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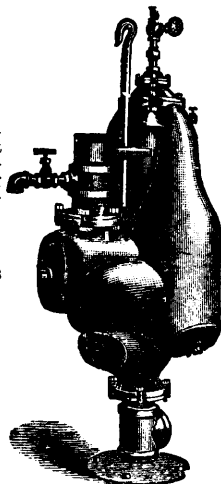
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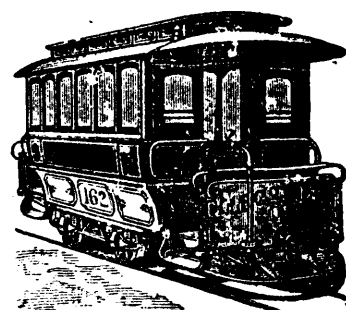
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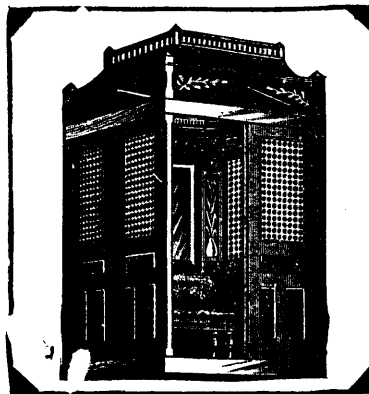
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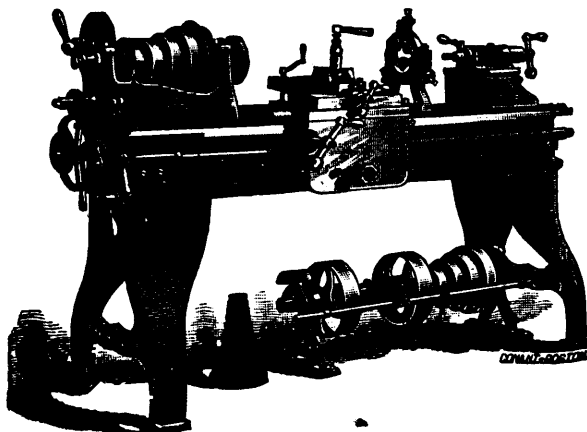
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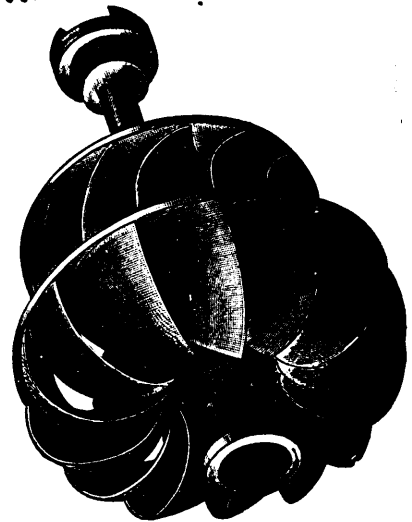
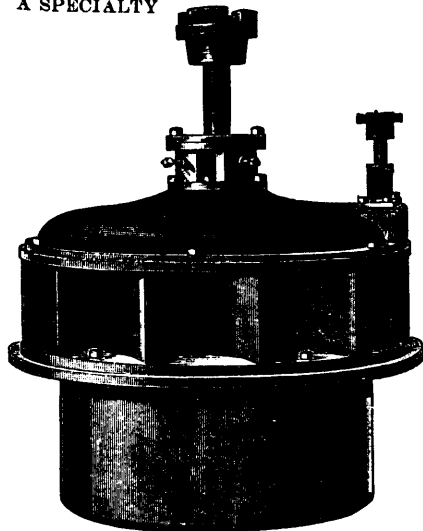
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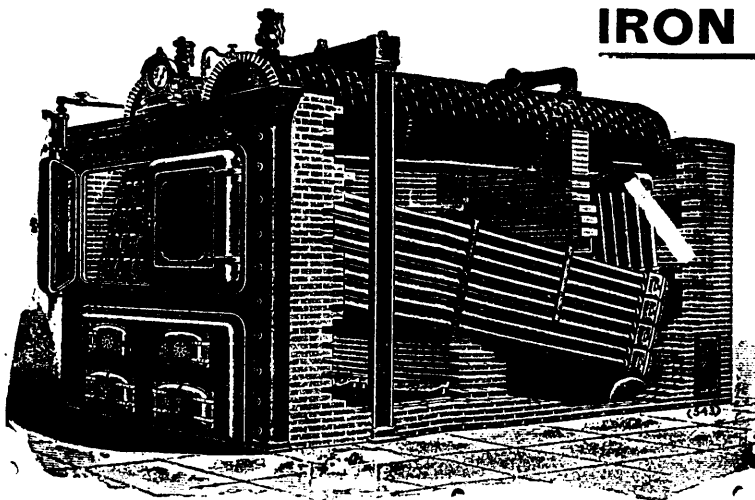
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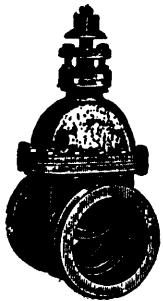
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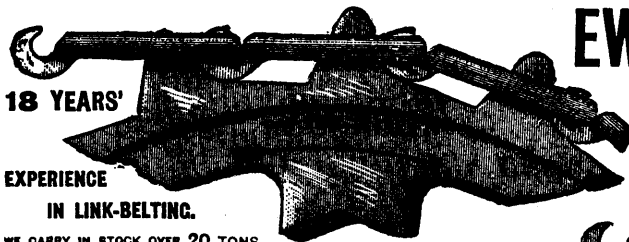
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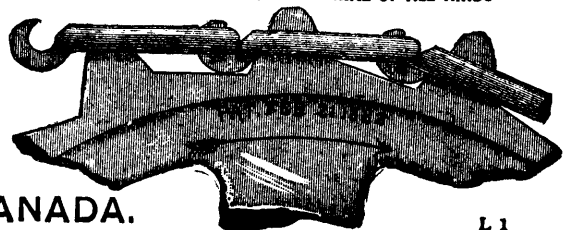
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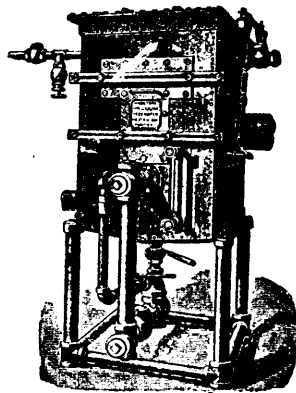
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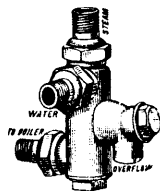


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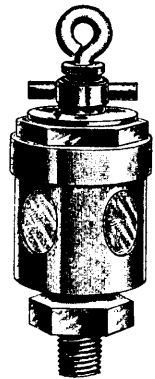
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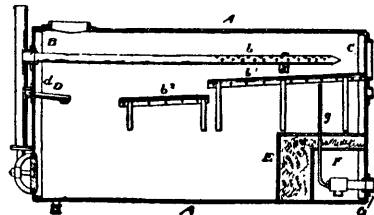
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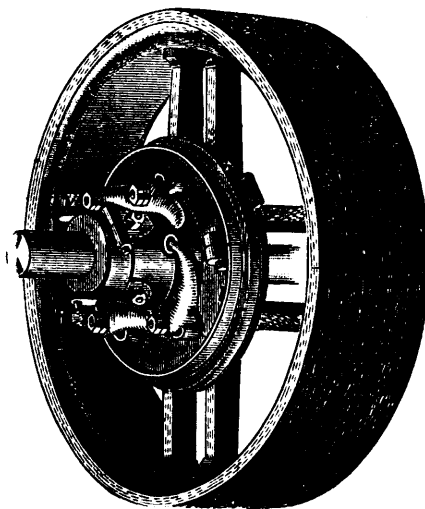
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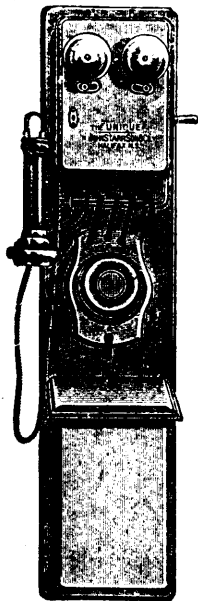
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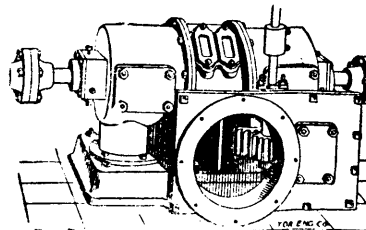
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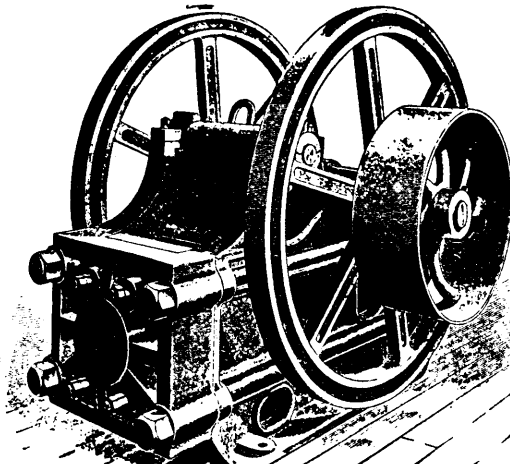
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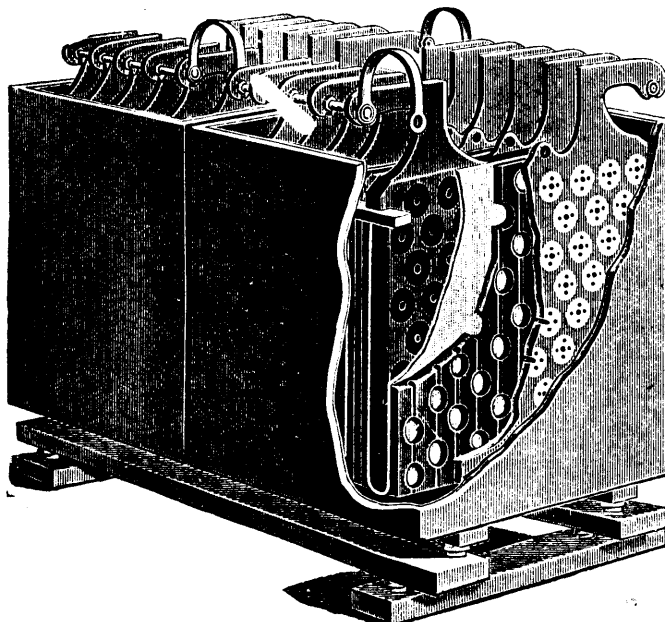
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PIG (IRON) HEADED MR. LAURIER.

What Mr. Laurier don't know, or don't think he knows about the manufacturing industries of Canada he is quite willing to supply from the resources of his fertile imagination.

In his speech at Galt a few days ago he declared that there was no manufacturer in that Sheffield of Canadian industry who would dare say that the workers of iron there were benefitted by the N. P.—that under that system the duty of \$4.00 per ton upon pig iron amounted to not less than 66 per cent.; and he explained that he made that assertion upon a statement that he once heard made in the House of Commons, that pig iron from Alabama could be laid down in Toronto for \$6.00 per ton. "Do you imagine," said he, "that the manufacturers of iron can be benefitted when they have a duty of 66 per cent. to compete against? Do you believe the iron manufacturer has much to be satis-

fied with and to be thankful to the Government for? I would suppose it to be good political economy for the raw material of the manufacturer to be free."

It is a favorite method of Mr. Laurier to attack the tariff in detail, and to allude to each and every manufactured article as being a "raw material," from which standpoint he endeavors to show that the consumers of such raw material would be benefitted if it were not subject to tariff protection. His effort at Galt was to show that pig iron, being the raw material of many of the industries of that town, should be duty free—that those industries could not be prosperous while having to pay a duty of 66 per cent. upon pig iron. It would not be saying much for the intelligence of the manufacturers of Galt if they could not immediately observe the speciousness and untruthfulness of the groundwork of Mr. Laurier's argument, and it is not saying much for the astuteness of that gentleman when he asked them to accept his conclusions, based upon such a flimsy groundwork. There were scores of manufacturers and business men within a stone's throw of where he stood who could have told him that there never was a time when Alabama or any other pig iron could have been laid down in Toronto or anywhere else in Canada at \$6.00 per ton, or for twice that sum. Mr. Laurier in making such an assertion certainly cared less for his character as a man of truth and justice than he did for what he thought a favorable opportunity to discredit the N.P. in the opinion of manufacturers with whom pig iron was a raw material.

It is remarkably strange that such an intelligent man as Mr. Laurier should stand before a Galt audience and use such language as the following, as he did do. He said: "I do not deny that the National Policy has helped the combines in the sugar and cotton trade, but it has injured almost every other industry. I denounce the National Policy, not only in the interest of the farmer, but also of the manufacturers, and I venture to say that with a revenue tariff which will make as far as possible all the raw materials free to the manufacturers, all of them, those in Galt especially, will be in a better position than they are to-day to compete in the markets of the world." Before allowing Mr. Laurier to stand before a Galt audience and talk such ridiculous stuff, why did not his political friends bundle him into a carriage and ride him around the town where he could observe some of the largest, finest and most prosperous manufacturing establishments not only in Canada but upon the continent. The intelligence of the proprietors of these industries, backed by the National Policy, made them what they are, and yet Mr. Laurier has the presumption to tell them that they don't know their business; that they are ignorant of their true interests; that the National Policy has injured their industries, and that in their behalf he denounces the policy as a fraud.

The fish swimming in the sea, the tree growing in the forest, the coal and iron in the unmined bowels of the earth—these and only these are raw materials, and Mr. Laurier's friends should so inform him. When human labor is bestowed in catching fish, in digging coal and iron, and in felling trees, the products of such labor are no longer raw materials but finished products, no matter what they may become in other industries, and this is a fact that should be communicated to Mr. Laurier by his friends.

THE NATIONAL POLICY NOT DISCREDITED.

The Toronto Globe speaks approvingly of the sentiment promulgated by the Carberry, Man., News, which says:—

Good wheat brings from twenty-five to forty-two cents just now. What is that boasted farmer's friend, the National Policy, doing for the farmers now? Last spring, when wheat took an unusually high jump, the Tory press cried from the housetops that the N. P. did it. Now they have crawled under the barn. The N. P. is a discredited fakir.

Which means that both these journals think that the farmers of Canada would be better off under free trade than they are under protection. Under free trade every article produced by farmers of the United States would come into Canada free, and the Canadian market would be wide open for the importation of American wheat, barley, rye, corn, oats, flour, potatoes, horses, sheep, cattle, beef, pork, cheese, butter, hay, apples, eggs, poultry and everything else produced on the farm. But free trade in Canada does not imply free trade in the United States; and we know that even under the Wilson tariff, now in force there, and which will probably never be changed in our favor, each and every of the above enumerated articles, if sent there from Canada would be met with as high or higher duties than now prevail in this country. The Wilson tariff imposes an ad valorem duty of twenty per cent. upon wheat, barley, rye, oats, corn, flour, horses, cattle, beef, pork and apples; fifteen cents per bushel upon potatoes; four cents per pound upon cheese and butter; \$2 per ton upon hay, three cents per dozen upon eggs, and three cents per pound upon poultry. The Globe calls the National Policy a discredited fakir—discredited with Canadian farmers. How would our farmers, particularly those of them near the border, where, if at all, international trading might be expected to be done, like such a one-sided arrangement? Everything that the Yankee farmer had to sell admitted into Canada duty free, while everything that the Canadian farmer might want to sell in the United States confronted with a high duty. But that is just what the Globe, and Mr. Laurier, and the Grit party propose.

Previous to the introduction of the National Policy, says the Petrolea Advertiser, the tariff relations between the two countries were somewhat similar to what is shown on the table above, though not exactly so one-sided, for on a few of the things mentioned, Canada, at that time, had a small duty. Many of our farmers will still remember how disastrously it operated against Canada. Over 100,000 of them petitioned Parliament to be relieved from the terrible effects of the jug-handled policy. In their petition they said, among other things:—"As practical farmers, we cannot but view with regret our markets filled with American produce free of duty, while Canadian produce is heavily taxed when sent to the United States markets;" and they respectfully prayed for "such protection as will secure the home market for the home producer, or, that the same rate of duty be levied on all agricultural products coming into the Dominion from foreign countries that is imposed by said foreign countries upon our produce." But, bad as the one-sided arrangement was for our farmers previous to 1878, it would be still worse now. The Western States have been producing more and more from year to year, as they have been filling up, so that their competition would be much keener now than then, and the Armours and the Swifts, of Chicago, had not the facilities

then that they have now for "flooding" the Canadian market with cheap Texas beef and Missouri rattlesnake pork. The Canadian farmer who remembers his sufferings from '75 to '78, is not likely to vote for a return of the conditions, in an aggravated form, which brought them about.

GROWTH OF CANADIAN INDUSTRIES.

Readers of the Toronto Globe have observed that that journal has given much space, on many occasions, to denounce as unfair and inaccurate the statements that have been given out from time to time by Mr. George Johnson, the Dominion Statistician, regarding the growth of Canadian industries. We all know that Mr. Johnson is a most capable and painstaking officer, whose duty it is to collate and prepare facts; and that it would be impossible for him, under any circumstances, to change them or to pervert their meaning. We also know that the Globe, disconcerted at the idea that the tendency of Mr. Johnson's statements is to strengthen the confidence of the country in the National Policy, loses no opportunity not only to discredit that policy but also the source of the information who so frequently demonstrates its value.

Considering the frequent and unjust attacks of the Globe, Mr. Johnson has prepared a statement in which he alludes to the jumble the Globe persists in making respecting the census figures of the mechanical and manufacturing industries of the country. Mr. Johnson says:—

It will be conceded by the Globe that there are manufactures in Canada, some large and some small. Well, where would the Globe draw the line, between what really are manufacturing and what are merely mechanical establishments?

Will the Globe say that only establishments having an output of \$50,000 and over per annum are real manufacturing establishments? If that is the Globe's idea, then according to the analysis by groups, the particulars of which I gave in my previous communication, the census showed the following results:

Annual output of manufactories having an output of \$50,000 and over in 1891.....	\$260,795,190
Annual output of manufactories having an output of \$50,000 and over in 1881.....	153,767,771
Increase 1891 over 1881.....	\$107,027,419

This is an increase of 69.7 per cent.

If the Globe desires to test the growth of manufactures by this group alone, it will have to admit that there has been a very great development of manufacturing during the ten years. Comparing this one group with the results of all the industrial establishments of the United States, big and little, from \$500 up, Canada has an increase of 69.70 per cent., and the United States of 69.27 per cent. That is not so bad, is it? Canada's increase in her largest manufactories is just a shade higher than the United States' increase in all their manufactories, big and little.

Does the Globe think that group 4, containing industries whose annual output is from \$25,000 to \$50,000, may fairly be considered good-sized manufactories? Then, by adding the increase in this group to the increase in the largest group, you have

Increase in group 5, as already given.....	\$107,027,419
Increase in group 4.....	8,756,372

Increase 1891 over 1881..... \$115,783,791

This is an increase of 61.8 per cent., and indicates very considerable growth in manufacturing during the ten years.

Perhaps the Globe will not be unwilling to include among the factories of the country establishments having an output of from \$12,000 to \$25,000 a year. If it does not object, the results are as follows:

Increase in groups 4 and 5.....	\$115,783,791
Increase in group 3.....	10,900,763

Increase 1891 over 1881..... \$126,684,554

This is an increase of 56.5 per cent. as the result of ten years' effort on the part of the people to develop manufacturing in Canada.

Does the Globe prefer that we should test our growth by including all manufacturing and mechanical industries having an output of \$500 a year and over? This is the United States standard. Let us try it. We will exclude those "rascally stuffed" industries (according to the Globe) having an output of under \$500, and come right down to the United States standard. The result is as under:

Increase in groups 3, 4 and 5.....	\$126,684,554
Increase in all other groups, excluding industries having under \$500 output.....	37,711,535

Increase..... \$164,396,089

This is an increase of 53.6 per cent.; not by any means a bad sort of increase. Now I want your readers to note that if we take only the factories having an output of \$50,000 and over, we have an increase of 69.7 per cent. If we add the next highest class, we have an increase of 61.8 per cent.; not quite so high as in the case of the \$50,000 group. If we add the third group, we have an increase of 56.5 per cent.—not so high as with groups 5 and 4 together. If we add the lowest group, we have an increase of 53.6 per cent.; again not quite so high an increase as with groups 5, 4 and 3 together. If we take the groups just as they stand in the census, the increase is the lowest of all, viz., 53.3 per cent.

What I want to ask is: why we should have been at the pains to take in all the very little industries which reduce the percentage of growth, if our object had been to show more development than there really had been, which is the Globe's contention? The dishonest way would have been to leave out the very small industries. That is the way the Globe advocates.

With the analysis of our industries by groups according to output, everyone can please himself. If he thinks small industries having an output of only \$200 should not be included, he can set them aside and take the others. If he thinks the line should be drawn at an annual output of \$500, he can exclude all under that amount and judge of the development of our mechanical and manufacturing industries by the growth of those industries with an output of over \$500.

If he wants to obtain an idea of the development of the large factories of the country, he can take industries with an output of over \$50,000 a year, and test the growth by these.

What he will find is that the largest percentage of increase is in the largest factories.

A BIG MISTAKE.

According to the reports of the newspapers, there was a grand ovation paid to Mr. Laurier and his friends at Galt last week. In the course of his address at that meeting, he stated, as reported in the Globe, that there was not an industry in the country that had been benefited by the N.P. He said: "You call yourselves the Manchester of Canada because you have woolen mills, and you are also the Sheffield of Canada because you have large iron industries." He then explained that there is a tax (meaning a duty), upon the raw material of the iron manufacturer, represented by \$4.00 a ton on pig iron. He declared that that raw material ought to be free, and that the National Policy, instead of benefiting the manufacturers, injured the honest manufacturer. It has helped the monopolists and the combines, but it has injured almost every other industry. In the interest of the Canadian manufacturer he denounced the N.P. He stated that with a revenue tariff which would make all raw materials free, the manufacturers of Canada, and of Galt especially, would be in a better position than they are to-day. We quite agree with Mr. Laurier that Galt is to Canada what both Manchester and Sheffield are to England; and it is to be supposed that the men who make Galt the counterpart of both these places, to wit, the manufacturers, are men of intelligence, and that it is not necessary for a professional politician to teach them their business. In other words, if Mr. Laurier is not in accord with the political sentiments of the manufacturers of Galt, it is a piece of impertinence in him to tell them that they are dishonest because they do not think as he does. Galt has always been the home of the National Policy, and it would be an exceedingly difficult matter for him to put his hand upon any manufacturer in that enterprising town who is not a supporter of it. In looking over the list of names of those mentioned by the Globe as being present at the demonstration to Mr. Laurier, we fail to find the name of any one manufacturer of that town, but we find the names of professional politicians, lawyers and scheming men who are willing to be benefited by the advantages that have accrued to that place, because of the many manufacturing industries existing there. Does Mr. Laurier know what is better for those men than they themselves know? Do they admit the position that he takes, that the National Policy, instead of benefiting, has injured them? Are they to be included in his category of those who are monopolists and combinesters? Do they agree with him in his statement that in the interests of honest Canadian manufacturers, he denounces the N.P.? Do they agree with him in the statement that the manufacturers of Canada, and of Galt, especially, will be in a better position than they are to-day if they accept his theories regarding the tariff? It strikes us that Mr. Laurier made a big mistake in his Galt speech.

THE FRENCH TREATY.

According to an Order-in-Council, dated October 10, 1895, the recently negotiated treaty between France and Canada was put in effect on October 14, 1895. Up to that date the exports of Canada to France have paid the maximum duty. Hereafter some twenty-one articles will be admitted into the French republic at the minimum duty. The following table shows the difference between the maximum and minimum

duty on the articles in respect of which Canada enjoys an advantage :

Articles.	Maximum tariff.	Minimum tariff.
Canned meats, per kilo.....	20 francs.	15 francs.
Condensed milk, pure	10 "	5 "
Fresh water eels	10 "	5 "
Fish preserved in their natural form	30 "	25 "
Lobsters and cray fish preserved in their natural form.....	30 "	25 "
Apples and pears, fresh	3 "	2 "
Apples and pears, dried and fresh	15 "	10 "
Fruits preserved, others	10 "	8 "
Building timber in rough or sawn.	1 to 2½ "	65c. — 1½ "
Wood pavement	5 "	3½ "
Staves	1½ "	75 c.
Wood pulp (cellulose), mechanical.	75 c.	50 c.
Wood pulp, chemical.....	2½ francs.	2 francs.
Extract of chestnut and other tan- ning extracts	5 "	3 "
Common paper, machine made...	13 "	10 "
Prepared skins, others, whole....	50 "	25 "
Boots and shoes.....	1 to 2½ "	¾ — 2 "
Furniture of common wood	6 "	5 "
Furniture, other than chairs of solid wood, common	11 "	9 "
Other chairs	30 "	20 "
Wooden sea-going ships	5 "	2 "

These articles must be of Canadian origin and to be imported direct from Canada.

Under date of October 14th, collectors of customs were notified that in all cases where a reduction of duties is claimed under the French treaty, satisfactory proof must be given at the time as to the origin of the goods. In connection with this matter it appears that since the ad valorem duty has been taken off certain wines, the packages become dutiable under the Canadian customs law at 20 per cent. Section 21 of the Customs Act enacts that where there is an ad valorem duty which includes the value of the packages, the duty on the packages shall not apply. But where there is a specific duty, which is based merely on the contents, a tax of 20 per cent. is collectible upon the packages.

The following is article I of the treaty :

Wines, sparkling and non-sparkling, common soaps, savons de Marseille (Castile soaps), and nuts, almonds, prunes and plums of French origin entering Canada shall enjoy the following advantages :—

1. Non-sparkling wines gauging 15 degrees by the centesimal alcoholmeter or less, or according to the Canadian system of testing, containing 26 per cent. or less of alcohol, and all sparkling wines, shall be exempted from the surtaxe or ad valorem duty of 30 per cent.

2. The present duty charged on common soaps, savons de Marseille (Castile soaps) shall be reduced by one half.

3. The present duty charged on nuts, almonds, prunes and plums shall be reduced by one-third.

CANADA-NEW ZEALAND TRADE.

It will be remembered that during the past summer Hon. J. G. Ward, Treasurer and Postmaster-General of New Zealand, visited Canada, and on behalf of his Government, signed jointly with Sir Mackenzie Bowell, the Dominion Premier, and Mr. Foster, the Finance Minister, a memorandum respecting improved commercial relations and reciprocal tariff regulations, as agreed upon in conference, held informally in Ottawa, in June, 1895, subject, of course, to approval

of the Governments of Canada and New Zealand respectively. It runs thus :—

The following named articles, when the produce or manufacture of New Zealand, and imported direct therefrom into Canada, and when the produce or manufacture of Canada and imported direct therefrom into New Zealand, to be admitted in both cases free of customs duties, viz.:

Animals (live) excepting hogs, frozen or fresh meats, bacon and hams, fish, hides, milk (condensed or preserved), wool and manufactures composed wholly or in part thereof, viz., blankets, flannels, tweeds and rugs; flax (phormium), barley and oats, wheat and wheat flour, seeds, coal, kerosene oil (petroleum), safes, organs and pianos, tallow, lumber and timber, planks, boards and dimension stuffs, rough or manufactured, including doors, sashes and blinds; binder twine.

The following articles, when imported under like conditions and in like manner, to receive in both countries preferential tariff treatment, as follows, viz.:

Agricultural implements, including also axes, hatchets, scythes, forks, rakes, hoes, shovels and spades, if made dutiable under New Zealand general tariff, to be free; twines of all kinds, ropes and cordage, a rate equal to two and one-half per cent. ad valorem less than the general tariff rates current at date of importation; leather, a rate equal to ten per cent. off the rate current at date of importation; boots and shoes, harness and saddlery, at seventeen and one-half per cent. ad valorem, or in case the general tariff rate in both countries be twenty-five per cent., the preferential rate to be twenty per cent.; furniture at twenty per cent. ad valorem.

A DIVIDED TRINITY.

Mr. Laurier as a political god is an unsuccessful and divided trinity.

In 1876 Mr. Laurier was a protectionist. According to Hansard, he stated in the House of Commons as follows:—"What my honorable friend has said as to my protection proclivities is perfectly true. I do not deny that I have been a protectionist, which I am still. It is asserted by many and assumed by others that free trade is a Liberal principle, and protection a Conservative principle. I beg to dissent from this doctrine. If I were in Great Britain, I would avow free trade; but I am a Canadian, and I think we require protection."

In 1889 Mr. Laurier was a commercial unionist. In September, 1889, he made a speech in Toronto, in which, according to the Globe, he said: "The policy which we advocate, which we still continue to advocate, is the removal of all commercial barriers between this country and the great kindred nation to the south. The Liberal party, as long as I have anything to do with it, will remain true to the cause until the cause is successful. I do not expect to win in a day, but I am prepared to remain in the cool shades of opposition until this cause has triumphed."

In 1895 Mr. Laurier was a free trader. In January of this year, in a speech delivered in Montreal, he said: "The Liberal party believe in free trade on broad lines, such as exists in Great Britain; and upon that platform, exemplified as I have told you, the Liberal party will fight its next battle."

Mr. Laurier's political beliefs form a most wonderfully divided trinity.

TROPICAL AND ARCTIC DAINTIES.

Mr. Adam Brown, who was Canada's Commissioner to the Jamaica Exhibition a few years ago, and who has done much to build up trade between that British island and Canada, has, in the illustrated lectures he has so frequently given regarding that island, made Canadians who have not already been there tolerably familiar with it. Not so, however, regarding Labrador, a vast British possession adjoining Canada, which is almost as unknown as the interior of Africa. In the October number of *Outing*, however, are most interesting articles about these two countries. One of these, speaking of the products of Jamaica, says:—

It is a matter of wonder how richness of soil and moisture can be sufficient to warrant such a profusion of vegetable life so crowded together as is this. But this is the region where one hundred and thirty inches of rainfall is the annual supply, and if the rich, black loam has any limit, neither planter nor even deepest tree-root seem to have found it out. Tamarinds, Jack-fruit, bread-fruit, mangoes of a score of qualities and flavorings, mighty cocoanuts, nutmegs, "pimento" or allspice, oranges, lemons, limes and shaddocks of the "citrus" tribe, pineapples, guavas, jimblins, cacao or chocolate-berry, genips, pindars, yams of several sorts, cassava or mandioc, sugar cane, bananas and plantains, coffee, arrowroot, ginger—the well-known "Jamaica Ginger" of our boyhood days—peppers of many kinds; these and many other cultivations, useful there and valuable for export, may all be seen along this seven miles. For hereabouts is undoubtedly, in the truest sense, the garden spot of the island, though it is still much behind some other parts in general thrift and improvement.

The other article, speaking of Labrador, says:—

In spite of latitude and Arctic current, Labrador is the home of much that is delicious in the berry world. Even the outlying islands furnish the curlew-berry and bake-apple in profusion; and upon the mainland, in the proper month, September, a veritable feast awaits one. Three varieties of blueberries, huckleberries, wild red currants having a pungent, aromatic flavor, unequalled by the cultivated varieties; marshberries, raspberries, tiny white capillaire tea-berries, with a flavor like some rare perfume and having just a faint suggestion of wintergreen: squash-berries, pear-berries and curlew-berries—the latter not so grateful as the others, but a prime favorite with the Esquimaux, who prefer it to almost any other; and lastly, the typical Labrador fruit, which, excepting a few scattering plants in Canada and Newfoundland, is found, I believe, nowhere outside of the Peninsula—the gorgeous bake-apple.

These cover the entire coast from the Saint Lawrence to Ungava. Their beautiful, geranium-like leaves struggle with the reindeer moss upon the islands, carpet alike the low valleys and the highest hill-tops, and even peep from banks of everlasting snow. Only one berry grows upon each plant, but this one makes a most delicious mouthful. It is the size and form of a large dew-berry, but the color is a bright crimson when half ripe and a golden yellow at maturity. Its taste is sweetly acid, it is exceedingly juicy, and so delicate that it might be thought impossible to preserve it. Yet the natives do preserve it, with all its freshness and original flavor, throughout the entire winter, merely by covering it with fresh water and heading it up tightly in casks or barrels.

EDITORIAL NOTES.

In an editorial in the October 18th issue of this journal it was stated that Mr. O. A. Howland, M.P.P., in an article in the *Canadian Magazine* reviewing the life of Sir John Thompson, written by Mr. J. C. Hopkins, had ventured the assertion that only lawyers could be statesmen. We are in receipt of

a letter from Mr. Howland in which he complains that we, in common with other Canadian journalists, had done him an injustice in attributing that sentiment to him. We take pleasure in giving Mr. Howland the benefit of his denial. We do not find in his magazine article just the precise words attributed to him; but it is evident that the spirit of what he did say was correctly caught, as shown not only in our interpretation of what he said, but that also of the other Canadian journalists of whom he complains.

Under Reform rule from 1874 to 1878, the farmer's wife had to give ten dozen eggs for five yards of cotton. Now, under the National Policy, she can get ten yards of cotton for five dozen eggs.

The resignation of Mr. R. S. White, of Montreal, as member for Cardwell in the Dominion House of Commons, precipitates the situation that it would be well for the Government and the manufacturers of Canada to consider. Mr. White has always been an earnest supporter of the Government, and his resignation calls for the election of some one to take his place. Why not fill it with some one who is not only an earnest advocate of the National Policy, as Mr. White has always been, but a manufacturer as well?

The election in Montreal, last week, at which Mr. Guerin, an opponent of the present Quebec Government, was elected by more than 1,250 majority in a constituency that usually returns a Conservative member, emphasizes the fact that the manufacturers are not sufficiently alive to their interests in putting up suitable men. Montreal is, perhaps, the most important manufacturing centre in Canada, and it is very evident that if the manufacturers in that city comprehended the situation, no one but those entirely devoted to their interests would be elected there to any office.

In a recent issue our esteemed contemporary, the *Montreal Trade Review*, stated as follows:—

If there is one class of manufacturers in Canada who deserve to be congratulated it is those who have undertaken the making of enamelled ware. There are but two in the country, Thos. Davidson & Co., of Montreal, and the McClary Manufacturing Co., of London, and these firms are entitled to the warmest congratulations, both for the enterprise they have exhibited and the excellence of the quality of the enamelled ware they turn out. It is surprising the perfection to which the firms in question have brought these goods, and these remarks apply to the fancy as well as to the plain lines. The Canadian made article is as good as the imported, and in some instances at least and in some respects, it is better.

This shows that ignorance is bound up in the heart of the child, and that it not only never travels as far as Toronto, but does not read the current business literature of the trade. We quite agree with what our contemporary says about the Montreal and London concerns, but why its ignorance concerning the Kemp Manufacturing Co., Toronto, who were the pioneers in the Canadian enamelled ware industry?

The London, Ont., Electric Street Railway Company recently invented and put into execution a way to avoid awaiting a decision from the Railway Committee of the Privy Council and also to obviate the necessity of the other fellows

obtaining an injunction. Trouble has existed for some time relative to the privilege of the Street Railway Company to cross the Canadian Pacific Railway tracks in London with their cars propelled by electric motors, but they still retain the right to cross with their horse cars. The method now is to run the electric cars close up to the C.P.R. track, when horses are attached and the cars are drawn across, when electricity is again used. It is observable, however, that the horses show no signs of excessive fatigue in performing the work they are supposed to do.

An electrical enterprise of considerable magnitude and importance is about to be undertaken by Mr. Pearson of Toronto, which presents features of a most novel and interesting character. A water power at Trenton, Ont., will be developed to 500 horse-power; this will be used partly to give electric light and power in Trenton itself; and about 400 horse-power will be electrically transmitted to Belleville—distant about eleven miles, there to be used for a most comprehensive service. The Belleville water works pumping plant will be converted from its present system, into a complete electric pumping plant; the railway generator will be operated by means of an electric motor, as also will the arc lighting dynamos, and power for other commercial purposes will be distributed by means of induction and synchronous motors. Ample provision has also been made for incandescent lighting. Polyphase currents will be used throughout, and a high voltage requiring special features of line construction. The entire work has been placed in the hands of Mr. G. White-Fraser, consulting engineer, of Toronto, and will be begun at once. We hope later to give a detailed description of this interesting installation, which will be instructive as showing the possibilities of electric power.

We are in receipt of a letter from a correspondent at Murphy, Ont., in which he asks information regarding the manufacture of birch oil, having read the article recently published in these pages on that subject. He says that there is an unlimited supply of black birch in his part of the country, which would cost no more than the labor of cutting and hauling, for the purpose of manufacturing the oil, and that there are abundant springs and streams which can supply water for the distillery. He thinks it would be worth while making an experiment in this direction, and is satisfied that the business would pay there, if at any place, as all the necessary materials are in abundance and labor is cheap, and if it could be made a success it would be a grand thing for many poor people in that part of the country. We are also in receipt of an inquiry from a correspondent at Port Arthur, Ont., in which he inquires if the oil can be extracted from white birch. Our information is that there is no value in white birch whatever for this purpose. These inquiries demonstrate the fact that the people who are interested in increasing the manufacturing industries of the country are alive to this question, and that we may very soon hope to see birch oil industries springing up in many parts of Canada.

At a recent meeting of the manufacturers of St. Louis, Mo., considerable discussion was had regarding the desirability and importance of teaching the consumers of that section to make their purchases of goods manufactured in that city in preference to sending a long distance away for them. They

called attention to the fact that where manufacturing industries are in the most flourishing condition, the people buy what is made at home. They believe in the encouragement of industry at home. They preach home protection and practice it, and as a result, the money centres of the country are in those sections where the greatest amount of manufacturing is done. They are aware of the fact that a large portion of the furniture, machinery, clothing, etc., consumed in St. Louis is made in other sections of the country. They say that any one can find in St. Louis products the equal of similar articles made anywhere else, and that they can be bought at the same price. The incident teaches that all Canadians are interested in seeing Canada become a great industrial and commercial centre. The greater the country becomes as a manufacturing centre the cheaper the goods can be sold. Consumers in purchasing goods should demand that they be of Canadian origin, particularly when they can be bought as cheap and of as good quality at home as abroad; and such purchases materially add to the industrial greatness and general wealth of the country.

C. W. Chancellor, United States Consul at Havre, France, has made an official report to the State Department of the recent competitive trial of horseless vehicles on the road between the cities of Paris and Bordeaux. The distance was 358 miles and return. By the terms of the race, any vehicle which consumed more than 100 hours on the road was to be disqualified. Prizes were offered, the principal one amounting to 40,000 francs for four-seated carriages. The best time was made by a four-seated and a two-seated vehicle, both propelled by gasoline. They covered the distance in 24 hours and 53 minutes, making about fifteen miles per hour. This record, Mr. Chancellor says, is considered very creditable in view of the necessity of climbing long lines of hills. These hills appear to have proved too much for the electricity-propelled carriages, only one of which got through. The electric carriages lost time by being compelled to stop frequently to renew their dynamic charges, as did the steam propellers by stopping for fuel and water, while the petroleum machines carried sufficient fuel for a twenty-four-hour run. Mr. Chancellor says the ordinary feeder used for short distances in the petroleum carriages, contains less than four quarts of oil and this is sufficient for a journey of twenty miles. He also mentions a petroleum cycle which entered this race and held its own with the larger vehicles, and says that the time will soon arrive when gasoline will come into general use for propelling bicycles, tricycles and even four-wheelers. Altogether, he concludes that petroleum is destined to become the popular agent of traffic and conveyance without horses in the streets of great cities and on smooth country roads.

The Toronto World, speaking of the resignation of Mr. R. S. White as a member of the House of Commons, says that it knows of nothing so damaging to the morals of a party, or of its standing in the country, as a wide-spread desire among its elected representatives for office; that the most discouraging thing to-day to the conscientious and patriotic Conservatives at Ottawa, is this desire for office. We quite agree with the sentiment. It is obvious that about the only object some men have in being elected to the Dominion Parliament is to obtain favors from the Government in the way of office for themselves. Toronto is suffering in that direction. Too

many professional men who are glib of tongue obtain the coveted prize of a seat in the House of Commons, but unfortunately, when they get there, they kick away the ladder by which they were elevated, and forget all about the promises they had made to obtain their preferment. In some instances impecunious men have been elected who have no other way of obtaining a living. In other instances, lawyers and professional men have been elected, who, while they may possess sufficient intelligence to entitle them to a certain consideration, seek the position merely for the honor that may be derived therefrom. While it is evident that these persons cannot be elected except by the suffrage of workmen, and the influence of manufacturers, the claims of those who have assisted them to office are ignored when the prize has been gained. It is of the utmost importance, therefore, that if we are to have true representatives in the legislative halls of the country, we must put men there who are interested in the industrial development of the country, and who desire to see Canada the great manufacturing and prosperous country that it should be.

The hematite iron deposits in the Mattawan range, in North-western Ontario, are commencing to attract the attention of foreign capitalists, and their development will be carried on in the future with considerable vigor. The first indication of increased activity has already been shown. The Bethlehem Iron Company of South Bethlehem, Pa., has secured an option on several properties and a party of miners with an expert will be sent to explore the locations and report upon them, with a view to a purchase, in which case work will

be vigorously prosecuted. The Bethlehem company is one of the strongest in its business in the United States. Its works were enlarged a few years ago in order to enable it to carry on the manufacture of nickel steel armour plate for the navy battleships. Heretofore it has brought its hematite ore from Cuba and elsewhere, but their proprietors have now turned their attention to the Ontario fields. The range crosses the Mattawan river in the vicinity of Three Falls, and it is possible that electric power may be obtained from this source, not only for working the mines, but to operate the railway branch which will have to be built. The iron locations of the Mattawan range are situated from twelve to twenty miles off the lines of the C.P.R. and the Port Arthur, Duluth and Western road. The range was inspected by Mr. Archibald Blue, Director of Mines, during his recent trip, and he expresses himself as confident that development will show a great amount of mineral which will prove of much value to the country.

Has Protection made you rich? For many months the Globe kept this enquiry standing in its columns. It is intended to substantiate the assertion frequently made by Sir Richard Cartwright that since the National Policy came into force in Canada, the manufacturers has been enriched at the rate of \$100,000,000, the opinion of the Globe being that the manufacturers had been benefited to a much greater extent even than that mentioned by Sir Richard, and that they had been enriched during that time to the extent of about \$1,600,000,000. When these figures with such immense proportions stare one in the face, it is hard to realize that the wealth went into the pockets of the manufacturers, or if it did what has

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become of the manufacturers who received it. With an average duty of about 25 per cent protection, the country must have consumed an average about \$400,000,000 worth of protected products per year, and if the power of consumption was so great it is evident an equivalent in foodstuffs must have been produced in the country. We do not think that the consumption has been nearly so great as intimated by Sir Richard, or the Globe, but if it has been, the more protection we have, the better it will be for the farmers. Mr. Laurier says that the National Policy has injured honest manufacturers, from which it is fair to conclude that the immense sums mentioned by Sir Richard and the Globe, must have gone into the pockets of dishonest manufacturers, and as Mr. Laurier says that Galt is both the Manchester and Sheffield of Canada, and as there were no manufacturers present at his recent meeting in that place to indorse his statement about the injurious effects of the National Policy, it would be interesting to know and we would be glad if he would indicate who the dishonest manufacturers are who have been so enormously enriched.

Mr. Laurier generally fights shy of particulars when he talks about amending the tariff; but at Markham he thought he was far enough away from any iron smelting industry to promise to abolish the duty on pig iron. He called it the "raw material of all the iron manufacturers." He would close up existing pig iron factories in Canada, ruin the works almost completed in Hamilton, and allow the country to continue to be dependent upon the United States for its supply of pig iron. He would make all the magnificent iron deposits of Canada useless, and prevent this country from developing its iron industry, as protection developed the same industry in the United States. In Hamilton an experiment is about to

be made which, we think, will revolutionize the iron industry in Canada, and which will clearly prove that iron can be made here as good and as cheap as it can in the United States. Mr. Laurier would kill that experiment. He would give the whole Canadian iron market to the United States.—Hamilton Spectator.

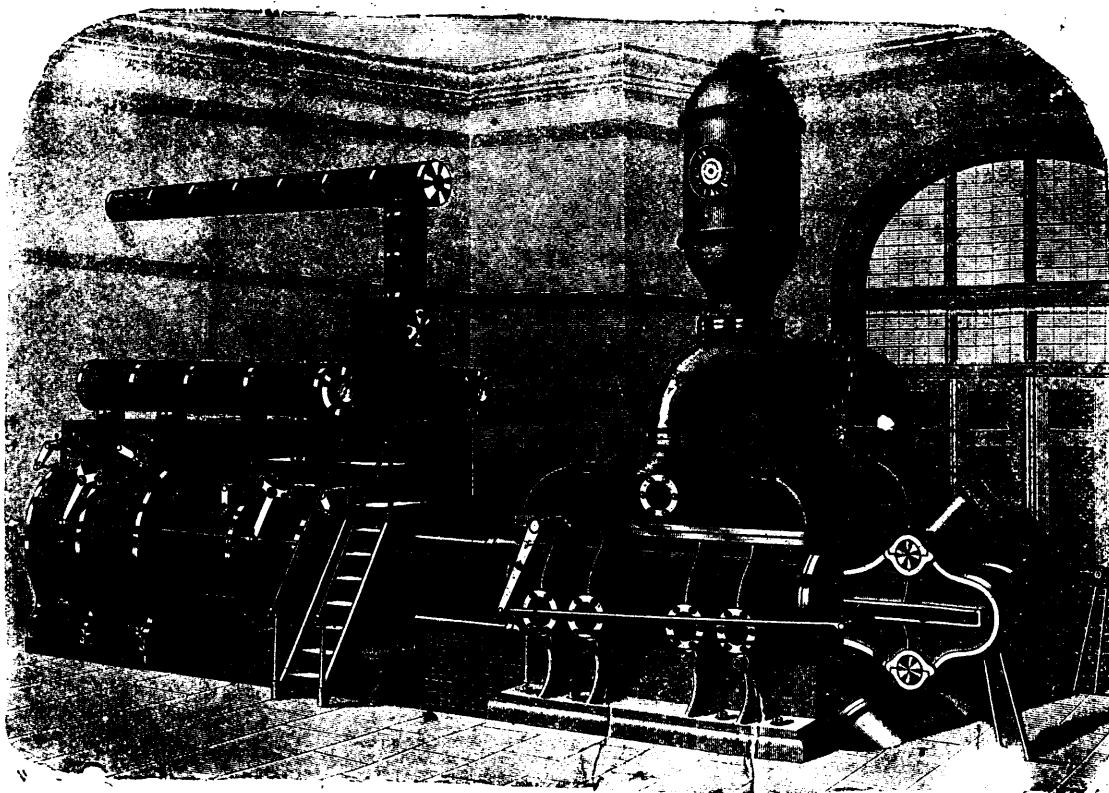
Mr. Laurier also sought to make a point on the pig iron duty in his speech at Galt, in which he called attention to the fact that the duty upon that article amounts to sixty-six per cent, ad valorem, his desire being to impress upon the manufacturers that it would be better to sacrifice the pig iron industry in Canada, than to pay the duty. In a recent issue of this journal we showed that the domestic production of pig iron which was in 1890 but 24,373 tons, amounted in 1894 to 62,522 tons, which shows a very important increase in the output within the five years. During the same term the amount of pig iron imported into Canada decreased from 87,613 tons to 45,282 tons, showing that the domestic production gradually and certainly displaced that of foreign origin. In 1891 the home production supplied about 19.8 per cent. of the consumptive requirement of the country, while in 1894, only three years later, the home production was 50.8 per cent. of the requirement. In the first named year the home production equalled less than twenty-five per cent of the imports, while in the latter named year the home production was 138 per cent. greater than the imports, and it is this growing industry so essential to the welfare of any country, that Mr. Laurier desires to see destroyed.

The officers of the Home Market Club, Boston, had a business meeting a few days ago at which the following resolutions were adopted:

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That in the opinion of the officers of the Home Market Club the most imperative duty that will rest upon Congress at its coming session will be to provide adequate revenue for the government; and that the easiest, least burdensome, and most helpful way for doing this is to increase the duties on foreign luxuries that were reduced by the Wilson tariff, to substitute specific for ad valorem duties so far as possible; and since the new tariff is confessedly protective in many features (to which fact the partial revival of business is largely due), to make it equitably so in all its features.

That it is humiliating and disgraceful for this great nation, recently acknowledged by M. G. Mulhall, the eminent British statistician, to be the richest, the most progressive, and the most enlightened nation in the world, to be made dependent upon a syndicate of foreign and domestic bankers to preserve its credit, and that there should be no further borrowing, except of a temporary character, while it is possible to increase the revenue.

There was considerable conversation concerning the state of the market and the enormous undervaluation of imported goods. One large manufacturer stated that the market had become bare of goods before the present revival; therefore, both manufacturers and importers are doing a fair business at present in replenishing the market, in consequence of which prices have been fairly good, but that already orders have begun to slacken, indicating that the market is now well supplied, and he anticipated severer competition very soon from the great quantity of imported and undervalued goods. Another large manufacturer stated that his orders had for some weeks been very small, hardly more than one-tenth what they were at this time of the year in 1892. All agreed that the most disastrous effects of the new tariff have hardly begun to be realized, but that they are sure to come, and

that every effort should be made to prevent customs frauds and to change that feature of the tariff which makes them easy.

The Federation of Liberal Clubs of Ontario have chosen two very soul-stirring poems which they offer as expressing the sentiments of their party regarding their political views. In one of them this expressive couplet occurs:

Joined together heart and hand,
Liberals for free trade stand.

We have no objection whatever to our free trade friends expressing their views in poetry, or in any other way, but in this connection we cannot but notice, that at the meeting in Galt last week, at which Mr. Laurier made the leading address, and in which, while admitting that Galt was both the Manchester and the Sheffield of Canada, he denounced in explicit terms the National Policy that had made that town what it is. In the Globe's list of names of gentlemen who were present to encourage Mr. Laurier in his free trade crusade, we failed to observe the name of any Galt manufacturer whatever. Mr. Laurier told the meeting that the N.P., had injured the honest manufacturer. Was there any Galt manufacturer who agreed with him in this position? We do not think so. He told them that the N.P., while it had helped monopolists and combinesters, had injured every other industry. Do the manufacturers of Galt consider that their industries have been injured by the N.P., or that they should be classed among the monopolists and combinesters? He told them that in the interests of the honest manufacturers he denounced the N. P. Did he represent the views of the honest manufactur-

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. . . ORDERS SOLICITED

ers of Galt in his denouncement? He sought to make a point with the manufacturers of Galt in his allusion to the duty on pig iron, and he called their attention to the fact that he had heard it stated on some occasion in the House of Commons that pig iron could be imported into Canada at such a low price that the duty would amount to not less than 66 per cent. ad valorem. Does he suppose that the manufacturers of Galt, with whom pig iron is a raw material, are to be deceived by his assertion that the duty on pig iron amounts to 66 per cent? Does he think that the manufacturers of Galt are children who cannot comprehend what he says, or who are to accept with implicit confidence his vague and untruthful assertions? We think we are safe in saying that there is no consumer of pig iron in Canada to day that objects to the duty of \$4.00 per ton on pig iron.

Some South Dakota farmers have adopted a system of telephones which for cheapness is a long way ahead of any other system in operation in this country. The wire fences for a distance of about eight miles constitute the lines. The staples by which the wires were fastened to the posts were removed and insulated fasteners substituted. All that was then needed was transmitters and receivers, and the system was complete. Just what substitutes were adopted for batteries and call-bells the history of the plant as published does not state. Possibly the operator at the transmitting station pounded on the fence with a sled-stake or an ax-helve, and on such a short circuit the signal could be heard and answered at the other station. At any rate, the enterprise has proven so successful that it is reported a number of stockmen propose to build a

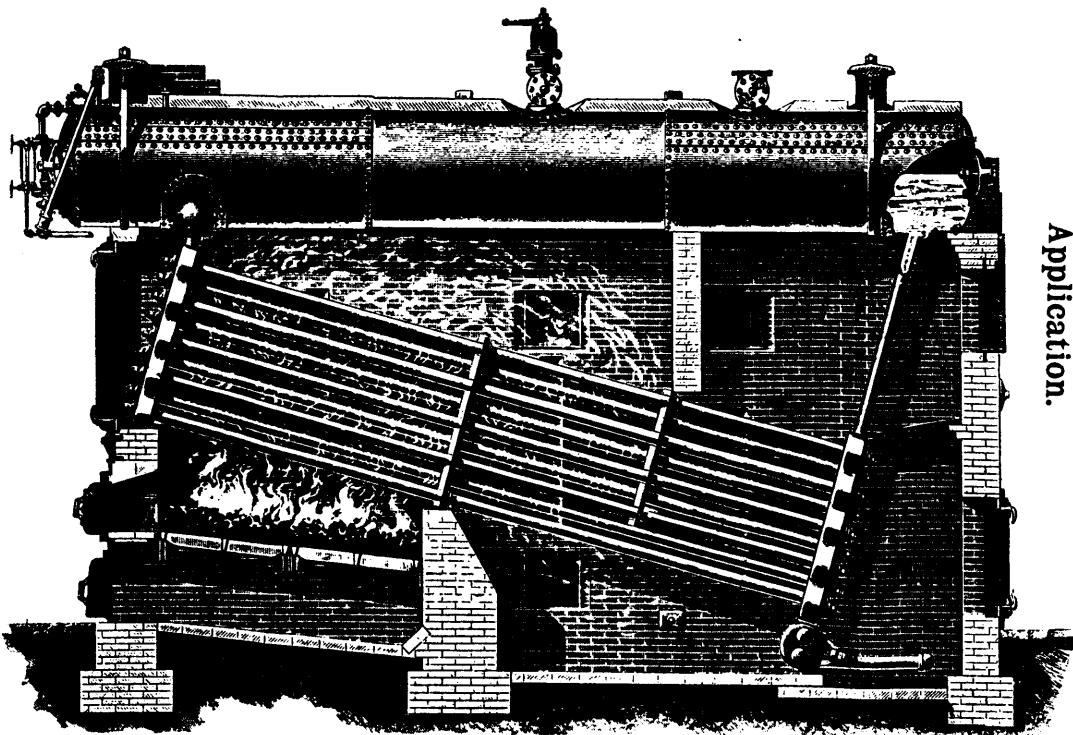
telephone line from Pierre, in South Dakota, to Midland, a central location in the cattle country, on the plan adopted by the farmers, so that warnings of storms may be received from the Pierre weather bureau. This is all very ingenious in its simplicity. But some of the Hindoo worshippers in India far surpassed this Dakota business in the telephone line hundreds of years before the Dakota farmers, or stockmen, or Alexander Graham Bell, or Gray, or Edison, or Drawbaugh were born. At Agra and Muttra, in India, are two temples about forty-two miles distant from each other. Connecting these two structures for religious worship is a line of copper wire about three-sixteenth of an inch in size, inclosed in cedar tubing resembling wooden pump-tubing sometimes used in wells, and this subterranean line was sunk about twenty feet from the surface. At either end of this line of wire was a vault about twenty feet square, on a level with the line of wire, where communications were sent and received. At either terminus the wire was connected with a diaphragm of raw hide about seven or eight inches in diameter, resembling a small drumhead, and this diaphragm was used both for purposes of transmitting and receiving messages. In transmitting, the operator throws his voice against the diaphragm, and in receiving, the operator at the other end of the line, placed his ear in contact with the same kind of instrument. And that was the telephone system in use in India centuries ago. Those heathens probably never dreamed of patenting their invention, but they possessed the inscrutable spark of mechanical inspiration all the same.—Chicago Industrial World.

The latest form of customs fraud, which has heretofore

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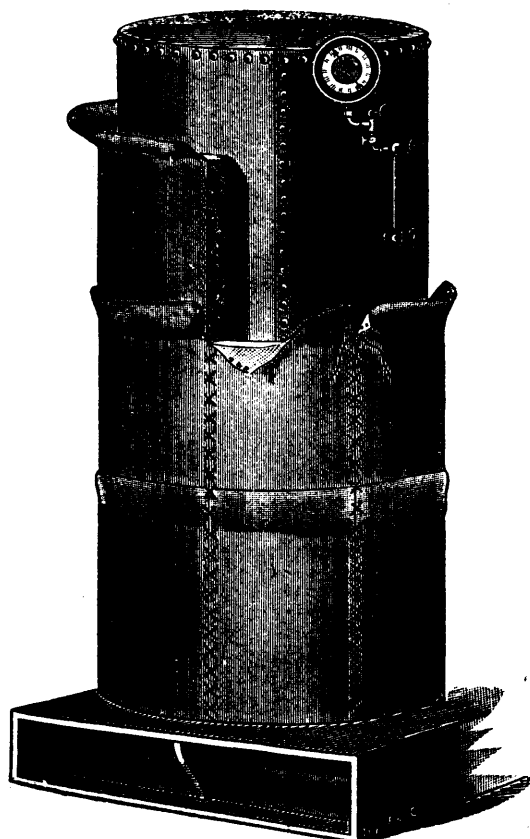
been unknown to the wholesale clothier, has been perpetrated within the past two weeks. A line of what purported to be 18-oz. Clay worsteds was sold by a large New York importing house to a prominent wholesale clothier at \$1.10 per yard, regular 56-inch goods. When the goods were received and opened, the buyer noticed a very damp feeling in them. He had them weighed and they were found to weigh full 18 ounces. His suspicions having been aroused, the goods were allowed to remain exposed to the air and dry, when they were weighed again and found to weigh 1½ ounces less per yard than when the weight was first taken; so that their real weight was merely 16½ ounces to the yard instead of 18 ounces. In other words, the clothiers were paying for water instead of wool. This new method of selling foreign goods goes to show to what a disadvantage American goods are placed through such tricks practised upon innocent buyers. In Bradford, England, they have what they call a conditioning house, the purpose of which is to add a certain amount of moisture to wool, etc. It has never before been the practice to "condition" goods in this manner, but it would seem from this revelation that, in order to offset the low prices of Bradford worsteds, this scheme of selling water for wool has been restored to. The buyers of these goods should be on the lookout for this dishonest practice. The profit to the seller of these goods at the rate of five cents per ounce would be 7½ cents per yard, or \$5 per piece, a very profitable operation, as this is all clear profit to the seller and all clear loss to the buyer. The injustice to American manufacturers in the enforcement of ad valorem duties on goods is clearly apparent. If there was a duty on the weight, in ad-

dition to the ad valorem duty, such dishonest practices would not be restored to. This is in line with previous revelations made by the Reporter regarding foreign goods as sold by the syndicate of foreign manufacturers.—American Wool and Cotton Reporter.

The November Ladies' Home Journal is especially engaging in its illustrations and bright in every line, exactly adapted to the Thanksgiving season's diversion of all members of the household. The Curtis Publishing Company, Philadelphia; one dollar per year; ten cents per copy.

Outing for November contains a varied store of reasonable reading and artistic illustration. The contents are as follows: "Rugged Labrador," by R. G. Taber; "Duck Shooting on Great South Bay," by J. D. Knap; "Old Plute's Gobbler," by Chas. E. Taylor; "Over Iinger Jock," by Jean Porter Rudd; "A Rondeau Muskallonge," by Ed. W. Sandys; "A Ceylon Tracker," by F. Fitzroy Dixon; "Through an Autumn Gale," "Banana Land Awheel," by E. M. Aaron; "A Shot at a Shadow," by Paul Pastnor; "Lenz's World Tour Awheel," "A Bit of Blue Ribbon," by Sara Beaumont Kennedy; "The International Athletic Match," by Wm. B. Curtis; "New Hampshire National Guard," by G. H. Moses; "Football of '95," by Walter Camp, and the usual editorials, poems, records, etc.

A timely, novel and attractive feature of the November number of Scribner's Magazine is a series of Thanksgiving-Fancies, ten full-page illustrations by well known artists. In the same number Mr. Royal Cortissoz's article, "Landmarks of Manhattan" deals with the growth of some of the great New York giants of business architecture, and appreciatively also with the splendid group of buildings to be erected on Morningside Heights, including the new cathedral of St. John the Divine, Columbia College and St. Luke's Hospital. The illustrations are especially fine. President Andrews' instalment of contemporary history, "The Plumed Knight and His Joust," is a vivid presentation of the chief events of the years of Blaine's greatest popularity, including the famous Mulligan Letter scandal and the exciting Blaine-Cleveland campaign.



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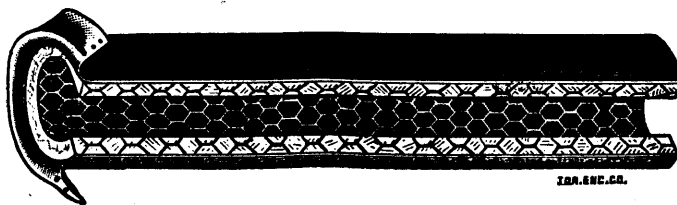
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9 JORDAN STREET, TORONTO.

TO AVOID FIRES.

The National Board of Fire Underwriters of the United States has promulgated a series of rules referring to electric appliances for light or power. It publishes the following cautions for the information of the public:

1. Have your wiring done by responsible parties, and make contract subject to the underwriters' rules. Cheap work and dangerous work usually go hand in hand.
2. Switch bases and cut-out blocks should be non-combustible (porcelain or glass).
3. Incandescent lamps get hot; therefore, all inflammable material should be kept away from them. Many fires have been caused by inflammable goods being placed in contact with incandescent lamp globes and sockets.
4. The use of flexible cord should be restricted to straight pendant drops, and should not be used in show windows.
5. Wires should be supported on glass or porcelain, and never on wooden cleats; or else they should run in approved conduits.
6. Wires should not approach each other nearer than eight inches in arc, and two and one-half inches in incandescent lighting.
7. Wires should not come into contact with metal pipes.
8. Metal staples to fasten wires should not be used.
9. Wires should not come into contact with other substances than their designed insulating supports.
10. All joints and splices should be thoroughly soldered and carefully wrapped with tape.
11. Wires should always be protected with tubes of glass or porcelain where passing through wall, partitions, timbers, etc. Soft rubber tube is especially dangerous.
12. All combination fixtures, such as gas fixtures with electric lamps and wires attached, should have approved insulating joints. The use of soft rubber or any material in such joints that will shrink or crack by variation of temperature, is dangerous.
13. Electric gas lighting and electric lights on the same fixture always increase the hazard of fire, and should be avoided.
14. An electric arc light gives off sparks and embers. All arc lamps in vicinity of inflammable material should have wire nets surrounding the globe, and such spark-arresters reaching from globe to body of lamp as will prevent the escape of sparks, melted copper, and particles of carbon.

15. Arc light wires should never be concealed.
16. Current from street railway wires should never be used for lighting or power in any building, as it is extremely dangerous.
17. When possible, the current should be shut off by a switch where the wires enter the building, when the lights or power are not in use.
18. Remember that "resistance boxes," "regulators," "controllers," "rheostats," "reducers," and all such things, are sources of heat and should be treated like stoves. Any resistance introduced in an electric circuit, transforms electric energy into heat. Electric heaters are constructed on this principle. Do not use wooden cases made for these stoves nor mount them on wood-work.

ST. CLAIR-ERIE CANAL.

With the general improvement of navigation in the great lakes by the deepening of channels and harbors, says the New York Times, a project is brought forward to shorten the water route between Lake Huron and points on Lake Erie from Cleveland eastward by seventy-eight miles. This is to be accomplished by cutting a ship canal from the south-eastern corner of Lake St. Clair through the county of Essex, Ontario, to Lake Erie, thereby eliminating the tortuous navigation of the Detroit river and the long detour which its use at present involves.

A private corporation has secured the franchise for cutting and operating this canal from the Dominion Parliament, the necessary surveys and estimates of cost have been already made by competent engineers, and nothing remains but to convince capitalists that the canal should prove a profitable enterprise by reason of the saving of time, labor, and coal consumption by vessels which will choose the canal at the outlay of a small tonnage charge in preference to the longer route by the Detroit river, which is free.

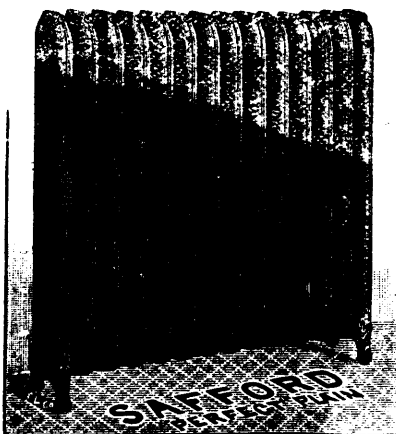
The shape of the south-western extremity of Essex country, Ontario, bears a striking resemblance to the contour of Spain and the southern portion of France, the Bay of Biscay representing Lake St. Clair and Lake Erie the Mediterranean. The present voyage which ships have to make from the entrance of the St. Clair river into the lake of the same name to Cleveland resembles, on a smaller scale, the voyage which ships have to make from Bordeaux to Naples, through the Straits of Gibraltar. It is an

HEATING APPARATUS**Safford & Co. Radiators**

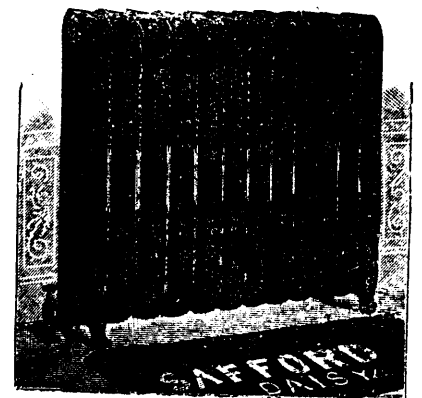
RECEIVED THE HIGHEST AWARDS:

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

interesting fact that the French Government has seriously proposed to make a direct waterway connection between the Bay of Biscay and the Mediterranean as a route for warships as well as for ordinary commerce.

By the present route vessels sailing from Lake Huron to Lake Erie must first pass through the St. Clair river to the north-eastern corner of Lake St. Clair, where the outlet into the lake is marked by Flat's Light. From this point to Detroit is 24 miles, from Detroit by the Detroit river and Lake Erie to Point Pelee is 60 miles; from Point Pelee to the Erie mouth of the proposed canal is 25 miles, making altogether 109 miles.

Contrasted with this route the distance through Lake St. Clair from Flats Light to the mouth of the proposed canal would be 17½ miles, and the length of the canal itself thirteen miles, making, altogether, 30½ miles, as against 109 miles, or a saving of 78½ miles. These figures, which are given by the projectors, while accurate according to the survey, do not allow for the offing which vessels from the Detroit river would keep after passing Point Pelee on their way to Cleveland or points eastward of it. Allowing 8½ miles compensation on this account, the proposed canal would still be 70 miles shorter in actual distance.

The thirteen miles of canal which would require to be excavated present an almost ideal material for this purpose. The land of Essex county is part of the great clay bank which surrounds the greater part of the lower great lakes. D. Farrand Henry, the well-known engineer employed by the United States Government for the past eighteen years to superintend the lake survey, has made a careful examination of the ground, including borings and the preparation of sectional plans of the proposed canal. He reports that the subsoil of the peninsula at the point selected consists entirely of clay, with no rock above a depth of 100 feet from the surface. From Lake St. Clair southward the land rises gently, attaining a height of 50 feet a short distance from the shores of Lake Erie, where there is a short abrupt ascent formed by a sand ridge. The dense clay forms an excellent material for the bed and banks of a canal, as it naturally resists the triturating action of the water. The difference in level between Lake St. Clair and Lake Erie is four feet or less, and no locks would be required, giving an absolutely unimpeded waterway. To save time it is intended to light the canal at night with electric lights so that vessels can pass through it at all hours.

The saving in distance is not the only merit claimed by the projectors of the proposed canal for it. While total wrecks are rare on the Detroit river, groundings and detentions resulting therefrom are comparatively frequent. These groundings involve the additional expense of towage and sometimes of lighterage, which has to be taken into account in fixing the premiums for insurance. These expenses would be saved by the use of the canal. It is also proposed to use the electric trolley on the banks of the canal as a means of hauling vessels through it at the highest rate of speed compatible with safety.

The cost of the canal is estimated at \$4,500,000 which does not include the price of the land, but covers the cost of cutting a channel with a minimum depth of twenty-one feet, a breadth at bottom of 100 feet, and at the water level of 160 feet. Fast freight boats on the great lakes have an average speed of ten miles an hour. Allowing a speed of only six miles an hour to vessels passing through the proposed canal would give a saving of seven hours on each trip, or fourteen hours on each round trip, as against vessels which went around by Detroit. According to the projectors' estimate, this saving in time would enable lake boats to make an additional trip each open season, the time for the round trip between Chicago or Duluth to Buffalo being taken at from ten to fourteen days, and the navigable period of the year between seven and eight months. By the same estimates the net profits of each round trip should be from \$1,000 to \$3,000, depending partly upon rates and partly upon the nature and value of the cargo. These amounts, less the amount of canal tolls, should be the profit to each vessel using the canal.

As for the total traffic upon which returns may be based, it is pointed out that in the season of 1894 the vessel tonnage passing through the Detroit river amounted to 26,000,000 registered tons. This was four times as much as passed through the Suez canal, open all the year around, in 1892, and three times as much as is expected to pass through the proposed Nicaragua canal. Less than ten per cent. of this registered tonnage, as shown by the last Detroit Board of Trade report, entered and cleared at the port of Detroit, the remainder passing on its way between the upper and lower lakes. These figures do not include the Canadian tonnage, which in 1891 amounted to 138,914 tons, and has since considerably increased in volume.

The tolls on the Suez canal, which cost \$96,000,000, are levied

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, Wires, Electrical Supplies.

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

at the rate of \$2 a ton, and yield a profit to its stockholders of something more than nineteen per cent. per annum. The rate proposed for the St. Clair canal is three cents a ton. At this rate, counting the cost of the canal complete at \$5,000,000, and the annual quantity of shipping passing through it at 25,000,000 registered tons, would give an annual gross income of \$750,000—sufficient to pay a net return of twelve per cent on investment.

Of course the possible error in these figures lies in the fact that vessels bound for Cleveland and points eastward might prefer to go through the Detroit river rather than take the shorter route by the proposed St. Clair canal. The projectors have calculated that the saving upon freight which passed through the Detroit river last year would amount to \$1,300,000, allowing for the payment of three cents per ton of registered shipping upon vessels which took the alternative route. It seems very probable that the larger vessels recently launched or now being built for the lake traffic, would prefer the straight channel, with its uniform depth of twenty-one feet, to the crooked, island-dotted channel of the Detroit river, though this is a question which only practical experience of the two routes can finally answer.

John Bogart, formerly State engineer for New York, made an examination of the proposed route of the canal several months ago. Speaking to a reporter of the New York Times, Mr. Bogart said that the canal presented no engineering difficulties of any moment, and that the work might easily be done within the limit of the estimate of \$4,500,000.

As a link between the deep water-ways which are ultimately sure to connect the great lakes with tidewater, the canal would be valuable not only as a short cut, but also as relieving the congestion which must sooner or later overtake the traffic in the Detroit river. One objection from the United States point of view is that the proposed canal would be wholly through Canadian territory. While this may be more a sentimental than a practical objection to the construction of the canal, it is nevertheless an obstacle which may seriously operate to prevent the investment of capital by this country beyond the reach of its political control.

The complete output of the largest paper bag company's mills, says the Schoharie Republican, amounts to between 5,000,000 and 6,000,000 bags per day, and is distributed throughout the length

and breadth of the United States. In the manufacture of the bags machinery is almost entirely used, although from 300 to 400 employes are kept busy attending to detail work. Of these employes more than two-thirds are women. The factories are mostly in the East, the largest of all being located in northern New York. The girls employed in the New England mills are many of them high school graduates, and live at home. The duties of these young women employes consist largely in attending to the arrangement of such details as enter into the making up of paste pots, cleansing of brushes, assortment of sizes, etc. Thirty tons of paper are converted each day into bags varying in size from the one-half to the thirty-five measurement. The paper is taken directly from the paper machine in rolls of different widths, and by gravity is run to the large elevator, which hoists it to the machine room. On each side of this immense apartment are located the great machines, while the center is devoted to the tying machines. A roll of paper is put on to the end of a machine, supplied with facilities which folds it into tubes, cuts into proper lengths, folds the bottom, pastes, prints, dries and delivers the bags, counted, and by a recent improvement, punched with a small hole in the top, so that it may be easily hung up, and is handy for the retailer. One machine will turn out 200,000 perfect bags a day, with lap not to exceed half an inch. There are several factories for the manufacture of bags in the Western country, but they are not so large as those located in the East. The girls employed in that section are not high school graduates, but they are bright and attractive, with a deftness of touch and quickness of understanding that ranks them with the better class of wage workers. Machinery has largely done away with individual labor, but there is still enough left to keep many scores of girls busy. The wages paid seldom rise above eight or ten dollars per week, and more often range below six dollars. It is almost impossible to compute by figures the number of these flying pockets of paper that are rushed from the mills each day, to flutter the wide world over.

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

...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

CAPTAINS OF INDUSTRY.

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

Messrs. Button & Fessant, Wingham, Ont., have put a new engine and boiler in their chair factory.

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

John Mundell & Co., Elora, Ont., have erected a large three-story addition to their furniture factory.

Wm. Holt is putting in machinery and refitting the burned carpet factory at Paris, Ont.

A new grain elevator is being erected at St. Vincent, Man., with a capacity for eighty thousand bushels.

The Richelieu and Ontario Navigation Co. are pushing the erection of their workshops at Sorel, Que.

James White's cheese factory at Jellby, Ont., was recently destroyed by fire. Loss about \$1,600.

D. McGillvray contemplates the erection of powder works at Departure Bay, B.C.

The Thousand Island Carriage Co., Gananoque, Ont., have erected a new crating and shipping building.

Joseph, Thompson, machinist, St. John, N.B., will make an addition to his premises of a building 50x40 feet, two stories high.

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

Wm. Lee & Co's flour mill at Pavilion, B. C., is being remodelled. The old stone mills are being supplanted by three sets of rollers.

The Woodstock Waggon & Manufacturing Co., Woodstock, Ont., have been incorporated with a capital stock of \$25,000 to take over and carry on the business heretofore conducted by Messrs. McIlwraith and Clynick Bros., and to manufacture waggons, buggies, etc.

Mr. G. Walter Green, Millbrook, Ont., has bought out the Payton Pump works at Peterboro', Ont., and will commence operations immediately.

Wm. Kennedy & Sons, Owen Sound, Ont., have erected a three story pattern storehouse in addition to their buildings, and have added a large radial drill to their machinery.

The Northumberland Paper and Electric Company have been incorporated with a capital stock of \$100,000, to acquire the plant and business of the Northumberland Paper and Egg-Case Company of Campbellford, Ont., and to manufacture pulp, paper, etc.

The London Auer Light Co., London, Ont., have been incorporated with a capital stock of \$50,000, to supply the Auer system of incandescent gas lighting to London and other places.

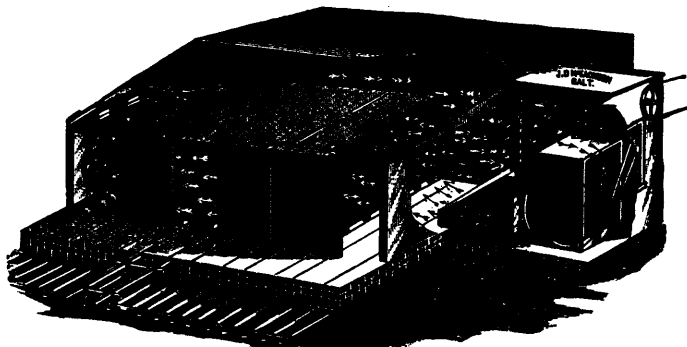
The John Ritchie Plumbing and Heating Co., Toronto, Ont., are applying for incorporation with a capital stock of \$75,000, to acquire the business now carried on by John Ritchie, and to manufacture gas fixtures, etc.

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

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

McEachren's System of Drying, Heating and Ventilating

Under Recent Patents.



CHEAP AND EFFECTIVE.
HIGHLY APPROVED OF BY PRACTICAL MEN.

The following is a specimen of letters received from customers:

J. D. MCEACHREN, Esq., Galt, Ont.

OTTAWA, April 1, 1895.

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

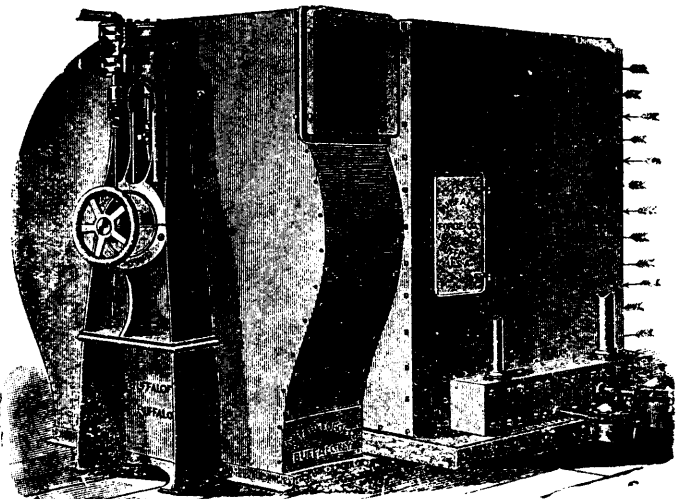
Yours truly,

McRAE BROS & CO.

For particulars address—

McEACHREN HEATING AND VENTILATING CO.
GALT, ONTARIO

Buffalo Lumber Dry Kilns



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

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

Send for Catalogue.

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

SOLD IN

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

S. N. Boright, Sutton, Que., will erect a saw mill.

Thos. Bell is erecting a new furniture factory at Wingham, Ont.

The Ross-McLaren Co. will erect a saw mill at Alert Bay, B.C.

Messrs. Lacouture and Desy are erecting a saw mill at Sorel, Que.

Mr. W. P. Plant of Norwood, Ont., will erect a foundry at Hastings, Ont.

F. G. Olmstead, Sutton, Que., has built an addition to his mill and put in a new engine.

S. S. Cooper's planing mills at Clinton, Ont., were destroyed by fire Oct. 24th. Loss about \$6,000.

George McWilliams' planing and windmill factory at Peterboro', Ont., was destroyed by fire Oct. 23rd.

The Canadian Pacific Railway Company will erect two more elevators at Fort William, Ont., next season.

Mr. Robert Whitelaw, engine and boiler manufacturer, Woodstock, Ont., has been awarded the contract by the Ontario Government for supplying the power plant of the new Dairy School at Strathroy, Ont.

The Bain Wagon Works, Woodstock, Ont., are applying for incorporation with a capital of \$250,000, to manufacture wagons, carriages, etc. This concern was formerly known as the Bain Wagon Company of Brantford, Ont. Under the new order of things the capacity of the factory will be doubled, and the number of employees increased from the present number of 75 to 200 men.

Mr. A. A. Taylor, chemist of the Dominion Dyewood and Chemical Co., Toronto, has just returned from Germany, where he has been taking a practical course of chemistry as applied to dyeing, in the laboratories of the Farbenfabriken vorm. Friedr Bayer & Co., Elberfeld. The Dominion Dyewood and Chemical Co. are fitting up an analytical laboratory at their works, and besides being able to supply their customers with latest and best methods of applying cyanine, alizarine and aniline colors, will also be in a position to do any ordinary analysis for their regular customers, such as water, soaps, oils, etc. This department will, no doubt, be appreciated by the cotton and woolen manufacturers as well as the dyers.

Mr. McNelly has purchased the woollen mills at New Hamburg, Ont.

James Ireland, of Owen Sound, Ont., has purchased the Great Western flour mills at Woodstock, Ont.

The Midgley Vapour Burner Company, Paris, Ont., have been incorporated with a capital stock of \$20,000, to manufacture Midgley vapour burners, etc.

The F. W. Borden Company, Canning, N.S., have been incorporated with a capital stock of \$50,000, to manufacture lumber, etc.

The Perth Canning Company, Perth, Ont., are applying for incorporation with a capital stock of \$20,000, to preserve and can fruit, vegetables, etc.

W. W. Chown & Co., manufacturers of tinware, etc., Belleville, Ont., will enlarge their factory capacity, introduce new machinery, etc., at a cost of about \$4,000.

The Canadian Fibre Chamois Co., Montreal, are applying for incorporation with a capital stock of \$100,000, to acquire the business heretofore carried on by the Canadian Fibre Chamois Co., Montreal.

The Canonto Mica and Mineral Company, Toronto, have been incorporated with a capital stock of \$22,000, to mine, cut and dress mica, etc.

The Trent River Lumber Company, Fenelon Falls, Ont., have been incorporated with a capital stock of \$500,000 to manufacture lumber, etc.

The Perth Canning Co., Perth, Ont., will become incorporated and will erect their factory at once. There will be two buildings 80 x 30 feet, besides boiler house, cooling house, etc.

The Millbrook Electric Light Company, Millbrook, Ont., are applying for incorporation with a capital stock of \$6,500, to acquire the plant and business of the Millbrook Electric Light Co., and to supply light, heat and power to that town.

The Okanagan Flour Mills Co., Armstrong, B. C., has been incorporated with a capital stock of \$60,000 to carry on the business of flour-milling, etc.

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

Mr. Elliott will erect a saw mill at Fairview, B.C.

George Gibson, Sr., will erect a shingle mill at Howe Sound, B.C.

The Brunette saw mill, New Westminster, B.C., which was recently destroyed by fire, will be rebuilt immediately.

Messrs. Laroche & Tremblay are erecting a saw mill at Mille Vaches, Que.

Mr. Guy Dyer, Bristol, N.B., will build a mill on the site of the one burned last spring.

Mr. W. C. Purves, Carleton, N.B., will rebuild his saw mill immediately.

The Comox Brewery Company, Cumberland, B.C., are applying for incorporation with a capital stock of \$50,000, to carry on the business of brewers, etc.

The Canadian Composing Co., Montreal, are applying for incorporation with a capital stock of \$21,000, to manufacture machinery for type-setting, printing, etc.

The Prismatic Glass Company, Toronto, Ont., are applying for incorporation with a capital stock of \$5,000, to manufacture prismatic glass, etc.

The Grant Tanning Company, Woodstock, Ont., have been incorporated with a capital stock of \$90,000, to carry on the business of tanners, and to manufacture leather, etc.

Messrs. Desy & Lacature's saw mills at Sorel, Que., were destroyed by fire Oct. 14th.

Messrs. Byram & Murphy, Blenheim, Ont., have taken over and will operate the E. A. Byram & Co., flour mill at that place.

The Perth mill has been leased to Mr. James Herron, Lanark, Ont., who is now overhauling it and putting it in first-class order.

The R. A. Booth Packing Company of St. Paul, Minn., will build an ammonia refrigerator at Selkirk, Man., with a 6,000,000 pound capacity.

Messrs. Geo. Gilmour and B. Lemay are negotiating with Coaticooke, Que., anent the establishment of a chair factory in that place.

J. C. Squarebriggs and L. A. Fretz will erect a flour mill at Revelstoke, B.C.

The Cookshire Mill Co., Cookshire, Que., are adding a box factory to their works.

R. A. Estey, Fredericton, N. B., will put a new engine into his saw mill.

Harvey Francis has erected a flour mill at Pakenham, Ont. The Stratford Mill Building Company supplied the machinery.

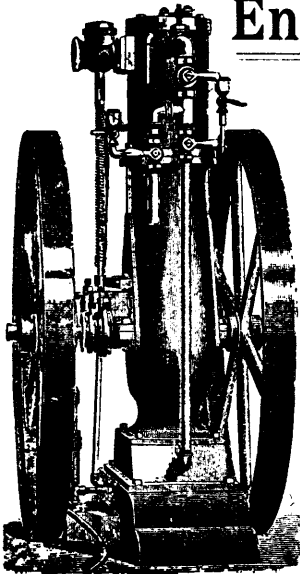
The London Furniture Company's factory at London, Ont., was partially destroyed by fire Oct. 22nd. Loss about \$1,500.

Gas was struck a few days ago near Ridgeway, Ont., which flows at the rate of about 2,000,000 feet a day.

The Penberthy Injector Company, of Detroit, Mich., write us that in visiting the State Fair of Mo., recently held at St. Louis, they found nineteen manufacturers of traction and farm engines with forty engines on the grounds. In looking over these engines they found on thirty-three engines out of the forty the Penberthy Injector, the other seven having five different makes. They also state that two manufacturers out of those representing the seven engines agreed to use the Penberthy Injector in 1896.

Mr. W. T. Bonner, Montreal, general agent for Canada for the Babcock & Wilcox Co., who are manufacturers of the celebrated Babcock & Wilcox water tube boiler, has sent us the souvenir and official programme of the fourteenth annual convention of the American Street Railway Association recently held in Montreal. In addition to the memoranda relating to the business of the convention is a very comprehensive and most interesting description of the principal places of interest in and about Montreal, and a sketch of the founders thereof; and it contains the assertion that that city is happily typical of Canada, for besides being the commercial metropolis of the Dominion, from its position at the head of ocean navigation, it still retains in its streets and in its inhabitants many characteristics of French and English occupation. The style and appearance of the beautiful brochure is similar with that of the best current magazines, and the illustrations, with which its pages are filled, are really works of art.

THE ELECTRICAL GAS OR GASOLINE...
Engine



WRITE FOR PRICES AND TESTIMONIALS.

J. R. BAIRD

WOODSTOCK, - - - ONTARIO

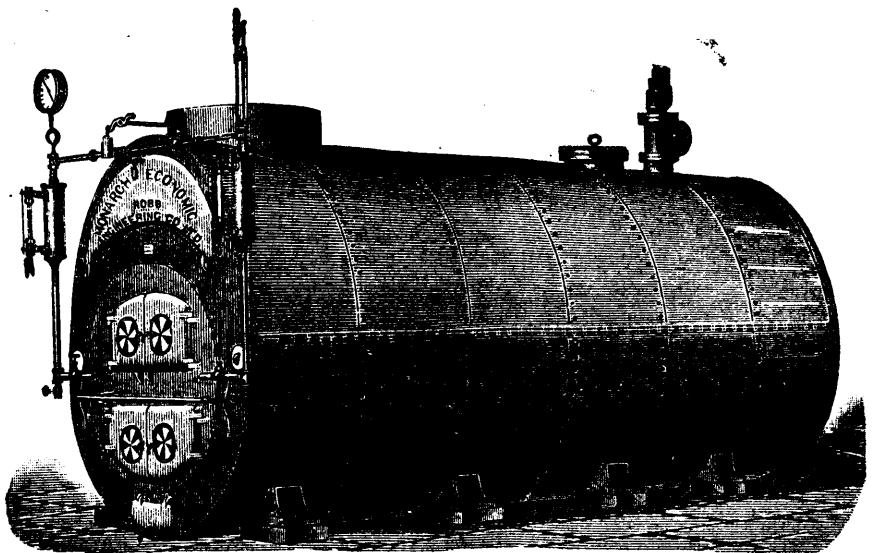
Firstbrook Bros.

Dovetail and Packing Boxes

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

R. Wood, Snow Road, Ont., will erect a saw mill at the Mississippi river, to be run by water power.

Geo. McEwen's flax mill at Hensall, Ont., was destroyed by fire Oct. 18th.

S. B. Lossing's woolen mill at Otterville, Ont., was destroyed by fire Oct. 17th. Loss about \$4,000.

A few days ago, while Mr. Alex. Crane was boring for water at Lorne, Ont., he struck oil at a depth of 135 feet.

Mr. Wm. H. Polley, Quebec, Que., will build a new shoe factory at that place.

The Canada Linseed Oil Mill Company, Mission, B.C., are applying for incorporation with a capital stock of \$100,000, to manufacture and refine linseed oil, etc.

The Okanagan Flour Mills Co., Armstrong, B.C., have been incorporated with a capital stock of \$60,000, to carry on the business of flour milling, etc.

The Barrie and Allandale Electric Street Railway Company have been incorporated with a capital stock of \$50,000, headquarters at Barrie, Ont., to construct lines of electric street railway in Barrie and vicinity, and to construct and operate works for the production and distribution of electricity for the purposes of light, heat, power, etc.

John McLeod, Kingston, Ont., has bought the Ford Brothers tannery. He is making alterations and improvements, having put in a new engine and boiler, new leaches and bark mill and will be ready to start up about first week in November.

The American capitalists who recently purchased the water-power at Sault Ste. Marie, on both sides of the river, and are now erecting pulp and paper mills on the Canadian side, have also acquired the Kakabeka Falls, near Fort William, Ont., where they will erect large pulp mills.

The town of Fort William, Ont., is offering a bonus of \$50,000, to any parties who will erect and operate blast furnace works at that place. Fort William is said to be a most desirable location for the erection of such works, as the iron deposits in North-west Algoma are among the best in the world and Fort William possesses splendid shipping facilities.

The Virden Milling Co., Virden, Man., will build a 10,000 bushel elevator at their mill.

A. F. Martin, Winnipeg, Man., is forming a company to build elevators in the French settlements in the Red River Valley, with a flour mill at a central point.

Messrs. Darling Bros., engineers, machinists and manufacturers of special and patented machinery, etc., and proprietors of the Reliance Works, Montreal, have sent us their very fine new catalogue of the specialties manufactured by them, in which allusion is made to the Webster vacuum feed water heater and purifier, Webster oil extractor and steam separator, Nordberg cut-off gear and regulator, L. P. & D. power transmitter, Clausen clutch pulleys, Morse valve reseater, tube scrapers, automatic feed drill, Prouty wire wheels, pipe cutters, Q. & C. shop saw, Lyman patent exhaust heads, hydraulic, belt power, hand power and electric elevators, Stirling water tube boiler, etc. These specialties are all beautifully illustrated and described and the prices mentioned. The names of many reliable business men are given who are users of the above-mentioned articles, and who testify to their merits. These catalogues may be had free upon application to Messrs. Darling Bros.

Mr. William Irving has just begun the construction of a fine woolen mill at Sundridge, Ont., and has sent us the following description thereof: The building will be 80x40 feet, two stories high. The first story will be of stone, the second frame, covered roof and sides with steel. The engine, boiler and picker rooms will be in a stone annex, the whole being made fire proof as far as possible. There will be one set of cards, and all the machines and machinery necessary for the manufacture of tweeds, flannels, dress goods, blankets, yarns, etc. Power will be derived from a fifty horse power Armington & Sims automatic cut-off engine. There will be a 300-light electric plant. The mill will be heated with steam and lighted by electricity throughout. A spring on the premises has sufficient head to supply all the tubs throughout the building, and all the lesser requirements of the factory, and the mill being situated on the border of a lake, an abundant supply is obtainable for fire and other emergent purposes. Fire protection will include a large steam pump and abundant fire hose upon each floor and in every room in the building. The estimated cost of the mill is \$10,000.

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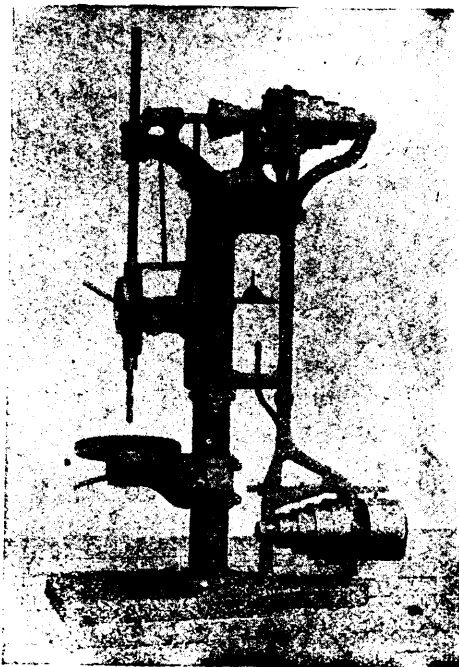
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Our Prices are right for strictly First-Class Tools
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THOS. REID, Eastern Representative.



T. Johnston's foundry at Kemptville, Ont., which was recently destroyed by fire, will be rebuilt immediately.

A new match factory is being started at Buckingham, Que., by the McLaren firm.

D. McGregor, Ripley, Ont., has just completed an oatmeal plant, an addition to his large custom mills.

An English company has bought large areas of timber at Takush Harbor, B.C., and will build a large saw mill at that place. The authorities there will give information.

W. H. Storey & Son, glove manufacturers, of Acton, Ont., will enlarge their factory, and will also build a two-story brick building to be used as a packing house and engine room.

The Breithaupt Leather Co., Listowel, Ont., are enlarging their tannery. They are putting in thirty more liquor vats and a new boiler, and are building a bark house.

Mr. F. A. Hilton, Toronto, who has recently been in the oil regions at Petrolia, Ont., acquiring petroleum properties for an English company, has succeeded in securing some very valuable properties in that district. The company is being organized by a syndicate in London, Eng.

The Burns Manufacturing Company, Hamilton, Ont., will be incorporated with a capital stock of \$200,000, to manufacture the new Burns typewriting machine.

The Robin Hood Powder Co., Winnipeg, Man., whose works were recently destroyed by explosion, are erecting a new powder mill at that place.

Mr. Hart is getting the pulp mill at Ellershouse, near St. Croix, N. S., ready for operation. T. G. McMullen will erect a band mill at the same place.

Oil has been discovered in the Central Gas Company's well at Dunnville, Ont. The oil has been examined by experts and pronounced to be of the best grade of amber petroleum, equal in quality to any found in the American fields. This is said to be the first time amber oil has been found in Canada.

The Toronto Steel-clad Bath and Metal Company have just completed and occupied their new premises at 125 and 127 Queen street east. We are under obligation to them for a beautiful lithograph view of the same. This concern started the manufacture of steel-clad bath tubs in a very small way, but their business increased so rapidly that they found it necessary to erect the handsome factory and office building into which they have but just removed. They have fifty employees. George Booth is president of the company and A. G. Booth manager.

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Wynyard Square, Sydney, New South Wales.

All Communications promptly attended to.

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 { Dominion Suspender Co., Niagara Falls, Ont.

Kay Electric Manufacturing Co.

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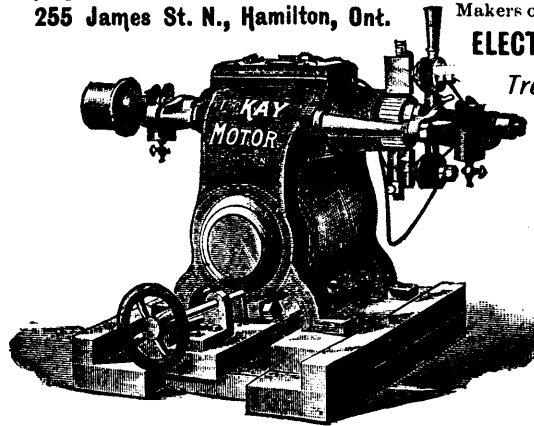
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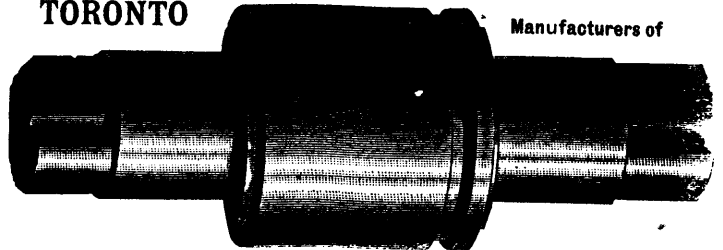
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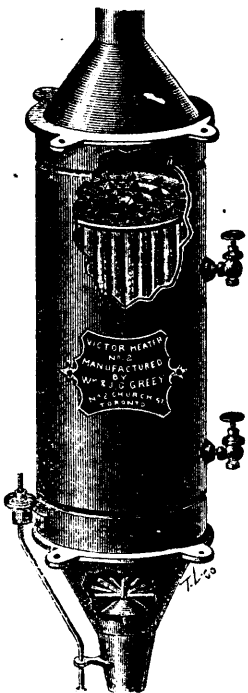
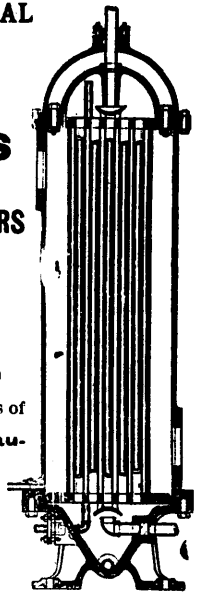
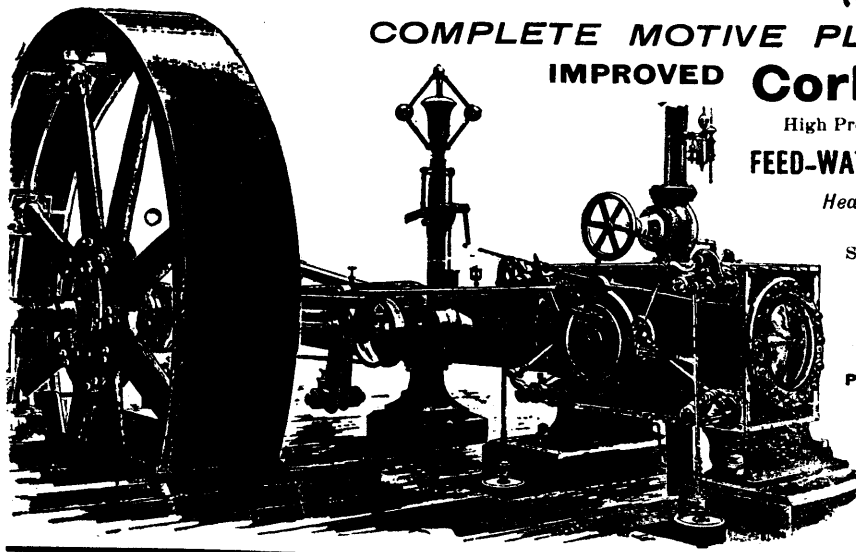
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**THE VICTOR
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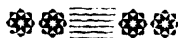
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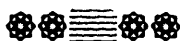
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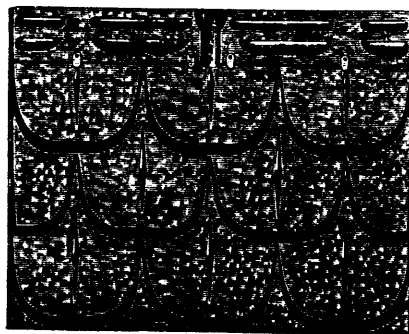
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Those contemplating building the coming season would do well to send for our catalogue. Cheap as a wooden shingle. Will last a life time.



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.

Bargains in Machinery.

NEW AND SECOND-HAND

Will be sold cheap before removal, several Corliss Engines of the best make and in first-class condition, from 250 to 350 h.p. I can furnish with these engines heavy fly wheels or band wheels.

Also to close up an estate the following new Automatic Engines will be sold cheap, strictly high grade, one 20" x 30", one 12" x 20", and one 12" x 18".

Also in stock a Double 23" x 60" Corliss Engine; 16" x 30" and 12" x 36" Corliss Engines; 16" x 32" and 10" x 16" Buckeye Engines; 12" x 12" Ball, 12" x 15", and 9" x 12" Beck, 9" x 12" Trenton, 9" x 9" New York Safety Automatic Engines.

Large stock of Slide Valve Engines, Boilers, Pumps, Feed Water Heaters, Centrifugal Pumps, Hoisting and Marine Engines, Lathes, Planers, Shapers, Drill Presses, Milling Machines and Steam Hammers, and Wood-working Machinery; 500 and 600 Light Dynamos, 1 to 60 h.p. Motors.

FRANK TOOMEY,
131 NORTH THIRD STREET

WAREHOUSES,
159 AND 161 CANAL STREET
976-982 BEACH STREET
PHILADELPHIA.

FOSTER MACHINE CO.
Foster 1894
Eighteen
Ninety
Four.
18-90-4
Cone Winder.
WESTFIELD, MASS.

IRON AT MARMORA.

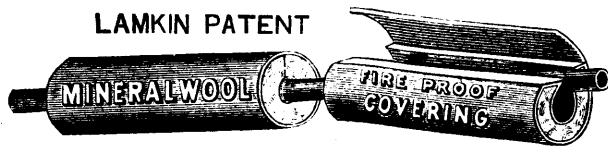
The village of Marmora and Blairton adjoining were noted in the early part of this century for their iron deposits, and many of the older inhabitants remember the immense furnaces that for a long time existed at Marmora, where large fortunes were sunk in endeavoring to produce iron by charcoal and deliver it at the front over the almost impassable roads existing when these furnaces were in operation, over which it took five days for the ox teams, then in use, to draw loaded waggons to Belleville.

The report of the Royal Commission on the mineral resources of Ontario in its description of the efforts made to develop the iron interests at that early day reads like a fairy tale, but its poetry was all lost to the promoters by the vast sums that were sunk in their laudable ambition. It appears that the first blast furnace was erected by Mr. Hayes at Crow Lake in 1820, in which enterprise he lost heavily, and the property passed into the hands of Hon. Peter McGill, of Montreal.

The Legislature was asked for a loan of £10,000 to aid the works, when a commission was appointed to enquire into the cost of

transferring the penitentiary from Kingston to Marmora, with a view of utilizing convict labor in the mining and smelting industry, but nothing came of it. Mr. Van Norman purchased the property in 1847 for \$21,000, and he, after expending a large additional amount, found himself sadly disappointed in the amount of iron that could be produced from a given amount of fuel.

At first the iron was carted to this city over the miserable roads then in existence, after which it was taken to Cobourg at a smaller cost as a part water route was available. At Cobourg the iron found ready sale at \$30 to \$35 per ton, but the completion of the St. Lawrence canals opened up the field to foreign pig iron, which sold at \$16 per ton, and settled the question of producing pig iron as heretofore. After Mr. Van Norman came the Marmora Iron Foundry, who sunk not far from £20,000 in the business; and next came an English company, whose losses were said to have been not less than £75,000. The furnace was again put in blast by an English company in 1856, under the charge of Mr. Bently, and run for forty days in all, when orders were given to blow out, because funds to pay the workmen were not forthcoming. The last



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
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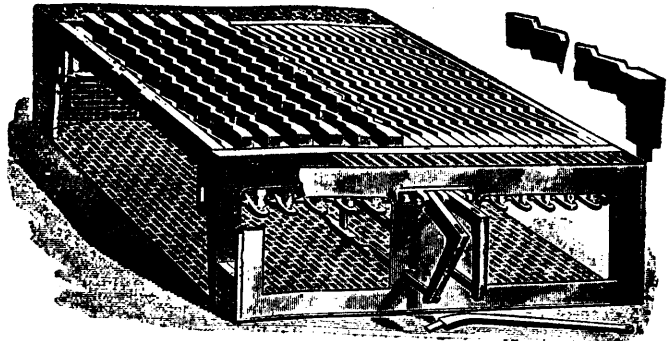
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31 COMMON STREET, - MONTREAL.

THE VOLCANIC PATENT SHAKING GRATE

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



GEORGETOWN, ONT., June 25, 1895

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Yours truly,

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

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Canadian Rubber Co., MONTREAL.

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Rubber Belting

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- "Extra Star," "Fine Para"
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All kinds of **Rubber Hose**

Made with our Patent Process Seamless Tube, including

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Yarns of all kinds for Manufacturers' use.

Twines, Lampwicks, Webbing, Etc.Dyeing of all colors, including **GENUINE FAST BLACK.****Toronto Carpet Mnfg. Co., Ltd.**

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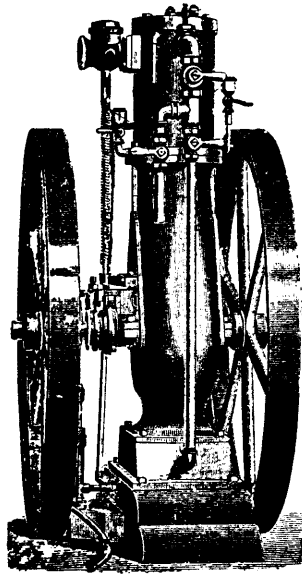
attempt to smelt ore at Marmora was in 1875, when an unsuccessful experiment was made with petroleum.

At this day the extensive works that cost so many thousand pounds have disappeared, and probably the last effort has been made to manufacture pig iron in Marmora.—Belleville Intelligencer.

ELECTRICAL GAS OR GASOLINE ENGINE.

The accompanying illustration is of an electrical gas or gasoline engine designed and built by J. R. Baird, Woodstock, Canada.

Following are some of the salient points of excellence claimed for this engine :—



The engine is of the single action type. The motive power is obtained by a mixture of air and gas, which is drawn into the cylinder of the engine by the downward stroke of the piston, and closely compressed by the upward stroke of the same. This mixture of air and gas in its compressed state is ignited by an electric spark, produced by a small battery, and the mixture, upon being ignited, produces power by the expansion of the heated gas. The engine uses from ten to fifteen cubic feet of coal gas, or about one-tenth of a gallon of gasoline, or one-eighth of a gallon of benzine per hour per horse power. It is adapted to use either coal gas, water gas, natural gas, gasoline or benzine; and those having but little space, will find this a most suitable motor, as it can be used for pumping purposes, running printing presses, small factories, elevators, jew-

ellers' lathes and polishers, dairymen's, agricultural, mining and wood-working machinery, well-boring, marine, and all other purposes requiring cheap and convenient power.

Its simplicity is such that it requires no skilled mechanic—or engineer to operate it. Any person of ordinary intelligence, with half an hour's instruction, can both comprehend and run it. Its efficiency is such, that it can be used in any place or for any purpose, where power is required, for it needs neither fire, boiler, nor other appliances that are of necessity used with steam engines. Its mechanism is such, that but a moment is required in which to start it, and after being started, requires but very little attention. There is no smoke, no ashes, no dirt, no steam nor water gage to watch, no steam to go down and no irregularity of motion.

These engines are built from one to fifteen horse power; and the term "horse power," as used here, means that the engine will exert the power claimed for it; in other words, they are not reckoned by indicated horse power, but by the amount of work they can actually accomplish.

In computing the cost of running this engine the manufacturer asks that the following facts should be taken into consideration :—

1. No expense until started.
 2. No necessity for starting until the power is required.
 3. Expense while running always in exact proportion to amount of power used.
 4. The moment the engine stops, all expense stops.
- While running at maximum speed and power, the engine consumes about one-tenth of a gallon of gasoline, or one-eighth of a gallon of benzine, or from ten to fifteen cubic feet of gas per hour per horse power. For further information apply to J. R. Baird, Woodstock, Ont.

The company that recently acquired the Kakabeka waterpower are negotiating with Fort William, Ont., for the putting in of an electric light plant. The company are also arranging to light the C.P.R. yards and elevators there.

A few days ago telegrams in the daily papers announced the occurrence of an accident in a mill at Aylmer, Ont., whereby a man was instantly killed by the bursting of a poorly constructed wood split pulley. The Dodge Wood Split Pulley Co., Toronto, advise us that the pulley in question was not of their make, and they advise users of pulleys of the importance when purchasing of seeing that they always obtain a well made and reliable article; that every pulley manufactured by them is guaranteed strong enough for the heaviest double leather belt made of any width.

BRUNNER, MOND & CO., (LTD.), Northwich, Eng.

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GUARANTEED 58 DEGREES

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DIAMINE COLORS

Have the Singular Merit of Dyeing Cotton, Wool and Silk in an Alkaline Bath, in one operation, without a mordant, hence their great importance for Mixed Fabrics. Some of the shades produced are faster than Alizarine.

THE LEADBEATER FURNACE.

In this age of keen competition the subject of cheap fuel for steam making is a question of the utmost importance and he who invents a practical device for economising fuel has certainly bestowed a boon upon steam users.

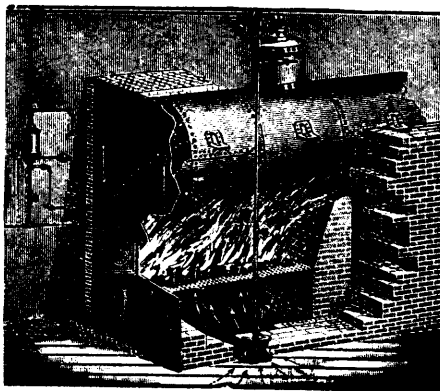


FIG. 1.

creates a draft which permits of the use of all low grade fuels, a valve is placed on the steam pipe by which the steam supply is controlled. Reference to the illustrations is sufficient to fully explain the operation of the device. Fig. 1 shows the application of the blower. Fig. 2 showing a sectional view of grate and enlarged view of blower.

We are informed that already there are quite a large number of

The accompanying illustrations are of such a device which was invented and patented by F. Leadbeater, 560 Baker street, Detroit, Mich. The apparatus consists of a blower operated by steam from the boiler, the steam being conducted to the blower through a pipe as shown in Fig. 1, where it is mixed with the air, and, being forced under the grate,

this device in use in Canada, and that it enables the users to burn in their furnaces all kinds of such fuel as hard, soft and coke screenings, locomotive cinders, tan-bark, sawdust and all other fuels that cannot be burned without a forced draft.

For further information, catalogue, price list, etc., apply as above.

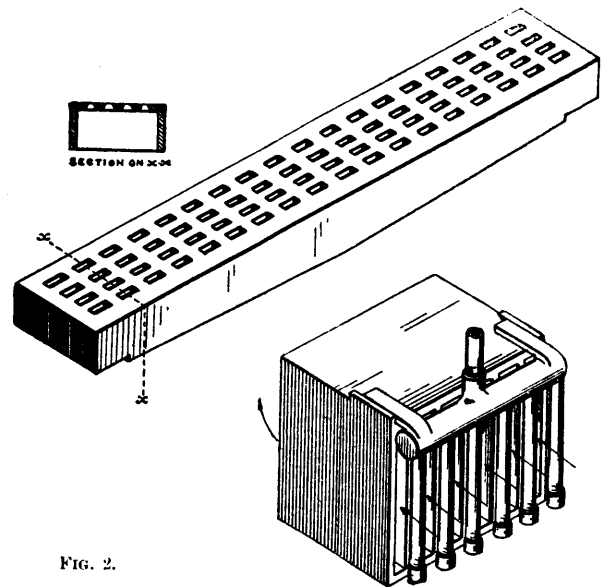


FIG. 2.

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A large Saving of Fuel is Made.
Power of Steam Greatly Increased.

Condensation of Steam Avoided.

Risk of Fire from Heated Surfaces Avoided.

Radiation of Heat Prevented.

Life of your Boiler Lengthened.

STEAM CARRIED LONG DISTANCES WITHOUT LOSS OF POWER.

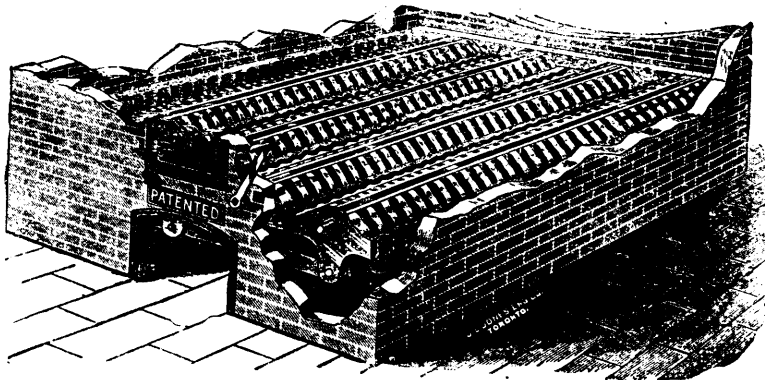
EUREKA MINERAL WOOL AND ASBESTOS CO., - - 124 Bay St., Toronto.

By **COVERING** your Steam Pipes and Boilers

WITH OUR

MINERAL WOOL SECTIONAL COVERING

NEW TESTIMONY EVERY ISSUE



From the Walker House, Toronto.

We have been using the Heeson Rocking Grate under our boiler for the last two years. It has been in constant use, and our engineer considers it now, so far as can be ascertained, in as good a condition as when first put in and he has no hesitation in saying that it is more economical, and gives greater satisfaction in every respect than any other grate we have used.

JOHN WRIGHT.

THE HEESON ROCKING GRATE BARS

Will be placed on trial under any boiler in the Dominion for thirty days, at the end of which time, if they are not satisfactory, we will remove them and return the old bars to their place free of expense

(-)-

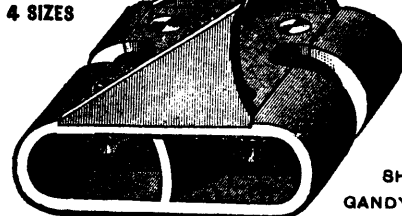
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CANADIAN PATENTS.

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

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

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

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

- 49,693 Cooking utensil, Allen A. Sage, John R. Van Dare and Minnie Hacht, Detroit, Mich.
49,694 Roller shelf, Sarah Anne Morden, assignee of Walter Henry Morden, Toronto.
49,695 Electric current transmitter, The Thomson-Houston International Electric Company, Portland, Me., assignee of Charles A. Coffin, Boston, Mass.
49,696 Contact apparatus, The Canadian General Company, Toronto, assignee of Elihu Thomson, Swampscott, Mass.
49,697 Electric circuit indicator, The Canadian General Electric Company, Toronto, assignee of Elihu Thomson, Swampscott, Mass.

- 49,698 Grain drier, Irvin Gilbert Hooper and James C. Coleman, Newark, N. J.
49,699 Electric dental engine, William Eugene Wheeler, George W. Johnston and James F. Johnston, Dayton, Tenn.
49,700 Electric accumulator, Arthur Duffek and Bohumil Holub, Prague, Bohemia, Austria.
49,701 Cigar case, Frederick Croneuwett, Jr., Detroit, Mich.
49,702 Bicycle lamp, Lewis Fulton Betts, Brooklyn, N.Y.
49,703 Electric transmitting thermometer, Francis Napier Denison, Toronto.
49,704 Clamp for hoes, James Irving, Seaforth, Ont.
49,705 Hot air heating apparatus, Christian Philip Shindler, Vancouver, B.C.
49,706 Hull for vessels, Mark Golinsky, Rahway, N.J.
49,707 Machine for making pipe, Robert F. Dockery, Los Angeles, Cal.
49,708 Stove for tailors, Albert Lundstrom, Amherst, N.S.
49,709 Artificial stone, William Owen, London, Eng.
49,710 Type-writer, Thomas Oliver, Dubuque, Iowa.
49,711 Instrument for making broken lines, James Harmer Knight, Philadelphia, Pa.
49,712 Process of making paper pulp boards, etc., William Norris Cornell, Brownville, N.Y.
49,713 Wrench, Karl August Klose, Richfield Centre, Minn.
49,714 Steam generator, Samuel E. Light, Lebanon, Pa.
49,715 Car fender attachment, Benjamin Ernest Charlton, Hamilton.
49,716 Boot and shoe, James Ferguson Sharpe, Toronto.
49,717 Reversible paper cutter, Laura C. Peters, New Orleans, La.

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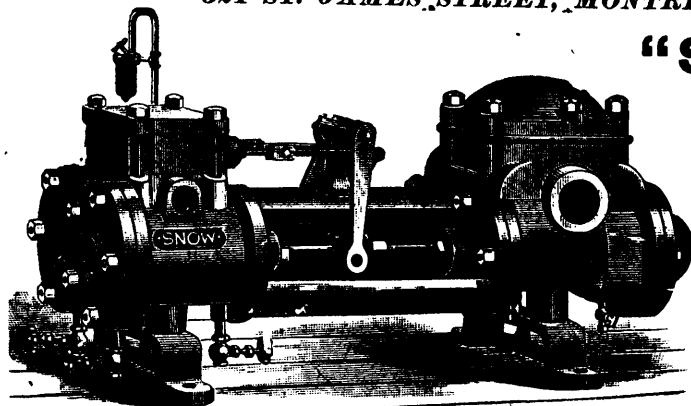
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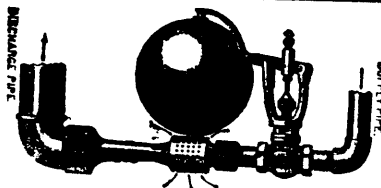
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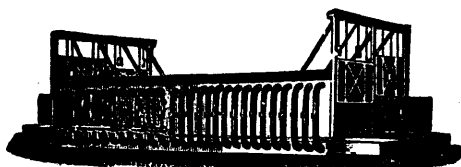
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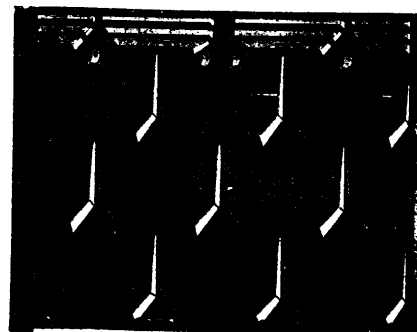
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- 49,721 Stock for screw cutting dies, John J. Harrison, Excelsior, Minn.
- 49,722 Lamp, Lewis Fulton Betts, Brooklyn, N.Y.
- 49,723 Beating engine for paper stock, Thomas C. Cadwgan, Anderson, Ind., and the O. S. Kelly Co., Springfield, Ohio.
- 49,724 Process of preparing paper stock, Thomas C. Cadwgan, Anderson, Ind., and the O. S. Kelly Co., Springfield, Ohio.
- 49,725 Machine for preparing paper stock, Thomas C. Cadwgan, Anderson, Ind., and the O. S. Kelly Co., Springfield, Ohio.
- 49,726 Electric head-light, Edgar Ambrose Edwards, Cincinnati, Ohio, and Charles W. Adams, Chicago, Ill.
- 49,727 Steam Turbine, Edgar Ambrose Edwards, Cincinnati, Ohio, and Charles W. Adams, Chicago, Ill.
- 49,728 Head-light, Edgar Ambrose Edwards, Cincinnati, Ohio, and Charles W. Adams, Chicago, Ill.
- 49,729 Carpet sweeper, T. Stewart White, Thomas Friant Gains, W. Perkins and Charles J. Reed, assignees of Silas Horatio Raymond, Grand Rapids, Mich.
- 49,730 Puzzle, Alphonse William Ziegler and Henry Utard, New York, N.Y.
- 49,731 Wire reel, Louis William Hanne and Frederick H. Hanne, assignees of Marcus Eli Fretwell, Jacksonville, Fla.
- 49,732 Firemen's axe, The Hall Manufacturing Co., Rockland, Me., assignee of Samuel Hix, Chelsea, Mass.
- 49,733 Cash till, Joseph Leopold Coyle and Henry Michael McClory, Ottawa.
- 49,734 Sticky fly paper, The O. and W. Thum Co., assignee of Otto Thum, Grand Rapids, Mich.

- 49,735 Machine for cutting axles, A. B. Jardine & Co., assignees of James Jardine, Hespeler, Ont.
- 49,736 Pneumatic bicycle tire, Peter Krumscheid and Philip Joseph Duggan, Boston, Mass.
- 49,737 Tire for bicycles, Manuel Baker and James Harvey Pearson, Toronto.
- 49,738 Apparatus for supplying liquid fuel to burners, Samuel Turner, New York, Cora Louise Turner, Brooklyn, N.Y., Henrietta Ehrenzella Chausfrau, Long Branch, N.J., and Annie Sophia Patten, Pleasure Bay, N.J.
- 49,739 Match magazine lighter, Edwin Seaborn, London, assignee of Frank Goff, Camden, and Thomas H. Joiner, Burlington, N.J.
- 49,740 Medical appliances, Daniel D. Wilson, Toronto.
- 49,741 Rack for wagons, Richard McLane, Colchester.
- 49,742 Lamp, Julius Schulke, Berlin, Germany.
- 49,743 Method of using the sea as a motive power, George Walter Blands, Sydney, N.S.W., Australia.
- 49,744 Exercising apparatus, Richard Henry Bath, London, Eng.
- 49,745 Machine for making cigars, Jean Reuse, Engien, Belgium.
- 49,746 Method of stringing pianos, Dominick Francis Ward, St. Catharines.
- 49,747 Cards for playing game, Paul Lehmann, Saxony, Germany.
- 49,748 Treatment of tobacco, Edward John Lusby, London, Eng.
- 49,749 Filter, Fredrich Breyer, Vienna, Austria.
- 49,750 Paving and roofing composition and method of making the same, The Asphaltina Company of America, assignee of John Augustus Just, Syracuse, N.Y.
- 49,751 Paving and roofing composition and method of making the same, The Asphaltina Company of America, assignee of John Augustus Just, Syracuse, N.Y.
- 49,752 Paving and roofing composition and method of making the same, The Asphaltina Company of America, assignee of John Augustus Just, Syracuse, N.Y.
- 49,753 Shoe, Adam Reed, St. Joseph, Miss.

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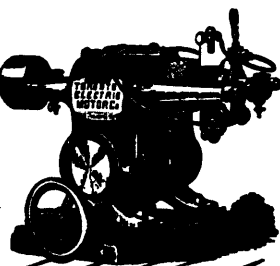
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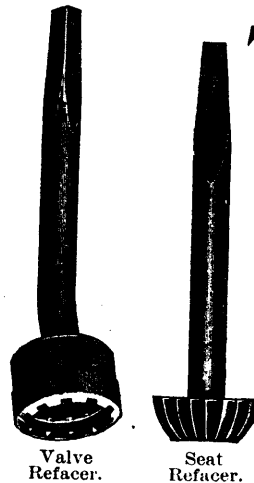


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- 49,755 Umbrella, The Gripsack Umbrella Company, assignee of Clarence C. Frost, Glens Falls, N. Y.
- 49,756 Combined vessel and crate for preserving fruit, etc., Elizabeth Ann Hegler, Toronto.
- 49,757 Nut lock, George H. Beaumont, Quincy, Ill.
- 49,758 Reflector, Hercule Alexander Crevier, Montreal.
- 49,759 Umbrella stand, Henry Westphal and Henry W. Beauclark, Chicago, Ill.
- 49,760 Lathe, William Anderson Robertson, Cedar Rapids, Iowa.
- 49,761 Pulp engine, Larkin Ashley Thomas, Banning, Ga.
- 49,762 Watch case, William Marion Rush, St. Joseph, Miss.
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- 49,769 Nipple holder, Joseph Canney, Butte City, Mont.
- 49,770 Machine for coating paper, Walter Sparks, New York, N. Y.
- 49,771 Machine for compressing metal rings, Jonathan Burns West, Rochester, N. Y.
- 49,772 Water heater, Charles Tuck Toulmin, New York, N. Y.
- 49,773 Attachment for ink bottles, Levi Hoffman Thomas, New York, N. Y.
- 49,774 Testing-machine, John H. Kellogg, Battle Creek, Mich.
- 49,775 Finger ring twine cutter, James Wallace, Oakland, Cal.
- 49,776 Stop cock, Edward Merrill Dart, Stanlon B. Champlin and George B. Champlin, Providence, R. I.
- 49,777 Rein holder, Fred W. Powers, Reinbeck, Iowa, assignee of David F. Maine, Mansfield, Ohio.
- 49,778 Match making machine, Levi H. Montross, Camden, N. J., and Adolph Segal, Philadelphia, Pa.

- 49,779 Power hammer, Royal Bullard Boynton, West Townsend, Daniel Lyman Chandler, Ayre, and Elliott Warren, West Townsend, assignees of Frank Everett Tenney, Ayre, Mass.
- 49,780 Screw propeller, Bruno Wesselman and Wilhelm Rocker, Gottinger, Russia.
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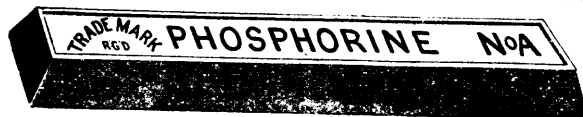
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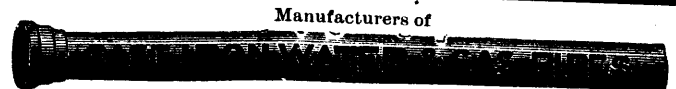
- 49,786 Automatic vending machine, George Harper Bowie, and John C. Roger, Ottawa.
- 49,787 Match racking machine, Edmund George Shepherd, Edwin Septimus Leetham and Charles Derbrishire Chitty, Ottawa, Ont., assignees of John Daniel Mantion, Hull, Que.
- 49,788 Liquid dispensing apparatus, William Miles Fowler, Stamford, Conn.
- 49,789 Knitting loom, John Bradley, North Chelmsford, Mass.
- 49,790 Fly trap, William Thomas, Schenectady, New York, N.Y.
- 49,791 Machine for making cigarettes, Christophe Ollagnier, Geneva, Switzerland.
- 49,792 Gill net lifting machine, Peter Gagnon and William Frank Ahearn, Two Rivers, Wis.
- 49,793 Metallic shingle, Frederick Crawford, Toronto.
- 49,794 Machine for making matches, Henry Arthur La Chicotte, Walter Betts La Chicotte, Brooklyn, N.Y.
- 49,795 Brush wiper, Frederick L. Clarke, Glens Falls, N.Y.
- 49,796 Apparatus for recording the number of passengers in railway and other vehicles, Adrian Gajardo, Valparaiso, Chili.
- 49,797 Machine for cutting tobacco, Alphonse Ouellette, Montreal.
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- 49,800 Pocket camera, John Conrad Hegelein, New York, N.Y.
- 49,801 Arc lamp, Moses Solomon Okun, New York, N.Y.
- 49,802 Car brake, Archibald Wayne Dingman, and Thomas Henry Allen, Toronto.
- 49,803 Valve for steam radiators, Sylvanus Sawyer, Fitchburg, Mass.
- 49,804 Roller bearing, Frank Mossberg, Attleborough, Mass.
- 49,805 Hay-rack, unloader and stack builder, John Butcher, Winnipeg, Man.
- 49,806 Nut lock, John William Hayward and Seward Young, Toronto.
- 49,807 Air pump for bicycles, Aquila Bolton Marshall and Edwin E. Dickinson, New York, N.Y., and Charles B. Baynton, Newark, N.J.
- 49,808 Bit for horses, William E. Simonds, Canton, assignee for Henry Small, Hartford, Conn.
- 49,809 Chain-coupling, Cyrus F. Noble, Baldwin, Me.
- 49,810 Sleigh, Dean S. Hall, Cabot, Vt.
- 49,811 Current-wheel, William Park, Fredonia, N.Y.
- 49,812 Steam engine, Richard Garstang, Alton, Ill.
- 49,813 Bicycle bearing, Horace E. Dodge and John F. Dodge, Detroit, Mich.
- 49,814 Steam engine, William R. Dow, Alameda, Cal.
- 49,815 Windmill, Henry Sutton Hopper, Detroit, Mich.
- 49,816 Water boiler, Ernest Peterson, Blackfriars Road, Eng.
- 49,817 Bit for horses, Joseph Clamer, Trenton, N.J.
- 49,818 Car-coupler, Charles W. Hinton, Los Angeles, Cal.
- 49,819 Car-coupler, Charles W. Hinton, Los Angeles, Cal.
- 49,820 Car-coupler, Horace Lester Dunlap, North Topeka, Kan.
- 49,821 Lathe, Henry William Norton Cole, Brooklyn, 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 :

- 548,040 Beading attachment for cornice brakes, John H. Crocker, Shelburne, Ont.
- 548,165 Velocipede, Charles F. Lavender, Toronto.
- 547,958 Storage receptacle, John McPherson, Fingal, Ont.
- 547,898 Car coupling, John Somerville, Milton, Ont.
- 548,530 Vine cutter, Hammond J. Evans, Hampton, Ont.
- 548,195 Rubber-soled footwear, Charles L. Higgins, Montreal.
- 548,567 Railway car axle, James A. Mahood, Victoria, B.C.

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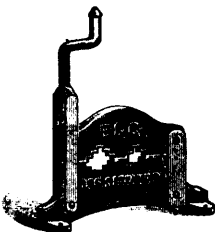
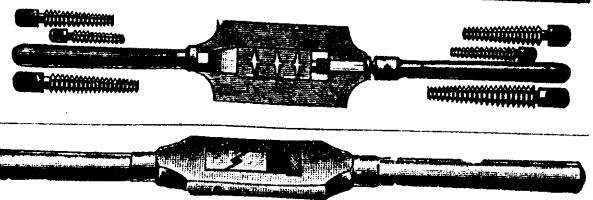
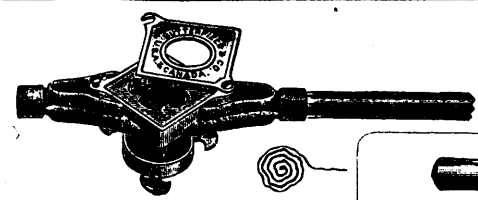
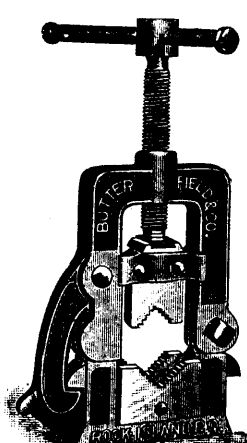


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1½	1½	4.13	\$0 4½	2½	2½	18.91	\$0 04
1¾	1¾	5.01	"	3	2¾	22.59	"
1⅞	1⅞	5.94	"	3¼	3¼	26.60	"
2	1⅞	7.46	"	3½	3½	30.94	"
2	2	9.83	0 04	4	4	42.33	0 05
2½	2½	12.53	"	4½	4½	53.57	"
2¾	2¾	15.55	"	5	5	66.13	"

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

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

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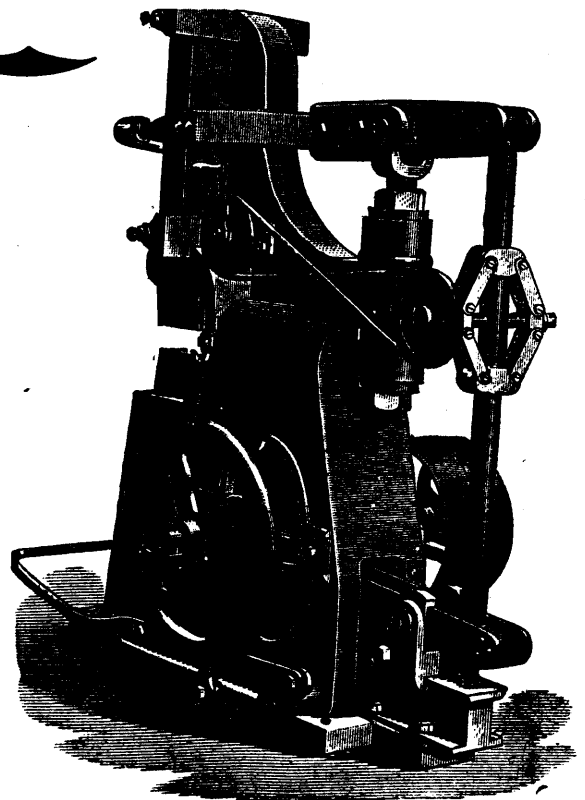
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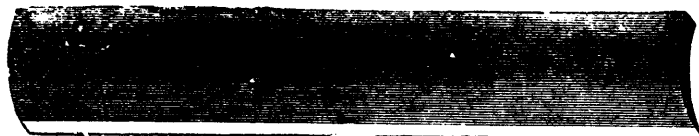


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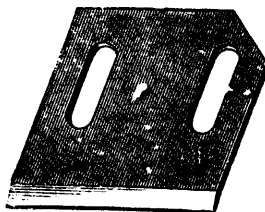


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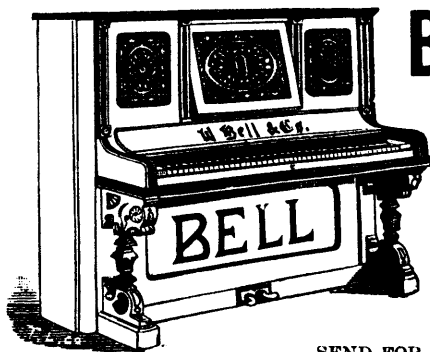
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 - To enable those in all branches of manufacturing enterprises to act in concert, as a united body, whenever action in behalf of any particular industry, or of the whole body, is necessary.
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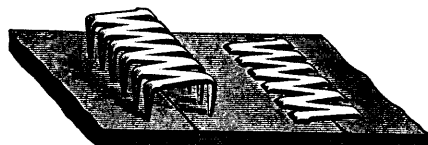
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