the Mark Lane Express should publish some of the assertions made by Mr. Cobden as to how free trade would affect certain British industries, and in a

parallel column produce proofs that Mr. Cobden was a false prophet. We reproduce a half dozen of Mr. Cobden's prophecies, and the proofs of their failure, as exhibited by the Mark Lane Express, and commend them to the consideration of the Toronto Globe:

PROPHECY.

"Land would not be driven out of cultivation by the repeal of the Corn laws."

"Land owners have nothing to fear from free trade in corn."

"In a country growing in population and advancing in prosperity, land always increases in value and without any help from the owners."

"The land of England would produce 25,000,000 quarters of wheat per annum."

"We should always have a natural protection of 10s. 6d. per quarter on wheat in the shape of carriage from abroad."

"We might as well doubt that the sun would rise on the morrow as doubt that in ten years every civilized nation on earth would have followed our free trade example."

PROOF OF FAILURE.

Nearly 2,500,000 acres have been driven out.

Rents and agricultural land values have fallen from 30 to 50 per cent.

If all the land in cultivation twenty years ago was worth £50 an acre, and has fallen 40 per cent., that is a loss of £20 an acre.

In 1862 we grew 17,000,000 quarters, in 1892 about 7,000,000.

Freights for wheat are now below 2s. a quarter, and it has been carried free, as ballast.

Not a single nation on earth has followed our example, and all are heavily taxing our goods in return for a free market here.

ROBIN, SADLER & HAWORTH

Manufacturers of

OAK TANNED LEATHER BELTING

MONTREAL AND TORONTO.

Orders addressed either to our Toronto or Montreal office will have prompt care
Goods will be forwarded same day as order is received.

Lincoln's apprehensive distrust of marriage is revealed in some extremely interesting letters from the great President in the October Ladies' Home Journal, in which John Gilmer Speed discusses "Lincoln's Hesitancy to Marry." The letters are given publicity for the first time, and are addressed to Lincoln's most intimate friend, Joshua Speed. The Home Journal blends interest, entertainment, instruction, usefulness and artistic excellence. It is published by The Curtis Publishing Company, Philadelphia.

Much of Robert Louis Stevenson's best work appeared for the first time in Scribner's Magazine, the only periodical to which he was an habitual contributor during the last ten years; and it is therefore peculiarly appropriate that the first account of his home-life at Vailima, written by a member his household—his stepson and co-worker, Lloyd Osbourne—should appear in Scribner's pages. Mr. Osbourne's account, in the October number, of the home which Stevenson created, of his extraordinary influence throughout Samoa, and the interesting household of Samoan servants and dependents which he built up around him, is most picturesque and entertaining. The whole article is an intimate personal account of a remarkable genius by one who loved him.

MACHINERY OF THE NEW AMERICAN SAULT LOCK.

Machinery for operating the gates of the new 800-foot lock at Sault Ste. Marie is being placed in position. The machinery proper is divided into two parts—the operating plant and the pumping plant. The operating plant consists of six machines which will be used in swinging the gates, twelve engines for opening and closing the valves, by means of which the water is let into and out of the chamber, and two hydraulic capstans, together with the pumps, accumulators and piping necessary for the operation of the same. There is a gate machine for each leaf of the working gates which are styled the upper, lower and intermediate lock gates. Each gate machine consists of two three-cylinder, single-acting hydraulic engines on one shaft. These engines drive a 6-foot winding drum, on which the cables are wound. The drum is driven in either direction by means of internal planet gearing. The gears are controlled by two friction brakes in such manner as to revolve the drum in one direction when one brake is set, and the reverse way when the other is set. The working parts of the gate machines are of the finest steel,

with bearings of bronze. Each machine weighs about ten tons and stands five feet high. The drums are six feet in diameter. The cable on the gate machines runs around sheaves in passages through the walls to the bottom of the chamber where it is connected with the gates.

The valve engines are twelve in number. Six are placed at the upper end and six at the lower end of the lock. They are direct acting horizontal cylinders and move the valves by connecting rods, which run from the crossheads to valves. These engines are operated by vertical valves placed on top of the south wall, which are connected with them by piping in such a way that each valve controls two engines. Twelve valves are used in filling and emptying the lock chamber. The valves and frames are of the best wrought steel. They are 8 x 10 feet in size and are carried on solid steel trunnions ten inches in diameter. The valves are three inches thick on the edges and sixteen inches in the middle. When they are swung open there is an effective passage of sixty-four square feet. One of the hydraulic capstans is located at the upper and other at the lower end of the lock, on the south side. In appearance they are similar to the ordinary ship capstan. They are driven by three single-acting oscillating hydraulic engines, and each will develop a pulling power of 19,000 pounds on an ordinary line. The capstans will be used in assisting vessels through the lock when they have no power of their own. The machinery of the capstan is set down in the wall in a circular opening.

In the basement of the power house will be located two thirty horse power turbines, which will drive three three-plunger single-acting high pressure pumps that will deliver pressure fluid to loaded accumulators, where it will be stored under a pressure of 300 to 500 pounds per square inch, ready for use and delivered to the engines as required. The exhaust or discharge from engines will be returned by means of a separate set of piping to a tank in the engine room and used continuously. The pressure fluid will probably be a limpid mineral oil and will be used during the entire season. This will be different from the present lock, which uses water pressure in summer and oil during cold weather. The gate machinery is entirely different from any at present in use for similar purposes and represents a combination of hoisting machinery and the best English hydraulic practice. The pumping machinery, which will be used for entirely emptying the lock in case of an accident to the gates, cost approximately \$88,000. It

The Babcock & Wilcox Water Tube Boiler

Over 1,500,000 Horse Power

Of these Boilers now in use



Large Book "STEAM," Sent Free on Application.

Sales During 1892 were 162,300 Horse Power. Sales for Month of June 1895, Exceeded 25,000 Horse Power.

WM. T. BONNER, HEAD OFFICE—415 Board of Trade Building, MONTREAL. General Agent for Canada. Shops at BELLEVILLE, CANADA.

will be located in the basement of power house. It consists of three centrifugal pumps, each thirty inches diameter of discharge. These are to be driven by three compound engines of 350 horse power each. Steam for this plant will be furnished by a battery of water tube boilers, set in steel castings. It is expected that the lock can be emptied in six or seven hours. The boilers were built by the Babcock & Wilcox Co., New York.—Sault Ste. Marie, Mich., News.

The Hamilton Iron & Steel Co., whose blast furnace plant at Hamilton, Ont., is fast approaching completion, are looking around to discover where they can best obtain their supplies of ore. Regarding this the Hamilton Spectator says:—J. J. Morehouse, superintendent of the smelting works, has gone up to Pembroke and the ore districts of Northern Ontario to arrange for the supply of ore for the furnaces. An immense stock will be required, as the furnaces will use 300 tons every day of the year—"no Sundays or holidays"—and it will be necessary to have at all times a couple of months' supply at the furnaces and four months' supply at the mines to provide against any contingencies which might cause the fires to have to be banked, as that is a most costly and losing operation. Mr. Morehouse is desirous of getting all his ore in Canada, but he looks forward rather dubiously to the task of awakening the northern mine owners to the needs of such a demand as will be created as soon as the Hamilton company commences operations. It will take some time to get both the mine owners and the railways alive to the extensive character of the productive and transportation operations that will be necessary to keep the insatiable maws of the big furnaces supplied. In case he is not successful in contracting for the amount in Ontario, he will be forced to bring ore from near Rochester, where there is an available supply of 200 tons per day. In the matter of transportation, Mr. Morehouse has interviewed the president of the Pennsylvania line, which owns the new coal ferry across Lake Erie to Port Dover, and has been promised the use of 200 open-bottomed flat cars belonging to that road, provided the Grand Trunk will exchange an equal number of ordinary coal cars with the American company. Cars with open bottoms are necessary for the handling of ore, as much time is saved in unloading by running the cars on a high trestle and letting the ore run out by opening a trap door in the floor.

CAPTAINS OF INDUSTRY.

This department of the "Canadian Manufacturer" is considered of special value to our readers because of the information contained therein. With a view to sustaining its interesting features, friends are invited to contribute any items of information coming to their knowledge regarding any Canadian manufacturing enterprises. Be concise and explicit. State facts clearly, giving correct name and address of person or firm alluded to, and nature of business.

Trainer's grist mill at Dundalk, Ont., was destroyed by fire September 12th.

A new infirmary is being erected in connection with the Hamilton Ont. Asylum that will cost, when finished, between \$20,000 and \$25,000. It will be a brick structure, three stories high, with stone foundations.

Mr. Odhur M. Hartt of New York purposes to start a stock company for the purpose of erecting a large boot and shoe factory in Fredericton, N.B.

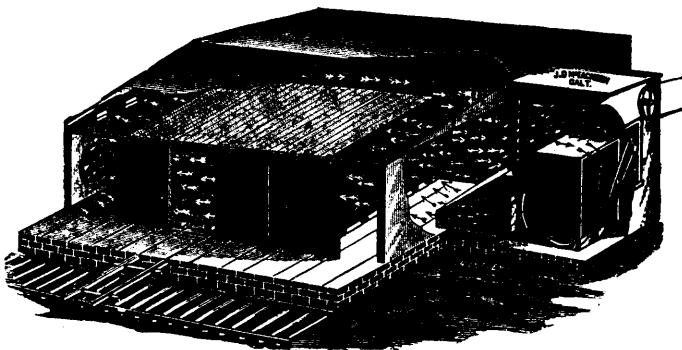
The Union Brewing Co., of Nanaimo, B.C., will erect a brewery at Union, B.C.

It has been resolved by the farmers of Spallumcheen and Okanagan, to organize a joint stock company to establish a flouring mill, \$10,000 has already been subscribed, and the project seems likely to succeed.—Vernon, B.C. News.

The Robb Engineering Co., Amherst, N.S., inform us that the Halifax, N.S., Electric Railway Co. have ordered two 300 horse-power engines, in addition to two of the same kind now under construction for them; the Dominion Coal Co., Sydney, N.S., have ordered one 60 horse-power engine to run their machine shop at Glace Bay, C.B.; the N. Sydney, N.S., Electric Co., have decided to enlarge their plant and have ordered two dynamos from the Canadian General Electric Co., and a 100 horse-power Robb-Armstrong engine and Monarch Economic boiler from them (The Robb Engineering Co.); and the Canadian General Electric Co. are installing a direct connected 50 horse-power Robb-Armstrong engine and dynamo in the Ladies' College at Whitby, Ont.

McEachren's System of Drying, Heating and Ventilating

Under Recent Patents.



CHEAP AND EFFECTIVE. HIGHLY APPROVED OF BY PRACTICAL MEN.

The following is a specimen of letters received from customers :

J. D. McEACHREN, Esq., Galt, Ont.

OTTAWA, April 1, 1895.

DEAR SIR,—Replying to your enquiry regarding Dry-Kiln purchased from you last summer, we beg to state that our lumber is stained hardwood, principally birch, which is put through a chemical process thereby rendering seasoning a very difficult operation. We tried to have it dried in the several styles of kilns used by factories in this district, all of which failed to take the moisture out of the core of the wood. In August last we put in one of your kilns with a capacity of 10 cars, or 30,000 feet, and since that time have seasoned most satisfactorily about 200,000 feet. The boards come out free from checks and warps, and we are now thoroughly convinced that it is the only dry-kiln in the market which fills the bill both as to efficiency and economy.

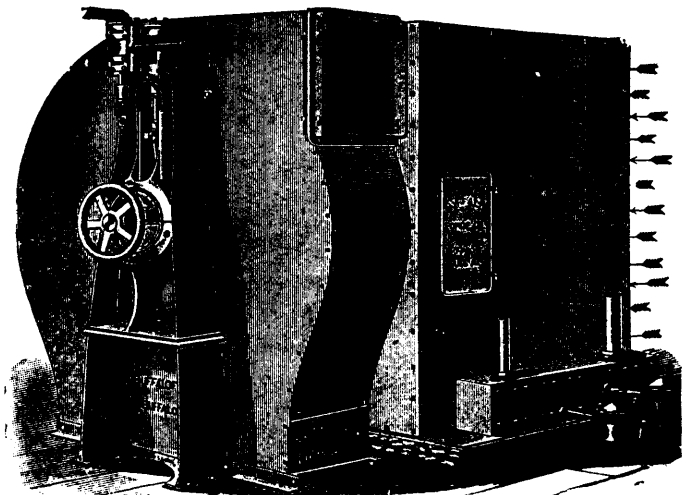
Yours truly,

McRAE BROS. & CO.

For particulars address—

McEACHREN HEATING AND VENTILATING CO. GALT, ONTARIO

Buffalo Lumber Dry Kilns



THE LARGEST DRIER IN AMERICA IS EQUIPPED WITH A "BUFFALO" HOT BLAST APPARATUS. THE OWNERS ARE ENTHUSIASTIC.

All users of Buffalo Kilns write letters similar to this one: "The Kiln answers every purpose to perfection; the Dry Rooms are run with exhaust steam at mere nothing in the way of cost, compared with the old way. Your arrangement is very simple and easily managed, besides being a money saver in operation. We are able, with the Kiln you sent us, to dry soft woods in three days, and hardwoods in five days. That's good enough for anyone."—SMITH BROS., Sayre, Penn.

Send for Catalogue.

Buffalo Forge Co., Buffalo, N.Y., U.S.A.

SOLD IN

Toronto, Ont., by H. W. Petrie. Brantford, Ont., by Canadian Machinery and Supply Co. Montreal, Que., by Canada Machinery Agency. Chicago Store, 22 and 24 West Randolph Street

Architect J. W. Liddall has taken out a permit for the erection of a new Jewish Synagogue at Toronto. The building will be after the style of a mosque, and is estimated to cost about \$25,000.

The new pulp mills at Sault Ste. Marie, Ont., promise to be one of the most important enterprises to be found in the western district of the provinces. Between 600 and 700 hands are engaged in the construction of the works and in getting out timber. Mr. Clergue, and those associated with him in completing the water power and in erecting the pulp mills, have shown great enterprise in the work. In addition to erecting the pulp mills, the company have plans prepared for two large buildings for paper mills.

The erecting shop of the Kingston & Pembroke Car Works, Kingston, Ont., was demolished by an electric storm, at that place, on September 11th; loss about \$1,000.

The Dominion Cotton Mills Co.'s mill at Kingston, Ont., was partially destroyed by an electric storm, at that place, September 11th; loss about \$80,000.

Hon. Thos. Greenway intends overhauling and improving his mill at Crystal City, Man.

The Bicycle Accident Repair Co., Toronto, has been incorporated with a capital stock of \$10,000 to manufacture, repair, etc., bicycles.

The McEachren Heating & Ventilating Co., Galt, Ont., have established an office at 124 Bay St., Toronto, where they will carry a line of Wonder hot water boilers, dry kilns, etc. Mr. George A. Perry is the Toronto manager.

A large and representative meeting of the cycle manufacturers and jobbers of Canada was held at Toronto, a few days ago for the purpose of completing the organization of a Canada Cycle Board of Trade. Representatives were present from Toronto, Kingston, Montreal, London, St. Catharines, and other places. The following officers were elected for the ensuing year:—President, Joseph N. Shenston, Massey-Harris Company; Vice-President, D. F. Maguire, Griffiths Corporation; Secretary, James Miln; Executive Committee, H. E. Walton, Kingston; T. Fane, Toronto; Mr. Knowles, Brantford; Mr. Chapman, St. Catharines. It was decided to hold a cycle show during 1896 under the auspices of the board.

It is stated that the Grand Trunk Railway Co., have definitely decided to locate their new car shops at London, Ont., as being the most convenient in Western Ontario.

George M. Dawson, Director of the Geological Survey, arrived home at Ottawa a few days ago, after making an inspection of the experimental boring for petroleum at Athabasca Landing, N.W.T. He found the boring progressing satisfactorily under Mr. Fraser, who has the contract for the work. The borings are now down to a depth of about 1,500 feet, and the prospects appear to be good for getting down two or three hundred feet deeper, to the sandstone, which underlies the cretaceous formation, and in which the petroleum is supposed to exist.

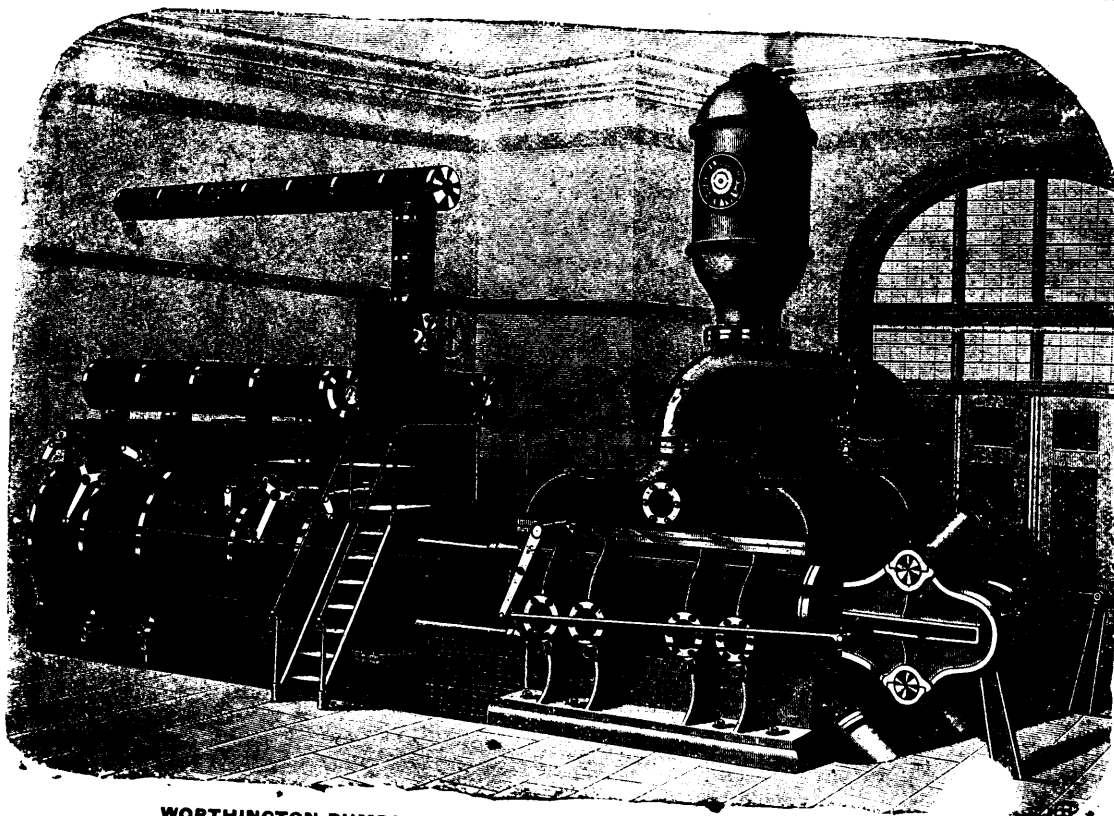
A telegram from St. Johns' Nfld., states that a discovery of what promises to be a very valuable seam of coal has been made near Grand Lake, quite close to the western end of the railway now being built in that island. Other seams in the vicinity are also announced. The largest seam has, as yet, been opened only to the depth of a few feet, but the quality is excellent—hard, bright and solid, approaching the nature of anthracite, and appears to improve as the depth increases. It is needless to remark that should it turn out as expected it would be of immense value to the country at large and to the railway in particular. Borings are now going on.

The Buffalo Evening Times has the following to say regarding the electric light plant recently installed in the Court House in that city, the engines for which were built by the Buffalo Forge Co., and is strong testimony regarding them as to their efficiency for electrical work. The item says:—The new electric light plant at the County House, has been formally accepted by the Supervisors' Committee. The test made in their presence showed about one per cent. variation in the voltage of the dynamo, between no load and 100 amperes. This means that it will require but little regulation as well as attention. A test of the engine built by the Buffalo Forge Co., was also made and was very gratifying to all interested parties. Engines specially made for electrical work require very exact regulation, in fact, is a necessity in the up-to-date engine. The plant was installed by an electrical engineer of this city, who was employed by the committee for the purpose. While the number of lights was increased a third the cost of the plant was a third below the original estimate.

JOHN McDOUGALL

CALEDONIAN IRON WORKS,

MONTREAL, QUEBEC.



WORTHINGTON PUMPS ARE UNEQUALLED FOR EFFICIENCY AND ECONOMY

General Agents

in Canada for

THE FAMOUS

Worthington

Pumps

Hydraulic

Machinery

Condensers

AND

Water Works

Supplies

Messrs. Brackman & Ker, will erect a saw mill at Edmonton, Man.

D. O'Connor's planing mill at Ottawa was destroyed by fire Sept. 17th; loss about \$20,000. Mr. O'Connor will re-build.

Mr. Desireguay's tannery at St. Rochs, Que., was destroyed by fire Sept. 17th.

Jean Tremblay's saw and flour mill at Pointe aux Trembles, Que., was destroyed by fire Sept. 15th.

Duplessis' tannery, city of Quebec, was damaged by fire Sept. 17th, to the extent of about \$5,000.

Mr. McKane's shoe factory at city of Quebec, was damaged by fire Sept. 17th, to the extent of about \$15,000.

Messrs. R. McDougall & Co's. pump and furnace works at Galt, Ont., were damaged by fire Sep. 14th.

G. F. Monckton will erect and operate a smelter at Vancouver, B.C., if the city will give him a \$5 a ton bonus for the first 5,000 tons smelted. A mining school will be established in connection with the smelter.

La Compagnie Manufacturiere de Saint Gabriel de Brandon (The St. Gabriel de Brandon Manufacturing Company) St. Gabriel de Brandon, Que., are applying for incorporation with a capital stock of \$10,000 to manufacture spinning wheels and other articles of wood. Dr. J. O. Laurendeau is one of the promoters.

The Fraserville Electric Power Company, Fraserville, Que., are applying for incorporation with a capital stock of \$25,000 to operate telephones and do electric lighting and supply electric motors for commercial purposes in Kamouraska and other counties in that province. N. G. Pelletier and P. E. Grandbois, M.P., are interested.

Under the supervision of Mr. George White-Fraser, consulting electrical engineer, Toronto, the Clinton, Ont., Electric Light Co., are increasing the capacity of their plant. The old plant was of 500 light capacity, direct current on the 3-wire plan. This has been discarded the new plant to be of 1,000 light capacity, alternating current. As far as possible the old mains, etc., will be retained.

Benj. Patterson has sold his grist mill at Burritt's Rapids, Ont., to T. A. Kidd.

S. Petitpiece has sold his woollen mill at Burritt's Rapids, Ont., to Thos. H. Miller.

Mr. L. Ludwig, vinegar manufacturer, London, Ont., intends to shortly establish his business at Toronto.

The Sayward Saw Mill Co., Victoria, B.C., will shortly put in a band mill.

Messrs. John Bertram & Sons, of Dundas, Ont., have received a large order for paper mill machinery from the Masterman Sulphite Fibre Co., Chatham, N.B.

The Irving Umbrella Company, Toronto, has been incorporated with a capital stock of \$25,000 to manufacture umbrellas, etc. Mr. G. T. Irving is at the head of the concern.

The Henderson Bicycle Company, which started in a small way in Brantford, Ont., last season, has decided to remove to Goderich, Ont., where the town is giving them exemption from taxation and other privileges. A company of Goderich and Toronto men are interested, and a capital of \$100,000 has been subscribed.

La Compagnie Ostreicole de Quebec, which was incorporated by letters patented on the June 10, 1893, is now commencing active operations. Its objects are to breed, cultivate, fatten and export oysters, and the scene of its operations is at Carleton, Baie des Chaleurs, Province of Quebec. The beach at that place has been accorded it by the local Government, and the federal Government, by an order-in-council dated 27th July last, has transferred to the company all its rights in the waters there and given it permission to construct certain dams. Local rights have been secured by it from the municipality of Carleton, and work is now proceeding upon a dam, containing sluices, which is to be over 300 feet in length, and will aid in enclosing the oyster farm, a tract of water in the bay covering 471 acres in superficies. The company expect after a while to send to market twenty millions of prime oysters annually. Its capital is \$30,000. Already oysters from Buctouche, Shediac, Cocagne and Caraquet have been planted upon the new farm. If success attends the efforts of the company there is no doubt that it will be followed by a number of others of the same kind.

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TORONTO, ONTARIO

BUILDERS OF

Model Roller Flour Mills

OF ALL CAPACITIES.

Manufacturers of High Grade Improved Flour Mill Machinery.

Dealers in Mill Furnishings and Supplies.

Sole Agents for Genuine Dufour Bolting Cloths

Large and Varied Stock Ready for Immediate Shipment

SOLE OWNERS FOR CANADA OF THE

DAWSON IMPROVED ROLL CORRUGATIONS

Producing Unsurpassed Results. No Extra Charge for this Corrugation.

Rolls Elegantly Ground and Corrugated with Despatch.

... ORDERS SOLICITED

William Partlos' large flour mill at Ingersoll, Ont., was destroyed by fire Sept. 28th; loss about \$20,000.

The sash and door factory of Messrs Aquin & Itzweire at St. Cunegonde, Que., was destroyed by fire Sept. 20; loss about \$3,500.

The Ontario Pressed Brick Co., Toronto, are building a large addition to their works at Toronto Junction. They have also built another kiln.

The Chaudiere Machine & Foundry Co., Ottawa, has been incorporated with a capital stock of \$15,000 to carry on the business of founders and machinists.

Messrs. O. S. Rixford and associates, of Upper Bedford, Que., are applying for incorporation as the Bedford Manufacturing Co., with a capital stock of \$65,000 to manufacture edge tools, etc.

The Tilbury Peninsula Oil and Gas Company, with headquarters at Tilbury Centre, Ont., are applying for incorporation with a capital stock of \$20,000 to bore for natural gas, oil, etc.

Natural gas has been discovered at Iberville, Que. A few days ago while boring an artesian well at that place, a fine stream of gas was struck at a depth of 123 feet.

John Davey's shingle mill at Lindsay, Ont., was destroyed by fire Sept. 25th; loss about \$2,500.

Fire in the works of the Central Bridge and Engineering Co., at Peterborough, Ont., Sept. 27th did damage to the extent of about \$1,000.

T. & J. N. Andrews' oat meal and barley mill at Thornbury, Ont., was destroyed by fire Sept. 18th.

A vein of hard coal has been discovered at St. Pierre, Island of Orleans, Quebec. Mr. Globenski, Provincial Inspector of Mines, it is stated, expressed his opinion that the discovery is a valuable one.

H. A. Lozier & Co., of Cleveland, Ohio, bicycle manufacturers, who bought the Barnum Iron Works property at Toronto Junction are making extensive alterations and building a large brick addition thereto.

Mr. Miller, the builder of the power-house and lock-gates, has received a contract to build the offices and machine shops for the Sault Ste. Marie ship canal and is laying out the works. The offices will be built near the flagstaff, and the machine shop near the power-house.—Sault Ste. Marie Pioneer.

As we have heretofore stated, the Mica Boiler Covering Co., Toronto, have found their accommodation in Bay street too small for the purposes of their rapidly increasing business, and have therefore secured much larger and more commodious premises at 9 Jordan street which are now being prepared for them and which they expect to occupy the 15th of the present month.

The Heeson Grate Bar Co., Toronto, informs us that they have recently placed their apparatus in the furnaces of the following concerns:—Macdonald Rolling Mills, Toronto Carpet Manufacturing Co., Dominion Bank, Commercial Traveller's Association building, Joseph Simpson's Knitting Works, all in Toronto, and Masonic Temple, Mount Hope Orphanage, St. Paul's Church and Public School, all in London, Ont.

The Stevenson Boiler Works, Petrolia, Ont., of which J. H. Fairbanks is proprietor, has just delivered a fine 75 h.p. boiler to James Kerr of that place. Other work recently turned out of these works include a 50 h.p. boiler for Perkins & Son; a 50 h.p. boiler for Noble & Perram; a 25 h.p. boiler for Van Tuyl & Fairbank new block; a 15 h.p. boiler for Ed. Watson; a new bottom for the Imperial Oil Co's jumbo agitator, new 10x30 ft. crude oil still for the Fairbank, Rogers Co., and other similar work. Mr. Fairbanks has recently been awarded a contract for the building of two large oil storage tanks for Messrs. Gross & Granger of Whitby, Ont.



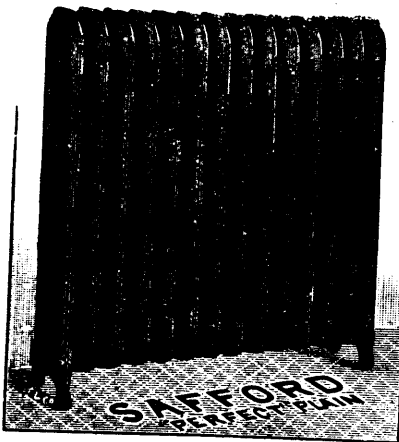
HEATING APPARATUS

Safford ∴ Radiators

RECEIVED THE HIGHEST AWARDS :

ANTWERP (BELGIUM) EXPOSITION 1894.
SHERBROOKE (QUEBEC) EXHIBITION 1893.

TORONTO (ONTARIO) EXHIBITION 1894
OTTAWA (ONTARIO) EXHIBITION 1892



All Iron.

Largest Radiator Manufacturers
Under the British Flag.



The **Toronto Radiator Mnfg. Co. Ltd.**, TORONTO, ONTARIO

J. V. Burns' grist mill at Manitowaning, Ont., was destroyed by fire Sept. 30th; loss about \$6,000.

John B. Smith & Son's saw mill at Callendar, Ont., was destroyed by fire. It will be re-built immediately.

Bloom's saw mill at Holmesdale, Ont., was destroyed by fire Sept. 25th.

Listowel, Ont., is making an effort to induce McTavish & Co., furniture manufacturers, of Wingham, Ont., to remove their plant and business to Listowel, Ont. They offer a suitable building, rent free and other inducements.

Mr. Joseph Cawthorpe of Thamesford, Ont., has bought a flour mill at Ridgetown, Ont., with a capacity of 150 barrels a day. It is a brick structure, five stories high, 45 feet square.

The G. T. R. will build a tank with a capacity of 150,000 gallons at Kingston station for supplying cattle passing along the line.

The Brantford Bicycle Supply Co., Brantford, Ont., are applying for incorporation with a capital stock of \$25,000, to manufacture bicycles, carriage and other supplies.

Northumberland Stone Co., Sackville, N.B., are applying for incorporation with a capital stock of \$10,000, for the purpose of quarrying building-stone, etc.

The Maritime Nail Co., St. John, N.B., are applying for incorporation with a capital stock of \$50,000, to manufacture nails, etc.

The G. & G. Flewelling Manufacturing Co., Hampton, N.B., are applying for incorporation with a capital stock of \$150,000, to manufacture lumber, etc.

The LeBlanc Manufacturing Co., Yarmouth, N.S., have been incorporated with a capital stock of \$5,000, to manufacture doors, sashes, etc.

The Green Automatic Door-Lock Switch Co., Halifax, N.S., are applying for incorporation with a capital stock of \$16,000, to manufacture the Green automatic door-lock switch, etc.

The Packard Electric Co., St. Catharines, Ont., have recently appointed as their representatives Ahearn & Soper for Ottawa and Hull, and Jno. Starr, Son & Co., of Halifax, N.S., for the Lower Provinces.

Mr. Stouffer will erect a button factory in Berlin, Ont., this fall. Building will be 40x35, two stories high.

The Union Furniture Company, Wingham, Ont., have decided to rebuild their factory at once.

Brault's Mill, at Brault's Mill, near Arthabaska, Que., was destroyed by fire on Sept. 23rd.

The St. Thomas Car Wheel Company, of St. Thomas, Ont., will establish a branch of their business in Austria.

The Richelieu & Ontario Navigation Company have commenced to reconstruct their work-shops at Sorel, Que. The building will be 180x40 feet.

The New Richmond Lumber Company, Richmond, Que., are applying for incorporation with a capital stock of \$10,000, to manufacture lumber.

The Credit Forks Mining and Manufacturing Company, Toronto, are applying for incorporation with a capital stock of \$200,000, to manufacture lime, bricks, terra cotta, etc.

The Continental Cordage Co., Brantford, Ont., are applying for incorporation with a capital stock of \$50,000, to manufacture cordage.

The Ingersoll Locked Wire Fence Company, of Ingersoll, Ont., have started a branch establishment of their business in Montreal.

The Henderson Bicycle Company, Goderich, has been organized with a capital of \$100,000, to manufacture bicycles, etc. They will occupy the old Goderich foundry with the addition of a building to be erected 40x36 feet and will employ about 75 hands.

The Parry Sound, Ont., Railway Company will shortly commence the construction of its shops at Archville, Ont.

A company has been formed at Perth, Ont., for starting a canning factory there. The mayor will give information.

John George, of Port Elgin, has been awarded a contract to build a light house and fog alarm building at Cabot Head, Georgian Bay, Ont., at a cost of \$3,475.

The output of the binder twine factory at the Kingston Penitentiary has been disposed of, and the operatives are now working for next year's sales. They will make 620 tons, with the expectation that more twine will be sold next year than was sold in 1895.

The Royal Electric Comp'y

MONTREAL, QUE.



Western Office... TORONTO, ONT.

Are now prepared to receive orders for the justly celebrated

STANLEY TRANSFORMERS

A MONEY MAKER FOR THE CENTRAL STATION

None equal them. They increase station capacity. They diminish operating expenses.

Economy Efficiency Regulation

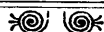
ALSO A FULL LINE OF ELECTRICAL APPARATUS

ARC DYNAMOS ARC LAMPS RAILWAY GENERATORS RAILWAY MOTORS

S. K. C. TWO PHASE ALTERNATING GENERATORS AND MOTORS

Direct Current Generators and Motors, Switchboards, Instruments, Wire, Electrical Supplies.

CORRESPONDENCE SOLICITED For ELECTRIC LIGHTING, RAILWAY, MANUFACTURING AND MINING WORK, ISOLATED PLANTS, CENTRAL STATIONS, LONG-DISTANCE TRANSMISSION FOR LIGHT AND POWER.



The Niagara Navigation Co., Toronto, of which Sir Frank Smith is president, have decided to build a new steamer to take the place of the recently destroyed Cibola on the route between Toronto and the Niagara river. The vessel will be larger than the Cibola and nearly as large as the Chippewa. She will be built by the Bertram Engine Work Co., at their shipyards in Toronto.

Two of the directors of the great Sault. St. Marie pulp mill passed through the city a few days ago and they report that the new Canadian canal at that place is securing all the business or quite as much as it can accommodate. The steamers with their consorts, it appears, find it a great deal easier to pass through the splendid Canadian lock than by the United States Canal. This means, among other things, an increased value of many daily sales of Canadian farm products to the vessels passing through the new canal. In fact, the Algoma farmers are not yet prepared for so great a demand and supplies are being brought from older Ontario. The directors add, however, that much good vacant land remains within 100 miles of the canal and no doubt farming in the district will receive an immediate impetus.

The pulp mill now being constructed at Sault St. Marie, Ont., will be the largest in the world and will have a capacity of 9000 horse power, the next largest in the universe being 2700 horse power. This, however, is not enough to satisfy the promoters of this colossal undertaking, and it is their intention to have a second pulp mill of 9000 horse power ready for operation next February. They will also build a dry dock, into which vessels drawing 19 feet can enter and the same will fill and empty itself automatically. The water will enter from Lake Superior on the high level and empty itself into the lower level of Lake Huron.

Mr. Edward Winnett, Petrolia, Ont., who has recently built and occupied a new and commodious boiler shop, finds business very brisk, and has many orders in hand which will keep him busy for some time. He has recently built boilers for the following parties:

For A. C. Edward, five stationary and portable boilers, from 20 to 80 h. p. each; Camerom & McKittrick, one of 40 h. p.; R. Morris one of 40 h. p.; Morris & Gurd, one of 50 h. p.; Robt. Palmer, one of 60 h. p.; H. Corey, one of 60 h. p., and has well under way for May & Co., Petrolia Flour Mills, an 80 h. p. boiler five feet in diameter with 82 14-foot flues.

BERLIN'S SEWAGE FARM.

The Berlin, Ont., Record a few days ago gave an account of the Berlin sewage farm, the first enterprise of the kind in Canada. It says:—The land or farm, as it is styled, which has been set aside as a huge filter for the city sewage is twenty acres in extent, and situated in the south-eastern portion of the town. Driving along the road in that locality and passing the place a stranger might mistake it for a well cultivated and flourishing market garden. The sewage and waste water from the town and its manufactories is conveyed through the 18-inch trunk sewer pipe for a mile or so across gardens and lots to the farm, where it flows into a large half-pipe running along the entire front and one side of the farm, with several tributaries exposed and so fitted that with a gate or cut-off it can be made to overflow at any given point, or over any of the numerous two or three acre beds into which the farm has been sub-divided.

Almost the whole of the twenty acres has been underdrained, that is at certain regular distances, rows of tiles have been laid at a depth of two or three feet beneath the surface. When a given bed is flooded with the dark-looking water from the sewer it filters through the beds of gravel down into the tiles, and is carried off by them to the creek, and the water is as clear as the creek water itself, and has no odor or offensive smell. Some 80,000 tiles have been laid for this purpose. The beds can be flooded as desired, and where vegetables have been planted, as is the case in almost all the beds this year, the ground is first thrown up in drills and the nourishing water made to flow along between the drills or rows. The plants and vegetables are thus nourished without the water touching them at all.

The scene presented at the farm is that of a beautiful garden. Near the road are several acres of peas that have ripened and been pulled. Next comes a large bed of winter cabbage, consisting of, perhaps, a hundred long rows, all in the finest condition of growth; rows of beans and onions that were planted on a bed from which the surface soil had been taken, and whose richness has not as yet been restored by the products received from the sewage, and consequently, the beans and onions are not as good correspondingly as the cabbage. A fair-looking corn patch succeeds them. Other vegetables raised on the farm are carrots, tomatoes and mangel wurtzels. The latter are raised in large quantities, and it would be hard to find a field to equal them in the country, the wurtzels

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Manufactured by....

THE EDISON AND SWAN UNITED ELECTRIC LIGHT CO.

STAND HIGHEST IN THE MARKETS OF THE WORLD
FOR GENERAL ELECTRICAL AND MECHANICAL
PERFECTION, AND ARE MADE FROM 1 TO 2,000 C.P.
IN ALL VOLTAGES, COLORS AND SHAPES . . .

Electrical Supplies of Every Description

JOHN FORMAN, 650 CRAIG STREET
MONTREAL

being remarkable for their size and quality, and they will be exhibited at the Fall Fair.

Cabbage and mangels appear to be the farm's forte, and they are certainly good. Next year an additional area will be brought under cultivation, and is now being watered by sewage, but the land of which would be styled poor. After a course, however, it becomes very fertile. The prejudice once existing among the citizens against sewer farm vegetables has disappeared, and, in fact, these vegetables are now preferred over others for their finer quality, due to regular and uniform supply of moisture during growth. The farm will yield a considerable return this year from their sale, which promises to be greatly increased in coming years.

To Chairman J. M. Staebler, Engineer H. J. Bowman and Mr. Shoemaker belong much credit for introducing here a successful sewer system—the first of its kind in Canada. Not possessing any body of water into which the town's sewage could have been emptied, it was necessary to find some other adequate and hygienic means of disposing of it, and this has been done, and done well. A visit to the farm would repay any citizen's time, and perhaps disabuse him of many erroneous notions and objections.

EMERY.

Emery is one of the few valuable rocks not yet produced in important quantities in America. Large amounts are yearly brought from Turkey and the Greek Islands, where it has been quarried since history began. Its wonderful properties were no secret to the Ancients who used it for cutting and polishing, but their methods of working are not certainly known. Curiously, modern schemes of mining this substance have made no progress, and today ledges of emery are heated by huge fires, and the hot rock cracked by douches of cold water.

During the Middle Ages and for many years afterwards emery, while not forgotten, could not be utilized. The old art of working was lost, and ingenuity was yet unable to utilize this substance, which defied every effort. Slowly, however, it again came into use, first as a polishing and cutting powder, and later attached to fabrics like sand paper. Means were at last found to cement and mould its particles into wheels. Emery wheels soon came into general use, and thus was born a most important invention.

Years elapsed and yet the emery millstone had not been made; but, at length, this too was accomplished, and a practical emery stone was brought out in England; and later, Yankee ingenuity produced the present successful rock emery millstone, which is built up of large blocks of emery set in strong metal.

These rock emery millstones are able to grind anything. They grind fast because the emery face is always sharp, and they are economical, because, while not much more expensive than other millstones, they are as much more durable as emery surpasses other stones in hardness. Many new uses will be found for emery, which for ages has held to rocks the same unique position that the diamond has to gems; but, probably, it can take no more important part than that of the emery wheel and the emery millstone—the one cutting and polishing in the shops the hardest surfaces, and the other grinding everything that can be ground to any degree of fineness and with the greatest economy.

In this connection attention is directed to the business card of the Sturtevant Mill Co., of Boston, Mass., to be found in these pages, who are sole manufacturers of Sturtevant mill and rock emery millstones.

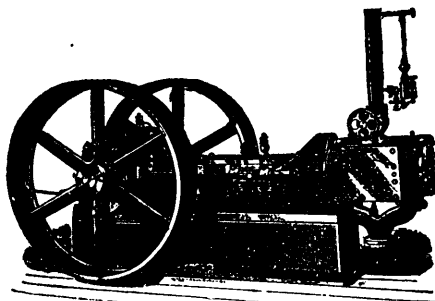
PETROLEUM IN ONTARIO IN 1894.

Petroleum and natural gas are now generally believed to have had a common origin. The latter originates under many conditions in which the former does not appear, Professor Orton says, but petroleum is never found free of inflammable gas, and in a large way all the facts and occurrences of both so exactly correspond that it is impossible to separate them in respect to their origin. Small quantities of oil has been found in the gas field of Essex and Welling, and an opinion prevails that in Essex there are great store-houses of oil that prospectors are trying to discover. In Petrolia and Oil Springs every well gives off more or less gas, and in the early days of the industry in Lambton the gas flow was very considerable; but in those days no thought was taken of utilizing gas as an article of fuel.

The petroleum industry has experienced a recent revival by an increase or price that set in towards the latter part of last year, but the effects are not noticeable in the returns made to the Bureau. For the current year there will no doubt be improvement, at least in the value of products; for it may be doubtful

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General Factory Purposes**

Perfect Regulation and Highest Economy.

**Steam Pumps, Shafting, Pulleys and
General Machinery.**

**NIE & WHITFIELD
HAMILTON, ONT.**

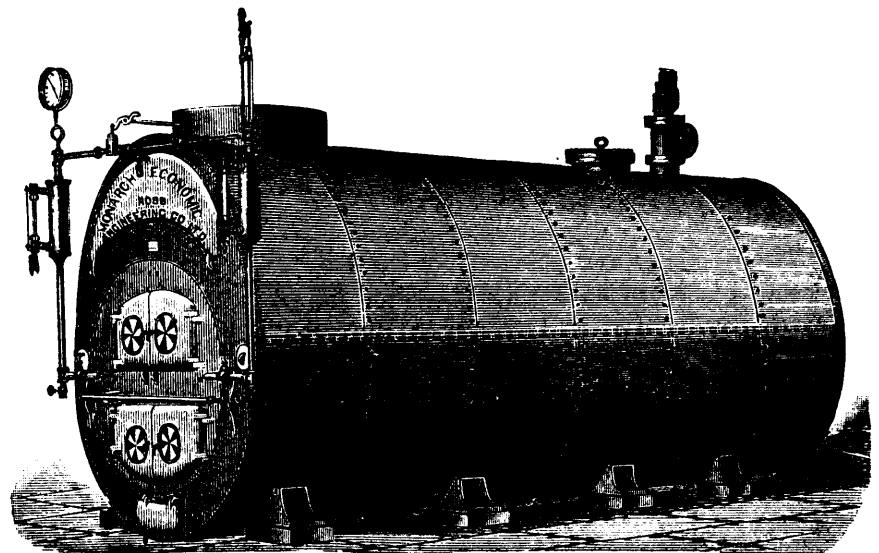
Firstbrook Bros.

Dovetail and Packing Boxes

Top-Pins, Side Blocks and Cross Arms. Wood
Printers, Etc.
Cigar Boxes. Shipping Cases.

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Monarch Economic Boilers.



Require no brickwork and are guaranteed to save at least ten per cent. in fuel over any brick-set boiler; in some cases the saving has been as high as thirty per cent.

ROBB ENGINEERING CO., (Ltd.), Amherst, N.S.

AGENTS:

**The Canadian Machinery Agency, 345 James Street, Montreal.
Wm. McKay, Seaforth, Ont., Travelling.**

that the fields now worked can be made to yield a larger supply of crude than they have been producing in recent years. It is certain, however, that promising districts will be tested, and probably one or two abandoned fields will receive attention again. Already enquiries are beginning to be made concerning the supply of petroleum in the region of Lake Athabaska, in the North-West territories, where some test borings has been made under direction of the Geological Survey; and if prices are maintained the enterprise of oil may be depended on to explore and operate every field within practicable reach.

The following table gives the quantity of crude petroleum produced in Petrolia and Oil Springs for each of the four years, 1891-94, and the value of it computed from the average prices for crude:

Year.	Imperial gallons.	Value.	Val. per gal., cts.
1891.....	31,312,645	\$1,209,558	2.863
1892.....	28,000,000	1,000,000	3.571
1893.....	34,055,000	1,099,868	3.230
1894.....	34,912,360	1,094,852	3.136

There was a steady decline in average price from 1891 to 1894, and in the latter year quotations fell from \$1.01 per imperial barrel in January to 92 cents in May, rising to 93 cents in June and July to 95 cents in August, and 98 cents in September, until \$1.11½ was reached in October. Since then the advance has been steady to the present time, averaging \$1.12 a barrel in November and \$1.15½ in December, \$1.16½ in January, \$1.20 in February and \$1.27 in March, \$1.31 at the end of last month.

The refining industry, which at one time was carried on extensively at London, is now for the most part located at Petrolia. Reports of the quantity and value of the several products of all the refineries have not been obtained for any year, but sufficient statistics have been supplied from which to obtain reliable averages for the three years, 1892-1894. From these data the following estimates have been computed:

Product.	1892. Quantity.	Value.
Illuminating oil, gal.....	10,862,894	\$919,315
Lubricating oils, gals.....	3,157,570	138,304
All other oils, gals.....	7,654,843	272,377
Paraffine wax, lbs.....	647,950	70,239
Fuel product.....		72,500

1893.	
Illuminating oils, gals.....	13,322,320
Lubricating oil, gals.....	4,239,847
All other oils, gals.....	11,220,705
Paraffine wax, lbs.....	2,250,000
Fuel product.....	

1894.	
Illuminating oil, gals.....	14,349,472
Lubricating oils, gals.....	3,817,181
All other oils, gals.....	10,632,141
Paraffine wax, lbs.....	2,754,300
Fuel product.....	

The total value of distilled product in 1892 was \$1,400,435, in 1893, \$2,188,690, and in 1894, \$2,146,936. The returns for 1892 did not give the number of workmen employed at the refineries but in 1893 there were 515, with wage earnings of \$302,000, and in 1894 there were 486, with wage earnings of \$279,030. The industry gives employment directly and indirectly to many other workmen, at the wells and in the manufacture of plant machinery, outfits of various kinds, etc., but there are no ready means of obtaining statistics of these.

Evidence of the progress made in the refining of crude oil is shown by the following tables, which gives the percentages of the several products, except paraffin and fuel material obtained as the refiners in each of the three years:

Product.	1892. p. c. of crude.	1893. p. c. of crude.	1894. p. c. of crude.
Illuminating oil.....	38.67	39.12	41.10
Lubricating oil.....	12.35	12.45	10.91
All other oils.....	27.34	18.14	30.45
Totals.....	78.36	79.71	82.46

The gain in all oils extracted from the crude in 1894 as compared with 1892 is shown to have been 4.10 per cent., and in illuminating oil alone 2.43 per cent. Much progress has also been made during recent years in the quality of illuminating oil, which is now little inferior to the best American, although the crude contains a much larger percentage of sulphur.—American Manufacturer.

PACKARD

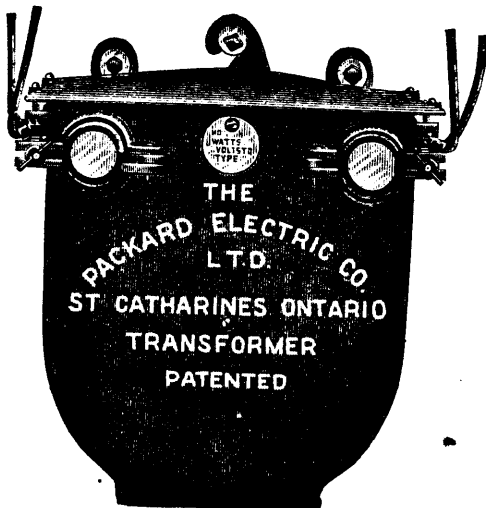
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ETC., ETC.

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ST. CATHARINES, ONTARIO

MILLING AND ELEVATOR IMPROVEMENTS.

The milling improvements throughout Manitoba and the North-West during the past season, and in anticipation of the abundant crops that have just been harvested there are very noticeable. The Winnipeg Commercial referring to the improvements carried out by the Lake of the Woods Milling Co. and the Northern Elevator Co. this season says:—"The former company has done a lot of work this year in extending its business interests here, principally in the line of building new elevators. Considerable work has also been done at the mills. At this Keewatin mill a fine new machine shop has been built, fitted with a most complete outfit of machinery and tools. All repairs for the mill can thus be made on short notice right on the spot. The coopeage in connection with the Keewatin mill has also been enlarged and a great deal of new plant put in. The coopeage is now supplied with the very best machinery procurable for the manufacture of flour barrels. The coopeage is run by electricity. At the mill itself the usual amount of new machinery has been put in, the policy of the management being to adopt all new machinery which has been proved to be a genuine improvement.

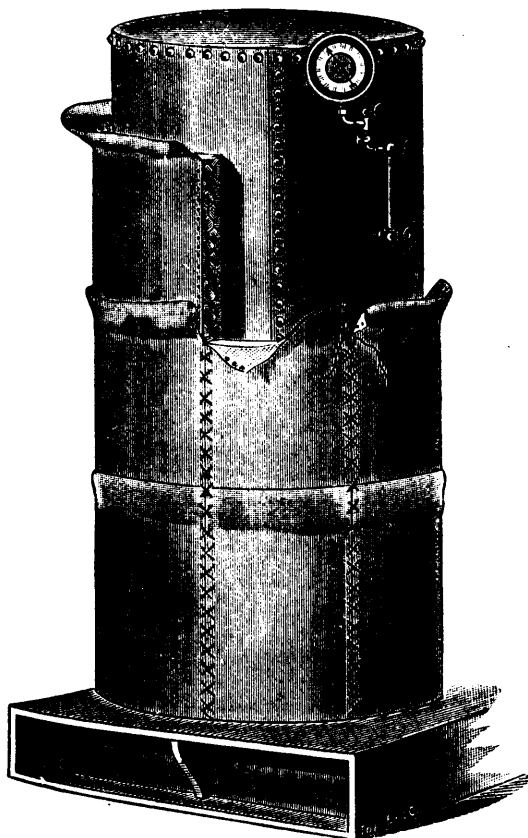
In elevator building the Lake of the Woods Milling Co. have had an active season, twelve new elevators having been built. These are located, one each, at the following places: Teesbank and Carroll on the South-Western; Reston on the Pipestone branch; Manitou, Alton, Ninga, Morden and Winkler on the Deloraine branch; Franklin and Arden on the Manitoba North-Western; and Fleming and Moosomin on the Canadian Pacific Railway main line west. The elevator at Ninga is to replace the one burnt a short time ago, so that the actual again is eleven elevators. The capacity of the elevators varies from 40,000 to 50,000 bushels each. They will all be worked by horse power and are not supplied with cleaning machinery, as large elevators are established in connection with each of the mills at Portage la Prairie and Keewatin. In addition to the elevators built this year the company has purchased the Agnew elevator at Dominion City, on the Emerson branch and also purchased a flat warehouse at Newdale, on the North-Western. A flat warehouse has also been built at Deleau, on the Pipestone branch. Altogether the season's work gives the company an increase in its country elevator capacity of about three-quarters of a million bushels. The company has in all thirty-seven elevators

and warehouses scattered through the country, all being on the various railways in Manitoba, with the exception of two or three in eastern Assiniboia territory.

Another company which has largely increased its investments in the country this season is the Northern Elevator Co., of Winnipeg. This company has built three new receiving elevators at country points, and has purchased or leased several other elevators and grain warehouses, besides building over several warehouses. The company has also a splendid storage and cleaning elevator in course of erection in Winnipeg.

The new elevators built this year are located at Sidney, on the C.P.R. main line west, and Hilton and Rosebank on the Brandon branch of the Northern Pacific. The company has purchased the Adamson elevator at Virden and also an elevator at Nesbit, and has leased four elevators at Morden, Gretna, Virden and Hartney. All these elevators have been overhauled and improved. Flat warehouses at Midway, Arden, Neepawa, High Bluff and Oxbow have been built over and converted into horse power elevators, and the one at Oxbow has been fitted with a steam plant. Warehouses for handling flaxseed have been built at Morris, Emerson and St. Jean.

The most important work undertaken by the Northern Elevator Company, however, is the fine new elevator now nearing completion at Winnipeg. It is designed principally for cleaning grain purchased at the company's numerous country buying points, and particularly for handling any off-grade grain. As all grain purchased on the Canadian Pacific Railway line in Manitoba passes through Winnipeg en route eastward, this point is a convenient one for a cleaning elevator. The establishment of this cleaning elevator relieves the company from the necessity of having cleaning machinery in all their country elevators, and will be a great advantage to the country in providing a means of cleaning up any off-grade grain and putting it into merchantile condition. Grain which would be almost unsaleable without these cleaning facilities, will be made merchantile. The new elevator will have a storage capacity of 150,000 bushels. This capacity is not large, so far as storage is concerned, but the plant is being established on a scale large enough to do the work of an annex elevator of 1,000,000 bushels capacity. It is proposed to build a storage annex elevator in the future in connection with the present plant, the elevator now being built being designed primarily for cleaning grain. It will have a handling capacity of sixty to seventy cars per day.



1895.

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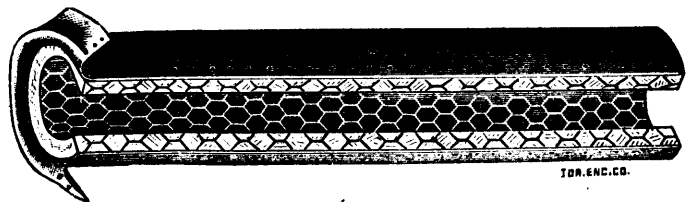
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CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office, from July 1 to July 30, 1895.

Information regarding any of these patents made be had on application as follows:—

Fetherstonhangh & Co., Bank of Commerce Building Toronto.

Ridout & Maybee, 103 Bay Street, Toronto.

C. H. Riches, Canada Life Building, Toronto.

A. Harvey, Central Chambers, Ottawa.

Copies of American patents corresponding to Canada patents can be procured from either of these attorneys for the sum of twenty-five cents.

- 49,352 Fire extinguisher, Jas. H. Byrns, and George W. Booth, Toronto.
- 49,353 Closure for cans, etc., Frank L. Salisbury, Chicago, Ill.
- 49,354 Process of obtaining silver and gold from ores and other compounds, The Cassel Gold Extracting Co., Glasgow, Scotland.
- 49,355 Apparatus for treating the fire gases evolved in steam boilers and other furnaces, James Patterson and James R. Sandilands, Glasgow, Scotland.
- 49,356 Turn-table, Jos. B. Tinsley and Henry C. Vinton, Kansas City, Kansas.
- 49,357 Diaphragm for locomotive boilers, William Britton, and Robert M. Weir, Boone, Iowa.
- 49,358 Sub-marine signalling, Lucien I. Blake, Lawrence, Kansas.
- 49,359 Insulator for electric wires, etc., Wilber Hitchcock, Cornwall, Ont., and Lewis K. McLaurin, Templeton, Que.
- 49,360 Packing, Jas. W. Peelle, Louisa W. Peelle and Sarah S. Peelle, Brooklyn, N.Y.
- 49,361 Spindle for spinning machines, Herbert H. Ham, Boston, Mass.
- 49,362 Photographic flash light, Charles Clifford and Fred H. Clifford, Muscatine, Iowa.
- 49,363 Rotary engine, Robt. Hewson, San Francisco, Cal.

- 49,364 Method of and apparatus for teaching office and business practice, Warren H. Sadler, Baltimore, Md.
- 49,365 Cane weaving machine, Ford Johnson & Co., Michigan City, Ind.
- 49,366 Typograph machine, Emil Werner and Moses M. Hobart, Cleveland, O.
- 49,367 Draft appliances for smokestacks, The Taylor Improved Draught Co., Newark, N.J.
- 49,368 Horse collar, Hewitt Boslock, Victoria, B.C.
- 49,369 Vehicle spring, Willie N. Snow, Snowville, Eaton, N.H.
- 49,370 Band cutter and feeder, Augustine Johnson, Falun, Kan.
- 49,371 Nut lock, Jno. J. Kine, Kendallville, Ind.
- 49,372 Furnace door, David E. Robinson, Arden, W.V.
- 49,373 Spring mattress and frame therefor, Francis G. Gale, Waterville, Que.
- 49,374 Steam Jacket attachment for feed water heaters, Warren Webster, Merchantville, N.J.

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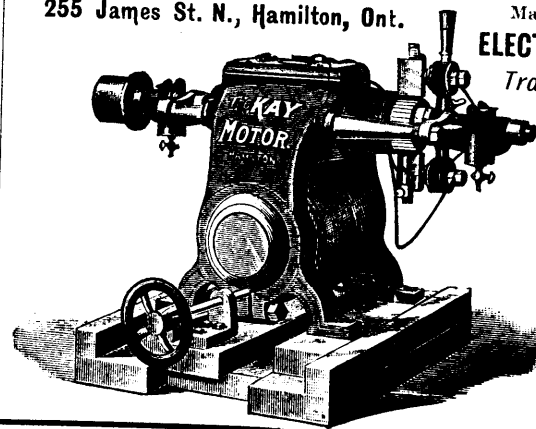
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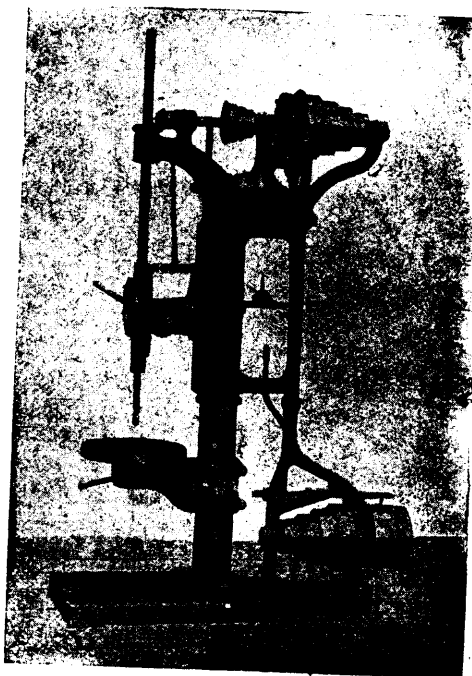
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- 49,376 Railway signal, The Canada Switch Mnf. Co., Montreal.
- 49,377 Rail brake, Frederick L. Des Moneaux and Peter S. Kaufman, Lawson, Col.
- 49,378 Pace indicator for wheels, Turney Clark & Co., Chicago, Ill.
- 49,379 Railway rail joint, Major Hall, Boise, Idaho, Wm. H. Blake, Jacob Thompson and Wm. A. Wheaton, St. Paul, Minn.
- 49,380 Process of filtering and purifying water or other liquids, David F. Maswell, Saint Stephen, N.B.
- 49,381 Designing and constructing dolls out of paper or other materials, Bertha A. Trufant, New Orleans, La.
- 49,382 Wheel hub, Jno. H. Partridge, Charsworth, Ont.
- 49,383 Artificial lumber, Geo. S. Mayhew, Minneapolis, Minn.
- 49,384 Machine for applying paris green, etc., on potatoes to destroy the potato bugs, Wm. Adams, Burlington, P.E.I.
- 49,385 Apparatus for raising sunken vessels, Jno. Taylor and Call Taylor, Detroit, Mich.
- 49,386 Envelope, Brent Waters, Baltimore, Md.
- 49,387 Method of making match splints, The American Safety Head Match Co., Lebanon, Pa.
- 49,388 Garment hook, Orville L. Mason, Cleveland, O., Roumaine C. Cole, Waverly, N.Y.
- 49,389 Truss, Adline M. L. Armstrong, Ottawa, Ont.
- 49,390 Feed-water regulator, Hodoram Bowman, Hunt Spur, and James W. F. Summers, Gould City, Mich.
- 49,391 Invalid bed, Wm. J. Dawson and Richard H. Dawson Cannington Ont.
- 49,392 Device for preserving meat, Chas. O. Brown, San Diego, Cal.
- 49,393 Oil can faucet, Geo. W. Arper, Oakland, Cal.
- 49,394 Railroad switch, Ed. W. Coughlin, Baltimore, Md.
- 49,395 Saw file, The Arcade File Works, Anderson, Ind.
- 49,396 Roofing, Jno. McKenna and Jno. Fair, Brantford, Ont.
- 49,397 Wind motor, Aaron Lancaster, Princeton, Iowa.
- 49,398 Matched board, Ronald H. Stilwell, Detroit, Mich.
- 49,399 Fire bar, Jacon L. Waldapfel, Cologne, German Empire.
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- 49,401 Corset steel and clasp, Carl Scholl, Goppingen, Wurtemberg, Germany.
- 49,402 Chart for drafting coats and vests, Alois Weiler, Formosa, Ont.
- 49,403 Machine for polishing stone, Alfred F. Spaulding, Northfield, Vt.
- 49,404 Steam trap, William Geipel, London, Eng.
- 49,405 Yarn roll and method of making same, Simon W. Wardell, Jr., Boston, Mass.
- 49,406 Parlor and sleeping car, The American Palace Car Co., Springfield, Mass.
- 49,407 Parlor and sleeping car, The American Palace Car Co., Springfield, Mass.

MONTREAL, October 4, 1895.

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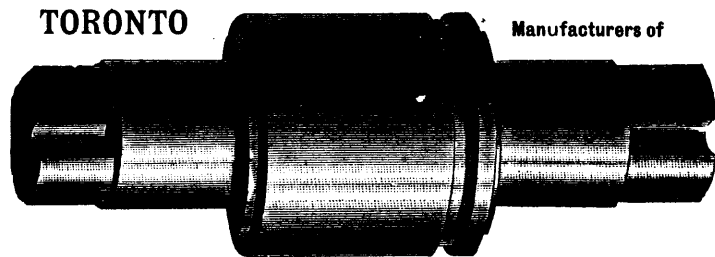
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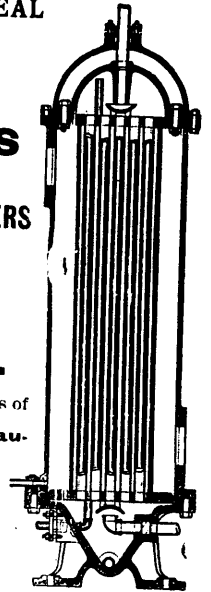
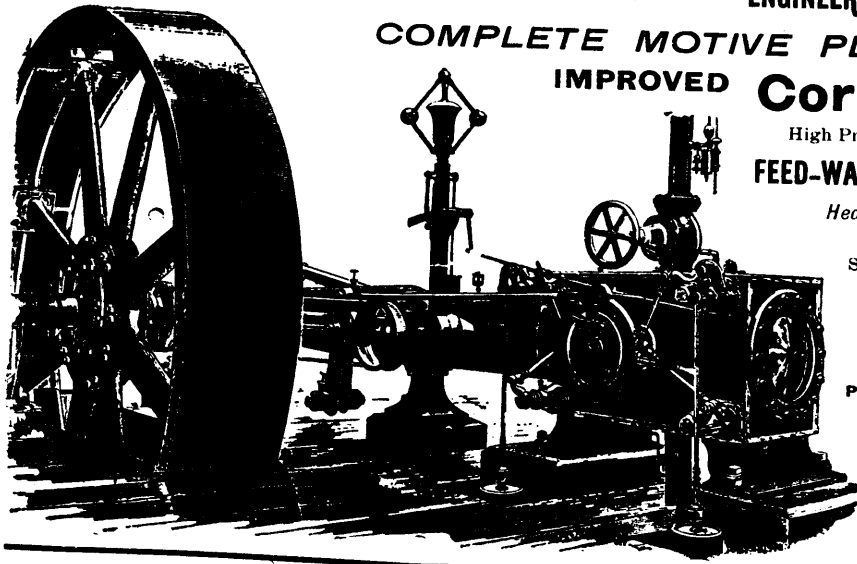
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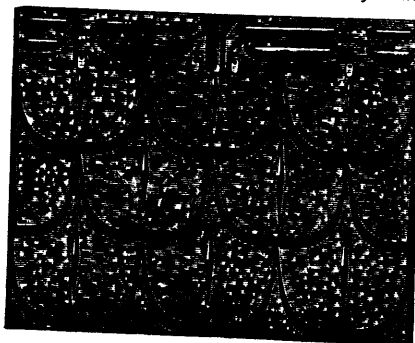
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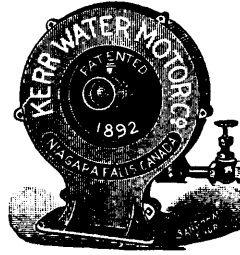
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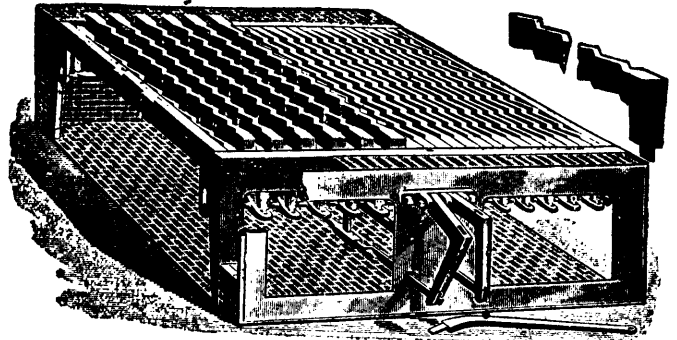
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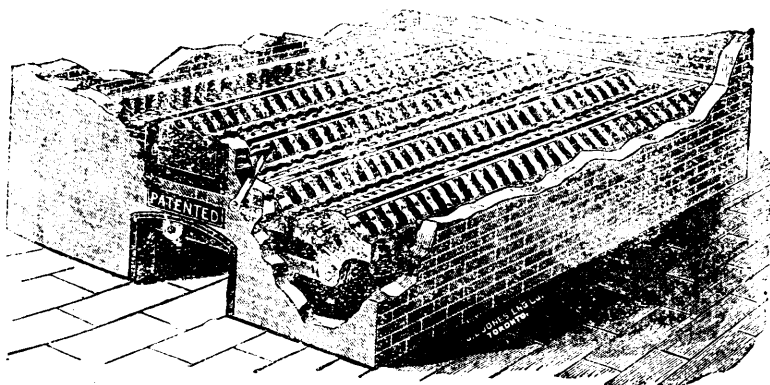
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- 49,429 Zither, The Fabrick Lockman Scher Musikwerke Aktien-Gesellschaft, in Peipezig-Gohlis, Leipzig, Germany.
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 49,447 Hay rake and loader, Jos. E. Van Nostran, Canton, O.
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 49,449 Scaffold Sewell A. Brooks, Strykenville, N.Y.
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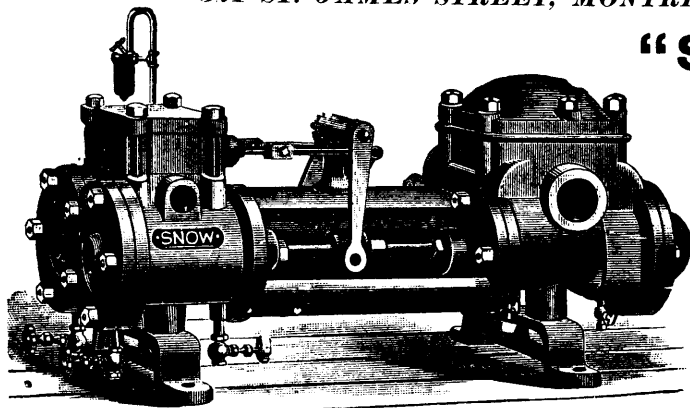
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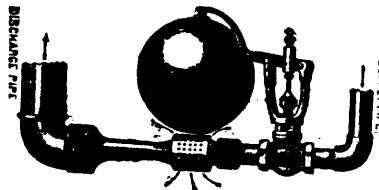
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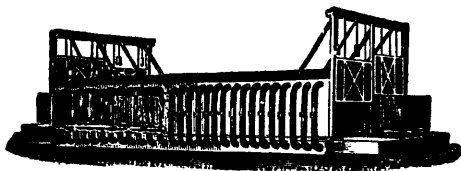
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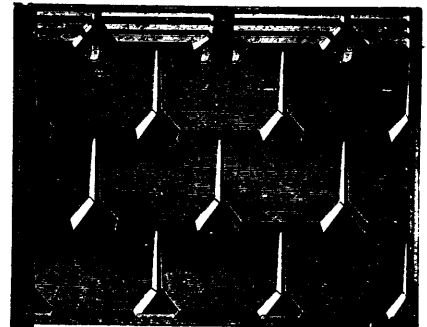
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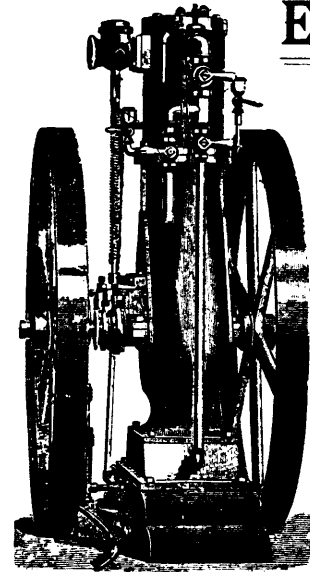
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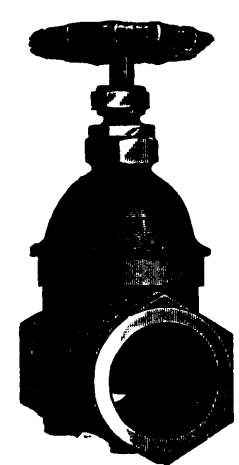
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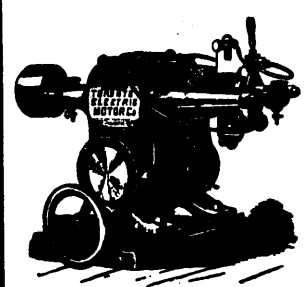


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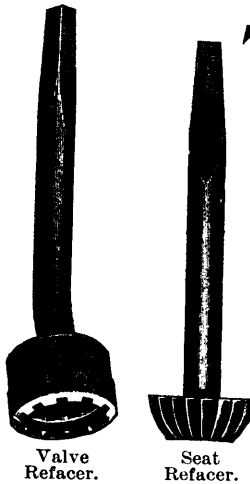
- 49,546 Grain dryer, Jno. A. Rivington, Carp, Ont.
- 49,547 Hot water boiler, Jno. D. McEachren, Galt, Ont.
- 49,548 Mop head, Charles Morgan, Freeport, Ill.
- 49,549 Mop head, Charles Morgan, Freeport, Ill.
- 49,550 Manufacture of artificial fuel, Graham S. Cory and Colin Cory, Swansea, Eng.
- 49,551 Sacramental case or box, Henry Eummelen, Vancouver, B.C.
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- 49,556 Fog signalling apparatus for railways, Jno. G. Dixon, Huddersfield, Eng.
- 49,557 Pneumatic tyre for bicycle wheels, Henry W. Parker, Toronto.
- 49,558 Railroad switch, Charles S. Jackson, Bridgeburg, Ont.
- 49,559 Egg tester, Wm. G. Glenn, Owen Sound, Ont.
- 49,560 Fitting for vent, back vent and local vent and other sanitary purposes, Oliver Schlemmer, Cincinnati, O.
- 49,561 Multi-colored printing, Theodore J. Turley, Nashville, Tenn.
- 49,562 Darning or embroidering frames, George P. Hill, Richmond, Va.
- 49,563 Machine for washing yarn, etc., Saml. Spencer, Jos. S. Lord and Geo. S. Lord, Whitefield, Eng.
- 49,564 Swimming appliance, Jules M. Turcotte, Quebec City, Que.
- 49,565 Hydrants, Edward L. Perkins, Ottawa, Ont.
- 49,566 Type-writer machine, Edward A. Jeffreys and Wm. Edwards, London, Eng.
- 49,567 Pencil sharpener, Wm. Duffield, London, Ont.

United States Patents to Canadian Inventors.

Since our last issue United States Patents to Canadian inventors were issued as follows, as reported by Mr. Chas. H. Riches, solicitor of patents, Canada Life Building, Toronto:

- 546,355 Truss, James W. Smith, Galt, Ont.
- 546,552 Blasting powder, B. C. Pettingell, Victoria, B.C.
- 546,566 Napkin holder, A. A. Vernon, Owen Sound, Ont.
- 546,676 Tie holder for collars, H. M. O'Reilly, Almonte, Ont.
- 546,698 Dredging bucket, E. J. Fader, Calgary, N.W.T.
- 546,745 Flower stand, Wm. Nafe, Waterloo, Ont.
- 546,769 Hand device for affixing postage stamps, Jas. P. Martin Wm. P. McFeat, Montreal.

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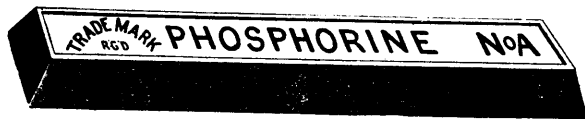
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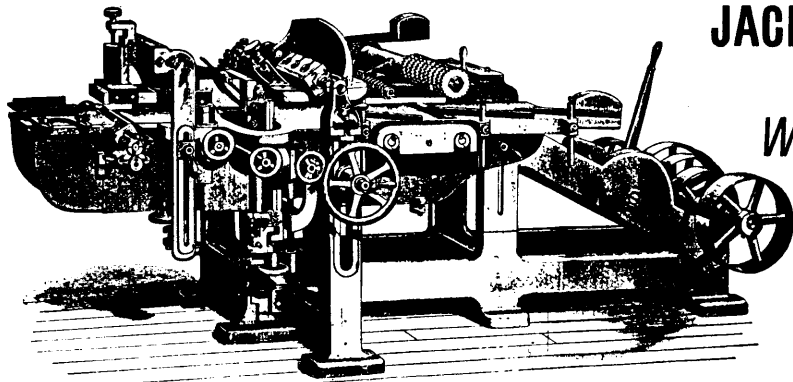
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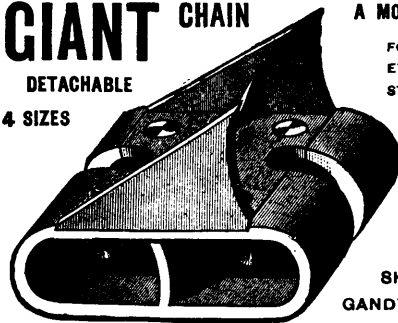
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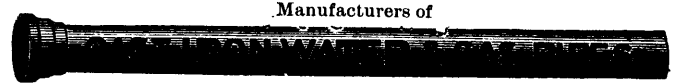
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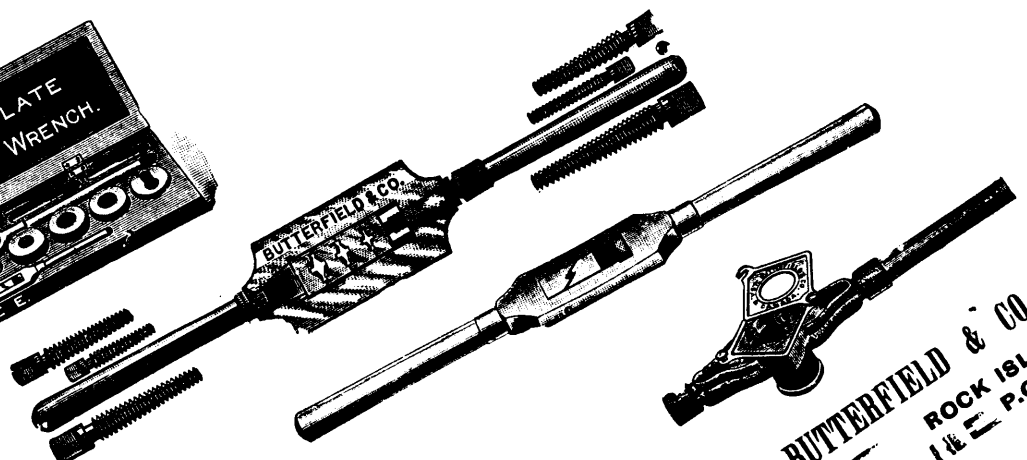
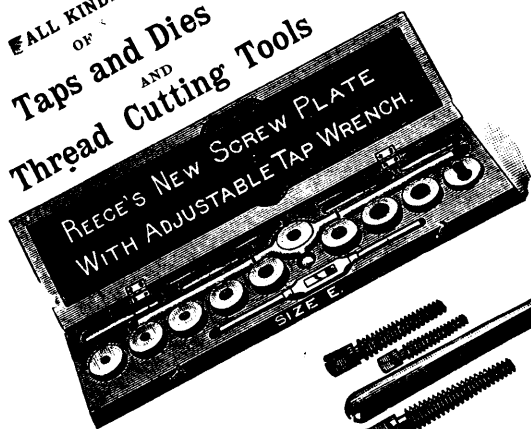
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1 $\frac{1}{2}$	1 $\frac{1}{2}$	5.01	"	3	2 $\frac{3}{4}$	22.59	"
1 $\frac{3}{4}$	1 $\frac{3}{4}$	5.94	"	3 $\frac{1}{2}$	3 $\frac{1}{4}$	26.60	"
1 $\frac{1}{2}$	1 $\frac{1}{2}$	7.46	"	3 $\frac{1}{2}$	3 $\frac{3}{4}$	30.94	"
2	1 $\frac{3}{4}$	9.83	0 04	4	4	42.33	0 05
2 $\frac{1}{4}$	2 $\frac{1}{8}$	12.53	"	4 $\frac{1}{2}$	4 $\frac{1}{2}$	53.57	"
2 $\frac{1}{2}$	2 $\frac{1}{8}$	15.55	"	5	5	66.13	"

NOTE.—Shafting as per actual size column, up to 3 inches diameter, always kept in stock.

Stock Lengths, 12, 14, 16 and 18 feet.

On orders from stock cut to other lengths, we charge for length from which we cut.

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All orders filled as per Actual Size column, unless otherwise specified.

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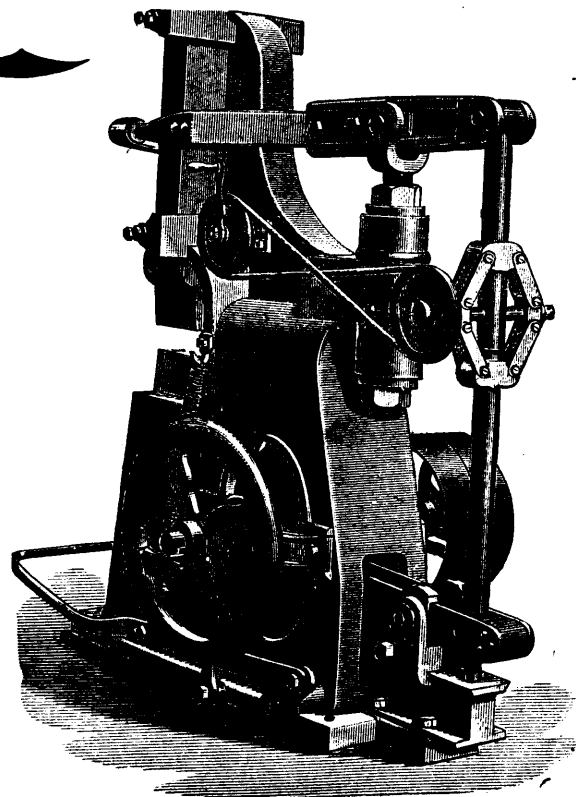
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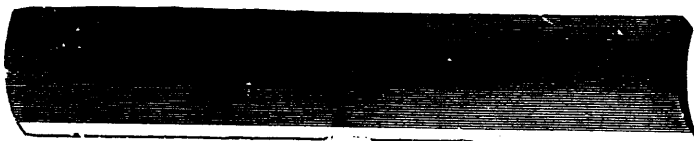
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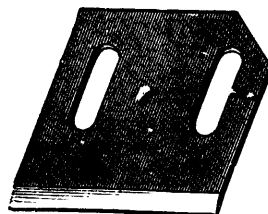


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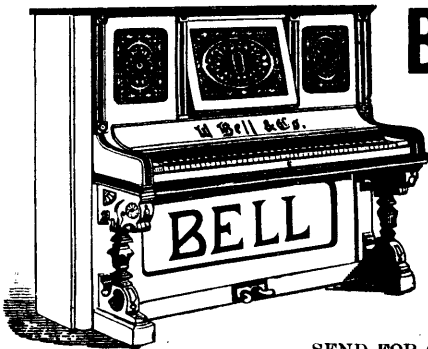
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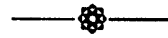
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