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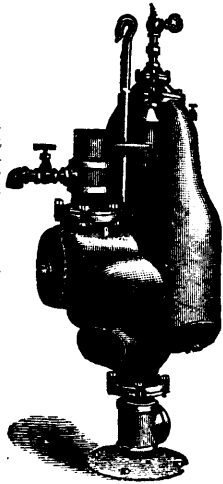
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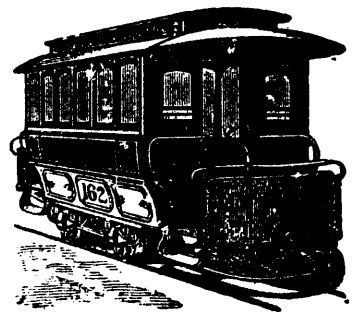
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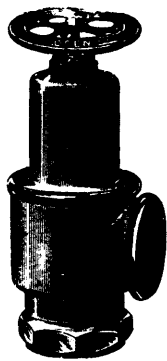
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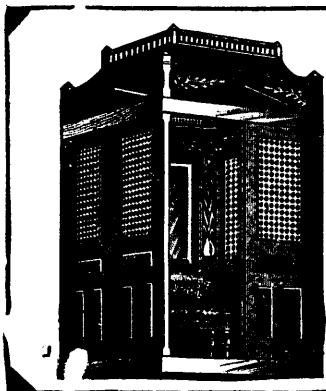
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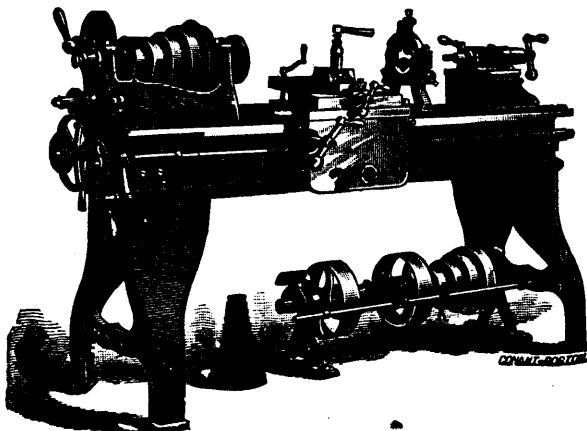
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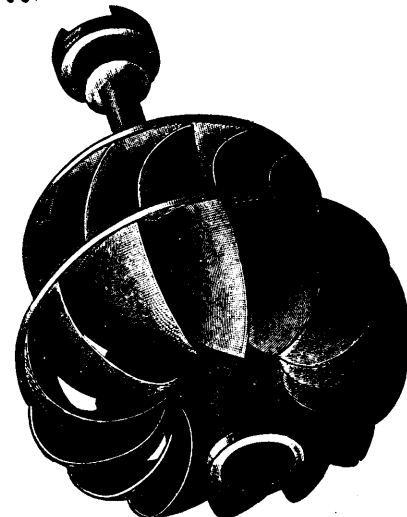
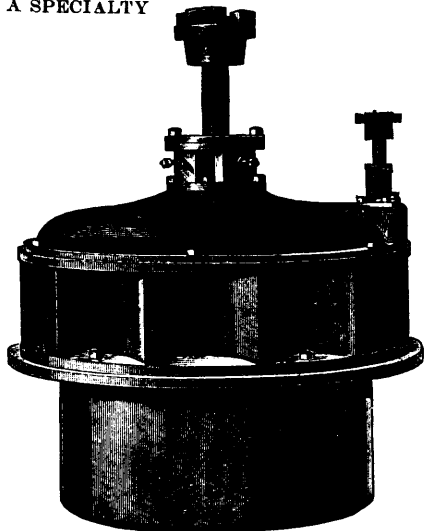
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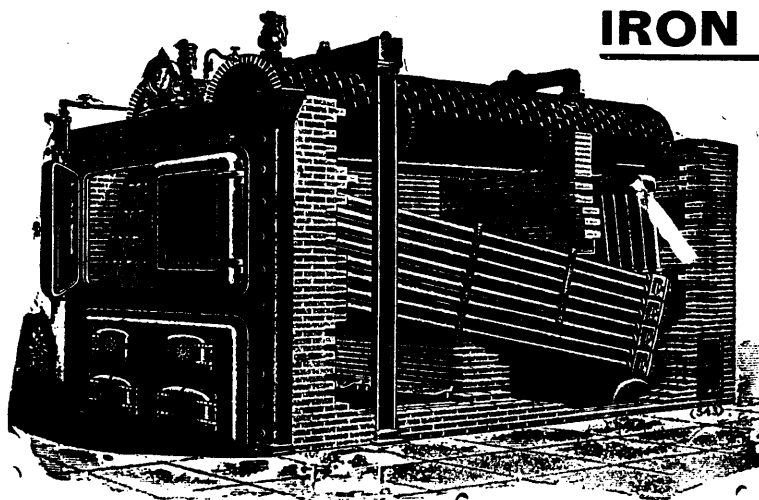
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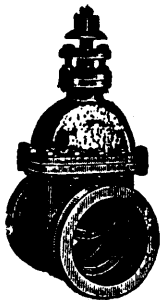
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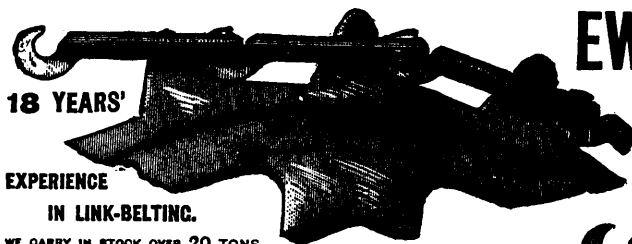
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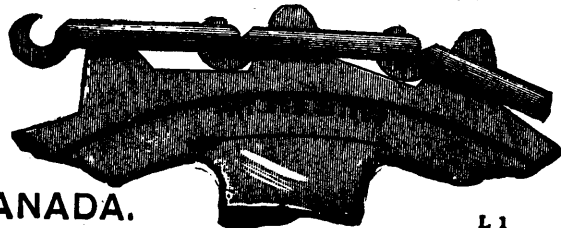
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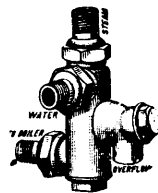
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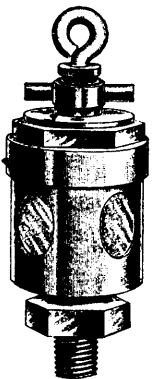
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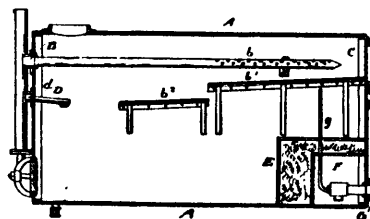
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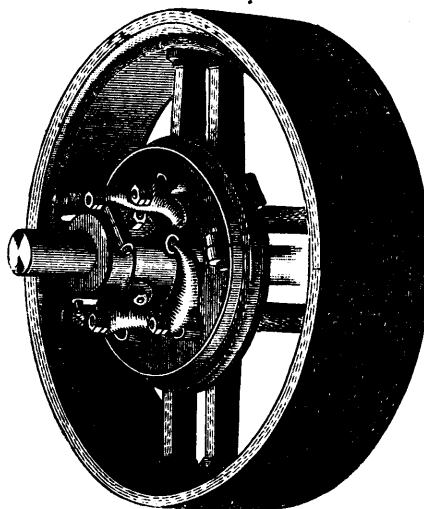
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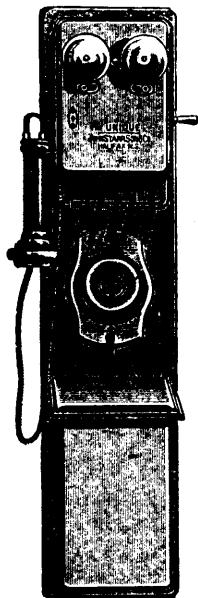
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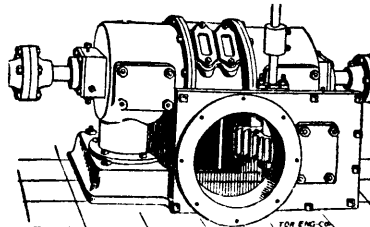
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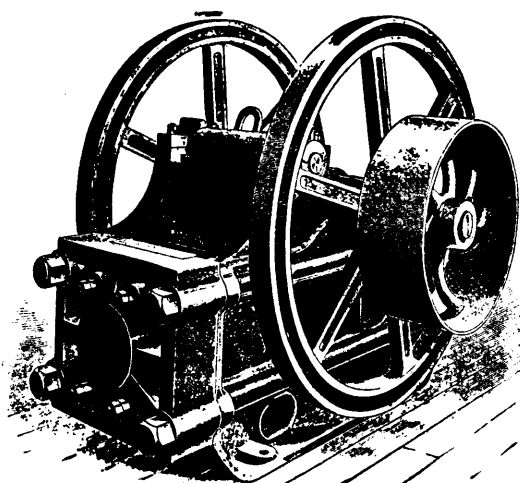
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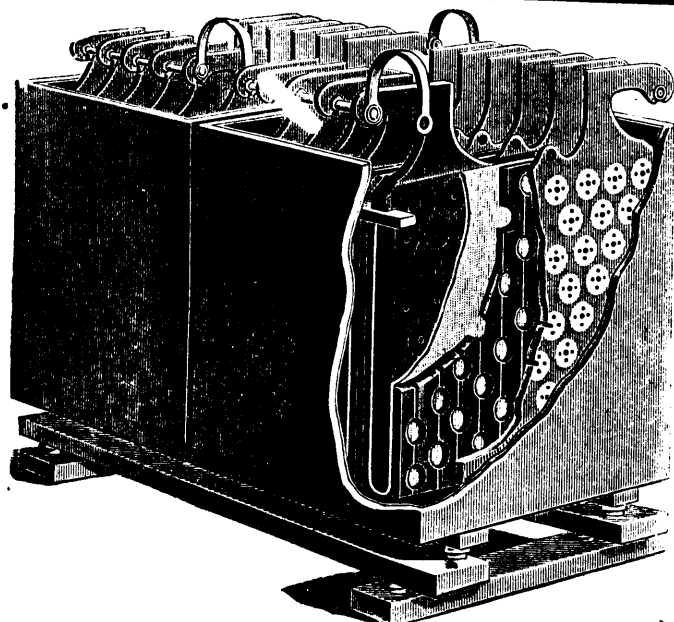
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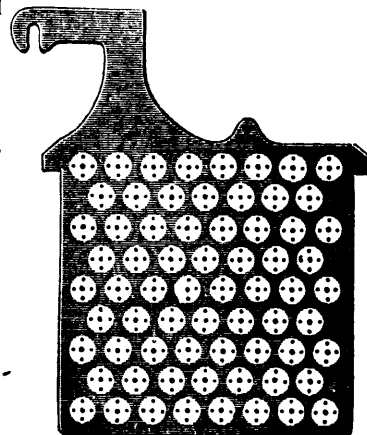
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ESTABLISHED IN 1880.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

J. J. CASSIDEY, - - - - - Editor

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**BUSINESS MEN WANTED.**

In a recent number of The Canadian Magazine Mr. O. A. Howland, a representative of a Toronto constituency in the Ontario Legislature, and himself a lawyer, in the course of a review of the life of Sir John Thompson, ventured the assertion that only a lawyer can be a statesman. From circumstances not necessary here to discuss, it seems that in Canada, and in the United States also, all legislative assemblies are composed largely of lawyers, and Mr. Howland, being himself a lawyer and a legislator, has conceived the conceited idea that lawyers are a specially endowed class to whom of right should be confided the duty of law making and of managing all the important affairs of State. As a student of history he should know that as a rule British statesmen have not been lawyers, and he will certainly concede that those to whom have been entrusted the affairs of the Kingdom for

many, many years, have acquitted themselves to the satisfaction of the British people. That other than lawyers are even now administering the Government of the Kingdom is evidenced by the names and occupations of those whom Lord Salisbury has called to assist him as Cabinet ministers, as recently published in these pages.

As far as the Dominion Parliament is concerned, while we are free to admit that many members of it who are lawyers are also statesmen, we regret to notice that there are so few practical business men there, particularly manufacturers, and that the statesmanship of the lawyers, who are largely in the majority, is tinctured but too strongly with the methods that obtain in courts of law where the lawyer has no business save as a partisan. It is true that Sir John Macdonald and Sir John Thompson were lawyers, but it was only in their earlier days that they practised their profession; and it is in evidence that neither of them attained to statesmanship and political influence until long after they had ceased to pose as lawyers. On the other hand, as we have shown, British statesmen are usually not lawyers, and the same may be said of many of the best men that have assisted to make Canada what it is.

The manufacturers of Canada, and others, have had frequent cause to regret that the number of business men in Parliament was not much larger than what it really is. We have been cursed with having professional men in Parliament who got there chiefly by the loud professions of fealty they made to the principles of the National Policy and devotion to the interests of the manufacturers, but who, owing probably to their earlier associations and training, were pedantic in views that lifted them far above the practical affairs of life, and into an atmosphere through which only abstruse theories could filter. Manufacturers and business men have had this fact most painfully forced upon them when, having business to transact with the Government, have found their representatives of no earthly use to them, further than to introduce them to the ministers, after the performance of which perfunctory duty they fold their hands and fall back in a convenient seat like bumps upon a log, leaving their clients to do as best they can without them. Manufacturers know to their disgust that but too often when their representative has accompanied them when they desired to submit some important matter to the consideration of the Government, the so-called statesman, not being a practical business man, could render them no assistance whatever, and to whom the matter under discussion was as a sealed book or an unknown language. Canada, and particularly the manufacturers, are suffering from a plethora of such statesmen.

The great need at this time is practical men in Parliament. The enemies of protection are, as they always are, canvassing the country from end to end, and their newspapers are indefatigable in preaching their free trade crusade. In ordinary times when affairs are going smoothly, it may be easy for politicians of small mental calibre and unsettled principles to pose as statesmen, vociferate against the other party, and indulge in stale platitudes and old campaign talk; but the present brings us face to face with a situation where true leadership and statesmanship are required, no less to undo the mistakes that have already been made than to defeat the machinations of those who aim to demolish the whole system that obtains in the management of the fiscal affairs of the Government.

## DEPRECIATING HOME PRODUCTS.

The Toronto Telegram directs attention to the fact that there has been a struggle in Orangeville, Ont., as to whether the municipality should purchase a Canadian or an American built wind-mill for use in that town, a minority being in favor of purchasing the products of home industry, these being chiefly Grit councillors. Our contemporary says that the division in the Orangeville Council was in a small way a reproduction of the division in the Toronto City Council, when a motion to give fair play to a Canadian industry was defeated, the reference being to whether the city should purchase a Canadian made steam fire engine, or one made in England.

It will be remembered that as a result of the disastrous fires that occurred in Toronto last winter, when it was demonstrated that much valuable property might then have been saved from destruction had there been adequate apparatus at hand, it was determined by the City Council that a new and up-to-date steam fire engine should be purchased. It was then immediately discovered that in Toronto, as has also been shown in Orangeville, there were those who believed that no good thing could come out of Nazareth, and that if a fire engine was to be obtained it must be purchased abroad. Those most familiar with the facts knew that as good and serviceable fire engines as are to be found on the American continent were manufactured in Canada, but the accursed pessimists who are always ready to depreciate any and every thing produced at home, and to declare that if a really good thing was to be had it could only be from abroad, were so persistent in their declarations that an engine was ordered from England. These patriotic souls would even have been willing to have placed an order for the engine upon the mere assertion of the builders that it would cost a certain price and perform a certain duty; but they were persuaded to agree that a stipulation should be entered into specifying that the weight of the engine should not be greater than that agreed upon, and that specified tests should be complied with regarding the capacity to throw a certain quantity of water in a certain time, and that the water should be thrown to a certain height. It is true that a certain Canadian manufacturer offered to produce an engine that would meet all the requirements, and to place it at the disposal of the city in much less time than it was possible to produce the English engine in Toronto, and at a very much less price; but this offer did not meet the approval of these anti-Canadians. In fact a Canadian engine was at that time in Toronto which it was guaranteed would meet all the requirements, but the English engine was ordered nevertheless.

After long delays and patient waiting, with a great flourish of trumpets, the arrival of the English engine was announced. Much in the nature of a mere formality it was decided to have a test of its capacity, and under circumstances the most favorable possible for the occasion, a spectacular display was arranged for the edification of those who might desire to witness it. But the Canadian engine was there also; and when the squirting was proceeded with it was found that the Canadian engine was quite as good and efficient in all respects as its English rival. Excuses were found for discontinuing the test at the time, and another was arranged; and when that was had it was shown that the Canadian machine was quite as desirable in all essential points, and superior in some.

It should be mentioned that the tests of the engines were made under the supervision of a committee of reliable hydraulic pumping experts. When the matter came up for discussion in the City Council it was shown that these experts had reported that the conditions contained in the builders' guarantee had not been complied with, the result being that the Council declined to accept or pay for the English engine.

As The Telegram says, the minority of the City Council who were in favor in the first place of purchasing a Canadian engine was largely made up of Grit aldermen, the majority in favor of passing over Canadian industry being headed by the Conservative leaders in the Council, and encouraged by the Conservative newspaper organ.

## PRISON LABOR vs. FREE LABOR.

At a recent meeting of the Toronto Trades and Labor Council the report of the Municipal Committee contained a letter from Hon. J. M. Gibson, the Provincial Secretary, explaining the reasons which induced the Ontario Government to farm out the Central prison binder twine industry. The Government deemed it out of its province to enter into competition with private industry, and considered that in breaking up the monopoly which formerly existed, the main object for instituting this industry at the Central prison had been attained. The committee were dissatisfied with the explanation.

The episodes of the Ontario Government establishing the binder twine industry in Central prison, Toronto, quickly followed by a precisely similar adventure by the Dominion Government in Kingston penitentiary, are certainly most disgraceful incidents in Canadian history. A few years ago, under the lead of the enemies of protection in Parliament and out, and of the free trade newspapers, a most senseless and unreasoning howl was raised against what was called the binder twine combine, the object being to intensify a feeling against the protective policy of the Dominion Government by showing that the farmers were being fleeced by the manufacturers of binder twine, and made to pay a much larger price for twine than they ought to pay. As a result of the excitement caused by this persistent howling, the Dominion Government, very unwisely we think, reduced the duty upon binder twine from 25 per cent. to 12½ per cent., thus opening the door for the almost free importation of foreign twine, and closing the doors of Canadian factories that had given lucrative employment to Canadian labor. Quick to perceive what they considered a fine opportunity to strengthen the hands of the opposition, their political friends in the Dominion House of Commons, and with the farmers, the Ontario Government imported machinery and material and established a binder twine works in Central prison, and employed convicted felons in operating the same. Whereupon the Dominion Government, forgetful of the principles of the policy upon which they had been elevated to power, and regardless of the teachings of the National Policy, and not satisfied with the stunning blow that had already been given a valuable Canadian manufacturing industry, proceeded to immediately follow the lead of the Ontario Government and engage in the manufacture of binder twine with prison labor in Kingston penitentiary. As is well-known, both these enterprises have proven dismal failures, that in Central prison being attended with taints of boodleism most disreputable to all concerned.

In this last named venture of government interference with prison labor with a flourishing and legitimate private industry, giving employment to free and honest labor, the undertaking proved to be such a failure as to compel the disposal of it by farming it out to private individuals.

This brings the question back to the enquiry whether the government is right in employing prison labor in any pursuits in competition with free labor.

The matter has frequently been debated in the British House of Commons, and but as recently as August last, Mr. Lowles, M.P., said :

The question of the importation of foreign prison made goods had stirred the working classes of London, who were looking to the present government to do something to stop this terrible evil.

Mr. Chamberlain, criticising the action of the late government in the premises, said :

The late government had five months in which to deal with the question, and in the course of that time did nothing. The present government had already communicated with foreign government for the purpose of securing their willing assent to stopping this importation which was injurious to British trade. That was the first prescription. The pledge which his right honorable friend (Mr. Ritchie) had given to his constituents was a pledge which they considered in their private capacity they gave, and which they were prepared to carry out now they were in office. It would be most improper seeing that they had made these friendly representations to foreign powers to indicate what their second prescription would be if their friendly representations failed. They knew, however, what steps they would take.

The Department of State, at Washington, has recently promulgated some information it has received through its Consular service, regarding prison made goods and prison labor in Germany. These advices state that :

The competition of convict labor with free labor seems to be growing in this country, if the reports of a number of chambers of commerce and trade guilds are reliable, which undoubtedly they are. The resolutions and petitions of these bodies condemn this competition in the strongest terms, and even those who view this question impartially admit the ruin this competition works on the trade. The cheapness with which goods are manufactured in the prisons can no longer be met, it is claimed, by free labor.

In the prison at Erlangen, Bavaria, for instance, sixty pfennigs, or fourteen cents, are paid for making a pair of pants, and four marks and sixty pfennigs, or \$1.09½, for a whole suit of clothes. Then, too, in many prisons such machines are put up which permit the production of certain articles on a large scale, thus "flooding" the market with convict made goods, as the report of a Chamber of Commerce in Thuringia puts it. Machines of this character are chiefly those used for the manufacture of knitted goods. In fact, hosiery of all kinds is made in quite a number of prisons, viz. : Halle and Delitzsch, both in the Province of Saxony, and Grunhain, Zwickau, Waldheim and Hoheneck, in the Kingdom of Saxony. There are others, as appears from reports before me, the names of which, however, I have not yet been able to ascertain. The prison at Zwickau operates fifteen knitting machines, that at Waldheim eighty-seven and that at Hoheneck twenty-five. It is said that some of the largest firms in this branch of industry employ convict labor.

The chief markets for the prison made hosiery are, according to a statement obtained from an official source, Turkey, Brazil and the Argentine Republic for goods from the Zwickau prison, and Germany and England for goods from the prisons at Waldheim and Hoheneck. It will be observed that the United States is not mentioned as a market for these goods.

But it seems strange that the latter should go to every other country on the globe, except the United States, whereas this country is the chief market for Saxon hosiery.

It will be observed that although neither Canada nor the United States are mentioned as being markets for the prison made goods mentioned in the bulletin of the United States Department of State, yet from the exceedingly low prices at which such goods are sold on this side of the water, particularly in Canada, there can be no doubt that the bargain counters of our big departmental stores are supplied with articles that were produced by German prison labor. That we also receive from Germany our share of their exports of prison made hats, brushes, dolls, baskets, buttons and artificial flowers is doubtless true. The question is, to what extent shall their importation be permitted? How high a protective tariff must we have in order to exclude them and give the work to Canadian labor that is now being done in German jails.

THE FRENCH TREATY.

In view of the fact that the French Treaty with Canada came into effect on October 14th, the following statement shows how exports of Canadian products into France are affected. Up to the present date the exports of Canada to France have paid the maximum duty. Hereafter some twenty-one articles will be admitted into the French Republic at the minimum duty. The table shows the difference between the maximum and minimum duty on the articles in respect of which Canada enjoys an advantage :

Articles.	Tariff. Maximum.	Tariff. Minimum.
Canned meats per kilo.....	20 francs.	15 francs.
Condensed milk, pure.....	10 "	5 "
Fresh water eels.....	10 "	5 "
Fish preserved in their natural form.	30 "	25 "
Lobsters and crayfish preserved in their natural form.....	30 "	25 "
Apples and pears, fresh.....	3 "	2 "
Apples and pears, dried and fresh.	15 "	10 "
Fruits preserved, others.....	10 "	8 "
Building timber, in rough or sawn.	1 to 2½ "	65c. to 1½ "
Wood pavement.....	5 "	3½ "
Staves.....	1½ "	75 centimes.
Wood pulp (cellulose), mechanical.	75 centimes.	50 "
Wood pulp, chemical.....	2½ francs.	2 francs.
Extract of chestnut and other tanning extracts.....	5 "	3 "
Common paper, machine made....	13 "	10 "
Prepared skins, others, whole....	50 "	25 "
Boots and shoes.....	1 to 2½ "	½ to 2 "
Furniture of common wood.....	6 "	5 "
Furniture, other than chairs of solid wood, common.....	11 "	9 "
Other chairs.....	30 "	20 "
Wooden sea-going ships.....	5 "	2 "

EDITORIAL NOTES.

Some men try advertising as the Indian tried feathers. He took one feather, laid it on a board and slept on it all night. In the morning he remarked : "White man, say feathers heap soft ; white man d--- fool."

Thursday, Nov. 21st, has been chosen as Thanksgiving Day this year. This is about the same period of the year as last year, although in 1894 the date fell on the fourth Thursday. An Order in Council has been passed fixing the date, Thanksgiving day in the States is one week later, viz., Nov. 28th.

The giving out of the natural gas wells in the State of New York has led to the belief that unless the output of this product in Canada is restricted before long a like fate may befall the Canadian wells. Recently representations were received at the Customs Department urging the imposition of an export duty on natural gas, in view of the enormous quantities which are being piped into Buffalo every week from the Niagara wells.

Hardware, a Toronto so-called trade journal, telling about the new steamer now being built in this city by the Bertram Engine Works Co., having stated that the width of the vessel would be thirty-two feet, says that the boilers which are to be contained in the vessel, would be heated by two furnaces thirty-seven feet in diameter. These would be quite remarkable furnaces considering the width of the vessel, and that the boilers are to be only eight feet in diameter.

Our Toronto brother, the Canadian Electrical News, prints the portrait of Mr. Henry C. Payne, of Milwaukee, as the president of the American Street Railway Association who will preside at the convention in Montreal. We are afraid that Editor Mortimer has enjoyed a Rip Van Winkle sleep during the summer solstice and has awakened himself last year. Mr. Joel Hurt, of Atlanta, Ga., is president of the American Street Railway Association and Mr. Payne is an ex-president.—Electrical Review.

The Toronto marine delegation's visit to Ottawa appears to have been productive of some prompt results. Telegraphic dispatches announce that Engineer Rubridge has been instructed to immediately dredge out the Iroquois lock in the Cornwall Canal, and to lower the sill. While dredging can be secured rather promptly on this side, Dominion administration methods in such material questions as the alteration of canal locks seem considerably in advance of those of the United States.—Cleveland, O. Marine Record.

The enforcement of the new customs regulation regarding boats trading between Canadian and American ports is proving excessively burdensome upon some of the smaller ferry lines, the cost of fees, etc., being in some cases in excess of the earnings. Surely the Treasury Department can find some means to mitigate this burden without affecting the work at Washington. It would seem that a daily statement of business by ferry lines would answer all purposes as well—Cleveland, O. Marine Record.

An extensive shipment of paper to Sydney, Australia, during the past week assisted in swelling the value of the exports of paper from New York for the week to the unusually large sum of \$21,760. The consignment to Sydney was of the value of \$13,718. Other shipments of some importance were: To Buenos Ayres, \$2,960 worth; to Havana, \$1,592 worth; and to London, \$1,193 worth. Buenos Ayres is not usually a customer of the United States in so far as paper is concerned, and the shipment to that corner of the world is all the more worthy of note.—The Paper Mill, New York.

Fifty cents a week for women and three dollars a week for men is said to be the wages paid to adults in some of the dry goods stores of the city. Those who are willing to go into

the ditch with a pick-axe get seventy-five cents and eighty cents a day. That is the information conveyed by the Municipal Bureau, which should know whereof it speaks, since it handles over a thousand cases a month. Yet we have a National Policy to protect Canadian Labor!—Montreal Herald.

Where is the point of your argument? If the men and women alluded to were working in a mill or factory, around which protection has been thrown, they would be paid much better wages than if working in the dry goods stores and on the streets of Montreal.

The Customs Department have sent out a memorandum to Collectors of Customs regarding British copyright works as follows: Item No. 101 of the Tariff, 1894, provides that reprints of British copyright works shall pay a duty of six cents per pound, and in addition thereto 12½ per cent. ad valorem, until the end of the next session of Parliament, and thereafter six cents per pound; and there having been no legislation affecting the case during the last session, the provision as to the 12½ per cent. ad valorem has lapsed, therefore there is no authority for collecting the ad valorem duty, and the duty now is only six cents per pound.

A circular has been sent out to the collectors of customs notifying them that the French treaty is now in force. Collectors will be reminded that the reductions in the tariff consequent upon the treaty apply not only to France but also to Great Britain and the colonies, Argentine, Austria-Hungary, Belgium, Bolivia, Chili, Columbia, Costa Rica, Germany, Muscat, Russia, Salvador and Sweden and Norway. Collectors must see that satisfactory proof is forthcoming as to the origin of the goods at the time that entry is made. On those articles in the treaty upon which the ad valorem duty has been removed, the packages in which they are contained will be dutiable at 20 per cent.

A few months ago when it was announced that Mr. W. H. Frost, of Smith's Falls, Ont., a long time adherent of the Liberal party, would at the next election be a National Policy candidate for a seat in the Dominion House of Commons, great consternation prevailed in that party; but the effect of the announcement was attempted to be mitigated by the so-called discovery by a Grit newspaper that it was a fake. Upon this authority the Liberals are felicitating themselves that Mr. Frost is not a National Policy man, and that he will not be a candidate in that behalf, but they have failed thus far in producing any authority from Mr. Frost in denial of the intention by him of being such a candidate. Be he Grit or be he Tory, Mr. Frost as a manufacturer and an upholder of the National Policy would be an ideal member of the Dominion Parliament. We need scores there of just such men.

The New York and Boston Dyewood Company have been defeated in their protest against the Collector of Customs at Boston, the contention being over certain so-called shade cards which were appraised at a certain value and assessed at 25 per cent. ad valorem, under paragraph 311, and at 30 per cent. ad valorem, under paragraph 308 of the Wilson tariff. The importers claimed them to be entitled to free entry under certain regulations of 1892. They stated that the cards had no value except for the purpose of showing different shades

produced by the several colors, and that they were not for sale and had no saleable value. The shades were in the ordinary portfolio style, but the Board of Appraisers seemed to class them under advertising matter, printed circulars and business cards, and could find no authority for admitting them free.

S. R. Dawson, of Des Moines, Iowa, the discoverer of the lost arts of hardening copper and making Damascus steel, recently brought to the Chicago Inter Ocean office some samples of cutlery made from the new metals, as they might be termed. The Inter Ocean says that a large dagger made from the hardened copper would have delighted the soul of a Spanish senorita or an Italian brigand. It looked like highly polished gold, and had an edge keener and smoother than a steel razor, as was demonstrated by photographs of microscopical tests. Mr. Dawson is a man about 48 years of age, tall and slender in physique, of modest and pleasing demeanor. The Inter Ocean says that he is a lineal descendant of Ralph Hogge, who cast the first iron cannon made in England, and adds that it is rather remarkable that his ancestors, on both his father's and mother's sides, have been workers in iron and steel.

The United States Government have issued the following order having reference to exports of meats from that country :

It is ordered that all beef offered for exportation, whether fresh, salted, canned, corned or packed shall be accompanied by a certificate of an inspector of this department showing that the cattle from which it was produced were free from disease and that the meat was sound and wholesome. And in order that it may be determined whether all beef exported has been so inspected and found free from disease and wholesome it is further ordered that meat of all other species of animals which is packed in barrels, cases or other packages shall be legibly marked in such manner as to clearly indicate the species of animals from which the meat was produced. Meat which is not so marked and which is not accompanied by a certificate of inspection, will be subject to unpacking and examination in order to ascertain if it is uninspected beef.

Notice is hereby given to exporters of beef, whether said beef is fresh, salted, canned, corned, packed or otherwise prepared, and to owners and agents of vessels upon which said beef is exported, that no clearance can be given to any vessel having on board said beef until the provisions of this order are complied with. This order takes effect Jan. 1, 1896.

The object of Controller Wallace's recent visit to British Columbia was to inspect the arrangements for the collection of Customs in the Kootenay mining districts, which are rapidly filling up with miners, and to examine the mining machinery, which is being entered free of duty, as not manufactured in Canada. The Controller found that a most efficient Customs service is maintained, and that the country is making phenomenal progress. There are now 7,000 miners in a district which a few years ago was unworked ; and towns are springing up and rapidly developing into large centres of population. The exports of the district will this year reach \$3,000,000. At one point, Kaslo, which three years ago had scarcely an existence, the public revenue collected is \$3,000 a month. Rossland was a wilderness six months ago, but now has 3,000 inhabitants. The wealth of the country is inconceivable. Mr. Wallace points out that wheat at sixty cents a bushel yields twenty dollars a ton, whereas miles of mountains in the Kootenay district yield from twenty-five to sixty dollars a ton

in gold, silver and lead. He predicts great strides in the near future. English capital is finding its way to the new Eldorado, and mining works are being undertaken on a great scale.

An excellent example of the thing called Tariff reform in practical operation lately occurred in the course of the business of a prominent wholesale clothier of New York City. Tempted by a bait of low prices, he had ordered of an English importing house a line of what purported to be 18-ounce clay worsteds. When the goods were received and opened, the clothier noticed a suspicious dampness about them. They were weighed and found to tip the scales at exactly the stipulated 18 ounces per yard. Then the clothier concluded to expose them to the air and dry them. He did so, and when he weighed them again he found that they had meanwhile fallen off to 16½ ounces per yard. That is, the clothier had been buying "cheap" foreign goods and paying for water. The English manufacturer had deliberately wet his light and flimsy fabrics to bring them up to weight. This is known as "conditioning" and is said to be regularly practised in England. It would yield, so it is estimated, an extra profit of \$5 on every piece of goods which Tariff reform enabled the canny Briton to sell to the unsuspecting Yankees. Under the McKinley Tariff there was a specific duty on the weight, in addition to the ad valorem duty which made such trickery well nigh impossible. And Tariff reform was going to give the American people not only cheaper but better clothing!—Boston Journal.

A plant or beet sugar factory costing \$400,000 will use, say, 300 tons of beets a day, during a "campaign" of 100 days, each ton producing an average of 165 pounds of sugar or a total output of 4,950,000 pounds. This is probably considerably over the average mark, because it has not resulted in the past in this country. But even on this basis it would take 800 beet sugar factories to produce the requisite 4,000,000,000 pounds of sugar for home consumption. The average beet yield is probably twelve tons to the acre, often more, and sometimes less, but on this basis it would take twenty-five acres of beets per day, or 2,500 acres, to supply one factory during a "campaign," say 2,000,000 acres per annum to give us sugar enough for our own supply. The labor in the factory on a ton of beets is from \$1.50 to \$1.57 per ton, or, say, \$450 per day ; \$45,000 in a campaign in one factory, to say nothing of the amount paid out for labor in the field to grow the beets. In 800 factories it would be \$36,000,000. The coal, coke, limestone, bags and oil, per ton of beets worked cost \$1.37, or \$411 per day ; \$41,100 in a "campaign" and in 800 factories \$32,880,000. The freight on the material is twenty-four cents per ton of beets, or \$72 per day, \$7,200 in a "campaign," and for 800 factories our railways would receive in transportation charges \$5,760,000. These are only some of the considerations which enter into the question of producing our own sugar, giving employment in our own country to labor in divers directions, and especially in the coal, coke and limestone industries.—American Economist.

In the recent discussion in the Toronto City Council of the report of the experts who had been appointed by the Council to conduct the tests of the Merryweather steam fire engine,



built in England, and the Ronald engine, built in Canada, it was pointed out that in respect of getting up steam the Merryweather engine could do so from cold water in three minutes, but that in all three tests it had failed to throw the guaranteed stream of 200 feet; the weight also which the experts considered a very important point, exceeds the specified weight of 5,150 lbs. by 2,312 lbs. The Merryweather people explained that the tests having been made on the lake front in a high wind, the guaranteed vertical height of 200 feet could not be reached, but were certain that should the test be made in the lee of some high building, the required height could be reached. The excessive weight was attributed to the heavy Archibald wheels, demanded in the specifications. This is amusing, and teaches us that if we are to have conflagrations where steam engines are to be used, it should only be of buildings in the lee of high buildings, which would shelter the streams of water from any high winds that might prevail at the time; or it should be arranged that no high winds should blow when our steam fire engines are endeavoring to extinguish fires. It is interesting, too, to learn that the weight of Archibald wheels when used on Merryweather engines are more than a gross ton heavier than the ordinary wheels. What wonderful structures those English steam fire engines must be.

Deputy Commissioner Blue, of the Ontario Government Mining Bureau, has returned from an eight weeks' tour of inspection of the mines in the Rainy River and Lake of the Woods district. He says that mining operations are more favorable than he ever saw before, and everything promises a brilliant future for that portion of the Province. The settlement in the Rainy River District is going on fast, and nearly the whole front of the river from Fort Francis to the Indian Reserve is settled. Some have gone six miles back in the woods to live. The soil is very rich. He visited the gold mines near Rat Portage, including the Sultana, Regina, and Gold Hills Mines. There is a stamp mill on each of these and operations are being actively carried on. There are a number of other locations in the vicinity upon which work is being done. An English syndicate has purchased the reduction works at Rat Portage, and has become owners of the Black Jack Gold Hill properties. The latter has fifty men at work. The Sultana Mines have reached a depth of 200 feet. A very large body of ore has been struck below the second level and the mill is producing its brick of gold worth \$1,200 to \$2,000 every week. Some ore at the bottom of the mine shows free gold. The McKellars, of Rat Portage, are developing an enormous property, a mile or more in length, and where it has been tested it pans free gold. Heretofore the chief drawback in mining developments in this locality has been the lack of capital. This year two English syndicates have made investments on an elaborate scale, and a representative of another is now investigating and has taken options on several properties. If the results are satisfactory there is no limit to English capital which will be invested.

Some time ago the Ontario Government advertised for tenders to operate the binder twine plant at the Central Prison, Toronto, and for the prison labor necessary to do the work. It is now said that the contract is on the point of being let. The labor of prisoners must be employed in some

way or other and it cannot easily be moved far from the prison. Free laborers object to competition to which prison labor subjects them; but it is not generally conceded that prisoners should be supported in idleness at the public expense. Sometimes it is contended that all articles made by prison labor should be labelled as such; but it is not probable that this would make much difference in the sale; since buyers look to price and quality rather than to origin. The probable reason for the renting of the plant and the labor at the Central Prison is that in the hands of the Government there has been a loss. This is not surprising when we find that the National Cordage Company of the United States is virtually, if not actually, bankrupt. But their disaster was due to an attempt to corner the raw material and to buying up at extravagant prices rival concerns, the real object being to get rid of their competition. The Central Prison experiment in binder twine is decisive of nothing, and does not help to solve the question of mode in which prison labor can best be employed. It contributes only a very small item to the solution of a large question.—*Monetary Times*.

The Ontario Government have let their binder twine plant and the prison labor with which to operate it at a ridiculously low price, and the lessee will now engage in active opposition to free labor factories. Of course the tendency of this will be to bring down free labor to the value of prison labor. It is distressing to know that both the Ontario and the Dominion Government allowed themselves to become engaged in such disreputable business. Such doings are against the interests of both free labor and the employers of such labor.

It is very clear already that the policy of the new Government will be one of close attention to the interests of our industry and commerce. The recent speeches of Mr. Chamberlain, and of Mr. Curzon, the Under Secretary of State for Foreign Affairs, have already strongly indicated this line. If it be followed up, both industry and commerce ought soon to be in a paradisaical condition compared with what they have been. The cure for want of employment is encouragement of industry and commerce, which will tempt people to enterprise and not terrify them from it, and which will secure and protect our commerce in neutral markets from the aggression of the unscrupulous filibusters of the Continent, who have been bitten with a new craze for colonial empire when the fever of democratic socialism has been showing signs of subsiding. An end must be put to the sacrifice of our commercial interests and the establishment of preferential tariffs against us in neutral markets, on the so-called conquests of European powers. And if other means do not succeed, the country must see what retaliation will do. It is gratifying to find that, after many days, some of our contemporaries are beginning to adopt the views of *The Textile Mercury* on this matter. *The British Trade Journal*, an influential monthly, in its current issue, says:—"The question arises whether our policy of throwing open new possessions to every competitor is the right one. It is being gravely discussed, and the conclusions arrived at show that when British blood and treasure have been expended to secure a new country, it would be well to impose such trade regulations that the market shall benefit British instead of Continental trade. When France, or Germany, or Belgium acquire a protectorate or new colony, they are very careful to keep it to themselves, and to make sure that no English or American competitor can send his goods into their possessions."—*Manchester, England, Textile Mercury*.

New uses for wood pulp are introduced almost every day, says an exchange. Paper pulp is now suggested for hosiery moulds in knitting. Writing from Bradford, England, United States Consul Meeker says to the State Department: "I have received inquiries from persons at Leicester who desire to open up negotiations with United States manufacturers relative to supplying paper to be used for moulds or forms, in making stockings. It appears that, at present, wooden moulds or models are used and prove unsatisfactory and expensive. It is thought that if these could be made from paper, such as is used in producing paper car wheels, it would prove very effective. I would be very glad if United States manufacturers of this material would address me through the Department of State, in order that I may place the inquirers in correspondence with them."

Among the very successful sugar beet farmers on the Chino ranch in California are the Gustafson Brothers, Louis, Victor and Charles. Theirs is a signal example of what perseverance and industry will accomplish in the sugar beet business. The Gustafson Brothers went to Chino four years ago without capital and commenced farming on their own account, doing their work thoroughly. The result is they have been successful in every crop they have planted. They bought 20 acres of choice land west of Chino for \$175 per acre, and on this they made the last payment in 1893. They have a clear deed for their 20 acres to-day, and they have paid for it from beets raised on the land. They came to Chino, as Mr. Gustafson said, "without a dollar," and they now own a piece of land that is not excelled in California. They kept a care-

fully itemized account of their expenses on the 20 acres of beets in 1893, including their own work, which they counted at \$1.50 per day, and which amounted to \$275. That much should be added to their net profit as it is their personal earnings from labor on their crop. They harvested from 20 acres 436 tons, for which they received an average of \$4.50 per ton. The figures are:

Gross returns, 436 tons.....		\$1,962.00
Plowing 20 acres.....	\$40.00	
Harrowing twice.....	12.00	
Seed.....	30.00	
Seeding.....	8.00	
Thinning.....	80.00	
Cultivating twice.....	12.00	
Weeding.....	20.00	
Topping.....	108.00	
Plowing out beets.....	40.00	
Hauling to factory.....	174.00	
Tear and factory expenses.....	60.20	
Total expenses.....	\$584.60	
Net profit.....	1,377.40	
Total.....	\$1,962.00—	\$1,962.00
Net profit per acre.....		68.87

—American Economist.

The flames that a few days ago consumed the hull of the old H.M.S. Alert, destroyed the last vestige of one of the most remarkable vessels of modern times. In 1875 and 1876 she moored nearer to the North Pole than any other vessel has ever been. She was the flagship of the Nares Arctic expedition, and was commanded by Captain, now Admiral, Markham. She spent a winter at Floeberg Beach in 82 deg.,

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14 minutes north latitude, and for 142 days her officers and crew never saw the sun. A party of explorers from the Alert and her sister ship, the Discovery, reached the grave of Captain Hall and erected over it the inscription "Sacred to the memory of Captain F. C. Hall, of the U. S. ship Polaris, who sacrificed his life to the progress of science 8th November, 1871. Erected by the English expedition of 1875, which, following his steps, profited by his experience." They also visited the camp where, in the summer of 1872, Mr. Chester's party from the Polaris passed part of the season, leaving behind them a chronometer and supplies. In 1883 the Alert was presented by the Admiralty to the U. S. Government to take part in the Greely relief expedition, and it will be remembered how that expedition reached Greely and his few surviving companions only just in time to save their lives. Had relief occurred a few hours later, all would have been over. The party had eaten no food for more than a month but lynchens and boiled strips of their sealskin clothing. Greely was cold to the waist and unconscious, while in his hand lay the book of Common Prayer, open where he had been reading prayers to his dying men. The ovation that greeted the return of the ships will not soon be forgotten. The Alert was returned with thanks to the British Government, and later lent to Canada, for the expeditions undertaken to determine the practicability of the navigation of Hudson Straits, and to bring back the party of explorers left there by the Neptune in 1884. On this trip the Alert was commanded by Captain Gordon, and was for three weeks jammed in a field of ice. The Imperial authorities presented her at last to the Canadian Government, and the latter, finding her, recently,

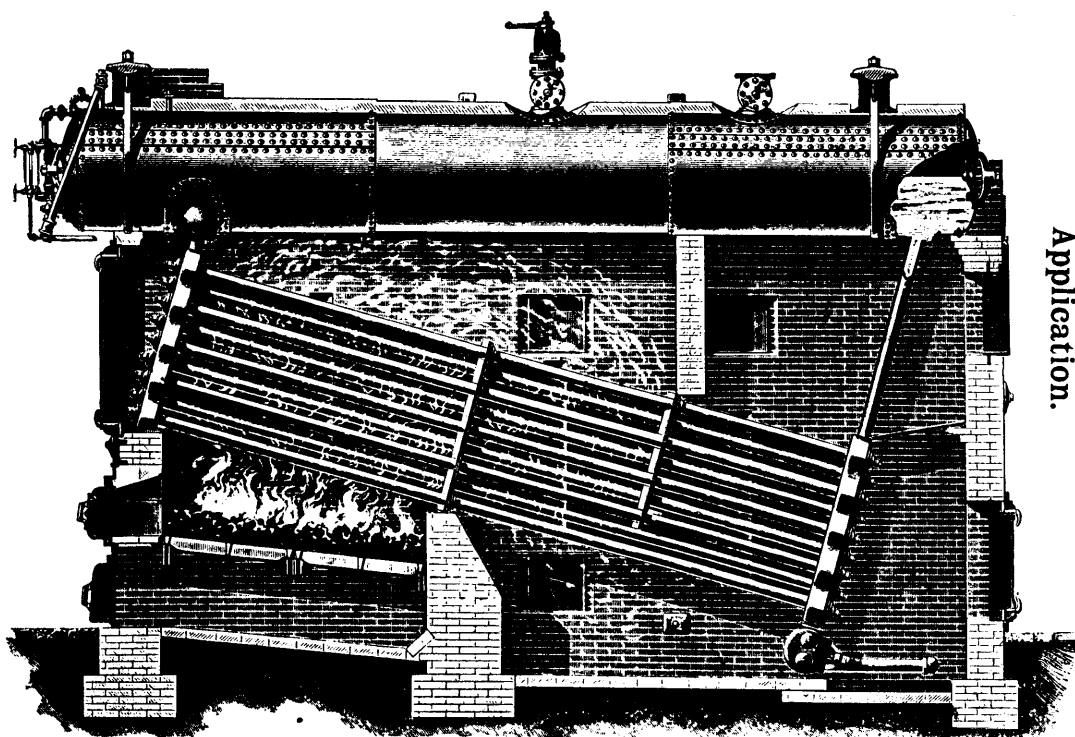
unseaworthy, after employing her for some time in the buoy and lighthouse service, sold her at auction to a St. John ship-builder, who has beached and burned her for the sake of her old metal.

The people of no other country part so freely with their money for recreation and sport as do Americans. Millions of dollars went into the roller-skating craze a few years ago, and now the more substantial and apparently permanent bicycle furor is the leading channel for the flow of the great American dollar. A Boston paper has figured, from reliable reports, that 500,000 bicycles have been marketed in the last season. Another estimate brought the figures up to 560,000 machines sold. Assuming the lower figure to be correct, over \$35,000,000 have gone for the purchase of machines alone during 1895. In addition to this original outlay every bicyclist has expended from \$20 to \$50 on a costume and machine outfit, thus easily bringing the figures up to \$50,000,000 for putting our wheelmen on the road ready for a "run." No more interesting study could be made than to follow this tremendous sum of money from the purchaser through its various channels of disbursement in the labor world. How many people have found employment through it? How many have grown rich? How many factories have been changed from idleness to busy times? Another element for speculative thought is, how much have these 500,000 new wheelmen meant to the roadside tavern-keeper? The "runs" always end at a wheelman's headquarters, and in the aggregate have brought thousands of dollars to the country hotelkeeper. Naturally, he wants their trade

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and has thus become a strong ally of the good roads movement. So, too, have the wheelmen, and here again has come a heavy investment of money, due largely to the agitation of the wheelmen. More miles of good roads have been built in the last year than at any other period, I imagine, in the history of the country. New York City alone has just appropriated \$300,000 for a macadamized bicycle path "from home to office," extending the length of the city without a break, and a million and a half is to be spent there this year in macadamizing streets in various neighborhoods. This is not done entirely for the cyclist, of course, but their demand for it has been the deciding factor in moving the officials to make the change. Through all the States the good roads demand, so long ignored, has become one of immediate concern by reason of the stand taken by wheelmen. It has only to be kept up to have our country roads a source of pleasure and a pride instead of a disgrace.—Peterson's Magazine.

Outing for October is a readable and finely illustrated number. The contents are as follows:—"A Bit of Blue Ribbon," by Sara Beaumont Kennedy; "Rugged Labrador," by R. G. Taber; "Boar Hunting in the Ardennes;" "Banana Land Awheel," by E. M. Aaron; "Hero," by Therese G. Randall; "Neath Cloudless Skies," by Fred. C. Green; "A Sporting Vacation in Montana," by G. W. Dillard; "Moose Hunting in New Brunswick," by the late E. P. Rogers; "Lenz's World Tour Awheel;" "Finnish Fish and Fishermen," by Fred. Wishaw; "Guns and Shooting," by Ed. W. Sandys; "The Great Dismal Swamp," by Alex. Hunter; "The New Hampshire National Guard," by Geo. H. Moses; "Football," by Walter Camp, and the usual editorials, poems, records, etc.

#### ROMANCE OF THE DYESTUFF INDUSTRY.

Very few persons have any idea of the large number of colors or dyes that are obtainable from that nasty, sticky, odorous black liquid, coal tar. Too many adjectives cannot be used to qualify the disagreeable attributes of this body, which a comparatively few years ago was the bete noir of the gas makers, who were often at their wits' end what to do with it, and had to invent all sorts of ways, surreptitious and otherwise, whereby to get rid of it. Now, thanks to the indefatigable industry of the chemist, all this is changed: coal tar is one of the most valuable products obtained during the process of making coal gas, and the gas maker has no trouble in getting rid of it. This transformation of a formerly useless waste material into one of the most useful of the raw materials at the disposal of the chemical manufacturer is one of the most wonderful instances of the value of the researches of modern chemists.

Coal tar has been split up by chemists into a large number of bodies, of greater or less importance. From these again, by various processes, may be obtained a large number of dyes, more than 800, the discovery of which has completely revolutionized the dyeing and printing of textile fabrics. It is not forty years since Perkin, an English chemist, first discovered by accident his mauve, the introduction of which in 1856 was soon to be followed by other colors; and the flow of new dyes obtained from coal-tar products has not ceased, and does not show signs of ceasing, at least fifty being brought out every year. Perkin, when he discovered his mauve, was endeavoring to prepare quinine artificially. He found something else instead, which, as regards utility, has proved of as much service as artificial quinine would have been—perhaps, indeed, greater. Similarly, by accident, Griess made the discovery that is the foundation on which is based the production of the most valuable dyes known, the azo colors. Even to-day dyes are discovered by accident: but the great bulk are found out as the result of much research work by the chemist, who works now on lines that have been laid down from theoretical considerations based on past work.

The chemist, working in his laboratory, puts in a little of this, and perhaps adds a bit of that—with the result that a new dye is born. His labors are not ended: he must find out if it be useful, whether it will really dye a piece of cotton, a length of woollen

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yarn, or a bit of silk ribbon. The chemist is only too familiar with many colored bodies which will do none of these things, and are therefore useless as a dye. Possibly, therefore, he may have to discover a new method of dyeing for his color. When Perkin first found out his mauve it was only useful for dyeing silk and wool in the first instance; and although he put a good deal of labor into it he failed to find a process that could be used therewith to dye cotton, all then known processes failing in this respect. It was reserved for a Manchester chemist to discover and patent a process for dyeing cotton with this and similar coal-tar dyes. When Bottiger first made Congo red, so recently as 1885, he could not dye cotton with it by any known process, and it was only by accident that a process was found that could be used. This has since done much to revolutionize the process of cotton-dyeing; but even to-day there is no good process for the dyeing of cotton with the azo dyes.

Let it be supposed that a chemist has found out that he can use a dye of which he has made perhaps a pound in his laboratory. Next he tries to make it in hundredweights—and the chances are that he may fail to do so, for it is by no means the easiest thing in the world to adapt laboratory processes to a works' scale, and it requires very often a clever chemist to succeed in doing so. However, in this our chemist is successful: he makes a lot and offers it to the dyer. This he does by preparing pattern cards containing bits of wool, silk and cotton dyed with the new color—and here it may be parenthetically remarked that there are firms who spend hundreds of pounds on pattern cards, many of which are really works of art and monuments of labor; probably a low estimate of their cost would be from £1 to £2).

When the new dye reaches the hands of the dyer it enters into competition with perhaps a large number of rivals already in possession of the field, and which have been in use many years. If it is to succeed in displacing some of these it must show some superior advantages: it may perhaps be more brilliant in color, or possibly the dyer finds it will stand a little more washing, and so he can use it with greater advantage in dyeing ladies' dress cloths than some of the older dyes; or it may resist acids better, so he uses it for dyeing hosiery; or perhaps it may stand light better, so he uses it for dyeing curtains, or carpets, or some other similar fabric that has to be exposed to light and air a good deal. Perhaps the new dye may be cheaper than the old ones—an advantage not despised by the dyer, who, like everybody else, wants to work as cheaply

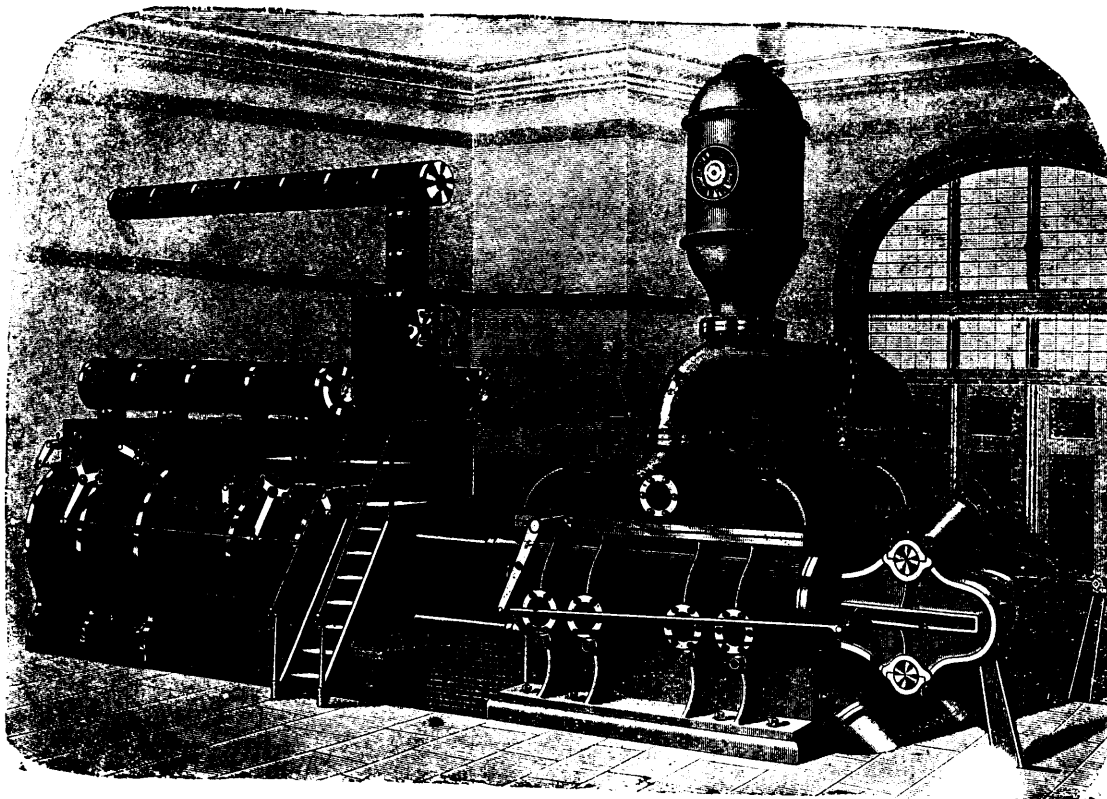
as he can. If the dyer finds that the new color does not possess any of these advantages he will ruthlessly discard it and stick to the old colors. On the other hand, if he finds some advantages he will adopt it and discard the old colors. Many instances of this might be quoted: Perkin's mauve had soon to give place to Hoffman's violet, which was brighter and better in every way; safflower, a natural dye, has given place to saffranine and erika, two artificial dyes; turmeric has similarly been displaced by auramine and turmerine, cochineal by the croceine scarlets, and last, but decidedly not least, madder by alizarine. These are examples of the Darwinian theory of the survival of the fittest in the domain of chemistry. So far the natural dyestuff indigo has not been replaced by a coal-tar dye—not that the chemist has not succeeded in making indigo from coal tar, but he cannot make it cheap enough: his product costs more than the natural one, so dyers still prefer the latter. Let the chemist, however, succeed in making indigo cheaper than it can now be bought, and the dyer will at once discard the natural and buy the artificial sort. That this course would mean the loss of a great industry to India, where the great bulk of the indigo is made, would not trouble the dyer; he has used madder, but when the chemist offered him alizarine, which was not only cheaper, but was easier to use, he chose to use alizarine, although the result has been that madder-growing, which formerly gave employment to many people in certain districts in France and elsewhere, has become a thing of the past. Lac dye used to come into this country in fairly large quantities from India, but the discovery of the aniline scarlets immediately stopped its use in dyeing, and now not a pound is imported. Cochineal is much in the same case, the azo scarlets having displaced it. Nevertheless, although the chemist has been successful in displacing so many of the natural dyestuffs, still there remain some for which he has not as yet succeeded in finding substitutes. Logwood is still the great source of the dyer for obtaining blacks, and fustic is yet a favorite dye for yellows. The chemist, however, does not mean to leave these alone, and there is scarcely any doubt that, sooner or later, substitutes for them will be found, all derived from coal tar.

The introduction of the coal-tar dyes has been a boon and a blessing to man. They have enlarged his ideas of color; their brilliance has brightened his home; by their ease of application they have enabled the dyer and calico-printer to produce brilliant and artistic effects, which were not previously possible, and in this

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way have done something to extend the growth of art culture among the people ; and at the same time the coal-tar color industry has found employment for large numbers of workmen, not only in producing but also in using them.—Textile Mercury.

The Waterous Engine Works Co., of Brantford, Ont., who are on the eve of moving into their splendid new premises, have just issued a comprehensive and well-illustrated catalogue showing the uses of Link Belt Machinery, an advertisement of which appears in another column. The multitude of uses to which this form of belt can be put commends it to mill owners, tanners, and all who require to move large quantities of grain, coal, or substances which require shifting. To save handling is to save money.

The Buffalo Forge Co., Buffalo, N.Y., inform us that they will very shortly issue a catalogue which will be of the most intense interest to all technical schools, the forge shops of every manufacturing industry, and in fact, every shop in the world where forges are used. It will contain a large number of handsome half-tone illustrations showing the Buffalo patented down draft smoke exhaust forge system. The catalogue is fully covered by letters patent, and the principle alluded to is applied to a multitude of uses such as exhausting foul odors, dust, acid fumes, etc.

Messrs. Darling Brothers, Montreal, inform us that they have recently made shipments of their special machines as follows :— Brackman & Ker Milling Co., 1, 75 H.P. Webster heater, Victoria, B.C. ; Laing Packing & Provision Co., Montreal, 1, 400 H.P. Webster heater ; British American Dyeing Co., Montreal, 1, 200 H.P. Webster heater ; Montreal Cold Storage & Freezing Co., Montreal, 1,400 H.P. Webster heater ; Dominion Coal Co., Montreal, 1,50 H.P. Webster heater ; Dominion Glass Co., Montreal, 1,75 H.P. Webster heater ; H. R. Ives & Co., Montreal, 1, 75 H.P. Webster heater ; Canadian Bridge & Iron Co., Montreal, 1, 50 H.P. Webster heater ; Toronto Paper Mfg. Co., Cornwall, Ont., 2 Webster oil extractors ; Standard Life Assurance Co., Montreal, 1 Webster oil extractor. All of the above machines were furnished under guarantee that they would effect a saving in fuel of 10 per cent. over other pressure coil or heaters. They are pleased to report that all these machines give perfect satisfaction and have effected the desired saving.

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.*

Messrs. Darling Bros., proprietors of the Reliance Works, Montreal, invite manufacturers, engineers and steam users, who desire to reduce the cost of running their steam plants, to send to them for their new illustrated eighty page catalogue which they will mail free on application.

D. W. Karn of Woodstock, Ont., is making a new departure in the promotion of his business in Quebec Province. His pianos and organs are in great demand there.

The Woodstock Wagon Co., is a new aspirant for favor in the wagon trade. Incorporation is being applied for and one of the wealthy merchants of the west end is at the back of the concern.

Senton of Brantford, has gone extensively into the manufacture of bicycle rims.

Did you ever hear of Ralston whole wheat flour ? Its manufacture is being commenced in Paris, Ont.

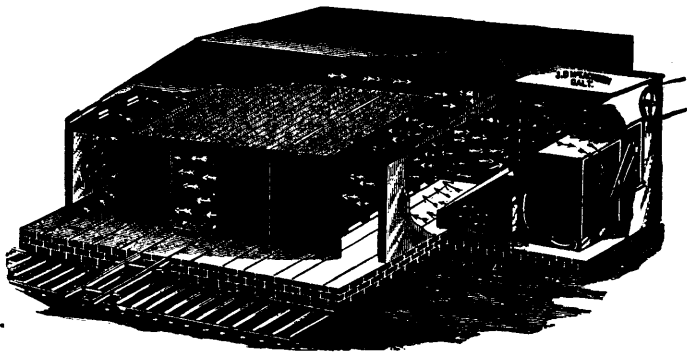
The Bell Foundry in St. George, Ont., has had a heavy falls' work on Ensilage cutters.

The Bain Wagon Co., of Brantford, who are about to remove to the old Patterson Works in Woodstock, Ont., have placed on the market a new low down wagon for freighters and truckmen, which is meeting with great favor. Its peculiar construction makes it well adapted for hauling stock, and on rough ground teamsters say the arrangement of the front axle lightens the work of the horses.

The Henderson Bicycle Co., of Brantford, Ont., is on the eve of removing to Goderich, Ont., where a large factory and a strong financial backing has been obtained to enable the proprietors to go every extensively into the manufacture of bikes.

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 hard wood, 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.

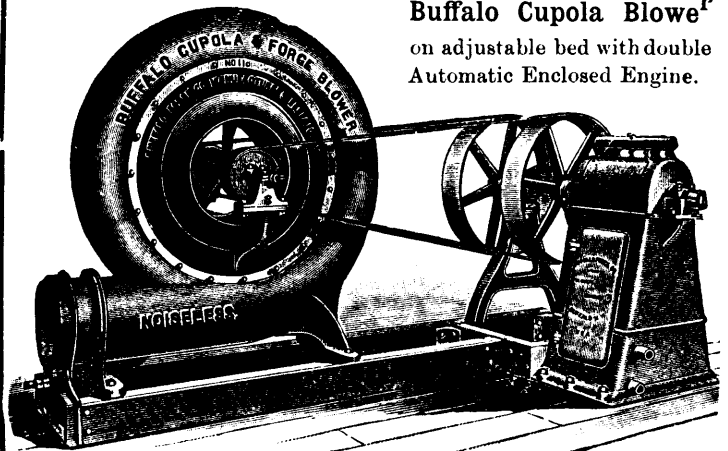
Yours truly,

McRAE BROS & CO.

For particulars address—

McEACHREN HEATING AND VENTILATING CO.  
GALT, - - - ONTARIO

Buffalo Cupola Blower<sup>r</sup>  
on adjustable bed with double  
Automatic Enclosed Engine.



Buffalo Dry-Kilns, Shaving Fans, Forges,  
Blowers, Exhausters, Black-  
smith Drills, Etc.

Are described in Sectional Catalogues FREE on application.

Their Efficiency, Smooth Running, and Durability  
are Unsurpassed.

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

Mr. T. G. McMullin, of Truro, N.S., will rebuild the old Ellers-house saw mills near St. Croix, N. S.

John Middleton's stave mill at Jericho, Ont., was destroyed by fire Oct. 6th. It will be rebuilt immediately.

Brown & Smith's saw mill at Notre Dame, N. B., was destroyed by fire, Oct. 6th.

Jas. G. Miller's foundry and machine shops, and Alex. Robinson's carriage factory at Chatham, N. B., were destroyed by fire Oct. 10th.

Messrs. J. & J. Livingston, Baden, Ont., are enlarging the capacity of their oil works by the addition of another flaxseed elevator.

William Wright's evaporator at Conway, Ont., was destroyed by fire, Oct. 8th.

Mr. Allard, Cookshire, Que., has purchased site and machinery of C. W. Taylor's saw mill and will erect a sash and door factory.

Messrs. Ross & Co's., pulp and saw mills at Sherbrooke, Que., were destroyed by fire Sept. 15th. Loss about \$10,000.

Messrs. Russell & Snider are erecting a 100 barrel flour-mill at Wawanesa, Man.

The contract for the road and electrical work connected with the extension of the Galt, Preston and Hespeler railroad through the village of Hespeler to Brodie's mill, will be let shortly, and the work begun as soon after as possible.

The St. Thomas Gas Company, St. Thomas, Ont., have commenced the manufacture of gas from coal oil or gas oil, instead of soft coal, at the expense of about \$15,000. The new gasometer will hold about 15,000 feet of gas.

The Power, Rope and Belting Co., St. Catharines, Ont., are applying for incorporation with a capital stock of \$20,000, to manufacture rope, belting, etc.

The Deschenes Electric Company, Aylmer, Que., are applying for incorporation with a capital stock of \$60,000, to construct works for the manufacture of electric machinery, and of electricity for the purpose of light, heat, power, etc.

Mr. T. B. Caldwell will erect a saw mill at Lanark, Ont.

Messrs. Friel, Parenteau & Comos are erecting a 100 barrel flour mill at St. Jean Baptiste, near Winnipeg, Man.

Jesse Whitney's saw mill, Belmont, Ont., was destroyed by fire Sept. 23rd, it will be re-built at once.

Mr. Henry Waite, of St. Marys, Ont., is negotiating to establish a dye works in Exeter.

Mr. Chas. Booth's butter factory near Granby, Que., was destroyed by fire a few days ago, loss about \$2,000.

Mack White's saw mill, Mansonville, Que., was recently destroyed by fire.

A deposit of firebrick clay has been discovered near Midway, B.C., and will prove of great value in the event of the establishment of smelting works at that point.

A new oatmeal mill will be erected at Edmonton, Alberta, N.W.T., by Messrs. Brackman & Ker, who also operate a mill at Victoria, B.C.

E. J. Cashman, of Toronto, is seeking encouragement from Vancouver for the establishment of a bicycle factory at the Terminal City.

Mr. J. G. McCrae's barrel factory at Sarnia, Ont., was destroyed by fire Oct. 2. Loss about \$2,000.

A. Gothard, of Vancouver, B.C., is looking for a location for a planing mill and sash factory at Rossland or Trail, B.C.

An order has been given by the Upper Ottawa Improvement Company to the Bertram Engine Works, of Toronto, for two new steel boats. One is to replace the steamer Perley, burned last spring; and the other the steamer Monitor, which has been running on Deschenes lake, and which is to be dismantled after this season. The two new boats will be entirely of steel, except the cabin room and cover for the men in the centre, which will consist of wood. They will be side-wheel steamers, with a much lighter draught than the ones they will replace, but yet with more power. As soon as the various parts of the boat are manufactured they will be put together, one at the Quyon, and the other at the Chats. They are to be in readiness for operation early next spring.

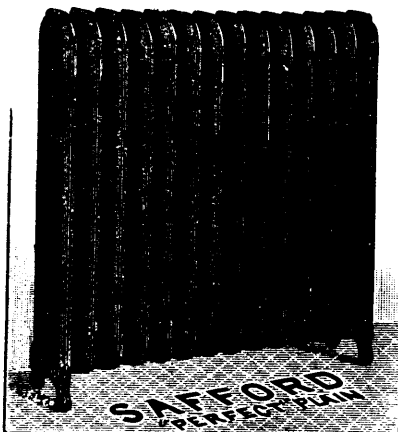
## HEATING APPARATUS

# Safford .: Radiators

RECEIVED THE HIGHEST AWARDS :

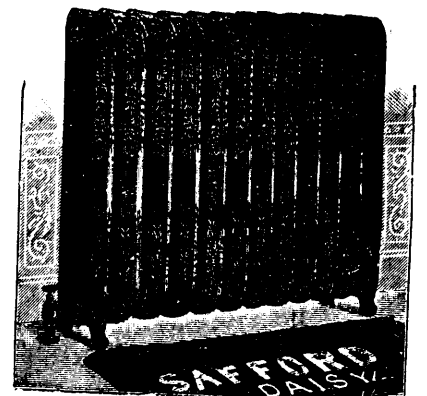
ANTWERP (BELGIUM) EXPOSITION 1894.  
SHERBROOKE (QUEBEC) EXHIBITION 1893.

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

The Okotoks Irrigation Company, Calgary, N.W.T., are applying for incorporation with a capital stock of \$10,000, to carry on the business of irrigators and water dealers, etc.

Woodstock Waggon and Mngf. Co., Woodstock, Ont., are applying for incorporation with a capital stock of \$25,000, to take over and carry on the business heretofore conducted by Messrs. McIlwrath and Clynick Bros., and to manufacture waggons, buggies, etc.

J. W. Wells will erect a cannery at Hatzic, B.C. He will pack both fish and fruit.

Wm. Squire, of Ekfrid, near St. Thomas, Ont., has invented a gunpowder engine for propelling bicycles, and will have it patented.

The F. W. Borden Co., Canning, N.S., are applying for incorporation with a capital stock of \$50,000, to manufacture lumber, etc.

The Harvey Van Norman Co., Toronto, Ont., are applying for incorporation with a capital stock of \$250,000, to acquire the business now carried on by Messrs. Harvey and Van Norman, and to manufacture boots, shoes, rubbers, leather, etc.

The Belleville Traction Co., Belleville, Ont., are applying for incorporation with a capital stock of \$100,000, for the purpose of constructing and working lines of street railway by electricity in Belleville, Ont., and vicinity.

American Tobacco Company of Canada, Montreal, have been incorporated with a capital stock of \$1,000,000, to manufacture tobacco, etc.

The Bicycle Accident Repair Company, of Canada, Toronto, Ont., have been incorporated with a capital stock of \$10,000 to manufacture bicycles, etc.

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

Mr. J. C. McCullough is making arrangements to establish a bicycle factory in Winnipeg, Man. He intends to make serviceable road wheels, weighing from twenty-five to thirty pounds.

The Chatham Manufacturing Co., of Chatham, Ont., have made an addition to their waggon works of a substantial brick building 60x40 feet, two storeys high.

The Essex Standard Oil & Gas Co. has struck another gusher at Union, in South Essex, Ont., with a capacity of 5,000,000 feet per day. This is the third good well the company has struck, and now they will endeavor to induce manufacturers to locate in that region.

Joseph Auberton, East Hersford, Que., is rebuilding his mill, which was destroyed by fire last spring.

The Town Council of St. Jerome, Que., has voted Smith, Fischel & Co., cigar manufacturers of Montreal, a bonus of \$20,000 and exemption from taxes for fifteen years to move their factory to that town. Steps will be taken immediately to build a large factory suitable for their business.

Mr. A. Brazeau, Pakenham, Ont., is rapidly getting his carding mill and woolen factory in readiness, and has already completed the outside work in connection with the water power.

Messrs. Robertson & Foster, St. John, N.B., are erecting a nail factory in connection with the rolling mills on Strait shore, which will employ about thirty-five hands.

Messrs. Bingham & Lawson, are erecting a mill at Fairview, B.C., at the expense of about \$15,000.

The Vancouver Marine Railway, Dry Dock and Manufacturing Company, Vancouver, B.C., will become incorporated with a capital stock of \$100,000, to erect a marine railway and conduct a general shipyard at that place.

A Woodstock, Ont., despatch says that it is now understood as definitely settled that the Bain Waggon Co., of Brantford, Ont., will remove to Woodstock; that a new company will be formed by the amalgamation of this firm with the Massey-Harris Co., and the business of the new and enlarged concern will be carried on in the Massey-Harris Co's. workshops—generally known as the Patterson works.

The first step in the construction of what is said to be the largest steel arch bridge in the world of single arch span was undertaken when the contract was let for the construction of the foundation for the mammoth bridge at Niagara Falls, Ont., which will be more than 850 feet across, besides the shore line parts. The bridge will supersede the present suspension bridge.

# 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.





Robert Whitelaw of Woodstock, Ont., is busy on Oatmeal machinery.

Wm. Partello, of Ingersoll, Ont., intends to rebuild his burned mill immediately.

Aquin & Itzeviere's sash and door factory, Ste. Cunegonde, Que., was destroyed by fire Sept. 20th. Loss about \$10,000.

Wesley Howell's Hydroleum Heater is a Brantford, Ont. aspirant for favor as a heat producer from oil and vapor.

Duplessis' tannery and McKane's boot and shoe factory, at the city of Quebec, was destroyed by fire recently. Loss about \$25,000.

Authority has been conferred upon the Hamilton Bridge Co., Hamilton, Ont., by supplementary letters patent to increase its capital stock from \$100,000 to \$150,000.

The Maple Leaf Rubber Company, of Toronto, Ont., are applying for incorporation with a capital stock of \$150,000 to manufacture gutta percha and rubber goods, etc.

The Pine and Hardwood Company of Ontario, Toronto, are applying for incorporation with a capital stock of \$40,000 to manufacture lumber, etc.

The steam-pipes in the Whitby Ladies' College are being covered with Mineral wool covering supplied by the Canadian Mineral Wool Company, Toronto.

The Stevens-Campbell Milling Company, St. Thomas, Ont., have been incorporated with a capital stock of \$450,000 to manufacture flour, meal, etc.

The Dominion Cold Storage Company, Toronto, Ont., have been incorporated with a capital stock of \$300,000 to preserve meat, fruit, vegetables, etc. by means of cold storage and refrigeration.

The Shearer & Brown Company, Montreal, Que., have been incorporated with a capital stock of \$100,000 to erect saw-mills, planing-mills, etc.

The Rat Portage Fish Company, Rat Portage, Ont., are applying for incorporation with a capital stock of \$40,000 to manufacture caviar, and for storing and freezing fish, etc.

The Canadian Mineral Wool Company of Toronto, have lately shipped to British Columbia a large amount of steam-pipe covering for the new Parliament Buildings at Victoria.

The contract for the Central Prison binder twine has been let to Mr. P. L. O'Conner, of Brantford. He makes a deposit of \$5,000 as a guarantee of the performance of the contract, which will extend over five years.

The Henderson Bicycle Company of Goderich, Ont., are applying for incorporation with a capital stock of \$100,000 to manufacture cycles, bicycles, sulkies, etc.

The Canadian Mineral Wool Company have about completed covering the steam-pipes at the new Union Station, Toronto.

The Ontario People's Salt Manufacturing Company have been authorized to change their corporate name to the Ontario People's Salt and Soda Company, and to manufacture bi-carbonate of soda, chloride of lime, etc.

The Office Specialty Manufacturing Company, Toronto, Ont., have been incorporated with a capital stock of \$75,000 to acquire the business now carried on at Toronto by the Office Specialty Manufacturing Company, of Rochester, N.Y., to manufacture office furniture, etc.

D. Johnson, lock manufacturer, Toronto, informs us that he has been for many years engaged as lock manufacturer and brass founder, having a year ago purchased the patent rights of the Hyde patent taps and valves, with patterns, etc., and having recently bought the machinery and patterns of the Hurdon Hardware Manufacturing Co., of this city, is now ready to fill orders promptly. Prices and terms on application.

The Talbot, Cockroft & Harvey Company, Elora, Ont., are applying for incorporation with a capital stock of \$99,000 to manufacture carpets, rugs, etc.

The Auer Light Company of Montreal are incorporating branch companies as follows:—London, Ont., with a capital stock of \$50,000; Hamilton, Ont., with a capital stock of \$50,000; Belleville, Ont., with a capital stock of \$40,000; Ottawa, Ont., with a capital stock of \$30,000; Toronto, Ont., with a capital stock of \$500,000.

# ...INCANDESCENT LAMPS...

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

Mr. T. B. Rider will build a flour mill at Magog, Que.

Welch Brush Co. will start a shoe factory in Berlin, Ont.

Mr. Henry Walte, of St. Mary's, Ont., will establish dye works in Exeter, Ont.

The Union Furniture Co., Wingham, Ont., will rebuild their factory at once.

C. McKutchen's large flour mill at Alton, Ont., was destroyed by fire Oct. 11th, loss about \$4,000.

George Garrett, Acton, Ont., will start a glove factory at Brandon, N.W.T.

Captain Foster, Smith's Falls, Ont., will start a broom and whisk factory in that town.

Messrs. Baillie Bros. are erecting a sawmill at Aylmer, Ont., which will give employment to about sixty men.

A. Gothard, Vancouver, B.C., is looking for a location for a planing mill and sash factory at Rossland or Trail.

W. H. Ross is rebuilding his pulpwood mill, recently destroyed by fire at Sherbrooke, Que.

A knitting factory is being started in Goderich, Ont., under the management of Mr. J. C. Hewett.

The Lunenburg Iron Company, Lunenburg, N.S., has been authorized to increase its capital stock from \$10,000 to \$30,000.

The Heeson Rocking Grate Bar Co., of Toronto, have changed their office from 133 Bay St. to the Mail Building, cor. King and Bay Sts.

I. Matheson & Co., New Glasgow, N.S., are applying for incorporation, with a capital stock of \$60,000, to carry on the business of iron founders, machinists, etc.

The Bain Waggon Company, Woodstock, Ont., are applying for incorporation, with a capital stock of \$250,000, to manufacture waggons, carriages, street cars, etc.

The business of the British Columbia Pottery & Terra Cotta Co., Victoria, B.C., has been acquired by Joseph Hunter and Chas. A. Vernon.

T. Johnston's foundry at Kemptville, Ont., was partially destroyed by fire; loss about \$800.

Henrichon's North Star Tannery at Joliette, Que., was destroyed by fire Sept. 29th; loss about \$15,000.

John Dovey's shingle mill at Lindsay, Ont., was destroyed by fire Sept. 25th.

Jackson & Co.'s sawmill at Tidnish, N.S., was destroyed by fire on Sept. 18th.

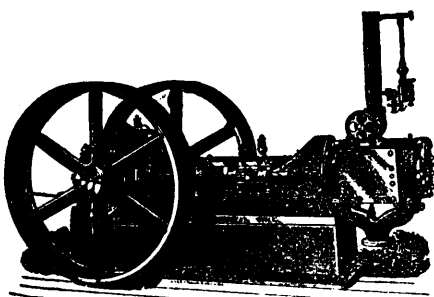
The Anderson Furniture Company's works at Woodstock, Ont., are being enlarged by the addition of a wing 300x28 feet three stories high. Increased power will be obtained from a 200 h. p. engine and a battery of four boilers supplied by Messrs. E. Leonard & Sons, London, Ont. The enlarged works will have capacity to give employment to some 600 hands.

At the Fair Grounds, Toronto, a few days ago, Mr. H. A. Massey, of the Massey-Harris Co., stated that he was the pioneer builder of agricultural implements in Canada. In 1851 he constructed the first reaper and the first mower manufactured in Canada. He also stated that next year he would probably be riding a vehicle propelled by electricity, and manufactured by his company.

The keel of the new boat for the Niagara Navigation Company has been laid in the yard of the Bertram Iron Works Company, Toronto. The carrying capacity of the new boat will be 1,400 persons, and the speed will be twenty miles an hour. The steamer is to be of the side-wheel passenger boat type, having three decks, will be 277 feet over all, 269 feet on the water line, 32 feet beam, 59 feet 2 inches over guards, and 13 feet 6 inches moulded depth. The hull is to be built of steel throughout; the engines are compound condensing of the inclined type, with cylinders 45 inches and 85 inches by 5 feet 6 inches stroke, turning paddle wheels 22 feet in diameter. The boilers are six in number, of the gunboat type; each boiler 8 feet diameter by 16 feet long, having two furnaces, 37 inches in diameter. The deck arrangements and the cabins have been laid out to suit the particular business for which the steamer is built—that is to ply as a day boat between Toronto, Niagara and Lewiston. Mr. A. Angstrom, the general manager of the Bertram Company, is the designer. The Cibola's successor is to cost a quarter million. She will be launched in April and will be ready for business some time in June.

## Armington & Sims

AUTOMATIC  
HIGH SPEED ENGINES



For Electric Lighting and  
General Factory Purposes

Perfect Regulation and Highest Economy.

Steam Pumps, Shafting, Pulleys and  
General Machinery.

**NIE & WHITFIELD**  
HAMILTON, ONT.

## Firstbrook Bros.

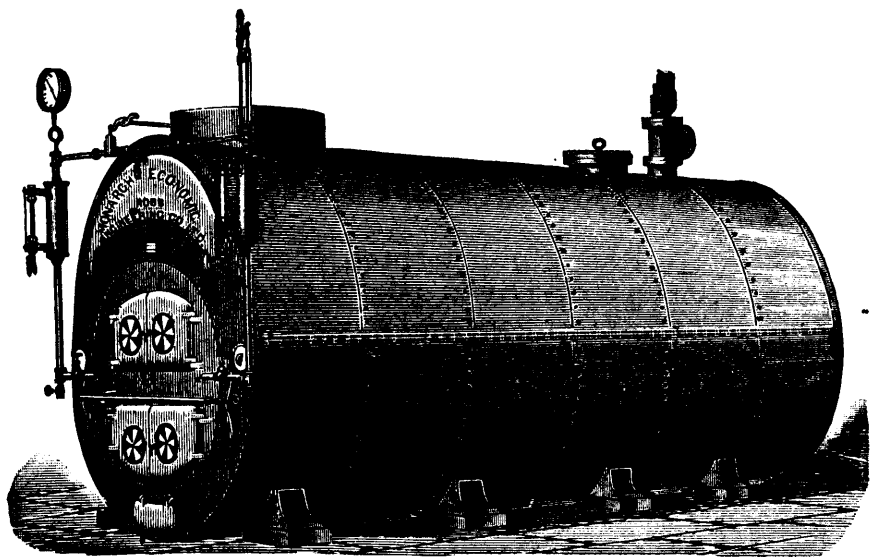
Dovetail and Packing Boxes

Top-Pins, Side Blocks and Cross Arms. Wood  
Printers, Etc.

Cigar Boxes. Shipping Cases.

TORONTO, ONTARIO.  
Write for Prices.

## 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.

W. J. Moses, Vernon, Ont., will erect a saw mill at that place. Newlands & Co., Galt, Ont., have put in a new steel boiler.

Mr. Julius Waterous, Brantford, Ont., has leased suitable premises and will engage in the manufacture of wire nails.

The Crescent Watch Case Company, Montreal, Que., have been incorporated with a capital stock of \$25,000, to manufacture watch cases, watches, jewellery, etc.

The Paterson Gold and Silver Magnetic Separator Company, Toronto, Ont., are applying for incorporation with a capital stock of \$125,000, to carry on the business of mining, etc.

The Lincoln Railway Traction and Light Company, St. Catharines, Ont., are applying for incorporation with a capital stock of \$90,000, to construct lines of street railway in St. Catharines, Ont., and adjacent municipalities.

The Tilbury Peninsular Oil and Gas Company, Tilbury, Ont., have been incorporated with a capital stock of \$20,000, to sink wells for the production of oil, etc.

The Irving Umbrella Company, of Toronto, Ont., have been incorporated with a capital stock of \$25,000, to acquire the business now carried on by Irving & Co., to manufacture umbrellas, parasols, walking-sticks, etc.

J. H. Babcock, Odessa, Ont., has purchased the Asselstine water power, and will build a shingle, saw, and grist mill.

Okanagan Flower Mills Company, Armstrong, B. C., are applying for incorporation with a capital stock of \$60,000, to carry on the business of flour milling, etc..

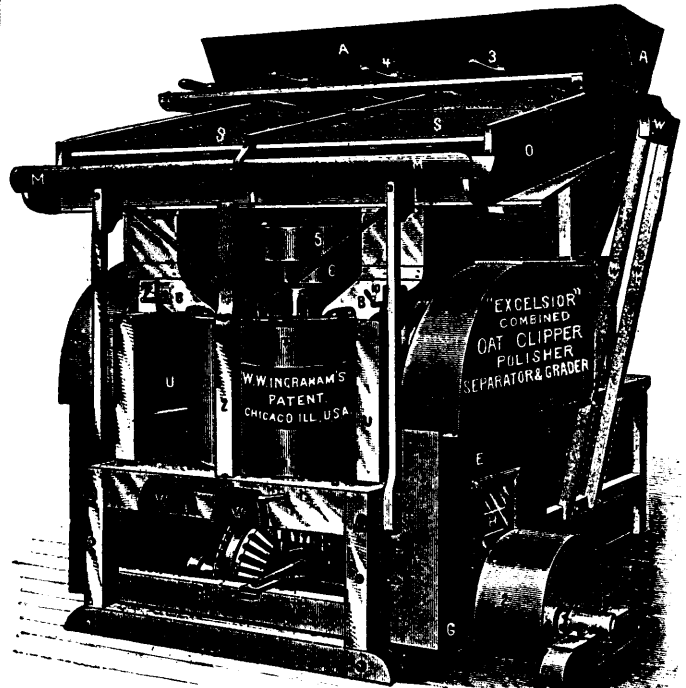
The Imperial Lumber Company, Warren, Ont., has purchased the Dominion Planing Mills in Sudbury, Ont. from W. J. Ford & Company.

The Northumberland Stove Co., Sackville, N.B., are applying for incorporation, with a capital stock of \$10,000, to manufacture stoves, etc.

The Oshawa Electric Railway Co. has ordered two 150 horse-power tandem compound condensing engines from the Robb Engineering Co., Amherst, N.S.

### OAT CLIPPER, SEPARATOR AND GRADER.

Messrs. Wm. & J. G. Greey, Toronto, manufacturers of milling machinery, etc., have begun the manufacture of the Excelsior oat clipping, polishing, cleaning, separating and grading machine,



FRONT VIEW.

combined, for which a Canadian patent has been granted the inventor, Mr. W. W. Ingraham, of Chicago.

The accompanying illustrations of it are described as follows:—

**PACKARD**

# Lamps

...and...

# Transformers

**PACKARD**

.....PRICES ARE RIGHT AND QUALITY GUARANTEED.....



...Get Our Quotations on Supplies...

We carry a Full Stock of

**SOCKETS, CUT-OUTS, INSULATORS, WIRE,**  
ETC., ETC.

**The Packard Electric Co., Ltd.**  
ST. CATHARINES, ONTARIO

A A receiving hopper 3 and 4 feed slides; s s sieves; o vibrating shoe, with sieves; m m discharge of refuse from sieves; c c suction trunk; B B receiving hoppers on clipping and polishing drum; 9 and 10 valves in receiving hoppers to pass grain outside of drum; u u receiving trunks from valves, 9 and 10; T clipping and polishing drum; E E separating trunks; w w weighted valves, under clipping and polishing drum; G discharge of cleaned grain; z balance spring to shoe and sieves; k cockle discharge; l valve in grading chamber; F first discharge from grading chamber; K K second discharge; N N fan drum and discharge; 3 and 4 fan slides to regulate suction separations; x door to grading chamber; 5 fan pulleys; 6 shaker pulley to shoe; 2 receiving pulley, with shaft and boxes; 7 and 8 bevel core wheel and pinions; w w stands for receiving hopper; l receiving chambers from the sieves and shoe.

As the oats fall through the hopper down on to the sieves s s, they are subjected to a suction current in the trunk c c, which draws directly through the grain, removing dust, chaff, straw, etc., and these are discharged by the exhaust fan N, into a dust room or out of doors. Hence the machines are dustless.

Being thus relieved of the foul stuff, the sieves s s are enabled to perform their work of removing dust, stones, nails and other objectionable matter from the oats, in the best possible manner.

The oats pass through the sieves s s and fall upon a zinc cockle screen, which screens out the fine dirt, sand, cockle, etc., and conveys the cleaned oats into the clipping and polishing drum t.

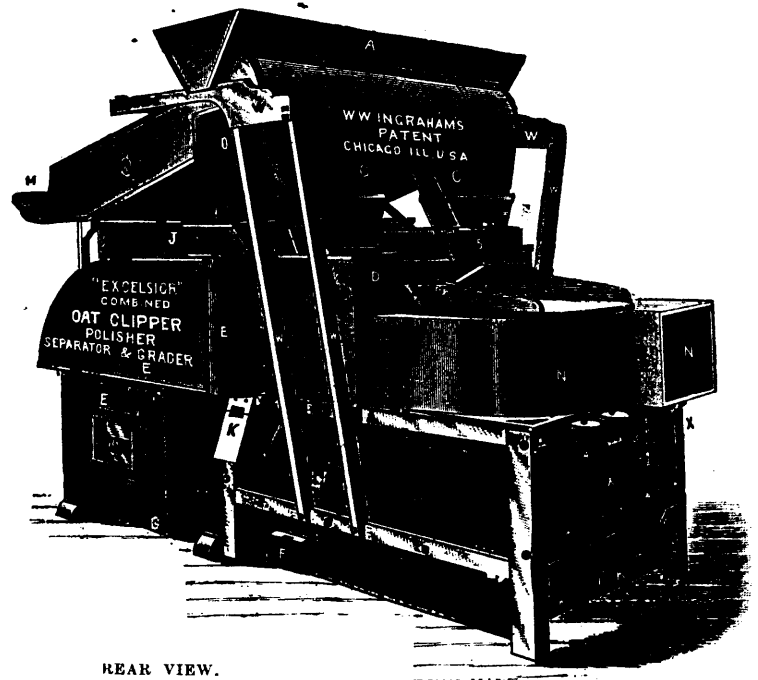
After being clipped the oats are discharged from the clipping drum into the main suction trunk e e where they are subjected to a strong suction, which not only removes all the dust, chaff, etc., created by the clipping process, but also sucks out light and imperfect oats, if is desired to do so.

This light stuff is all drawn into the separating and grading chambers where a separation of the dust, chaff, etc., from the light oats is made, the latter being spouted out at the side of the machine F, while the dust, etc., are discharged by the exhaust fan N in the same way as the chaff, straws, etc., before mentioned.

The oats can be held in the clipping drum by the use of the weights w w (see front view) until they are clipped as the operator may desire. The moving of the weights w w on the notched bars, will shut the valves, and the drum will fill, until the weight of the

grain will cause the valves to open, and thus discharge the grain as fast as it enters the drum (the valves being automatic.)

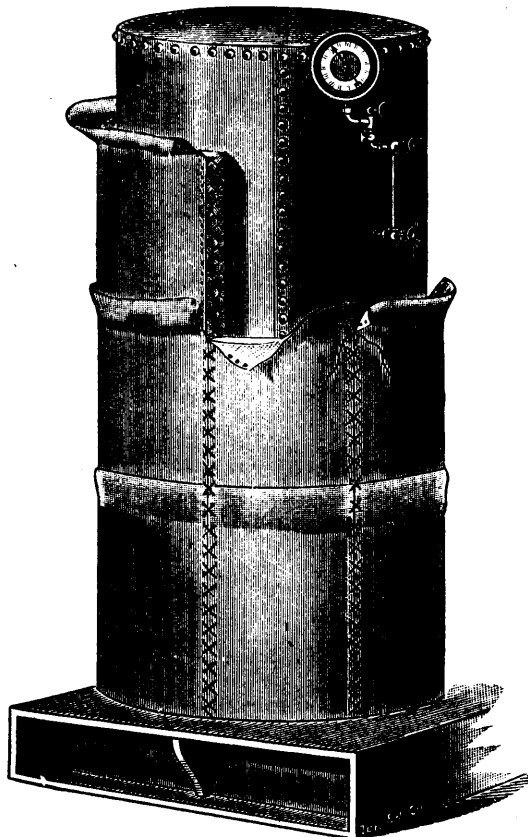
The machine can be quickly adjusted while running at full speed so as to raise the weight of the oats anywhere from five to ten pounds to the measured bushel, even to the nicety of a half pound per bushel, which cannot be done by other machines.



REAR VIEW.

The average waste in clipping is only about three-quarters of a pound to the bushel and should not in any case exceed one pound.

The light chaffy end of the oat is the part that is clipped off, therefore, the shrinkage in weight is but little more than if cleaned



1895.

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“MICA”

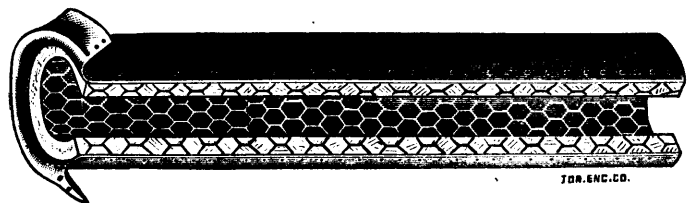
The well-known **Electrical Insulator** successfully adapted as an insulator of **Steam heat. Enormous Saving of Fuel Guaranteed** by the use of **Mica** boiler and steam pipe covering.

Patented

1894

and

1895



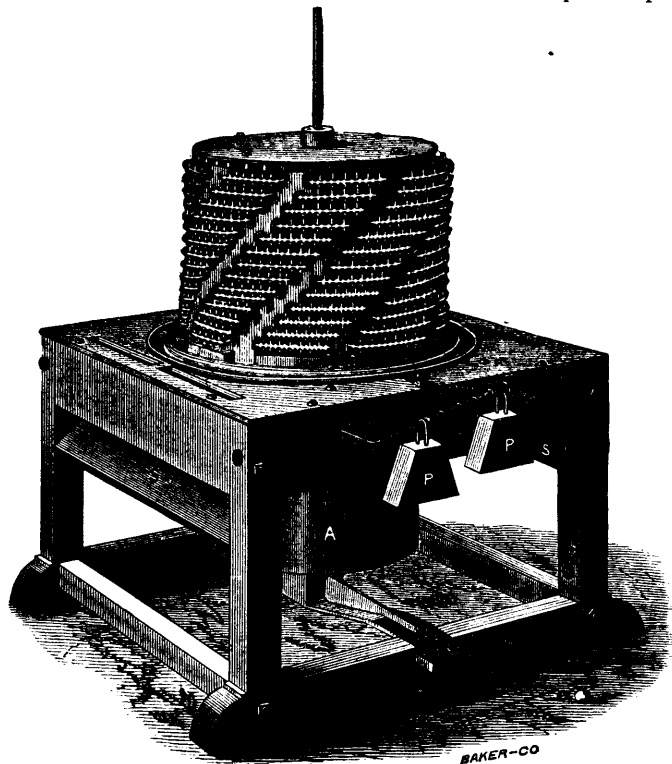
Now being used with great success by the Toronto Street Railway Co., Niagara Navigation Co., Toronto Ferry Co., etc., etc. Has been tested and thoroughly examined by the highest authorities and pronounced the most effective in the market. Impervious to the extremes of heat or cold, damp or vibration. Made in any size mats in any shape. Can be applied and removed as often as desired without injury.

SOLE MANUFACTURERS

The Mica Boiler Covering Company (Ltd.)

9 JORDAN STREET, TORONTO.

in a separator. These light ends while on the oats, tend to prevent the grain from packing close, but when chipped off, the oats pack almost as closely as wheat. The amount of shrinkage in weight depends upon the closeness of the clipping and the amount of light oats and dirt removed. Clean oats weighing, say 30 pounds per measured bushel before clipping, may be raised to 40 pounds per



VIEW OF CYLINDER AND STAND.  
To be driven by Belt. A Receiving Pulley, P P Valve Weights.

measured bushel, with a shrinkage of about one pound per bushel. If the grain is mixed with a large proportion of chaff or if there be much dirt and small seeds in it, the shrinkage will vary according to the quantity of foul stuff removed; but this part of the shrinkage would occur in cleaning and screening the oats through any machine without clipping.

The cylinders are encased in a heavy iron jacket, with a corrugated inner surface. The outer jacket remains stationary, while cylinder revolves at from 350 to 650 revolutions per minute according to the size of the machine or kind of grain to be operated upon. The cylinder is fitted with spirally arranged chilled castings, with lateral projections, so constructed that the grain is forced endwise against the corrugated jacket, actually clipping the oats of the barbed ends.

This machine is perfectly adapted to cleaning, separating, grading and polishing wheat, barley, malt and rye as well as oats. It is made in three sizes, having capacity to manipulate from 150 to 1,000 bushels per hour.

For further information apply to Wm. and J. G. Greey, 2 Church street, Toronto.

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**ELECTRIC MOTORS**

Transformers

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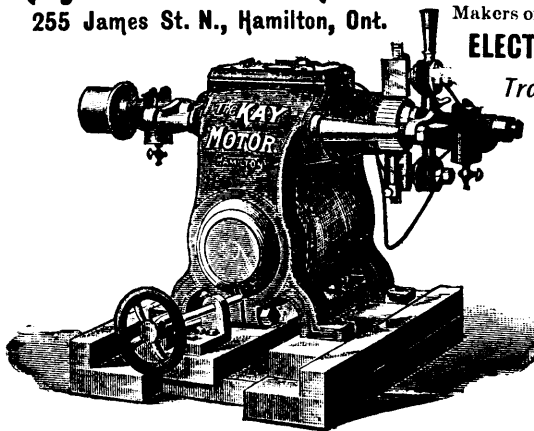
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**MACHINES**

ETC.

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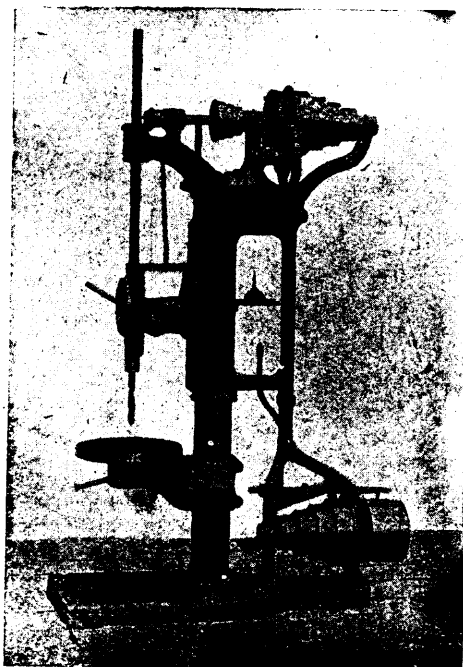
### UNIVERSAL MILLING MACHINES

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Our Prices are right for strictly First-Class Tools  
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**Montreal Office, 321 St. James St.**

THOS. REID, Eastern Representative.



**DIAMINE JET BLACK SS.**

Messrs. Wm. J. Matheson & Co., New York and Montreal, have sent us the following, having reference to their Diamine Jet Black SS, which, they say, is a new mark of Diamine Jet Black which in light shades is of greener appearance and in deep ones of a more intense black than their Diamine Jet Black OO.

Method of dyeing cotton a beautiful deep black of good fastness to washing and acids and of a remarkable fastness to light is obtained with five per cent. Diamine Jet Black SS dyed boiling with the addition of fifteen per cent. Glaubers Salt and five per cent. Soda.

By treating dyeings thus produced for fifteen minutes in a fresh bath containing four per cent. bichromate of potassium a very good fastness to milling is obtained. By this method of fixing the shade of Diamine Jet Black SS is only very slightly altered, while it reddens the shade of Diamine Jet Black OO for which mark we first recommended this method. As illustrated by dyeing No. 3, shown in their pattern card, the shade can be easily corrected by the addition of a small quantity of Diamine Fast Yellow B. This method of chroming will be found especially valuable in cases where fastness to milling, light and acids is required, principally for loose cotton and for yarns which are to be milled.

(The fastness to washing and depth of shade of Diamine Jet Black SS is also materially increased by diazotising and developing, especially with Phenylendiamine and Beta-Naphtol, but the shades thus produced are less fine than those obtained by diazotising and developing our older marks of Diamine Blacks.)

Diamine Jet Black SS shows on Linen and Jute the same good properties as on cotton.

Diamine Jet Black SS is of much importance for Unions owing to its beautiful shade and excellent fastness to light. For this material they recommend to dye with the addition of 3 1/2 ounces Glaubers salt, 1/2 ounce borax per gallon water at the boil for half hour and to let cool off in the same bath for another half hour.

For Italian cloth and in general for all goods where the cotton is to have a very deep shade, it is better to use Union Black S, a new product, which is closely related chemically to Diamine Jet Black SS.

Diamine Jet Black SS dyes the cotton in a single bath with five per cent. soap and ten to fifteen per cent. Glaubers salt a jet black,

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**FRICION BOARD FRICION BOARD FRICION BOARD**

Manufactured by **DOMINION LEATHER BOARD CO., MONTREAL**

Proprietors Sault Au Recollet Paper Mills.

**ROOFING, SHEATHING AND FLOORING FELTS**

while the silk remains lighter and can be shaded at will in a subsequent acid bath.

The great importance of Diamine Jet Black SS for this industry rests in the fact that in this simple way jet black dyeings can be obtained equal in shade to Aniline Black and without impairing the strength or the brilliancy of the material.

Besides its other good properties Diamine Jet Black SS which in fastness to light is superior to all similiar dyestuffs is also remarkably cheap, which advantage will facilitate its use in all those industries for which it is especially well adapted such as linings, sewing and knitting yarns, etc.

Messrs. T. & J. N. Andrews' oatmeal and barley mills, Thornbury, Ont., were destroyed by fire Sept. 19th.

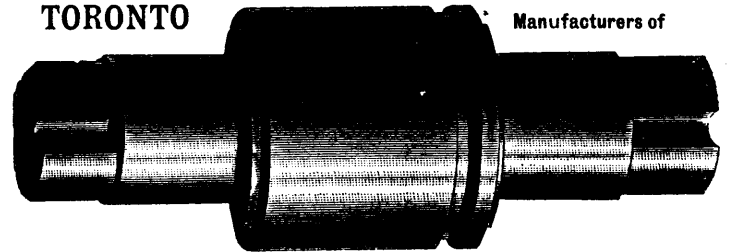
O'Connor's planning mill, Ottawa, Ont., was destroyed by fire Sept. 17th.

T. Johnston's foundry, Kemptville, Ont., was destroyed by fire recently. Loss about \$800.

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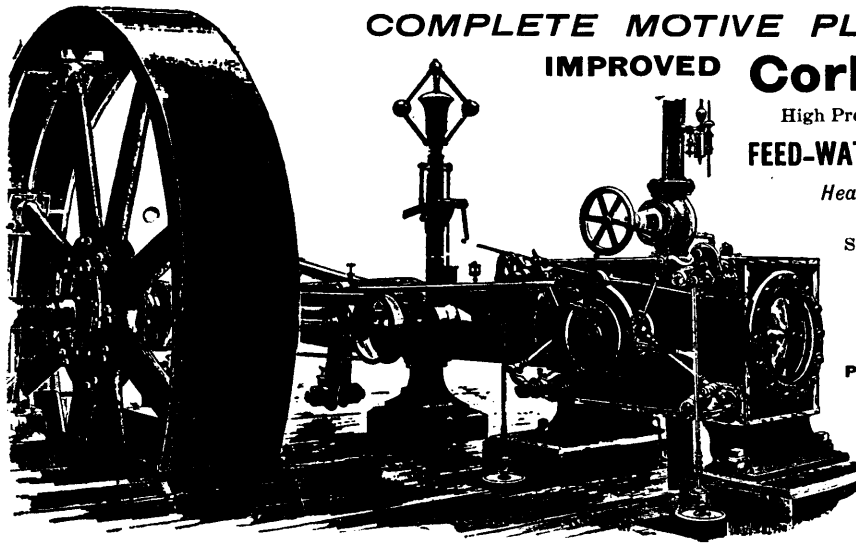
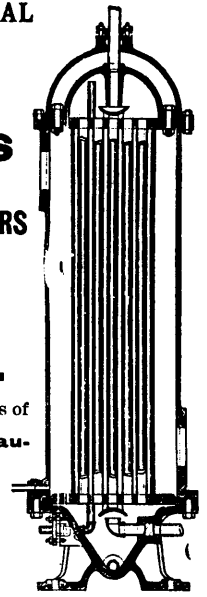
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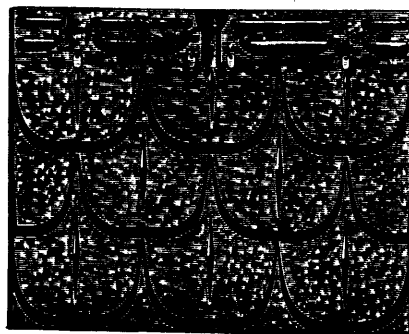
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*Cheap as a wooden shingle. Will last a life time.*



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furnish with these engines heavy fly wheels  
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Also to close up an estate the following new  
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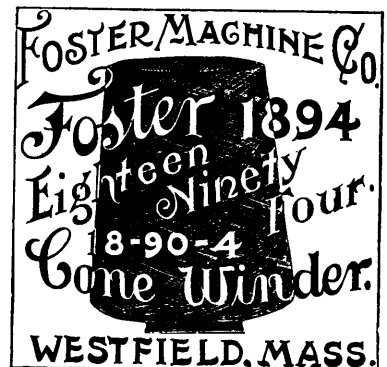
Also in stock a Double 23" x 60" Corliss En-  
gine; 16' x 36" and 12' x 36" Corliss Engines;  
16' x 32" and 10' x 16" Buckeye Engines; 12' x 12"  
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159 AND 161 CANAL STREET

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PHILADELPHIA.



**BUFFALO DOWN DRAFT SMOKE EXHAUST.**

The Buffalo Forge Co., Buffalo, N. Y., have sent us a circular having reference to their patent down draft smoke exhaust forge system, adapted for hard or soft coal, coke and other furnace fires, and intended for manual training schools, railway, repair, carriage, wagon and other forge shops. They inform us that the same general plan of exhausting foul odors, vapors, chemical and acid fumes, etc., is available for all industries.

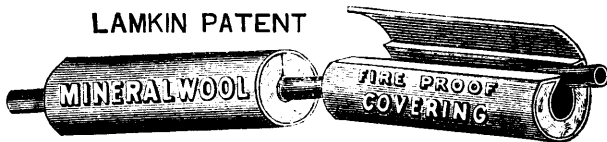
Regarding it they say that the Buffalo patented down-draft smoke exhaust system is an entirely new departure in smoke removing. The smoke is taken away from the forge immediately on being generated, and before it is allowed to escape into the room, no matter how heavy the fire may be. The down-draft suction through underground pipes carries the smoke to the Buffalo combined blower and exhauster, a portion of the air being again forced through the blast piping for supplying draft to the forge fires, and the balance being discharged into the smoke flue. The old layout of troublesome overhead pipes, and inconvenient sliding hoods, which (under the most favorable conditions) are

never thoroughly efficient, is no longer installed by this Company, excepting when requested. This system is covered by Letters Patent.

The Buffalo patented down-draft smoke hood is adjustable, and may be moved close to the fire or drawn back, according to the conditions and work being performed. These hoods and system of smoke removing are adapted to the very largest forges built, and in the forge shops where the heaviest work is done the arrangement has demonstrated itself to be one of the highest utility. In situations where it has previously been impossible to keep rooms free from smoke, this method has proved entirely efficient.

For further details address, Buffalo Forge Co., Buffalo, N. Y.

The St. Raymond, Que., pulp mill has been taken over by the Canada Paper Co., of Montreal, and is being worked to its full capacity, producing from four to six cars of pulp per week, which is forwarded to the company's mills at Windsor Mills, Que., for manufacture into paper.



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**W. T. BENSON & CO.**

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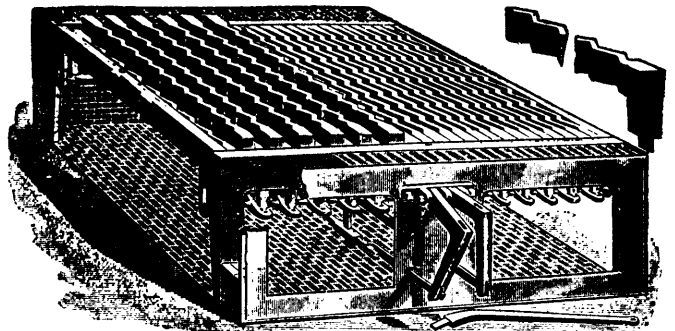
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**THE VOLCANIC PATENT SHAKING GRATE**

MANUFACTURED BY **THE GURNEY FOUNDRY CO., Ltd., Toronto.**



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The Gurney Foundry Co., Ltd., Toronto.

This is to certify that the VOLCANIC SHAKING GRATE BARS put under our Boiler two months ago by Reid Bros., is giving entire satisfaction, and can freely recommend them to parties using steam.

Yours truly,

(Signed), **EDWARD FINDLAY, Supt.  
JOHN R. BARBER, Prop.**

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- Suction Hose Galvanized Wire,
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Hosiery Yarns in Single or Double; in Cop, Skein or Cone.  
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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 :—

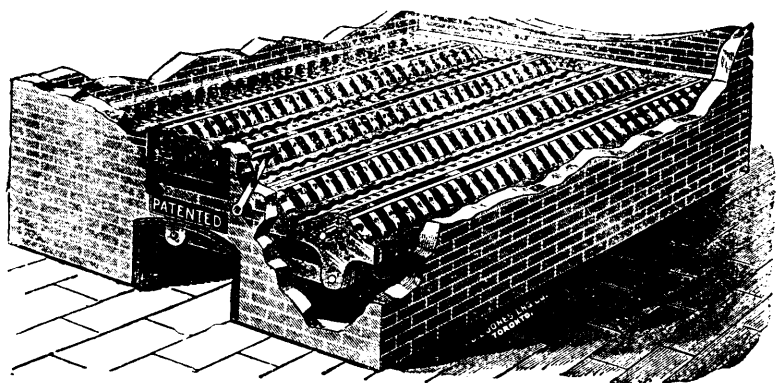
- Fetherstonhagh & Co., Bank of Commerce Building, Toronto.
- Ridout & Maybee, 103 Bay Street, Toronto.
- C. H. Riches, Canada Life Building, Toronto.
- A. Harvey, Central Chambers, Ottawa.

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

- 49,568 Gas motor, Henry Percy Holt, London, Eng.
- 49,569 Trunk, Florence Irene Leonard, Arlington, Geo., U.S.
- 49,570 Manufacture of seamless woollen boots, Edward Roos, Elmira, Ont.

- 49,571 Puzzle, Thomas Paterson, Peterboro', Ont.
- 49,572 Vapor lamp, Victor Simonet, Vienna, Austria.
- 49,573 Spittoon, Fredinand Diederich, Halle on the Saale, Germany.
- 49,574 Pen holder, Bertram John Young, Sheffield, Eng.
- 49,575 Chimney, Samuel Bernheim, New York, N. Y.
- 49,576 Paper feeding machine, Nelson E. Funk, Elkhart, Ind., U.S.
- 49,577 Drinking fountain, Benjamin Fletcher, Toronto.
- 49,578 Sad iron, Charles M. Coates and Charles E. Corlett, Aurora, Ill, U.S.
- 49,579 System of excavating and refilling trenches, Bernard J. Coyle, Washington, D.C., U.S.
- 49,580 Fare box, John Maitland Smith, Toronto.
- 49,581 Self-cosing cock or faucet, George S. Murphy, Sherman, Texas, U.S.
- 49,582 Boat, Charles C. Heimbaugh, Momence, Ill., U.S.
- 49,583 Cypher combination for telegraphing, etc., Clement W. Bowman, Ingersoll, Ont. and Granville, S. Decatur, Hamilton, Ont.

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- W. C. Barnes & Co., London, England.
- Manufacture Lyonnaise de Matieres Colorantes Lyons, France.
- Albany Coal Tar Dye & Chemical Co., Albany, N. Y.

- 49,584 Map, Miguel Arriaga, Mexico City, Mexico.
- 49,585 Crypto-Malt, the Chicago Crescent Company, assignee of Charles Lehman Hart, both of Chicago, Ill., U.S.
- 49,586 Device for catching flies and other winged insects, Eli Marshall, Henfield, Eng.
- 49,587 Drawer for safes, Alonzo B. Eastman, assignee of Murray E. Hart, both of Wellsborough, Penn., U.S.
- 49,588 Stapling machine, Edwin T. Greenfield and Charles J. Kintner, both of New York, N.Y.
- 49,589 Sewing machine, the Cutlan patent sew round machine, Syndicate, assignee of John Cutlan, London, Eng.
- 49,590 Cigarette Machine, The Wood International Cigarette Company, assignee of James Nelson Wood, Richmond, Va., U.S.
- 49,591 Electrical Exchange, The Strowger Automatic Telephone Exchange, assignee of Alexander E. Keith, Frank A. Lundquist, John Erickson and Charles J. Erickson, all of Chicago, Ill., U.S.
- 49,592 Game device, The C. Arthur Novelty Co., assignee of Charles A. Fettes, Cincinnati, Ohio, U.S.
- 49,593 Oil gas lamp, Louis Friedlander and Albert Schorfeld, assignees of Louis Friedlander and Theoder Muller, Berlin, Prussia.
- 49,594 Manufacture of ferments, The Chicago Crescent Company, assignee of George Drury Hart and Charles Lehman Hart, Chicago, Ill., U.S.
- 49,595 Life-saving apparatus, Robert Bustin and Robert Keltie Jones, St. John, N.B.
- 49,596 Rotary trimmer, Ambrose Stevens Vose, Boston, Mass, U.S.
- 49,597 Water tube steam boiler, John Wesley Van Dyke, Lima, Ohio, U.S.
- 49,598 Water closet, Patrick Henry Howard, assignee of William Thomas Fox, Rochester, N.Y.
- 49,599 Steam trap and feeder, David Lansing Long, Crawfordsville, Ind., U.S.
- 49,600 Machine for dressing type, Willam Wallace Farmer, of New York, assignee of George Rehfuss, John George Rehfuss and Martin Oscar Rehfuss, Philadelphia, Penn., U.S.
- 49,601 Packing and storing vessels, Amos Burson, Negley and Adam R. Mackall and George H. Mackall, of East Liverpool, Ohio, U.S.
- 49,602 Siphon test boxes for gas mains, A. Bouvier, Lyons, France.
- 49,603 Medical com sound, Elston Heman Lawson, Montreal.
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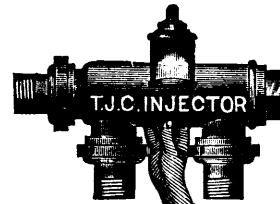
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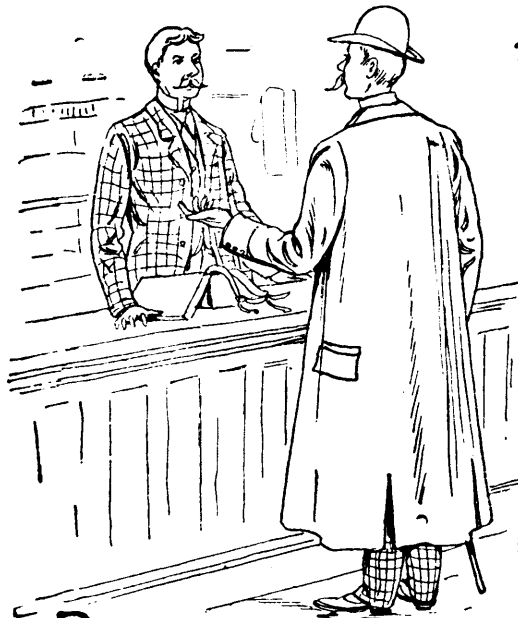
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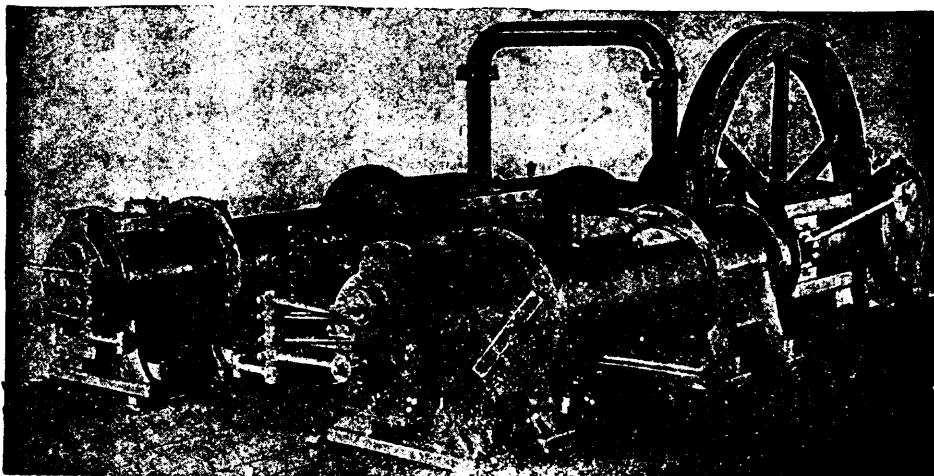
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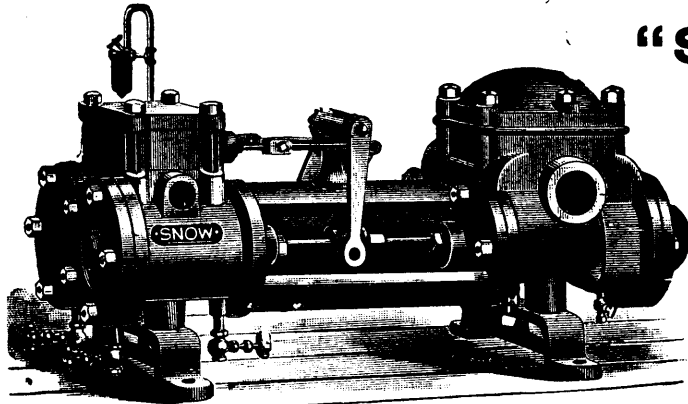
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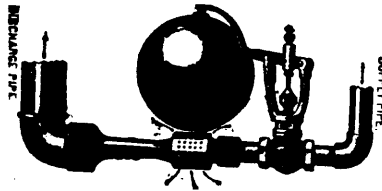
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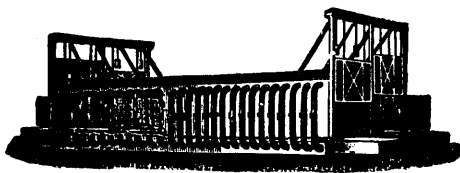
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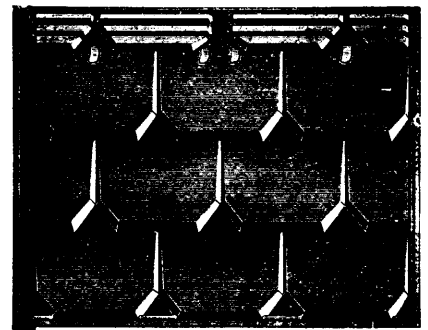
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- 49,640 Combined screen and storm door, Charles Cook Wheeler, Holland, Mich., U.S.
- 49,641 Portable press, Jeremiah Daigneau, Salem, Mass.
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- 49,644 Folding bed, William Henry McEnhill and Braxton Bragg Richardson, Sailor's Snug Harbor, New York, U.S.
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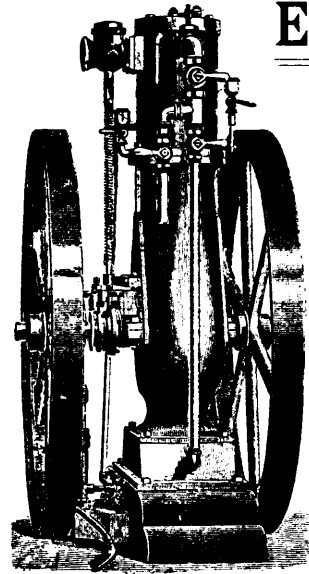
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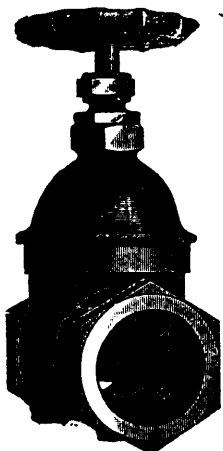
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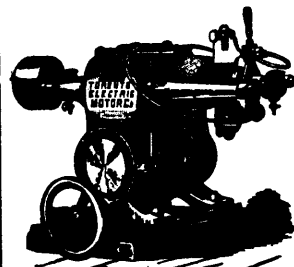
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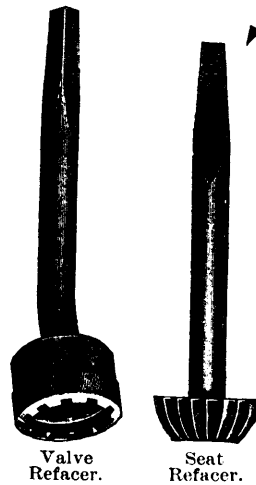
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- 49,665 Drier, Emilio Cabero Y. Echeandia, Las Marias, Puerto-Rico, W. I.
- 49,666 Ladder, Thos. J. Quinn, assignee of Mark A. Walker, Detroit, Mich.
- 49,667 Current interrupter, The Canadian General Electric Co., Toronto, assignee of Elihu Thomson, Swampscott, Mass., U.S.
- 49,668 Hot water heating apparatus, The Phoenix Hot Water Heater Co., assignee of Smith Northup Murgittroyd, Phoenix, N.Y., U.S.
- 49,669 Stand used in shoeing animals, David Menard, St. Paul, d' Abbottsford, Que.
- 49,670 Brake for trucks, Henry Lisch Hazen, Patchogue, N.Y.
- 49,671 Machine for bending and trimming metal shingles, The Metallic Roof Co., of Canada, assignee of Carleton Wescott Conner, Montreal.
- 49,672 Car fender, John F. Ryan, Toronto.
- 49,673 Ladder attachment, Edward Francis Guste, New Orleans, U.S.

- 49,674 Secondary voltaic battery, William Alfred Baxter, Middlesex, Eng.
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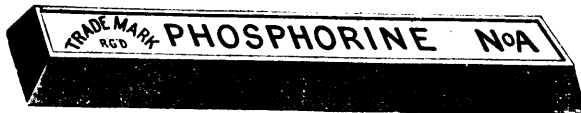
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- 49,688 Smoke arrester, William P. Shank, Cairo, Ill., U.S.
- 49,689 Sleigh, James N. Runnions, Cokato, Minn., U.S.
- 49,690 Wooden rim for cycles, Walter Scott Shipe, Toronto.
- 49,691 Car fender, Robert Bustin, and Robert Keltie Jones, St. John, N.B., Wesley Vanwark and John R. McConnell, Fredericton, N.B.
- 49,692 Insulator, Leonard Herbert Des Isles and Frederick Summer Palmer, Boston, Mass.

**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:

- 547,218 Street car fender, J. D. Lamb and J. E. Chapman, Montreal.
- 547,083 Saw dust feeder for furnaces, T. Manley, Prince Albert, Ont.
- 547,277 Fastening device, L. H. Morgan, Galt, Ont.
- 547,043 Rectifier for electrical currents, W. J. Still, Toronto.
- 547,498 Cheese-box trimmer, R. A. Oakley, Montreal, Que.
- 547,726 Automatic centreing or pivoting drill, M. Leist, Maitland, Ont.
- 547,752 Tire for bicycles, J. & E. P. Forbes, Halifax, N.S.
- 547,747 Car coupling, T. H. Walsh, Montreal.



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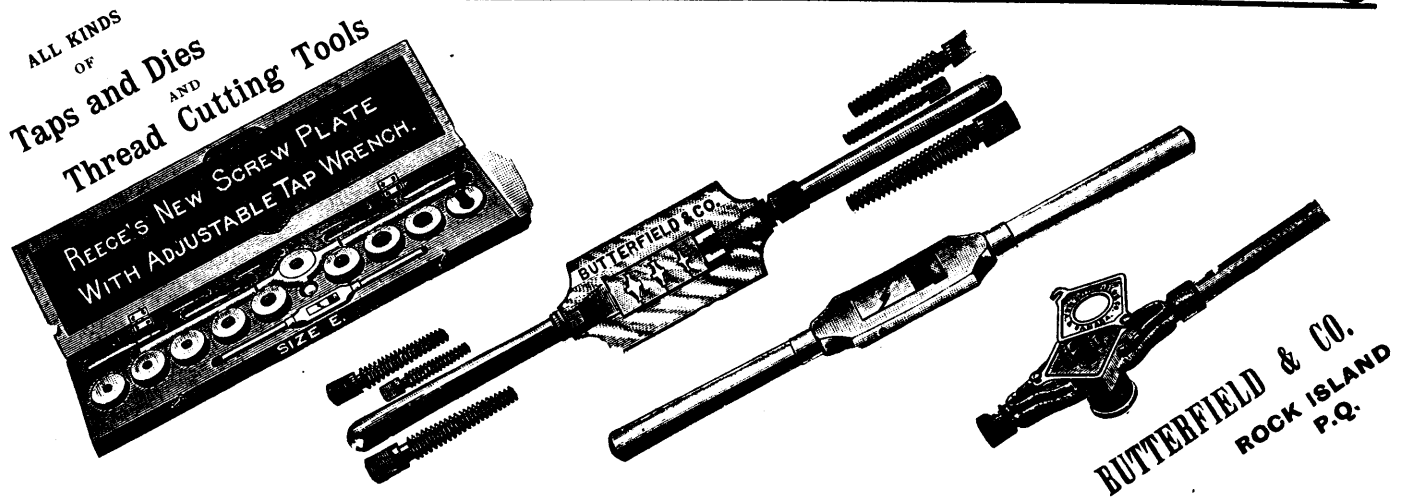
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Nominal Size of Shaft.	Actual Size of Shaft.	Weight, Per Foot.	Price, Per Pound.	Nominal Size of Shaft.	Actual Size of Shaft.	Weight, per Foot.	Price, Per Pound.
1 $\frac{1}{4}$	1 $\frac{1}{4}$	4.13	\$0 4 $\frac{1}{2}$	2 $\frac{3}{4}$	2 $\frac{11}{16}$	18.91	\$0 04
1 $\frac{3}{8}$	1 $\frac{3}{8}$	5.01	"	3	2 $\frac{1}{8}$	22.59	"
1 $\frac{1}{2}$	1 $\frac{1}{2}$	5.94	"	3 $\frac{1}{4}$	3 $\frac{3}{16}$	26.60	"
1 $\frac{3}{4}$	1 $\frac{11}{16}$	7.46	"	3 $\frac{1}{2}$	3 $\frac{7}{16}$	30.94	"
2	1 $\frac{13}{16}$	9.83	0 04	4	4	42.33	0 05
2 $\frac{1}{4}$	2 $\frac{3}{16}$	12.53	"	4 $\frac{1}{2}$	4 $\frac{1}{2}$	53.57	"
2 $\frac{1}{2}$	2 $\frac{7}{16}$	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.

Prices for Special Sizes, varying from list of actual sizes, given above, will be furnished upon application.

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

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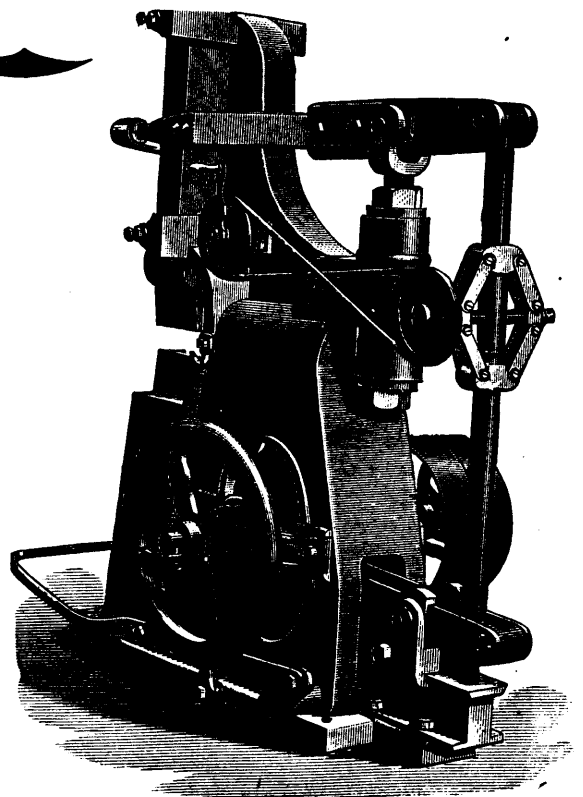
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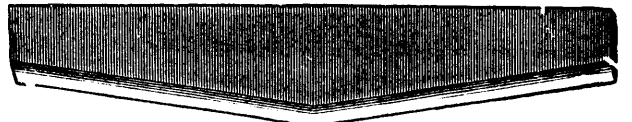


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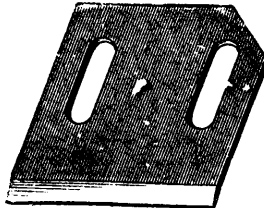


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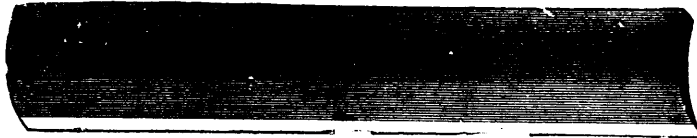
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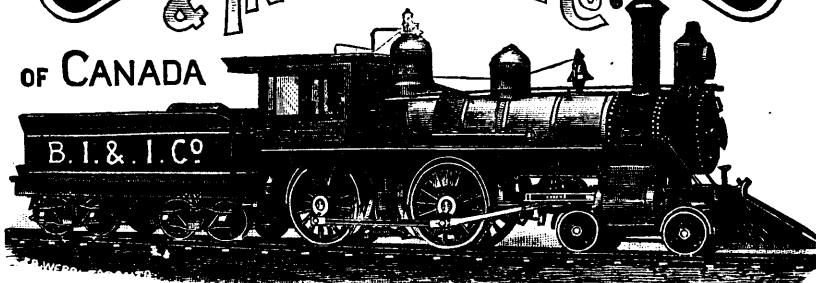
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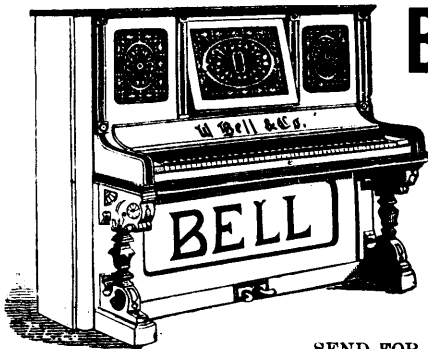
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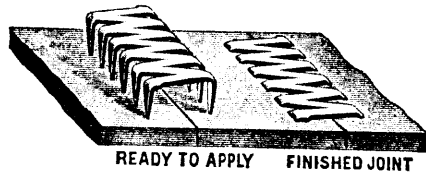
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