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Vol. 37.

TORONTO, SEPTEMBER 2, 1898.

No 6

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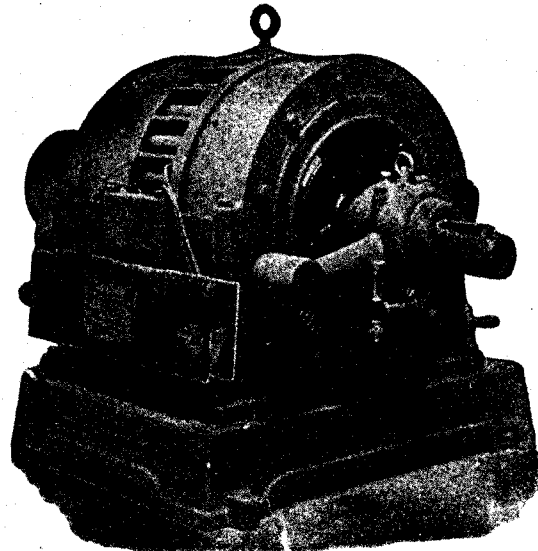
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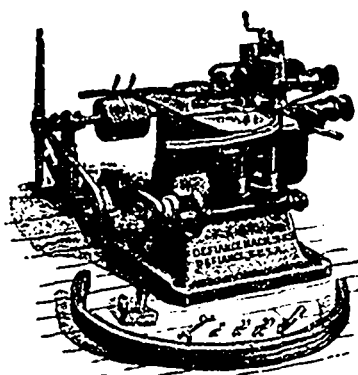
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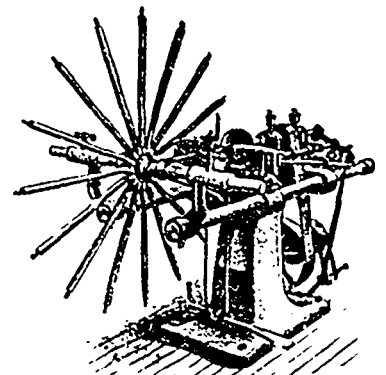
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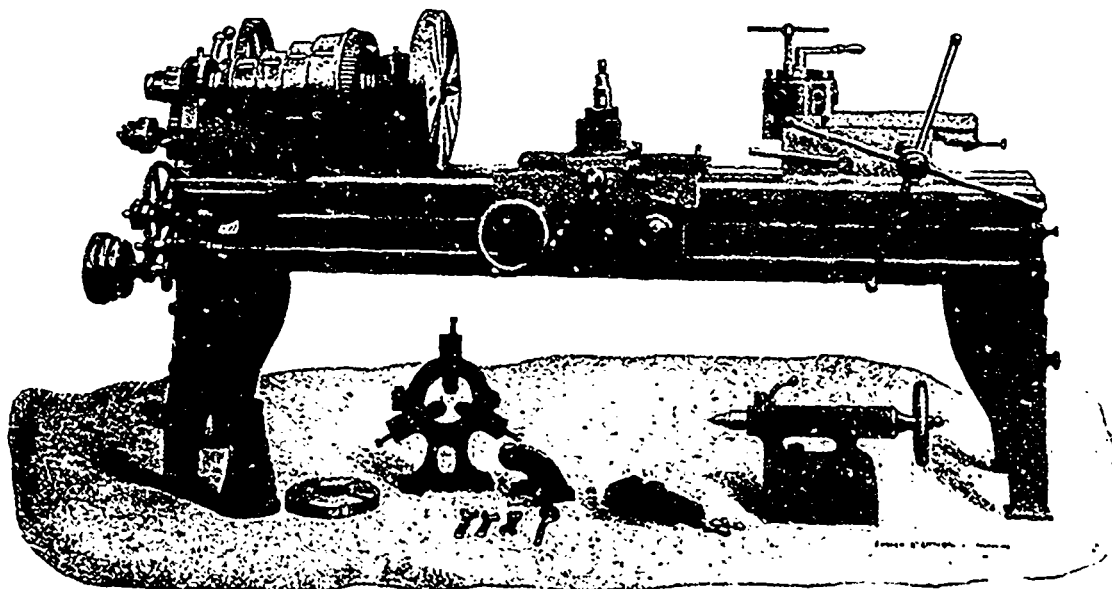
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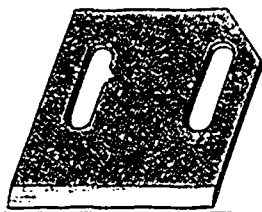
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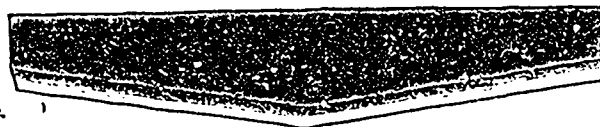
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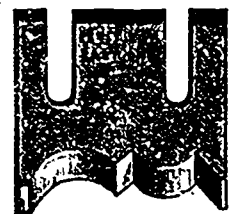
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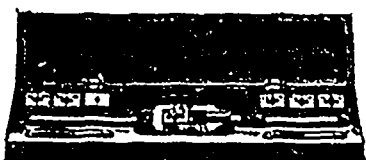
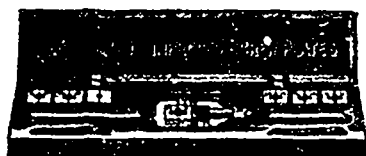
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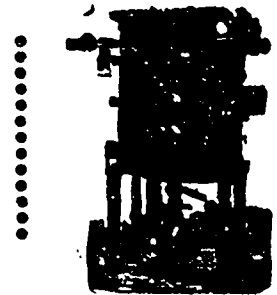
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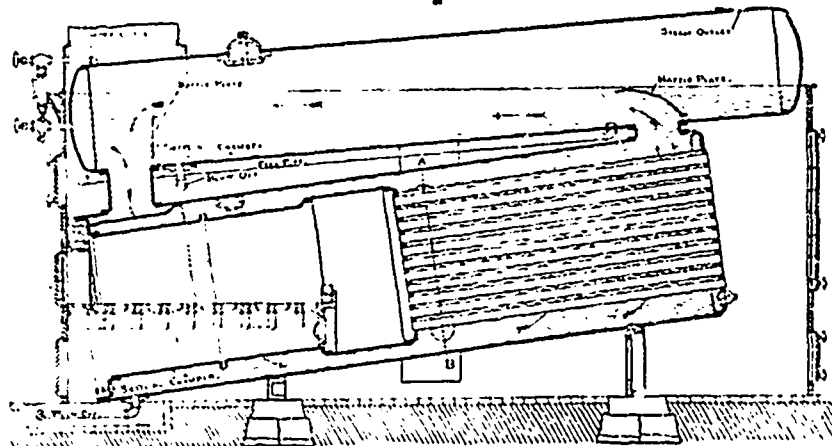
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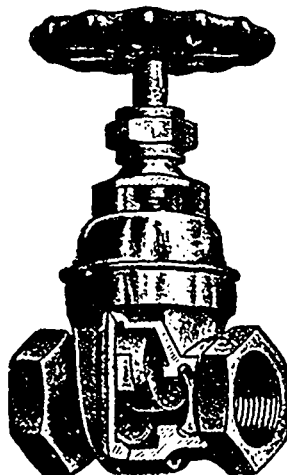
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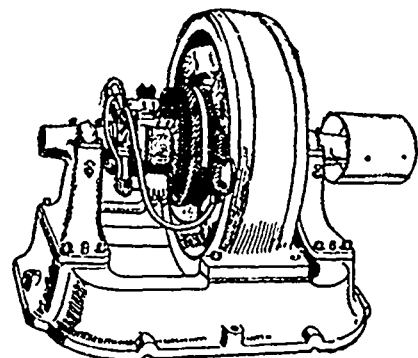
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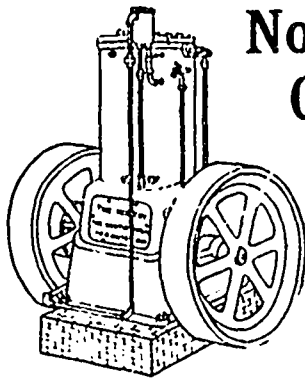


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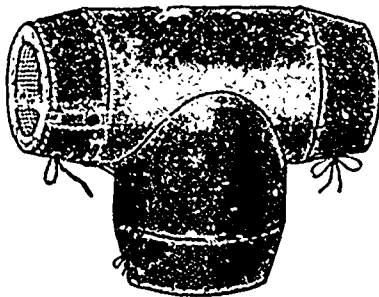
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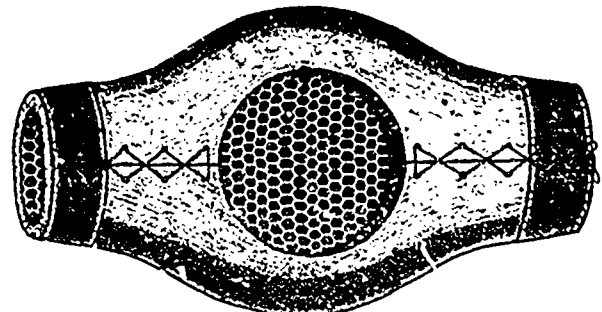
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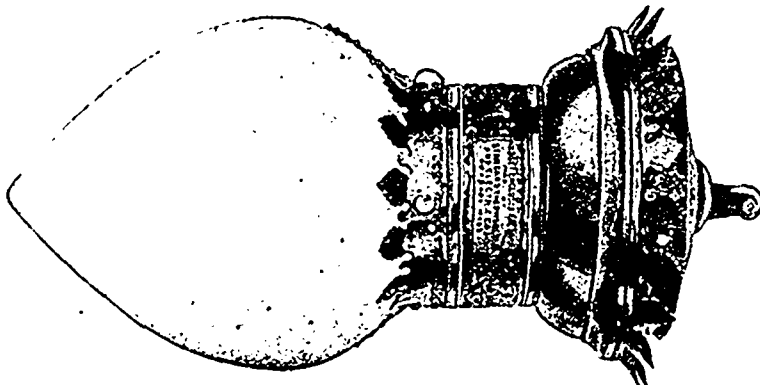


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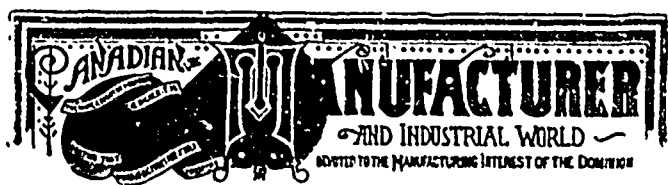
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## DISINTEGRATING THE EMPIRE.

Mr. Chamberlain made a speech in the House of Commons a few days ago, in which he alluded to the efforts that had been made by the British Government to persuade the United States to grant more favorable terms to the British West India Islands. He said that Canada had also been applied to, and had met the Mother Country in a spirit of liberalism which the Dominion had recently shown in a remarkable degree regarding Imperial matters. Canada, Mr. Chamberlain said, concedes 25 per cent. preference to sugar from British possessions in return only for the concession that the same terms be allowed Canada as are given to the United States. Unfortunately the concession, about 16 shillings a ton, failed to give the sugar of the West Indies sufficient advantage. It induced the planters to ship to Canada rather than the United States, and now the Imperial Government was asking the Dominion if it were possible to secure some further privilege, feeling the advantage Canada is to the Indies in the encouragement of trade. "We think," pursued Mr. Chamberlain, "that in return for sugar sent from the West Indies to Canada the ships should reload such products of Canada as lumber, corn, and pork." Whether or not this was practicable Mr. Chamberlain could not say, but if there were no obstacles in the way much benefit would result to both countries. "I have proposed," said he, "that conjointly with Canada, we subsidize a line of steamships between the West Indies and Halifax and other Canadian ports."

It is quite evident that Canada is to be used as a cat's paw with which to rake chestnuts out of the fire for free-trade Britain. Under the Cobden doctrine now in force, Germany finds free entrance into the British market for her bounty-fed sugar which can be sold there at much cheaper prices than those at which British West India sugar can afford to be sold; and as the latter article is barred out of the United States by the Dingley tariff, the British Government are casting about to find a way of relief for an industry that is now in a condition of collapse.

With a countervailing duty in Britain upon all bounty-fed sugar, Jamaica and all the other British West India Islands

could afford to sell their sugar in Britain, but Cobdenism prevents and forbids it, and the only hope for the British West India sugar industry is that Canada will come to the rescue. And notwithstanding all that Canada is doing in this direction, the British Government find that our concessions are not sufficient, and wants Canada to go still further and help the West Indies by joining in subsidizing a line of steamers to ply between Halifax and those Islands. We are told that the Colonial Secretary has discovered that the Canadian preference to Jamaica sugar, which was given last year, is not sufficient to make its sugar trade with this country profitable. Mr. Chamberlain does not seem to comprehend the fact that, even if Canada were to admit British West India sugar entirely free of duty, our market is not sufficiently large to absorb all the sugar that might be thus sent, and that a very considerable portion of it would have to be marketed elsewhere. Where? Not in Great Britain, for reasons already given. Not in the United States, for the Dingley tariff interposes an insuperable bar.

Mr. Chamberlain should bear in mind that the condition of the British West Indies is rapidly becoming worse and worse. A couple of years ago it was so bad as to call for the appointment of a commission to investigate the situation, but no satisfactory solution could be suggested. Since then the sugar industry of the people of those islands, good British subjects all of them, has been going from bad to worse. Since then Spain has been driven out of Cuba and Porto Rico, which are great producers of sugar, and it is safe to say that the day is not far distant when Cuban and Porto Rican sugar will either be admitted into the United States duty free, or at a rate of duty entirely unattainable to Jamaican sugar except under similar circumstances. Does Mr. Chamberlain comprehend what that means? What have Jamaicans to hope for? They ask for bread and—they don't get it. The Mother Country turns a cold shoulder and tells them that it will neither give a bounty on the production of sugar as Germany does, nor will it impose a countervailing duty on German sugar as the United States does. But Canada is both great and good. It is rich and prosperous, and in its daughter-like love for the dear, good mother, assumes to do for Great Britain what Great Britain refuses to do. Canada, to please Britain, throws off 25 per cent. of duty on sugar imported not only from the British West Indies, but from all British countries. But this concession is not enough, and now Mr. Chamberlain wants Canada to bear a large portion of the cost of instituting and maintaining a line of steamers that will bring at very reduced rates of freight Jamaica sugar to Canadian refineries. The scheme looks patriotic and pretty, but it will not work. What would be the use of dumping more sugar into this country than can be consumed here? The excess would deteriorate the value of the whole, the Jamaicans would be forced to accept lower prices, and the investment in steamers would not prove remunerative.

And then how about the loyalty to the Mother Country that is supposed to possess every British subject, including the negroes, mongrels and halfbreeds who live in the British West Indies. These latter feel that they have not been treated properly by the Home Government. They have seen the governments of other West India Islands, and other sugar producing countries, make treaties with the United

States by which their products are allowed entry to that country on better terms than they receive, and they naturally conclude that it would be worth more to them to enjoy similar privileges than to cling to a mother who is so entirely oblivious to their necessities.

The situation resembles in many respects that which led up to the occurrence of 1776. They have no representation in the Home Government, they get no relief from those who rule them and who should give it; they are not allowed to sell the products of their labor on equal terms as their neighbors in adjacent islands, and their loyalty is being stretched to the limit of endurance.

Surely Cobdenism is working the disintegration of the British Empire.

#### THE DENOUNCED TREATIES.

With display headlines The Toronto Globe publishes the following:—

At 12 o'clock on Monday night, says The Consular Journal, of London, Eng., in its issue of the first week in August, the treaty with Belgium of 1862 and that with Germany of 1865, restraining the colonies from admitting British goods on better terms than foreign goods, came to an end, in pursuance of the notice given last year by her Majesty's Government. Just after twelve on Tuesday morning the following message from the Council of the United Empire Trade League was cabled by Sir Howard Vincent, M.P., to Sir Wilfrid Laurier:—"Premier of Canada, Ottawa: United Empire Trade League in Motherland, Australia, Africa and Oceania affectionately salutes Greater Britain in Canada, and confidently expresses the undying gratitude of the British race of to-day and for ever to their brothers throughout the vast Dominion for their patriotic and filial inauguration of preferential trade between British kith-and-kin in this, the first minute of freedom from restraining treaties. May this preferential trade grow and grow into the complete commercial federation of British peoples and possessions the whole world over, to the honor of our Sovereign, the glory of the English name and the increasing welfare of all in Britain and Greater Britain. For the Council, Howard Vincent, Honorary Secretary, House of Commons, London, August 1, 1898, (12.01 a.m.)." All goods manufactured in the United Kingdom and India, Ceylon, the West Indies, British Guiana and Bermuda, or containing twenty five per cent. of British labor, are from now to be admitted into the Dominion of Canada at a reduction of one-fourth on the duty charged on foreign goods. An event of Imperial significance, the League memorandum says, "is fitly celebrated by a general holiday in the Mother Country."

Sir Howard Vincent has fought long and faithfully to obtain in Great Britain a preferential tariff by which the produce of all British possessions would be admitted to that country on better terms than similar products of other countries, for that is the aim and object of the United Empire Trade League, over which Sir Howard presides. It was as impossible to accomplish this during the continuance of the Belgian and German treaties as it was for Canada, in its 1897 tariff, to give preference to Great Britain alone. The denouncement of those treaties was absolutely essential to Great Britain so as to enable her to give preferential trade to her colonies if she desired to do so; and it was equally essential to Canada so as to enable us to give an exclusive preference to British products. Hence the pleasure to Sir Howard over the coming into effect of the denouncement of the Belgian and German treaties. Sir Howard is a leader in Great Britain of a large and influential party whose chief object it is to bring

about preferential trade within the Empire, and so was Mr. Joseph Chamberlain, and there can be no doubt that politics in Great Britain were rapidly shaping themselves in that direction up to the time that Sir Wilfrid Laurier, our distinguished Premier, most solemnly assured Mr. Chamberlain and the British people, that while he was ready and willing and anxious to give preference to British goods in the Canadian market, he would not ask for, in fact did not want, any preference for Canadian goods in the British market. No wonder Mr. Chamberlain has switched off from the preferential idea, feeling that if Canada did not desire the arrangement Britain should not force it upon her. Undoubtedly Sir Wilfrid Laurier had it in his power to force Great Britain to abandon her free trade fad, and should have used it to the great benefit of Canada and the other colonies. Mr. Chamberlain, being an important factor of the British Government, was ready and willing to make the concessions that would have meant so much to Canada, and could not but have felt disgusted at the action of the man who officially represented Canada, when he declared that he would not again touch the question, even with a pair of tongs. If Canada is willing to give everything and ask nothing, why should Mr. Chamberlain care?

But hear the comments of The Globe:—

This is the expression of opinion of men who know what they are talking about, and who are strong advocates for preferential trade, not only of a colonial preference to Great Britain, but of a British preference to the colonies.

Sir Wilfrid Laurier utterly destroyed all hope of Great Britain ever giving Canada tariff preference, and yet it speaks of Mr. Chamberlain and Sir Howard Vincent being strong advocates for that preference.

#### JAMAICA.

It is to be hoped that the gold-tinted glamor of Imperial Federation will not so dazzle the eyes of the British people, dispersed as they are in every quarter of the world, that they will be unable to see that instead of the solidifying of the Empire they so fondly hope for, there are strong evidences that disintegration is imminent, if not already begun.

The bolt does not come from a cloudless sky. More than two years ago Jamaica sent up a cry that after long waiting received some attention by the Home Government. The complaint was that the sugar industry of the Island was being ruined because of the inability to sell the product in its natural market, Great Britain, in competition with the bounty fed sugar of France, Belgian and Germany. As is usual in such cases, the British Government appointed a commission to investigate the grievance but nothing tangible can grow out of its recommendation. Some money will be expended in the Island in local improvements, and Canada is to help by remitting twenty-five per cent. of the duties on Jamaican sugar, and perhaps investing in a subsidized line of steamers between that Island and Halifax. But even better highway roads, lower duties in Canada and cheaper transportation cannot create a demand for all the sugar the Island produces, for this country can consume but about 150,000 tons of sugar per year, while Jamaica produces about 250,000 tons.

The remedy is simple for the correction of the trouble, and Great Britain alone, not Canada, is the one to apply it, but a

standards in the way—the free trade standard, by the persistent observance of which Great Britain stands to lose a valuable possession—nay, many valuable possessions.

And now a significant telegram comes over the wires from Jamaica to the effect that coincident with the conference that is to assemble on September 3rd, at Barbados, for the purpose of protesting against the sacrifice of the sugar industry of the British West India Islands by Great Britain, Jamaica is proposing a plebiscite to learn if the inhabitants would not prefer annexation to the United States; and we are told that while the promoters of the movement will endeavor to secure the co-operation of the other West India Colonies, they are not depending upon it.

Unless something is done to counteract this movement Jamaica will soon be lost to the British Crown, and not only Jamaica but all the other West India sugar-producing colonies, for should Jamaica lead the way the others will quickly follow. No power but that of the Imperial Government can quiet the trouble, and if that power is not evoked, and that without much delay, the disintegration will begin, but where it will stop none can tell. That something so necessary to be done consists simply in giving British subjects in the West India Islands as much favor in the British market as is given there to subjects of Germany, France, Belgium and other countries that pay bounties upon their exports of sugar. Countervailing duties will do it.

Canada is willing to sacrifice a great deal to secure imperial unity, but what is Great Britain willing to do? Canada can afford, probably, to sacrifice many of its most valuable interests to help Britain, but it is evident that British selfishness has exhausted the patriotism and patience of the people of her West India possessions, and Canada will soon weary of doing for the Mother Country that which it persistently refuses to do for itself, even if disintegration is the result.

#### THE SMOKE NUISANCE.

The dense volumes of smoke emitted from the tall chimneys of industrial establishments in Toronto and other places are entirely out of proportion to the number of such establishments. Aside from the discomfort arising from the soot floating in the atmosphere, it indicates a money loss of no small value. Efforts are being made constantly by steam users to abate the nuisance, and it is interesting to observe what is being done in other places with that end in view. The American Manufacturer says:

The Pittsburg municipal authorities have begun another crusade against the smoke nuisance, and tests of the steam plants at various establishments are now being made. The best feature of this movement is that common sense methods are to be used, and the investigation is not to be made for the purpose of introducing any particular device. The official having the matter in charge is quoted as saying that the question of smoke abatement will be dealt with in a practical way, and he notifies all steam users within the city limits that instead of putting them to any additional expense and trouble, in every case the plans he proposes to put in operation will mean a saving of at least 15 per cent. He states that investigation so far has shown that the smoke nuisance is due first, to improperly constructed furnaces; second, to a lack of ample boiler room, and third, inadequate

means to keep the flues and boilers free from scale and soot. The main trouble, he declares, is lack of ample boiler capacity as this causes the boilers to be driven to their utmost, and great quantities of smoke are the inevitable result. Therefore the generating capacity of the boilers should be sufficiently in excess to easily meet the requirements for power.

The foregoing plain facts are too often lost sight of in dealing with the smoke question. In attempting to abate the nuisance, too little attention is paid to the conditions under which a steam power plant is being operated. Instead of working by the best methods, and providing a plant able to meet requirements, an inadequate equipment is pushed beyond its proper limits, and the owners then hunt for some device that will accomplish impossibilities. The Pittsburg authorities are going at the matter in the right way, as they will show the operators of steam plants how much can be accomplished by proper construction and sensible methods.

In a recent issue of this journal mention was made of the abandonment and demolition of the tall chimneys of the works of the B. F. Sturtevant Company, and the installation of a fan on the top of the boilers, the gases of combustion being drawn through it and discharged through a short stack extending but a few feet above the top of the boiler house, the arrangement being simple, convenient and economical.

One of the incidentals of economy, independent of the lessened first cost of such a mechanical draft apparatus, is the gain in floor area on the floors through which a chimney usually passes. The fan occupies no valuable space, and no expensive foundations are required.

In the case alluded to the stack does not extend above the top of neighboring buildings, and no inconvenience has resulted therefrom. In fact, smoke is scarcely ever visible, and then only for an instant, the positive and ample supply of air resulting from the operation of the fan serving to promote perfect combustion. By means of a special automatic device the speed of the fan is exactly regulated to the requirements of the fire and the steam pressure is maintained absolutely constant.

With the modern advance in steam engineering practice, the economy of steam generation is receiving more of the attention which was previously accorded to grates. Efficiency in its utilization is imperative and mechanical draft is turned to as one of the important factors in decreasing the wastes usually incidental to the production of steam. The intensity of draft produced by a fan, and its entire independence of the temperature of the escaping gases, makes possible the utilization of much of the heat which is otherwise wasted, and which must be incidental to the operation of a chimney in which the draft is directly dependent upon the temperature of the gases.

#### BRITISH TRADE WITH CANADA.

British manufacturers are awaking to the fact that if they are to hold their own in Canadian trade they must bestir themselves. Good easy souls they have always been in considering that Canada was their porsimmon that they could gather at pleasure, oblivious to the fact that the trade was fast slipping away from them—indeed has almost gone—gobbled up by their more enterprising Yankee rivals. But now they begin to comprehend the situation, and we are told by a London contemporary, The Hardware Exporter, that British

trade with Canada is on the eve of a development unprecedented in the history of the commercial relations of the two countries. It tells us that it is confident in this prediction in spite of the scepticism of a certain school of rather antiquated British manufacturers, who always make the past gauge the future, however conditions may vary, or else are too indolent to seize the occasion when it offers. We have done with the past, it exclaims, and what are the new conditions? There are, first of all, the proofs that Canada earnestly desires to expand her trade with the Mother Country in both directions. Never before has a British Colony given the same token of her commercial good-will. So far as a customs tariff has restricted our exports to Canada by putting us on the same level with competing European countries, and at a decided disadvantage as regards the United States, chief of our competitors, because of our greater distance, the Dominion has now practically removed the disability by spontaneously conceding a preference amounting to one-quarter of the tariff rate. It was a fine concession to the Imperial idea, but beyond the sentiment involved in the Act, it unmistakably points to a Canadian preference for British goods, provided they can get them on equal terms; and with the thrift involved in that provision no one can quarrel. It now remains for British manufacturers and exporters to respond. The most ordinary dictates of commercial activity, apart from all question of sentiment, forbid our declining to cross the threshold of this new "open door." It may be only tentatively in the first place, by way of experiment, but to ignore the opening entirely is inconceivable of anyone who has goods to sell that the Canadian may perchance want to buy.

Acting on this idea, a representative of a number of British manufacturers is already in Canada, visiting all sections which give promise of fruitful cultivation, having in hand samples of the products of the concerns he represents.

This may be a new move on the part of our British friends, but it is an old one with American manufacturers, and no doubt accounts for the very large trade that our Yankee friends are enjoying.

#### EDITORIAL NOTES.

The Berlin correspondent of The London Daily Mail says:

"The naval battle of Santiago de Cuba is considered to have proved the superiority of American armor plating and artillery, and it is believed that in the future European nations will give larger orders to American makers for armor guns and the like."

The peculiar value of American armor plate is given to it by the admixture of an article that is not produced in commercial quantities in the United States, to wit: nickel, which is obtained exclusively from Canada. And yet Canada takes no steps to build up an armor plate industry that would supply the wants of all the world.

Speaking of the Quebec Convention, The Pall Mall Gazette says:—

The convention has an appreciable bearing upon international politics, from the fact that the United States and Great Britain are giving the world so striking a demonstration of a desire for a complete mutual understanding. It is a visible sign to all, that two nations may attempt to bury their superficial differences for the sake of attaining a fundamental unanimity, without which, treaties, and alliances, no matter how formal, cannot endure.

This visible sign that the two nations are attempting to bury their differences is a very unsatisfactory and delusive sign, forboding but little comfort to Canada. This striking demonstration of a desire for complete mutual understanding means that Canada is like the grain between the upper and the nether mill stone. She will be pulverized.

The announcement is now made that a movement is gaining strength in Jamaica in favor of admission to the United States. This has been brought about by the practical destruction of the sugar industry by German bounties on beet sugar, which enabled English manufacturers to buy sugar at less than cost. A convention of proprietors in the British West Indies is to be called at once and representations will be made to the Home Government showing the difficulty of the position, and asking first, relief in the British market, or, failing that, leave to apply for admission to the United States. The American market is now the chief comfort of the sugar planters, but with Porto Rico and Cuba coming under American sway, they will be shut out of that. We believe the British Government will make every effort to avert the loss of such important colonies. Jamaica especially, occupies a strategic position of immense value in view of the coming development of the Caribbean Sea region. It is more than likely that in the new arrangements that are certain to be made Canada will play an important part.—Montreal Herald.

Our esteemed contemporary is wrong in believing that the British Government will make every effort to avert the loss of Jamaica. The Herald knows that there are several things that could be done, that will not be done. Countervailing duties would do it, and import duties would do it. Countervailing duties would shut out bounty fed sugar from Germany France and Belgium, and preferential import duties would accomplish the same thing. But Britain should not expect Canada to become a guarantor for the fealty of Jamaica.

In a letter to The Ottawa Citizen, Mr. George Johnson, Dominion Statistician, apropos of the telegraphic report of the proposed action of Jamaica, with a view to ascertaining the feeling of the people respecting annexation to the United States, recalls the fact that in 1884 the people of Jamaica were anxious to throw in their lot with the people of Canada. "Why," he asks, "should not Canada undertake to look after the British West Indian possessions? It would give Canada what she needs—a tropical annex. It would relieve the statesmen of the United Kingdom of the great toil and trouble involved in caring for the six groups of the West India Islands belonging to Great Britain, and remove the congestion of administration now felt in the Colonial Office." But Mr. Johnson might with equal propriety have asked, Why should Canada undertake the task? Why should Canada be anxious to relieve British statesmen of the trouble involved in administering their Colonial Office? Canada has enough to do in looking after Canadian affairs. If the six groups of West India Islands belonging to Great Britain are worth anything to the Empire, Great Britain, not Canada, is the one to do such things as are best calculated to retain them. If the retention is not worth the effort, let them go free to make such other arrangements as will best conduce to their welfare and happiness.

In the smaller cities of the Province when a man wants to say nasty things about Toronto he calls it Hogtown. The remark originally had no relation at all to our friend the hog

but was merely intended to convey an impression that the citizens of Toronto were porcine in their tendencies and had their fore feet in anything that was worth having. Now, while we are not disposed to admit that this is a correct picture of the inhabitants of a city scarcely second to Boston in its intellectual, literary and educational development, we are no longer desirous of putting aside the garland woven for us by our jealous neighbors. We accept it, and shall wear it blushing on modest brows. For this is Hogtown, and growing more hoggy all the time. Toronto bacon is chasing Chicago pork and short ribs all around the ring. In a few more rounds we shall reach its solar plexus. Over a thousand live hogs come into the western market every working day on an average throughout the year, and the streets in the packing district are piled with dead hogs from all over Ontario during the fall and winter. Hogtown, and not ashamed of it. Our packing houses run out their products by the train-load now, just as Armour's and Swift's do. The live stock market is becoming too small and will have to be enlarged. There are other packing houses in Ontario, and other cities, that may ultimately seek to snatch the coronet from our brow, but for the present we alone are entitled to honorable mention as the Hogtown of Canada. When we get up to the new City Hall we hope to remove the old-fashioned Indian from our coat of arms and replace him with a pea-fed hog, rampant, on a field sanguine.—Toronto Globe.

As a competitor in the illuminating field acetylene will probably be a greater rival of illuminating gas than of electric current, and it is possible that its success will be of more benefit than harm to the latter. It is the old story over again of one rival stimulating another in competition, and by means of improved service and reduced cost, increasing the demand by an amount greater than its own supply. Illuminating gas, electric lighting and acetylene all have their own individual advantages, which, to a certain extent, outline certain fields of application of each, which the others cannot compete. For vehicle lighting, including train lighting, and for gas distribution, where but a small percentage is used for fuel, acetylene will probably show advantages over other forms of gas; while for combined heating and lighting service for one system, illuminating gas cannot be met by either acetylene or electric current, but for insulated plant service, theatre lighting and all cases where ease of control from a distance, or convenience of ignition, or adaptability to special decorative effects, are of any importance, the electric current has the advantage. It cannot be met by its competitors in the qualities of safety, neatness, cleanliness, convenience and elegance.—The Electrical World.

The Science and Art of Mining, a mining paper published in connection with the Wigan School of Mines, says:—"Street car axles are being made at Krupp's works with 7 to 8 per cent. of nickel, as also hollow driving axles for locomotives. For fire box steel as much as 25 per cent. of nickel is used." Less than 7 per cent. of nickel does not seem to be thought of any value in the construction of locomotive axles. The growing use of nickel is another piece of good fortune that is falling to investors in Canadian mines.—Toronto Globe.

Canada was never in better position and condition to impose an export duty upon nickel ore and matte than at present. By imposing the duty the good fortune would not be alone to investors in nickel mines, but to the whole country

It seems clear that the boom in Canadian interests is to be large and long continued. The Dominion has successfully struggled against the diseases which afflict the childhood of nations as corresponding ones do the childhood of the human creature. They are both in alternating periods of growth and consolidation. Present appearances strongly justify the belief that our kindred community in the great Northwest is entering upon a stage of development which promises a strong, vigorous and healthy manhood. As a consequence industrial and trade prospects are brighter than ever before in its history. Its liberal policy and its determination not to be seduced from its connection with the Mother Country are manifestations of a robustness of wisdom and prudence which will not be lost upon the Motherland. It is the old country which can be of the greatest benefit to the young one. The great need of the latter is abundant capital, and the capitalists of the old country want an enterprising field of investment under "the old flag." This the Dominion can give, and the result will be to the benefit of both.—The Textile Mercury.

The Canadian Manufacturers' Association has initiated a most desirable undertaking in the publication of a bulletin to be sent monthly or oftener to all its members, the special effort of which will be to keep Canadian manufacturers informed of trade opportunities in other countries. The daily press already gives most of this information, but good will result from having it carefully edited and presented in compact form. The first bulletin contains statistical information concerning Canadian industries and exports; trade with the United States; a summary of the conditions attaching to the preferential tariff, and notices of trade openings in South Africa, Russia, Guatemala, Spain, Italy, France, and the Philippines. This class of information can be made highly acceptable and of much profit to the manufacturers. There is the danger, however, which it is to be hoped the editors will manage to steer clear of, of confusing political considerations with those that properly appertain to such a publication. The first issue is practically free from this objection, and it is to be hoped there will be no deviation from the initial programme.—Montreal Herald.

We can assure The Herald that it is not the intention of the Association to allow anything whatever of a political character to find its way into The Bulletin.

Returns just compiled by Mr. George Johnson, Dominion Statistician, show that there are in Canada 559 creameries, 2,556 cheese factories and 203 factories producing both butter and cheese. The census of 1871 showed that there were in the Dominion then 353 cheese factories; the census of 1881 gave 709 cheese factories; that of 1891 gave 1,565, and the returns of 1897 show that, including the 203, there are 2,759 factories producing cheese. Comparing 1897 with 1871, the return of the number of factories does not show all the development there has been. The average output of 1891 was valued at \$6,250 per factory, and in 1871 it was worth \$4,570. The average value per factory for 1897-98, Mr. Johnson estimates at \$5,570, or about \$1,000 more than in 1871, but 680 less than in 1891, giving an output in 1897 of about \$15,800,000 against an output in 1891 of \$9,780,000; in 1881 of \$5,460,000, and in 1871, of \$1,602,000. In 1871 the Dominion had no creameries for the manufacture of butter; it was all home made. By 1881 there were forty-six creameries in the Dominion, all but one in Ontario and Quebec. By 1891 these had increased to 170, and by 1898 there were 559

creameries. In 1891 the output per factory was \$5,400. At the same rate the output in 1897-98 would be about \$3,018,000, an increase of over \$2,000,000. Since 1891, Nova Scotia has increased the number of its creameries and cheese factories from ten to fifty-six; Ontario from 638 to 1,317; Prince Edward Island from four to thirty-five; Manitoba from thirty-one to sixty-six, and the Northwest Territories from seven to thirty-two, and British Columbia from one to four.

For the past few months there has been more or less activity amongst the furniture factories, due to a very large extent to the fact that some of them had turned their attention to foreign trade. This had the effect of taxing the other factories to produce goods for the home market. The activity must not therefore be considered as an indication of an unusual revival of trade. The truth of the matter is, that while there has been a welcome improvement in trade, there has been nothing to warrant great enthusiasm. When a period such as that through which the furniture trade is just now passing occurs, the inevitable boomster is sure to get in his deadly work. Factories increase their capacity to an abnormal degree, and outsiders imbued with the idea that there is a fortune in furniture-making organize factories. This country has too many factories now, and that is the only reason why such an effort is being made to open up foreign channels for our goods. Prices are such to-day that the percentage on invested capital is most meagre. Anyone who runs away with the belief that furniture manufacturers are making money in anything but the slowest manner is sadly misled. Furniture manufacturers who rush up extensions and push their capacity ought to ponder the fact that the population of this country has not very materially increased within the past two or three years, and there are more factories to-day than ever.—Furniture and Upholstery Journal.

It has for some days been known that certain of the American lumbermen affected by the action of the Ontario Legislature in prohibiting the export of saw logs have been taking steps to make an international question of the matter, and that communications have been made by the Secretary of State for the United States questioning the right of Ontario to take such action, and suggesting that this legislation be included in the questions to be discussed at the Quebec Conference. The papers in the case have been transmitted through the proper channels to the Attorney-General, and a reply has been forwarded which takes firm ground in assertion of the exclusive right of Ontario to legislate in regard to its timber. As the matter is still the subject of correspondence and negotiations, the correspondence on the subject cannot as yet be made public, but it is understood that Hon. Mr. Hardy in his reply argues strongly that the regulation imposed in December last was absolutely within the scope of the powers and rights of the Legislature and the Government.

A committee of the Halifax, N.S., Marine Board of Trade has been appointed to present a memorial to Sir Louis Davies for his use as Canadian commissioner at the Quebec conference. The committee authorized Sir Louis, in their behalf, to offer to the United States the free use of Canadian inshore fisheries

by American fishermen on the same terms as enjoyed by Canadians. This privilege is to be given in exchange for access to Porto Rico and Cuba for Canadian products, and the same customs tariff as is imposed on United States products

The Boards of Trade of Chicago and other western cities, and also of Ogdensburg, N.Y., are doing what they can to get the International Commission to effect the removal of the tolls upon grain passing through the Welland canal. It is urged that the removal of the tolls will result in greatly increasing the business from the west to Montreal, for export, and that the Canadians will gain in the increased traffic much more than they will lose by the abolishment of the tolls, which amount to one-half cent. per bushel. The change would be of great advantage to the smaller class of vessels, both American and Canadian, which have been forced down to starvation rates by the construction of the large carriers the past few years. The big fellows are shut out from the Welland Canal trade, and the smaller boats would have the field to themselves. Millions of dollars worth of vessel property would be greatly enhanced in value by the removal of tolls in this way. We do not see that Canada would raise any objection in the matter if Great Britain would impose a small duty upon all grain going to that country that was not shipped through a port of a British colony. No doubt New York and Buffalo would do some kicking, but then neither the west nor Montreal would care much.

#### LITERARY NOTES.

Mark Twain is the next famous man to be "anecdotalized" by the Ladies' Home Journal, and his closest friends have contributed twenty funny stories about the humorist for the article. The stories will show that all the good things about Mark Twain have not been told. Several ludicrous "snap-shot" pictures of Mark have also been loaned by his friends—all printed for the first time. The Curtis Publishing Co., Philadelphia. One dollar a year; ten cents a copy.

The War Articles in the September Scribner's are led by Richard Harding Davis's account of "The Rough Riders' Fight at Guasimas." There is no information at second-hand in this article; Mr. Davis was in the thick of the fight and writes of what he saw. The illustrations give many of the best known men in the Rough Riders, and views of the country over which they fought. Episodes of the Santiago Campaign are given in brief and exciting narratives. Edward Marshall, the heroic correspondent, who insisted on dictating his account of the fight while supposed to be dying on the field, is now in a New York hospital and has written his recollections of the Guasimas fight. What it means to be shot and to be in a field hospital expecting death has never been presented so feelingly before.

Three articles in The Methodist Magazine and Review, for September, are very fully illustrated, "With the Fisher Folk," describing the Canadian toilers of the sea; "Flemish Pictures,"—Ghent and Bruges; and "Hampton Court and its Memories." "Stories of the Underground Railway," is an interesting paper by Miss M. Murray. An able paper by Dr. Ross, on "That Other Man's Conscience," will show where the individual responsibility to our fellows rests. "The Governmental and Commercial Relations of Great Britain and the United States," is a masterly paper by Hon. David A. Wells. Toronto: Wm. Briggs. \$2.00 a year.

Pen and pencil have combined to make Outing for September a masterpiece of pictures by land and sea, and a very treasure house of useful knowledge to those who love to live in or linger over the never fading, never jading charms of mother Nature. Its hunting and fishing stories range from "Elk in the Rockies" to "Squirrels in Virginia" and "Ducking on the St. Clair Flats," and from "Bass Fishing in Lake Emilo" to "How to Catch Swordfish." Its yachting embraces the new "Knockabout Cruising;" "Racing with a 51-Footer" and "The Yarn of the Yampa in the Baltic." Its travel comprises one of Nature's Links in the lovely Isle of Wight and the Cotswolds in merrie middle England.

# CANADIAN MANUFACTURERS' ASSOCIATION.

President:

**J. F. ELLIS.**

First Vice-President:

**JAMES KENDREY, M.P.**

Second Vice-President:

**P. W. ELLIS.**

Treasurer:

**GEORGE BOOTH.**

Chairman Executive Committee:

**R. W. ELLIOT.**

Chairman Tariff Committee:

**W. K. McNAUGHT.**

*The Executive Committee meet on the Second Tuesday of each month.*

## OFFICES

**McKinnon Building,**  
**TORONTO.**

**Tel. 1274.**

**J. J. CASSIDEY, - SECRETARY.**

## THE OBJECTS OF THIS ASSOCIATION ARE:

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

## CANADIAN INDUSTRIAL LEAGUE.

President, . . . . . **JAS. KENDRY, M.P.**

## WOOLEN MANUFACTURERS' ASSOCIATION,

President, . . . . . **BENNETT ROBERTSON, M.P.**

## KNIT GOODS MANUFACTURERS' ASSOCIATION,

President, . . . . . **JOHN PRYMAN.**

## CARPET MANUFACTURERS' ASSOCIATION,

President, . . . . . **J. P. MURRAY.**

## CLOVE MANUFACTURERS' ASSOCIATION,

President, . . . . . **A. R. CLARKE.**

## REPRESENTATIVES TO

## TORONTO INDUSTRIAL EXHIBITION ASSOCIATION.

**R. W. ELLIOT.**                      **GEORGE BOOTH.**  
**W. K. McNAUGHT.**              **A. E. KEMP.**  
**J. J. CASSIDEY.**

## WHAT THE ASSOCIATION ADVOCATES.

The following resolutions were passed at the Twenty-Third Annual Meeting of the Canadian Manufacturers' Association held in Toronto, April 12, 1898.

### THE NATIONAL POLICY.

Whereas, from its geographical position and commercial environments the prosperity of the Dominion of Canada depends largely upon the maintenance of a fiscal policy which will foster our agricultural, mining, commercial and industrial enterprises, and which will make the interests of Canadians paramount to those of foreigners, by preventing this from being made a slaughter market for the surplus products of foreign countries; and whereas, the observance of such policy gives confidence and stability to capital and enables our artisans to obtain wages far in excess of those which prevail in European countries, and which keeps them in the country by the payment of wages which enable them to live in comfort; and which provides a home market for many lines of agricultural products, which cannot be exported; a policy which also attracts foreign capital and inaugurates industries by inducing those who desire to participate in the benefits of our market to manufacture their products here; a policy which encourages and develops inter-provincial trade, and produces amongst the people a feeling of security, of national pride, and commercial and industrial independence, highly conducive to the welfare of the whole people, without which we can never attain to the name of national prosperity; and whereas, the revival of the mining industry in this country has given an impetus, not only to agricultural, but to many other industrial enterprises, as nearly everything used or consumed in the mining regions has to be brought from outside sources;

Therefore, be it resolved, that this Association desire to again place itself upon record, that in its opinion the prosperity of this country imperatively demands the continuance of a fixed and definite policy of protection, from the general principle of which there shall be no deviation, in order that our agricultural, mining, commercial and other industrial enterprises may participate in its general prosperity.

### PREFERENTIAL TRADE.

While heartily commending the Dominion Government for their desire to confine the scope of the Preferential Tariff exclusively to the Mother Country and the British Colonies, this Association is strongly of the opinion:—  
1. That our Preferential Tariff should not be extended to any colony, unless such colony accords to us a tariff preference in their market, equivalent to no discrimination allowed by us in its favor.  
2. Where our minimum Preferential Tariff is applied, the minimum rate of duty thereunder should be high enough to protect existing Canadian industries from the competition of countries having lower priced labor, cheaper raw materials and capital, and whose long established industries give them great advantages over those of Canada.  
3. That although the minimum Preferential Tariff has already been extended to Great Britain without any corresponding preference to Canada, we would strongly impress upon the Dominion Government the necessity of obtaining reciprocal concessions from the Mother Country as speedily as possible.

## CANADA'S COMMERCIAL AGENTS.

Following is the correct official list of Canada's Commercial Agents in Great Britain, British Possessions and foreign countries.

- J. S. Larko**, Sydney, N.S.W., agent for Australasia.
- G. Eustace Burko**, Kingston, Jamaica, agent for Jamaica.
- Robert Bryson**, St. John, Antigua, agent for Antigua, Montserrat and Dominica.
- S. L. Horsford**, St. Kitts, agent for St. Kitts, Nevis and Virgin Islands.
- Edgar Tripp**, Port of Spain, Trinidad, agent for Trinidad and Tobago.
- C. E. Sontum**, Christiania, Norway, agent for Sweden and Denmark.
- D. M. Ronnie**, Buenos Ayres, Argentine Republic, agent for Argentine Republic and Uruguay.

In addition to their other duties, the undermentioned will answer inquiries relative to trade matters, and their services are available in furthering the interests of Canadian traders.

- J. G. Colmer**, 17 Victoria Street, London, S.W., England.
- Thomas Moffat**, 16 Church Street; Cape Town, South Africa.
- G. H. Mitchell**, 15 Water Street, Liverpool, England.
- H. M. Murray**, 10 St. Enoch Square, Glasgow, Scotland.
- Harrison Watson**, Curator Imperial Institute, London, England.

## CANADA'S PREFERENTIAL TARIFF.

The Editor of the Bulletin is in receipt of a letter from the Minister of Finance as follows:

DEAR SIR:—In Bulletin No. 1, I notice an error in the statement respecting the preferential tariff on sugar, which, perhaps, you would like to correct.

"At the head of page 13, I read, 'the preferential rate on sugar will also apply to New Zealand, Fiji and Mauritius,' etc. It would be more correct to say that the preferential rate applies to sugar imported from any part of the British Empire. Mention was made of Queensland, Fiji and Mauritius as colonies which might send raw sugar to Canada, but the tariff was so worded that it applies to sugar from all parts of the Empire."

Yours faithfully,  
**W. S. FIELDING.**

## THE SOUTH AFRICAN EXHIBITION.

We are informed by Mr. W. G. Parmelee, Deputy Minister of Trade and Commerce, that, re the forthcoming South African exhibition, the A 1 First Class Iron Sailing Ship "Arcadia," will be ready to load at Quebec about September 1st and will sail about the end of the month for Cape Town direct, due to arrive there in ample time for the exhibition. Space has been secured in the ship for goods intended for the exhibition, and any parties wishing to avail themselves of the opportunity, or wishing to ship goods for other purposes can make application to and get full information by addressing D. R. McLeod, Quebec. The Dominion Government will arrange for a responsible agent at Cape Town who will take charge of consignments on arrival.



### BUSINESS MEN WITH BUSINESS PURPOSES.

Without doubt the most important move recently made by Canadian manufacturers is that just inaugurated by the Canadian Manufacturers' Association in beginning the publication of a "Bulletin of Information" with the purpose of making known the character and progress of the work being done by the Association, and to supply to the members, without charge, reliable information regarding the home and foreign trade of Canada. The initial number of the "Bulletin" was published August 15th, and already many commendatory letters are being received by the Association from manufacturers and others, and favorable comments by the newspapers, all pointing to the benefit to be derived, not by manufacturers only, but by the whole country, from the enterprise. Associations more or less similar to that of the Canadian Manufacturers' Association are no new thing in Canada or in any other manufacturing country, those in Canada usually taking the form of guilds of particular branches of trade, looking to the individual interests of those trades rather than to those of the great body of manufacturers including all branches. And in this particular the Canadian Manufacturers' Association differs from them all, inasmuch as it is composed of manufacturers engaged in all branches of manufacturing industry, banded together more for the purpose of promoting the interests of manufacturers generally.

The conditions under which manufacturing enterprises now have to be conducted are very different from what they were only a few years ago. Competition has increased production and has also led to a great lowering of the cost of production; and manufacturers who are not ready to admit this fact and to act upon it, cannot hope for success. This recognition must not be passive in its character, but rather aggressive—very aggressive, an aggression that will place them fully abreast with the manufacturers of all other countries. Therefore, to be as successful as their competitors in other countries, our manufacturers must of necessity adopt the most effective methods of those against whom they have to contend.

Perhaps the most aggressive manufacturers against whom our Canadian manufacturers have to contend are those of the United States, and it is well to consider one of the most effective methods by which they can serve their interests.

The National Association of Manufacturers of the United States was formed in January, 1895, as the result of a widely existing desire for a strong and well balanced organization, thoroughly national in its character, equipped for the performance of any service which the manufacturers of the United States might require. Upon this basis the Association has developed into a powerful organization, embracing in its membership upwards of 1,000 of the largest manufacturing interests in the United States, representing every important industry and every prominent industrial centre in the country.

Starting with purposes of very general character, the work of the Association has been shaped gradually by the expressed requirements of its members and by the conditions which have prevailed during the past three years.

The work of the Association naturally falls into groups—that which pertains to home interests, and that which relates to trade with foreign countries.

Although entirely without the pale of politics, and embracing in its membership men of widely differing and pronounced political views, the Association stands for the protection of American industries, believing that there is no market in the world of such importance to the manufacturers of the United States as that which lies within their own country.

The tariff is viewed by the Association, however, as a business problem, not as a matter of political capital; and the adjustment of the rates of duty in such a manner as to equalize the cost of imported articles and goods made in the United States represents the view of the tariff problem as held by the majority of the members of the Association.

The work which the Association has been doing in the

extension of the foreign trade of American manufacturers has attracted a great deal of attention both at home and abroad. The chief features embraced by this work are: Investigation of Foreign Markets; Establishment of Sample Warehouses; Improvement of the Consular Service; Restoration of the American Merchant Marine, and Restoration of Treaties of Reciprocity.

In this work, as in all else undertaken by the Association, the aim is to apply practical business methods. The plans for the foreign work of the Association provide for the careful investigation of possible new markets for American products, the study of trade conditions in various countries, and the ascertainment as fully as possible of the classes of American goods saleable in different markets, with the conditions of competition which must be met.

An important feature of the work of the Association is the publication of a large amount of matter that is of general interest and value to manufacturers. The Circulars of Information issued by the Bureau of Publicity of the Association have rendered valuable aid in promoting the interests of the organization.

While the work of the Association has been planned upon the broadest lines of public benefit, still it offers to its members direct personal services which far exceed in value the cost of membership.

An annual fee of \$50 entitles a manufacturer to membership and to all the privileges incident thereto during the period of twelve months from the date of payment. Only manufacturers are eligible for membership.

### CONDITIONS OF TRADE IN THE WEST INDIES.

A correspondent of The British Trade Journal, writing from St. John's, Antigua, says that the outlook for British trade in the West Indies is at present rather problematical. Much will depend upon the imposition of countervailing duties to fight the bounty-fed beet-sugar, which has been the cause of the deplorable condition of the West Indies, and we are inclined to think that if countervailing duties are imposed, the bulk of our sugars will be shipped to England instead of to the United States, as at present, and thereby increase our trade with the Mother Country. There is one point that must not be lost sight of, and that is, that the soil, climate, and physical conditions of some of the West India Islands, and especially Antigua, render any other industry, except sugar, impracticable for the support of the population. As far as the people are concerned, they can grow enough vegetables for their own use, but as far as any other staple industry is concerned, they can do nothing; and even admitting that we could "go in" for the cultivation of minor industries, many years must necessarily elapse before any return can be got from these industries; and what is to become of our population in the meantime? Helping us in the matter of paying our public debt and assisting us in maintaining our government institutions, while good enough in their way, does not solve the problem of how the people are to live.

The depression is not confined merely to old-fashioned planters, but extends to those who have adopted the most modern methods. The bounties have caused great over-production, considerably in excess of the needs of the world, and have had the effect of sending down prices to a point at which cane sugar does not even pay the cost of manufacture. Our only hope is, therefore, in the imposition of countervailing duties.

Under the United States reciprocity tariff every country entering into reciprocal relations with the United States is conceded a reduction of twenty per cent. in the duties charged on its products, which means something like twenty-eight cents on each 100 lbs. of sugar, or £1 6s. 1d. per ton. This tariff requires that any reciprocating treaty entered under it must be concluded within one year of its passing, and its observance is only guaranteed for four years; but there seems to be considerable delay on the part of the Home Govern-

ment in taking advantage of this treaty on behalf of the West Indies. Of course as a matter of quid pro quo, the West Indies would have to accord similar preferential treatment to United States manufactures, but this, we think, should not necessarily extend to British goods, unless the Mother Country extends to them similar concessions in the form of counter-vailing duties on foreign bounty-fed sugars.

If the duties in the West Indies are thus lowered in favor of the United States, there will be a falling off in the Colony's revenue, which might be met from the grants the Imperial Government contemplate giving to these Islands, and by cutting down useless expenditure, and at the same time resorting to a graduated Income Tax. This will have to be done to cope with the present crisis in our affairs.

This means, of course, that the British treasury will pay a money bonus to secure the United States market for Antigua sugar.

The writer thus alluded to the Canadian reciprocity scheme: With regard to the reduction of 25 per cent. in the Canadian duties on all sugars produced in any British colony or possession and shipped to Canada, it is said by those most conversant with the sugar markets of the world, that at first glance it would appear that the discrimination in favor of the British West Indian sugars would lead to large Canadian importations from the various islands. When, however, it is considered that it does not give such sugars the same advantage as they possess in the United States over their chief competitor, beet-sugar, the conclusion must be that it is not likely to lead to direct shipment to Canada, because the discrimination against beet-sugar in the United States is 27 cents for 100 lbs., while the 25 per cent. in favor of British West Indian sugars in Canada amounts to only about 15 cents per 100 lb. on Muscova sugar 89° test, and 18 cents per 100 lbs. for Centrifugals 96° test. Still, be the concession what it may, it is a step in the right direction, and must lead to closer commercial relations between Canada and the West Indies in the near future. But there is one important factor which cannot be overlooked, and which makes the West Indies tenacious about having reciprocity with the United States, and that is, the capacity of its market to take all their sugar, whereas the outlet of the Canadian market is comparatively small.

The Jamaica correspondent of the Trade Journal says:—

It has been argued that in consequence of our geographical position the United States is our natural market. Yet it cannot be but admitted that the British manufacturer has many advantages over his American competitor in not only holding his own, but enjoying a monopoly in many manufacturing lines. Unless, however, manufacturers of the Mother Country pay greater attention to the changed condition and growing requirements of these islands, and exert a little more effort in placing their goods, lines in which they practically had no competition bid fair to be completely taken out of their hands. Not very long ago hardware merchants and ironmongers would never have thought of placing their orders anywhere else but with English firms; in fact, the prejudice against American manufactures was so intense that it was doubtful if the numberless American catalogues received were even perused. Times have changed, however, and our enterprising neighbors, by perseverance in endeavoring to obtain a local knowledge of the trade and its requirements, and adapting themselves to it, have now become very formidable competitors. For instance, while but a short time ago British manufacturers had complete control of this market in such articles as cutlasses, axes, bill-hooks, digger's forks, grass knives, hatchets, hoes, picks, shovels and spades, nearly 50 per cent. of the entire imports for the fiscal years 1896-97 were taken from the United States, while Germany also made a fair contribution.

The present demand in Jamaica for hardware lines is not for a heavy class of goods, but rather a light handy description consistent with efficiency, and manufacturers desirous of trade with not only this Colony but the West Indies generally, will do well to acquaint themselves with these changed and altered

conditions, otherwise it is not unlikely that in the near future the entire imports, not only in agricultural implements, but also in every description of shelf hardware, including cutlery and mechanical tools, the products of Great Britain, will be replaced by American and other active competitors.

It is significant that the West Indian Electric Tramway Company, recently incorporated in this city for the laying down of lines throughout Kingston and its suburbs, are importing their rails and entire plant from the United States and Canada.

But a few years ago none but the very needy class of purchasers would have thought of wearing the cheap and roughly-made American boots and shoes, yet the United States succeeded in placing £21,240 on this market last year, running the United Kingdom pretty close, their shipments having been £35,518. Germany, France and Austria also made appreciable shipments.

A considerable demand has recently sprung up for cycles, and while United States manufacturers command the market, this is solely due to price rather than preference. The English makes that have been consigned to agents here, while having much in their favor as to superiority of quality are too expensive for the ordinary buyer. I am satisfied that if British manufacturers could place a good serviceable machine to sell for, say £9 to £11, they would get the preference of the trade. The import duty is 12½ per cent. ad valorem, while 7½ per cent. would perhaps cover other charges on this side.

#### THE QUEST FOR EXPORT MARKETS.

The search for foreign markets may be justly said to have developed in recent times into an exact, specialized science, in which not only individual exporters and associations, but expert government commissions, elaborately organized, equipped and maintained, each play, with constantly increasing efficiency, their co-ordinate roles. From a notoriously backward position, the result of long and implicit reliance upon home markets, the United States has now reached a position from which the usefulness of export associations and bureaus of information is generally recognized, although the complaint is sometimes heard that these organizations have been thus far rather too much in the hands of theorists and unsuccessful men, and are not sufficiently controlled by merchants who have had successful experience and practical training in foreign trade.

Meanwhile, some of the leading European nations have advanced one important step further in the science of export, and have called into service the expert commission, organized for a specific enquiry and sent out under government authority to gather precise technical information for the education of manufacturers and merchants in special lines of production and trade. The efforts of Germany and France in this direction have established a new record, to which the attention of manufacturers and exporters cannot be too soon or too seriously directed.

The German export commission which went out in February, 1896, to study the markets of China, Korea, and Japan, returned after a year of thorough and carefully-systematized work, bringing a vast collection, not of the art products or other merchandise ordinarily exported from those countries, but of the ordinary textile and other goods made in Japan and China for the use of their own people or for export to neighboring countries, and in the production of which it is thought that German manufacturers, equipped with exact information as to sizes, quality, price, and extent of demand, might be able to compete.

Neither the samples brought nor any of the numerous special reports made by the commission have been, or probably will be, made public. The samples were arranged in a suite of rooms in an upper storey in the Palace of the Imperial Diet at Berlin, where admission was granted by card,

to be obtained from a discreet official. The collection was subsequently broken up and distributed to the points, where similar goods are, or can be, made in Germany, as, for example, at Crefeld, where the textile samples are in possession of the chamber of commerce. The reports, if printed at all, will be presumably reserved for confidential distribution among the German manufacturers and merchants who are specially interested in knowing the wants of eastern peoples, their ability to purchase goods to meet those wants, and the prices that they are able to pay for them.

Similarly in France, the commercial mission sent out by the chambers of commerce of Marseilles, Roubaix, Lille, Bordeaux and Lyons has returned after an absence of nearly two years, and has presented its collections and reports to the chambers of commerce directly interested. Although none of these technical reports have yet been or probably will be published, it is known that they number more than one hundred, each prepared by an expert committee or individual, and that the general conclusion reached by the commission is that French export trade to China, Tonkin, Anam, Cambodia, and Cochin China has before it a great future, provided manufacturing exporters will make the best use of the specialized information that is now placed in their hands.

While the direct and immediate fruits of these well-devised and scientific quests for foreign markets will fall naturally and justly to Germany and France, there are certain general principles and facts which are suggested by these proceedings which, if rightly appreciated, may be of value to other exporters.

There is in all the specialized work of these commissions a broad recognition of the fact that in foreign trade it is the buyer, not the seller, who determines the kind of article he wants and the form in which he wants it turned out, labeled, and packed for shipment to him. It is the business of the seller not to force upon the consumer something that he never heard of and does not want, but to ascertain exactly what he has used and sold hitherto and then furnish him with something of the same general kind—but better for his money than he has had before. The exporter who succeeds best is, other things being equal, he who learns most accurately the wants of his customers and supplies them most nearly in the currency and on the terms and conditions to which the buyer is accustomed. At present the Germans are perhaps the ablest masters of this theory of export trade.

Secondly, the goods must, as a principle, be sold not at home, but abroad. The seller must go to the buyer with samples, prices, and conditions which the latter can see and readily understand. No museums or other collections of sampled merchandise, however useful in some respects, can attract more than a very limited number of buyers, from remote countries in which competing nations are already offering their goods, imported there at the expense of the wholesale merchant or the manufacturing exporter. Circulars and catalogues however, skillfully prepared, which only inform the foreigner what he can buy in dollars, will not compete effectively with the German, French, or English merchant who is there on the spot with his goods, duty paid, and fluent salesmen to show and explain them.

The need of the period is a class of competent well-trained young men, with good manners, a practical command of French, German, and Spanish—one or all—combined with intimate practical knowledge of a certain class of manufactured goods and the commercial methods, currencies, weights, measures, and customs of foreign countries. The education of such men requires certain specialized courses of study which the commercial schools of Germany, and, to some extent, of Belgium and England, furnish, but which those of the United States, with perhaps some exceptions, do not. The all-round education provided by our colleges and high schools turns out young men more or less fairly equipped for successful careers at home; but the competition for export trade has now become so sharp as to require the work of experts, which only specialized education, supplemented by practical experience, can provide. It will henceforth be

necessary that a largely increased class of young men shall prepare themselves for, and accept definitely, as so many thousands do in Great Britain and Germany, the career of mercantile employees in foreign lands, in which social sacrifices and the discomforts and even dangers of alien climates are balanced by the material advantages which such career offers to energy, perseverance, and trained capacity.

Salesmen who frequently visit Germany with no knowledge of any language but English are seriously handicapped, and this disadvantage is still further increased when the traveler puts himself into the attitude of a peddler by attempting to sell goods of wholly different classes and character, as, for instance, shoes, machinery, belting, lumber, and bicycles. No man willing to accept the hard life of a commercial traveler is likely to understand fully all these diverse branches of trade, and his efforts to sell something concerning which he is ignorant are generally and deservedly abortive. Export syndicates have their distinct and often very important uses but their best results are accomplished when they represent most fully different products in one special line or department of trade.

Circulars and catalogues may be useful in the few instances where they reach the hands of a customer who really wants a machine or other article which he knows something about; but for this purpose, they should be printed in the language of the country, give values in the currency of the country, and weights and measurement in metric units. Above all, the catalogues should state clearly the net price at which the machine or other article will be delivered least free on board at some leading seaport. If this is not done and the buyer is left to spend three or four weeks in writing to the maker to ascertain his best discount from list, the chances are his order will go to a European manufacturer, who either sends a salesman to get it or who has given a net price in his advertisement.

The old theory that cheap production and high quality of product are incompatible with payment of just and liberal wages to labor has been definitely exploded. It has been demonstrated that the modern struggle for life, which has brought into use more complex and scientific machinery, so far from decreasing, rather increases and emphasizes the importance of the individual. The advantages of this country consist, not only in its possession of profuse and excellent materials, but in its unequalled factory organization and the remarkable efficiency of its skilled operatives in every important line of manufacture.

The force of personal character—moral, mental, and physical—was never more potent than to day, when it is equipped with the implements of modern invention. It is not the machine, the gun alone, but the man behind it, that wins the battles of to-day on sea or land, in the hot conflict of war or the busy rivalries of peace. As the field of commercial activity broadens and grows more complex and difficult the attainments and enterprise of exporters and their agents must keep abreast of the new and more exacting requirements. The merchant of the present and coming generations must be, like the diplomatic, the consular, or executive officer, a broader, more highly trained and educated man than his father or grandfather had need to be.

#### PAPER IN GUATEMALA.

Germany stands first in the paper trade of Guatemala, but France takes a good second, and would do better still if attention were paid to the tastes and requirements of the country. The chief demand is for wood papers coming from Germany, Austria and Belgium, of a strength of 3, 4 and 5 kilos. (this latter weight being in great demand); the usual size is that known as Sittriss  $\frac{1}{4}$  and  $\frac{1}{8}$  foolscap. Ruled paper is not in much demand owing to the dearness of hand labor and the scarcity of ruling machines. Unruled paper constitutes 25 per cent. of the total trade. Ruled paper comprises "office," 50 per cent. of the total trade; "margin," 15 per cent., and "invoice," 10 per cent. Plain unruled paper is used

largely in 3 kilos. weight, and laid paper is used by cigarette factors. Current prices to sample are francs, 65 per 100 kilos. in reams of 480 sheets, packed in half-reams; ruling is included in this price. Drawing paper comes from France and straw packing paper from Germany. Tissue paper comes from Austria; white kinds, 4 francs. per ream, colored, from 10 francs. per ream according to color. Cigarette paper comes from Spain. Bardou rice paper is imitated and sold at a low price in Austria and Germany; a lot of it is sold in Salvador. Printing paper comes from Germany, Austria, Belgium and the United States (especially). Envelopes.—The usual Italian, French and German sizes are employed, but those coming from the United States are preferred. Prices are 24 by 10½, francs. 6.25, and 28 by 12, francs. 8.15. Wall Papers.—These come almost exclusively from France. The Customs duties per kilo upon paper are as follows, in piastres; cotton paper, colored and of all classes, not ruled, gross weight, 0.15; without borders, unglazed, gross weight, 0.15; papers of all kinds, ruled in any way, gross weight 0.30; wall papers of all kinds, but without gilding, silvering, or velveting, weight, with cover, 0.20; papers of all kinds, without borders, for cigarettes, gross weight 0.30; tracing paper, weight with envelope, 0.20, tissue papers, weight with packing, 2.00; colored papers for flowers, weight with packing 0.20.—French Charge d'Affaires at Guatemala.

#### STEAM FIRE ENGINES WANTED.

Several cities in the consular district of Cognac, which at present have no effective fire department, anticipate purchasing steam fire-engines. Cognac already has a fund for this purpose. Manufacturers should address M. E. Jouard, No. 1, rue Louise de Savoie, Cognac, Charente, France.

#### BICYCLES IN STRAITS SETTLEMENTS.

The importation of cycles into Straits Settlements would appear to be profitable under certain conditions. Last year Great Britain sold about \$70,000 worth of cycles there. High-class cycles would alone have any chance of success.

Every dollar's worth of manufactured products sent abroad from this country makes it that much the richer. Aside from the foreign dollars brought into our country to pay for the manufactures, the material entering into the exported articles was produced in America, and by American skill and ingenuity made into the perfect articles. American dollars paid for the labor which was performed by American hands. Our manufacturers have been able to maintain a price abroad which has netted them a reasonable profit above the cost of production, despite the fact that foreign manufacturers have the advantage of cheaper labor. Superiority is a predominant feature of American manufactures, and is the basis for successful trade in foreign countries. Whatever local prejudices foreigners may have, superiority of construction must appeal to their reason and convince them that as an individual investment, it pays to purchase something good. Our manufacturing industries are numerous and varied, and besides supplying the domestic demand, will eventually supply even a much greater foreign demand than they now do, although our manufactures are consumed in large quantities by all progressive nations on earth.—Farm Machinery.

Over two hundred leading manufacturers and merchants of France and her Colonies have been appointed correspondents of the French Ministry of Commerce with a view to promoting the foreign trade of that country. They bear the title of Councillors of Foreign Commerce, and are to serve, gratuitously, for five years. Their functions are apparently very similar to those which the members of the National Association of Manufacturers have set for themselves on the American side of the water. But the latter have not the same

honor of being addressed as Councillors of American Foreign Commerce.—Textile Mercury.

Paper manufacturers of Canada are enjoying a measure of prosperity just now. The demand for paper in the Dominion has increased, along with that on this side of the border, and there is no American competition at present. Consequently the Canadian mills are kept very busy in supplying their own home demand, and good prices are obtained. But some of the leading manufacturers are rather blue about the future. They anticipate a reduction of consumption in the United States, when the disagreement with Spain comes to an end, and they also see mischief ahead when the new paper mill at Grande Mere comes into the market with its big production. Doubtless there are some lively times ahead in the industry of Canada.—The Paper Mill.

Canada is not likely to suffer very much from the decision come to by the German Government that Canadian goods exported to Germany are no longer to enjoy the tariff advantages of the most favored nation clause. Canada might retaliate by prohibiting German goods entirely, and not be hurt for the figures show that the balance of trade is largely in favor of Germany. In 1897 Canadian imports of German goods were valued at £1,157,000, while Canadian exports to Germany amounted to only £209,000, this representing chiefly bread stuffs and apples. The German goods sent to Canada, the trade in which, after the 1st August next, will have to pay the higher rates, consisted principally of cotton manufactures, braids, cords and fringes, glass manufactures, silks, and manufactured iron and steel. Germany's action in this matter is altogether unwarranted, because Canada does not single out any particular foreign nation for differential treatment, but places all foreign countries on the same footing allowing the lower schedule of duties to apply only to goods from the British Empire. Thus Germany's action is in reality a protest against British Imperial federation.—British Trade Journal.

The following table, compiled from official returns, includes some of the more important articles of domestic manufacture of the United States exported in the fiscal year ending June 30, 1898, compared with those of 1888:

ARTICLES EXPORTED.	1888.		1898.	
		\$		\$
Starch	202,332		1,850,353	
Flax, hemp and jute manufactures of	391,216		2,557,465	
Cars, carriages, etc	2,243,756		3,424,419	
Fertilizers	1,255,028		4,359,834	
Tobacco, manufactures of	3,578,457		4,818,493	
Paper, and manufactures of	1,078,561		5,494,564	
Cycles and parts of			6,846,529	
Agricultural implements	2,645,187		7,609,732	
Chemicals, drugs, dyes and medicines	5,633,972		9,441,763	
Cotton, manufactures of	13,013,189		17,024,092	
Leather, and manufactures of	9,583,411		21,113,640	
Copper, and manufactures of	3,812,798		32,180,872	
Iron and steel, manufactures of	17,763,034		70,367,527	

These are all articles that ought to be manufactured in Canada for export for the markets of the world that are open to receive these products of American industry are also open to Canada.

The acts against the importation of prison-made articles into Great Britain and her colonies are being strictly enforced. The first actual seizure under this act occurred recently, it being a consignment of cocoanut fibre door mats manufactured in a Belgian prison. The British Mat & Matting Manufacturers' Association drew the attention of the authorities to the source of these goods, having agitated for some time past against the introduction of foreign prison-made mats, which have been sold at prices at which British mats made by free labor could not compete. Proof of the prison origin of the

mats in question having been given, the whole parcel, estimated to be worth between \$1,000 and \$1,500, was piled in a heap and publicly burnt.—Manufacturers' Gazette.

Speaking of the crisis in the British West India Islands growing out of the depression of the sugar industry there, The Demerara Chronicle says:—We doubt very much whether the Government will see their way to make war upon the bounty system by countervailing duties. The Ministry cannot afford to present their opponents with such a glorious opportunity: and it would be poor policy indeed for West Indians to help in overthrowing, or even discrediting, the existing Government. But there are other remedies, and, now that another door of hope has been slammed in our faces, it is really time the Imperial Government redeemed their promises to the West Indies. Reciprocity with the United States should long ere this have been an accomplished fact, and the various measures of "relief" recommended by the Royal Commission ought already to be in operation. Ever since Mr. Chamberlain's speech at Liverpool last autumn we have been waiting for his "scheme" for the amelioration of West Indian depression, but its production has been postponed week by week and month by month. It is now eighteen months since the Royal Commission made their memorable tour of these colonies, and nearly a year since the publication of their report. In the meantime nothing has been done, except the grant of £120,000 to the more hopeless of the islands.

The London, England, correspondent of The Paper Mill of New York, says:—British engineers are now looking to Can-

ada as a very promising market. Favored with a twenty-five per cent. advantage in the matter of duty they feel they ought to successfully meet the American manufacturer, and as pulp and paper mills are being projected at a rapid rate, they are in hopes that orders will flow to this side of the Atlantic. Perhaps it will not be so easy to oust the American manufacturer as some may imagine; now that better feelings exist between the Canadians and Americans, modifications may be made in the trade policy not unfavorable to the latter. The spirit of reciprocity is steadily growing.

A Canadian correspondence of The Paper Mill, of New York, enquires:—In view of the many sulphite fibre projects now on foot in Canada it becomes an interesting question where the machinery for the new mills will be obtained. Will it come from Britain or will it come from the United States? Britain has now a great tariff advantage over her great American competitor on this market. On the first of the present month the second installment of the preference allowed on British goods came into effect. For fifteen months previous to that, British goods were admitted at 12½ per cent. below the regular duties, paid by goods coming from the United States. Now British goods come in at a rate twenty-five per cent. below the regular duties imposed on American goods. Though its proximity to this country, and its cheapness of production give the United States an advantage over the United Kingdom for selling machinery or other articles of iron and steel on this market, this twenty-five per cent discrimination may put the latter in the better position for selling certain products of that kind here now, and among these may be possibly a plant for making sulphite pulp.

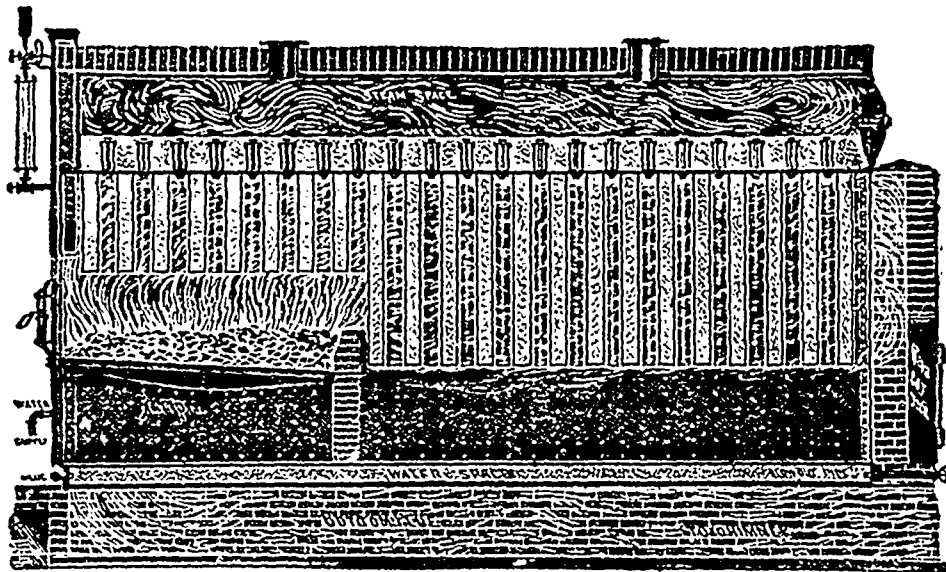
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*For Steam, Power  
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Installations...*

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Can be installed in any Basement,  
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...Catalogue Free.

## CAPTAINS OF INDUSTRY.

The following items of information, which are classified under the title "Captains of Industry," relate to matters that are of special interest to every advertiser in these pages, and to every concern in Canada interested in any manufacturing industry whatever, this interest extending to supply houses also.

If a new manufacturing enterprise of any kind is being started, or an electric lighting plant instituted, or an electric railroad, or a telegraph, or a telegraph line is being constructed; or a saw mill, a woolen, cotton, or knitting mill; or if any industrial establishment has been destroyed by fire with a probability of its being rebuilt, our friends should understand that possibly there may be something in the event for them. Do you catch on to the idea?

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, bolting, lubricants, machinery supplies, wood or iron working machinery, ventilating and drying apparatus; pumps, valves, packing, dynamos, motors, wire, arc and incandescent lamps, and an infinite variety of electrical supplies, chemicals, acids, alkalis, etc. It is well worth the while of every reader of the Canadian Manufacturer to closely inspect all items under the head of Captains of Industry.

The Jones & Moore Electric Co., Toronto, inform us that they have supplied the following with electric motors:—Reid & Co., The Kennedy Co., J. Langskill, L. Carpenter E. Cullerton, Howard Curtis & Co., General Engineering Co., H. Baker, W. Gammon, Sevan Bros., and A. Little, all of Toronto, Mantz & Huber, Berlin, Ont.; Brigham & Jugram, Stratford, Ont.; and The Sclator Shoe Co., Montreal. They have also installed a complete lighting plant in Fould's & Shaw's flour mill, Thorold, Ont., and a seven number intercommunicating telephone system for the Minerva Manufacturing Co., Toronto.

The General Engineering Co., Toronto, inform us that they have recently installed their Jones Under-feed Mechanical Stoker in the works of the following named parties: The Canada Pacific Railway Co., Montreal, 2; Maritime Sulphite Fibre Co., Chatham, N.B., 12; Rhodes Curry Co., Amherst, N.S., 1; Truro Condensed Milk and Canning Co., Truro, N.S., 1; The Slingsby Mfg. Co., Brantford, Ont., 1; The Toronto Railway Co., Toronto, 12; Laurentide Pulp Co., Grand Mere, Que., 6. It is evident that these concerns know a good thing when they see it.

The Canadian Bank of Commerce are erecting a new bank building at the intersection of Yonge and Bloor streets, Toronto, at a cost of about \$12,000.

No better evidence of the success of the cold storage system instituted by the Dominion Department of Agriculture could be wished for than that furnished by the improvement of the Canadian export butter

trade. This year the reports have been numerous of the Canadian article, selling for as high a price in England as the Danish, which heretofore has had its own way in the market. Naturally, this betterment of price has caused an increased activity in production as is evidenced by the heavy shipments from Montreal. In the week ending August 13th there were shipped from Montreal 9,523 packages, while in the same week last year the total was 4,679 packages. This improvement has been going on steadily for nearly two months, the result being that the total shipments to date aggregate 71,552 packages, against 57,449 last year, a very gratifying improvement. More especially is this true in view of the fact that American shipments are falling off noticeably. In the week ending July 23rd only 990 packages were shipped from New York, as against 9,619 from Montreal. It is quite probable that, owing to a sound business policy being set in operation by the Department of Agriculture, one which covers every operation from the farmyard to the consumers' table, Canada may soon do in the butter trade what has already been done in the cheese trade, displace all rivals in the British market, and build up a trade worth fifteen or twenty millions annually. The movement is all in that direction.—Montreal Herald.

Later reports show that the damage to the works of the Jenckes Machine Co., at Sherbrooke, Que., by fire on the night of the 13th Aug., to which reference was made in our last issue, was very much exaggerated. The fire was confined to the machine shop building, and the other departments, foundry,

boiler shops, etc., were in operation as usual on the following Monday. A few days later a portion of the machine shop was started up, and the whole is again in running order. The patterns, drawings, and office records were preserved practically intact, and all orders for work are being accepted as usual. The principal item requiring replacement was the roof of the machine shop, which, however, has been completed. The whole of the work of replacement was pushed with much energy, and the numerous orders in hand suffered comparatively slight delay.

The Jenckes Machine Company have been successful in getting a portion of the machine shop recently damaged by fire, into operation again, and anticipate getting the whole into running order once more early next week. The other departments, foundry, boiler shops, etc., do not seem to have been seriously interrupted. The work of renewal in the damaged building is being carried on vigorously and the numerous orders in hand will be carried to completion at an early date.—Sherbrooke Record.

The Cataract Power Co., of Hamilton, has placed an order with the Royal Electric Co. for two 250 k.w. and one 180 k.w. "S.K.C." generators.

The Athelstan Gold Mining Co., of Rossland, B.C., have placed an order with Mr. J. D. Sword, representing the James Cooper Mfg. Co., Limited, for a preliminary plant consisting of hoisting engine, boiler, pump, etc.

The Safety Light and Heat Co., manufacturers of the Cliff-Wardlaw acetylene gas generators, Dundas, Ont., say acetylene gas as made by the Cliff-Warden gas machine is simply perfection in lighting. A 100 light machine ran an all night service for six months during the past winter and never gave any trouble. It is fifty per cent. cheaper than coal oil, and the light is the same as daylight. Write to the Safety Light and Heat Co., Dundas, Ont., sole manufacturers of the above machine, for one of their booklets, it will interest you.

The grain elevator at Oshawa, Ont., being erected by F. L. Fowke, and which is about completed, covers an area of 50x36 feet, and is eighty feet high, with a cupola thirty feet high extending the whole length. The elevator will contain twenty-two bins, and will have a capacity of over 60,000 bushels. The elevator is for the use of the Oshawa Grain and Produce Co., a new company just organized in Oshawa, of which Mr. Fowke is president.

## INGERSOLL-SERGEANT Rock Drills

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STRAIGHT LINE  
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FOR ALL DUTIES.

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JAMES COOPER MANUF'G CO., Limited, - 299 St. James St., Montreal.

Other Offices - - - ROSSLAND, B.C. RAT PORTAGE, ONT. HALIFAX, N.S.

The James Cooper Mfg. Co., of Montreal, have just equipped the new Viger Square station of the Canadian Pacific Railway Co. with one of their steam actuated straight line piston inlet air compressors for testing air brakes, cleaning car cushions, etc.

The acetylene gas plant installed this summer in the Algonquin by the Hamilton Acetylene Gas Machine Co., improves on acquaintance, and is giving better satisfaction every day. There are 160 lights, including a row around the gallery, which, when lighted at night, makes the place as bright as day and give the effect of an illumination. The light is especially brilliant and penetrating, it being found that half the jets provided are sufficient to give all the light needed, showing that it is twice as brilliant as ordinary gas. It is safe to say that no summer hotel on the St. Lawrence is as well lighted as the Algonquin, and it is estimated that the cost of the light is little more than the wages of servants required for cleaning lamps and breakages. The machine is automatic, requiring very little attention and is admirably adapted for detached buildings. Cornwall, Ont., Freeholder. The above reference is to what is perhaps the largest acetylene gas plant in operation in Canada, which, it appears, is giving perfect satisfaction. The Algonquin House is on Stanley Island, one of the Thousand Islands in the St. Lawrence river, and one of the largest and most fashionable summer hotels in Canada.

One of the largest contractor's air plants in Canada has just been sold, through the Rossland branch office of the James Cooper Mfg. Co., consisting of a battery of two twelve-

drill piston inlet Ingersoll-Sergeant air compressors, and a battery of three 100 h.p. boilers, seventeen of their new Ingersoll drills, and the necessary accessories to go with the plant. The whole of this plant is to be delivered within ten weeks.

The Verity Plow Co., Brantford, Ont., have placed an order with the James Cooper Mfg. Co. for one of their duplex Ingersoll-Sergeant piston inlet compressors. This is to be a belt driven machine and when installed will give 570 cubic feet of free air per minute.

Messrs. P. W. Ellis & Co., manufacturing jewellers, Toronto, announce that their enlarged premises on Wellington street East, extending through to Front street East, will be open for inspection during the Toronto Industrial Exhibition. This immense establishment is claimed to be the largest of its kind in America, and the proprietors are to be congratulated on their success, which is entirely due to their own labors and methods. Forty-five thousand feet in area, divided into two buildings of three and four immense flats, with a very fine basement, will give them ample room to manufacture their many lines. The factory is to be carefully departmentalized, with responsible and experienced heads. The ware room and material departments are to be doubled in extent, and every facility sought to make the keeping of stock and filling of orders an easy matter. The changes and improvements in this establishment, which includes the introduction of much new machinery, involved the expenditure of over \$30,000.

Mr. W. J. Campbell of Boston Mills, Ont., has lately purchased the Oshawa, Ont.,

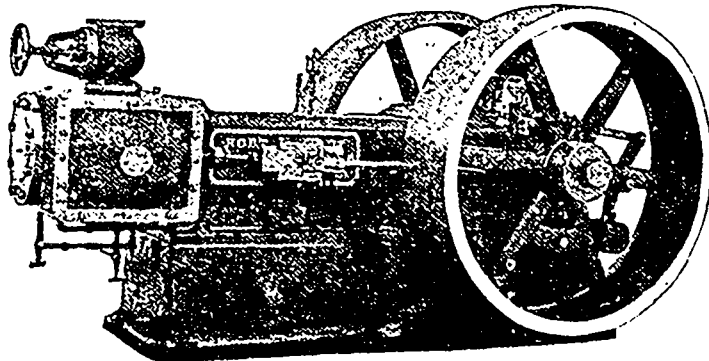
Roller Mills, and is replacing all the old machinery with new and up-to-date appliances.

A large addition is being built to the Bishop Bethune College at Oshawa, Ont. It is a handsome brick structure covering an area of 72x63 feet, three storeys high with stone foundation. It will include a chapel, assembly room, library and music room.

Messrs. J. O. Guy & Co., Oshawa, Ont., have just completed their new warehouse and grain elevator. It is thoroughly equipped with new machinery, run by electric power supplied by the Oshawa Electric Railway Company, which is also building a siding of its line up to the elevator.

The McLaughlin Carriage Co., Oshawa, Ont., have found it necessary, owing to rapid increase of trade, to make another addition to their already large establishment. A three-storey brick structure 150x50 feet will be built in the rear of the main building. The contract has been let, and a gang of men are at work on the job. With this addition to the present works the establishment will have a floor space in the buildings proper of over 125,000 square feet, making it the largest carriage factory in Canada. New and up-to-date machinery will also be placed in the addition, and the large staff of workmen, now numbering over 200, will be considerably increased. The growth of this concern has been phenomenal during the past few years: every year since 1895 large additions have been erected. During the past season the firm made a large shipment of their goods to South Africa, and they are now making up another one for Australia.

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& special purposes.

Grinding Machinery.



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...AGENTS WANTED...

Messrs. John F. Ellis, James K. McCutcheon, Thomas Milburn, and associates, have been incorporated under the name of the Highway Advertising Company of Canada, at Toronto, Ont., with a capital stock of \$75,000, to manufacture signboards and other advertising devices.

The Sunlight Gas Co., Montreal, has been incorporated with a capital stock of \$250,000 to manufacture apparatus for the production of acetylene gas, etc.

The ratepayers of Barrie, Ont., have sanctioned a by-law to raise \$35,000 for the installation of a municipal electric light plant.

The Union Shoe and Leather Co., of Winnipeg, Man., will make a large addition to their shoe and tanning factory at that place.

The Jacques Cartier Pulp and Paper Mill Co., Pont Rouge, Que., have arranged to light their new pulp and paper mills by electricity. The order for the plant has been placed with the Royal Electric Co., of Montreal, and is to be installed immediately.

Dundas, Ont., will give a fifteen year franchise to an electric lighting company, whose managing director is Mr. George H. Harper. The town is to have 150 incandescent lamps and four arc lights, at a cost of \$1,100 per annum.

Friday August 26, 1898, will be memorable in the annals of electricity in Canada, being the day on which the Cataract Power Co., of Hamilton turned the first current on to their long distance transmission line between DeCew Falls and Hamilton. The water was let into the fore bays and pipe line at about 3 p.m., and at 3.30 p.m. the hydraulic plant, consisting of two 1,500 h.p. waterwheels, and the electrical plant of two 1,000 k.w. "S.K.C." generators were turned over, the switch closed and the power sent to Hamilton, a distance of thirty-five miles, where it was utilized for lighting arc and incandescent lamps, and also for driving a 40 h.p. "S.K.C." induction

motor. The incandescent lamps in the sub-station, in Hamilton, were very artistically arranged in the form of a large star and maple leaf, and were kept lighted until far into the night. It is expected the works will start permanently within a few days.

The Nova Scotia Steel Co., New Glasgow, N.S., have received a large order for pig iron from a large German furnace company.

The Londonderry Iron Co., Londonderry, N.S., will supply 150 tons of pipe for the town of Lachute, Que.

The Robb Engineering Co., Amherst, N.S., are building two 100 h.p. boilers for the city of New Westminster, B.C., electric light station.

Messrs. Pearson Bros. Brampton, Ont., have secured the contract for street lighting at that place, and will put in an arc plant and new lamps at an expenditure of about \$8,000.

The Nordheimer Piano and Music Co., Toronto, have been incorporated with a capital stock of \$250,000 to manufacture pianos, organs and other musical instruments and to acquire the good-will and assets of the firm of A. & S. Nordheimer now carrying on the business.

The St. Thomas Brass Co., St. Thomas, Ont., has been incorporated with a capital stock of \$25,000.

Messrs. Broady, Love & Tyron, Winnipeg, are erecting an elevator at Fleming, N.W.T.

Tenders are asked for the erection of a school building at Greenway, Man.

Tenders are wanted for the erection of a schoolhouse near Baldur, Man.

The Broad Cove Coal Co., of Broad Cove, C.B., have just installed an Ingersoll-Sergeant Piston Inlet Air Compressor, and complete coal cutting plant purchased through the Halifax office of the James Cooper Manufacturing Co., Limited.

The Lake of the Woods Milling Co., will build an elevator at Sintaluta, Assa.

The Royal Electric Co., Montreal, have received an order from the Napanee Electric Light & Water Co. for a thirty-five k.w. two-phase generator and 500 light transformers.

Neepawa, Man., will vote on two by-laws—one to provide \$12,000 for a town electric light system, and the other for \$6,000 to install a telephone system, and the purchase of additional fire apparatus.

An agreement has been signed between the city of Brantford, Ont., and the Brantford Electric and Operating Co., for street lighting. The company will expend about \$10,000 on additional plant.

The Toronto Glass Co., Toronto, Ont., has been granted a city permit to erect a two-storey brick factory to cost \$1,600 and a one-storey wooden factory to cost \$2,700.

William Fortune's sawmill at Tranquille, B.C., was destroyed by fire August 9th. Loss about \$8,000.

The saw and shingle mills belonging to N. D. Seaman, near Owen Sound, Ont., were burned August 14th. Loss about \$3,000.

A destructive fire occurred at Madoc, Ont., August 13th, in which the Windsor Hotel, post office, Methodist Church, Bristol's carriage factory and ash mill and Wm. Orr's blacksmith shop were destroyed. Losses about as follows:—Windsor Hotel—\$10,000, post office—\$14,000, Methodist Church—\$10,000, Bristol's factory—\$9,000, and Orr's blacksmith shop—\$1,000.

Messrs. Bielt & Co's steam sawmill and cheese box factory at Chesley, Ont., was destroyed by fire Aug. 14th. Loss about \$3,000.

The P. & A. Corset Co., Farnham, Que., has been incorporated with a capital stock of \$50,000 to manufacture corsets, etc.

The Universal Fastener Co., Windsor, Ont., will make application for incorporation with a capital stock of \$50,000, to manufacture machinery, supplies, etc.

THE CANADIAN RAND DRILL CO. have moved their General Sales Office, controlling Canadian Territory, to 18 Victoria Square, Montreal, in order to facilitate their business, which has been rapidly increasing during the last two years. They have established an office at 88 York St., Toronto, one in Halifax, one in Rat Portage in charge of Mr. George J. Ross, and one in Rossland in charge of Mr. Mendenhall. They are as usual manufacturing largely along the lines of duplex construction which they have advocated from the first. A duplex compressor costs a little more in the first place than a straight line machine, but the difference in economy of the two offsets the difference in price. Their Toronto office has lately contracted with the Canadian Copper Co., the largest nickel producers of Canada, for a very large mining plant. The Canadian Gold Fields of Marmora, they have also just equipped with a large Corliis Compressor.

Through the Halifax office the Intercolonial Coal Mining Co., of Westville, are also installing one of their high class machines for pumping. Duplex construction permits of an economical arrangement of cylinders in proper ratio to the steam pressure at hand, and to the air pressure required.

The Rat Portage office last year installed from start to finish a large plant at the Sultana mine, a large plant at the Foley mine, and also a large plant at the Mikado. They are now putting in machinery at the Cameron Islands mine, and also a large plant for the Boulder Gold Mining Co., which is controlled by Mr. Leclair and other American capitalists.

The Rossland branch has rather the advantage of the others in that it has a large warehouse at its back and is able to fill orders from stock. They have lately contracted with the Knob Hill mine for a large power plant and two mining plants, the object being for the second mining plant being supplied with power from the one Compressor located at Knob Hill.



**B. GREENING WIRE CO.**  
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WIRE MANUFACTURERS  
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& MONTREAL.**

Wire Screens for Every Class of Material.

Perforated Metal of Steel, Copper, Brass, Zinc for all purposes.

Special Attention given to Miner's Requirements.



Supplementary letters patent have been issued whereby the corporate name of the Canada Clothing Co., Ottawa, Ont., is changed to the T. Lindsay Co.

The Prismatic Light Co., Toronto, Ont., have obtained a charter.

The planing mill of Devine Bros., Killaloe, Ont., was destroyed by fire recently.

P. F. Filion's sawmill, Manson Lake, Que., was destroyed by fire August 6th. Loss about \$1,500.

Mr. Carmar. O'Dell, who has been operating the lighting service in Annapolis, N.S., has decided to increase his lighting plant by the addition of a fifty k.w., S.K.C. two-phase generator. He is also adding con-

siderable to his distributing mains, covering a wider area, in fact, nearly doubling the output of the plant. The order for the generator and transformers was placed with the Royal Electric Co.

The steamer Primrose, of the Ferry Company's fleet, was run yesterday by the power of peat instead of soft coal. A number of shareholders of the Canadian Peat Fuel Company and a few vessel owners witnessed the experiment, which was a huge success. The new kind of fuel gives out very little smoke, and is said to be as powerful as soft coal, and is much cheaper.—Toronto World.

The Cataract Power Co. will soon be in a position to deliver power in Hamilton, Ont. The wiring has been completed, and the

machinery is now being tested. The company has 5,000 horse power available. It has already made contracts amounting to \$100,000.

Several of the out-buildings of the Victoria Chemical Works, Victoria, B.C., were destroyed by fire August 16th. Loss \$25,000.

The Dundas Electric Light Co., Dundas, Ont., have received a franchise from that town to furnish incandescent lights throughout the town, and also a contract for the street lighting, both systems to be in operation by November 1, 1898. The entire electrical equipment, consisting of a fifty k.w., S.K.C. two-phase generator, with 500 lights capacity in transformers, and all the necessary wire and materials, is to be supplied by the Royal Electric Co., and the plant is to be installed at once. Mr. Geo. H. Harper, of Dundas, will be manager of the new company.

The addition to the Merchant's Cotton Co's works at St. Henri, Montreal, has been completed. It is five stories high, and is 300 feet long by 100 feet wide, and can accommodate five hundred additional hands. Nearly three million pressed bricks were put into the structure. The company will now employ 1,400 hands.



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*The Largest Power ever obtained from a wheel of the same diameter. The highest speed ever obtained for the same power. The highest mean efficiency ever obtained when running from half to full gate. We guarantee also: A runner of the greatest possible strength. A gate unequalled in quickness and ease of opening and closing.*

Write for pamphlet, stating your head.

**JAMES LEFFEL & CO., Springfield, Ohio, U.S.A.**

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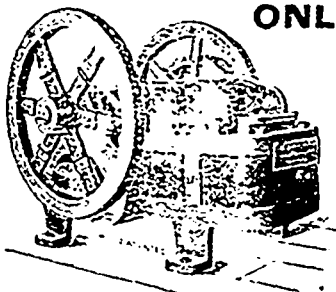
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## Pipe and Boiler Coverings, Engine Packings,

LUBRICATING OILS, GREASES, AND BOILER COMPOUND, COTTON WASTE, ETC.

**EUREKA MINERAL WOOL and ASBESTOS CO., 136 Bay Street, - Toronto.**



ROLL JAW CRUSHER.

ONLY

# FINE CRUSHER

BREAKS LARGE, or when set close  
Reduces to GRAVEL and SAND.

FOR ORES.

**STURTEVANT MILL CO., BOSTON, MASS.**

## THE Crocker Patent Turbine



5 inch Crocker Wheel Plant at the works of the Boston Rubber Co., St. Jerome, Que.

This Wheel is to be found in representative plants in nearly all parts of the Dominion. It possesses among its leading features

**LARGE POWER FOR THE DIAMETER. SUPERIOR STRENGTH AND DURABILITY.  
GREAT EFFICIENCY AT ALL DEGREES OF GATE OPENING.**

Designs prepared for complete plants and the best development of power possible under the peculiar circumstances of head, etc., in any locality.

CIRCULARS AND PRICES ON APPLICATION.

**The JENCKES MACHINE CO.,**

42 LANSDOWNE STREET  
[SHERBROOKE, QUE.]

**SOUTH AFRICAN EXHIBITION**

A gentleman who has been in South Africa, would attend the Exhibition to be held at Grahamstown, South Africa, during December, 1898, and January, 1899, in the interests of two or three Canadian Manufacturing firms. The object being to minimize the cost of representation to each firm.

Only one in each line will be taken.  
Address, "SOUTH AFRICA,"  
Care CANADIAN MANUFACTURER,  
Toronto.

To WOOLEN CLOTH Manufacturers and Wool Dealers.

**SYKES, HOLT & CO.**  
Wool Brokers, SYDNEY, N.S.W.

We undertake the buying of Washed and Greasy Wools in all the Australian markets on the lowest terms.  
Orders executed strictly to instructions.  
Samples and all information will be forwarded on application.  
BANKERS - The Union Bank of Australia, Limited, Sydney.  
REFERENCES - J. S. Larke, Esq., Agent Govt. of Canada in Australia.

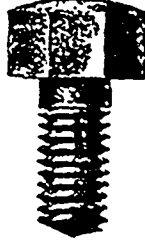
Canadian Goods for New Zealand  
To CANADIAN MANUFACTURERS

Our Mr. YEREX - a Canadian, but for the last 10 years a resident of New Zealand, will arrive at Vancouver by the "Aorangi" on August 11th, and will proceed eastward, touching at the leading towns en route. He leaves the same port again by the same steamer on November 17th, and while in Canada would like to make arrangements to represent any firm or firms who wish to have their goods introduced to the New Zealand public.  
We have had 8 years experience in importing American Manufactures, and we think we understand the New Zealand market.  
REFERENCES - The Union Bank of Australia, Limited, Wellington; J. S. Larke, Esq., Agent for the Government of Canada, Sydney, N.S.W.

The YEREX & JONES CO.  
HEAD OFFICE Wellington, New Zealand.  
BRANCHES - Dunedin, Christchurch, Wanganui and Napier, New Zealand.  
Agencies throughout the Colony.  
Address at once GEO. M. YEREX, care of THE CANADIAN MANUFACTURER, Toronto, up till October 1st.

**SPORTSMEN**  
NOTE  
The ABBEY IMPROVED CHILLED SHOT  
NEWCASTLE ON TYNE, ENGLAND.  
Is made by a New Process, and is highly spoken of by Sporting Papers and Sportsmen. Kills at greater distance than Soft Shot.  
Send to your Gunmaker for Samples

TORONTO MACHINE SCREW CO.  
Manufacturers of  
Hexagon AND Square Head Cap Screws.  
Steel and Iron Set Screws.  
Hanger and Flange Bolts, Studs, etc.  
Send for Price List and Discounts  
109 1/2 Adelaide St. W., - TORONTO.



The work of excavating for the foundation of a new bridge to be constructed across the Niagara River at Lewiston, has been started by James Stewart & Co., of Buffalo, N.Y. The anchorage of the old bridge has been removed. The Canadian Government has demanded that the super-structure be placed at the same height from the water as was the old bridge.

The Waterous Engine Works Co., Brantford, Ont., are adding to their shop capacity, and, requiring more power, are installing a thirty h.p. induction motor from the Royal Electric Co., which is to be operated from the alternating current lines of the Brantford Electric and Operating Co. This makes over a 100 h.p. in S.K.C. motors now operating in Brantford.

The new smoke consumer at the high level pumping house has been in operation since Saturday and is proving a great success. The consumer will remain in operation for two weeks on trial. - Hamilton Spectator.

The Canadian Electric & Water Power Co., Perth Ont., has been incorporated with a capital stock of \$150,000 to produce and distribute electricity for commercial purposes. Hon. John Haggart is one of the incorporators.

A. C. NEFF, Chartered Accountant  
JAMES WOOD, late sec The T. Eaton Co., Ltd.  
**NEFF & WOOD**  
PUBLIC ACCOUNTANTS, AUDITORS ASSIGNEES, ETC.  
Room 500 McKinnon Bldg., Toronto

**GEORGE WHITE-FRASER.**  
Member Can. Soc. C.E.  
Member Am. Inst. Elec. Eng.  
CONSULTING and Electrical Engineer.  
CONSTRUCTING  
Railways, Lighting, Power Transmissions, Factory Plants, Reports, Specifications, Tests.  
18 Imperial Loan Building, TORONTO.

**H. F. STRICKLAND,**  
Electrical Contractor.  
35 ADELAIDE ST. E., TORONTO.  
Telephone 1838.

SPECIALTY: Electric Wiring, by skilled men. All work done according to latest methods, at lowest possible prices. Complete Isolated Plants.

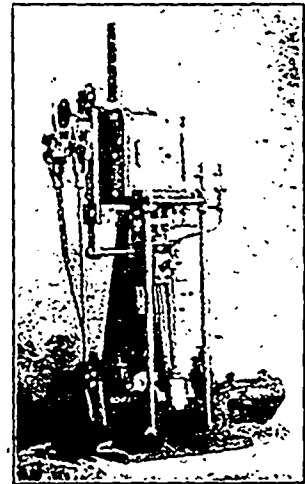
**ROBT. A. ROSS, E.E.,**  
Consultant to Canadian Pacific Ry., and Boiler Inspection Co.  
CONSULTING ENGINEER.  
Specifications, plans, advice upon Steam and Electric Plants, Power transmission and distribution. Special machines designed.  
17 St. John Street, MONTREAL.

**JOHN J. GARTSHORE,**  
19 Front St. West, Toronto.  
RAILWAY, TRAMWAY, and  
Contractors' Supplies  
METALS and SCRAP IRON  
Bought and Sold.

**SITUATION WANTED.**  
THOROUGHLY experienced double-entry bookkeeper, accustomed to accounts of a trade paper, as well as writing industrial news paragraphs, desires situation. Address "BOOKKEEPER," care of THE CANADIAN MANUFACTURER, Toronto.

**ALBERT BELL ENGINE WORKS**

DUNNVILLE, ONT. Makers of  
YACHT ENGINES, 1 H.P. to 50 H.P.  
Safety Water Tube BOILERS  
PROPELLER WHEELS  
Stationary Engines and Boilers



WRITE FOR CIRCULARS

**FLEMING & CHAPIN** SPLICING SOLE AGENTS FOR ALL  
229-231 Church St., PHILADELPHIA.  
YARNS  
HADLEY COMPANY.

**CARBONIZER** A neutral substance, harmless to animal fibre or tissue, while it destroys burrs, etc., as efficiently as acid. It leaves the wool in fine condition. Manufactured by the Merrimac Chemical Co., 13 PEARL ST. BOSTON.

**BOILERS.**  
YOU WANT THEM. WE MAKE THEM  
WRITE FOR PRICES  
**BANNERMAN & FINDLATER,**  
Boiler Makers, OTTAWA, ONT.

**WANTED**  
Mechanics, Engineers and Firemen to enclose 20 cents in stamps for Working Model of Valve for Steam Engines.  
Address, H. F. LOWE, M.E., Patent Solicitor, Confederation Life Bldg., Toronto, Canada.

**PATENT FOR SALE.**  
Canadian Patent No. 5378, relating to apparatus for rapidly discharging cargo from vessels, whereby the necessity of shoveling grain, coal, etc., in small quantities is avoided. Apply to  
**JOHN W. GLAHLIN,**  
Nanaimo, B.C.

**J. ALEX. CULVERWELL,**  
Electrical and Mechanical  
BROKER,  
Special Agent Royal Victoria Life,  
5 King Street West, - TORONTO.

The Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont., have been awarded the contract for several thousand tons of iron piping required by the waterworks department at Winnipeg, Man.

Messrs. Hillock & Co., refrigerator manufacturers, Toronto, have shipped to Mr. H. M. Mann, of Bridgetown, Barbadoes, W.I., one of their large "Arctic" refrigerators.

This firm has shipped a number to the Northwest and the Maritime Provinces, recently.

The by-law, which was voted on by the property owners of Lachine, Que., to grant \$15,000 to Messrs. George Barrington, Sons Co., to build a trunk factory in that place has been carried. The company must purchase land, erect a building and put in

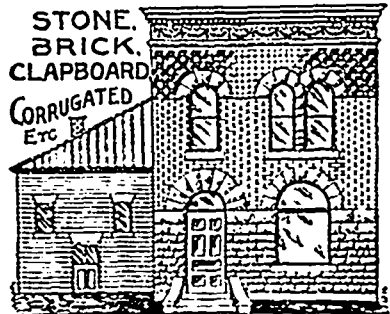
machinery to the value of \$25,000, before the town is called upon to pay anything. The work on the factory will be commenced immediately.

Acetylene is the newest cure for cancer. Carbide of calcium is applied to the cancerous surface and then moistened with water. Acetylene is at once evolved, producing at first a burning sensation and then exercising its curative effect.—Medical Record.

Newmarket, Ont., has voted to give the Office Specialty Co. \$5,000 to extend their buildings. The vote binds the company to remain and do all their manufacturing there for at least ten years, and to spend about \$7,000 in enlarging and equipping their buildings.

Harrington's cider mill at Toronto Junction, was damaged by fire to the extent of about \$1,200.

## STEEL SIDING



For

Stores, Houses, Halls, Barns, Sheds, Churches.

Entirely water, wind, storm and fire proof. Will last 100 years and always look well.

Cheaper than matched Lumber. Shipped from factory all ready to apply. Fully illustrated catalogue sent on request.

The  
PEDLAR METAL ROOFING CO.  
Oshawa, Ont.

## MALCOLM MILLS CO.

Manufacturers of  
Fancy Twist Yarns, in Worsted, Silk Cotton, etc. Polished Threads.  
Silk Nolls Yarns.  
Metal Threads and Tinsels.  
MILLS Frankford, Pa.  
OFFICE—229 Chestnut Street, Philadelphia

## PROGRESSIVE MANUFACTURERS

USE THE

## BLACKWELL UP-TO-DATE VARNISHES

For Finishing Pianos, Carriages, and Railway Coaches.  
BLACKWELL & CO., TORONTO.

## Dominion Oil Cloth Co.

Manufacturers of ...

## OIL-CLOTHS of Every Description

Floor Oil-Cloth, Table Oil-Cloth,  
Carriage Oil-Cloth,  
Enamelled Oil-Cloth,  
Stair Oil-Cloth, etc.

Office and Works

Cor. St. Catharino and Parthonsals Sts.,  
MONTREAL, Que.

# WOOLEN MACHINERY

...FOR SALE...

24 Hutchison & Hollingworth Dobby Looms.

20 Harness. 3 Box. 2 1/2.

9 Leeming's, of Bradford, England, "Dandy" Looms.

6 Harness. 1 Box. 10 1/2.

1 Hand Loom, Complete, with Shuttles, etc.

32 Harness. 1 Box.

1 Waste Shaker.

2 ft. 8 in. wide. 21 in. diameter.

1 Iron Doffer.

36 in. diam., 60 in. wide, with 2 1/2 in. shaft

1 Knowles Pump—Steam.

11 in. x 3 1/2 in. Water Cylinder

1 Horizontal Engine.

Six Horse Power.

All of the above can be seen running at the Factory, ST. GABRIEL LOCKS, MONTREAL.

We are prepared to entertain any reasonable offer for above.

Further Particulars on application.

**Montreal Woolen Mill Co.**  
MONTREAL.

## Felts for Pulp Mills

20 years in the business —the first to make Felts in Canada; capacity 1,000 lbs. per day. All our

Felts are woven endless, without a splice. Our Felts will last longer and make dryer Pulp. All up-to-date mills use our Felts. New mills, when in need, write for samples and prices.

HAMELIN & AYERS, Lachine Mills, P.Q.

## ELECTRIC REPAIR & CONTRACTING CO.

GEO. E. MATTHEWS, Manager. 621 LaGauchetiere St., MONTREAL. TEL. 2177.

COMPLETE ELECTRIC PLANTS INSTALLED.

ELECTRIC APPARATUS OF ALL KINDS REPAIRED ON THE SHORTEST NOTICE.

Armatures Rewound for all Systems. Commutators Refilled.  
Write us, our Prices are reasonable and work good.

The **Diamond**  
**Machine & Tool Co.**  
TORONTO, ONT.  
Manufacturers of  
**Machine Screws**  
OF EVERY DESCRIPTION.

SEND FOR CATALOGUE and PRICE LIST.

The Michael Lefebvre Co., Montreal, manufacturers of vinegar, etc., have obtained a charter.

The Shawinigan Water and Power Company which proposes to utilize Shawinigan Falls on the St. Maurice River, seventeen miles from Three Rivers, has decided to install at once a plant capable of developing 100,000 horse power. The plans have been prepared by Messrs. T. Pringle & Son, of Montreal, assisted as consulting engineer by Mr. W. C. Johnson of Niagara Falls, N.Y., and the company is now calling for tenders. It is understood that power will be sold at Three Rivers cheaper than it can be obtained at any other port in the world reached by ocean-going vessels, and also at the falls themselves at a proportionately low figure.

The Brighton Canning Co., Brighton, Ont., will establish an apple evaporating factory at Dutton, Ont., where they will employ about twenty hands.

Mr. S. DesBrisay, Petit Rocher, N.B., is erecting a flour mill to cost about \$8,000.

The Windsor Electric Light and Power Co., Windsor, N.S., are enlarging their recently installed electric lighting plant. They are adding one 100 k.w. and one 40 k.w. "S.K.C." generators, with an additional complement of transformers and material. The "S.K.C." apparatus and transformers are from the Royal Electric Co.

The Rossland, B.C., branch office of the James Coover Mfg., Co., Limited, reports that their erecting engineer, has returned from Anaconda, B.C., where he has been erecting a 12-drill compressor plant for the British Columbia Copper Co.

Mr. J. T. Ayers, Lachute Que., has secured a franchise from that town to furnish incandescent electric lights. For this purpose he has placed his order with the Royal Electric Co., for one of their 100 k.w. "S.K.C." generators, and the necessary transformers and material for the construction of the entire plant. The new plant will be driven by a water power situated about two miles from the centre of the town.

The warehouse of the Parmenter and Bullock Co., Gananoque, Ont., manufacturers of copper and iron rivets, was destroyed by fire August 28th. Loss about \$25,000.

J. H. Still's handle factory and the St. Thomas Pipe and Foundry Co., of St. Thomas, Ont., were destroyed by fire August 26th. Loss about \$60,000. The handle factory will, in all probability, be rebuilt.

The fourth of the 2,200 k. w., S.K.C. generators was set up in the Chambly Electric and Manfg. Co's. power house at Richelieu, Que., a few days ago, and they have now ready for operation over 10,000 h.p. These are the largest electrical units ever built in Canada, and the largest excepting Niagara Falls that have ever been built. Surely electricity is no longer in its infancy, neither is Canada behind in the development of the art.

The James Cooper Mfg. Co's. erecting engineer has just returned to Montreal after completing the installation of plant for the Regina Canada Gold Mines, Ltd., Rat Portage, Ont. This consists of a 15 drill Cross Compound Condensing Ingersoll-Sergeant Air Compressor, battery and boilers, ten drills, etc.

The Dufferin Mine (Salmon River, N.S.) plant is now running at its full capacity. It consists of an Ingersoll-Sergeant 15-drill Cross Compound Condensing Compressor, one 40 horse power and one 50 horse power Lidgerwood double drum double cylinder hoisting engine, battery of boilers, complete complement of drills, mountings, etc., all supplied by the James Cooper Manufacturing Co., Limited, Montreal.

The ratepayers of Owen Sound, Ont., have voted favorable on a by-law to borrow \$10,000, the money to be expended in constructing permanent macadam roadways, concrete walks, and the purchase of a steam road roller.

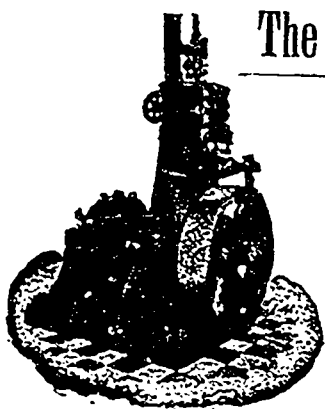
The town of Dundas, Ont., has granted a bonus of \$12,000 to Messrs. John Bertram & Sons of the Canada Tool Works, to aid them in enlarging their premises and constructing a railway switch.

The Sydenham Glass Co., Wallaceburg, Ont., are building a new furnace.

A. Haug & Co., Kingston, Ont., vinegar manufacturers, have shipped 600 gallons of vinegar to Glasgow, Scotland. This is interesting from the fact that it is the first vinegar ever shipped from Canada to Britain.

The People's Light and Power Co., have added to their plant, by purchasing through the Halifax office of the James Cooper Mfg. Co., another 50 h.p. Lidgerwood type hoisting engine.

The Royal Electric Co., is installing in the sub-station of the Cataract Power Co., on Victoria street, Hamilton, Ont., one of their 30 h.p. "S.K.C." induction motors, which is to be used in driving the fans for the air blast transformers.



## The Whitelaw-Shepherd

### ...ENGINE...

SIMPLICITY, COMPACTNESS,  
PERFECT REGULATION,  
ECONOMY,  
AUTOMATIC LUBRICATION.

For Electric Lighting Mills, Factories,  
and other purposes where Economy,  
close regulation and enduring service  
is required.

Manufactured  
by.....

**R. WHITELAW, Woodstock, Ont.**

## The ELECTRICAL CONSTRUCTION CO.

OF LONDON (Limited).

### MULTIPOLAR MOTORS and DYNAMOS

- AND -

DIRECT CONNECTED PLANTS FOR  
ISOLATED LIGHTING.

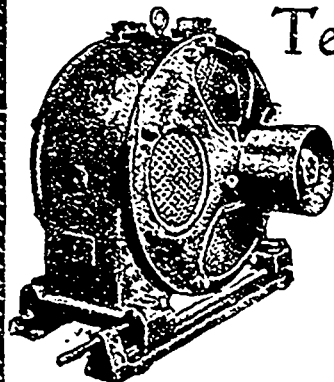
Repair Work a Specialty.

HEAD OFFICE AND FACTORY:

No. 90 YORK STREET, LONDON, CANADA.

700 Main Street, WINNIPEG.

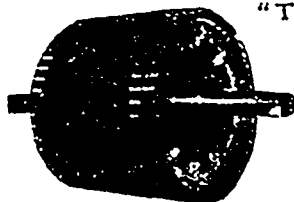
42 York Street, TORONTO.



Type "C" Motor. Complete.

## Tesla Polyphase Induction Motors, Type "C."

Are the only  
Motors  
supplying  
Niagara  
Power  
in Buffalo.

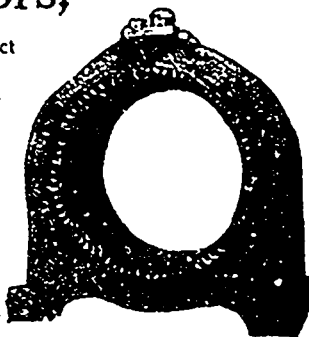


Revolving Secondary.

"Their work is giving perfect  
satisfaction."

VICTOR'S ARTICLE,  
Electrical World, Febru-  
ary 12, 1888.

New York, Atlanta, Aus-  
tin, Boston, Buffalo, Chi-  
cago, Cincinnati, Phila-  
delphia, St. Louis, San  
Francisco, Syracuse, Ta-  
coma, Denver, Mountain  
Electric Co., For Canada,  
Ahearn & Soper, Ottawa,  
For Mexico, G. & O. Bram-  
mell & Co., City of Mexico.  
Westinghouse Electric  
Co., Limited, 32 Victoria  
Street, London.



Stationary Primary.

**Westinghouse Electric  
& Mfg. Co., Pittsburg, Pa.**

The Jacques Cartier Water Power Co., Quebec, Que., has been incorporated with a capital stock of \$500,000, and has acquired from the Standard Light & Power Co., of Montreal, its chartered rights to introduce electricity for light, power, and heating throughout the city of Quebec.

The Northey Manufacturing Co., Toronto, are building a horseless carriage. It will be propelled by gasoline, six horsepower engine, and will seat four persons.

A bonus of \$5,000 has been granted Messrs. LaRoque and Renaud to aid them in rebuilding their mills recently destroyed by fire at St. Gabriel de Brandon, Que.

The Londonderry Iron Co., Londonderry, N.S., have received contracts from the towns of Amherst and Wolfville, N.S., to cover all the waterworks extensions of those towns for this year.

The Robb Engineering Co., Amherst, N.S., have received an order from the Electric Co., Windsor, N.S., for a 100 h.p. Robb Armstrong engine.

A workman while breaking up old iron recently at Cowan & Co's foundry at Galt, Ont., made a remarkable discovery. He had just broken a wheel that had done service on an old stationary engine for many years, when he discovered a crevice in the iron.

On examining it he found a flower blossom in perfect condition, its color being as fresh as the day it first found its way into that mysterious place. It had evidently fallen into the casting when it was being poured and escaped injury from the molten metal. It was preserved in an air-tight cavity from that time until now, when it was again exposed to view.

The James Cooper Manufacturing Co., Limited, are now erecting for the Whitewater Deeps Mining Co., Whitewater, B.C., complete ten-drill Ingersoll-Sergeant Air compressor plant of the belt driven type, and installing Pelton water wheel with half a mile of converse lock-joint pipe, with a mile of air-line pipe.

A by-law will be voted on at Arnprior, Ont., to raise \$8,500 to build an iron bridge to replace the White bridge.

The Jenckes Machine Co., Shorbrooke, Que., have received an order for a new sixty stamp mill from the Dufferin Mine Co.

The steamer Golden City was burned to the water's edge at Lakefield, Ont., August 22nd. Loss \$5,000.

Mention was made recently in THE CANADIAN MANUFACTURER that it was probable that the city of Belleville, Ont., would grant a bonus to an American concern to establish an iron rolling mill there. A few days ago the council decided to postpone the vote on the by-law indefinitely.

Jos. Cawthorpe's flour and sawmills at Thamesford, Ont., were destroyed by fire August 23rd. The cooper shop of James McKay of the same place was destroyed by fire also. Loss about \$50,000.

The directors of the Toronto Patent Agency have made extensive preparation for their exhibit of some three hundred inventors' patents at the Industrial Exhibition. Their exhibit will be in the Main building annex.

Secretan & O'Boyle, Rat Portage, Ont., have increased their plant by ordering through the James Cooper Mfg. Co., Limited, agent at that point, Ingersoll-Sergeant drill.

Mr. Carmen O'Dell, of Annapolis, N.S., is increasing his electric lighting plant by the addition of a 50 k.w. "S.K.C." generator.

## ECO MAGNETO WATCHMAN'S ELECTRIC CLOCK.

Without Batteries.

Write for descriptive circular to

### Eco Magneto Clock Co.,

Room 71, 620 Atlantic Avenue.  
BOSTON, MASS.

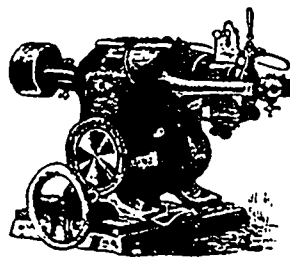
**MONTREAL ELECTRIC CO.,**  
1828 Notre Dame Street,  
(Balmoral Hotel Block).

Agents for Province of Quebec.

**John Starr, Son & Co. (Limited),**  
HALIFAX, N.S.,

Agents for the Maritime Provinces.

## Jones & Moore Electric Company



### ELECTRIC LIGHT AND POWER PLANTS

**Multipolar Machines**  
25 to 100 K. W.

16-Light Arc Plant for sale cheap. Good as New.

22 Adelaide Street West, - Toronto.

ESTABLISHED 1823.

Telegrams:—"WILSONS, CORNHOLME"—A.B.C. Code Used.

# WILSON BROS. BOBBIN CO.

(LIMITED)

CORNHOLME MILLS, TODMORDEN, ENGLAND.

## BOBBIN AND SHUTTLE MANUFACTURERS.

THIRTY PRIZE MEDALS AWARDED.

HIGH-CLASS WORKMANSHIP. SEVENTY YEARS' REPUTATION.

LARGEST BOBBIN MAKERS IN THE WORLD—(Over 1,200 Workmen).

ADDRESS—

### CORNHOLME MILLS, TODMORDEN, ENG.

BRANCH ESTABLISHMENT:

ATLAS BOBBIN WORKS, GARSTON, LIVERPOOL.

OFFICE AND SHOWROOMS:

14 MARKET PLACE, MANCHESTER

Advertise in the Canadian Manufacturer.

## Engineers' ..Supplies

OF ALL DESCRIPTIONS

### THE HEINTZ STEAM SAVER

Will increase your productive power  
and decrease your fuel account.

Write us for Booklet C.

"Twill interest you.

THE JAMES MORRISON  
BRASS MFG. CO. Limited,  
TORONTO

The property owners of Prescott, Ont., have voted in favor of a waterworks and sewerage system.

The George E. Tuckett & Son Co., Hamilton, Ont., have laid the foundation stone of their new five-storey factory building in which they will work Canadian-grown tobacco exclusively.

The Miller Bros. paper mills at Glen Millar, Ont., were partially destroyed by fire August 14th. Loss about \$17,000. The building will be rebuilt.

The Coulthard & Scott Co., manufacturers of agricultural implements, Oshawa, Ont., have just completed a large two storey brick addition to their factory.

Messrs. Jas. Robson & Sons, tanners, Oshawa, Ont., have purchased the old scythe shop at Cedar Dale, a suburb of Oshawa, together with all the property owned by Wm. Chaplin, the former proprietor of the shop, their present premises being altogether too small for their already large trade. The works in Cedar Dale, with some changes to be made, are well situated, and work will commence at once. Among the building operations will be the adding of two storeys to the north end of the main part, and a new beam house will be built west of the works. The works will also be connected with a switch to the Oshawa Railway. The capacity of the shop will be quadrupled and will

mean an employment of over one hundred hands when in full operation.

Messrs. Gordon & Ironside will erect a cold storage warehouse at Rat Portage, Ont.

The Canada North West Elevator Co., have built an elevator at Teesbank, Man.

The Toronto Junction Tribune, speaking of the St. Germain Autocar, says: Arrangements have been made by the Canadian Motor Syndicate for the exhibition at the Toronto Industrial Fair of their motor carriages—of different types run by electricity and gasoline. One or two of these motor carriages will run about the exhibition grounds for several hours each day carrying passengers for a nominal fee; and visitors will thus have the rare privilege of riding in an autocar. They will also run in front of the Grand Stand. These Canadian motor carriages are of elegant design and handsomely furnished and fitted, being the lightest and neatest in the market. The St. Germain Pioneer Autocar, the first of the St. Germain Autocar Line, announced to run between Toronto and Richmond Hill, will be on exhibition. This autocar will accommodate twenty-four passengers, and is a magnificent specimen of the carriage builders' art. In addition to these carriages it is expected that a motor tricycle carrier, which is being made for the Sunlight Soap Company, will also be ready for exhibition. The space reserved for the motor carriages,

when not running, is in the Carriage Building, near the west entrance. Visitors interested in these new mechanical marvels can there obtain reliable information from skilled attendants.

The Trail Smelter, Trail, B.C., is increasing their boiler plant and have placed an order with Mr. James D. Sword, representing the James Cooper Mfg. Co. Ltd., Montreal, for another 80 h.p. boiler, to be added to their present battery.

Messrs. Lang & Gray, surveyors, from the offices of Mr. John Galt, civil engineer, of Toronto, were in Oshawa, Ont., a few days ago surveying and making a profile for a waterworks and sewerage system for that town.

The Grand Calumet Mining Co. have ordered through the James Cooper Mfg. Co., a concentrating plant consisting of engine, rolls, crusher, etc.

During the current year up to August 25th, the Toronto city authorities have issued permits for the erection of new buildings to the aggregate value of \$1,176,800 as against \$657,168 during the whole of 1896, and \$928,619 in 1897.

Messrs. John Kay & Sons are erecting a fine four-storey carpet warehouse on King street west, Toronto, adjoining the Canada Life Building, at a cost of about \$30,000.

## THE WM. HAMILTON MFG. CO., LIMITED,

Engineers and Builders

# MODERN MINING and MILLING MACHINERY

## "Gyrating Vanner"

SHAKES LIKE A PAN SEND FOR SPECIAL CIRCULAR



Department "E"



Contractors for the Design and Construction of Complete Stamp Mills, Concentration, Chlorination, Cyanide, and Smelter Equipments



PETERBOROUGH, ONT., or VANCOUVER, B.C.

**GAS FROM GARBAGE.**

Some time ago THE CANADIAN MANUFACTURER called attention to the fact that Mr. Harris, the inventor of the process, had offered to construct a testing plant in Toronto to show how easily and cheaply city garbage could be manufactured into gas for illuminating and heating purposes. The efforts of Mr. Harris were frustrated through the non-action of Toronto's circumlocution office, but it is well to show what a good thing did not materialize therefrom.

The owners of the process, which has been patented in Canada, United States and other countries, are the International Sanitary Gas Co., of New York, their claim being

that high grade illuminating and power gas can be produced from city garbage, saw dust, refuse vegetable matter, brewery and distillery refuse, night soil, and like substances at a nominal cost.

One of the most important questions for the consideration of health officers and other officials of cities, towns, and other municipalities, is how best to secure the most perfect sanitary conditions, and how this may be done in the most economical manner. The disposal of garbage and refuse is usually accomplished in an unsatisfactory, expensive and wasteful manner; and it is evidently the duty of those concerned to make the process a source of revenue if it can be done.

Dr. E. G. Love, an eminent analytical chemist, of New York, certifies as follows:—

The sample of gas made from garbage by the "Harris Process," taken by myself at the works, corner of Smith and Huntington Sts., Brooklyn, N.Y., on May 18, 1898, contains:—

Hydrogen.....	29.12	per cent.
Marsh gas.....	29.12	"
Carbonic oxide.....	5.14	"
Heavy hydrocarbons.....	22.58	"
Nitrogen.....	13.16	"
Carbonic acid.....	0.00	"
Oxygen.....	0.87	"

Specific gravity (Air 1.).... .670  
Illuminating power..... 39.50 candles.  
Calculated heat units per cubic foot at 60° F. and 30 in. bar, 827.33.

The claim of the company is that from each ton of refuse matter enumerated, the quantities in cubic feet of thirty-five candle power gas, that can be produced averages as follows:—

City Garbage.....	15,000	feet.
Sawdust.....	40,000	"
Stable manure.....	12,000	"
Night soil.....	18,000	"
Fruit and vegetable packing house refuse.....	13,000	"
Beet sugar factory refuse.....	14,000	"
Brewery and distillery refuse.....	14,000	"
Fish offal.....	16,000	"

And similar results from other like substances.

Plants for the cremation of garbage and the manufacture of gas by the Harris process are now in successful operation in Brooklyn and Flushing, New York and San Francisco Cal., the cost of the gas at the holder ranging from 10 to 15 cents per thousand cubic feet.

Mr. L. R. Arnett, Toronto, is general agent and manager for Canada for the company owning the patent.

**CHEMICAL COMPOUND COMPANY**

**CORRECTLY COMPILED CHEMICAL COMPOUNDS**

**CIVILITY CAREFULNESS COMPLETENESS CONTINUITY**

**DO YOU KNOW**

That you are paying for Boiler Compound all the time whether you use it or not?

**IF YOU DO NOT BUY**

You will pay your coal dealer more than its cost in the extra Coal you burn.

**Zinkolene Saves Money**

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MANUFACTURERS OF

**CARBON POINTS** for all kinds of Arc Lamps, including Cored and Solid Carbon for Incandescent Circuits.

..... ALSO.....

**M**OTOR BRUSHES and Specialties in Carbon for Telegraph, Telephone and Electric Light Supplies.

**P**ORCELAIN INSULATORS, Cleats, Door Knobs, and all kinds of Pressed Porcelain for Electrical and Hardware Lines.

ALL GOODS GUARANTEED TO GIVE SATISFACTION.

**A Saving.**

The first cost is not the test of an actual saving. The truly Economical Manufacturer knows this to be true. For instance, the cheap, trappy Pulley, by its inferior working qualities, is a source of loss to the user the moment it is put in operation, and this loss continues all the time the Pulley is working. You do not get the full or proper results from your power plant. Higher price, though, is not always a sign of better quality, for instance—you may or may not have to pay more for

**"THE REEVES" PATENT WOOD SPLIT PULLEY**

but in either case you are getting the best value on the market. Because with THE REEVES the saving is continual, in Power, in Time, in Shafting, in Belting, and last but not least, and as a result of all the other savings, a saving in Money.

CAN YOU AFFORD TO BE WITHOUT "THE REEVES"? Is the best too good for you? WRITE TO-DAY FOR OUR CATALOGUE AND GET OUR PRICES.

Also COLUMBUS, IND.

- **REEVES PULLEY CO., Toronto, Ont.**

**ANOTHER NEW ILLUMINANT.**

One of the most important recent products of this inventive age is the discovery of a method for the utilization of iron slag which has recently been made by a Chicago iron worker. The product of the new discovery is called carbolite. It is a combination of carbon, calcium, aluminum and silicon, and from it is produced ethylene gas, which is a great improvement over acetylene. It is now generally believed, says the Scientific American, that the manufacture of carbolite will revolutionize the manufacture of iron. The reduction of the slag into carbolite reduced the waste iron to the state of a by-product, from which ethylene gas can be produced at a cost 50 per cent. under the cost of acetylene, and for all purposes the former is greatly superior.

The waste in the processes of iron manufacturing is enormous. For every ton of pig iron produced no less than 13,000 pounds of substance goes to waste. Using an ore containing 50 per cent. of metallic iron, the waste and production would be about as follows: Four thousand pounds iron ore,

1,100 pounds limestone, 8,500 pounds air, are consumed in the production of 2,000 pounds pig iron, 1,500 pounds slag, 12,100 pounds gas. For every ton of pig iron obtained there is a waste in slag of three-quarters of a ton. This is not only a waste product, but its removal from the blast furnace is expensive, and this greatly increases the cost of producing the pig iron. While this slag product has in some cases been used to adulterate the cheaper grades of cement and to manufacture mineral wool, its use has as yet been exceedingly limited. Its principal use has been as railroad ballast and in steel working, but the income from these sources has scarcely justified the handling of the material.

In the newly discovered fuel process this slag is combined with carbonaceous material, such as coke, and thus the new product is obtained. In bringing carbolite into contact with water or other liquid a gas is instantly generated, which when used in suitable burners gives a beautiful white flame of great steadiness and remarkable luminosity. The processes of the production of this new fuel product are as follows:

Slag being a combination of all the non-volatile substances contained in the charge except iron, and being lighter than molten iron, floats on the top and is drawn off through an aperture in the furnace, placed at the upper line of the molten iron, into suitable receivers, so constructed as to contain a very great amount of heat.

Being at a very high temperature, it is almost as fluid as water, and by means of great ladles, operated by hydraulic power, is passed from receivers into converters, similar to those used for the manufacture of Bessemer steel. Except that their tops are somewhat closed, the opening being much smaller than their central diameter, these converters may be likened to great elongated iron kettles, hung on iron shafts or trunnions leading to and connecting with a number of small tubes which perforate the bottom of the converter. These pipes are so arranged that finely crushed coke can be fed into and forced through them.

Before the slag is poured into the converter, a strong gas blast is forced through the pipes to keep the molten mass from running into and filling them up. As soon,

**GEO. REID & CO.,**

Dealers in

**Textile Machinery and Supplies,**  
TORONTO, ONT.,

Have bought and are offering for sale at great **Bargains** the entire machinery of the Campbellford Woolen Mill (which they are now taking out), also

A 4-Set Mill (Running), A 2-Set Mill (Running), and Three 1-Set Mills (Running).

Write at once for Prices and particulars.

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... ORDER ...

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THIS IS THE  
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**CYLINDER**

**“Atlantic”**

RED OIL

NO BETTER OILS MADE

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SAMUEL ROGERS, PRESIDENT

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**Leather Belting,  
Lancashire Hair,  
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Card Clothing,**

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VICTORIA SQUARE, - MONTREAL  
Stock Depots - Ottawa, Galt.

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**STORAGE BATTERIES**

THE LIGHTEST. THE STRONGEST. THE BEST.

If you use Electricity we Batteries Repaired and Recharged  
can save you Money. at Reasonable Rates.

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FOR WEAVING FROM COP?

WE MAKE THEM.

Write for Prices and Samples.

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BOBBIN WORKS,  
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FROM SELECTED STOCK.

Correspondence Solicited .....  
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**WESTERN TRADE:—**

Our Mr. R. M. W. McLaren, in charge of Galt Branch, will be pleased to give quotations as well as receive orders.



however, as the slag is poured into the converter, the pulverized coke is fed into the pipes, and by the blast is carried through and forced into the molten mass. This is continued until the mass is thoroughly impregnated with coke. To insure a uniform mixture, the converter is tipped backward and forward as desired, thus increasing the agitation, and when the mixture is complete, the converter is turned on the shaft so as to cause the mass to flow between a series of carbon fans or electrodes, which serve to introduce a powerful electric current.

Coke being an excellent conductor of electricity, while the slag is a resistant, the result is that the particles of slag, in connection with the particles of coke, form innumerable miniature electric arcs, producing an immense heat within the mixture. In the course of about twenty minutes the mass

becomes so superheated that the slag is de-oxidized and becomes fused with the coke. When this fusion is effected, the material is finished. It is then poured into moulds of any desired size or shape, and when cooled it is of a crystalline formation and has a metallic glitter. It is nearly twice as heavy as coal.

This product can be kept independently or transported without difficulty. Protected by wood-packeted tin cans from water and air moisture, it can be kept as a common article of merchandise and supplied to the consumer with much less difficulty than ordinary illuminating oil. Each pound of good carbolite will produce five cubic feet of gas, and each cubic foot is equal to fifteen feet of ordinary coal or water gas. By a little calculation it will be readily seen that at \$50 per ton, or 2½ cents per pound, 35

cents worth will produce as much light as one thousand feet of ordinary gas costing \$1. The same amount of light produced by the 16 candle power electric lamps, at one per cent. per hour, would cost \$2.

Carbolite is simple and inexpensive, and it is equally adapted to use in isolated places or to supply the largest cities. For individual use generators are built which operate automatically. When the lights are burning, the machine makes gas; when they are out, the machine and the consumption of carbolite stops. The generators are simple and inexpensive. Any ordinary person may operate and afford one. For automatic town plants the cost is many times less than those now in general use. The cost of piping is less and the maintenance of the plant is nominal. It is equally practicable to light individual blocks or buildings.

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Suitable for Car Wheels, Cylinders and Fine Castings, where the utmost strength is required.

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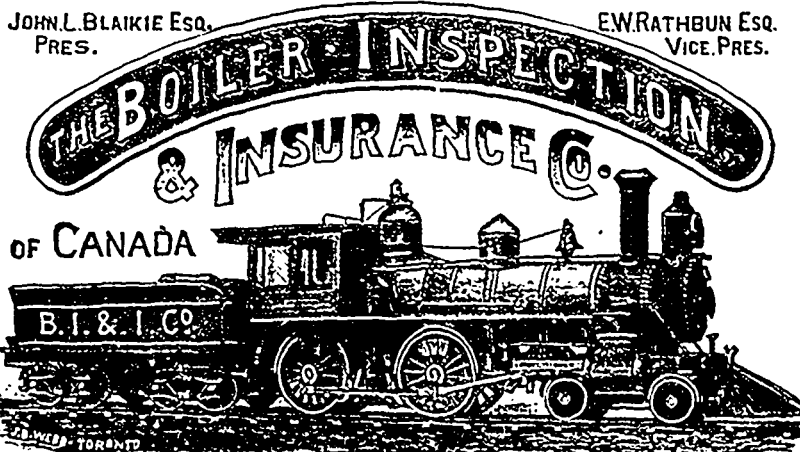
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ARE YOU SURE they are **SAFE** and in Good Condition?

The construction of a carbolite plant is almost identical with that of the Bessemer portion of a steel plant. The converters handle two or more tons at a single charge. The production of carbolite under the most favorable circumstances will be in connection with the manufacture of pig iron or coke. In a combined plant not only can the slag of the blast furnace be utilized and made valuable, but the immense value of gases from the furnaces, converters and coke ovens, together with the now wasted sensible heat, could all be transformed into mechanical energy ample to provide power for all requirements without the expenditure of a penny for fuel.

Through the adoption of this new process which utilizes the waste products of iron manufacturing, the cost of pig iron will be reduced fully one half. Based on the output of iron for 1897—being nearly 10,000,000 tons—it would mean a saving of upward of \$40,000,000. The use of carbolite gas for heat and power purposes is unlimited, and this new product is almost certain to revolutionize many important manufacturing industries.

From the new product either heat or power can be produced at one-tenth the present cost. Alcohol or ether can thus be produced in quantity, and in the processes carbonic gas is obtained. The most modern use of the latter is in extinguishing fires on shipboard. It is produced in such quantities that it is confined in pipes, and under pressure, it could be conveyed through buildings for fire extinguishing purposes. It could likewise be used for refrigeration, and would thus do away with ice boxes. Houses could be cooled in the same way in which they are heated with steam. This latest product of electro-chemistry and electro-metallurgy, which is really a process for the utilization of the by-products of iron making, is destined to work wonders, and the near future is certain to see its further exploitation and development.

**ELECTRICITY FOR MACHINE DRIVING.**

The Westinghouse Electric and Mfg. Co. Pittsburgh, Penn., have sent us a brochure in which they point out the advantages to be secured by using the electric current instead of long lines of shafting and connecting belts, for the transmission of power. They say electrical power is now employed in driving the machinery of many of the largest industrial establishments. It has been demonstrated beyond doubt that those owners of machinery who are determined to keep at the front in their respective trades find one of the chief advantages in production to be the adoption of electricity for power purposes.

It is reasonable to believe that within the next decade the shaft and belt driven machinery will be a thing of the past.

Reliability is a feature of greatest importance to the manufacturer, as a shut-down of but a few minutes duration costs many dollars in the wages of employees.

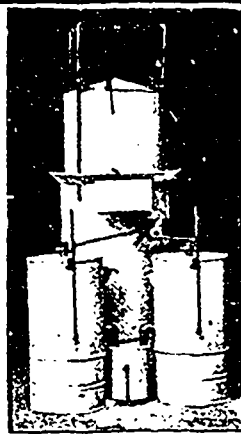
In point of reliability, an electrical plant, when properly installed, cannot be improved upon. No accident, such as the unlacing of belts, or the springing of a shaft, the slipping of a belt, or a loose pulley, can affect the whole plant.

Even in case of accident to the engine the electric plant is better situated, as it is much easier to simply start up the reserve unit than to change the main belts of an engine driven machine shop. Moreover, much less

attention is required to keep things in order, as there are fewer, or no, belts; few pulleys to oil, and a good motor will require no adjustment for months at a time, and will then need only to have its brushes adjusted and its oil bearings filled.

In regard to convenience and flexibility no system of belt and shaft driving can possibly compare with electricity. Where formerly it was necessary to place machinery in a certain relative position to the main or

auxiliary shafts, now, with electrical driving the machinery may be disposed according to the needs of the tools, or the available floor space. In the arrangement of any shop, this is an important feature, especially where the tools are of large size. The convenience of taking a portable drill, slotter, or other machine tool to any part of the floor, and carrying the power necessary to operate it through a flexible cable, which may be disposed of as best suits the conditions, is only



**The "SAFETY" ACETYLENE GAS MACHINE**

THE MOST SIMPLE AND THE SAFEST MACHINE MADE. It does what other machines cannot do. It generates Gas Cool. It washes and purifies the Gas twice. Automatically removes the Ash from the Carbide. Leaves the Ash perfectly dry and thoroughly exhausted.

Manufactured by ... **EVERY MACHINE GUARANTEED.**  
**THE SAFETY LIGHT & HEAT CO., Dundas, Ont.**

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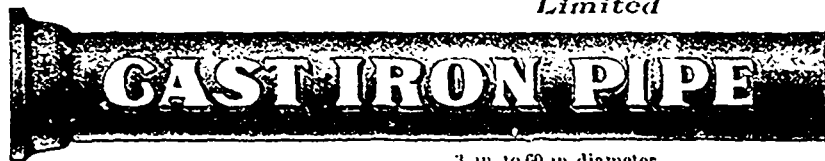
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Hosiery Yarns in Single or Double; in Cop, Skein or Cone.  
Yarns of all kinds for Manufacturers' use.

Twines, Lampwicks, Webbing, Etc.

Dyeing of all colors, including **GENUINE FAST BLACK.**

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RIM... (REID'S PATENT).

*The Strongest, Lightest and Best Belt Surface in the World*

No Glue, no Nails in Rim like Segment Rim Pulleys, to be affected by Steam, Dampness or Moist Temperature.

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**The London Machine Tool Co., LONDON, ONT.**  
**MANUFACTURERS OF GENERAL MACHINERY....**

Having recently sold our patterns and plant to the A. R. Williams Co., of Toronto, retaining only such machines as are useful in our business, we beg to say that we are rapidly putting in New Machinery, from new and improved designs, and are now in a position to receive orders for all Standard Tools for Metal Working in all branches. It will be our aim, by personal supervision of the product of works, with expert men of large experience at the head of each department, to turn out nothing but first-class work at moderate prices. And as we intend to deal directly with the manufacturers, they will be enabled to get their machinery at first cost.

As we shall not be able to get directly at each manufacturer, it is for this purpose that we publish this advertisement. This is our agent who is going about to solicit a share of your patronage. We are thankful for the patronage extended to us in the past, and hope that we may secure an extension of the favors for the future.

All correspondence relating to the following Tools will be promptly answered, viz:

- |                                                               |                                                                     |
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| <b>LATHES</b> Engine, Cap, Break, Turrot, Fox, Spinning, Etc. | <b>SHAPING MACHINES</b> Whitworth, G. & E., Rack-Driven, Etc.       |
| <b>PLANERS</b> Standard, Crank, Plato, Etc.                   | <b>HAMMERS</b> Steam, Sandage Drop, Stiles Drop.                    |
| <b>DRILLS</b> Standard, Sensitive, Multiple, Radial, Etc.     | <b>BULL-DOZERS</b> for all purposes.                                |
| <b>MILLING MACHINES</b> Lincoln, Plain, Universal, Etc.       | <b>PUNCHES AND SHEARS</b> for Plato, Angles, Channels, Gauges, Etc. |

And we would call special attention to our **Wiring, Riveting, Etc.** We shall also esteem it a pleasure to give quotations on Special and General Machinery in our line.

fully appreciated by those who have adopted the electric system.

Power generated at any convenient point is distributed throughout the works by means of a few small wires, which, when once installed, require no further attention. It is entirely practicable to operate the generators with water or other power many miles distant, transmitting the current at high voltage and transforming it down to lower voltage at the works.

One of the important advantages of electricity for machine driving is the facility with which any section of the mechanical plant can be operated independently of any other section. This opportunity for subdivision is highly valuable when, in running overtime, or for other causes, one department is enabled to work without waste of energy while the remainder of the plant is at rest.

The saving of power through direct driving by electricity is a matter of the first importance. Tests have brought to light instances where five-sixths of the power developed in the ordinary engine room was dissipated in the shafting and belting, and this, with every machine running at full load, a condition seldom, if ever, reached in practice, and the maximum of efficiency of the plant was only thirty per cent. This is abnormal, however, and is the exception rather than the rule. Henthorn gives as a result of fifty-five tests in New England twenty-six per cent. loss in belting and shafting, while Flather contends that his experience shows such losses to reach an average of about forty per cent. of total power developed. The mean of the tests taken on one hundred and eight shops, by Fessenden, gives the average loss through friction as sixty-nine per cent., while Gibbs, in a series of tests, found the average to be fifty-two per cent.

When machinery is driven by direct connected electric motors, there is also an improvement in the sanitary conditions of a manufactory. The removal of belting and shafting eliminates a constant source of danger to life and limb. Instead of the myriad moving belts, obstructing the light, and keeping in constant agitation the greaso laden dust, there is overhead a free and unobstructed view, with plenty of light, and untainted atmosphere.

Plenty of light and fresh air are stimulants which at once react in favor of the employer by rendering each employee more efficient, either in the production of more work, or of a better class of work. Indeed, this point is the second of importance in determining any question as to the advisability of equipping with electricity. Actual returns from plants that are now operated by electricity show that the output has been increased from ten to thirty per cent., results that are bound to be considered by all managers.

In eliminating the major portion of the shafting and belting, as is the case when electric power is used, a large expense is saved. With no shafting to lubricate, no belts to renew or repair, and no annoyance from loose pulleys, there is little difficulty in keeping machinery running, and the men productively employed.

With the installation of electric power, it becomes possible to concentrate the generating units at any convenient point, and it frequently happens that by removing the plant some distance from the main buildings, the owner is enabled to secure a considerable reduction in his insurance rate.

A further advantage lies in the possibility of designing the plant so as to have the generating units of such a size as to operate

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**FAST COLORS** for Wool Dyeing,  
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**LIGHT YOUR  
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**LUXFER PRISMS**

The latest device for



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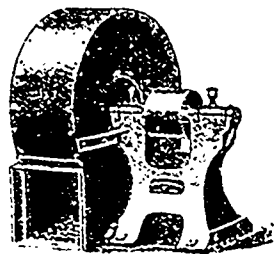
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**By Daylight**

For catalogue  
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 write to

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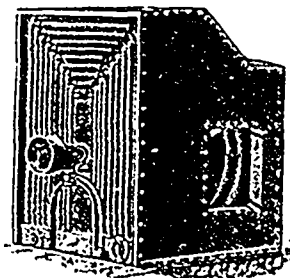


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 Fans, Blowers and  
 Exhausters.**

**WE** have on hand Fans of the Best American Makes, ranging from 15 inch to 72 inch. Also Second-hand Coil Heaters, with Fans to suit, from 1,000 feet to 5,000 feet of inch pipe capacity.

THE ABOVE ARE FOR SALE CHEAP.

Write for Prices and Send for Catalogue.



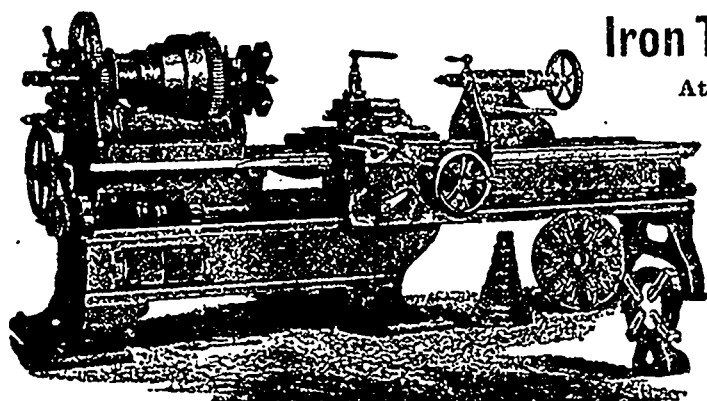
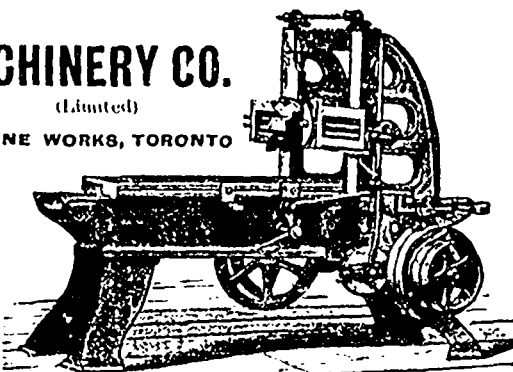
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**A. R. WILLIAMS MACHINERY CO.**

(limited)

Head Office, - - SOHO MACHINE WORKS, TORONTO

Manufacturers of and Dealers in  
**High-Class Iron Tools,  
Wood-working Machinery,  
Engines, Boilers,  
Motors, Water Wheels,  
General Machinery  
and Supplies.**



**Iron Tool Works**

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BRANCHES

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Send for Circulars,  
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**The Pulsometer**  
**STEAM PUMP**

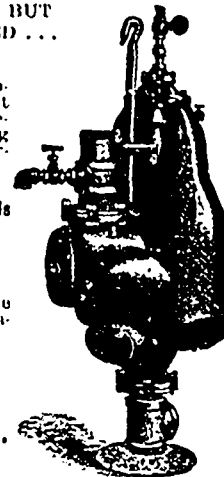
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Muddy or Gritty Liquids  
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**PULSOMETER**  
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Send for Catalogue and Price  
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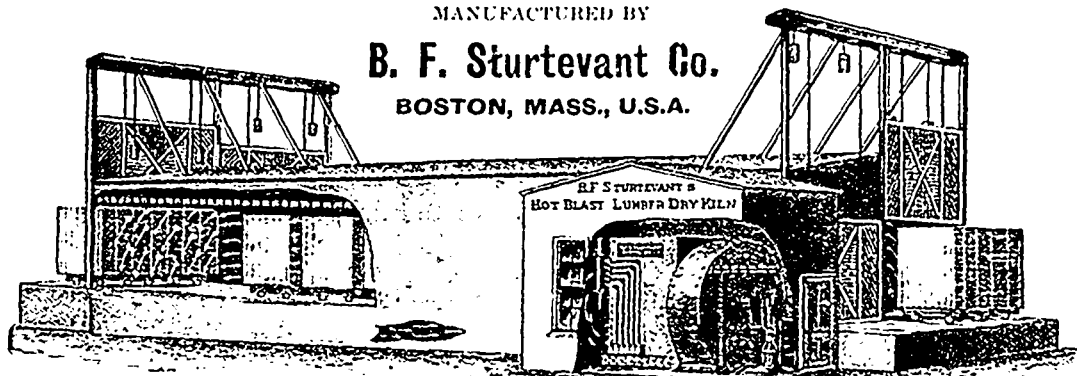
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Plans . .  
Furnished .  
With . .  
Each . .  
Apparatus.

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**B. F. Sturtevant Co.**  
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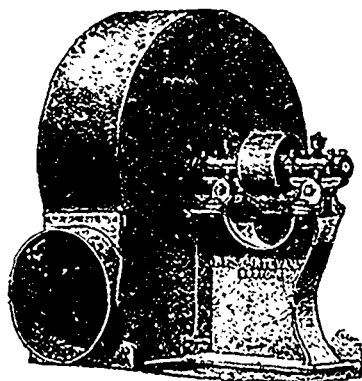


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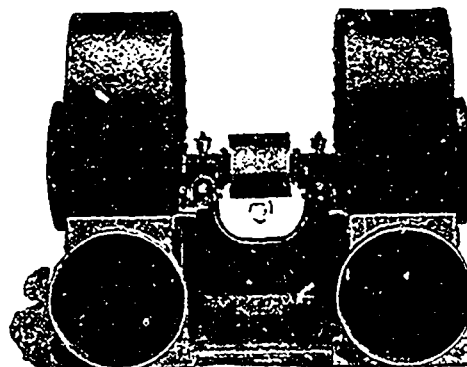
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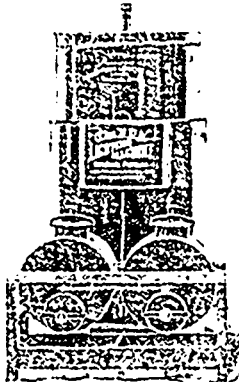
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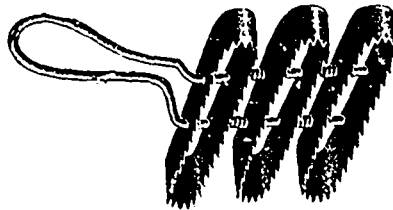
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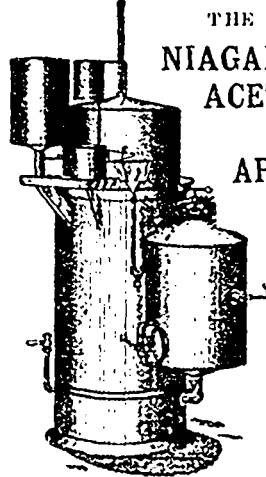
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shoddy dyer must bring to bear that knowledge which is born of experience. Naturally he cannot expect to dye light or bright colors on shoddy that is already of a dark color, although he may successfully dye bright shades on a light colored shoddy and dark shades on a dark colored shoddy. Although much may be done in the way of attempting to destroy or discharge color from shoddy, yet too much cannot be done in this direction, for the dyer must have some regard to preserving the nature of the fibre, and violent attempts to destroy color from shoddy might result in the destruction of the material itself. Boiling with 3 per cent. of bichromate of potash and 6 per cent.

of sulphuric acid is a good plan; there is not alone a discharge of the color but mordanting of the fibre with chrome, which is beneficial in many instances. Boiling the goods with 8 per cent. of their weight of sulphuric acid is also a good plan, taking care to rinse well afterwards.

Boiling also with 4 per cent. of oxalic acid and 4 per cent. of sulphuric acid is a good plan. The dyer should, when he gets a batch of dark colored shoddy, test a small portion in each of these ways to see which gives the best results, and he will then be able to see what he can do with the batch he has before him. It is hardly necessary to point out that, after using these stripping

baths, the shoddy should be well washed in water to remove acids. It might be worth while, before proceeding to dye light colored shoddies, to boil them up with soda to remove any grease they may contain and enable them better to take up the colors after.

As shoddy may contain both wool and cotton, the shoddy dyer will find it worth while to use those colors belonging to the direct series of dyes, which will dye wool most satisfactorily, as such dyes also go on to cotton and will cover up very well any cotton fibres the shoddy may contain. In the accompanying recipes such dye stuffs are used and the proportions are calculated for 100 lbs. weight of goods.

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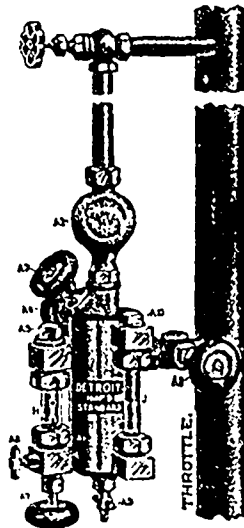
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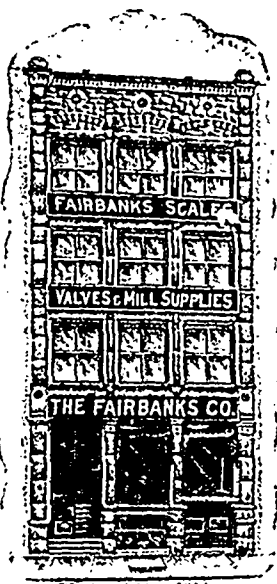
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Blue Black.—Strip with sulphuric acid and then dye in a fresh bath containing 2 lbs. Formyl Violet, 10B, working at the boil for one hour.

Dark Blue.—Using a shoddy which is not very dark, make the dye bath with 1 1/2 lbs. Formyl Violet 10B, 1 lb. Diamine Dark Blue B, and 20 lbs. Glauber's salts, working at the boil for one hour.

Dark Brown.—Strip with sulphuric acid, then dye in a bath containing 1 lb. Diamine Catechine G, and 1 lb. Diamine Brown N, working for one hour at the boil.

Black on Dark shoddy. Make a dye bath with 3 lbs. Union Black S, and 20 lbs. Glauber's salts, and work at the boil for one hour.

Dark Crimson.—Strip with bichromate of potash and sulphuric acid and dye in a fresh bath with 2 lbs. Diamine Red 5B at the boil for one hour.

Dark Chestnut.—Strip as last, then dye in a new bath with 1 lb. Diamine Catechine G, and 1/2 lb. Diamine Brown M.

Dark Black Blue.—Strip with bichromate of potash and sulphuric acid, and dye with 2 lbs. Formyl Violet 10B.

Bronze Green.—Strip as above, then dye with 1 lb. Diamine Green B, and 1/2 lb. Thiollavine S.

Dark Claret.—Strip with sulphuric acid and dye in a fresh bath with 1 lb. Diamine Green B, and 1/2 lb. Thiollavine S.

Bright Blue on Cream Shoddy.—Prepare a dye bath with 1/2 lb. Alkali Blue B, 1 lb. borax and 10 lbs. Glauber's salts. Work for one hour at the boil, then pass into a bath containing 2 lbs. sulphuric acid to raise the blue, then rinse and dry.

Rosa on Cream Shoddy.—Make the dye bath with 1 1/2 lbs. Rhodamine B, 10 lbs. Glauber's salts, and 2 lbs. acetic acid. Work for one hour at the boil. If the dye bath be not exhausted, add some bisulphate of soda.

Bright Crimson.—Make the dye bath with 2 lbs. Diamine Fast Red F, 10 lbs. Glauber's salts, and 2 lbs. acetic acid, working for one hour at the boil.

Green.—Prepare the dye bath with 1 1/2 lbs. Thioearmine R, 1/2 lb. Milling Yellow O, 10 lbs. Glauber's salts, and 5 lbs. acetic acid, working at the boil.

Olive Yellow.—Make the dye bath with 1 1/2 lbs. Anthracene Yellow C, 1 1/2 lbs. Diamine Fast Yellow B, 10 lbs. Glauber's salts. Work for one hour at the boil, then add 1 lb. acetic acid, working for one-half hour longer.

These recipes will perhaps be sufficient to show the lines on which the shoddy dyer may work. G. E. Hoelz, in the Dyer and Calico Printer.



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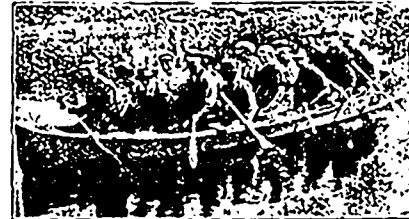
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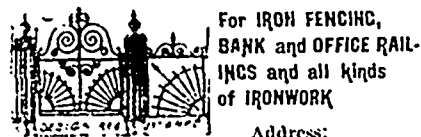
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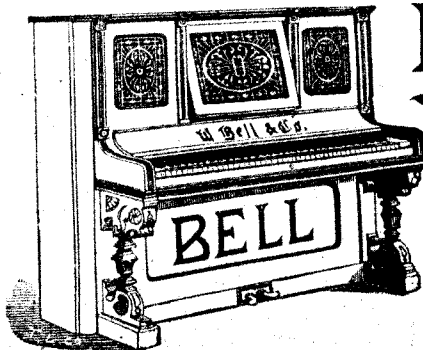
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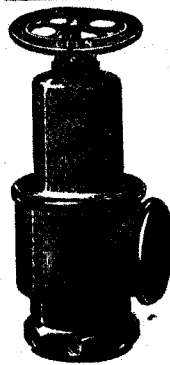
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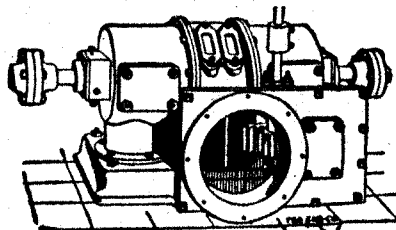
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