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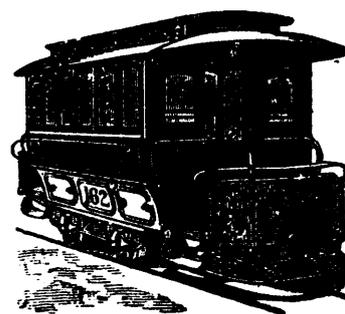
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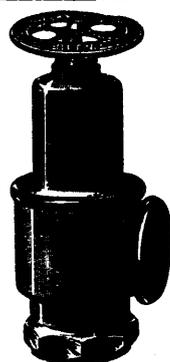
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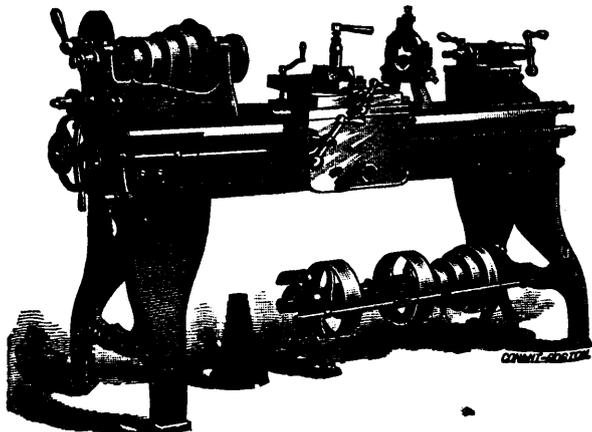
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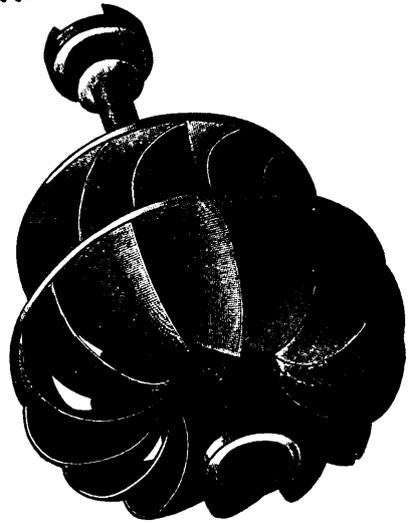
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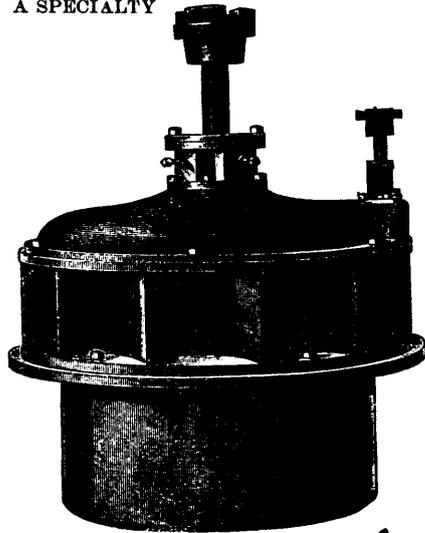
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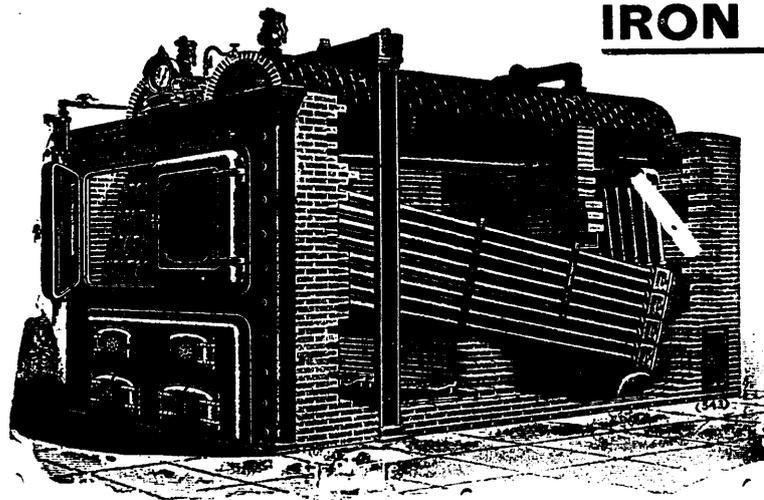
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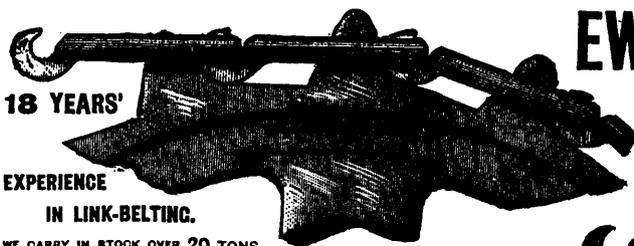
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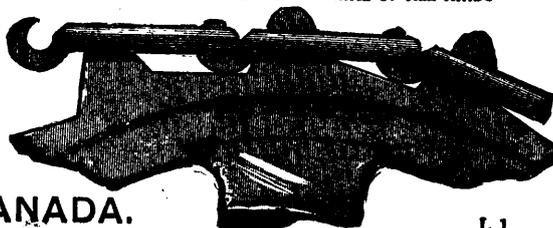
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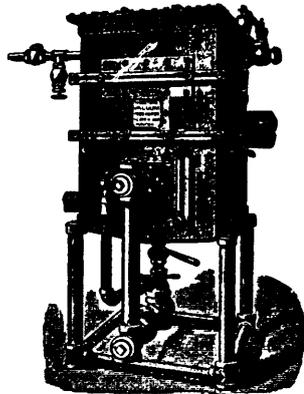
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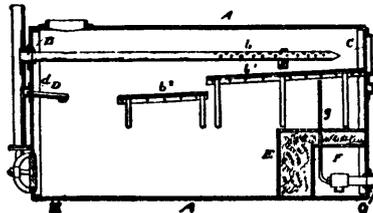
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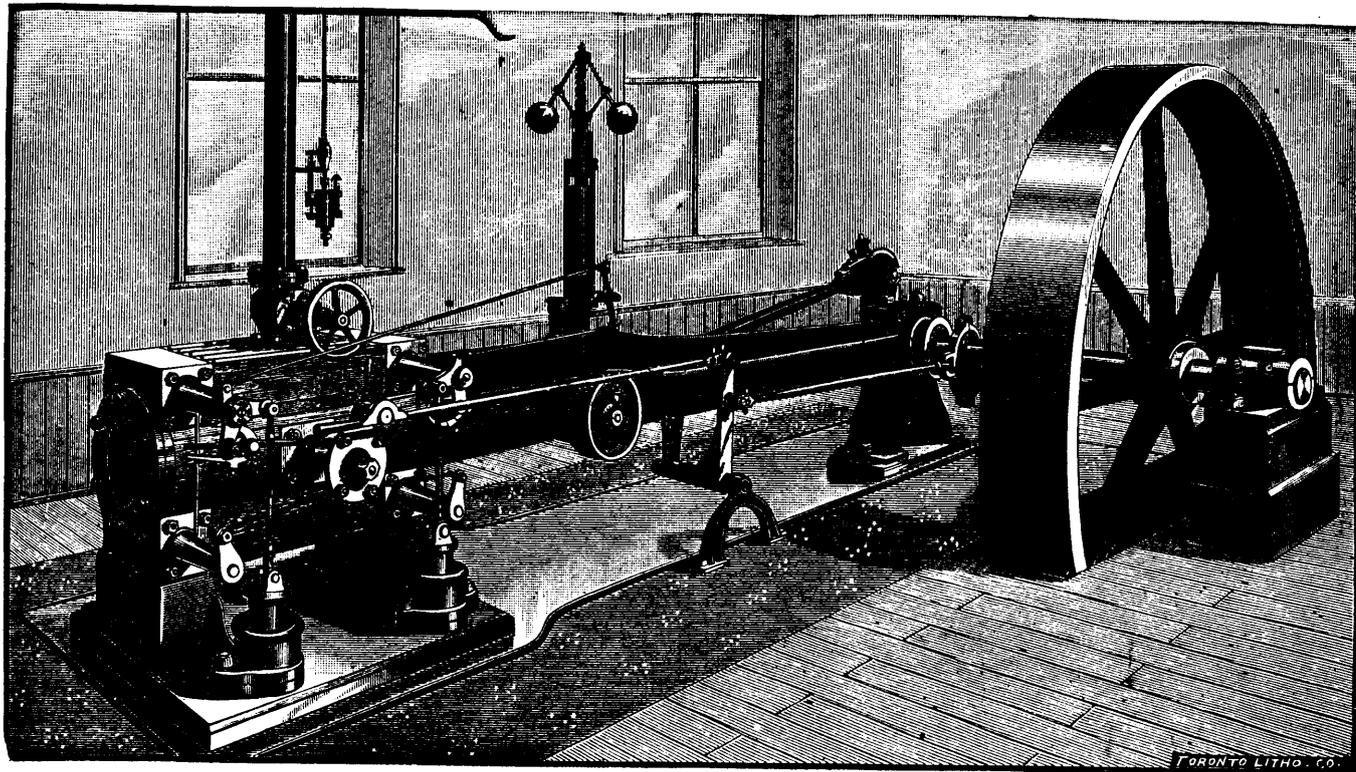
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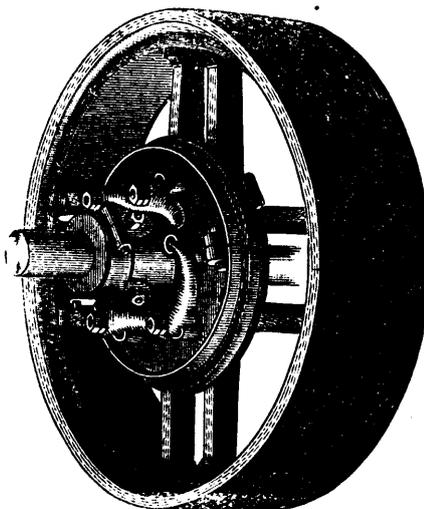
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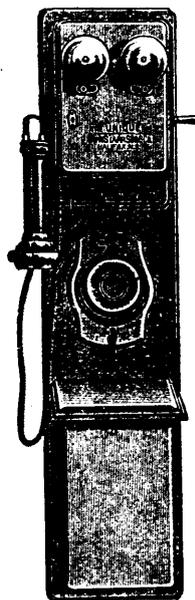
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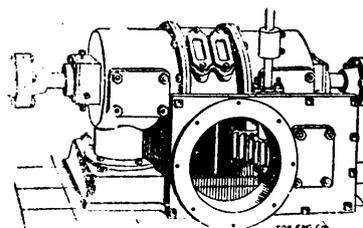
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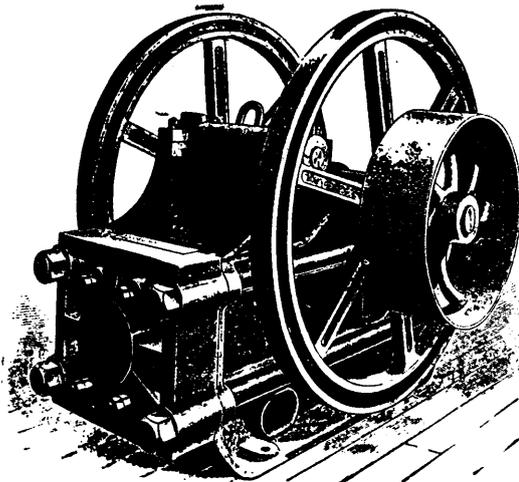
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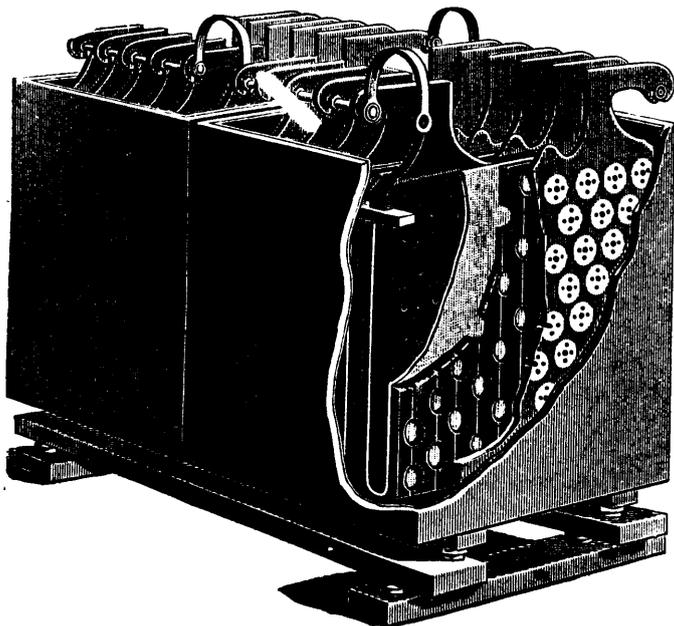
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**THE ORDER AND DISORDER.**

The Massey-Harris Company, implement manufacturers, Toronto, are in communication with the Detroit Manufacturers' Club, with the object of procuring a site for a big factory in the United States, probably in that city. The Company desires to get free iron and other materials for their products, and this they cannot get while a heavy tax on iron, paint, etc., is levied by the Ottawa Government. The Liberal platform provides for free raw material for the manufacturer.—London Advertiser.

Is this constant threatening about the Massey-Harris Company removing their works to the United States never to cease? It has become exceedingly monotonous and tiresome. It might be imagined that if the event should occur the stars in their courses would stop in amazement that such a thing should be allowed—certainly that the whole political and social fabric of

Canada's existence would melt and dissolve like frost in the warm sunshine. The Dominion Government, in a moment of weakness, allowed themselves to be bulldozed by this concern with giving them free malleable iron, free paint, free lumber, free everything entering into the construction of their agricultural machinery—that is allowing them a drawback of ninety-nine per cent. of any duty that might be paid by them on whatever materials they might import. They had represented to the Government that without this favor—without having all their so-called raw materials substantially free of duty, they could not compete with American manufacturers in foreign markets. They had shown to the Government that the handicapping under which they labored in having to pay duty on their raw materials, or what they said was the same thing, for materials of Canadian production to which the duty had been added to the cost thereof, was of such an onerous nature that they would be compelled to move out of the country if their demand were not complied with. They obtained the concession, and what is the result? During the last session of the House of Commons in reply to questions put to him in the matter, Mr. Wallace, Controller of Customs, stated that 3,385 self-binding harvesters were exported from Canada, during the year 1894, all of which were manufactured by the Massey-Harris Company, the average amount of drawback on account of duty allowed and paid to them on the raw materials entering into the construction on each of such harvesters being \$2.87 9-10, the total of drawback paid being \$10,083,91.

The Massey-Harris people were good enough protectionists as long as protection benefited them, for protection gave them the virtual control of the whole Canadian market, and that is all that protection could promise to any industry. They make excellent machines, sell them at reasonable prices, and have no foreign competition whatever. But why should they desire to destroy other Canadian industries to the end that they might with greater profit to themselves engage in foreign trade? Shall other manufacturers be driven out of business and hundreds of Canadian workmen thrown out of employment to the end that the Massey-Harris Company may gain an additional \$2.87 upon each machine they export? But that is just the effect being produced by the Order in Council allowing them a drawback of duty.

All this talk about the Massey-Harris Company moving their works to the United States is the veriest nonsense. They will never do it, and the sooner the Government and the community recognize this fact the better for all concerned. Canada existed before them and will no doubt exist even if they should take their departure. But they will not depart. They say that the machines made by them are all covered by patents which is, no doubt, true. We understand that the concern own or control a very large number of patents covering their products. The protection afforded them by these patents is operative only in Canada; and we are informed that other concerns being owners or controllers of the same patents in the United States, are manufacturing identically the same machines there. And that is why the Massey-Harris Company will not remove their works to the United States, for, not being owners of the American patents they could not manufacture there.

We again call attention to the fact that the Dominion Government, to enable the Massey-Harris Company to save \$2.87 upon each machine they export, are sacrificing some of

our most valuable industries, and antagonizing an element that has always been its firm and staunch supporter. The effect of the Order in Council is to force the Canadian manufacturers of iron and iron products, paints, varnishes, and all other materials entering into the construction of agricultural implements, to reduce the price of their goods to the American level, and to sacrifice every vestige of benefit supposed to accrue to them by the imposition of duty upon such things when imported.

If the Massey-Harris Company imported all these materials the Government would give them a drawback of ninety-nine per cent. of the duty paid them. If our home manufacturers supply these materials it must be at no higher prices than the imported materials, but they obtain no drawback because their products are not exported by them, and so it is that these various industries are being ruined.

If the Massey-Harris Company and other manufacturers must be encouraged in engaging in the export business, it should not be at the expense of other industries. It would be far better for the Government to pay a bounty of \$2.87 each upon all exported harvesters than to kill off a dozen other industries by the pernicious effects of the unfortunate Order in Council.

#### A MACEDONIAN CRY.

A few days ago the Toronto World, conscious of the need of new blood and more strength in the Conservative party, made a loud call for Hon. W. R. Meredith to step down from the Bench to which he had been recently elevated, and accept a position in the Dominion Cabinet, to which we do not understand he has yet been invited. Mr. Meredith when leader of the Conservative Opposition in the Ontario Legislature displayed remarkable ability as a statesman, and was always accounted clean, pure and upright, yet the long years he gave to his party never won over for it sufficient of the confidence of the electors to displace Mr. Mowat and place the reins of power in his hands. The reason of this was that, there being no national issues to be determined by the Ontario Government and Legislature, and the people having every confidence in the leadership of Mr. Mowat, and satisfied with his management of provincial affairs, declined to remove him to give place to even so trustworthy a man as Mr. Meredith. Mr. Meredith seemingly being satisfied that he could not change the current of opinion as regarded provincial politics, abandoned the effort and accepted a high judicial position. The World, voices, we are sure, the sentiments of the whole country in the following allusion to Mr. Meredith:

The World receives with satisfaction a suggestion that Hon. William Ralph Meredith, chief justice of common pleas for Ontario, should step down from the bench to enter the federal ministry. There are few abler men in Canada than Mr. Meredith. There is certainly no man in public life to-day with a cleaner or more honorable record. Honorable and eloquent, there is possibly nobody in Ontario to-day better calculated to lead the Conservative hosts to victory, and to rally the young men of the province under his banner, than the judge. For years in the local legislature he led the opposition members with marked ability, and now that a request again comes to him to enter the federal arena, the World trusts that Mr. Meredith will not be unresponsive to the call.

The Hamilton Spectator commenting upon this call to Mr. Meredith thinks that it is rather cheeky of the Conservative

party in Ontario to ask the judge to come to its rescue now. It says:

Is it not rather too much for Ontario Conservatives, who failed to do their duty to Mr. Meredith when last he asked for their help—and at a time when their help would have put him into the premier's chair, to ask him now to sacrifice his comforts to their interests? Of course that does not apply to the bulk of the Conservatives in Ontario; the great majority of them stuck to Mr. Meredith loyally. But the moderate Conservatives gave him the cold shoulder, and it is these moderate Conservatives who now find themselves in such a position that they find it necessary to call on the rejected Meredith for help.

It is passing strange that neither the World, the Spectator, or any other of the Conservative journals comprehend the situation. For many years Mr. Meredith represented a strong Conservative constituency in the Ontario Legislature, which would have been open to him for as long a time as he might have been pleased to represent it, and yet he, the ablest man in his party, could never muster more than a corporal's guard at his back in any effort he ever made to supplant Mr. Mowat. On the other hand, in Dominion politics, the Ottawa Government can always depend upon Ontario rolling up Conservative majorities, and returning Conservative members.

The explanation of this condition is obvious. There is a large and influential element in Ontario that unflinchingly supports the Dominion Government simply because the Dominion Government maintains the National Policy; but this element has no quarrel with Mr. Mowat, declines to antagonize him, and will vote to retain him as Premier of Ontario as long as he desires the honor. Who the Spectator alludes to by "moderate Conservatives" we do not know. Mr. Meredith in his last days in the Legislature was as strong as ever he was, therefore there could have been no giving the cold shoulder to him; and it is not likely that it is those who did not vote and work for him then that are demanding his return to political life as a Dominion Minister. The manufacturers of Ontario and their friends compose the element that keeps Mr. Mowat in power as Premier of the province, and also that holds the balance of power in Dominion elections and casts it in favor of National Policy candidates.

If from any cause the Dominion Government find themselves in need of new blood—if they find themselves weak—they should remember that the votes and influence of the manufacturers counted strongly in placing them in power. If they keep their promises looking to the maintenance of the National Policy, carrying them out in good faith, they may feel assured of the support of the manufacturers in keeping them in power. The National Policy is the shibboleth of the manufacturers.

#### MONOPOLISTIC INDUSTRIES.

The London Advertiser announces that the senior member of the firm of Frost & Wood, of Smith's Falls, Ont., is a Liberal candidate for the House of Commons, and "a repudiator of the high tax system as a help to legitimate manufacturing industries."

It tells us that Frost & Wood are, next to the Massey-Harris Company, the largest manufacturers of agricultural implements in the Dominion, and that Mr. Frost, knowing what he is talking about, asserts that "outside monopolistic industries that profit unfairly at the expense of the people, the

manufactories were just as flourishing prior to 1878 as they are to-day." The Advertiser tells us that Mr. Frost could have pointed to the blotting out by the blighting effects of the National Policy of legitimate manufacturing industries in almost every city, town and village in the West.

Hear what The Advertiser says about the new candidate:—  
Mr. Frost, in a recent address, made this strong point:—  
"There is not a manufacturer in Canada in any line I know of who, with free raw materials, would not give the workmen more work, better wages and greater prosperity than we have had in the past. There are scores of industries in Canada that do not derive one cent of benefit from the tariff. As a manufacturer he said he believed that a revenue tariff and an economical Government would best promote the interests and prosperity of the country." With thirty years' experience as a manufacturer Mr. Frost ought to know something about the effect of the policy of high taxation. His business was a prosperous one during the revenue tariff years prior to 1878, just as many manufacturers in this and other cities were under a revenue tariff. The position of Mr. Frost, and of independent manufacturers throughout Canada generally, is that they wish no favors at the hands of Governments, to be paid for by huge contributions to political bribery funds; all they desire is free or low taxed raw material, and they can hold their own with any competitor. When it is represented that the fair-play policy which these manufacturers support—that promoted by Hon. Wilfrid Laurier—would blot out the manufacturing industries, it can only be said that the foolish men who make such an unwarranted statement are beggared for argument. The Liberal policy would build up Canada everywhere, because it would give the great giant now bound hand and foot with monopoly cords, free scope for his mighty limbs, and set industry prospering as it can never prosper while a few are enabled to become millionaires at the expense of the remainder. Fair play to every worker, whether employer or employed, manufacturer or farmer, lumberman or miner, must rule.

We accept the statement of our contemporary that Messrs. Frost & Wood are, next to the Massey-Harris Company, the largest manufacturers of agricultural implements in Canada; and, we suppose that the Advertiser correctly reflects the sentiments of Mr. Frost when it says that Mr. Laurier's policy, if successfully inaugurated, would give the great giant industry of manufacturing agricultural implements, in which the gentleman is engaged, and which is now bound with monopolistic cords, free scope, and set it prospering as it can never prosper while a few such manufacturers are enabled to become millionaires by the operation of the National Policy.

As far as the original Massey Manufacturing Company were concerned, we know that until very recently they were staunch advocates and supporters of the National Policy, and enthusiastic members of the Canadian Manufacturer's Association. Why the concern have abandoned this position, if they have really abandoned it, may be left to the imagination of our readers. Like that concern, we know that Frost & Wood do an infinitely larger business now than they did in 1878, and that under the auspices of the National Policy they have waxed and grown fat, so that instead of being the comparatively weak concerns they were 17 years ago, they are, as the Advertiser says, among the largest manufacturers in their line in Canada. In fact, if reports are correct, both these concerns can now count their wealth by millions. Do these people admit, as the Advertiser charges, that the National Policy has enabled them to become millionaires at the expense of other manufacturers? Why, at the expense of other manufacturers? Manufacturers in what lines of business?

Do these millionaire manufacturers of agricultural implements admit the implication? The implication is one of dishonesty, and surely these gentlemen do not admit having been or being dishonest in the accumulation of their wealth, but this is just what The Advertiser imputes to them.

The fact is there are very few if any agricultural implements made in Canada or the United either, that are not covered by valuable patents, and we suppose that those made by these millionaire manufacturers, the Massey-Harris Company and Frost & Wood, are so covered. The implements made by these concerns being intrinsically excellent in their design, operation and construction, and fully covered by patents, are by law protected from imitation, and therefore the makers enjoy a protection more effective than any that could possibly be derived from any operation of the National Policy. Any manufacturer in Canada is free to engage in the production of agricultural implements, but he is not free to produce just such implements as are made by the Massey-Harris Company or Frost & Wood, and covered by the patents that they hold. The Advertiser says that Mr. Frost could have pointed to the blotting out of legitimate manufacturing industries in almost every city, town and village in the country through the blighting effects of the National Policy. We deny that it was from this cause, else why have not the industries of these two millionaire concerns also suffered the same fate? Why should the many suffer collapse and the few prove successful? They all operated under the same law. They all purchased their raw materials in the same market. They all sold their products in the same market. Why charge the disaster to the many to a cause that did not prevent the accumulation of millions by the few? Why not honestly say that in this as in other affairs the great natural law of the survival of the fittest prevailed? If all or most of the best implements made in the country were covered by patents held by a few enterprising men how could the many manufacturers who could not make such implements hope to succeed? Yet when they fail to succeed the enemies of protection charge it to the operation of the National Policy.

It is rather remarkable that a few manufacturers who have become rich since the introduction of the National Policy, and who were the whilome supporters of it, should now show so much anxiety to have free raw materials in their industries. In the manufacture of agricultural implements as in all other industries every material entering into their construction is the finished product of some other industry, and yet there are pure, unselfish souls who desire to see every other industry swamped and destroyed to the end that they may obtain free raw materials and become millionaires.

The Massey-Harris Company, know, and Frost & Wood know that while their patents afford them a more valuable and comprehensive protection in Canada than could ever be hoped for from the National Policy, they could not engage in the manufacture of their implements in the United States simply because they do not own such a monopoly there; and for this reason they will never leave Canada.

#### WAR VESSELS ON THE GREAT LAKES.

The refusal of the United States Secretary of the Navy to award to a Detroit ship building concern the contract for one or more of the war vessels to be built for the American navy

on the ground that it would be in contravention of the agreement existing between the United States and the British Governments, while showing a commendable spirit on the part of the Secretary has stirred up a feeling among his countrymen that is demanding that the international agreement be disregarded to the end that shipbuilders in lake cities may participate in the work of construction of the new navy. Some of the Yankee enthusiasts seem to think that it would be all right even under existing circumstances to build such vessels in lake cities, provided they do not receive their armament, and are put in commission, until they have been taken down to salt water. This view is combated by the Cleveland Marine Record as follows:—

There are two sides to this story, however, as well as to others. Exception may be taken to the claim that a vessel is not a war ship until she is armed; but, this step being taken, and the vessel floated, it cannot always be ascertained from a distance whether she is armed or not. The Canadian law, and the laws of some of the States, forbid the entrance of troops bearing arms; and they do not argue that because a gun isn't loaded, it isn't a gun. Then again, the letter of the treaty cannot be evaded by calling a vessel a hulk until the boat is accepted. A new merchant vessel is not officially considered a boat until she has been enrolled, and receives her official number; but a naval vessel has an official existence almost from the time her designs are completed. She is named, and naval representatives are assigned to duty on her construction. The same is true of other government craft.

Rear Admiral Walker has expressed the opinion that the day is not far distant when the United States and Great Britain will be at war, and that in view of the fact that British war vessels might be carried up to the lakes, through our Canadian canals, to the menace of American lake cities, it is of utmost importance that the Erie canal be enlarged so that American war vessels could be also taken to the lakes, there to defend and protect American interests.

Mr. C. H. Cramp, too, the head of the Philadelphia Company who have built the Atlantic liners St. Louis and St. Paul and also several of the war vessels of the new navy, is strongly in favor of the United States Government giving all possible encouragement to the lake shipbuilders by awarding them contracts for the construction of war vessels, treaty or no treaty; and his pugilistic soul impels him, in a letter to a member of the American Government, to say:—

For my part I think the whole agreement, fishery clause and all, ought to be torn up and consigned to the waste basket, but I hardly expect anything as good as that. I do, however, insist that my ship building brethren of Detroit shall have an even chance with the rest of us in the pursuit of their honest and legitimate business, and I declare that England has no more right to make laws for them than she has to make laws for me or Mr. Scott or any other American ship builder. There is no good reason why England should have any more control over the fresh waters of the United States than over the salt waters. Tear up the infernal treaty. Let the Detroit people have the advantage of their lowest and best bid. At all events let us declare the independence of the great lakes.

One of Mr. Cramp's arguments in favor of a declaration of independence of the great lakes, in which he finds many sympathizers, is that Canadian population on the lake coasts and tributary waters is less than four millions, while the population on the American side is about thirty-five millions. Of course, this should be considered a strong argument, whereby the showing, because the population of the United States in the regions alluded to is about nine times as great as that of Can-

ada, therefore a treaty intended to preserve the peace of the two countries, and which Canada is willing and anxious to observe, should be abrogated.

In the cause of peace and good will between the two countries it is to be hoped that the better sense of the people of the United States will prevail. American war vessels on the lakes would be a constant menace to Canadian interests, and an inducement to strife. Therefore we hope our neighbors will confine their ship-building operations to the construction of fleets of grain and ore carriers. But the awarding of a contract for the construction of a war vessel should be the signal for Great Britain to prepare for the emergencies that would certainly arise. For every Yankee war vessel upon the lakes there should and probably would be two or more British ships.

Better leave a sleeping dog alone.

### TORONTO CALLED BACK.

Mr. C. C. Taylor, of this city, who several years ago published a most useful and instructive book called *Toronto Called Back*, and who subsequently published a revised edition of that book, bringing his facts and statistics down to the later date, has just published his lecture on the Dominion of Canada, being a synopsis of the lectures he has delivered in many of the principal cities and trade centres in Great Britain during visits he has made to that country.

In the early part of 1889 this journal took occasion to allude to Mr. Taylor's *Toronto Called Back*, in which it was mentioned that previous editions of it had been circulated extensively in Great Britain, where copies were to be found in all the more important libraries, and were of much importance in affording accurate information to the better class of intending emigrants to Canada. Of course the information contained in Mr. Taylor's books had special reference to Toronto, but any intelligent reader would comprehend that, Toronto being one of the largest cities in Canada, anything that might be said of it must be in connection with the country at large, that had to such a great extent contributed so essentially towards making it such. In a subsequent issue of this journal in the latter part of 1890, again alluding to Mr. Taylor's book, mention was made of that gentleman's recent re-visit to the Old Country where he was received with the greatest cordiality by many of the best people there, under the auspices of some of whom he delivered lectures to intelligent and interested audiences, not only about Toronto, but about the whole Dominion, showing the advantages of it as a field for emigration.

That Mr. Taylor's book, ever since the issue of the first edition thereof, has been considered of great value as an educator regarding Canada, is evident in the large number of letters received by him from prominent statesmen and business men of Canada and Great Britain testifying to its merits; and also in the favorable notices bestowed upon it by the newspapers of both countries; and it is particularly to be noticed that many of the emigration agents of Canada residing in Great Britain are applying to Mr. Taylor for copies of his book, and lectures, as supplying just the kind of facts essential in inducing emigration to Canada.

Considering then the intrinsic value of Mr. Taylor's writings, the great favor with which they have been received both

at home and abroad, his high personal character, and the encomiums bestowed upon his efforts to bring Canada prominently to the attention of the world, it is rather surprising that neither the Dominion or the Ontario Governments have not at their own expense distributed his literature most liberally in the Old Country. If the few desultory lectures recently delivered in England by Rev. Manly Benson were worth the money the Dominion Government paid for them, certainly the well thought out arguments of Mr. Taylor should receive recognition.

#### CANADIAN STREET RAILWAYS.

The Dominion of Canada covers an area about equal to that of the United States, and contains a population of about five million people. By the census of 1891 the population density of the Dominion was 1.39 per square mile. There are twelve cities in the Dominion which have more than ten thousand inhabitants, the combined population of which is about 750,000, or about 15 per cent. of the whole. The population of the cities of the United States having 10,000 inhabitants forms 28 per cent. of the entire population of that country. The Street Railway Journal in its souvenir edition, having reference to the recent convention of the American Street Railway Association in Montreal, gives an exceedingly interesting account of the Street Railways of Canada, from which we obtain the following facts. It will be observed that from the foregoing brief statistical statements how great the differences are that exist between the street railway conditions in Canada and the United States, differences in field of effort, in magnitude of operations and in markets for manufactured products.

It might be expected to find also, more differences than really exist in matters of engineering and operating practice, owing to the influence of English precedence in colonial matters; but in matter of fact, the mother country is too remote, and the United States examples are too potent to bring about any essential variations from the work met with in the United States, except perhaps in the road-bed construction of the two large cities of Toronto and Montreal, which is more nearly representative of English than American methods.

The equipment of the Canadian street railway system for electric operations has been comparatively recent, and advantage has been taken of the best American experience, so that the physical condition of most of the Canadian properties is excellent. Comparatively little apparatus and material has been imported from the United States, the duties on nearly all electrical railway material being from 20 to 30 per cent. ad valorem. Several American manufacturers have, however established works or manufacturing agencies in Canada, particularly in the line of electrical material, but nearly all the engines, boilers and car bodies are the product of Canadian factories; while rails and railroad iron in general, have been imported from England.

In the allusions made to the street railway system of different Canadian cities and town, our contemporary points out in each case the special influences which effect the traffic, and it critically examines the conditions under which each system is operating, with a view to determining whether or not it is fulfilling its mission in the best possible manner.

It shows that the present and projected lines of the Montreal Street Railway Co., occupy the main routes of travel,

east and west, north and south; in fact the entire business and residential sections of the city are quite thoroughly served.

There is at present a five minute service on Notre Dame Street; a four minute service on St. Catharine Street; a seven and a half minute service on the Craig and Centre Streets line; a six minute service on the Ontario and Wellington Streets line, and a two-and-a-half minute service on the Windsor and St. Lawrence Streets line, which carries by far the largest number of people. Many of these lines turn into St. Catharine Street, which is the best served street in the city. The company own 75.15 miles of track, laid in 39.51 miles of street. One of the most interesting features of the Montreal plan from an engineering standpoint, is its road-bed construction, which differs entirely in its principal feature from the United States practice. The type of construction adopted in Montreal is identical with that adopted in Toronto, as a result of specifications laid down by those cities by Engineer Cunningham. The essential feature in these constructions is found in the liberal use of concrete as a sub-structure for the road-bed. For granite block pavement, a solid flooring of concrete six inches in depth is laid. The rails are placed directly on this flooring without fastenings of any kind except the tie-bars which are placed six feet apart, and which serve, of course, to keep the rails exactly to gauge; grouting is then run in all along the rail on both sides of the web, so that it becomes in effect a long rectangular paving block. In the power house of the Montreal Company, much of the machinery is supplied by Canadian concerns, the greater part of the heating apparatus having been built by Garth & Co., of Montreal, the feed pumps by the Northey Manufacturing Co., Toronto, and the six cross compound condensing Corliss engines by the Laurie Engine Co., Montreal. The electrical equipment consists of twelve 200 K.W. bi-polar and six 300 K.W. multi-polar generators supplied by the Canadian General Electric Co. These are connected with the engines by three ply leather belting. The belts of the multi-polar generators are 56 inches wide and 130 feet long, and are said to be the largest belts ever made in Canada. The station is equipped with two fifteen ton cranes built by the Dominion Bridge Co. The Company has four car houses in different parts of the city, with a housing capacity of 240 cars. A twenty-five horse power motor built by the Royal Electric Co., runs the machine shop, and a thirty-five horse power motor runs the carpenter shop. The armature compound and the armature paint used for the protection of armatures and field coils from moisture is manufactured by J. H. Farr & Co., Toronto. The Company own 310 cars of which 145 are box motor cars, forty-five open motor cars, sixty box trail cars, and sixty open trail cars. These cars were built by the principal Canadian and a few American manufacturers. Nearly all the new cars are now built in the Company's own shops. The Montreal Car Wheel Co. supply the greater number of all the car wheels used. There are a number of electric snow-sweepers, snow-ploughs, etc., and, contrary to the general outside impression, there is no more difficulty in handling the snows of winter than is experienced in other cities.

What the Montreal Street Railway Company is within the limits of that city, the Montreal Park and Island Railway Company is to the suburbs thereof. This Company are now operating two main lines in the city of Montreal and vicinity;

one line, that to Back River, extends seven and one-half miles from the city limits. The Company own eleven closed motor cars, seven open motor cars, and seven open trail cars. Nine of the closed cars were built by N. & A. C. Lariviere: the open cars by other Canadian manufacturers. The motors for these cars were furnished by Ahearn & Soper and the Royal Electric Co. The boiler, of 300 horse power capacity, and the Corliss engine of 150 horse power capacity, were built by Messrs. Cowan & Co., Galt, Ont.

The street railway system of Toronto was originally established in 1861: in 1891 the city purchased the lines, and in that year a contract was entered into with the Toronto Railway Company, by which the latter was given the exclusive right of operation within the city limits for thirty years. Upon the execution of this contract the Company went immediately to work to reconstruct the old horse railway lines, and to make extensions into new territory; and the main system of the Company now extends to and connects with the two suburban lines which have been built in the same interest, but under separate organizations, to wit, the Toronto and Mimico Electric Railway Company, and the Toronto and Scarboro' Electric Railway Company. The backbone of the entire Toronto system is the Queen Street line, which extends from the extreme eastern to the extreme western part of the city, a distance of over eight miles, and, including the Mimico road, over thirteen miles.

A great advantage which the Toronto Railway Company enjoys over the principal systems in other cities lies in its freedom from competition, the exclusive right for street car operation being granted to it by the municipality; and it is thus enabled to avoid the over building of lines which is so painfully evident in other cities. The arrangement of the lines in Toronto shows the effect of this lack of competition, in that there is no paralleling of tracks in the business section, while the distance between the parallel lines which actually exist is such as to make a short walk to the cars frequently necessary but not unduly burdensome. In the power house of the Company is a 3000 horse power plant, consisting of five Armington & Sims cross compound condensing engines, direct belted to nine 200 K. W. and one 100 K. W. bi-polar generators built by the Canadian General Electric Co. Another section of the station contains two direct connected 1200 horse power units, the engines of which were built by the Laurie Engine Co., Montreal, and the Bertram Engine Co., Toronto. The Company build their own cars. A special feature of the rolling stock is the admirable manner in which the cars are kept bright and fresh; and they are never allowed to degenerate into such a state of bad repair as causes unfavorable comment in other cities. Most of them are extra well lighted with a double lighting circuit, and in winter comfortably heated. The motors in use were furnished by Ahearn & Soper, representing the Westinghouse Company, and by the Canadian General Electric Co. Farr insulating compound is used in armatures and motors. In 1884, when the horse car system was in vogue in Toronto, the number of passengers carried by the street car company was at the rate of 56 rides per capita; in 1891, the year in which the present company took possession and adopted electricity as motive power, passengers were carried at the rate of 88 rides per capita, and in 1894 at the rate of 130 rides per capita.

OTTAWA. —The Ottawa Electric Street Railway Company is

a recent consolidation of the Ottawa Street Passenger Railway Company, that originally operated a horse railway through the principal streets of Ottawa, and the Ottawa Electric Street Railway Co., a more recent concern. This company give excellent service to all parts of the city with its thirty miles of track. The power station building is 100x50 feet, built near the Chaudiere Falls, from which the power is obtained. The power plant consists of five water wheels of 500 horse power capacity, and one of 175 horse power capacity, each wheel operating under a twenty-five foot head. The electric plant consists of one 700 horse power, two 400 horse power, and three 100 horse power Westinghouse multipolar generators. This railway plant is one of five electric generating plants operated from Chaudiere Falls by the Ottawa Electric Railway Co., and the Ottawa Electric Co., both of which are controlled in the same interest. The company own fifty-seven motor cars, three mail cars and five sweepers. Nearly all the cars were manufactured by the Ottawa Car Co., and no trail cars are used. The cars and also the offices of the company are heated by electric heaters of a novel pattern manufactured by Messrs. Ahearn & Soper of that city. The Company have adopted the practice of providing buttonhole bouquets to all of their conductors and motor men each morning, believing that these little points mean increase of traffic to them. The officers of the Company are J. W. McRae, president, W. Y. Soper, vice-president, J. D. Fraser, secretary and treasurer, Thomas Ahearn, managing director. Messrs. Ahearn & Soper are the well-known electrical engineers and contractors, and are one of the most important individual firms in this particular line in Canada.

HAMILTON, Ont.—This city is small in area and thickly settled. Its entire local street railway system is but 11 miles in length, single track basis, and its longest line is but three miles. The franchise of the Hamilton Street Railway Co., expires in the year 1914. The company have the exclusive right to operate street railways within the city limits, except the rights already granted upon certain streets to two suburban lines. The engine plant consists of three Wheelock tandem compound condensing engines of 260 horse power each, built by the Goldie & McCullough Co., Galt, Ont., and one Corliss tandem compound condensing engine of the same size built at Toronto. These are belted direct to four Westinghouse 250 horse power multipolar generators. Westinghouse appliances are used throughout. Mr. E. Martin is general manager, and J. B. Griffiths, electrical engineer.

The Hamilton, Grimsby and Beamsville Electrical Railway whose route extends over a distance of eighteen miles from the centre of Hamilton, is in many respects unique among the electric railroads of the country. Several of the cars are combination passenger and baggage, and a large proportion of the traffic consists in package of fruit, etc. The cars stop at every farm house along the way when desired, and in some cases milk stands have been erected along its tracks, a profitable portion of its business being the conveyance of milk from farms along the route into Hamilton. Trips are made every hour throughout the day, and special excursion trips are frequently arranged for. The three 150 horse power boilers in the power house of this company, as well as the two 150 horse power Corliss engines, are of Canadian manufacture. There are two 150 horse power Westinghouse generators, eight double truck cars, equipped with Westinghouse motors, and 22 trail cars

used for freight, some of which are combination. A. J. Nelles is superintendent, and C. K. Green, electrician.

NIAGARA FALLS, ONT.—The Niagara Falls Park and River Railway, Niagara Falls, Ont., has one terminus on the Niagara River above Horseshoe Falls, opposite Navy Island, distant about twenty-three miles from Buffalo, N. Y. From this terminus it extends along the river bank, across the Dufferin Islands, over three steel bridges, through the International Park, past the upper rapids and the Horseshoe Falls, past the Suspension Bridge, along the ravine above the Whirlpool Rapids, and around the great Whirlpool itself, and down the river over Queenston Heights, to the lake terminus at the wharf in Queenston, from whence steamers run to Toronto. During the summer months a half-hour's service is given over the whole line, and a fifteen minute service between Bridge Street and Table Rock. The road-bed consists of twenty-eight miles of track. The main power station is situated on a level about 200 feet south of the Horseshoe Rapids, from which, through the 200 feet stone flume and two vertical tubes sixty-three feet deep, water is taken for operating the turbines. There are at present installed two forty-five inch 1,000 horse power turbines built by Messrs. Wm. Kennedy & Sons, Owen Sound, Ont. These turbines take the water at a sixty-two foot head, but the power is by means of an eighteen foot draft tube equivalent to an eighty foot head. The company own forty-one cars, of which ten are thirty-five feet observation cars on double trucks with three tiers of seats; four are eighteen feet closed motor cars, ten are twenty-eight feet open motor cars and seventeen are open and closed trail cars. In the winter the cars operating between Niagara

Falls and Suspension Bridge are heated by electricity. The general manager is Ross McKenzie, the superintendent, J. C. Rothery, and electrician, W. Phillips.

The Niagara Falls, Wesley Park & Clifton Tramway Co., operate the horse railway between Niagara Falls and Suspension Bridge, over a country road parallel to the Niagara River, but some distance away. The road is about four miles long.

LONDON, ONT.—The street railway system of London, Ont., is now in process of conversion from horse to electricity. When the reconstruction is completed the plan will be substantially as follows: twenty-five miles of track, cars being combination, similar to those of the Detroit Railway Co., the trailers being those formerly used by the company as horse cars. Officers, H. A. Everett, president, C. E. A. Carr, manager, D. L. De Hart, superintendent.

BRANTFORD, ONT.—The Brantford Street Railway Co., operate eight and one-half miles of single track with seven closed, three open motor cars, and three trail cars. In the boiler room of the power station are two tandem compound Wheelock engines of 150 horse power each, to which are belted two 100 K. W. generators. Mr. J. F. Madden is in charge as general manager.

KINGSTON, ONT.—The Kingston, Portsmouth and Cataract Railway Co., the head-quarters of which are at Kingston, operate about ten miles of single track. The power is purchased from the Kingston Light, Heat and Power Co. The plant in the power station consists of one 200 K. W., and one 100 K. W. multipolar generator. The equipment consists of ten closed cars and two double truck open cars, all of Canadian manufacture. The wheels of all the cars of this system

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were furnished by the St. Thomas Car Wheel Co. Mr. B. W. Folger is manager.

**GALT, PRESTON AND HESPELER, O T.**—The Galt, Preston & Hespeler Electric Railway Co., with general offices at Galt, Ont., operate an electric railway between the places named, over a road-bed which is capable of carrying freight cars of the C.P.R. Co., with whose road it is connected. It has sidings into each factory and foundry on its route, so that cars can be unloaded or loaded at their doors. The freight transported includes coal, pig iron, wheat, manufactured goods, etc. The line is nine miles in length, single track, with sidings. In the engine room of the power house are two Wheelock engines of 125 horse power each, belted direct to one 175 K.W., and one 100 K.W. generator. There are four motors and three trail cars for passenger service, one of the motor cars being a combination baggage car, thirty-seven feet long, with double truck. St. Thomas car wheels are used. Thomas Todd, Galt, Ont., is managing director.

**BELLEVILLE, ONT.**—The Belleville Traction Co., Belleville, Ont., operate a road two miles in length, running from the wharf on the harbor towards the railroad station, through the principal business streets. In the power house is a 150 horse power Brown engine, belted direct to a 100 K.W. multipolar generator. Northey pumps and condensers are used. The equipment consists of two closed and two open motor cars. Extensions of this system are planned to complete a belt line through the residence portion of the town, and a line to the park and cemetery.

**BERLIN AND WATERLOO, ONT.**—The Berlin and Waterloo Street Railway Co.'s lines connect the towns of Berlin and

Waterloo, Ont. The line is two and one-half miles long. The rolling stock consists of three motor cars and five trail cars, of which two are open and three closed. This company has been running a horse-car line for a number of years, which has only recently been converted to an electric road. Mr. T. M. Burt is president and T. E. Maclean, manager.

**OSHAWA, ONT.**—The Oshawa Railway Co., Oshawa, Ont., have just completed their line, seven miles long, extending from the Oshawa station of the Grand Trunk Railway Co., to Oshawa, the road passing the principal factories along the route. The company are at present renting steam power, but expect to put in a 270 horse power horizontal tandem compound condensing engine, belted or rope driven, to a 200 K.W. Westinghouse generator. The rolling stock consists of five motor cars, the motors being furnished by Messrs. Ahearn & Soper, Ottawa, Ont. Mr. W. Y. Soper is general manager.

**PORT DALHOUSIE, ST. CATHARINES AND THOROLD, ONT.**—The Port Dalhousie, St. Catharines and Thorold Electric Street Railway Co., with headquarters at St. Catharines, operate eight and one-half miles of electric road. There ten motor cars.

**PETERBOROUGH, ONT.**—Peterborough and Ashburnham Street Railway Co. This Company operate four miles of track with eight cars, six motors and two trailers. General Electric System. T. E. Bradburn, general manager, Peterborough.

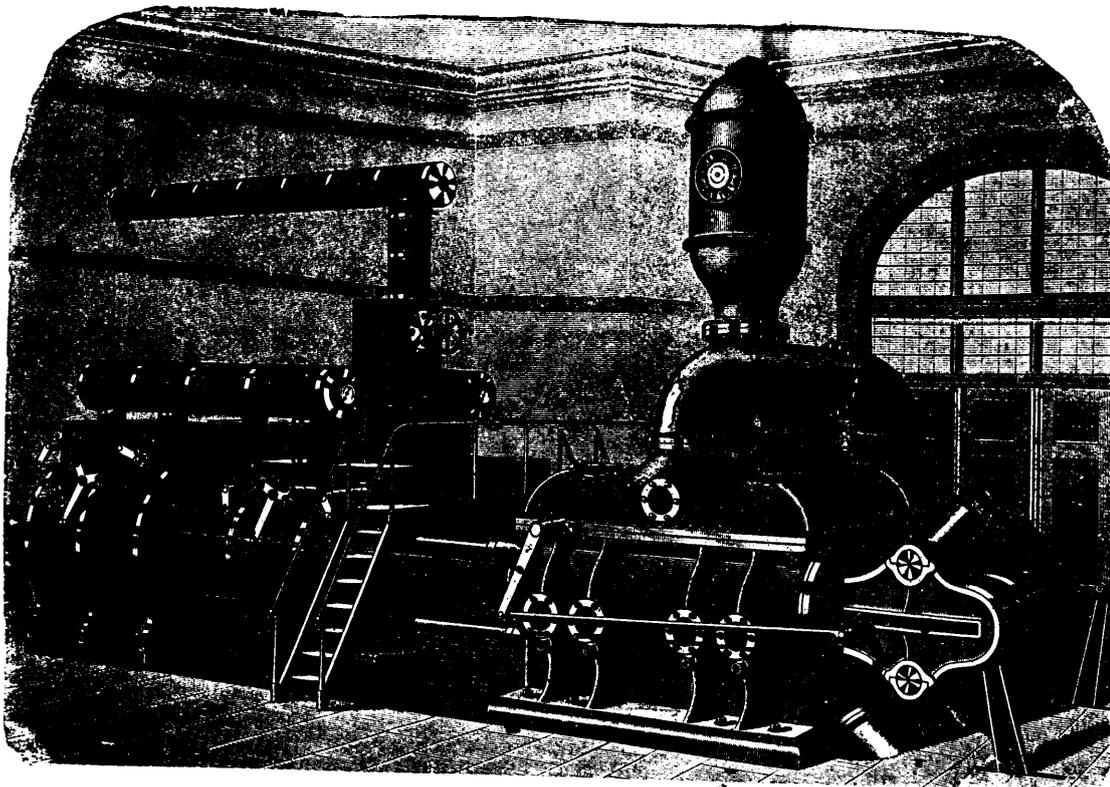
**SANDWICH, WINDSOR AND AMHERSTBURG, ONT.**—The Sandwich, Windsor and Amherstburg Railway Co. operate a ten mile electric road between the three places named. The equipment consists of ten motor cars and four trail cars.

**ST. THOMAS, ONT.**—The St. Thomas, Street Railway Co.

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operate a two mile horse railway, using four horse cars. The company have an application before the City Council for additional rights, including the right to use electricity.

**SARNIA, ONT.**—The Sarnia Street Railway Co., operate a four mile horse railway line. The equipment consists of twenty-one horses and nine cars.

**PORT ARTHUR, ONT.**—The electric light and electric railroad plant connecting Port Arthur, Ont. and Fort William, Ont., is owned and operated by the town of Port Arthur. The road is eight miles long. The overhead construction carries main and supplementary feed wires, and double telephone line, with connections at each ten poles, made in such a way that the line can be cut in and every car be put in communication through its telephone and battery with the power station. The power plant consists of two boilers and a 150 H. P. Wheelock compound condensing engine, belted to a bipolar generator of the Edison type. The rolling stock consists of three closed eighteen foot vestibule cars, and one open end car made by Patterson & Corbin, St. Catharines, Ont. These cars have electric bells, electric lights and electric heaters. The road is operated by a committee of the city council, of which W. P. Cooke is chairman.

**WINNIPEG, MAN.**—The street railway system of Winnipeg is controlled practically by the same syndicate who own the systems of Toronto and Montreal. The Winnipeg Street Railway Co., was organized in 1892, and have recently bought out the older company that were operating horse car lines. The old lines have been rebuilt and new ones added, and electricity has been adopted as motive power throughout the city, the change having only recently been completed. The company

operate 15.8 miles of track. In the power house are six boilers of 120 horse power each, with furnaces adapted for burning either wood or coal. There are one 16 and 29 x 38 inch Wheelock engine, and one 18 and 34 x 42 inch Corliss engine, these being belted through counter shafting and friction clutches to four 100 K. W. Edison bipolar generators. An addition to the plant now being made will include an 18 and 34 x 42 inch Laurie-Corliss engine coupled direct to a 400 K.W. multipolar generator, built by the Canadian General Electric Co. The rolling stock includes twenty closed vestibule cars and three open cars, with twelve smaller cars used as trailers. The company also own a snow-plow and an electric sweeper, which were made by the Toronto Railway Company. G. H. Campbell is general manager, and H. J. Somerset, electrician.

**CITY OF QUEBEC.**—The two street railways of the City of Quebec, one in the Upper Town and one in the Lower Town, are more nearly characteristic of Quebec itself, than they would be of a more bustling and commercial city.

The St. John Street Railway Company operate a horse railway line through St. John Street, the principal business street of the Upper Town, and through St. John Gate to a point about half a mile outside of the city, the total length of which is 1.3 miles. It owns thirty horses and five horse cars. The secretary and manager is Mr. W. W. Martin. It is probable that this line will soon be consolidated with a larger system.

In the Lower Town, the Quebec Street Railway Company operate a line 3.25 miles in length. They own sixty-nine horses and thirteen cars, the line passing through the principal

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business streets of the Lower Town, The superintendent and manager is T. F. Boomer.

The Quebec, Montmorency and Charlevoix Railway Company operate a steam railroad line from the Lower Town, past the falls of Montmorency and the shrine of St. Anne de Beaupre to Cape Tourmente, the entire line being thirty miles in length. In the summer time immense numbers of people travel over this line to reach the shrine of St. Anne. The equipment consists of four locomotives and twenty-two passenger cars. This company have recently secured a franchise to construct an electric railway within the city limits. The manager is Mr. G. S. Cressman, and the general superintendent Mr. W. R. Russell.

HALIFAX, N.S.—The Halifax Electric Tramway Co. have recently purchased the property of the Nova Scotia Power Co., and will completely reconstruct and extend the old system of that road, which will be equipped by electricity.

NEW GLASGOW, N.S.—The New Glasgow Electric Co., expect to build an electric street railway line in that city in the near future, but the work has not yet been commenced.

YARMOUTH, N.S.—The Yarmouth Street Railway Co. operate a two mile electric line, upon which are three motor cars and two trail cars.

ST. JOHN, N.B.—The Consolidated Electric Co., operate five miles of road, and have five motor cars. Edison system. C. D. Jones, general manager.

VICTORIA, B.C.—The Victoria Electric Railway and Lighting Co. operate three railway systems. They have eighteen motor cars, the power plant consisting of a battery of five

boilers, one 700 horse power Corliss engine, belted to one Edison and three T.-H. generators. The lighting plant includes one 1,000 light and one 640 light alternators of T.-H. style and one forty-five light arc machine. The company operate fifteen miles of track. F. W. McCrady is superintendent and purchasing agent, D. Deverell, electrician.

NEW WESTMINSTER AND VANCOUVER, B.C., Tramway Co operate sixteen and one-half miles of track.

#### EDITORIAL NOTES.

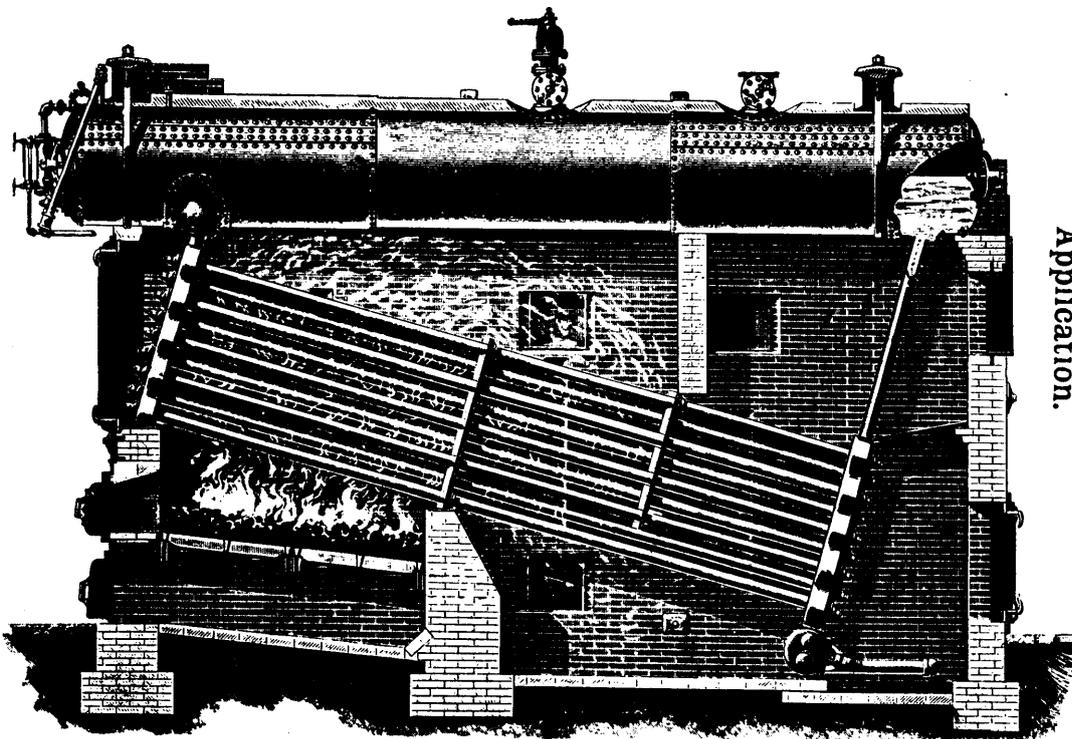
The National Association of Implement Manufacturers, recently in session in Chicago, decided to begin a vigorous campaign against Midway exhibitions at county fairs. A resolution was adopted that windmills, threshing machines and vehicles stood no chances whatever by the side of such attractions. We do not agree with our American friends in this matter, for if crowds of visitors are essential to the success of a fair, the tastes of the multitude should be consulted. Much of the popularity of our own Toronto Fair is attributable to the entertainments given in front of the grand stand. At the same time the greatest possible facilities and accommodations should be extended to exhibiting manufacturers.

The discovery of a large deposit of graphite has been reported to the Ontario Bureau of Mines. The find is situated in the township of Brougham, Renfrew county, on lots 17, 18 and 19 of the third concession. It is understood that the control of the property has been secured by Senator G. C. McKindsey, who intends forming a company and establishing

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a factory in the province to work it without delay. The graphite is said to be of a very pure quality, and will be used chiefly in the manufacture of stove polish, facings for foundry castings and lead pencils. It is also largely used in the manufacture of crucibles, though it is not known as yet whether the present discovery will be suitable for that purpose. The discovery forms another indication of the extent of mineral wealth lying dormant within the Province of Ontario.

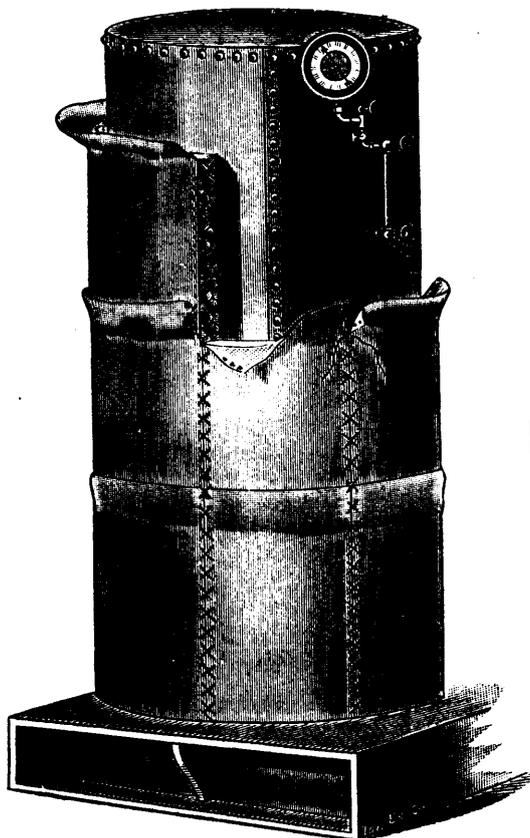
The astute London Advertiser tells how the Massey-Harris Company are desirous of obtaining a favorable location in the United States, where they can obtain free iron and other materials for their business; and it also tells that the Liberal platform provides for free raw materials for the manufacturer. This very intelligent newspaper does not seem to know that even under the tariff reform policy of Mr. Wilson the duty on pig iron in the United States is just the same as it is in Canada, and the duty upon all other materials entering into the construction of agricultural implements—malleable irons, screws, bolts, nuts, paints, varnish, etc., is much higher. It does not seem to know that free trade does not prevail in the United States. And then how glibly it talks about free raw material for the manufacturer. We venture the assertion that if it tried for a year it could not give a clear and intelligent definition of the term raw material.

In our Captains of Industry Department is an item to the effect that a prominent American manufacturing concern—Messrs. H. A. Lozier & Co., of Toledo, Ohio—are establishing a branch of their works at Toronto Junction, a suburb of this

city, for the manufacture of bicycles; that it will probably be the largest of the kind in Canada, and that all the machine tools, machinery, etc., for the same, were being made for them by a Canadian concern—Messrs. John Bertram & Sons, Dundas, Ont. Perhaps it would be well to call attention to the fact that these new coming Americans are more patriotically Canadian in equipping their works with Canadian machinery than some other and older Canadian concerns who do not do so. Our new friends, to whom we extend a most cordial and friendly Canadian greeting, seem to be fully cognizant of the fact that in coming to Canada they expect to sell their products to Canadians, and therefore they give our home manufacturers the benefit to be derived from filling their requirements for machinery and supplies.

One would think that nothing would please the Tory papers so much as the restoration of the McKinley act in the United States, and the adoption of protection in Great Britain.—The Globe.

This journal offers its congratulations to Canada and all believers in the system of tariff protection to home industries, on the reascendency of the star of what the Globe calls McKinleyism in the United States. The recent elections there indicate that Clevelandism, and Wilsonism, and tariff reformism are dead cocks in the pit. The Globe may construe the event as the handwriting on the wall, warning the free trade party there, and also in Canada, that protection is an enduring feature in the political economy of the North American continent. It should also understand that whatever feature of protection Great Britain may and probably will adopt, it will



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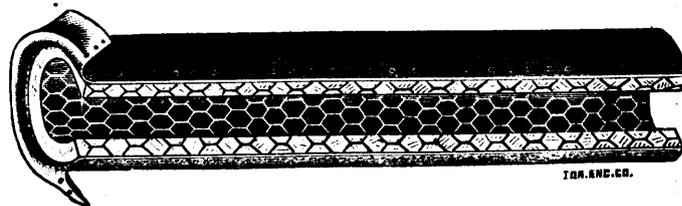
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include discrimination in favor of all British countries, and against all countries that do not acknowledge the sovereignty of the British flag.

The price of land is greatly increased by proximity to and diminished by remoteness from the manufacturing centres. You may find land selling \$80 an acre within a few miles of a manufacturing town, and you may buy the same quality of land at \$5 an acre fifty or one hundred miles from manufacturing centres. And why so? Because not only the housewife has a market for her butter and chickens and eggs and cheese, and everything of that character that is produced upon the farm, but the farmer himself has a market for every bushel of wheat, oats, hay, etc., and for every apple, peach, pear, cabbage, and everything of that character that he grows upon the farm when located near a manufacturing centre; and he gets the best price for his grain, flour, meat, and other necessary articles produced upon the farm. So, in every view of it, no class of people in this country are more benefitted by the increase of manufactures and the diversity of labor, thus putting down the price of manufactured articles and putting up the price of labor and the price of farm products, than the farmers themselves.—Petroleum Advertiser.

It will now be in order for the Globe and other free trade journals, and free trade orators, to denounce the coming to Canada of an important American manufacturing concern, who understand that if they are to sell their products in the Canadian market, they could not hope to do so from their American factory, seeing that they would perforce have to pay the Canadian duty thereon; and that therefore, to enjoy

the Canadian market, they must become Canadian manufacturers and manufacture their products in this country. The Globe may declare that the consumer pays the duty, but the American concern to whom we allude know that, in the face of the competition already established by manufacturers in Canada, the only way by which they can hope to succeed in selling their products in Canada is by manufacturing them here. And this is another evidence of the benefit of the National Policy to Canada. Under any other policy these new comers would not be establishing works in Canada, making all their purchases of tools and machinery here, and giving employment to hundreds of Canadian workmen.

The annual statistics of the Bureau Veritas relating to the mercantile navy of the world, which have just been published, give the total number of sailing vessels now afloat measuring over 50 tons as 25,570, with an aggregate tonnage of 9,323,995 tons. Of this number Great Britain comes first with 8,793 ships of 3,333,607 tons. The United States is second with 3,824 vessels and 1,362,317 tons. Norway is third, with nearly 1,000 less vessels than the United States, but nearly the same amount of tonnage. France occupies only the eighth rank, between Sweden and Greece. In regard to the steamers, England counts 5,771 vessels, with nearly 10,000,000 tons. Germany, which comes second, has 826 steamers of 1,306,771 tons; France third, with 501 steamers and 864,598 tons, while the United States holds fourth place with 447 steamers and 703,399 tons. These figures relate only to ocean and sea-going vessels, and do not include coasting craft or those employed in lake and inland navigation.

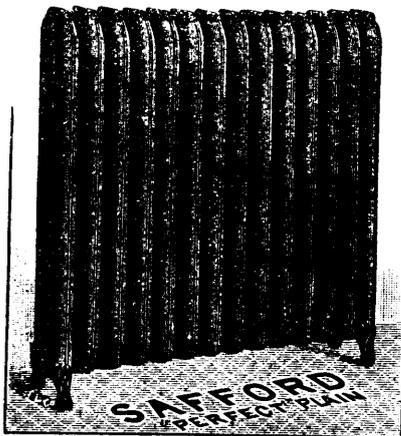
## HEATING APPARATUS

# 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

England is worried very much over the incursion of foreign paper, and is lying awake nights, trying to think of some way of stopping it. The Merchandise Marks Act, which has been in operation for several years, has done Great Britain's industries no good, and has done her commerce much harm. That act is not effective in the matter of paper, as obviously the mark is placed upon the package, and not upon the paper itself. Now some of the mill workers, and some political reformers as well, are calling for such an amendment to that act as will compel the makers of all paper in foreign countries which is intended for the British market, to watermark each sheet—or, in the case of rolled paper, each length which will constitute a sheet when it comes into the hands of the ultimate consumers—with the place of origin. But even the journals devoted to the paper industry oppose this suggestion, and point out that, if it is carried out, it will surely do the paper industry in England much harm. Of course it would stop the sale of American news in London for the time being, but ultimately it would so advertise foreign papers of all grades, American as well as Continental, that the American paper industry would be the gainer. It is hardly possible that England will intensify the blunder of the Merchandise Marks Act.—The Paper Mill.

It will now be in order for The Globe to pitch into Mr. E. B. Eddy if it is true that he is in favor of the Dominion Government imposing an export duty on spruce logs, as below alluded to by the North-Eastern Lumberman, of Boston, and The Paper Mill and Wood Pulp News, of New York:—

If any pulp or paper maker has any doubt about the future intentions of the Canadian Government concerning an export duty on spruce pulp wood, let him consider the following, says the North-Eastern Lumberman; the Hon. E. B. Eddy, member of Parliament and one of the largest lumber and paper manufacturers of Ottawa and Hull, in an interview about the tariff bill, stated that despite the general reduction of United States duties the Canadian Government should reimpose the export duties on logs. "Put on the duty on spruce logs," says Mr. Eddy, "and the Americans must pay the duty and keep on buying our logs. They have no logs of their own worth talking about. The mills in New York State are importing hundreds of thousands of cords of spruce. The mills of Michigan and Wisconsin are getting thirty per cent. of their logs from Canada." Mr. Eddy states that the spruce trade is going to be the future lumber trade, not pine. "Put the duty on spruce," he says, "and you will make miles of spruce land in Ontario and Quebec worth millions, which to-day are not worth the bite of a bumble bee." Mr. Eddy knows full well that all the spruce will be wanted for pulp and paper. He also knows that Canada wants the pulp and paper manufactured within her own borders, to give value to the forests and employment to her population. As the matter stands now, Canada sees hundreds of thousands of cords of spruce wood being exported to the United States to enrich the pulp grinders here, while the pulp and paper industries languish in Canada. If she is to furnish a large percentage of the raw material, she wants part of the manufacturers' profit.

Sir Edwin Arnold with some eloquence describes the condition of the modern artisan of England, and it serves as a picture to some extent of the commercial spirit of the age. He says:—

I invite you briefly to contemplate an artisan's experience

## 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.



in your own Birmingham. What king of old ever fared so royally? Observe his dinner board. Without being luxurious, the whole globe has been his serving-man to spread it. The currants in this dumpling are a tribute from classic Greece, and tinned salmon or kippered herring a token from the seas and rivers of Canada or Norway. He may partake, if he will, of rice that ripened under the hot skies of Patna or Rangoon; of cocoa—"that food of the gods"—plucked under the burning blue of the equator. For his rasher of bacon the hog express runs daily with ten thousand grunting victims into Chicago. Dutch or Brittany hens have laid him his eggs, and Danish cows grazed the daises of Elsinore to produce his cheese and butter. If he drinks beer, it is odds that Russia and Bavaria have contributed to it the barley and the hops; when he has finished eating, it will be the Mississippi flats or the gardens of the Antilles that fill for him his pipe with the comforting tobacco. And then, for a trifle, his daily newspaper puts at his command information from the whole globe, the freshness and fullness of which makes the news-bearers of Augustus Caesar, thronging hourly into Rome, ridiculous. At work, machinery of wonderful invention redeems his toil from servitude and elevates it to an art. Is he fond of reading? There are free libraries open to him, full of intellectual and imaginative wealth. Is he artistic? Galleries rich with beautiful paintings and statues are prepared for him. Has he children? They can be excellently educated for next to nothing. Would he communicate with absent friends? His messengers pass in the Queen's livery bearing his letters everywhere by sea and land; or in the hour of urgency the ariel of electricity will flash for him a message to the end of the kingdom at the price of a quart of small beer. Steam shall carry him wherever he wants to go for a penny a mile; and when he is sick, the charitable institutions he has too often forgotten in health render him such succor as goddesses never got from Æsculapius, or Ulysses at the white hand of Queen Helen. Does

he encounter accident? For him as for all others the benignant science of our time, with the hypodermic syringe or a waft of chloroform, has abolished agony; while for dignity of citizenship, he may help when election time comes by his vote to sustain or to shake down the noblest empire ever built by genius and valor. Let the fancy fill up the imperfect picture with these thousand helps and adornments that civilization has brought even to lowly lives.

The Montreal Star is evidently in favor of imposing an export duty on Canadian logs. Hear it:—

In the course of an article urging the Canadian Governments to fix for a definite and long time the prices of stumpage, so that investors of all kinds might know what to depend upon, the American Cultivator makes some appreciative and well-informed remarks upon the present value of Canadian timber. It sees plainly that the worth of a standing forest has greatly increased within the last few years. "We are now rapidly cutting away on the last half of the great forests which once covered this continent," it says, "and it necessarily follows that what is left has increasing value, whether in Canada or in the United States." To this, it might have added the fact that there is very little indeed left in the United States; and that, consequently, Canada enjoys a practical monopoly of the raw material of so many industries. The Cultivator is by no means certain that we are wise in shipping so much unmanufactured lumber to be cut up and made into a thousand articles by American labor in American mills. We practically keep the mills of Michigan going now, and much of our wood goes to supply the pulp mills along the border. Says the Cultivator, speaking of Canada:—"She sees that free trade in lumber with the United States means more logs and more pulp wood shipped away from her borders, without adding to her manufacturing importance. The poorest countries on earth are those whose income is derived mainly from the exportation of

# ...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

raw materials. Canada realizes that, to secure the benefits which her unequalled forest resources entitle her to, her forest products should be worked up by local saw mills, local wood working establishments and local pulp and paper mills. Her population should have the advantages to be derived from the finished products." The remedy proposed by this critic is that we shall put our stumpage dues at a figure somewhere near where they ought to be, and then guarantee their permanence for a long period. This, it believes, would induce American capital to come into Canada, buy our limits and establish pulp and paper mills and various wood working industries, thus giving employment to Canadians at home. Whether or not this be the one thing needful, none but experts can decide; but certain it is that Canadian lumber should be manufactured at home and not sent abroad as raw material. We might as well secure from the American purchaser not only the price of the wood but the price of a lot of good Canadian labor bestowed upon it before the finished product crossed the border. What is the use of possessing a monopoly of timber if we are not to use it? We now send our lumber abroad and send our Canadian youth after it to manufacture it in a foreign city, adding their custom to the trade of a foreign people and their manhood to the citizenship of a foreign state. Is this policy either sensible or necessary?

Our Monthly published by the Manufacturer's Life Insurance Company, Toronto, offers \$20.00 for the best argument for life insurance in the form of a story not exceeding fifteen hundred words.

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

### 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.

A new boiler and engine will be put in Borden's mill at Canning, N.S.

Mr. McKay, Combermere, Ont., will put roller machinery in his grist mill.

The Maritime Nail Co., St. John, N.B., have been incorporated with a capital stock of \$50,000, to manufacture nails, etc.

There seems to be no doubt that the proposed Port Perry and Kincardine Electric Railway will be built. It will be operated by water power, and will be the only railway connecting Lakes Ontario and Huron from east to west. Mr. A. E. C. Pew, of Hamilton, Ont., is the promoter of the concern.

The G. & G. Flewwelling Manufacturing Co., Hampton, N.B., have been incorporated with a capital stock of \$150,000, to manufacture lumber, etc.

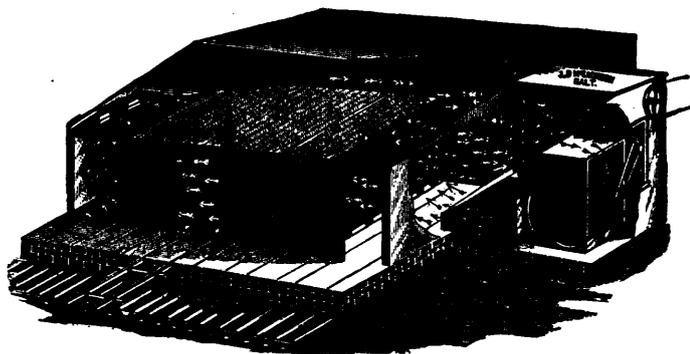
The Power Rope & Belting Co., St. Catharine's, Ont., are applying for incorporation with a capital stock of \$20,000, to manufacture rope belting, etc.

The Montreal Hydraulic Wheel Co., Montreal, are applying for incorporation with a capital stock of \$100,000, to manufacture hydraulic wheels, etc.

The Raymond Sewing Machine Co., Guelph, Ont., are applying for incorporation with a capital stock of \$130,000, to acquire the business and plant of Charles Raymond, of Guelph, and to manufacture sewing machines, cash registers, bicycles, etc.

## 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 Planing Mill Exhaust Fans

EFFICIENCY  
UNEQUALLED  
DURABILITY  
UNSURPASSED  
SMOOTH  
RUNNING  
INCOMPARABLE

## Forge

THE LARGEST  
IN THE WORLD

Thirty-Eight other Designs of Portable and Stationary Types.

**BUFFALO LUMBER DRY KILNS**  
Blowers, Blacksmiths' Tools, etc.  
—SOLD IN—  
Toronto, Ont., by H. W. Petrie.  
Brantford, Ont., by Canadian Machinery & Supply Co.  
Montreal, Que., by Canadian Machinery Agency.  
Chicago Store, 22 and 24 West Randolph Street.

John Cadas' flour mill at Pike Creek, Ont., was destroyed by fire Nov. 8th. Loss about \$20,000.

The Northey Manufacturing Co., Toronto, has placed a pumping engine in the Parliament Buildings with a capacity of 500 gallons a minute. Mr. A. M. Wickens is mechanical engineer of the buildings.

The Georgian Bay Box Company's factory at Midland, Ont., was destroyed by fire Nov. 6th. Loss about \$7,000.

The Hanover Spring Bed and Mattress Factory Co.'s works at Hanover, Ont., were destroyed by fire Nov. 10th. Loss about \$2,400.

The Harvey Van Norman Co., Toronto, have been incorporated 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, etc.

The Modern Office Systems Co., Toronto, are applying for incorporation with a capital stock of \$10,000, to manufacture stationery, office supplies, etc., and carry on a general printing and publishing business.

The Imperial Brewing Co., Kamloops, B.C., are applying for incorporation with a capital stock of \$50,000, to acquire the business and plant of the Imperial Brewing Co., now being carried on at Kamloops, B.C., and to carry on the business of brewers, etc.

The Cape Breton Boot and Shoe Manufacturing Co, North Sydney, N.S., are applying for incorporation with a capital stock of \$10,000, to manufacture boots, shoes, rubbers, etc.

The Gold Car Heating Co., St. John, N.B., are applying for incorporation with a capital stock of \$250,000, to acquire the patent rights of the Gold Car Heating Co., New York, and to manufacture heating apparatuses, etc.

Becroft & Sloan, Flesherton, Ont., will erect a planing mill at that place.

Johnson Bros., Petrolia, Ont., will erect an hotel at that place. We have their assurance that the building will be both large and architecturally fine, and that all the latest modern improvements will be introduced.

The Clinton Electric Light Co., Clinton, Ont., are installing a 100-light alternator.

The Chandos Mining Co., Toronto, are applying for incorporation with a capital stock of \$199,000, to carry on the business of mining, etc.

The Fraserville Electric Power Co., Fraserville, Que., are applying for incorporation with a capital stock of \$25,000, to operate telephones and contract for electric lighting.

Stock amounting to \$40,000 has been subscribed for an electric line between Cobourg and Port Hope, Ont.

The Western Electric Light, Heat & Power Company, Vancouver, B.C., has been formed to take over the lighting of that city.

Winchester, Ont., is agitating for an electric railway between Morrisburg, Ont. and Ottawa, passing through Winchester.

The Ottawa Carbon & Porcelain Works have turned out their first lot of insulators. They have \$25,000 worth of orders on hand.

The Council of Arthur, Ont., are prepared to grant a franchise to light the streets of that town by electricity. Communicate with J. M. Roach.

H. H. Van Every is reported to have been offered a bonus of \$600,000 by the cities of Vancouver, B.C. and New Westminster, B.C., to construct an electric railway fifteen miles in length.

The Montreal Park & Island Railway Co., will extend their line to St. Laurent, Que., a distance of seven miles.

Alexandria, Ont., has decided to have electric light and water works.

The paper mill now being erected at St. Croix, N.S., by H. McHart, Esq., will be lighted by electricity, the dynamo and plant for the same being furnished by John Starr, Son & Co., of Halifax, N.S.

Windsor, Ont., will use natural gas for fuel at the electric light works and pumping station. The annual cost is estimated at \$1,900 at the lighting station and \$4,000 at the pumping station, which will be a saving of several hundred dollars per year.

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



The Ontario & Western Lumber Company have erected a sash and door factory at Rat Portage, Ont.

D. McGillivray will establish blasting powder mills at Nanaimo, B.C.

The stave mill at Fletcher, Ont., owned by Mr. P. T. Barry, Chatham, Ont., was destroyed by fire Oct. 26. Loss about \$1,000.

Mr. H. Heise, Preston, Ont., is erecting a saw-mill at that place.

Mr. S. J. Cherry has erected a grist mill at Preston, Ont., with 250 barrels capacity.

Mr. Walter Thompson, Mitchell, Ont., has purchased the Great Western Mills, of Woodstock, Ont.

Kimball Brothers, Bryanston, Ont., have just erected a saw-mill at that place.

Both Penman's Nos. 1 and 2, mills at Paris, Ont., have been working over time for the past few weeks. Larger orders than usual and more of them is the cause. These mills are remarkable for the way in which they keep their operatives steadily employed from one year's end to the other. The comfortable homes and well clad persons of the employees of these mills, give an emphatic answer to the Globe's chestnut query—"Has the N.P. made you rich."—Brantford Courier.

It is reported from Lunenburg, N.S., that parties have bonded the water power property known as Bang's Falls on the Medway river where they propose to erect two or three pulp mills and build an electric railway to Port Medway, N.S., for the purpose of carrying the pulp to a port of shipment. The mayor will give information.

Messrs. Wm. Kennedy & Sons, of Owen Sound, Ont., are building the outfit for the water power plant of the Canada Paper Co.'s mills at Windsor Mills, Que. It consists of three 60-inch and two 40-inch "New American" water wheels, with main driving gear, bridgetrees and shaftings. They are at work on the models now. They have just sent the last of twenty-four 51-inch New American wheels to the Sault Ste. Marie Pulp & Paper Mills, and are reported to find an increasing demand for their electric water governors.

Messrs. Campbell & Campbell will start a furniture factory in Brandon, Man.

R. O. & A. B. Mackay, of Hamilton, Ont., are figuring on a 1,200-ton steel or composite freight steamer, which will cost about \$60,000. It will likely be built in Toronto.

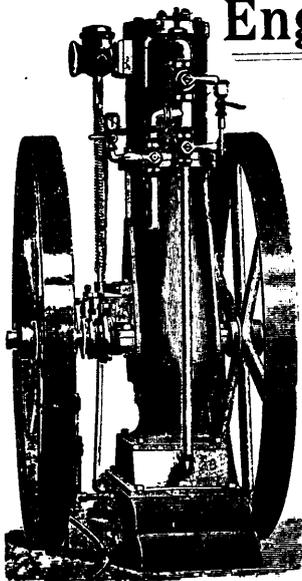
Mr. Woodruff, Sydenham, Ont., will put new machinery in his saw-mill.

The Unique telephones manufactured by John Starr, Son & Co., Halifax, N.S., are coming into very general use throughout the Dominion. They have been adopted by the Engineer's Department of the Imperial Government for connection of their different coast stations, after exhaustive tests of other makes of instruments. Several large contracts have recently been made for complete equipment of lines and exchanges, and the firm report that their staff is taxed to the utmost to fill orders.

The Kerr Engine Company, manufacturers of the Weber patent straightway valves, etc., Walkerville, Ont., write us as follows:—  
Gentlemen: We are pleased to say that we are in correspondence with a large company in Copenhagen, Denmark, in regard to supplying them with our valves. The company state that they had seen our advertisement in THE CANADIAN MANUFACTURER. We are also pleased to state that we are pressed with orders for our Weber valves. Our business has increased very much in the last two months in this particular line.

The Breithaupt Leather Co., Berlin, Ont., write us as follows:—  
Gentlemen: We see in a recent issue of THE CANADIAN MANUFACTURER that you make note re enlargement of our tannery at Listowel. When the additions and improvements there are completed, it may be considered a model for the production of high-class sole leather. We may add that we have also built large additions to our Eagle Tannery in Berlin, including a large new tan yard and a new beam house with all modern appliances. We are also putting in a large 200-horse-power boiler here, as well as adding another boiler of the same dimensions to our tannery at Penetang, where we have also added a number of improvements during the year. A good share of what is made in the tanning business now-a-days must be re-invested in modern appliances if one does not wish to be "left behind in the race."

THE ELECTRICAL GAS OR GASOLINE...  
**Engine**



WRITE FOR PRICES AND TESTIMONIALS.

**J. R. BAIRD**

WOODSTOCK, - - - ONTARIO

**Firstbrook Bros.**

Dovetail and Packing Boxes

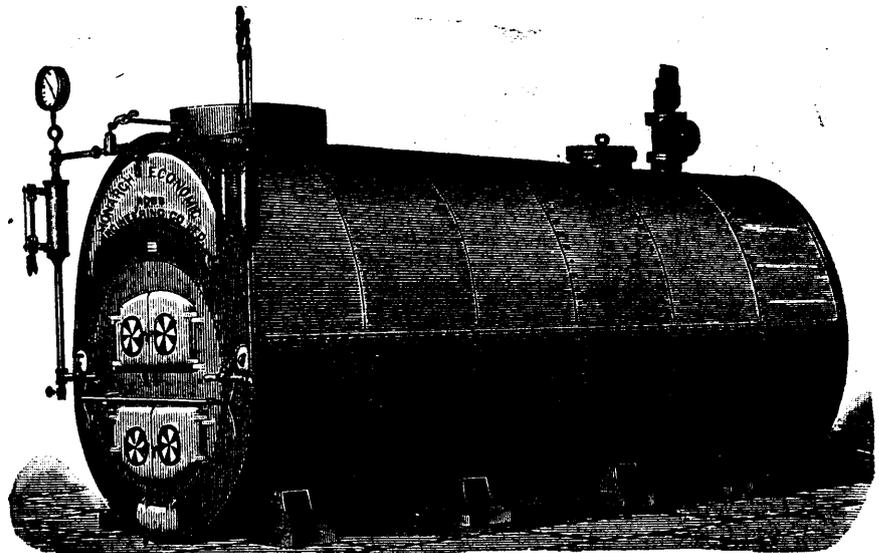
Top-Pins, Side Blocks and Cross Arms. Wood Printers, Etc.

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.

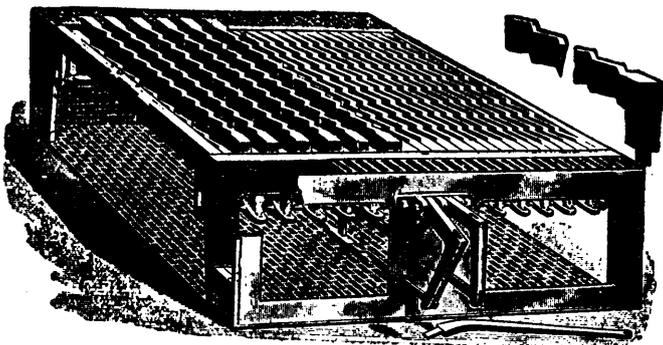
The Petrolia, Ont., Advertiser has just installed an electrical gas engine made by J. R. Baird, of Woodstock, Ont., and it is very happy at the event. A couple of weeks ago it had this to say:—"In this age of restless activity, of scientific invention, of enterprise and progress, The Advertiser cannot afford to lag behind. For years we have been adding improvements of one kind or another to our office and the general public have applauded our efforts and shown us their practical appreciation of our onward march by their liberal support. This week we add another vast improvement to our plant in the form of a complete and up-to-date electrical gas engine. This engine, which is called the "Electrical Gas Engine," was specially manufactured by J. R. Baird of Woodstock, for exhibition at the great Toronto Industrial Fair. It has been installed in our office this week by Mr. Baird himself, and it works like a charm. There is no dirt, very little noise; it can be started instantaneously and stopped as quickly. Its power is two-horse actual, or three-horse nominal, and runs our entire complement of presses with ease. By the introduction of this efficient power we are enabled to tender for large contracts of book, pamphlet, poster or other work against any city office. This is the first engine of this kind ever introduced into Petrolia, and we extend a cordial invitation to any of our citizens to call and see it working on Tuesday evening next from 7:30 to nine o'clock." In its next issue this:—"In our last issue we extended a general invitation to our citizens to call in on Tuesday night from 7:30 to 9 o'clock, to see our new Electrical Gas Engine provide the power for all our presses. Shortly after the time appointed the people began to pour in, and before we shut down for the night nearly four hundred of our citizens had inspected the engine and declared it a little beauty. Those of our visitors who were practical mechanics, and who are competent to judge, say that it is the slickest thing in the way of power that they have ever seen. Mr. J. R. Baird of Woodstock, the maker of the engine, was on hand and courteously gave all the information that was asked concerning it. As to ourselves we have now had ample opportunities of testing its merits, and we are more than satisfied with the result. If Mr. Baird does not sell a score of his engines here we shall be inclined to think that some people are making a mistake. The Electrical Gas Engine is simple in construction, easy of manipulation, and furnishes a steady, perfect power. The capacity of our engine is said to be two-horse power, but we are inclined to the opinion that it is actually nearer three than two."

## DIAMINE ROSE.

Diamine Rose, patented, manufactured by Leopold Cassella & Co., is a new and valuable addition to the series of Diamine colors, being offered by Wm. J. Matheson & Co., New York and Montreal, the following being a description of the properties and method of application of the new dyestuff. Cotton: In pale shades, Diamine Rose yields on cotton exceedingly bright pinks which possess an excellent fastness to light and washing. It may be used for dyeing and padding as well as for printing pale shades, and as an addition to the various discharges for Alizarines produced by means of oxidizing agents. Dye cotton with the addition of one-half per cent. soda, two per cent. soap, and five per cent. glauher's salt, for from one-half to three-quarters of an hour from 140 deg. F. to boiling temperature. Diamine Rose possesses the valuable property to dye level very easily and therefore may be used for shading also in boiling baths. For padding on cotton, dissolve two-and-one-half to three and one-half ozs. Diamine Rose BD in one-half gallon boiling water, and add this solution to twenty-two gallons water in which have been previously added seven to fourteen ozs. phosphate of soda and two to four lbs. white dextrine. For discharging Diamine Rose in pale shades use the ordinary tin crystals discharge. Cotton and silk mixed goods are best dyed with two-and-one-half per cent. phosphate of soda, two per cent. soap and ten per cent. glauher's salt, very uniform dyeings being obtained in pale shades. Wool: Diamine Rose is suitable for dyeing wool as well as for printing tops or woollen piece-goods, yielding shades fast to washing or light. It is dyed with ten per cent. glauher's salt and two per cent. acetic acid. For printing tops the following proportions will be found suitable: one-sixth to one-half oz. color, three gills water, fourteen ozs. gum thickening, five-and-one-half ozs. British gum; boil together, after cooling down add three and one-half ozs. acetic acid 8½ deg. Tw. Steam for three-quarters hours without pressure. For printing woollen piece goods Diamine Rose BD can be recommended for pale as well as for darker shades. Suitable proportions are the following: one-sixth to one ounce color, one pint water, eleven ounces British gum; boil together, after cooling down add three and one-third ozs. acetic acid 8½ deg. Tw. Silk is dyed in a soap bath weakly acidulated with acetic acid. The dyeings are not only fast to washing, but also resist water very well. Messrs. Matheson & Co. supply Diamine Rose, patented, in two strengths: Diamine Rose BD, patented, and Diamine Rose B. Extra, patented.

## THE VOLCANIC PATENT SHAKING GRATE

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



THE TORONTO FERRY COMPANY, LIMITED.

Toronto, July 11th. 1895.

MESSRS. THE GURNEY FOUNDRY CO., LTD., TORONTO.

DEAR SIRS—I have much pleasure in stating that the Volcanic Grate bars you placed on our Str. "Island Queen" have proved most satisfactory. They are the best shaking bars I have yet seen and my engineer is very much pleased with them, and reports a great saving in fuel. The exact saving I will be able to figure out in a few days. They are far superior to the ordinary grate bars we have been using which need renewing almost every season, and as far as I can judge at present your bars promise to last a number of years.

Yours truly,

(Sgd.) W. A. ESSON, Manager.

THE GURNEY FOUNDRY CO., Ltd., TORONTO.

## DOMINION BRIDGE CO.

(LIMITED).

MONTREAL AND LACHINE LOCKS, P.Q.

Steel Bridges for Railways and Highways,

Steel Piers and Trestles, Steel

Water Towers and Tanks, Steel

Roofs, Girders, Beams, Columns,  
for Buildings.

A Large Stock of...

ROLLED STEEL BEAMS, JOISTS, GIRDERS

CHANNELS, ANGLES, TIES, Z BARS

AND PLATES ALWAYS ON HAND

IN LENGTHS TO THIRTY-FIVE FEET

Tables, giving Sizes and Strength of Rolled Beams  
on application.

Post Office Address, - - MONTREAL

J. H. MCGREGOR, Agent, Canada Life Building  
TORONTO, ONT.

The Dominion Lime Co.'s works at Lime Ridge, Que., were destroyed by fire Oct. 28th. Loss about \$50,000.

The Fraser River Packing Co., Vancouver, B.C., are applying for incorporation with a capital stock of \$250,000 to engage in the business of packing salmon, etc.

The Paris Tool Co.'s pipe wrench is claimed to be one of the best yet brought before the notice of the trade.

The Penman Manufacturing Co.'s Mills at Paris, Ont., are running overtime to overtake surplus orders.

An outfit of the most rapid wire nail machinery is contemplated by the Ontario Nut Works, Paris, Ont.

The Canning, Ont., Woollen Mills have been busy on custom work and blankets.

Messrs. Cowan & Co., Galt, Ont., were awarded a diploma at the recent St. John Exhibition at St. John, N.B., for their exhibit of wood working machinery.

Extensive improvements are being made in the Paris, Ont., Wincey Mills.

Newlands, the Buffalo robe manufacturer of Galt, Ont., has given Goldie & McCulloch an order for a new engine and boiler.

R. W. Simpson's saw mill at Coatsworth Stn., Ont., was destroyed by fire Oct. 29th.

G. O. Gale & Sons will build a foundry at Waterville, Que.

A company is being formed to establish a carriage factory in Truro, N.S. The mayor will give information.

Messrs. Geo. Dutch & Sons saw mill at Black Point, Restigouche, N.B., was recently destroyed by fire. They will rebuild immediately.

The Dickinson's Landing Cheese Manufacturing Co.'s factory at Cornwall, Ont., was destroyed by fire Oct. 28th. Loss about \$2,000.

The Imperial Brewing Co., Kamloops, B.C., are applying for incorporation with a capital stock of \$50,000 to acquire the plant and business of the Imperial Brewing Co., of that place, and to carry on the business of brewers, malsters, etc.

Mr. Barber will put new machinery in his saw-mill at Burford, Ont.

Mr. D. Chapman, of Kingarf, Ont., will erect a saw-mill near that place.

J. Lemon's pottery works at Owen Sound, Ont., were damaged by fire Nov. 4th.

An addition 100 x 40 feet is being built to the erecting shop at the Amherst Car Works, Amherst, N.S.

Mr. Mitton, Ridgetown, Ont., will erect a saw-mill at Highgate, Ont.

Fraser & Donald, Pilot Mound, Man., are erecting a steam power elevator, with a 30,000-bushel capacity, at that place.

J. A. Smith will build an elevator at Glenboro', Man.

Pascal Amesse's iron foundry at Montreal, Que., was damaged by fire Nov. 5th to the extent of several thousand dollars.

R. Dowsley, Frankville, Ont., will start a paper bag factory at that place.

Ahearn & Soper, of Ottawa, Ont., are putting in an electric lighting plant at Eganville, Ont.

Messrs. Davis & Crothers, Upper Gagetown, N.B., will erect a saw-mill at that place.

Messrs. Harris & Co., Rockwood, Ont., will build an addition to their woollen mills.

## Kay Electric Manufacturing Co.

255 James St. N., Hamilton, Ont.

Makers of.....

**ELECTRIC MOTORS**

Transformers

**DYNAMOS**

**PLATING**

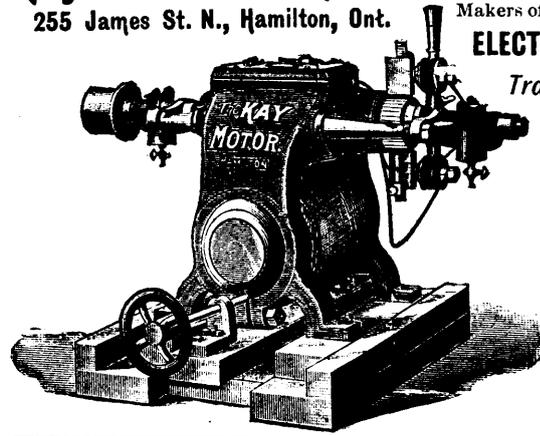
**MACHINES**

ETC.



Please let us know your requirements.

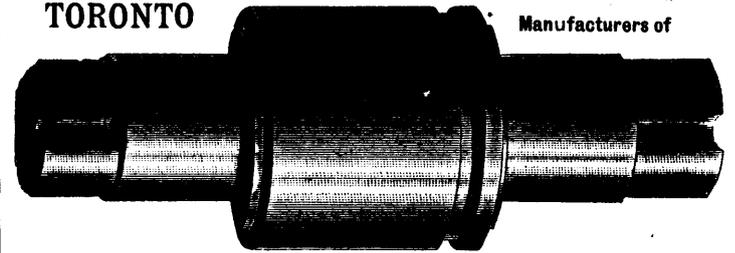
Write for latest prices and testimonials.



## WM. & J. G. GREEY

TORONTO

Manufacturers of



### Superior Chilled Rolls

FOR ALL PURPOSES.

Perfect Surface, Deep Chill, Hard, Tough, Durable,  
Guaranteed Free from Flaw.

Have the Largest and Most Complete Plant for Grinding and  
Corrugating Rolls in Canada.

ALSO  
SPECIAL  
AGENTS  
FOR

EWART  
LINK  
CHAIN  
BELTING



Wm. & J. G. Greey

Carry full line of the

**LINK CHAIN  
BELTING . .**

And Attachments

also manufacture any  
size of

**SPROCKETS**

FOR ANY CHAIN.

JORDAN CHAMBERS 17 JORDAN ST.

**Kramer,**  
DESIGNER &  
ENGRAVER  
ON WOOD

TORONTO ONT

# LAURIE ENGINE CO.,

ST. CATHERINE STREET EAST, MONTREAL  
ENGINEERS AND CONTRACTORS

COMPLETE MOTIVE PLANTS, ETC.

## IMPROVED Corliss Engines

High Pressure, Condensing and Compound  
FEED-WATER HEATERS and PURIFIERS

Heavy Fly Wheels a Specialty.

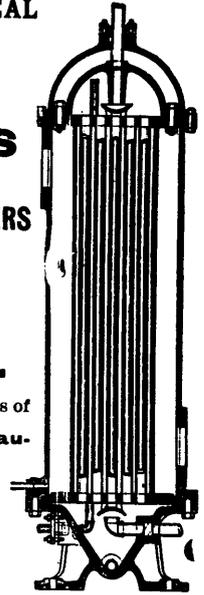
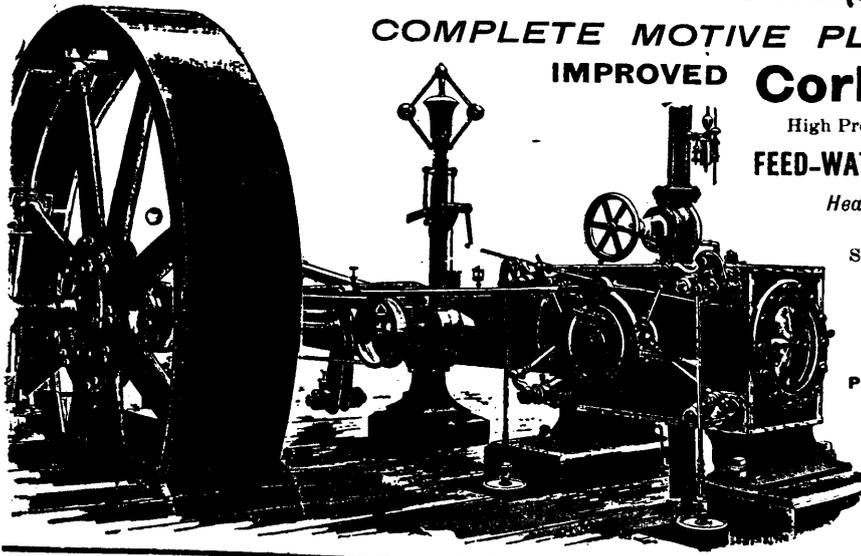
Sole Agents in Prov. of Quebec for

### NORTHEY CO. Ltd.

Manufacturers of all kinds of  
Pumps, Condensers and Hydraulic Machinery

Sole Agents in Canada for the

### HOLLY GRAVITY RETURN SYSTEM



## Wm. & J.G. Greay

TORONTO,  
ONT.

Manufacture  
THE VICTOR

### Wheat Heater

The benefits  
secured are

Whiter  
Flour

Uniform  
Grades

Cleaner  
Offals

Broader  
Bran

# Steam Traps

Pipe Machines

Buffing and Polishing Lathes

Strapping Machines

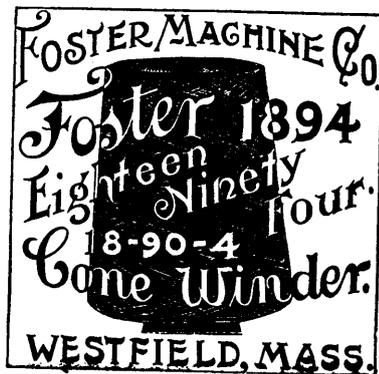
Shafting Hangers

## G. T. Pendrith

MANUFACTURER

73 to 81 Adelaide Street West

TORONTO

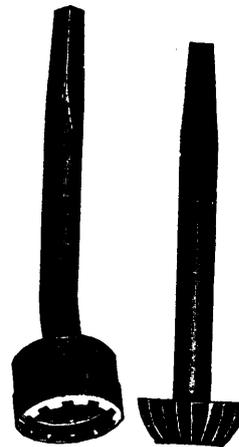


BALL CHECK VALVES.  
BALL GLOBE VALVES.  
BLOW-OFF VALVES FOR  
BOILERS A SPECIALTY  
OIL AND SALT WELL SUPPLIES.

## T. Draper

Manufacturer of

### REFACTERS FOR GLOBE VALVES



Valve  
Refacer.

Seat  
Refacer.

Jenkins'  
Valves  
and  
Water  
Taps

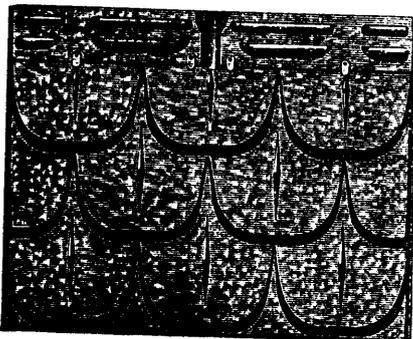
### Perfectly True Brass Balls

For all purposes—Hollow or Solid.

PETROLEA, ONT.

### METAL ROOFING

Those contemplating building the coming season would do well to send for our catalogue. Cheap as a wooden shingle. Will last a life time.



Guaranteed to be Water, Wind, Storm, Fire and Lightning Proof.

### THE PEDLAR METAL ROOFING CO.

Office and Works, - **Oshawa, Ontario**  
In answering please mention this paper.

### Welland Vale Manufacturing Co.

LOCK No. 2, ST. CATHARINES, ONT.  
Manufacturers of.....

AXES, SCYTHES, FORKS, HOES  
RAKES and EDGED TOOLS

The old Dumfries Mills in Galt, Ont., are now being run by one of Goldie & McCulloch's wheellock engine. Four Scotts are now the proprietors.

A company to manufacture hammocks in Paris, Ont., is being formed. Already they have got up a beautiful display of samples and are pushing for trade.

Messrs. Girard & Godin, Three Rivers, Quebec, have recently put in a fifty horse power Corliss engine, supplied to them by Cowan & Co., Ont.

Mr. C. J. Robinson, Cambridge, N.B., has just purchased from Cowan & Co., Galt, Ont., one of their famous No. 6 planers and matchers.

Messrs. Bryan & Murphy, Blenheim, Ont., have just put one of Cowan & Co.'s revolving bed planers in their hub and bending factory.

T. Sirois, Sayabec, Quebec, has placed a forty horse power slide valve engine, fifty horse power boiler and a saw mill; and Messrs. Breubacher Bros., Breslau, Ont., have placed an engine, boiler and saw mill, manufactured for them by Cowan & Co., Galt, Ont.

Goderich, Ont., is feeling the impulse of a better prospect before it on account of the advent of Henderson's Bicycle Works, the foundry and machine shops there so long idle have been purchased and work is now going on.

The Southampton Manufacturing Company, Southampton, Ont., have recently added to their plant a eighty horse power Harris-Corliss engine which was supplied to them by Cowan & Co., of Galt, Ont.

Shipments of oatmeal are being constantly made to Scotland and Ireland by Walter Thomson, of Mitchell. Three carloads went to Belfast last week.

C. H. Haun, Ridgeway, Ont., has lately purchased from Cowan & Co., Galt, Ont., a 100 horse power Harris-Corliss engine for driving his electric light plant and for factory purposes.

The Patterson Dry Mineral Magnetic Separator and Gold Extraction Company of Ontario, Toronto, has been incorporated with a capital stock of \$125,000 to carry on the business of mining, etc.

The Paris, Ont., Electro-Plating Co., are putting a new and serviceable can opener on the market.

Mr. Geo. H. Evans, agent of the Dodge Wood Split Pulley Co. at St. John, N.B., is in receipt of a letter from Mr. S. Patterson, Quaco West, N.B., in which he says:—I have had one of the Dodge Wood Split Pulley Co.'s split friction clutch pulleys in use for the last month. It transmits fifty horse-power in a stationary rotary saw mill, and never slips or shows the least sign of weakness. It gives me perfect satisfaction in every respect.

The New York, Lake Erie and Western Railroad have just purchased two large air compressors to perform duty in their shops. The compressed air is to be employed to operate a large number of machines, and for a variety of purposes such as rivetting, chipping castings, punching, air lifts, air jacks, and various pneumatic tools. The compressed air plant was decided upon after carefully considering the advantages to be gained by its introduction. The Ingersoll Rock Drill Company, Montreal, manufacture these compressors.

Messrs. Ahearn & Soper, contracting electrical engineers, Ottawa, inform us that they have lately closed contracts for a 250 light plant for the Edson Fitch Mill, Etchemin, Quebec; a 1,000 light alternator for Coaticook, Quebec; and a 400 light machine for the Bell Telephone Co., Montreal. At Alexandria, Ont., they are installing a 1,000 light municipal plant with forty-five street lamps, putting in the plant complete, including Robb-Armstrong engine. At Oshawa they are just installing a 275 horse power generator to be driven by two Robb-Armstrong engines, and they are also installing a 100 light plant for the Prescott Elevator Co., of Prescott, Ont.

The well known bicycle manufacturing concern of H. A. Lozier & Co., of Toledo, Ohio, who are now constructing a branch of their works at Toronto Junction, near this city, are having their outfit of machinery made by Messrs. John Bertram & Sons, Canada Tool Works, Dundas, Ont. Messrs. Bertram advise us that they have already shipped to Messrs. Lozier & Co. seven car loads of tools, including lathes, planers, shapers, drills and several kinds of drilling machines, and another large consignment is to go forward this week to complete the contract. The Lozier bicycle factory, it is expected, will be in operation at an early day and will be perhaps the largest of the kind in Canada.

## W. T. BENSON & CO.

31 Common St., - MONTREAL

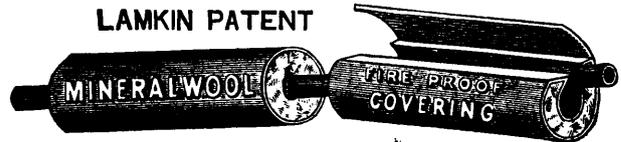
IMPORTERS OF ALL KINDS OF

**Chemicals, Dyestuffs and Extracts**

STOCKS OF DYESTUFFS AND MISCELLANEOUS  
CHEMICALS ALWAYS ON HAND

Crystal Carb, Caustic Soda, Caustic Potash, Oxalic Acid, Coconut and Palm Oil, Silicate of Soda, Etc.

LAMKIN PATENT



BY THE USE OF - - Mineral Wool Covering

For Steam Pipes, Boilers, etc.,

**A Large Saving in Fuel is made.**

**Radiation and Condensation Prevented.**

**Steam Carried Long Distances Without Loss of Power.**

We manufacture our own Mineral Wool and can put you on the ground floor in regard to prices. Beware of imitations and infringements.

**CANADIAN MINERAL WOOL CO.,**

Telephone 2376.

24 SCOTT ST., TORONTO.

## Canadian Rubber Co., MONTREAL, OF

A. ALLAN, President. F. SCHOLLES, Managing Director. J. O. GRAVEL, Secretary-Treasurer.

CAPITAL, \$2,000,000.

J. J. McGILL, General Manager

Manufacturers of Superior Quality

**Rubber Belting**

of following grades

"Extra Star," "Fine Para"

"Extra Heavy Star"

"Forsyth Patent" Seamless

"C.R. Co. Stitched"

All kinds of

**Rubber Hose**

Made with our Patent Process Seamless Tube, including

Engine Hose, Hydrant Hose,

Conducting Hose, Steam Hose,

Suction Hose Galvanized Wire,

Suction Hose Galvanized Smooth Bore

Suction Hose Hard Rubber,

Rubber Valves, Gaskets, Packings, etc.

WESTERN BRANCH:

Cor. Front and Yonge Sts., TORONTO

:-:

**J. H. WALKER, Manager.**

Thos. Little, Beachburg, Ont., has lately put in a planer and matcher manufactured by Cowan & Co., of Galt, Ont.

The Dominion Suspender Co., Niagara Falls, Ont., inform us that they are shipping large quantities of suspenders to Australia and on their home orders they have been very busy all the past season, working full capacity and some times overtime.

Cowan & Co., Galt, Ont., have lately supplied Messrs. A. Cushing & Co., St. John, N.B., with one of their latest improved revolving bed planers with divided roll and divided shoe.

The Röss-McLaren Lumber Co., are contemplating the erection of a large mill near Cape Caution, B.C.

John Galey & Son., St. John, N.B., have purchased from Cowan & Co., Galt, Ont., a heavy planer and matcher.

The Empire Tobacco Co., are putting up an additional building in Granby, Quebec, 70 x 40 feet, two stories high.

Mr. F. B. Ouellet, St. Paschal, Quebec, has just purchased from Cowan & Co., Galt, Ont., a thirty-five horse power slide valve engine.

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 and engineers, and to manufacture machinery, etc.

The Alexandria Water Works Co., Alexandria, Ont., have recently put in a seventy-five horse power boiler purchased from Cowan & Co., Galt, Ont.

It is surprising to see the quantity of pulpers being turned out at the Coleman Foundry in Seaforth, Ont.

An addition will be made to the premises of the Dominion Oatmeal Mills, London, Ont., at a cost of about \$4,000.

Messrs. Cowan & Co., Galt, Ont., have lately supplied Mr. J. McGugan, of St. Thomas, with one of Moffat's patent feed water heaters and purifiers.

The Richmond Creamery Co., Toronto, Ont., are applying for incorporation, with a capital stock of \$50,000 to manufacture butter, etc.

Messrs. Anderson & Co., Woodstock, Ont., have lately added to their furniture factory one of Moffat's patent feed water heaters and purifiers, manufactured by Cowan & Co., Galt, Ont.

The Wanderer Cycle Co., Toronto, are applying for incorporation with a capital stock of \$45,000, to acquire the business heretofore carried on by the Wanderer Cycle Company at Toronto, and to manufacture bicycles, bicycle supplies, etc.

Z. Simard & Co., Rimouski, Quebec, are putting in an engine, boiler and saw mill complete which they bought from Cowan & Co., Galt, Ont.

The five large scales with which the new Northern Elevator Co's. elevator in Winnipeg, Man., is furnished, were supplied by the Gurney Scale Co., Hamilton, Ont.

Mr. Hy. Sealey, Sweaburg, Ont., has purchased one of Cowan & Co's. celebrated saw mills. Mr. C. Blythe, of Orchard, Ont., has also bought from Cowan & Co. a three block saw mill.

The Sydenham Glass Co's. buildings at Wallaceburg, Ont., were damaged by fire October 28th, to the extent of about \$15,000. They will rebuild immediately.

The old and reliable wagon firm of Adams & Sons, Paris, Ont., are getting up a supply of vehicles for next season's trade which will add to their excellent reputation. Peter Adams has always kept his manufactures in the fore-front, both as regards make and quality.

## George White Fraser

C.E., D.T.S., A.Am. Inst. Elec., Eng.

### CONSULTING ELECTRICAL ENGINEER

Electric Railways and Electric Light  
Construction Superintended.

18 IMPERIAL LOAN BUILDING  
TORONTO

(COPY).

Messrs. The John Abell Engine and Machine Works Co., Ltd.,  
Toronto, Ont.

DEAR SIRS—We enclose you cheque in payment in full for machinery supplied us for our new mill recently erected. This makes the fifth mill that I have been interested in erecting and remodelling, and I am pleased to state that it is far ahead of any of them, and I believe ahead of any mill running in Ontario to-day not using similar machinery. Your bolts and air belt purifiers are simply perfect, and the system of separations is all that can be desired, and best of all the power required to run it. We used two wheels of twenty-eight horse power each to run our old mill, and we are driving this mill (same capacity), with the one wheel, and we think your expert, Mr. Patch, as well as yourselves, deserve great credit for getting up such a simple, easy-running, up-to-date mill. Wishing you every success. Yours etc. (Sgd.)

SIMCOE FLOUR MILLS,  
Simcoe, Ont.,  
October 11, 1895

W. B. BROWNE & CO.

## The John Abell Engine and Machine Works Co., Ltd.

TORONTO, ONT., CAN.

# The Canadian Rand Drill Company, SHERBROOKE, QUEBEC, CANADA

Straight-Line  
and  
Duplex  
Air  
Compressors.



The "Sluggo"  
and  
"Little Giant"  
Rock Drills  
For Mining and  
Tunneling.

Duplex 12" x 18" Compound Condensing Steam Air Compressor,  
WITH HALSEY'S PATENT POSITIVE MOTION AIR VALVES.

We furnish a line of Belt and Steam-actuated Compressors for mechanical purposes in connection with manufacturing plants for compressing gases and for use in chemical works, breweries, and other establishments where large bodies of liquids are to be moved.

Branches—16 Victoria Sq., MONTREAL, 129 Hollis St., HALIFAX, N.S., 632 Cordovia St., VICTORIA, B.C.

## CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office, from September 3 to September 13, 1895.

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

Fetherstonhaugh & 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.

- 49,823 Calculating machine, Edgar Troyer, Toronto, and Joshua Snider, Drysdale, Ont.  
49,824 Tobacco pipe, Hugh Dixson, Sydney, assignee of Frederick William Schroeder, Newton, N.S.W.  
49,825 Trolley for electric railways, Cecil Hepburn Burns, Toronto.  
49,826 Process of manufacturing metal letters by electro-deposition, John James Callow, Cleveland, O.  
49,827 Manufacture of magnesium, Michel Nicholas D. Andria, Stratford, Eng.  
49,828 Digestive compound, John Carnrick, New York, N.Y.  
49,829 System of electrical distribution, William Stanley, Pittsfield, Mass.  
49,830 Alternating current electric motor, Charles S. Bradley, Avon, N.Y.  
49,831 Demagnetizing apparatus, Charles Houlgrave, Richmond, Va.  
49,832 Re-active coil, The Canadian General Electric Co., Toronto, assignee of Elihu Thompson, Swampscott, Mass.  
49,833 Method of treating garbage, Archibald Anderson Dickson, Toronto.

- 49,834 Manufacture of fertilizers, Archibald Anderson Dickson, Toronto.  
49,835 Reduction of metallic sands and pulverized ores, Archibald Anderson Dickson, Toronto.  
49,836 Thermo-electric generator, Harry Barringer Cox, Hartford, Conn.  
49,837 Storage battery, The Hess Storage Battery Co., Springfield, O., assignee of Henry Kasper Hess, Syracuse, N.Y.  
49,838 Dynamo electric machine, James F. McElroy, and The Consolidated Car Heating Co., Albany, N.Y.  
49,839 Dynamo, The Consolidated Car Heating Co., assignee of James Finney McElroy, Albany, N.Y.  
49,840 Method of and apparatus for decomposing gases, Henry Tindal, 12 Sarphatikade, Amsterdam, assignee of Nicolaas Vander Sleen and August Schmeller, Alfen-Onshoorn, Kingdom of Holland.  
49,841 Threshing machine, Richard Love Duvall, assignee of Charles Franklin Goddard, Chicago, Ill.  
49,842 Vacuum can, Charles Ferguson, assignee of William H. Ferguson and Joseph Nicholson, London, Ont.  
49,843 Electric conductor, Edward D. Lewis, Savona, N.Y.  
49,844 Method of preventing electrolysis of street sewer pipes, Richard Watkins, Sacramento, Cal.  
49,845 Metal box or packing vessel, Arthur Lockhart Howard, Brownsburg, Que.  
49,846 Vehicle running gear, Louis Francis Robare, Au Sable Forks, N.Y.  
49,847 Brake for road engines, The O. S. Kelly Co., assignee of Edward T. Wright, Springfield, O.  
49,848 Coin adder and rack, Samuel Chittick, New York, N.Y., assignee of Henry Arthur Hayden, Jersey City, N.J.  
49,849 Whiffletree plate, John M. Lane, Ovid, Mich., Adolphus Carrette and Marcus W. Robinson, Jackson, Mich.  
49,850 Vehicle wheel rim, Robert Albert Gibson, Buffalo, N.Y.  
49,851 Wooden rim for bicycle wheels, Robert Albert Gibson, Buffalo, N.Y.

## BRUNNER, MOND &amp; CO., (LTD.), Northwich, Eng.

MANUFACTURERS OF

PURE ALKALI

GUARANTEED 58 DEGREES

The Strongest and Purest Form of SODA ASH in the Market and the Most Economical Form of SODA for the Manufacture of

SOAP, GLASS, PAPER,  
WOOD PULP AND COLORS

Also for Printers and Bleachers



and BLEACHING POWDER

Winn &amp; Holland, Montreal

SOLE AGENTS FOR THE DOMINION OF CANADA.

HEMOLIN

PATENTED



THE Cheapest Black-producing Dye for Wool on the Market. Has all the advantages of Logwood with none of its inconveniences. Can be Dyed in one Dip, or may be employed in Wool Dyeing as a self-color, or in combinations, wherever Logwood is used, by following the same recipes.

This is not a mixture, but a new product for which patents have been granted in U.S.A., Great Britain, Canada, Germany, France and Austria, and use in these countries has increased constantly since its introduction.

MANUFACTURED BY—

WM. J. MATHESON &amp; CO., Limited, New York, U.S.A.

BRANCH HOUSES—BOSTON, PROVIDENCE, PHILADELPHIA, MONTREAL.

- 49,852 Steam engine, Edward Gschwind and Joseph K. Boland, New Orleans, La.
- 49,853 Saw filling machine, John C. Ballew, Evansville, Ind., and Frontier Iron Works, Detroit, Mich.
- 49,854 Jointed horse-shoe, James B. Hague, Horseheads, N.Y.
- 49,855 Windmill, Charles H. Paget, Oxford, Ind.
- 49,856 Four-wheeled vehicle, Andrew Ross, Hamilton, Ont.
- 49,857 Electric arc lamp, George Gale Stout, Parkerburg, West Va.
- 49,858 Fountain pen, The Horton Pen Co., New Haven, Conn., assignee of Edward G. Peck and Frederick O'Meara, Seymour, Conn.
- 49,859 Hernia truss, Amelia Cluthe, assignee of Charles Cluthe, Toronto.
- 49,860 Bicycle and vehicle combined, Jean Trancle Armand, Toronto.
- 49,861 Method of and apparatus for cutting nail blanks, George Albion Coombs, Gothenburg, Sweden.
- 49,862 Boiler Furnaces, Edwin Powell, Pittsburg, Pa.
- 49,863 Farm truck or waggon sled, Justus L. H. Baker, Jamestown, O.
- 49,864 Coin-operated dispensing machine, George Franklin Gale, Winthrop, Mass., and Arnold Boone Holmes, Newton, Mass.
- 49,865 Reflector for lamps, Ernest Tillman and Charles K. Lexow, New York, N.Y.
- 49,866 Curd cutter, James B. Harris, Antwerp, N.Y., assignee of Dwight A. Goodrich, South Champion, N.Y.
- 49,867 Machine for stuffing mattresses, Edwin Napier Stephenson, Waco, Tex., and David Hunt, Boston, Mass.
- 49,868 Machine for tufting mattresses, Edwin Napier Stephenson, Waco, Tex.
- 49,869 Means for oiling loose wheels, etc., Meredith Leitch, Covington, Va.
- 49,870 Flash light mechanism for photographic apparatus, Marion Warner Newcomb, Salt Lake, Utah.
- 49,871 Machine for repairing waggon spokes, George H. Fraser, Upper Musquodoboit, N.S.
- 49,872 Flexed splint, William Dickey Kearns, Pittsburg, Pa.
- 49,873 Water gauge, Henry Brockton, St. Louis, Mo.
- 49,874 Torch, John Graham, Boston, Mass.
- 49,875 Stitch separating and indenting machine, John Benjamin Hadaway, Brockton, Mass.
- 49,876 Piano harmonic scale, Julius Ebel, Jamestown, N.Y.
- 49,877 Harvesting machine, Martin Schaffter, Hermandarias, Entre Rios, Argentine Republic.
- 49,878 Dumping wagon, William H. Kauffman and Matthew Spellacy, Columbus, O.
- 49,879 Numbering machine, The Carter-Crume Co., Niagara Falls, N.Y., assignee of John Robert Carter, Boston, Mass.
- 49,880 Numbering machine, The Carter-Crume Co., Niagara Falls, N.Y., assignee of John Robert Carter, Boston, Mass.
- 49,881 Numbering machine, The Carter-Crume Co., Niagara Falls, N.Y., assignee of John Robert Carter, Boston, Mass.
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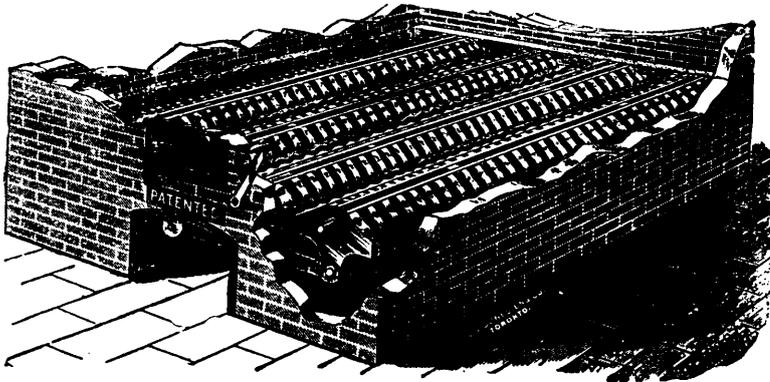
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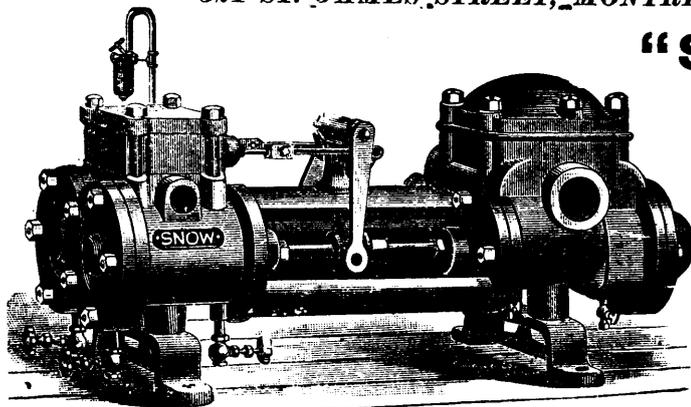
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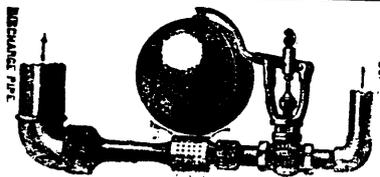
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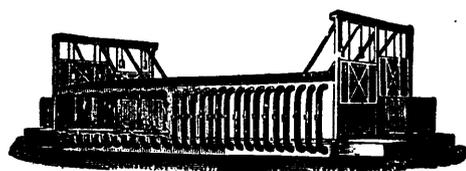
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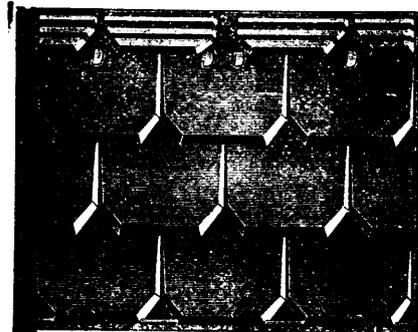
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References:

Menzie, Turner & Company, Toronto.  
Dominion Suspender Co., Niagara Falls, Ont.

- 49,883 Accumulator plate, Georges Rene Blot, Paris, France.
- 49,884 Electrolytical apparatus and electric generator, Dr. Carl Hoepfner, Giessen, Germany.
- 49,885 Electric light, Edgar Ambrose Edwards, Cincinnati, O., and Chas. W. Adams, Chicago.
- 49,886 Rectifier for electric currents, William Burrows Close, assignee of William Joseph Still, Toronto.
- 49,887 Syringe, etc., The Riverside Rubber Co., Belleville, N.J., assignee of Henry Doremus Smith, Newark, N.J.
- 49,888 Process of extracting precious metals from ores, The firm of Siemens & Halske, assignee of Oscar Frolich, Berlin, Germany.
- 49,889 Artificial fuel, Charles Weygang, Romsey, Eng.
- 49,890 Brush for blackboards, George Orth, Brampton, Ont.
- 49,891 Fire alarm box, Thomas Walsh, Montreal.
- 49,892 Electric belt, Walter Joseph James Purbrook and Herbert de Carle Hudson, Wellington, New Zealand.
- 49,893 Balling machine, Geo. James Torrance, Kearney, N.J.
- 49,894 Fire proof floor, Thomas A. Lee, New York.
- 49,895 Churn, George Ayers, Markham, Ont.
- 49,896 Fire arm, Otokar Rozvoda, Prague, Bohemia, Austria.
- 49,897 Bridge, Walter Nobert, Ste. Genevieve de Bas-tican, Que.
- 49,898 Concentrator for ores, Walter John Hammonds, London, Eng., and John Gordon, Rio Janeiro, Brazil, S.A.
- 49,899 Mechanical calculator, Wilhelm Kuttner, Burgk, Saxony, Germany.

- 49,900 Process of treating zinc bearing ores, Edgar Arthur Ashcroft, Hima-laya, Broken Hill Colony, N.W.S.
- 49,901 Heating and ventilating apparatus for railway trains, Jules Dery, Brus-sels, Belgium.
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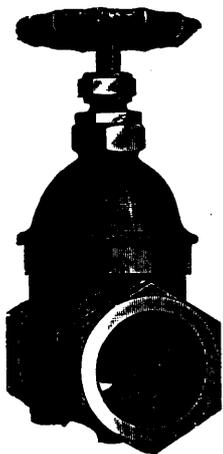
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 49,908 Shield for wounds, etc., Alexander Cole, Dublin, Ireland.  
 49,909 Bark cutter, Jeremiah Daigneau, Salem, Mass.  
 49,910 Clip for books, etc., Eli H. Hillborn, Toronto.  
 49,911 Spring cockeye, William Finter, Pleasant Hill, Mo.  
 49,912 Kiln for drying lumber, La Fayette Moore, Cordele, Ga.  
 49,913 Force pump, Thomas Reid, Hamilton, Ont.  
 49,914 Soft metal tube, William Drosier, London, Eng.  
 49,915 Machine for uniting soles and uppers of boots and shoes, William Carey, Montreal.  
 49,916 Bracket for car doors, Edward A. Hill, James L. Mallory and Edgar A. Hill, Chicago, Ill.  
 49,917 Bracket for car doors, Edward A. Hill, James L. Mallory and Edgar A. Hill, Chicago, Ill.  
 49,918 Pattern for garments, Robert John Smith, Ottawa, Ont.  
 49,919 Wash benches, David Boyd, Washburn, Atkinson, Me.  
 49,920 Furnace, Alfred Metcalf Hewlett, Kewanee, Ill.  
 49,921 Window, Christian Lenz and Johannes Stumpf, Berlin, Prussia.  
 49,922 Water-tube boiler, James McGregor and John Leonard Jackson, Saginaw, Mich.  
 49,923 Device for preventing horses from slipping, Robert Abell, Dery, Eng.  
 49,924 Bicycle, Archibald H. Brintnell, Toronto.  
 49,925 Dental chair, The S. S. White Manufacturing Co., Philadelphia, Pa., assignee of Arthur W. Browne, Prince's Bay, N.Y.  
 49,926 Grain screen, The Closz and Howard Manufacturing Co., assignee of Charles Closz, Webster City, Ia.  
 49,927 Potato digger, Joseph N. Cocker, West Devenport, Tasmania.  
 49,928 Bicycle support, William J. White, Montreal.  
 49,929 Milking machine, Alexander Shiels, Glasgow, Scotland.  
 49,930 Sash fastener, John Lutz and George K. Neher, Albuquerque, New Mexico.  
 49,931 Compound engine, John Wand and William D. Edy, London, Ont.  
 49,932 Document file, Sarah Ann Morden, assignee of Walter Henry Morden, Toronto.  
 49,933 Elevator attachment for grain binders, The Massey-Harris Co., assignee of Lyman M. Jones, William F. Johnston, and William J. Clokey, Toronto.  
 49,934 Dump car or wagon, Nathan Barney, Brooklyn, N.Y.  
 49,935 Observation tower, Morris Ford Smith, Philadelphia, Pa.  
 49,936 Harrow, John C. Freeman, Richmond, Va.  
 49,937 Drawing table, The Laughlin-Hough Drawing Table Co., assignee of Samuel J. Laughlin and James Hough, Guelph, Ont.  
 49,938 Process of and apparatus for the production of zinc and lead by electrolysis of the melted chlorides, Dr. Richard O. Lorenz, Gottingen, Germany.  
 49,939 Trolley wire and support, Hebert H. Ashley, Springfield, Ill.  
 49,940 Portable electric pump, The Thompson-Houston International Electric Co., Portland, Me., assignee of Charles A. Coffin, Boston, Mass., and Albert Wahl, Chicago, Ill., executors of Charles J. Van Depoele, late of Lynn, Mass.  
 49,941 Carbon for electric lamps, Edward G. Acheson, Mongahela, Pa.  
 49,942 Insulating compound and method of manufacturing, The Canadian General Electric Co., Toronto, assignee of Joseph Hoffman, Schenectady, N.Y.  
 49,943 Armature for dynamos, The Canadian General Electric Co., Toronto, assignee of James J. Wood, Fort Wayne, Ind.  
 49,944 Electric cut-out, The Canadian General Electric Co., Toronto, assignee of Elihu Thomson, Swampscott, Mass.

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- 49,947 System of electric distribution, The Canadian General Electric Co., Toronto, assignee of Walter S. Moody, Lynn, Mass.
- 49,948 System of electric distribution, The Canadian General Electric Co., Toronto, assignee of Edwin W. Rice, Jr., Schenectady, N. Y.
- 49,949 Construction of armature cores, The Canadian General Electric Co., Toronto, assignee of Henry G. Reist, Schenectady, N. Y.
- 49,950 Armature for dynamo electric machines, The Canadian General Electric Co., Toronto, assignee of Edwin W. Rice, Schenectady, N. Y.
- 49,951 Rotary fan, Ovide Parent, Montreal.
- 49,952 Electric meter, The Diamond Electric Co., assignee of Gustave A. Scheffer, Peoria, Ill.
- 49,953 Process of Desulphurizing mineral oils, Adolph Sommer, Cambridge, Mass.
- 49,954 Machine for making ice, Josiah P. Perkins, Omer M. Perkins and Henry Seyfried, Indianapolis, Ind.
- 49,955 Multiple switchboard system, The Bell Telephone Company of Canada, Montreal, assignee of Charles E. Scribner, Chicago, Ill.
- 49,956 Method of preparing decorating mixtures, Melvin B. Church, Grand Rapids, Mich.
- 49,957 Carriages provided with heating apparatus for transporting food, Johann Lay. Essen on the Buhr, Prussia.
- 49,958 High power explosive, the Jovite Mnfng Co., assignee of Jonas Emile Blomen, Washington, D.C.
- 49,959 Process of and apparatus for extracting gold and silver from their ores, John J. Croke, New York, N. Y.
- 49,960 Process of and apparatus for extracting silver from ores and mattes, John J. Croke, New York, N. Y.

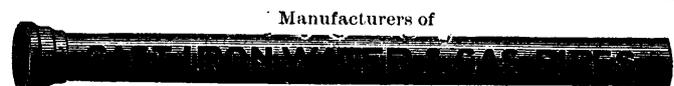
- 49,961 Electric accumulator, Vicomte Gaston de Schrynmakers de Dormal, Brussels, Belgium.
- 49,962 Spoon for administering medicine to horses, etc., John D. Mauseau, New Bedford, Mass.
- 49,963 Pyrometer, Alvan A. Simonds, Dayton, O.
- 49,964 Electric cable way, Richard Lamb, New York, N. Y.
- 49,965 Water closets, David S. Wallace, Denver, Col.
- 49,966 Insulated electric conductors, John Robinson, Germantown, Pa., and William J. Chaniel, Philadelphia, Pa.
- 49,967 Manufacture of self-lubricating jour-bearings, The Mineral Antifriction Mfg. Co., assignee of Alfred M. Crooker and Richard E. Weinholt, Memphis, Tenn.
- 49,968 Threshold marker, Geo. S. Tozier and John T. Dilling, Sprague's Mills, Me.
- 49,969 Match printing and coiling machine, The E. B. Eddy Co., assignee of George H. Millen and Narcisse Derouin, Hull, Que.
- 49,970 Automatic oiler, William J. Ferguson, William Gilpin Harrison Slump and William H. Whitridge, Baltimore, Md.
- 49,971 Car seat, The Pottier and Stymus Co., assignee of William P. Stymus, Jr., and August F. Kreutzberg, New York.
- 49,972 Car seat, The Pottier & Stymus Co., assignee of John S. Johnston, New York, N. Y.

**United States Patents to Canadian Inventors.**

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

- 548,860 Variable drive for machine tools, W. Ames, Toronto.
- 548,983 Washing machine, J. M. Grover, Winnipeg, Man.
- 548,880 Postage stamp attacher and recorder, J. Keith, Ottawa.
- 548,648 Car brake, J. P. Martin, Montreal.
- 549,003 Window, L.A. Murphy and A.H. Milne, Wellington, P.E.I.
- 549,478 Driving gear for bicycles, J. W. Duncan, Montreal.
- 549,360 Footwear, C. L. Higgins, Montreal.
- 549,148 Mustache-adjuster, J.J. McCallum, Belleville, Ont.

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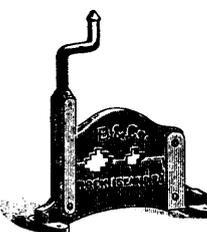
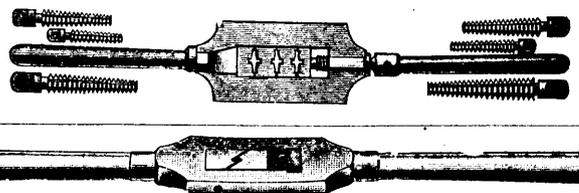
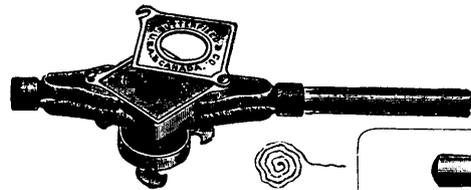
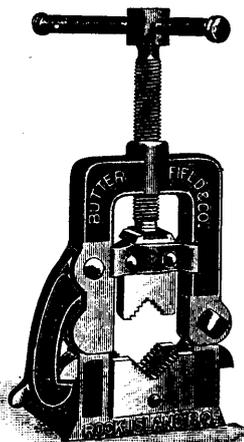


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AS PER FOLLOWING LIST:

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EVERY BAR GUARANTEED STRAIGHT AND TRUE TO SIZE WITHIN  $\frac{1}{100}$  OF AN INCH.

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1 $\frac{1}{4}$	1 $\frac{1}{4}$	4.13	\$0 4 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{4}$	18.91	\$0 04
1 $\frac{3}{8}$	1 $\frac{3}{8}$	5.01	"	3	2 $\frac{1}{2}$	22.59	"
1 $\frac{1}{2}$	1 $\frac{1}{2}$	5.94	"	3 $\frac{1}{2}$	3 $\frac{1}{8}$	26.60	"
1 $\frac{3}{4}$	1 $\frac{3}{4}$	7.46	"	3 $\frac{3}{4}$	3 $\frac{3}{8}$	30.94	"
2	1 $\frac{7}{8}$	9.83	0 04	4	4	42.33	0 05
2 $\frac{1}{4}$	2 $\frac{1}{8}$	12.53	"	4 $\frac{1}{2}$	4 $\frac{1}{2}$	53.57	"
2 $\frac{1}{2}$	2 $\frac{1}{8}$	15.55	"	5	5	66.13	"

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

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

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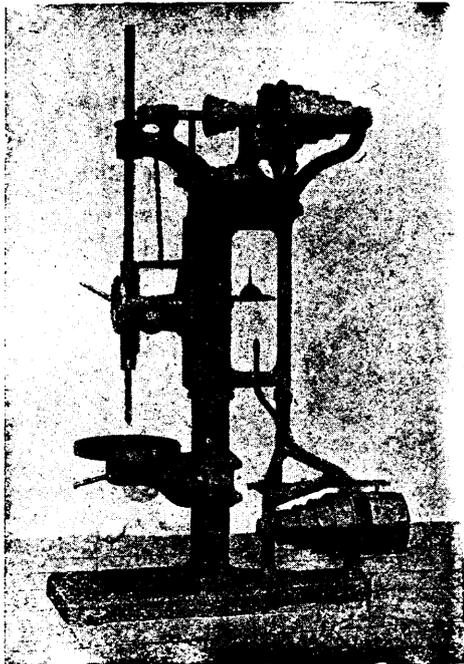
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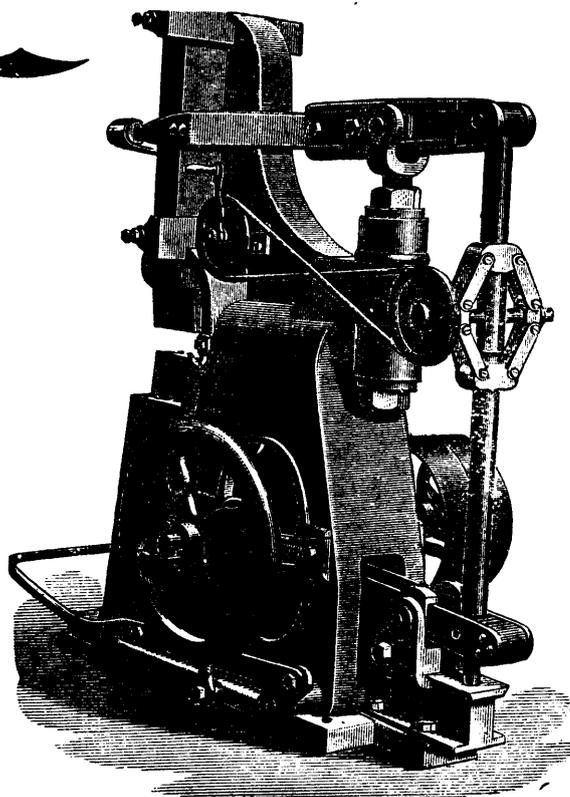
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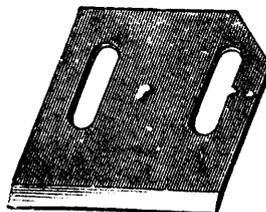
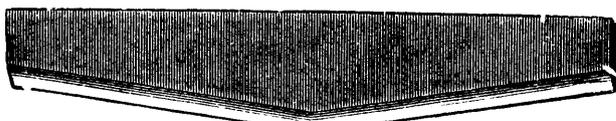


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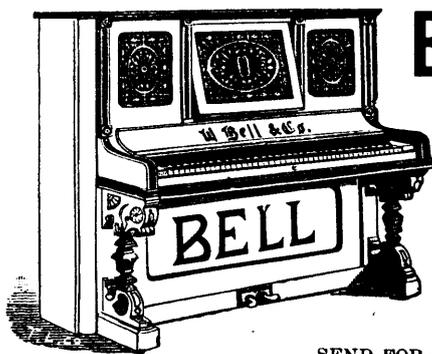
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To secure by all legitimate means the aid of both Public Opinion and Governmental Policy in favor of the development of home industry and the promotion of Canadian manufacturing enterprises.  
 To enable those in all branches of manufacturing enterprises to act in concert, as a united body, whenever action in behalf of any particular industry, or of the whole body, is necessary.  
 To maintain Canada for Canadians.  
 Any person directly interested in any Canadian manufacturing industry is eligible for membership.

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		For loss of both feet.
		For loss of both hands.
<b>\$1,665</b>	{	For loss of one hand and one foot.
		For loss of one foot.
		For loss of one hand.
<b>\$750</b>	{	For loss of one eye.

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<b>\$10,000</b>	{	For death.
		For loss of sight in both eyes.
		For loss of both feet.
		For loss of both hands.
<b>\$3,333</b>	{	For loss of one hand and one foot.
		For loss of one foot.
		For loss of one hand.
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