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VOL. 49.

TORONTO, OCTOBER 7, 1904.

No. 7.

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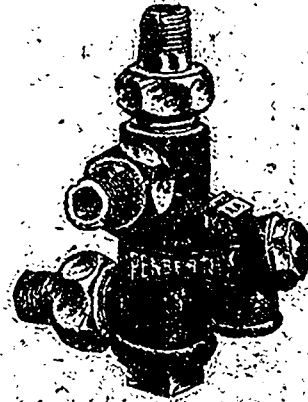
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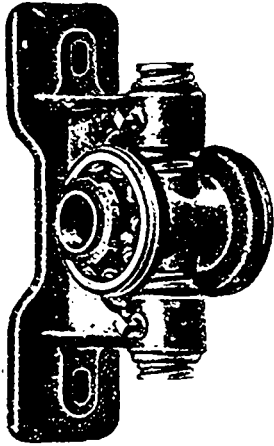


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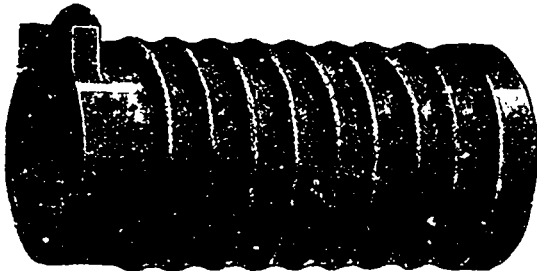
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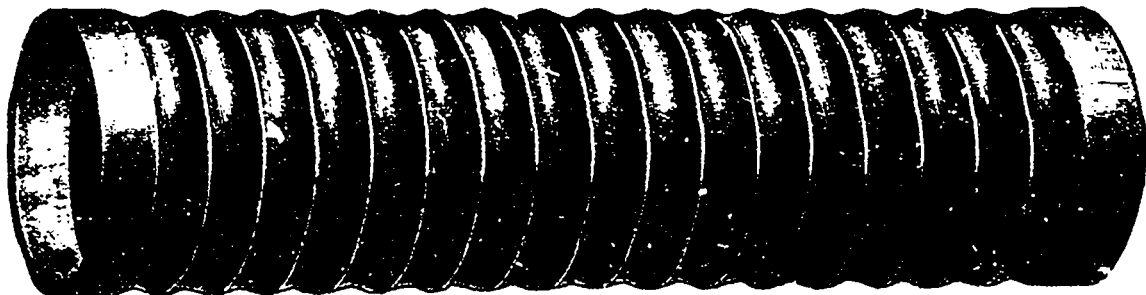


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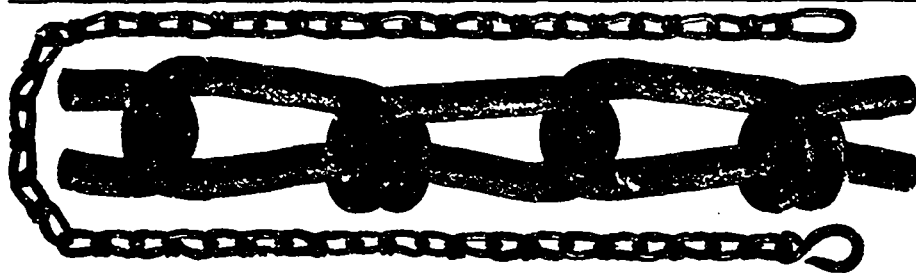
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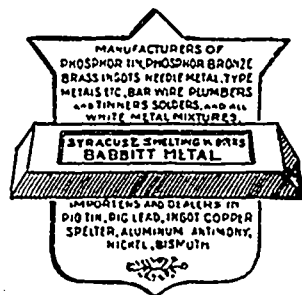
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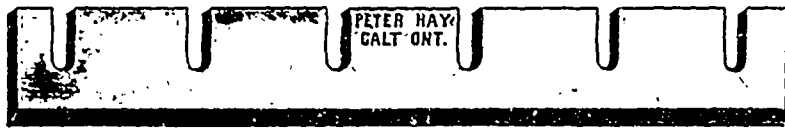
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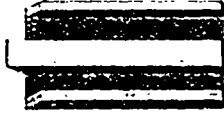
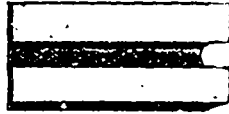
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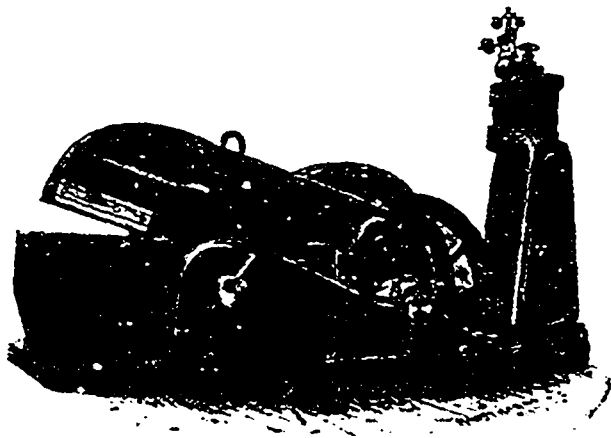
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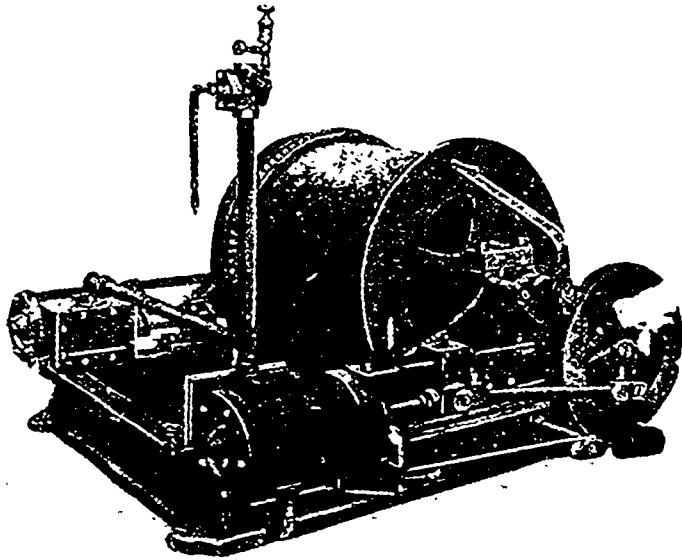
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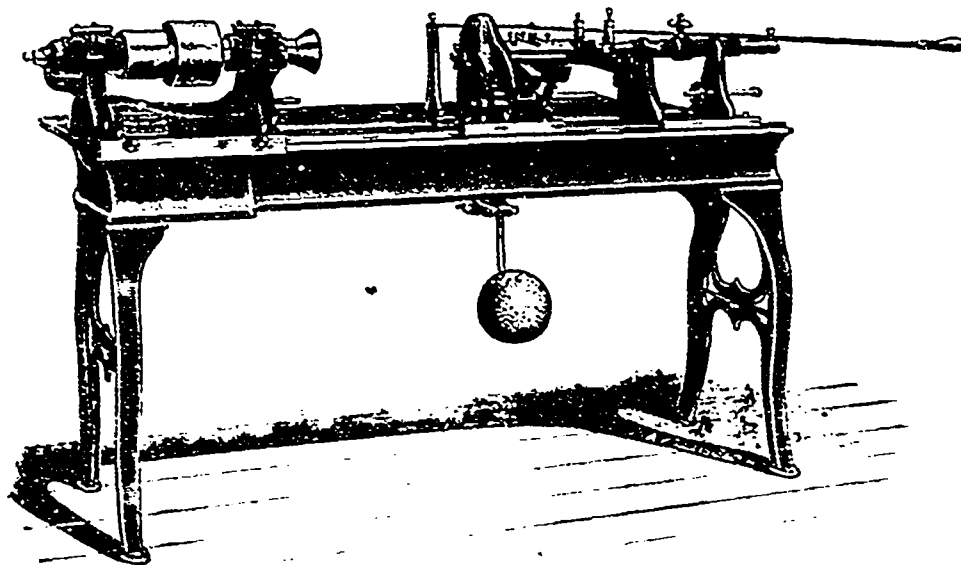
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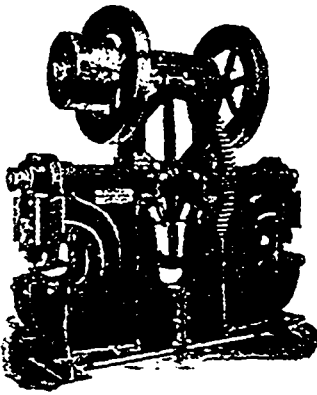
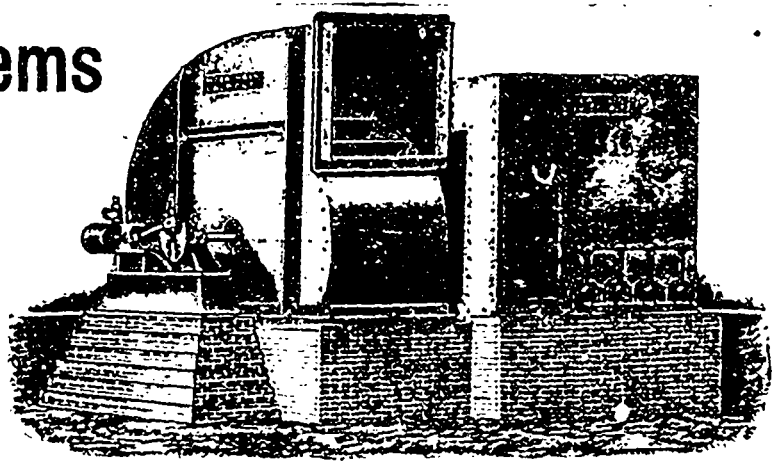
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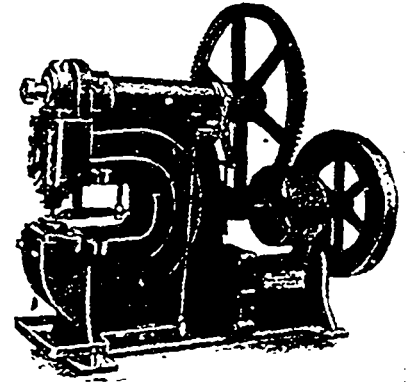
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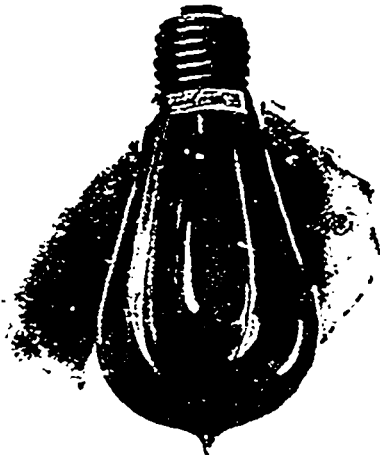
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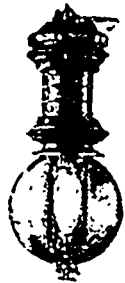
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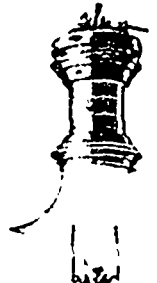
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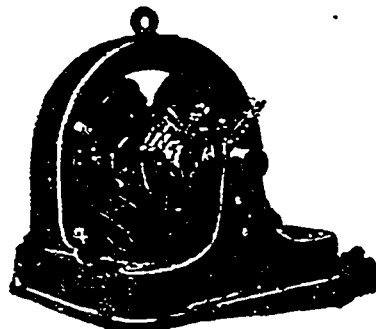
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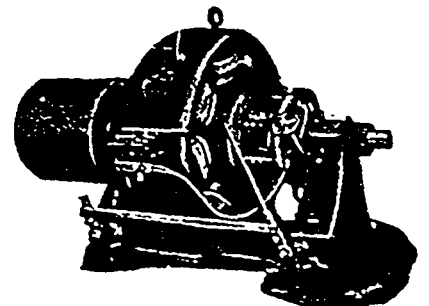
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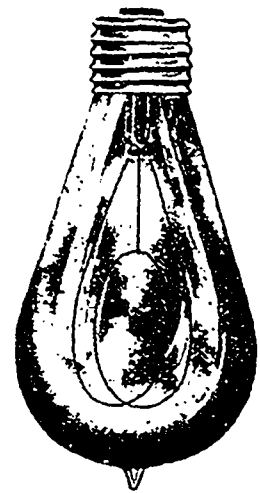
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J. J. CASSIDY, Editor and Manager

Classified IndexPage 42

Index to AdvertisersPage 49

CANADIAN MANUFACTURERS IN CONVENTION.

The thirty-third annual convention of the Canadian Manufacturers' Association which was held in Montreal, September 20, 21 and 22 was an interesting event. Trade conditions, tariff revision and Imperial preferential trade were the dominating notes of the gathering. All the speakers closely followed the traditions of the Association in demanding adequate tariff protection to Canadian manufacturing industries, with such Imperial preference as might be consistent with the interests of Canadian manufacturers.

The address of the retiring president, Mr. George E. Drummond, was, naturally, the main feature of the occasion. It was a decidedly interesting utterance, dealing at length with the events of the past year as they affected the trade and commerce of the Dominion. We have pleasure in reproducing some of the very interesting and instructive remarks of this distinguished captain of Canadian industry. Speaking of the growth of this country, Mr. Drummond said:

In considering the course that we must adopt in this nation building of ours, one of the first questions to which we must give thought is the importance of establishing, preserving and developing manufacturing industries in Canada.

The source of a nation's wealth is the work it does and the things it creates. Trade follows production. If we make, we are prosperous; if we don't make, we lose ground in every department of national life, and individually and collectively become impoverished. The great fabric of commerce is all woven together on the warp of production.

Now there is no territory in the civilized world more richly endowed and better adapted by nature to the production of wealth, and to the founding of a great and prosperous nation of workers, than that embodied within the bounds of the Dominion of Canada. Our vast areas of arable lands, and our wealth of mine, forest and fisheries, offer a wide and profitable field for intelligent human effort, and fortunately, too, the varied character of our natural wealth affords a solid basis for the establishment and successful operation of diversified industries within the borders of the Dominion. No civilized nation ever has been or ever can be prosperous and great without diversified industries that will afford congenial

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employment to people of varying tastes and capacities. The more numerous the industries are, the greater the prosperity of the nation will be.

Through much difficulty, consequent in part upon the necessity of carrying on business over a wide and sparsely populated territory, shut out by hostile tariffs from other markets, and unduly exposed at home to the keenest opposition from the longer established and more highly developed and specialized industries of older and more densely settled countries, our Canadian manufacturing enterprises have yet lived through the initial stages of existence, and to-day form, conjointly with our vast agricultural interests, the means by which our people gain their livelihood, and through which we hope to establish and maintain here a great, prosperous and progressive nation.

Let us as briefly as possible take stock of the position that our Canadian manufacturing interests occupy to-day.

In the first place, I think we are well within the mark when we estimate that we have now not less than \$520,000,000 of capital invested in manufacturing in Canada. In 1881 there were \$159,000,000 so invested. Thus, in twenty years we have, in the face of many difficulties, increased our capital investment by \$361,000,000.

I have been favored with some particulars in regard to the 1901 census of the Canadian manufacturing industries, and in those statistics I find that we have much cause for congratulation.

The total production of the 14,650 Canadian factories in 1901 is estimated at \$481,053,375. To produce this amount of goods there were 345,095 work people and clerks employed, to whom were paid \$113,283,146 in wages.

Mr. Drummond proceeded to quote figures to prove the importance of the manufacturing industries:

As a nation of producers, our first thought must naturally be the profitable marketing of our products. There is one market that we can safely take, mould, and control for the upbuilding of Canadian interests— I refer to the home market. Our statesmen, even the greatest among them, have limits to their power, but at any rate they can legislate to conserve our home market to the people of this country, and to prevent foreign producers depriving us of our power of self-help.

Foreign markets, however desirable, never equal in any permanent sense the value of the home market, for, so far as the foreign markets are concerned, we know from past experience that we are always liable to be legislated out of business. The home market is the more

remunerative to our people because the products of the farm, mine, and forest naturally yield a higher degree of profit to the individual producer when marketed in close proximity to the place of production.

To establish native industries that will create and maintain a prosperous people, and that will thus provide a home market, should be the object and aim of our statesmen and of our farmers and manufacturers alike.

The successful establishment of an important industry in any Canadian centre, for instance, secures to the farmer, miner, and other producers—when their interests and those of the industries are properly safeguarded by an efficient Customs tariff—not only the home market created by the needs of the work people directly employed but the market afforded for the sale of raw material to the factory, and in addition the ranks of the work people consumers are augmented by the doctors, notaries, clergymen, teachers, shoemakers, tailors, carpenters, masons, plasterers, painters, cabinet makers, wheelwrights, carriage and harness makers, store keepers, butchers, bakers, policemen, firemen, and the hundred and one other workers who go to make up the necessary and useful members of any community.

All over the country, in Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, the North-West Territories, and British Columbia, we have just such communities, whose very existence depends upon the safety and success of the industrial enterprises established in their midst. Allow these Canadian industries and communities to be crushed out by foreign and antagonistic competitors, and you destroy, for instance, the farmers' immediate and most profitable market. You leave on his hands a surplus of farm products, often of a perishable nature, for which, shut out from the American and other markets, he cannot find sale. In addition to this you injuriously affect the transportation, financial, and every other interest in this country.

Mr. Drummond dealt with Canada's importations. He said :

The trade and navigation returns for the year 1904, are ample proof of the need of radical changes in the present Canadian Customs tariff. On the basis of goods entered for consumption and exports of domestic produce, the increase in Canadian trade for the past year was \$2,788,611 which is a small increase compared with those of the years immediately preceding. A further analysis brings to light the fact that the domestic exports show a shrinkage of \$15,987,235. This decrease is accompanied, first, by an increase of \$1,813,152 in the export of foreign produce; and secondly by an increase of \$18,775,896 in the importation of goods for consumption; in other words, while our total trade statistics have not altered materially, the balance of trade has turned against us in one year to the extent of \$34,763,131. That fact explains the liquidation of woollen mills, the four thousand silent cotton looms, the transformation of shirt manufacturers into shirt importers, and it is a striking statistical accompaniment to your need of business during the first six months of the present year. What further do we find? In 1903 our importations from the United States amounted in value to about \$129,000,000. This year they have increased to \$143,010,578, excluding bullion, an increase of more than \$14,000,000, or about 10 per cent. Of this increase over \$8,850,000 was dutiable goods, so that the main feature of our trade during this past year has been the growth of importations from the United States, and the main feature of these imports is that they are to a large extent in goods that could be made in Canada. The amount of dutiable goods imported under the general tariff from the United States in the year ending June, 1904, was \$77,360,807. That, in short, represents the value of the Canadian harvest reaped last year by the United States—a country that will not

admit our goods on anything like reasonable terms. Nevertheless, we must admire the strong, consistent national policy pursued by the United States in conserving her own interests.

In 1903 over 38 per cent. of that country's imports consisted of crude products, which are raw material for their industries. In Canada only some 20 per cent. of the imports is in the form of raw material, and that in spite of the fact that we must import our cotton, anthracite coal, and so forth, which the United States produces at home. The United States importation of articles wholly or partially manufactured, and articles of voluntary use, which are largely manufactured goods, comprises 40 per cent. of their importations, whilst similar goods in Canada made up 66½ per cent. of our importations.

Can we not produce more in Canada, and what would that production mean to this country?

Our importations of dutiable goods this year have been to a value of about \$149,000,000. Statistical returns are not yet to hand to enable us to fully analyze the goods actually covered by this amount, but as a guide we know that our importations of wholly or partially manufactured goods last year were \$149,600,000. With these figures before you I believe you will agree with me that with a properly constructed tariff, admitting raw material at a low rate of duty, and with proper protection upon the finished article, we could easily increase our output of manufactures by \$60,000,000.

According to the census returns, 344,095 operatives produce \$481,053,375 worth of goods, and the manufacture of \$60,000,000 of goods will employ 42,900 work people—yes, even more, for we shall be making the more highly finished class of goods, which require more labor than many of the lines now manufactured. The employment of 43,000 people will build another city equal in population, if not in wealth, to that of Toronto, and it will consume upwards of \$20,000,000 worth of farm products annually. Surely here is a policy worthy of the support of a patriotic Government and people.

Now, let us consider the Canadian Customs tariff and our trade relations.

With respect to our present Customs tariff, the Canadian Manufacturers' Association occupy exactly the same position to-day as when we met at Halifax two years ago and adopted the following resolution, namely :

"Resolved. That in the opinion of this association the changed conditions which now obtain in Canada demand the immediate and thorough revision of the tariff upon lines which will more effectually transfer to the workshops of our Dominion the manufacture of many of the goods which we now import from other countries :

"That, in any such revision the interests of all sections of the community, whether of agriculture, mining, fishing, or manufacturing, should be fully considered, with a view not only to the preservation, but to the further development of all these great natural industries.

"That while such a tariff should primarily be framed for Canadian interests, it should nevertheless give a substantial preference to the Mother Country, and also to any other part of the British Empire with which reciprocal preferential trade can be arranged, recognizing always that under any conditions the minimum tariff must afford adequate protection to all Canadian producers."

As I have said on a former occasion, "the two great and practically the only markets available for Canadian products to-day are, firstly, the home market; and secondly, Great Britain, the Mother Country." What I may call our "Halifax policy," therefore has a double purpose, viz., to conserve as much as possible these two markets to the Canadian people, and in the case of the British market, to transfer orders for our surplus requirements to our own customers, the people of the Mother Country.

The full and careful revision of our present Custom's tariff, which we have consistently pressed for during the past two years, and which we are convinced is so vitally necessary in the best interests of this country, has not yet been undertaken by the Dominion Government. We cannot but deplore the delay, because it has meant in the interim, and it means to-day, a very serious and continued loss to the industries, and we believe to the general interests of Canada. We recognize that signs are not wanting to show that the Government realize that we are right in our contentions, this being indicated by the highly commendable action of the Government in respect to steel rails, and by other very necessary changes recently made, and which are in the right direction. In so far as these changes are helpful to the particular Canadian industries dealt with they must have the cordial recognition and approval of this association, but nevertheless we stand for a full revision of the tariff as being absolutely necessary to the welfare of all the industries and interests of this country.

With regard to the question of preferential trade between the United Kingdom and her colonies, we have placed ourselves unreservedly on record as favorable to a tariff arrangement that, while encouraging the development of industries in Canada will nevertheless give a substantial preference to the Mother Country, and also to any other part of the British Empire with which reciprocal preferential trade can be arranged. A preferential arrangement giving Canadians an advantage in the markets of Great Britain will be immensely to the interest of our agriculturists; moreover, it will be to the advantage of our national and Imperial interests in that it will make the Dominion of Canada more attractive and important than ever.

The report of the tariff committee opened by expressing regret that another year had passed without bringing a general revision of the tariff. It declares that the need for such revision grows more and more acute. Our importations have increased by leaps and bounds and for the past year are nearly \$40,000,000 in excess of our exports.

Foreign competition, now national as well as individual, is keener than ever before. Canadian manufacturers continue to suffer, particularly from the unfair and overwhelming competition of those gigantic aggregations of capital which control the specialized industries of the United States. This competition has become so dangerously unfair that the Parliament of Canada at its last session was obliged to enact special legislation to preserve one branch of Canadian industry. From a business standpoint all these changes demand a general revision. Its necessity has now been clearly recognized by the Dominion Government in the regulations passed at the last session to prevent the "dumping" of foreign goods in Canada, and by the announcement that a Tariff Commission would be appointed. Any further delay in carrying out the revision means a continued and serious loss to the Dominion.

The position of this association on tariff matters having been misunderstood and misrepresented, your committee deemed it wise to issue a short statement setting forth the views of the organization. This was forwarded to the Government, as follows:—The Canadian Manufacturers' Association is absolutely non-political. It has declared itself during the past two years in favor of an early and thorough revision of the Canadian tariff.

The association does not advocate the adoption of the United States tariff. Some lines of manufacture in Canada may require as much protection as the same lines receive in the United States; many may require less. What we believe to be necessary is a tariff framed from a national standpoint, primarily for Canadian interests, and also to build up an increased trade with other parts of the British Empire. Above all, however, it must enable

Canadian products to meet the competition of foreign labor on fair and equitable terms.

Continuing, the report expresses the view that insufficient protection has been granted to the woolen and twine interests, and does not approve of the departure made by Government of increasing the protection by lessening the preference. It was also urged that dumping could only be prevented by increasing the duties. The report adds:

The association still has the earnest conviction that the changed conditions, which now obtain in Canada, demand the immediate and thorough revision of the tariff upon lines which will more effectually transfer to the workshops of our Dominion the manufacture of many of the goods which we now import from other countries.

The report continues:

Your committee cannot but report with satisfaction the continued growth of a national protectionist sentiment in Canada, as evidenced by both the general public and the Dominion Government. While a general revision has not yet taken place, the active and constant work of this association may be said to have produced splendid results. Business men in every branch of trade and of all shades of politics are to-day recognizing the fact that for the welfare of the Dominion the tariff should be a national rather than a party question, and that industries, as national assets, should be defended from foreign invasion.

The committee recommends:

That we pledge our continued support to the tariff resolution passed at the annual meeting held in Halifax in 1902, urging an immediate and thorough revision of the Canadian tariff, from a national business standpoint.

That we reaffirm the resolution passed at the annual meeting, held in Toronto last year, recommending the appointment of a tariff commission of experts, as follows:

That we recommend the establishment in Canada by the Dominion Government of a permanent tariff commission of experts, who shall have constant supervision of tariff policy and changes, and shall follow closely the workings of the Canadian tariff, with a view to making such recommendations to the Government as will best conserve and advance the interests of the Dominion.

That we stand opposed to any arrangement for reciprocal trade with the United States affecting the manufacturing industries of Canada

That we again express our disapproval of the bounty system as a substitute for the policy of protection.

That in the coming general elections we pledge our individual support to those candidates, irrespective of party, who announce themselves publicly in favor of an immediate general tariff revision upon lines which will more effectually transfer to the workshops of our Dominion the manufacture of many of the goods which we now import from other countries.

The report of the committee aroused considerable discussion. The last clause was to the effect that the Association should pledge its members to support candidates in favor of a higher tariff but the opposition was so great that it was decided to change the wording to read, "the Association recommends its members to support members in favor of a higher tariff," and with this change, the resolutions were approved.

Respecting the woolen industry, the following resolution was adopted:

"Whereas the slight increase made at the last session of the Dominion Parliament in the net tariff on certain lines of woolen goods is altogether insufficient to redeem the Canadian woolen industry from the serious condition into which it has lapsed, many of the mills being in a more hopeless and unsatisfactory condition than ever before: And whereas the general conditions of the industry have not improved since the increase has been effected. The competitors of the Canadian mills are reducing prices, which more than counterbalance the

benefit of the tariff change, and the importations, especially in lines of cheap cloths, continue to increase.

"And whereas the greater difficulty is experienced in securing and retaining with the wages available even a limited number of workers necessary to keep a part of the mills in operation. Therefore resolved. "That the woolen section of the association request the association to bring the strongest pressure to bear upon the Dominion Government to grant a sufficient increase to afford it relief.

"That this increase should be made at once if the industry would be saved.

"That it should apply not only to certain lines of woolen cloths, but equally well to all classes of woolen goods manufactured in Canada."

The report of the fire insurance committee, which was submitted, went very fully into the entire question indicated in its title, winding up by a proposal that an insurance department of the association should be organized. The report after giving the reason for the necessity of the manufacturers having some system of mutual insurance owing to the excessive rates charged by existing companies, recommended a system to be organized as follows:

The department shall be controlled by a standing committee of the association to be known as the insurance committee which shall report monthly to the executive council, and annually to the annual meeting. The committee shall be composed of twenty-one members. Seven members of the committee shall be elected at each annual meeting, and hold office for three years, and shall be eligible for re-election. In centres where there are eight or more members of this association, advisory committees shall be organized at the discretion of the insurance committee.

The department shall be organized to carry on the business (a) of mutual fire insurance, and (b) of insurance brokers.

In order to increase the desirability of the policies issued by the department, as many risks as can be obtained (provided they are satisfactory to the department) will be accepted. No manufacturing risks will be accepted unless the manufacturers are members of the Canadian Manufacturers' Association. All warehouse, dwelling, and non-manufacturing property irrespective of ownership will be insured under the same conditions as manufacturing risks.

Every risk before being insured by or with the insurance department must be approved of by the insurance committee.

To avoid the necessity at the outset of an expensive inspection department the rate of premium charged will be the same rate as is charged at the time the insurance is effected by any company that is acceptable to the committee, and the usual conditions regarding co-insurance will also be adopted.

The Department will aim among other things to encourage the insuring public to protect their own property, and as an inducement, sprinkled and properly protected risks will receive special consideration.

In addition to the insurance carried by the Department, arrangements are expected to be made with several first-class Canadian, English and United States companies, whereby an insurance amounting to several times the amount carried by the Department may be placed. The commission on this insurance will be credited to the Department to increase the fund available for losses.

In addition to the cash premium paid to the Department, the policy holders shall also bind themselves by the acceptance of a policy to be responsible for all losses suffered by the Department over and above the amount of premiums collected to an amount sufficient to make the policies absolutely safe.

No agents will be employed by the Department. The

insurance will be secured through the head and branch offices of the association, and through the individual efforts of the interested members.

The Department will at the end of each year set aside a percentage of profits to be decided upon for a reserve fund to increase the security and lessen the guarantee of policy-holders.

The Department will begin business just as soon as it has insurance contracted for to the amount of \$1,000,000, provided that legal authority has been obtained by that time. An effort will be made to have in addition to this \$1,000,000 a large amount of insurance to place in other companies, on which the Department will receive a commission.

The committee submitted an estimated statement, figured on the basis of \$5,000 on each risk, the Department carrying half and reinsuring half. The result gives a balance of \$7,000 in favor of the Department out of \$40,000 earned on policies of \$2,000,000, half being reinsured. This \$7,000, it is claimed, is straight excess over the amount at the disposal of the line companies for the same losses on the same business.

The executive committee will arrange for the carrying out of the plan.

When the question of preferential trade was again brought up, the following resolution was unanimously carried: "That whereas the events of recent years, industrial, political and international, indicate that the future strength and safety of the British Empire depends on the closer union of all its parts, and whereas the time has come when the Mother Country and the colonies should extend to one another some practical expression of such union, therefore be it resolved that this association in convention assembled re-affirms its belief in an Imperial trade preference, and favors the appointment of an Imperial commission representing all the British dominions, who shall consider the whole question, and submit a plan for the consolidation and permanency of the Empire.

The names of the officers of the association for the ensuing year are published in another page.

UNFAIR BUSINESS METHODS.

The practice of paying commissions to engineers, under superintendents and other employes about manufacturing establishments by salesmen representing supply and machinery houses in order to have such employes recommend their products having become quite general in the United States, manufacturers there are up in arms against this questionable practice. There enormous sums are expended in this way annually and no doubt it has to some extent been extended to Canada, and, if not, is likely to be, hence this is a matter for the attention of Canadian manufacturers. The problem involves nothing less than wholesale bribery. In addition to paying a fair price for the products which he uses, the manufacturer through this practice, is compelled to pay a certain sum which goes into the pocket of his engineer or other employe to whom he is already paying a good salary. Of course such commissions are paid secretly and it is a somewhat difficult matter for the employer of such workmen, to ascertain whether they are or are not, receiving a bonus from firms whose machinery and supplies they recommend.

Many large manufacturing concerns, using large amounts of supplies of various kinds, already have their expert buyers, but the buyer has to rely on the engineer or superintendent to a certain extent for his expert knowledge, and either of these can readily condemn or approve as he chooses. It would be a good idea for every manufacturer to keep closely in touch with the prices of the products which he consumes, and of course when it becomes known that the unfair practices mentioned are in vogue in his establishment there is certain to be an upheaval. These unfair practices are of interest to every manufacturer and

we believe that this journal is the first in Canada to point out these objectionable methods.

A LARGE EXPENDITURE.

President Shaughnessy, of the Canadian Pacific Railway, in his annual report to shareholders just published, has the following to say regarding the proposed expenditure of the \$25,500,000 new stock issue.

In view of the contemplated construction of the Grand Trunk Pacific Railway it will be impracticable to continue the use of the Grand Trunk Co.'s line between Toronto and North Bay for the routing of traffic between points in Ontario and points reached by your lines in North-Western Canada, and, therefore, it is important that you should, with the least possible delay, secure your own independent connection between the main line and the city of Toronto. The shortest and best route, and one upon which the local traffic will be profitable, is from a point in the vicinity of Sudbury to a point near Kleinburg on your Ontario Division, a distance of about 230 miles. Your directors are proceeding with the construction of the line, and you will be asked to authorize the issue and sale of the necessary securities to meet the expenditure.

It will be seen that the expenditures on capital account have largely exceeded the proceeds of the sale of capital stock and the appropriation from earnings, and most of this excess has been temporarily advanced from your surplus. To cover the amount advanced, and to provide for future requirements, your directors recommend that the ordinary capital stock of the company be increased by the amount of \$25,500,000, namely, from \$84,500,000 to \$110,000,000, such increase of stock to be issued from time to time, according to the requirements of the company, as may be determined by the directors. A resolution giving effect to this recommendation will be submitted for your approval.

The working expenses for the year amounted to 69.42 per cent. of the gross earnings, and the net earnings to 30.58 per cent., as compared with 63.97 and 36.03 per cent. respectively, in 1903.

The large increase in working expenses over the previous year was due, not only to the additional railway mileage operated, but to the higher prices paid for wages, fuel, and supplies, and the unprecedented weather conditions that prevailed during the winter.

Four per cent. consolidated debenture stock to the amount of £3,103,349 was created and sold during the year. The proceeds were applied, under your authority, in the purchase of 15 Atlantic steamships, in the construction of 260 additional miles of railway, and in the acquisition of bonds of other companies, the interest on which had been guaranteed by your company.

A satisfactory settlement has been reached with the Dominion Government re the selection of the balance of your land grants by the company agreeing to accept lands in what is known as the "Irrigation Belt," between Medicine Hat and Calgary to the extent of 2,900,000 acres in a solid block. Contracts have been let for portions of proposed irrigation canals, involving an expenditure of \$1,000,000.

The land sales for the year were 938,854 acres for \$3,807,249, being an average of \$4.10 per acre. There was a considerable decrease in the acreage sold, as compared with the previous year, when large blocks of land were sold to colonization companies, but the price realized was 43 cents per acre higher.

A further sum of \$3,000,000 has been deposited with the Dominion Government during the year on account of the \$15,000,000 land bonds mortgage, making a total amount of \$3,500,000 deposited up to the end of the fiscal year. The amount of deferred payments on lands

sold is now \$15,252,308, drawing interest at 6 per cent. per annum, while the total of the Land Bonds outstanding is \$11,500,000 at 3½ per cent. per annum.

The net earnings of your Atlantic steamship line amounted to about \$200,000 for the first six months, but this profit was practically absorbed by the shrinkage in net revenue during the last half of the year, due to the demoralized state of the Atlantic trade. Nevertheless, the steamship line has, as was anticipated, proved a valuable auxiliary to the railway.

It is desirable that the directors be authorized to arrange for the construction of two additional passenger steamships with a sea speed of about 18 knots per hour and ample cargo capacity. These will be useful and profitable ships on the Atlantic and they will be admirably adapted to your Pacific trade if, at a later date, you determine to replace them on the Atlantic with a fleet of larger and faster vessels.

Your directors have arranged to acquire by lease the control of the Tillsonburg, Lake Erie & Pacific Railway. This line is important as affording a connection by vessel at Port Burwell with the great coal producing districts of Ohio and Pennsylvania. Arrangements have been made for the leasing of the Northern Colonization Railway in Quebec, and of the Guelph & Goderich Railway Co. in Ontario.

Changes in the operating statistics from previous year are given in the following table:

	1904.	1903.
Miles operated	9,108	8,985
Passengers carried	6,893,223	5,489,606
Passengers carried one mile	666,740,000	626,300,000
Rate per passenger per mile.....	\$1.78	\$1.68
Tons of freight carried.	11,135,896	10,180,847
Tons carried one mile.....	3,670,821,775	3,721,877,190
Rate per ton per mile.....	\$0.77	\$0.74
Average No. tons rev. freight per loaded car	\$15.08	\$15.34

The balance sheet for June 30, 1904, compares with that of the previous year as follows:

	1904.	1903.
Assets.		
Road and equipment	\$256,665,689	\$242,769,210
Steamships	11,909,120	11,771,133
Real estate, hotels, etc.....	2,724,418	2,266,635
Due on land and town sites sold....	15,252,309	13,914,480
Advances to other roads	1,604,688	3,073,261
Materials and supplies	5,802,494	5,498,788
Traffic balance, etc	5,412,382	4,918,698
Cash.....	11,741,703	12,172,612
Total assets	358,919,294	341,699,376
Liabilities:—		
Common stock	84,500,000	84,500,000
Preferred stock	33,473,333	32,500,000
Consolidated stock	82,355,218	67,252,252
Bonds	58,738,086	61,738,086
Current accounts	7,764,097	7,153,477
Interest and rent	1,770,184	1,772,071
Sub and bonuses	30,672,284	30,229,109
Net proceeds of lands	41,160,444	37,119,552
P. and I. surplus	17,561,046	18,846,176
Total liabilities	358,919,294	341,699,276

EDITORIAL NOTES.

The Ninth Parliament of the Dominion was dissolved last week and the general elections fixed for November 3. The principal issues on which the campaign will be conducted, are the tariff question, preferential trade with Great Britain and British Colonies, and the proposed national transcontinental railway. The Liberal Government have made a good record during the eight years they have been in power and during this time the country has enjoyed great prosperity. Canadian manufacturing industries have undergone wonderful development during this period and manufacturers will play a prominent roll in the coming elections.

SUCTION GAS PRODUCERS

As the economical generation of power is essential for the industries, it undoubtedly will be of interest to the readers of this paper to hear about a new departure in power generation which makes it possible to generate a power gas for gas engines directly out of coal or coke. As one pound of anthracite or charcoal is sufficient for developing 1 h.p. hour, it is evident that with a price of \$5.00 per ton for anthracite, 1 h.p. hour can be generated for $\frac{1}{2}$ of a cent, which is about one-half the cost of steam power.

Producer gas power plants are built for generating out of a suitable fuel a mixture of carbon-monoxide and hydrogen, which, if used in gas engines, allows an exceedingly advantageous utilization of the fuel. Up to the present time producer gas has been produced in so-called pressure gas producers by evaporating water in a separate boiler and by leading the steam, mixed with air, by

with, and the heat of the gases produced is used for generating the necessary amount of steam.

The heat of the gases respectively of the producer is entirely sufficient for furnishing such a quantity of steam as is required for the generation of an effective power-gas. The utilization of the fuel in suction gas producers is much higher than in pressure producers and is reaching 80 per cent or more. By leading the steam under the grate the latter is kept cool and clean.

The transformation of steam into hydrogen and the formation of carbon-monoxide is taking place so quickly that the producer is always making the amount of gas required, and is able to start suddenly from a low to a full load.

ADVANTAGES OF SUCTION GAS PRODUCER PLANTS.

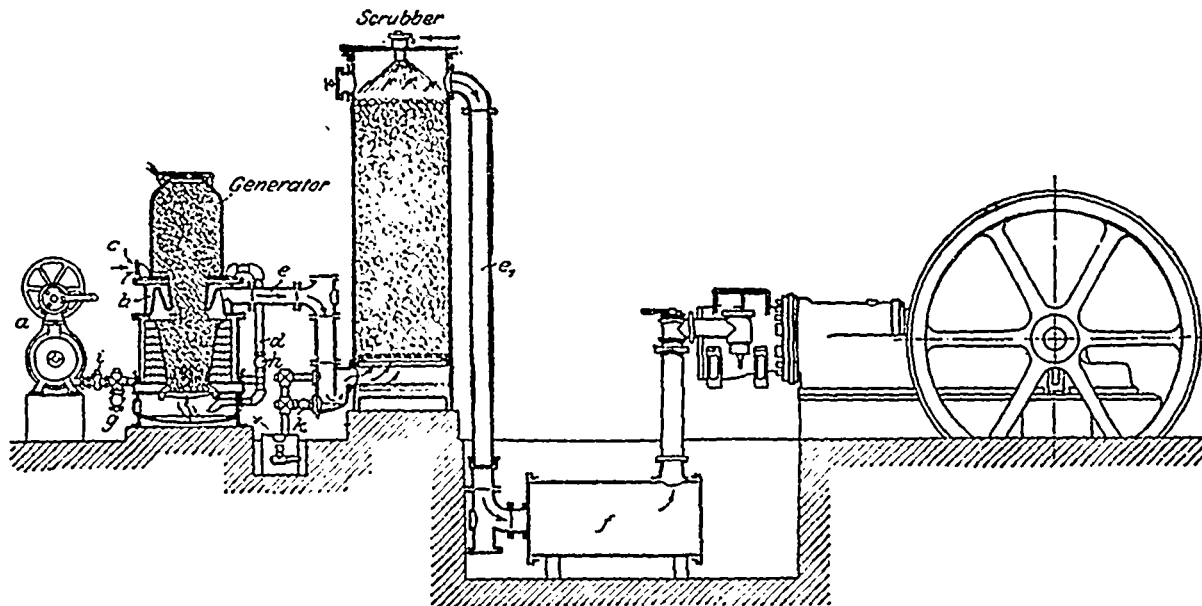
1. Automatic generation of the gas by the engine.
2. Highest and best utilization of fuel.

The gas leaving the producer is heating up the evaporator and causes here a formation of steam which goes under the grate together with the necessary amount of air. From the producer the gas goes through the scrubber in which it is cooled and purified from the dust and tar. From the scrubber it goes through a small equalizer.

THE WORKING OF THE PLANT

Before starting the engine the fuel in the producer has to be heated up by means of a small hand blower, "a" attached to same until the gas is burning well. For this about ten minutes are required. When this point is reached the hand blower is stopped and the engine started in the usual way.

The engine is now drawing, by her own sucking action, the necessary amount of air, and is producing her own power-gas. The air is entering at "c" and goes through the evaporator "b." Here it is saturated with steam and the mixture of air and steam is now going through "d" under the grate of



NAGEL'S SUCTION GAS PRODUCER.

means of a steam jet blower or fan through the glowing fuel, whereby the steam is decomposed to hydrogen and the coal burned to carbon-monoxide. This mixture of combustible gases is lead through a scrubber to a gas-holder and from there to the engine.

It is evident from this description that for generating gas by this method a boiler and a gas-holder is required, which increases considerably the cost of construction and of attendance.

These pressure gas plants are now being superseded by the so-called Suction Gas Producer Plants, which are much simpler and cheaper in construction and easy to attend, as no boiler or gas-holder is required.

In a suction gas producer plant the boiler is supplanted by an evaporator which, in small plants, is built on the top of the producer, and in large plants right near the producer, in the form of a tubular evaporator. This evaporator is generating the steam required by utilizing the heat of the producer and of the gases. This is of considerable advantage as compared with the old system as the firing of a separate boiler is dispensed

3. No boiler and no gas-holder is required.
4. Can be erected without danger in any convenient place.
5. Easy to start and to run.
6. No soot, no smoke, or odor.
7. No explosion possible.
8. Small floor-space required.

DESCRIPTION OF A SUCTION GAS PRODUCER PLANT.

A complete suction gas producer plant consists of a producer, an evaporator, an overflow water-pot, a scrubber and an equalizer (sawdust scrubber).

The producer is lined with fire-bricks. By the sucking action of the engine a mixture of air and steam is drawn through the burning fuel, whereby the producer gas is generated. There is always only as much gas made as is required by the engine.

The producer is provided with a hopper through which fuel can be filled into the producer without interfering with the working of the engine.

The cleaning of the grate may be performed during the regular work.

the producer, through the fuel, and then through pipe "e" to the scrubber; from here through pipe "c-1" to the equalizing tank "f" which is directly connected with the engine.

The gas making process continues as long as the engine is moving, but as soon as the engine is stopped the gas making is also stopped.

FUEL.

Anthracite, charcoal or coke can be used equally well for generating gas in the Suction gas producer. It will take, according to the ash content, 1 to 1½ pounds of anthracite or charcoal, or 1½ to 1½ pounds of coke for developing 1 h.p. hour. With anthracite (pea) at \$5.00 per ton, 1 h.p. for 24 hours will cost from 6 to 8 cents. This is about one-sixth the cost of illuminating gas power (at a price of 75 cents per 1,000 cubic feet of illuminating gas), or one-eighth the cost of gasoline (at a price of 16 cents per gallon).

These plants are built by Oskar Nagel, 90 Wall Street, New York City, in units from 5 to 300 h.p.

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 on 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 telephone, 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.

Constantly increasing demand for Packard Incandescent Lamps, manufactured by the Packard Electric Co., St. Catharines, Ont., has compelled that company to again largely increase their manufacturing facilities and to rearrange their splendid plant at St. Catharines in order to keep pace with the increasing business. Incidentally this increase pays another compliment to the generally recognized merit of the Packard lamps.

Contracts have been closed by the New Brunswick Southern Railway for the manufacture of four steel bridges by the Dominion Bridge Co., Montreal. The shop inspection has been placed in the hands of the De Lano Osborn Engineering Co., Toronto.

The Rossendale Belting Co., Toronto, of which Mr. L. J. Rowland is general manager, have been licensed to manufacture belting in Ontario with a capital of \$40,000. This is a branch of the well-known belting manufacturing company of the same name whose factories are at Manchester, England, and who manufacture the well known "Rossendale M.A.Y." brand of woven belting.

The Ogilvie Flour Mills Co., with head office at Montreal, have closed a contract for the erection of a new 3,000 barrel flour mill at Fort William, Ont., to the Nordyke Marmion Co., Indianapolis, Ind., at a cost of \$200,000.

The Frontenac Cereal Co., Kingston, Ont., are enlarging their power house.

The Continental Contracting Co., Ottawa, have been incorporated with a capital of \$500,000 to carry on a general construction and contracting business. The provisional directors include W. H. Curle, J. T. C. Thompson and A. R. Fraser, Ottawa.

The Department of Public Works, Ottawa, are inviting tenders for the erection of the new Victorian Memorial Museum. The building will be four stories high, with a frontage of 400 feet, width 50 feet, and will have two wings, each having a depth of 126 feet. The cost will be about \$1,000,000.

The Department of Public Works, Ottawa, are inviting tenders for the extension of the Toronto Island breakwater. Steel piling will be used.

The Steel Trough & Machine Co., Tweed, Ont., have been incorporated with a capital of \$25,000, to manufacture steel troughs, tanks, etc. The provisional directors include W. Gordon, J. F. McGowan, Tweed, and S. H. Ketcheson, Hungerford, Ont.

The Doty Engine Works Co., Goderich,

Ont., have been incorporated with a capital of \$40,000 to manufacture engines, boilers, etc. The provisional directors include F. W. Doty, C. W. Doty and M. E. Doty, Goderich.

The Sault Job Printing & Lithographing Co., Sault Ste. Marie, Ont., have been incorporated with a capital of \$10,000, to carry on a printing and lithographing business. The provisional directors include C. N. Smith, C. J. O'Donohoe and D. W. Hilts, Sault Ste. Marie.

The Mohawk Natural Gas Co., Limited, Brantford, Ont., have been incorporated with a capital of \$150,000, to produce natural gas and electricity for heating and lighting purposes. The provisional directors include H. Cockshutt, E. L. Cockshutt and W. J. Aikens, Brantford.

The British Canadian Bank Note Co., Ottawa, have been incorporated with a capital of \$500,000, to carry on the business of steel plate engraving, printing and book binding bank notes, certificates, etc. The provisional directors include W. McL. Walbank, A. Ramsay and H. Laporte, Montreal.

The New Ontario Brewing Co., North Bay, Ont., have been incorporated with a capital of \$30,000, to carry on a brewing and malting business. The provisional directors include A. F. Doyle, J. J. Doron and J. Evers, North Bay.

The Kronthal Lythia Water Co., Kingston, Ont., have been incorporated with a capital of \$30,000, to manufacture lythia waters, etc. The provisional directors include W. J. Thompson, W. J. B. White and G. A. McGowan, Kingston.

Messrs. J. Winer & Co., Limited, Hamilton, Ont., have been incorporated with a capital of \$100,000, to acquire the business of J. Winer & Co., and to manufacture drugs, etc. The provisional directors include G. Rutherford, J. McHaffie and J. M. Williams, Hamilton.

The Eureka Refrigerator Co., Limited, Toronto, have been incorporated with a capital of \$40,000, to acquire the business of the Eureka Refrigerator Co., and to manufacture refrigerators, butchers' supplies, etc. The provisional directors include W. Hooey, W. H. Shapley and H. W. Shapley, Toronto.

The Simplex Coal Saver, Limited, Toronto, have been incorporated with a capital of \$40,000, to manufacture smoke consumers, fuel savers and boiler house supplies. The provisional directors include P. H. Patriarche, F. B. Allen and Wm. Eacrett, Toronto.

The Dominion Brass Works, Port Colborne, Ont., have recently gone into operation. They have built and equipped a new plant and are manufacturing the Huxley valve.

The Manson Campbell Co., Chatham, Ont., have increased their capital from \$150,000 to \$300,000.

The Ham & Nott Co., Brantford, Ont., have been incorporated with a capital of \$100,000 to acquire the business of the Ham & Nott Mfg. Co., and to manufacture refrigerators, washing machines, etc. The provisional directors include J. T. Ham, J. H. Ham and T. L. Lyle, Brantford.

The C. B. C. Corset Co., Limited, Toronto, have been incorporated with a capital of \$50,000, to acquire the business of the C.B.C. Corset Co., and to manufacture corsets, etc. The provisional directors include P. R. Corson, M. S. Belcher and C. J. Currie, Toronto.

The Eye-Fix Remedy Co., a United States incorporation have been licensed to manufacture medicines in Ontario with a capital of \$40,000. J. Hartnett, Windsor, Ont., is their attorney.

The Hamilton Silicate Brick Co., Hamilton, Ont., recently organized will erect a large factory in that city.

Tenders are invited for the installation of a system of pneumatic tubing in Toronto and Montreal post-offices, in connection with the plan outlined by the Postmaster-General at Ottawa, for the improvement of postal facilities in those cities.

The Rock Island Arsenal, Rock Island, Ill., have recently purchased a large oil filter from the Burt Mfg. Co., Akron, Ohio. This well known firm not only supplies the United States Government with their products, but does an extensive business abroad. Besides shipping two of their 8-inch exhaust heads for the use of the Government at Seattle, Washington, they have recently made a shipment of 16 exhaust heads and nine oil filters to supply their English trade. They also report the sale of three oil filters to their agency at Calcutta, India.

W. H. McGillivray, Ottawa, has been awarded the contract for the erection of the Dominion Archives building which will be 100x50 feet, three stories high and will cost about \$50,000.

The Department of Public Works, Ottawa, are inviting tenders for the erection of the Canadian Branch of the Royal Mint.

The International Iron Co., in which Duluth capitalists are interested are developing iron deposits on Hunters Island, a few miles east of Port Arthur, Ont.

Gillies & Martin, Teeswater and Listowel, Ont., have sold out their foundry at Listowel to Hay Bros., who will operate it on an enlarged scale.

The Perrin Plow Works, Smith's Falls, Ont., have reached their capacity, 8,000 plows, and will now enlarge their works.

Mr. J. D. King, Toronto, has sold his mica mine near Cantley to the Westinghouse Co., Pittsburg, Pa.

The Page Wire Fence Co., Walkerville, Ont., have secured orders for 240 miles of fencing along the Halifax Southwestern Railway, N.S., and for 80 miles of the new Canadian Pacific Railway line from Guelph to Goderich, Ont., also 10 miles from the Southwestern Traction Co., London, Ont.

The excellence of the products of the Burt Mfg. Co., Akron, Ohio, is evidenced by the repeated orders which they receive from the largest concerns in the country. They have recently made a shipment to the United States Steel Corporation of their oil filters and exhaust heads, which now makes 151 oil filters and 70 exhaust heads which have been supplied to this corporation by the Burt Mfg. Co. They have also recently sent three oil filters with automatic water separator attachments to the Pennsylvania Iron Co., Lancaster, Pa.

W. Thompson & Son, millers, London, Ont., are erecting a large grain storage warehouse.

The International Stock Food Co., Toronto, have changed their name to the Clydesdale Stock Food Co.

The Mooney Biscuit & Candy Co., Stratford, Ont., have increased their capital from \$100,000, to \$250,000.

The Norman Box Co., Rat Portage, Ont., have been incorporated with a capital of \$25,000, to manufacture lumber, boxes, etc. The provisional directors include L. R. Mackey, H. A. W. McKinnon and J. Glenn, Keewatin, Ont.

The Minnehaha Mining & Smelting Co., a United States incorporation, have been licensed to carry on a mining and smelting business in Ontario, with a capital of \$40,000. H. D. Alston, Wabigoon, Ont., is their attorney.

The Crown Oil Co., London, Ont., have been incorporated with a capital of \$300,000, to carry on a mining, milling and reduction business. The provisional directors include D. S. Robb, London, B. G. Baker and C. McDowall, Buffalo, N.Y.

The Mount McKay Brick & Tile Co., Fort William, Ont., have been incorporated with a capital of \$40,000, to manufacture brick and tile. The provisional directors include K. O. Brune, F. Waldberg and R. Nelson, Fort William.

The Standard Art Mfg. Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture brushes, wood specialties, etc. The provisional directors include J. B. Alderson, A. A. Dickson and C. W. Younge, Toronto.

An order for 50,000 tons of iron ore is being filled from the Negaunee mine stockpiles and being forwarded to the Algoma furnaces at the Canadian Soo. The South Shore road are handling the traffic as an all-rail haul, some of their largest compound locomotives having been put into this service. The Brietung Hematite are also filling a similar, though somewhat smaller, order for the Algoma furnaces.

Rinaldo McConnell, Ottawa, has been doing development work on iron ore ranges in the vicinity of Port Arthur, Ont., and upon one of his properties has proved, it is asserted, over 4,000,000 tons of iron ore. The indications are that the ore body extends a considerable distance, and the Canadian Iron Co. have been organized with a capital of \$2,000,000 to develop lands adjoining. This company expect to explore extensively before next summer. R. W. DeMorest, Sudbury, Ont., is engineer for the company.

The Northern Iron & Steel Co., with offices at Toronto, and works at Collingwood, Ont., have been incorporated with a capital of \$2,500,000, to carry on a mining, milling and reduction business. The provisional directors

include J. A. Currie, W. J. Lindsay and D. Donald, Toronto.

The Canadian Glove & Mitten Co., Ingersoll, Ont., have been incorporated with a capital of \$30,000, to manufacture gloves, mittens, overalls, etc. The provisional directors include S. McKenney, Fremont, Ohio; J. A. Neff and A. McKay, Ingersoll.

General Manager Shields, of the Lake Superior Corporation, says regarding the steel rail mill: "The company placed their steel rail mill, with a capacity of 500 tons of rails daily, in operation on August 23, and after 500 heats the quality of rail secured was so entirely satisfactory that on September 6 we put on a night and day shift, and from now on the mill will be run continuously. We are at present at work on a 10,000-ton contract for the International railway for delivery in Montreal. When this contract is completed we will start work on other orders for the same railway, as also for the Temiskaming."

The Otto Gas Engine Works, Philadelphia, Pa., have recently ordered a large oil filter from the Burt Mfg. Co., Akron, Ohio. This makes three of the Burt Filters which this concern are now using in their testing-room. The Otto Gas Engine Works, say that they had considerable difficulty in filtering their oil until they had installed their filter, and they speak in very flattering terms of the work which this filter does. In their American oil filter, the Burt Mfg. Co. have the only filter which will successfully handle the heavy grades of oil used in connection with gas and gasoline engines, on account of the hot water chamber at the top of same, which heats the oil by means of the hot water exhaust from the engine which thins it, and facilitates the filtering of same. A large oil filter made by the Burt Mfg. Co. has also been sent recently to the Connersville Blower Co., Connersville, Ind.

The London Street Railway Co., London, Ont., have awarded to Messrs. A. Burnett & Co., and T. Pace & Co., the contract for the erection of their new car barns and machine shops.

The Collegiate Institute at Guelph, Ont., will be enlarged.

The Barber-Ellis Co., Brantford, Ont., will erect a new warehouse 120x48 feet.

The ratepayers of Hespeler, Ont., will vote on a by-law to grant \$20,000 to the Clark & Demill Co., Galt, Ont., to establish a factory for the manufacture of wood-working machinery.

A. J. Young, Limited, North Bay, Ont., have been incorporated with a capital of \$100,000, to manufacture lumbermen's supplies, hardware, etc. The provisional directors include A. J. Young, Cache Bay, Ont.; J. W. Hennessy, Fort Coulonge, Que., and Geo. Gordon, Sturgeon Falls, Ont.

The Canada Coating Mills, Limited, Toronto, have been incorporated with a capital of \$100,000, to manufacture paper, cardboard, wood-board, etc. The provisional directors include J. R. Barber, Georgetown, Ont.; E. Trout and R. Kilgour, Toronto.

The Hurndall Novelty Furniture Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture lumber, woodenware, machinery, etc. The provisional directors include J. P. MacGregor, J. A. Ritchie and C. W. Kerr, Toronto.

The Nipissing Foundry & Machine Co.,

North Bay, Ont., have been incorporated with a capital of \$20,000, to manufacture machinery, tools, implements, etc. The provisional directors include R. Booth, R. W. Gordon, Pembroke, Ont., and A. J. Young, Cache Bay, Ont.

The Hamilton Biscuit & Confectionery Co., Limited, Hamilton, Ont., have been incorporated with a capital of \$100,000, to acquire the business of the Hamilton Biscuit & Confectionery Co., and to manufacture pickles, jams, sugars, etc. The provisional directors include W. H. Schneider, T. W. Hand, Hamilton, Ont., and F. Chalcraft, Brantford, Ont.

The Northern Construction Co., Toronto, have been incorporated with a capital of \$200,000, to carry on a contracting and construction business. The provisional directors include A. R. Mann, A. C. McKenzie and W. H. Moore, Toronto.

The Electric Development & Securities Co., a United States incorporation, have been licensed to generate motive power for manufacturing purposes, etc., in Ontario with a capital of \$100,000. F. K. Foster, Toronto, is their attorney.

The steamer *Chicago*, of the Niagara Falls Line, was damaged by the breaking of a piston rod, which jammed into one of her cylinders on September 26. Loss about \$15,000.

The Northrop & Lyman Co., Toronto, will erect a new three story warehouse at a cost of \$15,000.

The Department of Trade and Commerce at Ottawa have been notified by Mr. F. H. Clergue, of the Lake Superior Corporation, that the company's mills at the Soo are now turning out 400 tons of steel rails daily, and in a short time will produce 500 tons daily. This will be the normal output of the concern, and on this the Government will have to pay \$1,125 a day as bounty. Other bounties which confront the department are those on lead and crude petroleum. It is estimated that the latter will cost the country from \$250,000 to \$300,000 a year.

Messrs. Wm. Jessop & Sons, Toronto, will erect a five story warehouse at a cost of \$23,000.

The Woodstock Government Cool Curing Cheese Station at Woodstock, Ont., will be enlarged by an extension 45x17 feet with a capacity of 200 tons of ice.

An American syndicate in which Mr. W. P. Bullard, Chicago, Ill., is interested, report that they have found petroleum in paying quantities on the Manitoulin Island, Ont., and it is their intention to develop the fields on a large scale.

The York County Loan & Savings Co., Toronto, will erect a two story assembly hall at a cost of \$15,000.

The Toronto Board of Control have awarded the contract for two steam fire engines to the Waterous Engine Co., Brantford, Ont. The engines will have a capacity of 1,200 U.S. gallons (231 cubic inches) per minute and will cost about \$13,440 each.

A company is being organized at Toronto Junction, Ont., and will erect a textile factory 250x50 feet and give employment to 100 men. For further information apply to the mayor.

The Scott & Hudson Building Co., Rat Portage, Ont., have installed a new 30 h.p.

Westinghouse electric motor, a new moulding machine, sticker and a sanding machine.

The City Council of Stratford, Ont., have engaged Mr. Willis Chipman, C.E., Toronto, to inspect additional sources for the increase of their water supply.

A new steel smokestack 26 inches in diameter and 45 feet high has been constructed by the Corbet Foundry & Machine Co., Owen Sound, Ont., for the steel works of the Wm Kennedy & Sons Co. of that place. The same firm are building a 60-foot stack, 34 inches in diameter for the Canada Furniture Mfg. Co., Wiarton, Ont.

The town of Meaford, Ont., is preparing to take over the electric lighting plant in that place owned by Moore & Sons.

A day or two ago there were six steamers lying at one time at the Lake Superior Power Co.'s docks at Sault Ste. Marie. Two of these were unloading iron ore, two were awaiting their turn to unload the same kind of cargo, one was loading steel rails, and one was loading lath. The Sault has taken on a new appearance and is permeated by a new spirit since the resumption of steel-rail manufacture. It is expected that in a few days the smelting furnaces will be in active operation.

The brick-making plant of the London Builders' Supply Co., at London, Ont., was destroyed by fire September 22. Loss about \$25,000. The company will rebuild.

The Windsor Hotel at Sault Ste. Marie, Ont., was destroyed by fire September 21. Loss about \$25,000.

Messrs. Park, Blackwell & Co.'s packing-house, Toronto, was destroyed by fire September 24. Loss about \$35,000.

The Ontario Lantern Co., Hamilton, Ont., will rebuild their factory which was destroyed by fire recently.

Work has been begun on laying the keel for the new Government dredge at the Polson Iron Works yards, Toronto.

John Marchen's woolen mill at Lost Channel, Ont., was destroyed by fire September 20. Loss about \$3,000.

The People's Natural Gas Co., Brantford, Ont., including all the companies in the Attercliffe field, have sold out to the Pittsburgh Gas Co. for over \$100,000.

T. M. Kirkwood, Toronto, who recently visited the principal commercial centres of the United States, has placed an order with Wickes Bros., New York City, for a large rolling mill equipment, to be shipped to Winnipeg, Man. Mr. Kirkwood proposes to make bar iron, shapes, etc., and has selected the most modern material for construction of his plant.

The Consumers Gas Co., Toronto, will erect a storage building for coal and coke at a cost of \$40,000.

At a recent meeting of the shareholders of the Hess Furniture Co., Bracebridge, Ont., the company was reorganized under the name of the Bracebridge Furniture & Casket Co., Limited.

The Grand Trunk Railway Co. will make the following improvements to their shops at Stratford, Ont.: The present erecting shop will be extended into the boiler shop, a distance of 179 feet, which will give 12 additional pits for engine repairs. These pits are to be of 22 feet centres, and built of concrete.

An entire new boiler shop will be erected, the dimensions of which will be 169x120 feet. It will be equipped with two electric travelling cranes, one of 30 tons and one of 10 tons capacity. The machinery will be driven by electric motors. A new tender shop will be built at right angles to and adjoining the new boiler shop. This shop will be 326x102 feet. A new brass foundry, 70x41 feet, will be built. There will be an addition of 50 feet put on the east end of the blacksmith shop, and the east end of the tender shop will be extended 70 feet. This latter building will be used for light repairs to locomotives, repairs to steam shovels, and other similar work. There will also be an addition, 60x41 feet, to the west end of the tender shop. The present brass foundry will be converted into additional machine shop space. The new buildings and additions to old ones will give 74,654 square feet of additional floor space. A large amount of new and up-to-date machinery will be installed in the different shops. In addition to the new machinery there will be installed a new 300 k.w. electric generator to work the electric cranes and machinery that will be electrically driven. Tenders are now being invited for the work, the approximate cost of which will be about \$117,000.

The grip that Canadian manufacturers are getting on the Australian market is indicated by the fact that 50 cars of Massey-Harris machinery are being shipped to Sydney, Australia. This is only a fraction of the Australian shipments this season.

The Peat Board Co., Toronto, recently organized with a capital of \$250,000, will erect their plant at Cannington, Ont., at a cost of \$75,000 for the manufacture of half-stuff to be converted into pulp board and leather board.

Mr. Wm. D. Long, Hamilton, Ont., has purchased the Canada Woolen Mills at a cost of \$253,000. Mr. Long will either reopen the mills himself, or form a company to operate them.

The Canadian Credit Indemnity Co., Toronto, are being organized for the purpose of insuring manufacturers and wholesalers against extraordinary losses from bad debts. The company propose to provide insurance for loss over and above the normal percentage of bad debts. F. Arnoldi, K.C., and J. Macdonald Oxley are directors.

The Grand Trunk Railway Co., have commenced the construction of their own waterworks at Stratford, Ont., which will cost about \$20,000.

The Ontario Government are inviting tenders for the sale of timber limits in the township of Burleigh, in the county of Peterboro, and the township of Johnson, in the district of Algoma.

The Ontario Pipe Line Co., Dunnville, Ont., are applying to the town of Thorold, Ont., for a franchise to lay gas piping through the town.

The Russell House at Ottawa, Ont., will be enlarged and improved at a cost of \$15,000.

Tenders are being invited for the erection of the new barracks at Kingston, Ont., which will cost about \$100,000.

The Canadian Pacific Railway Co. have ordered 50 steel ore cars. They will be 30 tons capacity, length, 24 feet over end sills.

The car bodies have been ordered in the United States, the trucks will be built by the Canadian Pacific Railway.

Dr Geo. M. Aylesworth, Collingwood, Ont., owner and inventor of the 20th century hot air radiator is demonstrating the new type of heating in Toronto this week.

The Algoma steel plant of the Lake Superior Corporation at Sault Ste. Marie, Ont., is busy turning out steel rails. The contract of 10,000 tons which the company have from the railway department of the Intercolonial is about filled.

The Michigan Central Railway Co.'s roundhouse at Windsor, Ont., was destroyed by fire October 2. Loss about \$40,000.

R. J. Fleming, Assessment Commissioner, Toronto, has asked the Civic Property Committee for a grant of \$60,000 for new freight sheds on the east side of the city's wharf at Harbor Square.

A by-law has been passed at Waterloo, Ont., granting a loan of \$15,000 to the Canada Furniture Manufacturers, whose factory was recently destroyed by fire.

The town of Waterloo, Ont., will purchase the gas company's plant at a cost of \$11,000 and will extend same at a cost of \$9,000.

A new Isolation hospital will be erected in Hamilton, Ont.

The Queen's Hotel at Meaford, Ont., was destroyed by fire October 1. Loss about \$10,000.

The blacksmith shop, machine shop, repairing shop, interlocking switch tower and boiler house of the Toronto, Hamilton & Buffalo Railway Co.'s works at Hamilton, Ont., were destroyed by fire October 4. Loss about \$30,000.

The Toronto City Council are inviting tenders for the erection of a new fire hall at a cost of \$30,000.

The Burt Mfg. Co., Akron, Ohio, report that they have recently sent one of their large oil filters to the National Steel & Wire Co., New Haven, Conn., where they have already sold a number of their Cross oil filters. The largest concerns in the country are using the Burt Mfg Co.'s goods and they have also recently sold two Warden oil filters to the Lehigh Coal Co. Two of their 150-gallon oil filters have been sent to the LaBelle Iron Works, Steubenville, Ohio, for use in connection with an oiling system which this plant operates. This concern think highly of the Cross oil filters and now have quite a number in use in their mills.

The Allis-Chalmers-Bullock Co., Montreal, through their Winnipeg office, have secured the contract for supplying the electrical driven pump for the new water works system at Lethbridge, N.W.T. This company have recently opened a branch office in Winnipeg, with Mr. L. J. Belnap as district manager.

The Canadian Pacific Railway Co. are building 33 vans at their Farnham, Que., shops, which will be 29 feet long by 9 feet over frames, and will have 33-inch cast iron wheels, outside hung brake beams, and will be equipped with Westinghouse air brakes. The interior equipment will consist of cupola, with two revolving chairs, and lockers underneath floor of cupola, wash stand and cooler, desk, folding table, stove with oven, and four pull-out seats, with folding berths above.

The warehouses of Messrs. Chaput, Fils & Co., the British Thread Trust and the Canada Hardware Co., at Montreal, were destroyed by fire September 21. Loss about \$750,000.

The Canadian Rubber Co., Montreal, are enlarging their plant and installing new machinery at a cost of about \$375,000.

The Canadian Government have authorized the purchase of a new set of cartridge machinery for the Quebec arsenal.

A branch post office building, 90x50 feet, will be erected in Montreal.

The Quebec Furniture Co.'s warehouse, Quebec City, was destroyed by fire September 22. Loss about 40,000.

From now to the first of November it is estimated that over 100,000 tons of steel rails will be brought into Montreal alone. The unprecedented rush is due to the fact that to escape the duty of \$7 a ton all rails ordered before August 23, have to be brought into Canada before the first of November. The largest amount of rails now coming in at different ports of entry, from United States are consigned to the Canadian Pacific Railway Co. from the Pennsylvania Steel Co. The railway had a contract for 40,000 tons with an option for 60,000 tons at the same price. Part of the first contract has already been supplied but the rest of it and all the new contract of 60,000 tons will be rushed in.

Mr. A. G. Ross, the Montreal manager of the National Trust Co., has purchased the Sissiboo Pulp & Paper Co.'s properties near Digby, N.S.

The Locomotive & Machine Co., Montreal, have just completed for the Grand Trunk Railway Co., the first two large-type locomotives to be turned out from their works.

The Canadian Pacific Railway Co., Montreal, will construct two heavy tonnage eighteen knot passenger steamers for their Atlantic service. Tenders for same will be invited shortly.

The Montreal Burns Club will erect a statue of Robert Burns in that city at a cost of about \$15,000.

The Quebec Electric Co., Quebec City, will build an electric railway from St. Anne to Murray Bay, Que.

The Canadian patents recently secured through the agency of Messrs. Marion & Marion, patent attorneys, Montreal and Washington, D.C., were the following: A. M. Baekham, Wellington, N.Z., means for retaining and locking window sashes at any desired height, A. Gamache, Bartlett, N.H., telephone transmitter, R. Rouge, Paris, France, windings of electrical machines and appliances, A. Dumont-Degoffs, Brussels, Belgium, crushing or grinding machines; Wm. J. Mundy, Petrolia, Ont., down draft, base burning stove, H. LaRose, Vercheres, Que., baling press, H. T. Hughes, Frankfort, N.Y., nut lock.

Mr. O. Daoust's creamery and grist mill at Masson, Que., were destroyed by fire September 19. Loss about \$5,000.

The Trois-Pistoles Pulp & Paper Co., Trois-Pistoles, Que., have increased their capital to \$300,000.

The Haskell Lumber Co., Monte Bello, Que., have been incorporated with a capital of \$300,000, to manufacture lumber, pulp,

pulp wood, etc. The provisional directors include W. L. Haskell, Ulysses, Pa.; M. S. Haskell, Herring, Pa., and G. W. Thayer, Rochester, N.Y.

The Salvation Army of Montreal will erect a new barracks at a cost of about \$30,000.

The steamer Admiral of the North American Transportation Co., Quebec City, was destroyed by fire at Montreal October 4. Loss about \$35,000.

The announcement recently made by the Canadian Pacific Railway Co., that they will further invade the passenger and freight business of the Atlantic by the construction of two large tonnage vessels, with a speed of 18 knots, has caused considerable interest in Montreal, as it means that the company will place themselves in a position to compete with the Allan Steamship Co.'s splendid fleet, running in conjunction with the Grand Trunk Railway. Mr. Arthur Piers, the manager of the Canadian Pacific Railway steamship lines, states that it had been decided that the steamers required should be constructed by the company on the most modern and improved patterns. This decision means that the steamers will not be available for service until about the beginning of next September. The contract for the new steamers will be signed immediately after the annual meeting of the company.

The determined action of American companies to assure for themselves a good share of the big increase in the business of Canada in the next decade is shown by the announcement made almost simultaneously by three different companies of their decision to either extend or establish plants in Canada. The three companies which are all looking for railway development are the American Locomotive & Machine Co., the Simplex Railway Appliance Co., and the Canada Car Co. The Locomotive & Machine Co. announce that they will double the capacity of their plant at Longue Pointe, to the east of the city, while both the other companies will erect plants that will cost over a million and a half dollars, to the west of the city, on the Grand Trunk Railway line. The Simplex Appliance Co., up to the present time, have only had a leased plant, and will erect a large modernly-equipped one that will be in operation by September 1, 1905. The Canada Car Co., which is controlled by interests of the American Car & Foundry Co., and the Pressed Steel Car Co. have formed an alliance with the Grand Trunk Railway, and General Manager Coleman, who was formerly vice-president of the American Car & Foundry, states that his company are sure of getting enough of the Grand Trunk Pacific business to keep the plant in operation for close to two years.

The Chatham Pulp & Paper Co., Lachute Mills, Que., have been incorporated with a capital of \$200,000, to manufacture pulp, paper, etc. The provisional directors include T. H. Ayers, J. T. Ayers and J. T. Griffith, Lachute Mills.

Compagnie Générale d'Enterprises, Montreal, have been incorporated with a capital of \$1,000,000, to erect and operate pulp and saw-mills, etc. The provisional directors include F. Allard, J. Coiseau and J. Dollfus, Paris, France.

The Eastern Townships Furniture Mfg. Co., Arthabaskaville, Que., have been incorporated with a capital of \$50,000, to manu-

facture furniture, etc. The provisional directors include E. Crepeau, F. Beauchesne and P. H. Cote, Arthabaska, Que.

The John McDougall Caledonian Iron Works Co., Montreal, will supply that city with three boilers for waterworks purposes at a cost of \$15,350.

The Dominion Iron & Steel Co., Sydney, N.S., have most of the machinery for their rail mill on the ground; the balance of it is ordered and will be delivered inside of the next sixty days. This mill the company expect to start early next year. Its capacity will be 1,000 tons per day. At the present time the rod mill is operating and turning out from 110 to 130 tons per shift.

The Robb Engineering Co., Amherst, N.S., are receiving a large number of orders for engines and boilers from the West, including two large compound Corliss engines for the Canadian Pacific Railway metallurgical department at Banff, N.W.T.; a tandem compound Corliss engine for the Stratford, Ont., shops of the Grand Trunk Railway, to be used for electric driving, and a compound engine for the Dominion Bridge Co., Montreal. A compound engine is being shipped to Australia, which is the third engine sent to the same company. The company are at present erecting engines for several of the large towns in Western Canada, including Edmonton, Calgary, Red Deer, Wetaskiwin and Moose Jaw. These are all for municipal lighting or water works plants, and serve to illustrate the rapid extension of the North-West.

Messrs. McNeil Bros., New Glasgow, N.S., will erect an iron working plant at Port Hawkesbury, N.S., at a cost of about \$35,000.

A wireless telegraphy station will be erected near Port Morien, N.S.

The Elder-Dempster steamer Degama, Capt. Brydges, sailed from Sydney, N.S., September 20, for Vera Cruz, Mexico, with a cargo of 400 tons of coal from the Dominion Coal Co. for the Inter-Oceanic Railway of Mexico. This is the first cargo of Canadian coal shipped to that country, and is for the purpose of experiment. Should the test prove successful it is expected that an extensive coal trade between Cape Breton and Mexico will be the outcome.

A large fire occurred at Halifax, N.S., September 19, which destroyed the following companies warehouses: Messrs. Black Bros.; Pickford & Black; Leslie, Hart & Co.; Bryant & MacDonald; and R. B. Seeton & Co. Total loss about \$200,000.

The City Council of Halifax, N.S., will purchase 1,000 feet of rubber hose, and are considering the purchase of a fire boat.

The Dominion Coal Co., Sydney, N.S., have awarded to Captain Nilsen, representative of a Norwegian firm, the contract for the construction of three large steamers to be used for the coal trade from Sydney to Montreal. The steamers are to be built of steel, by J. Thompson Co., Sunderland, England, and will cost about \$500,000. They will be 360 feet long, 49 feet 6 inches beam, with a draught of 22 feet, and will have a carrying capacity of 6,500 tons.

The Victoria Acetylene Mfg. Co., have been incorporated at Fredericton, N.B., with a capital of \$25,000, to manufacture gas machines, generators, etc. The provisional

directors include J. H. Whitman, Port Dufferin, N.S. Jas. Hunter and J. H. McRobbie, St. John, N.B.

The Ames Holden Co., Montreal, manufacturers of boots and shoes, etc., have been licensed to do business in New Brunswick.

The Moncton Woodworking Co., Moncton, N.B., have been incorporated with a capital of \$8,000, to manufacture shingles, lathes, sashes, doors, etc. The provisional directors include J. M. O. Steeves, J. A. Bishop and F. Bishop, Moncton.

The Anderson Furniture Co., New Castle, N.B., will have their new factory in operation shortly and will give employment to 100 men.

The New Brunswick Petroleum Co now have 65 wells in operation, producing about 100 barrels daily. Their new refinery will be completed next spring and will have a capacity of 300 barrels daily. Mr. R. W. Ambrose, Amherst, N.S., is a director of the company.

A company, headed by Alfred Harmsworth, the English publisher, has purchased large areas of timber land in Newfoundland and will establish pulp mills to supply the Harmsworth papers.

The Intercolonial Railway, Moncton, N.B., are inviting tenders for the construction of a station building, freight shed and out-buildings at Mitchell, Que., and for the construction of a station and freight building at Aulac, N.B.

The St. John Times Printing & Publishing Co., St. John, N.B., have been incorporated with a capital of \$100,000, to carry on a printing, electrotyping, and engraving business. The provisional directors include J. Russell, Jr., W. H. Murray and Jas. Pender, St. John, N.B.

The Department of Public Works, Fredericton, N.B., are inviting tenders for the construction of the new River Mills bridge in Charlotte County, N.B.

The St. John Ladder Co., St. John, N.B., have been incorporated with a capital of \$10,000, to manufacture ladders, implements, etc. The provisional directors include A. G. Staples, J. H. McRobbie and G. H. McRobbie, St. John.

The North-West Co-operative Construction Co., Winnipeg, Man., have been incorporated with a capital of \$20,000, to construct buildings, and to manufacture bricks, cement blocks, etc. The provisional directors include E. Machetti, S. Cossavella and I. Durli, Winnipeg.

The Mineral City Clay Co., Moose Jaw, N.W.T., are preparing to install a modern brick plant at that place and will be in the market for equipment.

A three story hotel building is being erected at Moosomin, N.W.T. For further information apply to the Mayor.

Messrs. Hamelin Bros. & Co. will erect a business block 100x50 feet two stories high, at Arcola, N.W.T.

The Dominion Organ & Piano Co., Bowmanville, Ont., will establish a branch factory in Winnipeg, Man.

The Alberta Grain Co. are erecting a new elevator at Wetaskiwin, N.W.T. The building will be 34 feet square, with 50 feet crib-work, and will have a capacity of 40,000 bushels.

Mr. B. Hollonquist, Carlyle, N.W.T., will erect a hotel building at Heward, N.W.T. at a cost of \$10,000.

A. B. Cail, Winnipeg, Man., manufacturer of rubber stamps and stencils, etc., will erect a new factory.

The city of Moose Jaw, N.W.T., will vote on a by-law to raise \$160,000 for waterworks, sewerage system and electric lighting.

The Dowd Elevator Co. are erecting a grain elevator at Goodlands, Man.

The town of Miami, Man., is offering a bonus of \$1,500, for the establishment of a flour mill there.

The Melita Milling Co. are enlarging their elevator at Oxbow, Man.

The First Baptist Church, Winnipeg, Man., will be enlarged at a cost of \$28,000. J. H. Russell, architect.

The Anglo-Canadian Elevator Co. are erecting elevators with a capacity of 30,000 bushels each at Drinkwater, Boharm and Milestone, N.W.T.

The plans for the Government Buildings at Prince Albert are almost completed. Tenders will be invited shortly.

At the grain inspection branch of the Trade and Commerce Department, Ottawa, there has been received a map upon which every elevator and grain warehouse in Manitoba and the Territories is marked. There are now 982 elevators, running a capacity from warehouses of 1,000 bushels to the big terminal elevators at Port Arthur, where 3,500,000 bushels can be stored. In 1900 there were 532 elevators in the West of a net capacity of 18,879,352 bushels. This year there are 459 more, with a total capacity of 41,186,000 bushels. Latest returns to the Department place the wheat crop of 1903 at 50,146,027 bushels, so that the crop of Manitoba and the Territories should be at least 60,000,000 bushels.

The Cecil Hotel, the Flannery Hotel, the Central Hotel, the Labbe Hotel, and the Donovan Hotel at Dawson City, Y.T., were destroyed by fire September 24. Loss about \$200,000.

The Burrige-Cooper Co., Winnipeg, Man., have been re-organized with a capital of \$50,000, to manufacture gasoline threshing engines, etc. The following are the officers of the company: Jas. Burrige, president; A. Grezey, vice-president, and E. S. Cooper, manager.

The Alberta Railway & Coal Co., the Canadian North-West Irrigation Co., and the St. Mary's River Railway Co. have amalgamated under the name of the Alberta Railway & Irrigation Co., Alberta, N.W.T.

The Brandon Stock Food, Medicine & Sale Co., Brandon, Man., are applying for incorporation with a capital of \$50,000.

Plans are being prepared for the erection of a Catholic church at Regina, N.W.T., at a cost of \$20,000.

Plans have been prepared for the extension of the Bell Telephone Co.'s buildings in Winnipeg, Man., which will cost about \$50,000.

Mr. F. Williamson, Belmont, Man., is erecting a new implement warehouse.

Architect A. W. Greene is inviting tenders for the erection of a brick Baptist church at Dauphin, Man.

The coal mining company at Frank, N.W.T., who lost so much of their plant and machinery in the great landslide a year or two ago, are now building a large brick power house, so as to begin operations on another shaft.

The Canada Foundry Co., Toronto, have completed a contract with the Canadian Northern Railway for a bridge over the Saskatchewan River near Battleford, N.W.T.

The town of Gilbert Plains, Man., has passed a by-law to raise \$3,000 to assist the Gilbert Plains Milling Co. in building and equipping a grist mill.

R. Rogers, Minister of Public Works, is calling for tenders for the erection of an Agricultural College building.

Messrs. S. F. & W. A. Peters, architects, are calling for tenders for a town hall for Strathclair, Man.

The Department of Public Works at Ottawa are inviting tenders for the construction of a magazine at Winnipeg, Man.

The Hanbury Mfg. Co., Brandon, Man., will build another large addition to their factory for the manufacture of sashes, doors, and interior wood work.

John Weir, Oakville, Man., will receive tenders for construction of a brick veneer school house, two stories high.

The Palace Hotel at Oxbow, N.W.T., is being enlarged at a cost of \$5,000.

Messrs. C. A. Rutland & Co. will erect a hotel building at Bentley, N.W.T.

A school house 108x73 feet, two stories high, will be erected at Brandon, Man.

The Brandon Heating & Plumbing Co. will erect a new two story factory building 90x25 feet.

An English church will be erected at Gladstone, Man., at a cost of \$11,000.

A public school building is being erected at Midale, N.W.T., at a cost of \$4,000.

Tenders are being invited for a new school building at Grainsby near Shellmouth, Man.

The Columbia Flouring Mills Co. will erect a grain elevator at Lethbridge, N.W.T., with a capacity of 30,000 bushels.

The Canadian Pipe Co., Limited, have been incorporated at Victoria, B.C., with a capital of \$25,000, to acquire the business of the Canadian Pipe Co., and to manufacture wooden and other piping.

The Vancouver Pipe & Foundry Co., Vancouver, B.C., have been incorporated with a capital of \$10,000, to acquire the business of the British Columbia Ideal Foundry Co., and to manufacture cast iron, soil-pipe and fittings.

The Hammond Steam Scraper Co., have been incorporated at Victoria, B.C., with a capital of \$200,000, to manufacture automatic steam scrapers, etc.

A plant for the utilization of the products of the whaling industry on the Pacific coast is to be erected at a cost of \$50,000 on Sechart Island near the mouth of the Alberni Canal.

Plans are being considered for operating a line of electric railway between Cloverdale and Port Guichon by the Victoria & Terminal Railway & Ferry Co., Vancouver, B.C.

The car-building plant of the British Columbia Electric Railway Co., New Westmin-

ster, B.C., which was destroyed by fire recently, is being rebuilt on a larger scale. The main building will be 180x75 feet, with office, boiler room and paint shop annexes. A full equipment of wood and iron-working machinery will be installed. The power will be electrical, taken from the company's commercial circuit.

The Velvet-Portland Co., Rossland, B.C., will double the capacity of their present plant to secure a daily milling capacity of 100 tons.

A water power plant will be installed near Sooke Lake on Vancouver Island, B.C., and power utilized to operate several electric lines.

Extensions of the Great Northern Railway being made to Phoenix and other mining towns in British Columbia are now well under way. A number of large bridges are being built.

Extensions will be made to the water works of Nanaimo, B.C., at a cost of \$30,000.

The King Lumber Co.'s No. 1 mill on Nigger Doe Creek near Cranbrook, B.C., was destroyed by fire September 11. Loss about \$25,000.

C. Fernau, the zinc expert, has made an agreement with the Crow's Nest Pass Coal Co., for the erection of a zinc smelter. The agreement calls for a zinc smelting plant costing not less than \$100,000 to be completed by December 30, 1905.

Mr. R. E. Kinsey will develop a water power on Lamb Creek and install an electric plant for lighting the village of Moyie, B.C. The surplus power will be used for mining purposes. The plant will cost about \$18,000.

It is reported that the Western Oil & Coal Co., Vancouver, B.C., have struck oil in paying quantities in their well in South Alberta, near the South Kootenay Pass of the Rocky Mountains.

The Pacific Coast Wood, Pulp & Power Co., with head offices in London, England, have absorbed the Pacific Coast Power Co. and the Industrial Power Co., both of Vancouver, B.C. It is proposed to construct pulp mills on the Powell River, about eighty miles north of Vancouver.

The Victoria Pulp Co.'s plant at Quatsino, B.C., is about completed and will turn out hundreds of tons of pulp daily and will give employment to about 500 men.

The first furnace at the Montreal & Boston Consolidated Boundary Falls smelter near Greenwood, B.C., was blown in September 28. The second furnace will also be blown in in a short time. So soon as that is done the third furnace now on the floors, will be installed. This battery of three furnaces will handle about 1,000 tons of ore daily.

The ratepayers of Chilliwack, B.C., have approved of the by law granting a franchise to the Chilliwack Light & Power Co. This company will supply power for light and manufacturing, and will operate within three years a line of electric railway between New Westminster, B.C., and Chilliwack.

A large sawmill will be erected at Nelson, B.C. Mr. J. P. McGoldrick, Victoria, B.C., is interested.

The Burt Mfg. Co., Akron, Ohio, who make the well known Cross oil filters have developed what is probably the largest export

business in the world. They have recently made a shipment of five oil filters to their agency at Helsingfors, Finland; also three large shipments to their representative in Havana, Cuba; also four filters to customers at Valparaiso, Chile.

Those interested in the construction of railway shops will find an article in the April issue of the American Engineer & Railway Journal by R. H. Soule, particularly interesting in regard to round-houses. Referring to the question of heating he says: "Heating by hot air from the fan is most satisfactory, especially if the dampers are so arranged that a large volume of hot air can be delivered under an engine in one pit and quickly thaw it out." This system of heating round-houses is to be found throughout the country and especially in all the large round-houses. By means of the fan, which is driven by a direct-connected steam engine, fresh air is drawn over the coils of steam pipes encased in a fire-proof jacket, and distributed through systems of distributing pipes, one over-head and another underground, the latter discharging the air under the engine and cars for the purpose of removing the ice and snow from the engines and cars as they enter the round-house in the winter season. Thus the building is positively and economically heated and ventilated, and the ice and snow is removed from the engine and cars in a minimum time, regardless of the weather. Among the recent installations of the fan heating system in round-houses by the B. F. Sturtevant Co. are those at the Wabash Railway Co.'s round-houses at St. Louis, Mo. and Montpelier, Ohio; the Pennsylvania Railway Co.'s round-house at Philadelphia, Pa.; the Illinois Central Railway Co., Chicago, Ill.; the C. M. & St. Paul Railway Co., Galewood, Ill. and nine round-houses of the Canadian Pacific Railway Co. at North Bend, B.C., Regina, Assa., Sault Ste Marie, Ont., Cartier, Ont., Wehwood, Ont., Chalk River, Ont., McAdams Junction, N.B., Outremont, Que., and Toronto Junction, Ont.

In an article on the early fire brick industry published in the last issue of the "Clay Record" appears the following regarding the establishment of the concern which has since developed into the Reese-Hammond Fire Brick Co., Bolivar, Pa. In 1851 James Hammond came to America from Achonry, County Sligo, Ireland. He remained in eastern Pennsylvania for a few months, and then went to Bolivar, where he secured employment in Glover's growing establishment. He seemed to possess an inborn genius for the manipulation of fire clays and for devising new uses to which they could be put. In a short time he became the most valued employe in the establishment; before long he became a partner; and, when Glover retired from the business, he purchased the interests of his former employer. Not content with depending upon the caprices of the furnace men and the small demands of Pittsburg steamboat owners and manufacturers, Hammond induced Glover to branch out into other lines, such as the manufacture of refractory wares for grate settings, locomotive arches, potters' kilns, crucibles, stove linings, and linings for brass, copper, lead, zinc, and other metal-smelting furnaces. It was largely due to his efforts that the manufacture of Pennsylvania fire clay products ceased to be a mere appendage of iron making, and that

Bolivar fire clay won the reputation that it still enjoys of being one of the best for many purposes that has ever been discovered.

The Stilwell-Bierce & Smith-Vaile Co., Dayton, Ohio, have been acquired by Col. J. D. Platt, president of the Barney & Smith Mfg. Co. Col. Platt has organized a new company to be called the Platt Iron Works Co., with a capital of \$400,000, which will take over all the unfinished contracts of the Stilwell-Bierce & Smith-Vaile Co.

The B. F. Sturtevant Co., Boston, Mass., have fitted up quarters in their large plant to be used for an emergency hospital in case of accident to employes. It is equipped with all the appliances known to medical and surgical science for the proper care of the men who may get injured in the discharge of their duties until they can be removed to their homes. A graduate nurse and medical student is in charge and a local doctor will attend to all surgical cases.

The Harbison-Walker Refractories Co., Pittsburg, Pa., advise that the recent fire at Hays works will not in any way affect deliveries on orders. No. 1 and No. 2 works were unaffected by the fire, and it will be possible to make shipments without interruption from these works. Arrangements have been made so that the friends of the Refractories Co., will suffer no inconvenience from this accident.

The new Susquehanna plant of blast furnaces at Buffalo, N.Y., has been started and made its first cast of pig iron September 28, every detail of the blowing-in going off to the satisfaction of the manager, Mr. Hugh Kennedy. This pair of furnaces represents the most advanced step in modern blast furnace construction, and is being watched with interest by the iron trade. The works are located on the outer harbor at South Buffalo, opposite the Lackawanna Steel Co. Each furnace has a daily capacity of 400 tons of pig iron. Mr. Wm. A. Rogers is president of the iron company whose product will be handled by Rogers, Brown & Co., Buffalo, N.Y.

The export trade of the Burt Mfg. Co., Akron, Ohio, is certainly one to be proud of. They have recently sent six oil filters to supply their trade at St. Petersburg, Russia, and 27 oil filters and exhaust heads to their agency at Genoa, Italy, as well as a shipment of 12 exhaust heads and three oil filters to their agency at Malmo, Sweden.

ELECTRICITY.

Electrical machinery and appliances of all kinds, electrical power plants and other progress in the electrical industries will be noted here.

Mr. R. S. Kelsch has concluded a contract whereby the Montreal Light, Heat & Power Co. will supply the Montreal Street Railway with 7,000 h.p. per year at \$25 per h.p. for a number of years.

The Ontario Independent Telephone Co., Windsor, Ont., have been incorporated with a capital of \$100,000, to construct and operate lines of telephones, etc. The provisional directors include C. W. Taylor, J. R. Brooks, and J. A. McRae, Detroit, Mich.

The German consul at Belgrade reports to his Government that within the past year a considerable number of electric plants and

other industrial establishments have been built in Servia. The consul advises manufacturers to send expert representatives to Servia to study conditions on the spot.

The town council of Sarnia, Ont., have offered \$50,000 for the electric and gas plants in that town.

Mr. R. S. Kelseh, electrical expert, Montreal is acting in a supervisory capacity for the Hull & Ottawa Power Co., who are installing a new 2,000 h.p. generator, water wheels, and switchboard. The company will furnish power to the International Portland Cement Co., to the maximum amount of 3,000 h.p.

The electric light plant of Killarney, Man., has been sold to B. Kenaston, Winnipeg, who will operate it in the future.

The council of Niagara Falls, Ont., will extend and improve the electric light plant at a cost of \$15,000.

The city council of St. John, N.B., will purchase the electric light plant of the Carleton Electric Light Co., at a cost of \$25,000.

The Canadian General Electric Co., Toronto, have installed another generator in the electric lighting plant of Winnipeg, Man., increasing the lighting capacity by 450 arc lights.

The British Columbia Electric Railway Co. are equipping several of their cars with air brakes furnished by the Canadian General Electric Co., Toronto.

The Dartmouth, N.S., Electric Light Co. are enlarging their plant.

The International Telephone Co., are installing a telephone system at Fort Frances, Ont.

The Rainy River International Telephone Co. will install a plant at Rainy River, Ont.

A company are applying to the Rainy River, Ont., council for a franchise to install an electric lighting system in that town.

The Grand Trunk Railway Co. have prepared plans for substituting electric power for operating the trains through the Sarnia, Ont., tunnel. The plans call for the three-rail system and the cost is estimated at \$400,000. It is calculated that the saving effected by the adoption of electricity will be about \$40,000 a year.

Messrs Stephens & Hawkins, Victoria, B.C., are installing the electrical machinery in connection with the new carpenter shop for the Imperial Government at Esquimalt, B.C.

The Ontario Crown Lands Department have granted the application of the Backus-Brooks Co., Minneapolis, Minn., for an extension of time for the completion of the power works at Fort Frances, Ont., until Jan. 1, 1907. The syndicate have practically completed arrangements for erecting on the Canadian side of the river a 2,000-barrel flour mill. The plans provide for a dam that will raise the waters of Rainy Lake to highwater mark. Koochiching Falls proper has a net fall of 25 to 30 feet, and there is besides a fall of several feet from the two miles of rapids which extend up river to the foot of the lake. All told, it is estimated that the dam will produce a fall of approximately 32 feet, and that, when fully developed, the horsepower will reach 30,000. Completion of the water power development is required on or before January 1, 1907, with not less than \$50,000 worth of work on dam construction this

season. Work on the cofferdam has already begun and the timbers are being delivered on the ground. The estimated total cost of the work is \$500,000. The completion of the transaction with the Ontario government is the consummation of eight years of negotiations on the part of the Backus-Brooks Co for the Canadian rights to the Koochiching water power. Sufficient power to operate the first mills, it is expected, will be ready early next summer. For the construction of the first flour mill a company has been organized and \$600,000 capital subscribed, and this mill is to be in operation in time to grind the 1905 Manitoba wheat crop. Paper, flour and lumber mills will also be established.

The Northern Aluminum Co., Shawinigan Falls, Que., have been awarded the contract for the conductors of the electrical transmission and distribution circuits on the Welland Canal.

Arrangements are about completed for the installation, by the New Westminster, & Burrard Inlet Telephone Co., New Westminster, B.C., and the International Telephone Co., Bellingham, Wash., of a telephone cable line to connect Bellingham and Vancouver by a direct wire. The proposed route of the cable is from the eastern shore of Vancouver Island, across San Juan, Orcas, Shaw and Lummi Islands. The entire line will be some 65 miles in length, 15 of which will be sea cable. The cable will be of English make and will consist of four copper wires.

The new sub-station at New Westminster, B.C., for the British Columbia Electric Railway Co. has been completed and the machinery is now being installed.

The Central Telephone Co. have purchased the St. Martin's telephone system at St. Martin's, N.B., and are erecting an extension through part of King's County. They have 110 instruments in Woodstock, N.B., and 400 miles of wires connecting Florenceville, Centreville, and other places in New Brunswick.

FUEL.

For names of fuel dealers see "Coal and Coke" in Classified Index.

The fuel supply question is a most important one to Canadian manufacturers. The information published in this department will keep the readers posted on sources of production.

Five thousand tons of Nova Scotia coal have been shipped to Vera Cruz, to be tested by one of the Mexican railways. The Dominion Coal Co. made the trial shipment, and in case the quality proves satisfactory a regular line of coal carriers may be established between Nova Scotia and Mexico.

Imports of coal into Canada from ports on the Great Lakes during July last amounted to 153,744 tons anthracite and 542,843 tons bituminous, a total of 696,587 tons. For the seven months ending July, 1,184,475 tons of anthracite were imported and 2,359,097 tons of bituminous, a total of 3,543,572 tons of both kinds.

The Dominion Coal Co., have reduced the price of coal to Sydney consumers from \$3.50 a ton to \$3. The reduction is the result of an

agitation begun in this direction by the Sydney Board of Trade a few months ago.

The Dominion Coal Co. have awarded a contract for three additional steamers to a Norwegian firm. The vessels will be used in the St. Lawrence River trade and, according to contract, are to be ready for delivery next May.

The New River Consolidated Coal & Coke Co., Thurmond, W. Va., has been licensed to do a wholesale and retail coal business in Ontario. The entrance of this company into the Canadian retail coal market marks a new departure in this line. The United States coal companies have heretofore confined themselves to the wholesale business in Canada. Mr. H. W. Holmsted, 1524 King St., W., Toronto, is representing the company in Canada.

During the year 1903 the coal production of the United Kingdom amounted to 230,334,000 long tons, and of the United States 320,983,000 long tons. Germany produced 116,638,000 metric tons (2,204 pounds), France 34,318,000 metric tons and Belgium 23,912,000 metric tons. The production of coal in 1903 in each of these countries was greater than in any previous year.

One of the cheerful notes that comes to hand is the improving condition of the coke business. This is particularly so when one considers that coke enters so largely into the manufacture of iron and steel. With these on a sound basis, there is no room for cavil. That more coke ovens are being put in blast to serve this trade is, therefore, one of the most important and gratifying of the new features connected with the fuel industry.

It is reported that there are 250,000,000 tons of coal in sight in the Peace River region in Athabasca.

Mr. E. R. Wood, one of the directors of the Grand Trunk Pacific Railway, returned to Toronto a few days ago from the trip taken to the Pacific by the directors and officials of the company, for the purpose of spying out the land. Speaking of the coal deposits in the West, Mr. Wood said: "No one who has not visited the Kootenay district can have any idea of its progress." He is director of the Crow's Nest Pass Coal Co., and left the other Grand Trunk Pacific directors at Dunmore Junction on the return trip to run through the coal district. Fernie, he found, had recovered from its disastrous fire last spring, but unfortunately the town was not incorporated soon enough to prevent the re-erection of wooden buildings. "Six or seven years ago, where there was a wilderness there are now the towns of Michel, Fernie, Coal Creek and Morrissey, with a population of at least 7,500, and the monthly wages to their employees exceed \$125,000. This is no visionary gold mine scheme, but based on a paying business proposition. The company have quite recently been able to realize their aim; that is, to be able to supply the demand. They now have 1,140 coke ovens turning out 1,500 tons of coke daily. Through the extension of the Great Northern they have obtained a market in Montana, the greatest for coke in America outside of Pittsburg. The company are now supplying coke to the smelters at Great Falls, Butte, Anaconda, Helena and Northport, as well as to all the Canadian smelters at Nelson, Trail, Greenwood

and Grand Forks. There are no complaints about the quality of the coke, and, so far as Canadian smelters are concerned, none that they do not receive sufficient supply."

The following new members have been added to the recently formed Western Ontario Retail Coal Association:—J. W. Hunt, Ayr, Ont.; Brantford Coal Co., Brantford, Ont.; R. Boehmer and A. Lockhart, Berlin, Ont.; S. H. Bacon, Blenheim, Ont.; A. Bechtel, Baden, Ont.; J. J. Couzens, Chatham, Ont.; C. E. Baxter, Drumbo, Ont.; T. G. Turnbull, Komoka, Ont.; W. Corlett, Norwich, Ont.; W. Shaw, Sarnia, Ont.; Reid & Wilson, Seaforth, Ont.; L. Brown, and J. B. Jackson, Simcoe, Ont.; and McIntosh Coal Co., Woodstock, Ont.

It is reported that after four years' trial the profit-sharing plan devised by President F. L. Robbins of the Pittsburg Coal Co., Pittsburg, Pa., is working out with most satisfactory results to all concerned.

The output from the Dominion Coal Co.'s collieries at Glace Bay, N.S., for September aggregated 275,374 tons.

The Kamloops Coal Development Co., Kamloops, B.C., have made a strike of bituminous coal at a depth of 260 feet on Coal Hill.

The J. & T. Hurley Coal Co., Detroit, Mich., are making alterations to their wharf at Windsor, Ont., at a cost of \$4,000.

TARIFF ON COAL.

The New York Times, speaking of the advantages that would accrue to both Canada and the United States from the removal of the duty on bituminous coal, says:

New England manufacturers wish to buy cheap coal, in order to compete successfully with their more favored rivals in the coal districts of the South and West. Nova Scotia produces quantities of bituminous coal, and looks eagerly to shipping it free of duty to New England. The coal operators of Ohio and Western Pennsylvania, on the other hand, desire to sell coal and wish Canada to take her tariff off bituminous coal, which they could then export with advantage to Canada's central manufacturing districts. The duty exacted by either country is 67 cents a gross ton. Obviously there is need of reciprocity in the coal trade between the United States and Canada.

Nova Scotia cannot reach profitably the great and growing central portion of Canada; neither can Vancouver, which produces a high grade of the bituminous variety, largely used in the Pacific States in preference to their own coal. Convenient access to Canada's vital centres is found only from points in the United States by rail or water along Lake Ontario and Lake Erie from Oswego to Cleveland and Toledo. Moreover, Canada's consumption of coal far exceeds her production, and is rapidly increasing. In 1886 it was but a fraction over three-fourths of a ton per capita; in 1903 it reached 2.3 tons per capita, having fully tripled in seventeen years. The total consumption in 1903 was 12,720,455 tons, of which 6,678,450 tons were imported. She exported 1,979,951 tons, mainly from Vancouver to the Pacific States. Canada levies no tax on incoming anthracite coal, for she produces none. The central portion took 1,606,000 gross tons of anthracite from this country by way of Buffalo, besides

1,531,000 tons imported from the Cuyahoga district, which measures the importance of this trade to Ohio and Western Pennsylvania, and reveals their reason for wanting the duty off bituminous.

Under a reciprocity agreement American mine owners would gain practically entire control of the increasing central Canadian trade in coal, while New England and the Pacific States which are already dependent upon outside sources for fuel supply, would get their fuel cheaper. Benefit would accrue both to the United States and Canada.

OPPORTUNITIES.

Manufacturers and others in need of machinery, supplies, etc., of any kind are requested to consult our advertising columns, and if they cannot find just what they want, if they will send us particulars we will make their wants known free of cost, and in this way secure the attention of those who may be able to supply them. No charge for publishing what is wanted nor for giving information. When writing to enquirers kindly mention The Canadian Manufacturer.

Wanted—Jones & Lamson operator; one that can read drawings, and able to set up his own machine and get maximum output; state experience and terms, also when ready to report. Ross Rifle Co., Quebec City.

Wanted—Several toolmakers for gage and fixture work, none but first-class men desired; state experience and terms, also when ready to report. Ross Rifle Co., Quebec City.

The department of the state railways of Roumania will award contracts for enlargement of the electric plant at Bukharest and for materials and machinery required for electric lighting and furnishing power for the new railway workshops in that city. The department will also receive proposals for supplying machine tools required by the State railways.

The Government of Cape Colony, South Africa, contemplate the erection of cold-storage depots in all the ports and in the principal trade centres of that country, and the purchase of a large number of refrigerator cars for their railroad lines. The growing movement among the South Africans to form agricultural co-operative associations also tends toward the increase of cold-storage facilities. Manufacturers in this line should give prompt attention to this opportunity for getting orders.

A concession has been granted to the "Empresa del Ferrocarril Oesta de Buenos Aires" to extend two of their lines of railway about 50 miles each. All materials and machinery for building and equipping these new roads will be granted entry free of duty, provided such articles can not be manufactured in Argentina.

The Servian Government will spend \$2,400,000 for building railroads from Belgrade to Valzedo and between Paratschin and Zait-schar, and invite tenders for executing the work.

An electric power station will be built in Santos, Brazil.

The directors of the Agricultural Bank of Bulgaria will soon decide upon the quantity of agricultural machines and implements

which will be necessary to purchase for use next year.

The firm of Preece & Cardew, No. 8 Queen Anne's Gate, Westminster, London, will furnish particulars as to electric street cars which the municipality of Penang, Straits Settlements, intend purchasing.

The Spanish Government have granted a concession for the building of three lines of narrow-gauge railway. Further particulars can be obtained from the Ministerio plants, de Agricultura y Obras Publicas in Madrid.

An elevated road will be built at Almeria, Spain, to connect the railroad station with the harbor of that city.

J. L. Malhewman, Appleby, Ont., wishes to hear from manufacturers of kerosene oil engines.

PUBLICATIONS.

The publishers of The Canadian Manufacturer solicit in advance, if possible, catalogues, circulars, and other industrial publications issued by manufacturers. We wish to review such literature, and bring the principal points to the attention of our readers.

S. Vessot & Co., Joliette, Que., and Toronto, have distributed a neat booklet on the Champion Feed Mill which they manufacture.

The Richmond Conduit & Mfg. Co., Toronto are distributing to their friends interested in interior electric wiring a handsome calendar and thermometer. It is a very useful article and will be sent to interested parties who mention this journal.

Mr. Horace See, the naval architect of New York and inventor of the famous See Ash Ejector, sends us a copy of "Some Sea Specialties," Series 1904, a handsome and useful publication.

The Sheetz & Lynde Co., Toronto, have issued folders illustrating and describing the Von Der Osten brick machine.

Jeffrey Grab Buckets are described in an attractive booklet just issued by the Jeffrey Mfg. Co., Columbus, Ohio. This and other Jeffrey publications will be supplied by the A. R. Williams Machinery Co., Toronto, who are the Canadian agents.

Messrs. Sheldon & Sheldon, Galt, Ont., have issued an attractive booklet on the "Special Fans" which they manufacture. The fans described and illustrated in this catalogue are those adapted to special purposes of the various manufacturing industries. Among the users of these fans are: Johnson Co., Bells Asbestos Co., and King Bros., Thedford Mines, Que.; the American Asbestos Co., Black Lake, Que.; Horseshoe Quarry, St. Mary's, Ont.; Robertson, McKenzie Lumber Co., Cranbrook, B.C.

The Syracuse Smelting Works, Montreal, are sending to their customers a number of attractive folders, blotters, and other literature relating to their well-known babbitt metal, solder, etc.

The Textile World Record, a leading textile journal in the United States, publishes an excellent article describing the merits of the Chapman Double Ball Bearings, which the Chapman Double Ball Bearing Co., Toronto, have reprinted in book form for the information of parties interested in power and transmission economics.

The Ontario Wind Engine & Pump Co., Toronto, have issued a very readable booklet which tells of some of the advantages of their line of products.

The annual report of the American Locomotive Co., just issued has the following to say regarding their Canadian plant: After deducting \$980,037.59 in partial payment of the securities of the Locomotive & Machine Co., Montreal, the convertible cash assets amount to \$12,215,720.10 and the current liabilities to \$2,892,349.65, leaving a net working capital of \$9,323,370.45, as compared with \$6,751,713.71 excess of assets on June 30, 1903, and of \$4,998,915.93 on June 30, 1902. It will thus be seen, says the report, that there has been satisfactory development along safe and conservative lines. In order to protect the company's business relations in Canada, the report says, control of the Locomotive & Machine Co., of Montreal, Limited, was acquired on March 1 last. The American Locomotive Co. own the entire capital stock and \$1,000,000 out of a total issue of \$1,500,000 of the first mortgage 4 per cent. bonds of that company. The purchase has met with favor in Canada, where the rapid development of that great territory promises an adequate return upon the investment.

The C. E. Sutton Co., Toledo, Ohio, who have absorbed the Bremer Machine & Tool Co., formerly of Kalamazoo, Mich., have issued a very attractive catalogue of punches, shears, blacksmith punches, forging machines, milling machines, and tool room lathes. This catalogue can be obtained by addressing H. W. Petrie, Toronto, Canadian agent for the C. E. Sutton Co.

The Canadian General Electric Co., Toronto have just issued a most attractive catalogue under the title of "Some Facts regarding Type H. Transformers." Parties interested in electrical power appliances should peruse this interesting publication and examine this type of transformer.

The G. & C. Merriam Co., Springfield, Mass., publishers of Webster's International Dictionary, announce the publication of a new and enlarged edition of this valuable reference work. The new edition of Webster's International Dictionary brings Webster again abreast of the growth of the language and again confirms it in its position as the One Great Standard Authority. A decade has passed since the International was first published and the years have been full of changes and growth in life and knowledge and achievement; changes that have been reflected in the language and that must now be registered in the dictionary. The new edition of Webster, therefore, retains all the excellencies of the International, emphasized and multiplied, all its accuracy and convenience with added fullness and authority, so that it is, as before, the best practical working dictionary of the English language.

The Cassella Color Co., New York City and Montreal, have issued a new folder on Anthracene Chrome Blue F. "Dyestuffs" published by this company monthly, in its last issue presents some valuable matter for textile workers.

The Oliver Machinery Co., Grand Rapids, Mich., who are represented in Canada by H. W. Petrie, Toronto, have just issued a handsome catalogue of more than 200 pages on wood-working machinery.

The W. E. Caldwell Co., Louisville, Ky., who are well known in Canada, have issued a new catalogue on tanks, towers and tubs.

F. E. Meyers & Bro., Ashland, Ohio, have issued a new 325-page catalogue on pumps, etc.

Catalogue No. 21 just issued by the Penberthy Injector Co., Windsor, Ont., gives a complete description of "Penberthy" injectors, lubricators, gauges, valves, etc., together with price list and other information of value to all steam power users.

FOREIGN CATALOGUES.

The Committee of the Canadian Privy Council reporting on the catalogue duties, and referring to the exemption from duty of catalogues and price lists sent to Canada by post, state that such catalogues and price lists shall not be held to include almanacs or advertising periodicals or printed matter designed to advertise the sale of goods by any person in Canada.

PERSONALS.

The Canadian Westinghouse Co., Hamilton, Ont., have opened offices in the Union Bank Building, Winnipeg, Man. The representative in charge of the district covered by this office is Mr. W. E. Skinner, who was formerly associated with the Westinghouse Electric & Mfg. Co., Pittsburg, Pa.

Among the callers at this office during the past week was Mr. Jno. A. Skelton, representing the Contract Journal and the Electrical Engineer, of London, England. Mr. Skelton has been making a tour of Canada in the interest of these well known English publications with special reference to the mining and manufacturing development.

Fifty-six members of the Austrian Manufacturers' Association, known as the "Niederösterreichischer Gewerbeverein," visited Toronto a few days ago. They came to Canada with the object of visiting some of the manufacturing establishments here and in Montreal. The party had visited New York, Philadelphia, Pittsburg, Chicago and the St. Louis Fair.

Hon. Chas. Hyman, Acting Minister of Public Works, has appointed the following engineers to carry out surveys along the route of the proposed Ottawa and Georgian Bay Canal from North Bay to Montreal. The chief engineer will be Mr. E. D. Lafleur, and the engineer in charge Mr. A. St. Laurent. The divisional engineers will be:—Nipissing division, J. Chapleau, Ottawa; Ottawa division, E. J. Ramboth, Quebec; Montreal division, Geo. P. Brophy, Ottawa. The following will be sectional engineers.—E. E. Perrault, North Bay, Ont.; Wm. Cross, Toronto Junction, Ont.; C. E. McNaughton, Montreal; L. R. Voligny, Ottawa; H. P. Bell, Victoria, B.C.; A. C. MacDougall, Ottawa; Geo. L. Griffith, Winnipeg, Man.; A. Robert, Ottawa.

The following have been appointed first assistants to the sectional engineers.—E. A. Forward, Iroquois, Ont.; A. J. McDougall, Cornwall, Ont.; J. H. Armstrong, St. Catharines, Ont.; C. R. Cortlee, New Glasgow, N.S.; A. L. Ghysens, Montreal; Mr. Jennings, Toronto; R. H. Barrett, Pembroke, Ont.

The following will act as second assistants:—C. H. Mathewson, London, Ont.; E. H.

Pense, Kingston, Ont.; A. Birch, Westmount, Que.; S. Ouimet, St. Rose, Que.; F. R. Smith, Chatham, Ont.; E. G. Goodspeed, Penniac, N.B.; P. Davis, Windsor, Ont.; Henry Robertson, Montmagny, Que.; Edgar Miles, Fredericton, N.B.

Hon. J.F. Stairs, the head of the well-known firm of Wm. Stairs, Sons & Morrow, Halifax, N.S., died in Toronto on September 26. Mr. Stairs was a director of the Nova Scotia Steel & Coal Co., the Robb Engineering Co., and an interested member of other prominent manufacturing concerns.

The Fairbanks Co. have removed their Toronto offices from Bay Street to 100 King Street West.

Mr. J. McLennan, Peterborough, Ont., has been appointed superintendent of the Trent Canal.

The Canadian Rand Drill Co., have issued notices to the effect that their Toronto sales office will be discontinued after October 1. After that time all communications should be addressed to the General Sales Office of the Company, Imperial Bank Building, Montreal. Mr. J. G. Harris, 23 Sussex Court, Toronto, will continue to represent the company in the Toronto district.

Mr. G. A. Powell, of the Packard Electric Co., has just returned to the company's office in Winnipeg, Man., from a journey through the North-West Territories. He reports business in excellent shape, and the prospects very promising.

Mr. C. D. Warren, president of the Lake Superior Corporation, returned this week from New York, where he attended an important meeting of the directors of the company.

Mr. Owen Sullivan of the Geological Survey Department, has returned to Ottawa from James' Bay, where he spent the summer in making a survey of the coast from Point Comfort to Cape Henrietta Maria.

Dr. Robert Bell of the Geological Survey Department, has returned to Ottawa from St. Louis, where he has been attending the eighth Universal Congress of Geologists.

President Warren, Director Rowell and General Manager Shields, of the Lake Superior Corporation, interviewed the Commissioner of Crown Lands last week for the purpose of closing up matters in connection with the reorganization of the company.

CHEMICAL SOCIETY.

On concluding their annual meeting in New York city the members of the Society of Chemical Industry were the guests of the Canadian section of the Society last week at Niagara Falls. About 175 guests were present, among them Sir William Ramsay, retiring president of the Society and probably the most noted chemist in the world. Mr. Nicholls, an American chemist of note, who has just succeeded Sir William Ramsay in the presidency, was also present.

After luncheon the party inspected the various industrial and power plants, the visitors being especially interested in studying the chemical features of the various processes of manufacture, notably of the graphite works. An invitation has been extended to the Society, which has a membership of about 1,500, to hold an annual meeting in Toronto.

INSTITUTE OF CIVIL ENGINEERS.

The members of the Institute of Civil Engineers, London, England, who are now touring Canada and the United States, were in Toronto a few days ago. Among the prominent members of this well-known society in the party were Sir William White, President of the Institute, and formerly director of naval construction to the British Admiralty, a post he resigned on account of ill-health in 1902; Prof. W. C. Unwin, formerly instructor of the Royal School of Naval Architecture, professor of mechanical and hydraulic engineering in the Royal Indian College of Engineering, professor of engineering at South Kensington, and the author of several important works on engineering; Mr. Alex. Ross, prominent in railway engineering work for many years, and at present chief engineer for the Great Northern Railway Co., whose lines with connections run from London to the north of Scotland and at present is engaged in constructing underground lines in London, in which more than ten miles of tunneling is necessary; and Lieut.-Col. C. A. Brereton, who has had charge of many important railway works in all parts of Great Britain, and has also had very extensive dock construction works under his charge.

Among the others in the party were Dr. Tudsbury, Secretary of the Institute; A. White, of H.M.S. Ariadne; P. C. Bayley, H. O. Baldey, W. Barrington, C. E. Botley; J. A. Brodie, City Engineer of Liverpool; A. Havelock Case, W. Collingwood, H. E. Jones, W. H. Hunter, H. H. Wake, John G. Hudson, J. Campbell Thompson, F. C. Murray; John D'Eath, Government engi-

neer, Jamaica; A. C. Hurtzig, J. Lobley, H. D. Pearsall, W. Rowley, T. Copley Calvert, F. Wilton, Sir Lloyd Wise, Joseph Randall, Woolwich dockyard; H. Griggs, Assistant Secretary of the Institute of Civil Engineers; R. Campbell Grant, C. E. Dodwell, Public Works Department of Canada, C. D. M. Hindley, F. T. W. Brain, C. P. Sandberg, C. B. Lucas, London & Northwestern Railway, Crewe; C. P. Hogg, Glasgow; H. B. Kellon; Alfred Chatterton, Madras, India; O. F. Wheeler Cusse, Burma, India; F. J. Edge and others.

The party were given receptions at City Hall and at the Parliament Buildings and went to Niagara Falls from here.

OFFICERS OF THE ASSOCIATION.

Following are the names of the officers of the Canadian Manufacturers' Association for the year 1904-5, chosen at the recent convention in Montreal:

President—Mr. W. K. George, Standard Silver Co., Toronto.

First vice-president—Mr. C. C. Ballantyne, Sherwin-Williams Co., Montreal.

Ontario—vice-president—Mr. J. O. Thorn, Metallic Roofing Co., Toronto.

British Columbia—vice-president—Mr. John Hendry, British Columbia Mills Timber & Trading Co., Vancouver.

Quebec—vice-president—Mr. Geo. E. Amyot, Dominion Corset Co., Quebec.

Manitoba—vice-president—Mr. E. L. Drewry, Winnipeg.

Nova Scotia—vice-president—Mr. D. W. Robb, Robb Engineering Co., Amherst.

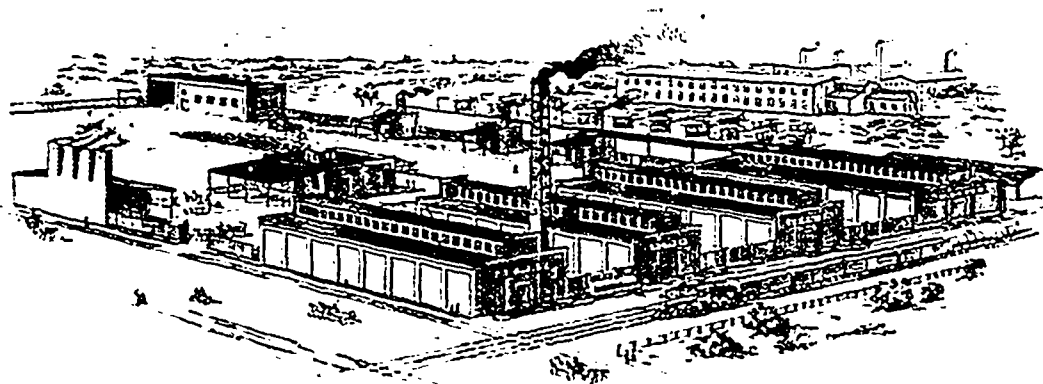
Prince Edward Island—vice-president—

Mr. Bruce Stewart, Bruce Stewart & Co., Charlottetown.

Treasurer—Mr. George Booth, Booth Copper Co., Toronto.

Toronto—Messrs. P. H. Burton, The Merchants' Dyeing & Finishing Co.; C. N. Candee, Gutta Percha & Rubber Mfg. Co.; R. J. Christie, Christie, Brown & Co.; J. W. Cowan, The Cowan Co.; R. A. Donald, the Pure Gold Mfg. Co.; L. V. Dusseau, the Gendron Mfg. Co.; W. P. Gundy, the W. J. Gage Co.; Geo. Heintzman, the Heintzman Co., Limited; D. T. McIntosh, the McIntosh Marble & Granite Co.; J. S. McKinnon, S. F. McKinnon & Co.; P. McMichael, the Dominion Radiator Co.; J. P. Murray, the Toronto Carpet Mfg. Co.; Frederic Nicholls, Canadian General Electric Co.; F. B. Polson, the Polson Iron Works; Thos. Roden, Messrs. Roden Bros.; A. S. Rogers, the Queen City Oil Co.; W. B. Rogers, Chas. Rogers & Sons; A. F. Rutter, Messrs. Warwick Bros. & Rutter; J. T. Sheridan, the Pease Foundry Co.; T. A. Staunton, Messrs. Staunton, Limited; Wm. Stone, the Toronto Lithographing Co.; A. W. Thomas, the Copp, Clark Co.; J. O. Thorn, the Metallic Roofing Co.; W. B. Tindall, Parry Sound Lumber Co.; Henry Wright, A. F. McLaren Cheese Co., Limited; S. M. Wickett, Wickett & Craig, Toronto.

Montreal—Messrs. Geo. E. Drummond, Canada Iron Furnace Co.; J. S. N. Dougall, McCaskill, Dougall & Co.; D. L. McGibbon, Canadian Rubber Co.; C. W. Davis, the Williams Mfg. Co.; Col. J. H. Burland, Canada Engraving & Lithographing Co.; R. C. Wilkins, Robt. Wilkins & Co.; S.W. Ewing, Messrs. S.H. Ewing & Sons; Jos. Horsfall, Montreal Woolen Co.; R. Munro, the Canada Paint Co.;



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since we commenced to make Varnish. During this period we have acquired a knowledge not only of Varnish, but of the varied needs of varnish consumers that nothing but time can impart, and have also learned how to cater successfully to every varnish want.

Our experience belongs to those who use and sell Berry Brothers' Varnishes. Safest goods to handle, surest and most reliable goods to use.

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BERRY BROTHERS, Limited, - Walkerville, Ont.



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Wants Manufacturers Cheap Electric Power

Thousands of electric horse power from Burleigh Falls and
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Valuable Inducements Offered by Municipality.

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Port Hope is located on Lake Ontario 63 miles east of Toronto, having one of the finest harbors.

Is on main line of Grand Trunk Railway and is the terminus of the Midland Railway connecting Georgian Bay.

Port Hope is also the most natural, cheapest and probable outlet of Trent Valley Canal.

WE ALSO OFFER POWER AT PETERBORO', COBOURG, BOWMANVILLE
and other Central Ontario Points.

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Head Office—Cor. George & Hunter Sts., PETERBORO'.

Address Manager's Office—**PORT HOPE, ONT.**

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Quebec—Messrs J J M Timmons, M. Timmons & Sons; Geo. E Amyot, Dominion Corset Mfg. Co.; C. Blouin, J. B. Blouin & Son; E. B. Eddy, the E. B. Eddy Co., Limited, Hull, Que.

Nova Scotia—Messrs. John F. Stairs, Nova Scotia Steel & Coal Co., New Glasgow; H. L. Hewson, Hewson Woolen Mills, Amherst; C. M. Crockett, I. Matheson & Co., Limited, New Glasgow.

British Columbia—Messrs. A. C. Flumerfelt, Granby Consolidated Mining & Smelting Co., Grand Forks; Alex. McLaren; E. H. Heaps, Messrs. E. H. Heaps & Co., Vancouver.

New Brunswick—Mr. James Pender, Jas. Pender & Co., St. John.

Manitoba—Mr. D. E. Sprague, Winnipeg.

Ex-officio members of the executive council being past presidents.—Messrs. George E. Drummond, the Canada Iron Furnace Co., Montreal; Cyrus A. Birge, the Canada Screw

Co., Hamilton; Robert Munro, the Canada Paint Co., Montreal; P. W. Ellis, P. W. Ellis Co., Toronto; J. F. Ellis, Messrs. Barber & Ellis, Toronto. A. E. Kemp, the Kemp Mfg. Co., Toronto; D. W. Karn, the Karn Piano Co., Woodstock; B. Rosamond, the Rosamond Woolen Co., Almonte; John Bertram, the John Bertram & Sons Co., Dundas, R. W. Elliot, Elliot & Co., Toronto; W. K. McNaught, the American Watchcase Co., Toronto; Edward Gurney, the Gurney Foundry Co., Toronto.

WHOLESALE HARDWARE ASSOCIATION.

The Sixth Annual Convention of the Canadian Wholesale Hardware Association was held at Montreal last month, and was a great success. The election of officers resulted as follows:

President, John Bowman, of John Bowman Hardware & Coal Co., London, Ont.; vice-president, Thos. Birkett, M.P., of Thos. Birkett & Sons Co., Ottawa; secretary-treasurer, James Hardy, of Jenkins & Hardy, Toronto. Executive committee, A. Jeanotte, of L. H. Hebert, Montreal; A. Letang, of Letang Hardware Co., Montreal; Gordon

Seybold, of the Seybold, Sons Co., Montreal; Victor Lemieux, of N. Lemieux & Fils, Quebec, C A Whitwam, the Hobbs Hardware Co., London, Ont.; past president Wm. Vallance, of Wood, Vallance & Co., Hamilton, Ont, past president T. H. Newman, Caverhill, Learmont & Co, Montreal; past president W Stark, Stark Hardware Co., Montreal; past president T. B. Lee, Rice Lewis & Son, Toronto; past president F. O. Lewis, Lewis Bros. & Co., Montreal This was followed

FACTORY LOCATIONS.

The following Canadian municipalities are offering inducements to secure manufacturing establishments. Inquiries should be addressed to the Mayor, Town Clerk or Board of Trade of the respective cities:

Brantford, Ont.

Hamilton, Ont.

Orillia, Ont.

Peterborough, Ont.

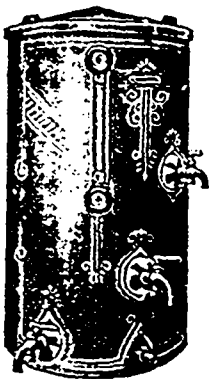
Sherbrooke, Que.

Toronto, Ont.

A crucible that practically never skelps is the McCullough-Dalzell. You need them in your foundry. Let us tell you more about them. Simply write.

MCCULLOUGH-DALZELL CRUCIBLE CO., Pittsburg, Pa.

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Satisfy yourself that the
CROSS OIL FILTER

Will save one-half
the cost of oil

by having us send you the filter on thirty days' trial. It will gratify us because we know it will please you—but you take no chances. If the filter is not satisfactory, return it and we pay transportation charges.

"The Cross Oil Filter is giving good satisfaction."
Memphis (Tenn.) Light & Power Co.

THE BURT MFG. CO.,

LARGEST MFRS. OF OIL FILTERS IN THE WORLD,

212 Main Street, AKRON, OHIO, U.S.A.

A complete stock carried by the
FAIRBANKS CO., Montreal.

Supplied also by Oil Companies, Engine Builders and Power Contractors.

**STURTEVANT
HAND BLOWERS**



An improved type for blowing forges of all kinds. Used also as portable ventilating apparatus. We make complete

FORGE SHOP EQUIPMENTS

including Forges, Blowers, Exhausters, Galvanized Iron Piping, Etc.

B. F. STURTEVANT CO.

BOSTON, MASS.

General Office and Works, Hydro Park, Mass.

New York Philadelphia Chicago London

by a banquet, which was held in the Canada Board of Trade Building, which was an unqualified success.

SETTLERS LOW RATES WEST

Via the Chicago & North Western Railway, every day from September 15 to October 15, settlers one way second class tickets at very low rates from Chicago to points in Utah, Montana, Nevada, Idaho, Oregon, Washing-

ton, California, also to Victoria, Vancouver, New Westminster, Rossland and other points in the Kootenay District. Correspondingly low rates from all points in Canada. Full particulars from nearest ticket agent or B. H. Bennett, General Agent 2 East King Street, Toronto, Ont.

The Becker-Brainard Milling Machine Co., Hyde Park, Mass., have greatly enlarged their

facilities, and installed improved machinery. A large stock of end and face cutters for vertical spindle milling machines are on hand for immediate delivery, also plain, face, straddle and inserted tooth cutters, gear cutters, metal slitting and screw slotting cutters.

The United States Steel Corporation, New York City, are considering the erection of a steel plant in Canada which would cost about \$12,000,000.

**CORUNDUM WHEELS,
EMERY WHEELS and
GRINDING MACHINERY**

**CANADIAN CORUNDUM
WHEEL CO.
HAMILTON, - ONT.**

RAND AIR HOISTS for foundry and machine shop. Used in connection with **RAND TROLLEYS** they are admirably adapted for the handling of goods and material and are safe, speedy and economical. Send for Air Appliance Catalogue. Series "A."

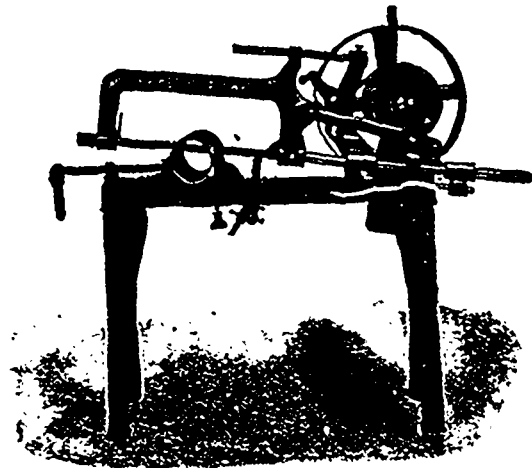
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General Sales Office,
MONTREAL, QUE.

SHERBROOKE, QUE.

Robertson's No. 1 Power Saw

Price, \$20.00



Capacity 4 x 4". Round or square.
Cuts hard or soft metals.

No machine shop can afford to be without at least one machine. Some use six, others twelve machines. We make four sizes up to 8 x 15".

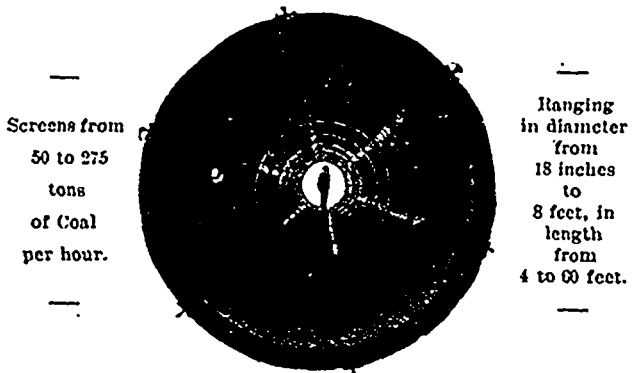
We also make Gas and Gasoline Engines, for stationary and marine purposes.

All orders for Canadian trade shipped from Bridgeburg, Ont.

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BUFFALO, N.Y.**

**THREE RECOMMENDATIONS OF
The Jeffrey Coal Screen**

ARE { **LARGE CAPACITY
AMPLE STRENGTH
EASE OF MANIPULATION**



Screens from
50 to 275
tons
of Coal
per hour.

Hanging
in diameter
from
18 inches
to
8 feet, in
length
from
4 to 60 feet.

Screen Catalogue No. 69
mailed free with others on

**ELEVATING, CONVEYING,
POWER TRANSMITTING, COAL
CRUSHING, DREDGING, COAL and
ROCK DRILLING.**

THE JEFFREY MFG. CO., Columbus, Ohio, U. S. A.

Toronto Agents—A. R. WILLIAMS MACHINERY CO.
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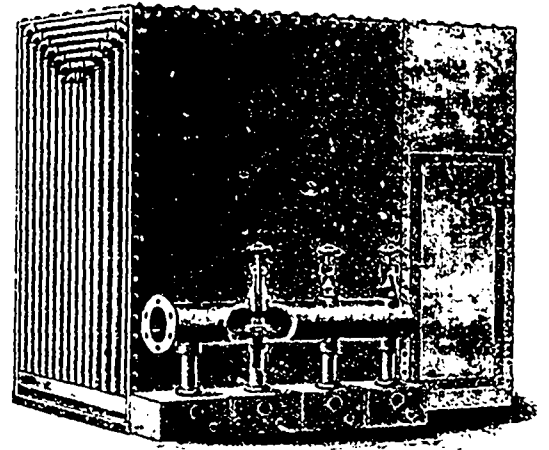
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FOR DRY ROOMS OF EVERY DESCRIPTION, BUILDINGS OF ALL SIZES AND FOR ALL PURPOSES, but chiefly used at present in **Factories, Hospitals, Churches, Theaters, etc.**

This Heater will give 5% more heat with a given heating surface than any other on the market.

-For prices and particulars write

McEachren Heating & Ventilating Co.,
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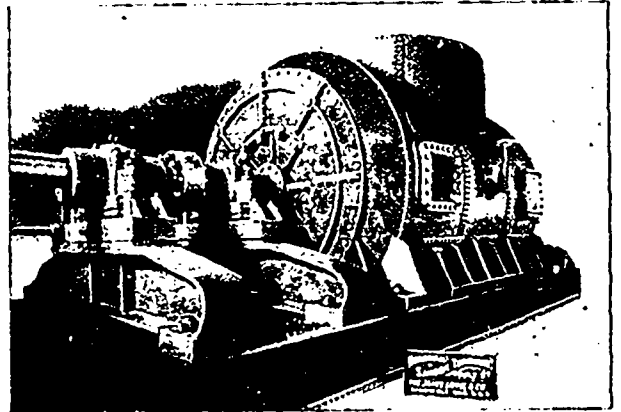
unexcelled for use in

ELECTRIC POWER PLANTS.

Built Upright or Horizontal,
Single or in Pairs.

Unequaled for Speed, Power, Easy Regulation
and High Efficiency.

THE WM. HAMILTON MFG. CO., Limited
Peterborough, - Ontario.



Petrie's Machinery Depot

ENGINES AND BOILERS

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WOOD-WORKING MACHINERY

SAW MILLS

ENGINEERS' AND MILL MEN'S

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London Machine Tool Co.
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chine Co., Cleveland, Ohio.
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Prices and Descriptions of NEW AND SECOND-HAND
MACHINES on Application.



FULL MOUNTED
DERBY SCREW PLATE NO. 119.
1/4 5/16 3/8 7/16 1/2 5/8 3/4 7/8 1"
WITH ONE No. 9 AND ONE No. 11 TAP WRENCH

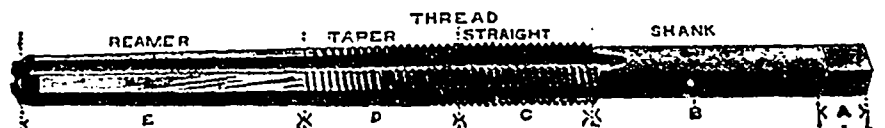


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STAY BOLT TAPS, all diameters and lengths up to 94 inches.
SPINDLE STAY BOLT TAPS and TAPS for Screw
Machines, and TAPS for all uses,
Regular and Full Mounted Reece and Derby Plates, Bicycle
and Machinists' Plates, etc., etc.



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Rock Island, Que.



When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

SITUATION WANTED

A practical mechanic, with first-class references, 31 years of age. Has held positions of Master Mechanic, Superintendent and General Foreman of Iron Works. Well acquainted with modern methods and management. Can be engaged immediately.

Address, C. M. G.,
Care Canadian Manufacturer, Toronto.

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*Always
Up to Date*

**WEBSTER'S
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A Dictionary of ENGLISH,
Biography, Geography, Fiction, etc.

The New and Enlarged
Edition Contains

25,000 New Words

New Gazetteer of the World
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containing names of over 10,000 noteworthy
persons, with nationality, occupation, date
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United States Commissioner of Education,

New Plates 2380 Quarto Pages
Rich Bindings 5000 Illustrations

We also publish

Webster's Collegiate Dictionary
with Glossary of Scottish Words and Phrases.
1100 Pages, 1100 Illustrations. Size 7 1/2 x 5 1/2 inches.
"First-class in quality, second-class in size."

LET US SEND YOU FREE

"A Test in Pronunciation" which affords a
pleasant and instructive evening's entertain-
ment. Illustrated pamphlet also free.

G. & C. MERRIAM COMPANY,
Publishers, Springfield, Mass.

To Our Advertisers

Are your special lines mentioned in our
Classified Index?

If not, kindly inform us.

Do it now.

SPRINGS

(OIL TEMPERED)

Made to any shape for
special purposes.

And to stand up to

SEVERE WORK

THE

BAILEY-UNDERWOOD CO., LIMITED

NEW GLASGOW, - NOVA SCOTIA.

Clyde Steel Works SHIPBUILDERS

REPAIRING and ALTERING. EDWARD RAMAGE,

Steel and Composite Hulls our Specialty. Builders of Yachts, Tugs, Launches, Scows, Tanks, Etc. Manager.

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CONVEYING MACHINERY

CATALOGUES AND ESTIMATES FURNISHED

BORDEN & SELLECK CO.

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CHICAGO

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COAL
YARDS
AND
DOCKS



DEEP WELL PUMPS

Steam Geared or Electrically Driven.

Deep Well Pumping Systems for Cities, Railroad,
Mines, Factories, etc.

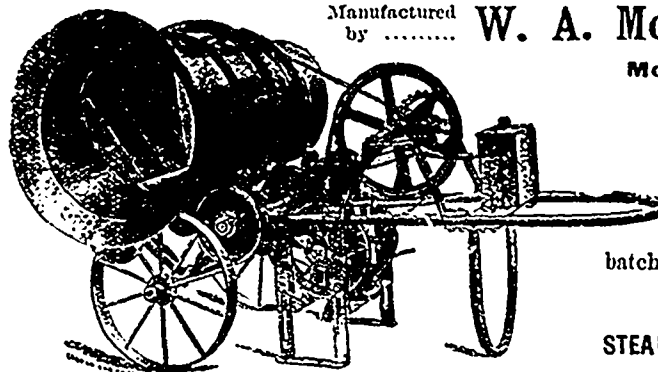
DOWNIE PUMP CO., Downieville, Pa., U.S.A.



THE **McKELVEY CONCRETE MIXERS**

Manufactured by **W. A. McKELVEY**

**McKinnon Building
TORONTO**



These machines are
made to mix either
continuously or in
batches, and can be operated

**EITHER BY HAND,
STEAM OR GASOLINE POWER**

The Bell Telephone Co.

of Canada, Limited

Has extended its

LONG DISTANCE SERVICE

From **Brantford** To

**Mohawk, Oakland and
Scotland, Ont.**

Rates may be obtained from any of the Long Distance Toll
Stations of the Company.

THE **WELLINGTON MILLS**

LONDON, ENGLAND

Genuine EMERY

Oakey's Flexible Twilled Emery Cloth.
Oakey's Flint Paper and Glass Paper.
Oakey's Emery Paper, Black Lead, Etc.

Prize Medal and Highest Award Philadelphia, 1876, for Superiority of Quality, Skilful Manufacture, Sharpness, Durability, and Uniformity of Grain.

Manufacturers

John Oakey & Sons, Limited, Wellington Mills, Westminster Bridge
Road, London, England.

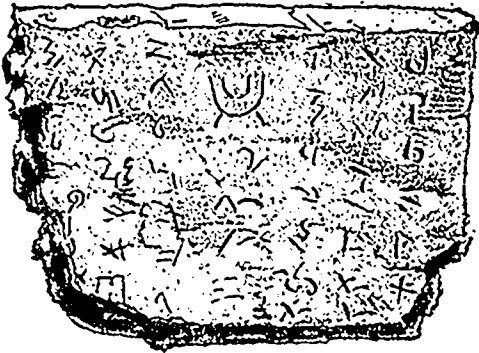
Enquiries should be addressed to

JOHN FORMAN, - 650 Craig St., MONTREAL

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

A BIT OF UNPUBLISHED HISTORY.

And it came to pass in those days (18456 years ago), that an antideluvian named U-jeb bethought himself of a way to cook glue. The wise men of that day have handed down tablets of stone inscribed in ancient hieroglyphics, which being interpreted means: "The U-jeb Perfected Glue-Heating Device."



"The glue is placed in the cup which is kept in boiling water till done."

"DIRECTIONS
--Use whenever you want to make things stick."

And behold, all men, when they desired to cause sticking, made use of the U-jeb Heater,

as it was a most radical change from the orthodox method of making "things stick."

Then, according to the words of the wise man Bel-kow, the fame of U-jeb's invention spread throughout the length and breadth of the land and many men of great means marveled at the usefulness of the heater when they saw its merits, and by twos and threes laid their bags of gold at U-jeb's feet to be used in the making of more heaters and spreading their fame to the uttermost parts of the earth.

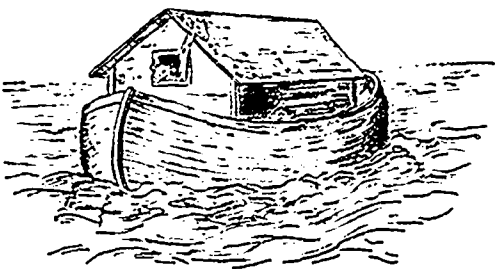
And it came to pass that within three moons U-jeb had formed the first stock company, commenced making and selling the marvelous heater to all peoples with sticking to do until the fame of his invention was known from Zookhib to Caboolum, and from Updab to Uz.



Lo and behold at this time a panic struck the land sore. It was but

the result of the natural depression following the Great Flood.

The great flood was the disastrous result of a prolonged wet spell said to have been of some forty days' and nights' duration. Hence, in due time it happened that the glue heater business began to wane. The men making use of the "U-jeb method of heating glue" were not pleased and forthwith sent back the heaters they had tried and found wanting. They complained: "The glue spills and is wasted; a thick skum is formed which must be taken



away which is a troublous thing to do; the glue becomes foul with fermentation, and with flying and floating things which fall into it; it keeps one laborer busy to stir the glue and withal costs many talents and pieces of gold to operate."

And when these words reached the ears of U-jeb he was exceeding sad and sore for he had visions of wealth which he was just about to grasp. His wife and little ones were wanting a brand new dinosaur and cart which, besides being a pleasure in their eyes, would cause envy to gnaw at the vitals of all antideluvians.

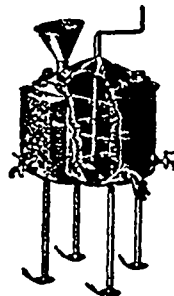
But while the sales were fewer and U-jeb's laborers were forced to seek other work to do, and all those who had sticking to do must use U-jeb's heater for preparing their glue, and generation after generation went on making glue in a cup set in boiling water just as they had seen their fathers do, and their little ones gathered at their side to learn the wasteful way of cooking glue. They stirred and skimmed and spilled.



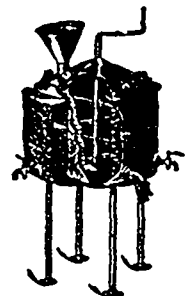
And so on down through the ages when the Pyramids were building, when Romulus and Remus were clinging to their wolfish foster-mother, when the clank of armored steeds and men marked the passing of another band of crusaders, when Columbus discovered America, when the colonists threw off the British yoke, men cooked their glue in open pots set in boiling water, and stirred and ladeled out the sticky mass by hand.

Until at last, after countless ages of the use and abuse of this very useful and indispensable commodity, "glue," U-jeb's wonderful (in its time) heater received a jolt. The jolt was caused by the introduction of the **WETMORE PATENT GLUE HEATER**. And were we gifted in hieroglyphics we would send thundering back through the ages great tablets of stone bearing these words:

WITH THE
WETMORE



- NO MORE SKIMMING
- NO MORE STIRRING
- NO MORE SPILLING
- NO MORE CRUSTING
- NO MORE EVAPORATION
- NO MORE SOURING
- NO MORE THICKENING
- NO MORE ODOR
- NO WASTE



Sent on thirty days' trial.

ADVANCE MACHINERY CO.,

23 SOUTH HURON ST.

TOLEDO, OHIO.

COAL SCREENS

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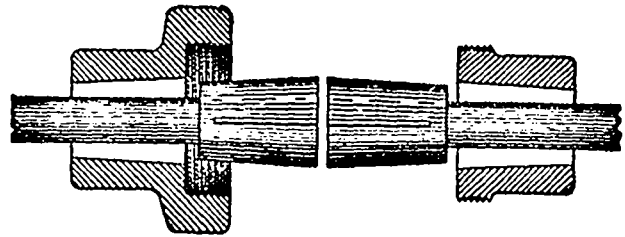
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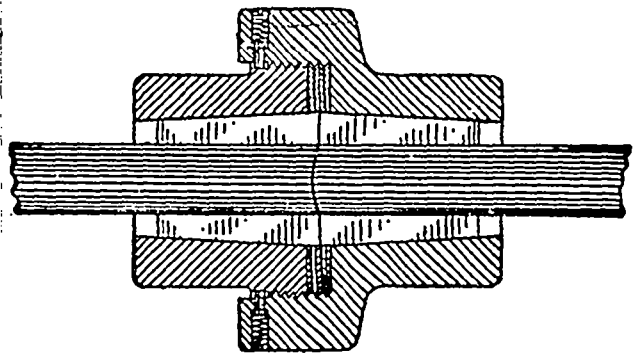
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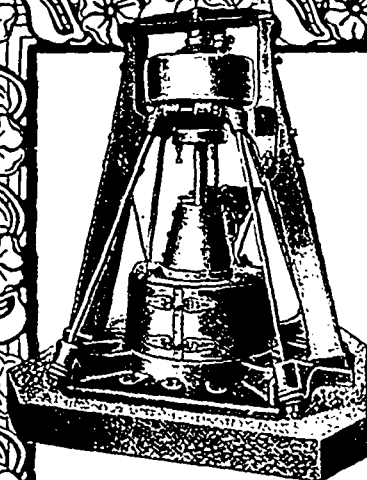


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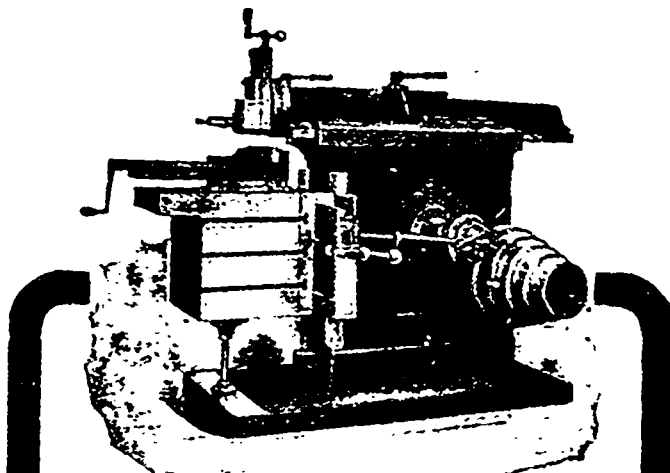
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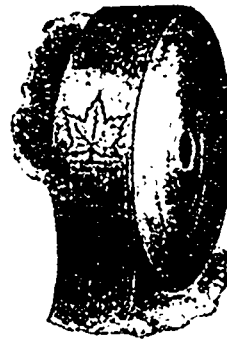
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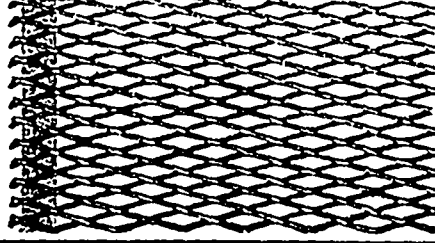
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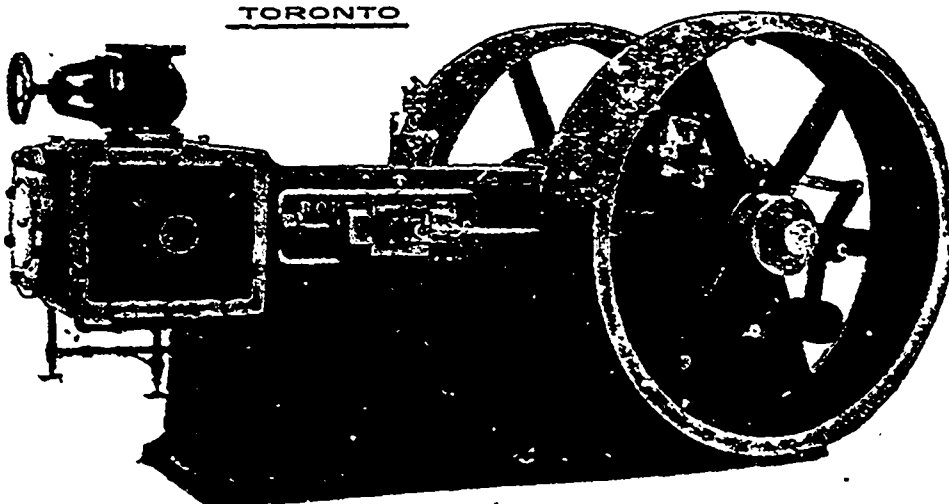
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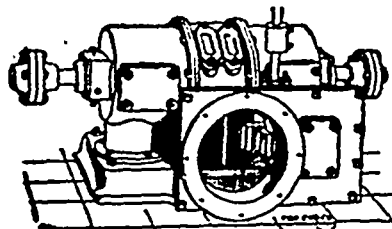
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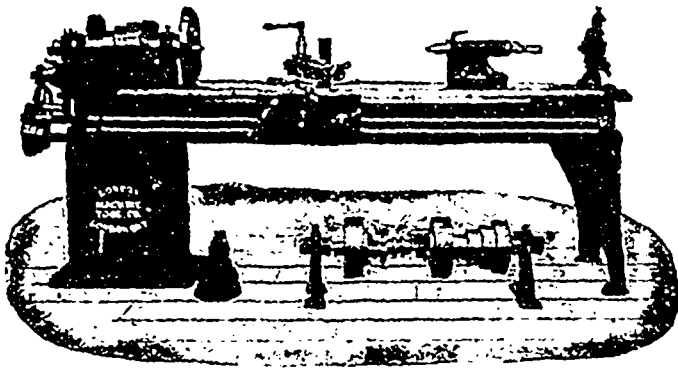
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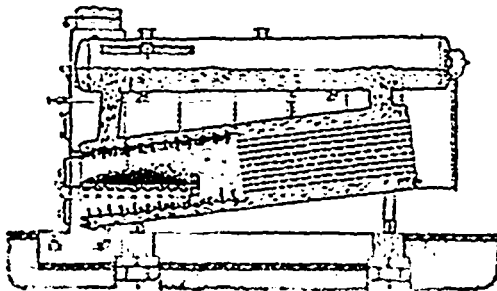
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 Carlin's, Thomas Sons Co., Allegheny, Pa.
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 Hopkins, F. H. & Co., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Sir, G. S. & Sons, Warton, Ont.

Contractor's Plants

Allis-Chalmers-Bullock, Limited, Montreal.
 Hopkins, F. H. & Co., Montreal.
 Petrie, H. W., Toronto.
 Von der Osten, E. & Co., Toronto.
 Williams, A. R. Machinery Co., Toronto.

Conveying Machinery

Allis-Chalmers-Bullock, Limited, Montreal.
 Babcock & Wilcox, Limited, Montreal.
 Borden & Selleck Co., Chicago, Ill.
 Buhl Malleable Co., Detroit, Mich.
 Canada Foundry Co., Toronto.
 Dodge Mfg. Co., Toronto.
 Jeffrey Mfg. Co., Columbus, Ohio.
 McDougall, John, Caledonian Iron Works Co., Montreal.

Perrin, William R. & Co., Limited, Toronto.
 Pittsburg Shafting Co., Detroit, Mich.
 Rossendale Belting Co., Toronto.

Copper Materials

Greening, B. Wire Co., Hamilton, Ont.
 Phillips, Eugene F. Electrical Works, Montreal.
 Syracuse Smelting Works, Montreal.
 Wire & Cable Co., Montreal.

Corundum

Canada Corundum Co., Toronto.

Corundum Wheels

Canadian Corundum Wheel Co., Hamilton, Ont.
 Rice Lewis & Son, Toronto.

Covers

McCullough-Dalsell Crucible Co., Pittsburg, Pa.
 Pittsburg Crucible Works, Pittsburg, Pa.

Crayons

Lowell Crayon Co., Lowell, Mass.

Crucibles

Dixon, Joseph, Crucible Co., Jersey City, N.Y.
 McCullough-Dalsell Crucible Co., Pittsburg, Pa.
 Pittsburg Crucible Works, Pittsburg, Pa.
 Syracuse Smelting Works, Montreal.

Crucible Caps and Nozzles

McCullough-Dalsell Crucible Co., Pittsburg, Pa.
 Pittsburg Crucible Works, Pittsburg, Pa.

Crucible Covers and Stoppers

McCullough-Dalsell Crucible Co., Pittsburg, Pa.
 Pittsburg Crucible Works, Pittsburg, Pa.

Dies (Socket, Sewer Pipe and Tilo)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Directories

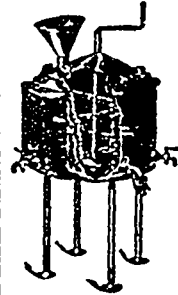
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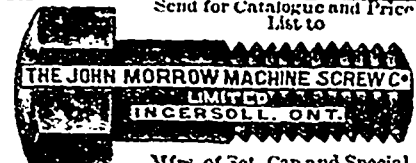
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Drills

Allis-Chalmers-Bullock, Limited, Montreal.
 Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 London Machine Tool Co., London, Ont.
 Petrie, H. W., Toronto.
 Pittsburgh Shafting Co., Detroit, Mich.

Drills (Pneumatic and Rock)

Allis-Chalmers-Bullock, Limited, Montreal.
 Canadian Rand Drill Co., Sherbrooke, Que.
 Jeffrey Mfg. Co., Columbus, Ohio.

Drills (Twist)

Cleveland Twist Drill Co., Cleveland, Ohio.
 Pittsburg Shafting Co., Detroit, Mich.

Drop Forgings

Globe Machine & Stamping Co., Cleveland, Ohio.

Drop Forging Dies

Globe Machine & Stamping Co., Cleveland, Ohio.

Dry Kiln Apparatus

Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Dust and Shavings Separators

Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Dye Stuffs and Chemicals

Bellhouse, Dillon & Co., Montreal.
 Benson, W. T. & Co., Montreal.
 Brunner, Mond & Co., Northwich, England.
 Casella Color Co., New York City.
 Geigy Aniline & Extract Co., New York City.
 Klipstein, A. & Co., New York City.
 McArthur Cornelle & Co., Montreal
 Winn & Holland, Montreal.

DYNAMOS (See Motors and Dynamos)

Electric Meters and Transformers

Allis-Chalmers-Bullock, Limited, Montreal.
 Packard Electric Co., St. Catharines, Ont.

Electric Mine Locomotives

Canadian General Electric Co., Toronto.
 Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 Jeffrey Mfg. Co., Columbus, Ohio.

Electrical Repairs

Volta Electric Repair Works, Toronto.

Electrical Supplies

Allis-Chalmers-Bullock, Limited, Montreal.
 Bristol Co., Waterbury, Conn.
 Canadian General Electric Co., Toronto.
 Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 Electrical Construction Co., London, Ont.
 Forman, John, Montreal.
 Jones & Moore Electric Co., Toronto.
 Packard Electric Co., St. Catharines, Ont.
 Toronto & Hamilton Electric Co., Hamilton, Ont.
 United Electric Co., Toronto.
 Worth & Martin, Toronto.

Elevators and Conveyors

Allis-Chalmers-Bullock, Limited, Montreal.
 Buhl Malleable Co., Detroit, Mich.
 Canadian Otis Elevator Co., Toronto.
 Darling Bros., Montreal.
 Jeffrey Mfg. Co., Columbus, Ohio.

Elevator Insurance

Canadian Casualty & Boiler Insurance Co., Toronto.

Emery and Emery Wheels

Canadian Corundum Wheel Co., Hamilton, Ont.
 Forman, John, Montreal.
 Petrie, H. W., Toronto.

Emery Grinders

Robertson Mfg. Co., Buffalo, N.Y. and Bridgeburg, Ont.

Engineers (Chemical)

Heys, Thomas & Son, Toronto.
 Hunt Robert W. & Co., Chicago, Ill.

Engineers (Civil)

Delano-Osborn Engineering Co., Toronto.
 Kelsch, R. S., Montreal.
 Parke, R. J., Toronto.
 Vogel, C. H., Ottawa.

Engineers (Consulting)

Delano-Osborn Engineering Co., Toronto.
 Electrical Construction Co., London, Ont.
 Electrical Supervision Society, Toronto.
 Hunt, Robert W. & Co., Chicago, Ill.
 Kelsch, R. S., Montreal.
 Marion & Marion, Montreal.
 Parke, R. J., Toronto.
 Perrin, William R. & Co., Limited, Toronto.
 Simpson, T. T., Deschênes, Que.
 Vogel, C. H., Ottawa.
 Volta Electric Repair Works, Toronto.
 Von der Osten, E. & Co., Toronto.

Engineers (Contracting)

Babeck & Wilcox, Limited, Montreal.
 Canada Foundry Co., Toronto.
 Darling Bros., Montreal.
 Electrical Construction Co., London, Ont.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Robb Engineering Co., Amherst, N.S.

Engineers (Electrical)

Allis-Chalmers-Bullock, Limited, Montreal.
 Canadian General Electric Co., Toronto.
 Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 Delano-Osborn Engineering Co., Toronto.
 Electric Engineering & Supply Co., Montreal.
 Electrical Construction Co., London, Ont.
 Electrical Supervision Society, Toronto.
 Kelsch, R. S., Montreal.
 Jones & Moore Electric Co., Toronto.
 Marion & Marion, Montreal.
 Toronto & Hamilton Electric Co., Hamilton, Ont.
 United Electric Co., Toronto.
 Volta Electric Repair Works, Toronto.
 Worth & Martin, Toronto.

Engineers (Mechanical)

Allis-Chalmers-Bullock, Limited, Montreal.
 Babeck & Wilcox, Limited, Montreal.
 Borden & Selleck Co., Chicago, Ill.
 Buhl Malleable Co., Detroit, Mich.
 Darling Bros., Montreal.
 Delano-Osborn Engineering Co., Toronto.
 Electrical Construction Co., London, Ont.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Hunt, Robert W. & Co., Chicago, Ill.
 Kelsch, R. S., Montreal.
 Kerr Engine Co., Waukegan, Ont.
 Marion & Marion, Montreal.
 Robb Engineering Co., Amherst, N.S.
 Sheldon & Sheldon, Galt, Ont.

Engineers (Mill and Hydraulic)

Buhl Malleable Co., Detroit, Mich.
 Delano-Osborn Engineering Co., Toronto.
 Vogel, C. H., Ottawa.

Engineers (Mining)

Buhl Malleable Co., Detroit, Mich.
 Heys, Thomas & Son, Toronto.
 Mills, S. D., Toronto.

Engineers (Municipal)

Von der Osten, E. & Co., Toronto.

Engineers and Contractors

Buhl Malleable Co., Detroit, Mich.
 Jeffrey Mfg. Co., Columbus, Ohio.

Engines and Boilers

Allis-Chalmers-Bullock, Limited, Montreal.
 Babeck & Wilcox, Limited, Montreal.
 Bertram Engine Works Co., Toronto.
 Canada Foundry Co., Toronto.
 Canadian Heine Safety Boiler Co., Toronto.
 Corbett, R. B., Brooklyn, N.Y.
 Goldie & McCullough Co., Galt, Ont.
 Hamilton, Wm. Mfg. Co., Peterborough, Ont.
 Hopkins, F. H. & Co., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 McLachlan Heating & Ventilating Co., Galt, Ont.
 Petrie, H. W., Toronto.
 Petroleum Iron Works Co., Washington, Pa.
 Pittsburgh Shafting Co., Detroit, Mich.
 Robb Engineering Co., Amherst, N.S.
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.
 Williams, A. R. Machinery Co., Toronto.

Engravers

Canadian Manufacturer, Toronto.
 Jones, J. L., Engraving Co., Toronto.

Exhaust Fans

Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Exhaust Heads

Burt Mfg. Co., Akron, Ohio.
 Darling Bros., Montreal.

Factory Sites

Central Ontario Power Co., Peterboro, Ont.

Feed Water Heaters

Babeck & Wilcox, Limited, Montreal.
 Darling Bros., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Petroleum Iron Works Co., Washington Pa

Files

Spence, R. & Co., Hamilton, Ont.

Financial

Bradstreet's, New York City.
 Dun, R. G. & Co., Toronto.
 Neff & Postlethwaite, Toronto.
 Petrie, H. D., Hamilton, Ont.

Filters (Oil)

Babeck & Wilcox, Limited, Montreal.
 Burt Mfg. Co., Akron, Ohio.
 Darling Bros., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Perrin, William R. & Co., Limited, Toronto.

Filters and Filtering Systems (Water)

Babeck & Wilcox, Limited, Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.

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CLASSIFIED INDEX.

(CONTINUED).

Fire Brick and Clay

Dunbar Fire Brick Co., Pittsburgh, Pa.
Hamilton Facing Mill Co., Hamilton, Ont.
Harrison-Walker Refractories Co., Pittsburgh, Pa.
Pennsylvania Fire Brick Co., Lock Haven.
Pittsburgh & Buffalo Co., Buffalo, N.Y.
Reese-Hammond Fire Brick Co., Bolivar, Pa.
Scioto Fire Brick Co., Sciotoville, Ohio.
Stowe-Fuller Co., Cleveland, Ohio.
Wynn, W. H. & Co., West Decatur, Pa.

Fire Escapes

Darling Bros., Montreal.
Meadows, Geo. B., Wire, Iron & Brass Works, Toronto.

Forges and Blowers

Canada Foundry Co., Toronto.
McEachren Heating & Ventilating Co., Galt, Ont.
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Founders

Canada Foundry Co., Toronto.
Cowan & Co., Galt, Ont.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
Goldie & McCullough Co., Galt, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Sinclair, G. S. & Sons, Warton, Ont.

Foundry Facings and Supplies

Hamilton Facing Mill Co., Hamilton, Ont.

Fuel Economizers

Babcock & Wilcox, Limited, Montreal.
Sturtevant, B. F. Co., Hyde Park, Mass.

Furniture (Lodge, Opera and School)

Canadian Office & School Furniture Co., Preston, Ont.

Galvanizing

Ontario Wind Engine & Pump Co., Toronto.

Galvanizing and Tinning Machinery and Furnaces (Wire)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Gas and Gasoline Engines

Goldie & McCullough Co., Galt, Ont.
Morrison, T. A. & Co., Montreal.
Robertson Mfg. Co., Buffalo, N.Y. and Bridgeburg, Ont.

Gauges (Recording Pressure)

Bristol Co., Waterbury, Conn.

Gauges (Steam)

American Steam Pump Co., Battle Creek, Mich.
Penberthy Injector Co., Windsor, Ont.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Gauges (Water)

Babcock & Wilcox, Limited, Montreal.
Penberthy Injector Co., Windsor, Ont.

Generators

Allis-Chalmers-Bullock, Limited, Montreal.
Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Phillips, Eugene F., Electrical Works, Montreal.
Toronto & Hamilton Electric Co., Hamilton, Ont.
Volta Electric Repair works, Toronto.

Gloves, Mittens and Moccasins

Storey, W. H. & Son, Acton, Ont.

Glue Heaters

Advance Machinery Co., Toledo, Ohio.

Glue Room Equipment

Advance Machinery Co., Toledo, Ohio.

Government Notices

Factory Inspectors.
Minister of Agriculture.

Graphite

Dixon, Jos., Crucible Co., Jersey City, N.J.
McCullough-Dalzell Crucible Co., Pittsburgh, Pa.
Pittsburg Crucible Works, Pittsburgh, Pa.

Grease Cups

Penberthy Injector Co., Windsor, Ont.

Grinding Machinery

Canadian Corundum Wheel Co., Hamilton, Ont.

Grinding Pans

Carlin's, Thomas Sons Co., Allegheny, Pa.

Hardware

Butterfield & Co., Rock Island, Que.
Cleveland Twist Drill Co., Cleveland, Ohio.
Gartshore, John J., Toronto.
Globe Machine & Stamping Co., Cleveland, Ohio.
Hopkins, F. H. & Co., Montreal.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Rice Lewis & Son, Toronto.
Ryall Machine Screw Co., Montreal.
Stanyon Metallic Furniture Co., Toronto.

Heating and Ventilating Apparatus

Darling Bros., Montreal.
McEachren Heating & Ventilating Co., Galt, Ont.
Sheldon & Sheldon, Galt, Ont.
Stevens, Alfred J., Toronto.
Sturtevant, B. F. Co., Boston, Mass.

Hoisting Engines

Bertram Engine Works Co., Toronto.

Hoists (Chain and Pneumatic)

Allis-Chalmers-Bullock, Limited, Montreal.
Canadian Rand Drill Co., Sherbrooke, Que.
Hopkins, F. H. & Co., Montreal.

Hose (Fire and Pneumatic)

Gutta Percha & Rubber Mfg. Co., Toronto.
McLaren, J. C., Belting Co., Montreal and Toronto.

Hydrants

Kerr Engine Co., Walkerville, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.

Hydraulic Accumulators

McDougall, John, Caledonian Iron Works Co., Montreal.

Hydraulic Machinery

Canada Foundry Co., Toronto.
Darling Bros., Montreal.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Perrin, William R. & Co., Limited, Toronto.
Petrie, H. W., Toronto.
Wilson, J. C. & Co., Glenora, Ont.

Industrial Plants

Von der Osten, E. & Co., Toronto.

Insulated Wires and Cables

Phillips, Eugene F., Electrical Works, Montreal.
Wire & Cable Co., Montreal.

Iron and Steel Specialties

Abbott, William, Montreal.
Armstrong Mfg. Co., Bridgeport, Conn.
Bailey-Underwood Co., New Glasgow, N. S.
Bourne-Fuller Co., Cleveland, Ohio.
Brown & Co., Paris, Ont.
Buhl Malleable Co., Detroit, Mich.
Canada Foundry Co., Toronto.
Cleveland Twist Drill Co., Cleveland, Ohio.
Leslie, A. G. & Co., Montreal.
Lysaght, John, Limited, Bristol, England and Montreal.
Meadows, Geo. B., Wire, Iron & Brass Works Co., Toronto.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Petrie, H. W., Toronto.
Petroleum Iron Works Co., Washington, Pa.
Pittsburgh Shafting Co., Detroit, Mich.
Rice Lewis & Son, Toronto.
Ryall Machine Screw Co., Montreal.
Sinclair, G. S. & Sons, Warton, Ont.

Injectors

Canada Foundry Co., Toronto.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Penberthy Injector Co., Windsor, Ont.
Williams, A. R. Machinery Co., Toronto.

Iron and Steel Inspection

Hunt, R. W. & Co., Chicago, Ill.

Lamps--Electric

Allis-Chalmers-Bullock, Limited, Montreal.
Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Forman, John, Montreal.
Packard Electric Co., St. Catharines, Ont.
Sunbeam Incandescent Lamp Co., Toronto and St. Catharines, Ont.

Lathes

Cowdrey, G. H. Machine Works, Fitchburg, Mass.
London Machine Tool Co., London, Ont.
Petrie, H. W., Toronto.
Williams, A. R. & Co., Toronto.

Lathes (Wood-working)

Cowan & Son, Galt, Ont.
Goldie & McCullough Co., Galt, Ont.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Lubricators

Penberthy Injector Co., Windsor, Ont.



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Vancouver, B.C.	Winnipeg, Man.

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CLASSIFIED INDEX.

(CONTINUED)

Machinists

Bertram Engine Works Co., Toronto.
Buhl Malleable Co., Detroit, Mich.
Goldie & McCullough Co., Galt, Ont.
London Machine Tool Co., London, Ont.
Worth & Martin Toronto.

Machinists' Supplies

Armstrong Mfg. Co., Bridgeport, Conn.
Buhl Malleable Co., Detroit, Mich.
Butterfield & Co., Rock Island, Que.
Cleveland Twist Drill Co., Cleveland, Ohio
Goldie & McCullough Co., Galt, Ont.
Gutta Percha & Rubber Mfg. Co., Toronto.
Hopkins, F. H. & Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
London Machine Tool Co., London, Ont.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Robertson Mfg. Co., Buffalo, N.Y. and Bridgeburg, Ont.
Ryall Machine Screw Co., Montreal.
Sinclair, G. S. & Sons, Wiarion, Ont.
Worth & Martin, Toronto.

Machine Tools

Abbott, William, Montreal.
Bertram, John & Sons Co., Dundas, Ont.
Cleveland Twist Drill Co., Cleveland, Ohio.
Cowdry, C. H. Machine Works, Fitchburg, Mass.
Darling Bros., Montreal.
London Machine Tool Co., London, Ont.
Petrie, H. W., Toronto.
Robertson Mfg. Co., Buffalo, N.Y. and Bridgeburg, Ont.

Machinery Repairs

Bertram Engine Works Co., Toronto.

Malleable Iron Castings

Buhl Malleable Co., Detroit, Mich.
McKinnon Dashi Metal Works Co., St. Catharines, Ont.
Smith's Falls Malleable Castings Co., Smith's Falls, Ont.

Marine and Stationary Engines and Boilers

Allis-Chalmers-Bullock, Limited, Montreal.
Bertram Engine Works Co., Toronto.

Mechanical Draft

Babeock & Wilcox, Limited, Montreal.
McEachren Heating & Ventilating Co., Galt, Ont.
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Metal Stamping

Globe Machine & Stamping Co., Cleveland, Ohio.
Stanyon Metallic Furniture Co., Toronto.

Metallurgists

Mills, S. D., Toronto.

Mill Machinery and Supplies

Allis-Chalmers-Bullock, Limited, Montreal.
Armstrong Mfg. Co., Bridgeport, Conn.
Buhl Malleable Co., Detroit, Mich.
Cleveland Twist Drill Co., Cleveland, Ohio.
Cowan & Co., Galt, Ont.
Darling Bros., Montreal.
Fleming, W. A. & Co., Montreal.
Gartshore, John J., Toronto.
Goldie & McCullough Co., Galt, Ont.
Greedy, Wm. & J. G., Toronto.
Gutta Percha & Rubber Mfg. Co., Toronto.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Hamilton, Wm., Mfg. Co., Peterborough, Ont.
Hay, Peter Knife Co., Galt, Ont.
Hopkins, F. H. & Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
London Machine Tool Co., London, Ont.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.

McLaren, D. K., Montreal and Toronto.

Penberthy Injector Co., Windsor, Ont.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Rice Lewis & Son, Toronto.
Robb Engineering Co., Amherst, N.S.
Robertson Mfg. Co., Buffalo, N.Y. and Bridgeburg, Ont.
Ryall Machine Screw Co., Montreal.
Sinclair, G. S. & Sons, Wiarion, Ont.
Spence, R. & Co., Hamilton, Ont.
Wilson, J. C. & Co., Glenora, Ont.

Miners' Lamps

Allis-Chalmers-Bullock, Limited, Montreal.
Anton, John & Son, Monongahela, Pa.

Mining Machinery

Allis-Chalmers-Bullock, Limited, Montreal.
Buhl Malleable Co., Detroit, Mich.
Canadian Rand Drill Co., Sherbrooke, Que.
Cleveland Twist Drill Co., Cleveland, Ohio.
Corbett, R. B., Brooklyn, N.Y.
Gartshore, John J., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Hopkins, F. H. & Co., Montreal.

Jeffrey Mfg. Co., Columbus, Ohio.
McDougall, John, Caledonian Iron Works Co., Montreal.

Perrin, William R. & Co., Limited, Toronto.
Petrie, H. W., Toronto.

Williams, A. R. Machinery Co., Toronto.

Motors and Dynamos

Allis-Chalmers-Bullock, Limited, Montreal.
Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Corbett, R. B., Brooklyn, N.Y.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Petrie, H. W., Toronto.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Volta Electric Repair Works, Toronto.

Moulding Sand

Hamilton Facing Mills Co., Hamilton, Ont.

Novelty Manufacturers

Worth & Martin, Toronto.

Nozzles

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Office and Bank Fittings

Canadian Office & School Furniture Co., Preston, Ont.
Meadows, Geo. B., Wire, Iron & Brass Works Co., Toronto.

Oils and Lubricants

Dixon, Jos. Crucible Co., Jersey City, N.J.
Fleming, W. A. & Co., Montreal.
Hart & Co., Chicago, Ill.
Imperial Oil Co., Petrolia, Ont.
Queen City Oil Co., Toronto.

Oil Cloth

Dominion Oil Cloth Co., Montreal.

Oil Cups

Penberthy Injector Co., Windsor, Ont.

Paints and Colors

Bellhouse, Dillon & Co., Montreal.
Fleming, W. A. & Co., Montreal.
Geigy, Aniline & Extract Co., New York City.
Klipstein, A. & Co., New York City.
McArthur, Cornelio & Co., Montreal.

Paper Manufacturers

Barber, Wm., & Bros., Georgetown, Ont.
Toronto Paper Mfg. Co., Cornwall, Ont.

Patents

Budden, Hanbury, A., Montreal.
Case, Egerton K., Toronto.
Fetherstonhaugh & Co., Toronto.
Marion & Marion, Montreal.

Perforated Metals

Globe Machine & Stamping Co., Cleveland, Ohio.
Greening, B. Wire Co., Hamilton, Ont.
Stanyon Metallic Furniture Co., Toronto.

Personal Accident

Canadian Casualty & Boiler Insurance Co., Toronto

Phosphorizers

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Pig Iron

Bourne-Fuller Co., Cleveland, Ohio.
Canada Iron Furnace Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Shepard, Charles G., Buffalo, N.Y.
Syracuse Smelting Works, Montreal.

Pipe (Riveted, Iron and Steel)

Babeock & Wilcox, Limited, Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.
Petroleum Iron Works Co., Washington, Pa.

Pipe Threading Machines

Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.
Petrie, H. W., Toronto.
Rice Lewis & Son, Toronto.

Pipes and Tubes

Abbott, William, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.
Corbett, R. B., Brooklyn, N.Y.
Gartshore-Thomson, Pipe & Foundry Co., Hamilton, Ont.
Montreal Pipe Foundry Co., Montreal.
Rice Lewis & Son, Toronto.

Plaster

Albert Mfg. Co., Hillsborough, N.B.

Plates

Bourne-Fuller Co., Cleveland, Ohio.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Rice Lewis & Son, Toronto.

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CLASSIFIED INDEX.

(CONTINUED).

Plumbago

Hamilton Facing Mills Co., Hamilton, Ont.
McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Pneumatic Tools

Allis-Chalmers-Bullock, Limited, Montreal.
Canadian Hand Drill Co., Sherbrooke, Que.

Pointer Rolls (For Rods and Wire)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Portland Cement

Canadian Portland Cement Co., Deseronto, Ont.
Owen Sound Portland Cement Co., Owen Sound, Ont.
Rathbun Co., Toronto.
St. Lawrence Portland Cement Co., Montreal.

Power Plants—Equipments

Allis-Chalmers-Bullock, Limited, Montreal.
Babeock & Wilcox, Limited, Montreal.
Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Cleveland Twist Drill Co., Cleveland, Ohio.
Corbett, R. B., Brooklyn, N.Y.
Darling Bros., Montreal.
Delano-Osborn Engineering Co., Toronto.
Electrical Construction Co., London, Ont.
Goldie & McCullough, Galt, Ont.
Gutta Percha & Rubber Mfg. Co., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Kelsch, H. S., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.
Packard Electric Co., St. Catharines, Ont.
Perrin, William H. & Co., Limited, Toronto.
Petrie, H. W., Toronto.
Phillips, Eugene F., Electrical Works, Montreal.
Pittsburgh Shafting Co., Detroit, Mich.
Robb Engineering Co., Anlierst, N.S.
Sinclair, G. S. & Sons, Warton, Ont.
Sturtevant, B. F. Co., Boston, Mass.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Wilson, J. C. & Co., Glenora, Ont.

Presses (Tile, Sewer Pipe, Nozzles and Sleeves)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Pulleys

Darling Bros., Montreal.
Goldie & McCullough Co., Galt, Ont.
Greay, Wm. & J. G., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
McDougall, John, Caledonian Iron Works Co., Montreal.
McLaren, J. C., Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Wilson, J. C. & Co., Glenora, Ont.

Pumps and Pumping Machinery

Allis-Chalmers-Bullock, Limited, Montreal.
Canada Foundry Co., Toronto.
Corbett, R. B., Brooklyn, N.Y.
Darling Bros., Montreal.
Downie Pump Co., Downieville, Pa.
Goldie & McCullough Co., Galt, Ont.
Kerr Engine Co., Walkerville, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Ontario Wind Engine & Pump Co., Toronto.
Petrie, H. W., Toronto.

Punches and Shears

Globe Machine & Stamping Co., Cleveland, Ohio.
Petrie, H. W., Toronto.

Purifiers

Babeock & Wilcox, Limited, Montreal.
Goldie & McCullough Co., Galt, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.

Purifying and Softening Systems (Water)

Babeock & Wilcox, Limited, Montreal.
Darling Bros., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.

Railroads

Chicago & North-Western Ry., Toronto & St. Paul, Minn.
Quebec Central Railway, Sherbrooke, Que.

Railway Supplies

Algoma Steel Co., Sault Ste. Marie, Ont.
Allis-Chalmers-Bullock, Limited, Montreal.
Gartshore, John J., Toronto.
Greening, B. Wire Co., Hamilton, Ont.
Gutta Percha & Rubber Mfg. Co., Toronto.
Hopkins, F. H. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Phillips, Eugene F., Electrical Works, Montreal.

Reamers

Butterfield & Co., Roel. Island, Que.
Cleveland Twist Drill Co., Cleveland, Ohio.

Rivets

Bourne-Fuller Co., Cleveland, Ohio

Rock and Ore Crushers

Allis-Chalmers-Bullock, Limited, Montreal.
Bradley Pulverizer Co., Boston, Mass.

Roller Bearings

Pittsburg Shafting Co., Detroit, Mich.

Rolling Mill Engineers

Bourne-Fuller Co., Cleveland, Ohio.

Roofing

Bourne-Fuller Co., Cleveland, Ohio.
Metallic Roofing Co., Toronto.

Rubber Goods

Gutta Percha & Rubber Mfg. Co., Toronto.
Pittsburg Shafting Co., Detroit, Mich.

Rubber Packing

Gutta Percha & Rubber Mfg. Co., Toronto.

Rubber Washing Tubs

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Rural Mail Boxes

Globe Machine & Stamping Co., Cleveland, Ohio.

Safes and Vaults

Goldie & McCullough Co., Galt, Ont.

Screws

Morrow, John, Machine Screw Co., Ingersoll, Ont.
Ryall Machine Screw Co., Montreal.

Screw Plates

Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.

Sewer Pipe

Pittsburgh & Buffalo Co., Buffalo, N.Y.

Shafting

Allis-Chalmers-Bullock, Limited, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Goldie & McCullough Co., Galt, Ont.
Greay, Wm. & J. G., Toronto.
Jeffrey Mfg. Co., Columbus, Ohio.
McDougall, John, Caledonian Iron Works Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.

Shafting Coupler

Sinclair, G. S. & Sons, Warton, Ont.

Shapers and Carvers

Advance Machinery Co., Toledo, Ohio.

Shear Knives

Carlin's, Thomas Sons Co., Allegheny, Pa.
Hay, Peter Knife Co., Galt, Ont.

Sheets (Iron and Steel)

Abbott, William, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Leslie, A. C. & Co., Montreal.
Lysaght, John, Limited, Bristol, England and Montreal.

Sheet Metal Goods

Globe Machine & Stamping Co., Cleveland, Ohio.
Metallic Roofing Co., Toronto.
Stanyon Metallic Furniture Co., Toronto.

Sheet Metal Stamping

Globe Machine & Stamping Co., Cleveland, Ohio.
Metallic Roofing Co., Toronto.
Ryall Machine Screw Works, Montreal.
Stanyon Metallic Furniture Co., Toronto.

Ship Builders

Bertram Engine Works Co., Toronto.
Clyde Steel Works, Toronto.

Smoke Stacks

Hamilton, Wm. Mfg. Co., Peterborough, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Petroleum Iron Works Co., Washington, Pa.

Solder

Globe Machine & Stamping Co., Cleveland, Ohio.
Syracuse Smelting Co., Montreal.

Special Machinery

Allis-Chalmers-Bullock, Limited, Montreal.
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Stanyon Metallic Furniture Co., Toronto.

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CLASSIFIED INDEX.

(CONTINUED).

Springs—Flat and Spiral
Bailey-Underwood Co., New Glasgow N. S.

Sprinkler Insurance
Canadian Casualty & Boiler Insurance Co., Toronto.

Stamps and Stencils
Globe Machine & Stamping Co., Cleveland, Ohio.
Hamilton Stamp & Stencil Works, Hamilton, Ont.
Stanyon Metallic Furniture Co., Toronto.

Steam Pumps
Allis-Chalmers-Bullock, Limited, Montreal.
American Steam Pump Co., Battle Creek, Mich.
Canada Foundry Co., Toronto.
Darling Bros., Montreal.
Goldie & McCullough Co., Galt, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Williams, A. R. Machinery Co., Toronto.

Steam Separators
Babcock & Wilcox, Limited, Montreal.
Darling Bros., Montreal.
McEachren Heating & Ventilating Co., Galt, Ont.

Steam Specialties
Darling Bros., Montreal.
McEachren Heating & Ventilating Co., Galt, Ont.
Penberthy Injector Co., Windsor, Ont.
Sheldon & Sheldon, Galt, Ont.

Steam Valves
American Steam Pump Co., Battle Creek, Mich.
Babcock & Wilcox, Limited, Montreal.
Darling Bros., Montreal.
Kerr Engine Co., Walkerville, Ont.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Steel and Composite Ships
Bertram Engine Works Co., Toronto.

Steel Rails
Algoma Steel Co., Sault Ste. Marie, Ont.
Drummond, McCall & Co., Montreal and Toronto.
Gartshore, John J., Toronto.
Hopkins, F. H. & Co., Montreal.

Steel Shafting
Darling Bros., Montreal.
Goldie & McCullough Co., Galt, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Leslie, A. C. & Co., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Pittsburg Shafting Co., Detroit, Mich.
Wilson, J. C. & Co., Glenora, Ont.

Stocks and Dies
Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.
Petrie, H. W., Toronto.
Rice Lewis & Son, Toronto.
Worth & Martin, Toronto.

Stoppers
McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Structural Steel
Abbott, William, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.
Hopkins, F. H. & Co., Montreal.

Suspension Furnaces
Continental Iron Works Co., New York City.

Tanks (Oil and Water)
Canada Foundry Co., Toronto.
Corbett, R. B., Brooklyn, N.Y.
Goldie & McCullough Co., Galt, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Ontario Wind Engine & Pump Co., Toronto.
Petroleum Iron Works Co., Washington, Pa.

Taps and Dies
Butterfield & Co., Rock Island, Que.
Cleveland Twist Drill Co., Cleveland, Ohio.
Globe Machine & Stamping Co., Cleveland, Ohio.
Hamilton Stamp & Stencil Works, Hamilton, Ont.

Tees
Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.

Textile Manufacturers
Dominion Oil Cloth Co., Montreal.
Smith Mfg. Co., Toronto.
Storey, W. H. & Sons, Acton, Ont.

Textile Supplies
McLaren, J. C. Belting Co., Montreal and Toronto.

Thermometers (Recording)
Bristol Co., Waterbury, Conn.

Tin
Leslie, A. C. & Co., Montreal.
Syracuse Smelting Works, Montreal.

Tool Steel
Abbott, William, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Hopkins, F. H. & Co., Montreal.
Leslie, A. C. & Co., Montreal.

Trucks
Corbett, R. B., Brooklyn, N.Y.
Hopkins, F. H. & Co., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.
Sheldon & Sheldon, Galt, Ont.

Trucks (Railway)
Canada Foundry Co., Toronto.

Trucks (Wire Mill Supplies)
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Tubs (Cleaning and Coating Wire)
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Tugs
Bertram Engine Works Co., Toronto.

Tumbling Barrels
Globe Machine & Stamping Co., Cleveland, Ohio.

Turbines
Canada Foundry Co., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Wilson, J. C. & Co., Glenora, Ont.

Typewriters and Supplies
United Typewriter Co., Toronto.

Valves
American Steam Pump Co., Battle Creek, Mich.
Babcock & Wilcox, Limited, Montreal.
Canada Foundry Co., Toronto.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Kerr Engine Co., Walkerville, Ont.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Valves (Rubber)
Gutta Percha & Rubber Mfg. Co., Toronto.

Varnishes
Berry Bros., Walkerville, Ont.

Ventilators
Darling Bros., Montreal.
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Wagon and Carriage Wood Work
Hore, F. W. & Son, Hamilton, Ont.

Washers or Hollinders (Cleaning Rubber)
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Water Purifying Chemicals
Lord, Geo. W. Co., Philadelphia, Pa.
Sleeth, D., Montreal.

Windmills
Ontario Wind Engine & Pump Co., Toronto.

Wire Mill Supplies
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Wire and Wire Rope
Dominion Wire Rope Co., Montreal.
Greening, B. Wire Co., Hamilton, Ont.
Leslie, A. C. & Co., Montreal.
Phillips, Eugene F. Electrical Works, Montreal.
Pittsburg Shafting Co., Detroit, Mich.
Wire & Cable Co., Montreal.

Wire Rope Fittings
Dominion Wire Rope Co., Montreal.

Wire Cloth
Greening, B. Wire Co., Hamilton, Ont.

Wire Drawing Machinery
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Wire Specialties
Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.
Stanyon Metallic Furniture Co., Toronto.

Wood-Working Machinery
Advance Machinery Co., Toledo, Ohio.
Cowan & Co., Galt, Ont.
Crowley, C. H., Machine Works, Fitchburg, Mass.
Goldie & McCullough Co., Galt, Ont.
London Machine Tool Co., London, Ont.
Petrie, H. W., Toronto.
Sheldon & Sheldon, Galt, Ont.
Stentoe, John Shaper Co., Cincinnati, Ohio.
Williams, A. R. Machinery Co., Toronto.

Yachts
Bertram Engine Works Co., Toronto.

Zinc
Leslie, A. C. & Co., Montreal.
Syracuse Smelting Works, Montreal.

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INDEX TO ADVERTISEMENTS.

Where the follo is not given the Advertisement appears at Intervals.

See Classified Index Beginning on Page 89

ofc..... outside front cover.		obc..... outside back cover.	
A	PAGE	PAGE	PAGE
Abbott, William, Montreal	42	Canadian Heino Safety Boiler Co., Toronto	47
Advance Machinery Co., Toledo, Ohio	43	Canadian Manufacturer Pub. Co., Toronto	38
Agriculture, Ontario Minister of, Toronto	38	Canadian Oak Belting Co., Brockville, Ont	47
Albert Mfg. Co., Hillsborough, N.B.	8	Canadian Office & School Furniture Co., Pres- ton, Ont	47
Alexander, John H., Windsor, Ont.	7	Canadian Otis Elevator Co., Hamilton, Ont.	ofc
Algoma Steel Co., Sault Ste. Marie, Ont.	4	Canadian Portland Cement Co., Deseronto, Ont	8
Allis-Chalmers-Bullock, Ltd., Montreal	11	Canadian Rand Drill Co., Sherbrooke, Que	33
American Steam Pump Co., Battle Creek, Mich.	7	Canadian Westinghouse Co., Ltd., Hamilton, Ont	51
Anton, John & Son, Monongahela, Pa.	41	Carlin's, Thomas Sons Co., Allegheny, Pa.	10
Archbold, Dr. Geo., Prescott, Ont.	9	Case, Egerton, R., Toronto	ofc
Armstrong Mfg. Co., Bridgeport, Conn.	39	Casella Color Co., New York and Montreal	40
B		Central Ontario Power Co., Peterboro, Ont.	31
Babcock & Wilcox, Limited, Montreal	ofc	Chapman Double Ball Bearing Co., Toronto	3
Bailey-Underwood Co., New Glasgow, N.S.	35	Chicago & North-Western Railway, B. H. Ben- nett, General Agent, Toronto	32
Bank of Hamilton, Hamilton, Ont.	46	Cleveland Twist Drill Co., Cleveland, Ohio	obc
Barber, Wm. & Bro., Georgetown, Ont.	43	Clyde Steel Works, Toronto	35
Bellhouse, Dillon & Co., Montreal	40	Continental Iron Works, New York, N.Y.	3
Bell Telephone Co.	35-41	Corbett, R. B., Brooklyn, N.Y.	42
Benson, W. T. & Co., Montreal	40	Cowan & Co., Galt, Ont.	3
Berry Bros., Walkerville, Ont	30	Cowdrey, C. H., Machine Works, Fitchburg, Mass	11
Bertram Engine Works Co., Toronto	3	D	
Blagden, Waugh & Co., London, E.C., England	40	Darling Bros., Montreal	ofc
Borden & Selleck Co., Chicago, Ill.	35	Delano-Osborn Engineering Co., Toronto	9
Bourne-Fuller Co., Cleveland, Ohio	4	Dixon, Jos., Crucible Co., Jersey City, N.J.	41
Bradley Pulverizer Co., Boston, Mass	37	Dominion Belting Co., Hamilton, Ont.	38
Bradstreets, Toronto and New York	46	Dominion Oil Cloth Co., Montreal	41
Bremer Machine Tool Co., Kalamazoo, Mich	12	Dominion Wire Rope Co., Montreal	ofc
Bristol Co., Waterbury, Conn	obc	Downie Pump Co., Downieville, Pa.	35
Brown & Co., Paris, Ont.	44	Drummond, McCall & Co., Montreal, Que	4
Brownlee, J., Galt, Ont	7	Dun, R. G. & Co., Toronto	46
Brunner, Mond & Co., Northwich, England	40	Dunbar Fire Brick Co., Pittsburg, Pa	8
Budden, Hanbury A., Montreal	9	E	
Buhl Malleable Co., Detroit, Mich.	obc	Edwards, R. J., Toronto	13
Burt Mfg. Co., Akron, Ohio	32	Electrical Construction Co., London, Ont.	9
Butterfield & Co., Rock Island, Que.	34	Electrical Supervision Society, Toronto	9
C		F	
Canada Corundum Co., Toronto	2	Electric Engineering & Supply Co., Montreal	9
Canada Foundry Co., Toronto	4	Empire Machine and Metal Stamping Co., To- ronto (See Stanyon)	14
Canada Iron Furnace Co., Montreal	4	Engineering Review, London, England	48
Canadian Casualty & Boiler Insurance Co., To- ronto	38	Expanded Metal & Fireproofing Co., Toronto	39
Canadian Corundum Wheel Co., Hamilton, Ont.	33	G	
Canadian General Electric Co., Toronto	13	Gartshore, John J., Toronto	9
D		Gartshore-Thomson Pipe & Foundry Co., Hamil- ton, Ont	2
E		Geigy Aniline & Extract Co., New York, N.Y.	40
F		Globe Machine & Stamping Co., Cleveland, Ohio	38
G		Goldie & McCulloch Co., Galt, Ont.	3
H		Greening, B. Wire Co., Hamilton, Ont	5
I		Greay, Wm. & J. G., Toronto	obc
J		Gutta Percha & Rubber Mfg. Co., Toronto	ofc
K		H	
L		Hamilton Brass Mfg. Co., Hamilton, Ont	ofc
M		Hamilton Facing Mill Co., Hamilton, Ont	obc
N		Hamilton, Wm. Mfg. Co., Peterborough, Ont	34
O		Hamilton Stamp & Stencil Works, Hamilton, Ont	41
P		Hancock, J. M. & Co., Niagara Falls, N.Y.	7
Q		Harbison-Walker Refractories Co., Pittsburg	7
R		Hay, Peter Knife Co., Galt, Ont	10
S		Heys, Thomas & Son, Toronto	9
T		Hoffman, Jules G., Detroit, Mich	6
U		Holden, Arthur P., Toronto	9
V		Hopkins, F. H. & Co., Montreal	5
W		Hore, F. W. & Son, Hamilton, Ont	44
X		Hunt, Robert W. & Co., Chicago, Ill.	9
Y		I	
Z		J	

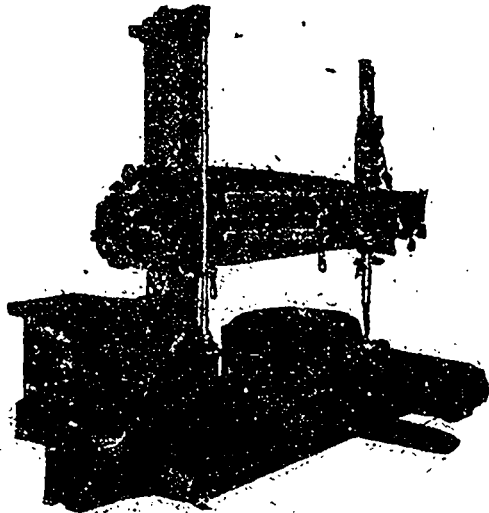
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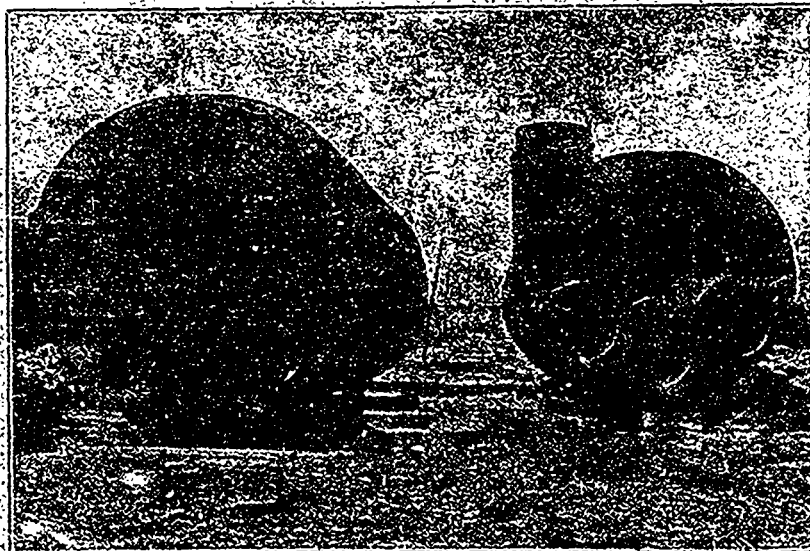
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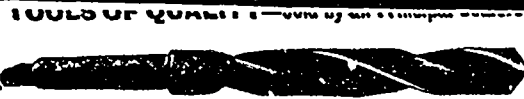
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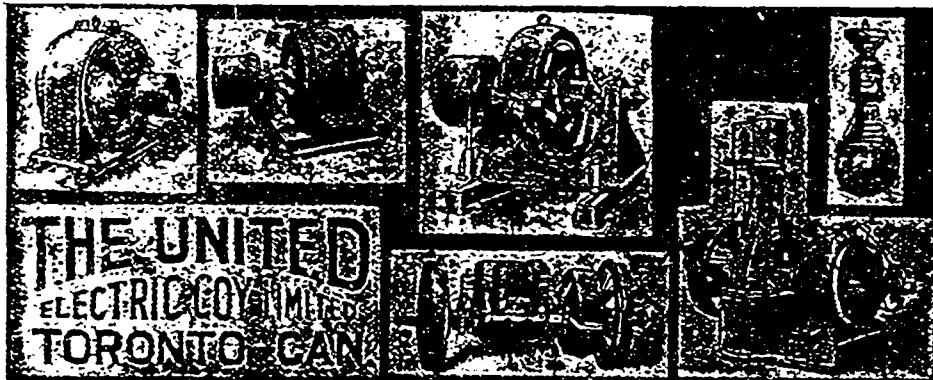
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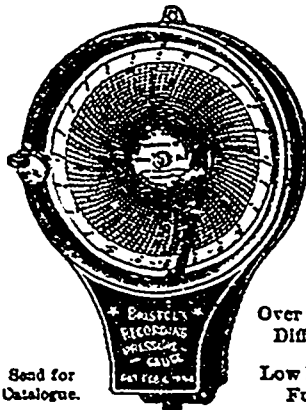


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