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Vol. 38.

TORONTO, JUNE 16, 1899.

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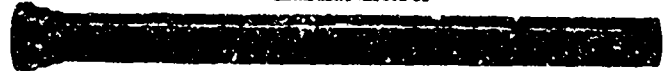
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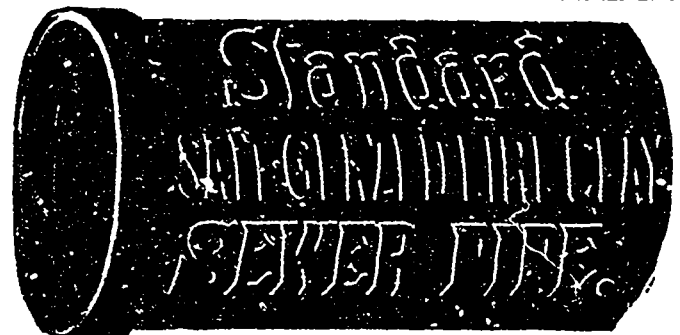
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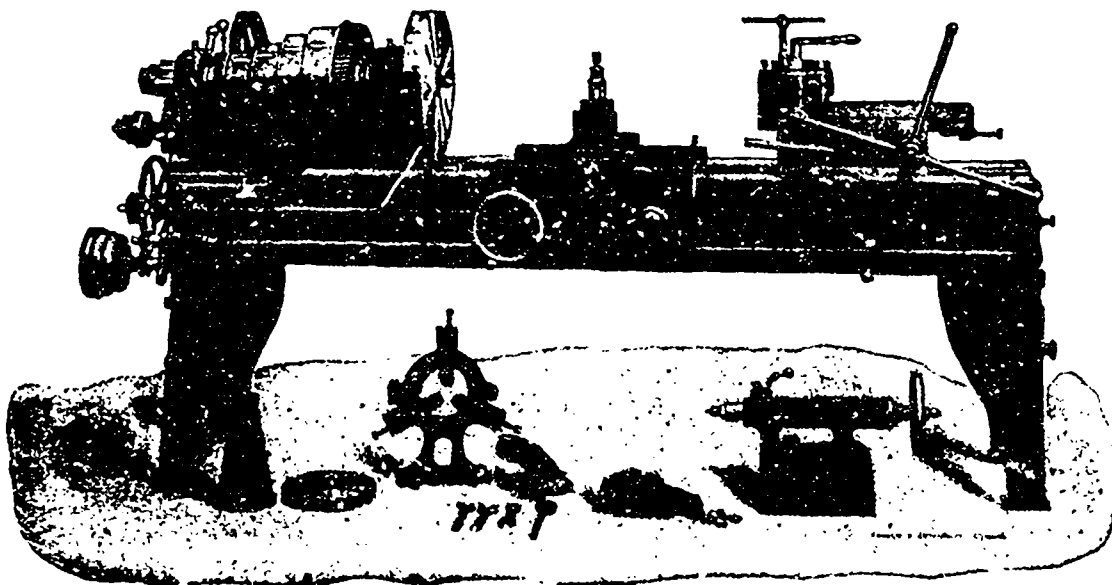
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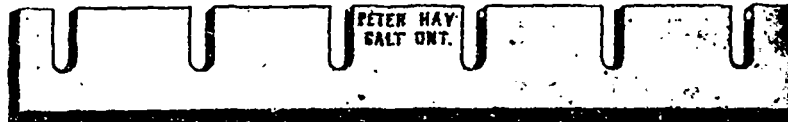
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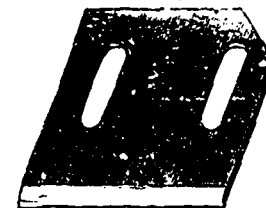
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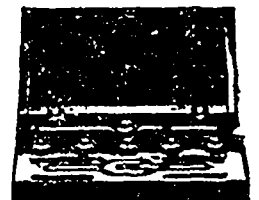
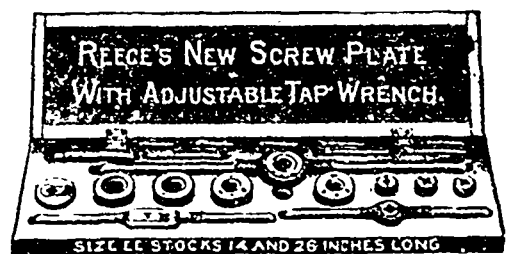
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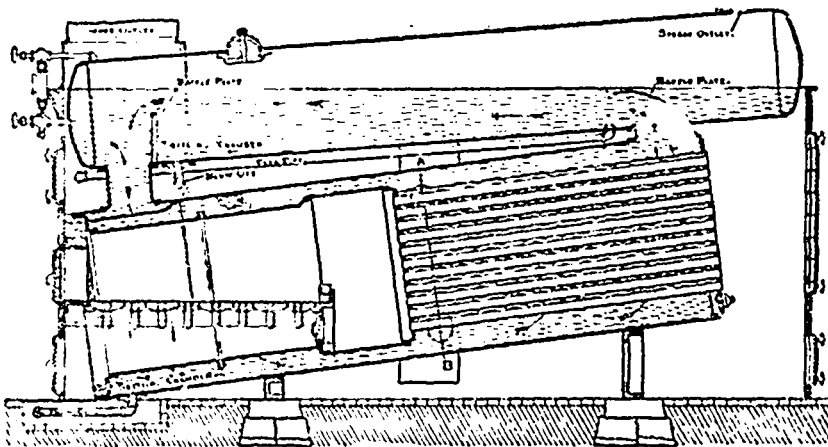
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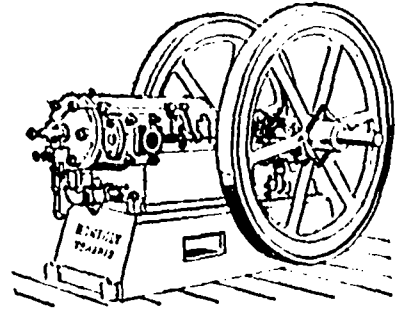
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IRON MANUFACTURING IN CANADA.

An important announcement was made a few days ago in the notice of resolution which the Honorable Mr. Fielding gave in the House of Commons providing for the gradual reduction of the bounties on steel ingots, puddled iron bars and pig iron manufactured in Canada.

It will be remembered that in 1897 it was enacted that the following bounties should be paid: \$3 per ton on steel ingots made from ingredients of which not less than fifty per cent. of their weight consists of pig iron made in Canada, (2) \$3 per ton on puddled iron bars made from Canadian pig-iron, (3) \$3 per ton on pig-iron made from Canadian ore, and \$2 per ton on pig iron made from foreign ore. This Act was to remain in force until 1902.

Our esteemed contemporary, the Monetary Times, undertakes to analyse the iron manufacturing industry of Canada, and gives us some information concerning it as follows:—

Capital has within the past two or three years become interested in Canadian iron manufacturing. Several plants for the production of iron and steel have been established in Ontario. In the Maritime Provinces the Nova Scotia Steel Company has been a large producer. During 1898 this company produced at the works at Ferrona and New Glasgow, 21,627 tons of pig iron, 23,541 tons of steel and 2,276 tons of forgings, in the manufacturing of which they consumed 107,000 tons of coal, 19,000 tons of native ore, 15,000 tons of Newfoundland ore, 6,000 tons of Spanish or Cuban ore, 32,000 tons of coke and 18,000 tons of limestone.

Other ventures are contemplated and from those who are investing capital in the industry has come a request for information as to the probable duration of the bounties. Mr. Fielding now states that the bounties will be abolished by June 30, 1907. Reduction in the amount of them will commence on the 23rd of April, 1902. From this date until June 30, 1903, the bounty will be only ninety per cent. of what it is at present. From July 1, 1903, to June 30, 1904, the bounty will be seventy-five per cent. of the present figures. From July 1, 1904, until June 30, 1905, the bounty will be fifty-five per cent. For the following year the bounty will be thirty-five per cent., and for the final year the bounty will be twenty per cent. It is provided that no bounty will be paid on steel ingots manufactured from puddled iron produced in Canada.

The Monetary Times informs us that the assistance which

these bounties gives is to an infant (?) industry, and thinks that if the industry is not sturdy enough to thrive under these bounties the only conclusion to be drawn is that conditions in Canada are not suited to iron manufacturing. It has confidence, however, that this is not the case, and it is kind enough to believe that within the next few years the iron industry will grow in importance.

It is exceedingly kind of our neighbor to entertain such pleasant anticipations regarding an infant (?) industry the beginning of which was signalized when Champlain was a living character in this country. It shows ignorance of the history of the industry, and of Canada also, but it is excusable. We are happy to learn, too, that the Monetary Times really believes that within the next few years the iron industry will grow in importance.

Mr. James M. Swank, in his just published report to the American Iron and Steel Association, of which he is General Manager, and who is an unchallenged authority in such matters, devotes space to giving the statistics of the Canadian iron trade for 1898, in which he tells of the growth of the industry. He tells us that the production of pig iron in Canada in 1894 amounted to 44,791 gross tons.

In 1895 the production amounted to 37,875 tons, in 1896 to 60,030 tons, and in 1897 to 53,796 tons. In 1898 the production amounted to 68,755 tons, of which about one-eleventh was charcoal iron, the remainder being coke iron. The production of Bessemer pig iron in 1898, included in the figures given above, was 10,200 tons, and the production of basic pig iron was 9,100 tons, all made by one company. The total production of pig iron in 1898 as compared with that of 1897 shows an increase of 14,959 tons. The consumption of limestone by the Canadian furnaces in 1898 amounted to 30,302 tons, against 27,957 tons in 1897.

On December 31, 1898, the unsold stocks of pig iron in Canada which were in the hands of the manufacturers or their agents amounted to 9,979 tons, as compared with 20,265 tons on December 31, 1897, 29,320 tons on December 31, 1896, and 17,800 tons on December 31, 1895. Of the unsold pig iron on hand on December 31, 1898, about four-fifths was charcoal pig iron, the remainder being coke iron.

Canada did not produce any spiegeleisen or ferro-manganese in 1897 or 1898, although some time ago the Mineral Products Company, of Hillsboro, New Brunswick, leased the Bridgeville Furnace, at Bridgeville, Nova Scotia, for this purpose and expected to have the furnace in operation in 1898. The company now hopes to blow in the furnace some time in May. The ferro-manganese will be made from briquettes of manganese ore. The annual capacity of the furnace is about 7,300 gross tons.

On December 31, 1898, there were nine completed blast furnaces in the Dominion, and of this number three were in blast and six were out of blast on the date named. On December 31, 1897, there were eight completed furnaces, of which four were in blast and four were idle. In the spring of 1898 the Deseronto Iron Company, Limited, began building a charcoal furnace at Deseronto, in the Province of Ontario, which it completed in December. The furnace was blown in on January 25, 1899. It is now making about 1,000 tons of pig iron per month from Lake Superior ores.

The production of crude steel, steel castings, and all kinds of iron and steel rolled into finished forms in Canada in 1898

is given approximately below, full reports or careful estimates having been received by us from all the manufacturers in the Dominion.

The production of Bessemer and of basic and acid open-hearth steel ingots and castings in 1898 was 21,540 gross tons, against 18,400 tons in 1897, 16,000 tons in 1896, and 17,000 tons in 1895. Of the total production of open hearth steel in 1898 a little more than one half was made by the acid process. The production of open-hearth steel rails in 1898 amounted to 600 tons, against 500 tons in 1897; structural shapes, 1,565 tons, against 4,300 tons in 1897; cut nails made by rolling mills and steel works having cut-nail factories connected with their plants, 152,688 kegs of 100 pounds, against 202,939 kegs in 1897; plates and sheets, about 1,000 tons, against about 2,000 in 1897; all other rolled products, excluding muck and scrap bar, blooms, billets, sheet bars, etc., 80,322 tons, against 61,161 tons in 1897. Changing the cut nail production from kegs of 100 pounds to gross tons of 2,240 pounds the total quantity of all kinds of iron and steel rolled into finished products in the Dominion in 1898, excluding muck and scrap bar, billets, and other intermediate products, amounted to 90,303 tons, against 77,021 tons in 1897, 75,043 tons in 1896, and 66,402 tons in 1895.

The total number of rolling mills and steel works in Canada on December 31, 1898, was 18. Of this number at least four were idle during the whole of 1898. Canada has only one steel casting plant, which is equipped with a 3,000-pound modified acid Bessemer converter. Its first castings were produced in 1897. Canada also has one open-hearth steel plant, which makes steel by both the acid and basic processes.

Canada has nine completed blast furnaces, 17 rolling mills, one Bessemer plant, and one open-hearth steel plant. A new charcoal furnace was virtually completed at Deseronto, Ontario, late in 1898 and blown in on January 25, 1899.

The imports of pig iron into Canada in the fiscal year ending June 30, 1898, amounted to 35,812 tons, of which 2,099 tons were charcoal pig iron and 33,803 tons were other grades. In 1897 the imports of pig iron amounted to 25,650 tons, of which 2,622 tons were charcoal and 23,028 tons were other grades.

Reading in the light of Mr. Swank's statement we would like our intelligent contemporary to express an opinion as to whether the Canadian iron industry has yet attained to any position of importance. To our view the iron manufacturing industry of Canada, under the system of bounties that have been bestowed upon it, has been going ahead in a most gratifying manner. As Mr. Swank shows, our production of pig iron increased from 37,829 gross tons in 1895 to 68,755 gross tons in 1898, an increase of more than fifty-three per cent. in three years.

The Monetary Times expresses the opinion that the opening up of new and abundant sources of iron ore in Canada will be of more assistance to the industry than Government bounties, but it does not say why. If our production of pig iron increased more than 53 per cent. in three years under the bounty system, why would that production be accelerated by the withdrawal of the bounty? It is gratifying to learn, however, that new and abundant supplies of iron ores are to be opened up, concerning which our contemporary says:

In the west the districts of Western Ontario are most promising. In the Mattawan Iron Range, there is a deposit

of a hematite ore averaging fifty per cent. to sixty per cent. metallic iron. These deposits have been tested with diamond drills, the ore has been uncovered by stripping and shafts have been sunk to a considerable depth, and all operations have gone to prove the superior quality and permanent character of the ore. For twenty miles this range is skirted and crossed by the Ontario and Rainy River Railway now under construction. The same road at its 100th mile taps the Atik-Okan Range. The ore here runs from sixty to seventy per cent. metallic iron. A close examination has been made of many deposits in this district, borings of several hundred feet deep have been made with diamond drills. The ore body is found to be from 100 to 125 feet in width, rising to a height of 200 feet above the surrounding country. It is stated that in the two ranges there are 389 million tons of ore in sight. From the Maritime Provinces comes the news of the discovery of an immense deposit of magnetic iron at George's River mountain, a few miles from North Sydney. The location of this iron deposit is at the western end of Long Island, on the Little Bras d'Or, and comprises three ranges of mountains, running northeast and southwest, parallel with one another. The area containing the iron is said to embrace two square miles. If investigation confirms the reported richness of this deposit the importance of the discovery can scarcely be over-estimated. In the meantime, Nova Scotia with cheap coal and situated within short vessel distance from the proven rich ore deposits of Newfoundland should steadily come to the front as a producer of iron and steel.

ANGLO-AMERICAN-CANADIAN TRADE.

The Manufacturer, of Philadelphia, analyzes the three sided trade of Britain, United States and Canada, and relates some facts about the commercial relations of the countries indicated as follows:—

The following statement appears in the London Economist, in a recent summary of and comment on the annual Budget of Ottawa, submitted to Parliament not long ago by Hon. W. S. Fielding, Dominion Minister of Finance:

"In regard to the effect of the preferential tariff accorded to the mother country, it was pointed out that at first sight it appeared a little disappointing, the increase in imports from Great Britain being very small, while there was a substantial expansion in the volume of produce received from the United States. As the Minister of Finance stated, the comparison means but little, as a large proportion of the imports from the United States consists of articles which the United Kingdom does not produce, and in regard to which consequently the question of competition does not arise. It might have been added that a considerable portion of the goods entering Canada from the United States are not properly imports at all, but are simply goods in transit, the bulk of them on their way to this country."

There is, in the Canadian foreign trade statistics for the past ten years, much that should be a source of gratification to American exporters. There have been, however, during the past two years,—since the introduction of the system of preferentials in favor of British products—several changes in the United States exports to Canada which indicate that this market may not always be in our control, notwithstanding the fact that our total exports to the country continue to increase.

The closing statement added to Mr. Fielding's comments by the Economist, as to "a considerable portion" of the imports from the United States being goods in transit to European countries and particularly to England, is, if not altogether incorrect, at least misleading. The figures upon which this statement is based are those for the fiscal year ending June 30th, 1898. That the impression conveyed by it is false may be seen from the following tables taken from the recently issued report of the Department of Trade and Commerce of Canada for the year in question.

The total imports into Canada from various countries during the past three years were as follows:

	1896	1897	1898
United States	\$59,290,166	\$66,140,617	\$83,020,035
Total British Empire	35,577,217	31,512,409	34,425,195
Great Britain	33,001,997	29,328,576	32,408,551
Belgium	927,457	1,189,441	1,450,197
Germany	6,454,706	5,785,546	5,763,784
France	2,782,693	2,507,128	4,090,506
Japan	1,648,232	1,329,980	1,458,233
Total from all countries	112,785,180	114,542,415	135,932,209

During these same years the chief exports of foreign merchandise, or merchandise exported from Canada, but not produced therein, were as follows:

	1896	1897	1898
United States	\$1,960,740	\$2,216,735	\$2,092,712
Total British Empire	4,343,139	8,053,102	12,098,582
Great Britain	3,971,312	7,693,650	11,933,799
Germany	150,612	280,843	418,352
Belgium	2,703	123,289	803,655
Total from all countries	6,606,738	10,825,163	14,980,883

It thus appears that the exports of foreign products from Canada to all countries during 1898 amounted to less than \$15,000,000, or a little over one-sixth of the total Canadian imports from the United States alone, while in 1896 they amounted to \$6,600,000 or a little over one-tenth of the Canadian imports from the United States. Granting even that all the foreign products re-exported from Canada had their origin in the United States, it thus appears to be a very misleading, if not an entirely erroneous statement to call so comparatively small a percentage of the United States imports into Canada "a considerable portion."

In this connection it is interesting to note that during the past ten years the imports into Canada from the United States have increased from 45.86 per cent. to 59.24 per cent. of the total imports, for consumption only, while those from Great Britain have decreased from 38.73 per cent. to 24.78 per cent. During the same period the exports sent from Canada to Great Britain have increased from 45.27 per cent. to 67.78 per cent. of the total exports, and those to the United States have decreased from 45.73 per cent. to 23.53 per cent. of the total. The figures showing the share of Great Britain and the United States in Canadian trade for the past decade are as follows:

Year	Per cent. of total Canadian imports for consumption rec'd from		Per cent. of total Canadian exports sent to	
	Great Britain.	United States.	Great Britain.	United States.
1889	28.73	45.86	45.27	45.73
1890	38.75	46.89	52.91	38.47
1891	37.67	46.05	52.12	39.43
1892	35.66	44.90	59.65	31.09
1893	36.09	45.44	57.76	32.73
1894	33.96	46.52	60.96	27.31
1895	30.85	49.84	58.35	32.22
1896	31.15	50.80	59.02	32.23
1897	27.58	53.18	59.17	32.13
1898	24.78	59.24	67.78	23.53

If the imports from the United States for consumption were nearly 60 per cent. of the total imports of that class received in Canada during the year 1898, while in 1889 they were only 45.8 per cent. of such imports, there is still ground upon which to base a certain degree of satisfaction for American exporters.

That a "large proportion of the imports from the United States consists of articles which the United Kingdom does not produce," is quite true, as Mr. Fielding says in his report, and in this fact there is food for thought for those who have so persistently opposed any form of reciprocity with the Canadian provinces. To show with full force the direction which the movement has taken during the past three years, it seems best to take the figures for the eight months ending with February. As the Canadian statistics are not divided for this period, it is necessary to resort to British and United States figures, as is done in the Canadian monthly statistical publications. According to the United States Treasury statistics, the exports from the United States to British North

America during the eight months ending February, 1897— which period was before the first preferential of 12½ per cent., dating from April, 1897, was granted to British imports— amounted to \$42,925,382. During the corresponding period of 1897-98, while the first British preferential rate was in force, they increased to \$53,057,184; and during the same period of 1898-99,—during all but one month of which time British imports were favored by the 25 per cent. preferential, granted from August 1, 1898,—our exports to all parts of Canada amounted to \$60,324,368, an increase of over 40 per cent. in two years. The United States Treasury figures also show that \$5,871,000, or about one-third of this net increase, was in corn, wheat and wheat flour, much of the remaining increase being in provisions, lumber, seeds, and other agricultural and forest products. In manufactured products, and particularly those which are in competition with the British articles of similar kind, we have little ground for boasting. Unfortunately the classification is quite different in the statistics of the two countries, so that direct and satisfactory comparison is in many lines impossible, but an example is the single item of cotton cloth. United States exports to Canada in the eight months ending with February, 1897, were \$1,462,770, in 1898 they were \$462,659, and in 1899 they were \$582,364, being over \$400,000 less in the two eight-month periods in 1898 and 1899 combined than they were in the corresponding period of the year 1896-97 alone. During this time British piece goods imports have grown from \$679,403 to \$970,486.

The chief gains in exports from the United States to Canada from the corresponding eight-month periods from July to February, inclusive, of the three years in question are shown in the following table:

	1897	1898	1899
Agricultural implements	\$206,325	\$359,365	\$700,578
Books, maps, etc.	428,700	488,355	572,901
Corn	1,723,997	3,066,379	4,628,021
Wheat	2,542,266	3,886,138	4,920,214
Wheat flour	2,400,312	1,780,782	2,988,040
Carriages, cars, etc.	65,384	109,223	184,160
Builders' hardware	332,204	413,835	530,361
Steel rails	*	918,486	1,358,666
Boots and shoes	146,109	175,332	251,242
Oil cake and meal	5,528	8,622	43,807
Oil, cotton seed	42,005	69,041	71,233
Beef, canned	81,927	28,239	121,737
Beef, fresh	2,006	260	38,651
Bacon	362,792	722,032	533,299
Hams	185,142	283,470	458,547
Pork, fresh and pickled	454,864	560,324	755,715
Lard	173,096	129,844	362,432
Cheese	407,247	865,308	786,188
Seeds	285,838	258,212	1,189,913
Wood, unmanufactured	427,555	662,000	629,157
Lumber	421,266	641,906	844,914

*Not separately stated.

The figures for the chief imports received in Canada from Great Britain during the same periods are as follows:

	1897	1898	1899
Spirits	\$320,366	\$438,573	\$487,366
Cotton manufactures—			
Piece goods unbleached	25,501	25,935	50,036
Piece goods bleached	129,266	124,956	222,710
Piece goods printed	524,636	642,497	706,740
Mfrs. of dyed cotton yarn	639,756	771,108	900,142
Linen piece goods	389,536	463,651	579,408
Silks	82,065	87,608	134,068
Woolen fabrics	913,979	838,157	1,169,050
Worsted fabrics	1,838,860	2,253,613	2,147,861
Railroad iron	520,726	157,802	67,884
Tin plates and sheets	755,715	750,108	537,440
Steel, unwrought	238,830	209,773	132,929
Lead, pig	57,694	110,478	174,949
Earthenware, etc.	344,565	517,123	527,671

Of railroad rails it will be noticed that in the past two years there has been a large increase in the amount contributed by the United States, while the imports into Canada from Great Britain have been reduced to less than \$100,000;

but aside from this item there is little in the tables from which the American manufacturer can draw comfort, and the question naturally arises as to what is to become of our Canadian market when our northern neighbors begin to utilize their own resources for the production of grain and provisions, if in the meanwhile we make no effort to secure some advantage which will in a measure compensate us for the preference now granted to our formidable rival overseas.

IRON AND STEEL BOUNTIES.

In the Dominion House of Commons on Tuesday, Hon. Mr. Fielding, Minister of Finance, moved the House into committee on the following resolution on the bounties on iron and steel:

That it is expedient to provide that the bounties on steel ingots, puddled iron bars and pig iron made in Canada, authorized by chapter 6 of the acts of 1897, shall, on the termination of the period therein mentioned, be gradually reduced during a limited term until they are extinguished, and that the bounties to be paid for the additional term shall be as follows:

From April 23, 1902, to June 30, 1903, both inclusive, the bounties shall be 90 per centum of the amount fixed by the said Act.

From July 1, 1903, to June 30, 1904, both inclusive, the bounties shall be 75 per centum of the amount fixed by the said Act.

From July 1, 1904, to June 30, 1905, both inclusive, the bounties shall be 55 per centum of the amount fixed by the said Act.

From July 1, 1905, to June 30, 1906, both inclusive, the bounties shall be 35 per centum of the amount fixed by the said Act.

From July 1, 1906, to June 30, 1907, both inclusive, the bounties shall be 20 per centum of the amount fixed by the said Act.

Provided, however, that if any steel ingots be made from puddled iron bars manufactured in Canada no bounty shall be paid on such steel ingots.

The said bounties shall cease and determine on June 30, 1907.

The resolution was debated at some length and adopted.

Sir Charles Tupper expressed the hope that the Government would extend to Newfoundland the benefits of the iron bounties.

Mr. Fielding said it might cause a little strain to do so, but the Government would consider the matter.

CANADIAN CANALS.

Events of great importance are transpiring in Canada in connection with the work of short and improved outlet to tide water for the grain and other products of our States and the upper Lake region of Canada through Canadian water and territory. The establishment of a through line of grain carriers to go through the Welland Canal, with 14 foot draft and carrying cargoes of 80,000 bushels, with return freights from abroad, and the establishment of canal and lower lake and St. Lawrence carriers to take, at the head of the canal, cargoes brought down the lakes by the large craft, is a matter of much importance because of its power to divert grain traffic to Montreal that now comes to our Atlantic ports. But a matter of much larger importance will be the building of the canal from the connecting waters of Georgian Bay to

the Ottawa. The money has been raised for this work recently in London, and the work itself will take about three years, but with its completion it will make a through and very short water route from Lakes Superior and Michigan direct to tide water for steamers of the larger class, and will revolutionize the lake business. The line will be so much shorter than the present line by the lower lakes and the Erie that, even were the latter deepened to a ship canal, it would be at manifest disadvantage. The truth is the St. Lawrence is the natural outlet and the peculiar conformation of the lake country gives Canada manifest advantages. So far as water carriage goes, the building of the Erie canal gave us manifest advantage and turned the channels our way in early days. There was a little check when the Welland Canal was built, but it was a shallow canal. Now it has been deepened and there is another check. But with the growth of traffic in the North-West, with all that has come in the way of creating capital for large enterprises, the time has come when Canada can begin to utilize some of the advantages and wealth with which nature has endowed her, and the growth of traffic is so large as to assure returns on the work as a commercial proposition. It is almost a due east line from the foot of Lake Superior at Sault Ste. Marie and from the foot of Lake Michigan at the Straits of Mackinaw, to Montreal, with the distance thence to tide water hardly a third that by way of the lower lakes and the Erie, and the canal will have the benefit of being a steady downward grade with an eternal and abundant head of water feeding it from the upper lakes.

—New York Financial News.

BRITISH-CANADIAN TRADE.

The following enquiries have been received at the office of the High Commissioner of Canada in London, England:

NOTE—Those who may wish to correspond with any of these inquirers can obtain their names and addresses by applying to THE CANADIAN MANUFACTURER, Toronto. No charge for giving information. When writing refer to the numerals opposite the inquiries.

45. A firm in Scotland desires to enter into correspondence with Canadian houses shipping cleaned sheep sausage skins.

46. A Belgian firm of good standing wishes to buy direct from Canadian cheese and canned goods packers.

47. Another firm in Belgium, who offer good references, desires to obtain consignments of cheese to sell on commission.

48. An enquiry has been received for suitable timber cut to size for pyramid butter boxes, sufficient for from fifty to one hundred thousand boxes.

EDITORIAL NOTES.

THE CANADIAN MANUFACTURER Publishing Company, Limited, will, at an early date, begin the publication of an Export Edition of THE CANADIAN MANUFACTURER.

The New York Boots and Shoes Weekly says that New England shoe manufacturers are paying a good deal more attention to the Canadian trade than formerly—that the field is getting to be a better one every day. The same cannot be said of the old England shoe manufacturers. In fact, British manufacturers, notwithstanding the twenty-five per cent. tariff preference in their favor, are apparently resigned to the condition that puts them far back behind their American competitors in the race for Canadian trade.

A circular of some interest to the general public has been issued dealing with the entry of dutiable postal packages. Under the existing regulations, packages to gain the preferential tariff cut must bear a certificate that the goods enclosed are of British origin and manufacture. The result has been to cause more or less trouble in a small way owing to the absence of the certificate and consequent payment of the full duty rate. The department now orders that where the merchandise is not for sale and not of more than \$25 value, Customs officers and postmasters may, notwithstanding the absence of the certificate, allow the reduction of one-fourth in the duty rate where the goods are from a British country, and when they are reasonably satisfied that the goods have been manufactured in such country.

The present is a most favorable opportunity for Canada to embark in the iron and steel industry. The demand for all kinds of iron is unprecedentedly large, and it is growing at an enormous rate. The market for iron and steel is world-wide and there is no reason why Canada should not soon make a bid for foreign business, as well as supply its own demands. We do not believe that any country in the world is better adapted than Canada for the manufacture of iron and its products. In addition to our unlimited supplies of the raw materials of the iron industry, we have a unique advantage in the possession of a monopoly of nickel, whose use is fast increasing in the manufacture of steel and other metals. If Canada were to put in force a vigorous nickel policy, forcing the refining of the ore to be done in the country, the iron industry would be benefitted not less than the nickel business itself. The one industry is complementary to the other, and together they would give us an immense advantage over any other country. The country is tired listening to The Globe's theories to the effect that Canada enjoys unique advantages in the possession of a monopoly of nickel. What the country desires and demands is that the Government adopt a policy that will cause Canada to profit by reason of these advantages.—Toronto World.

At a mass meeting of manufacturers, ship-owners and merchants held at Glasgow last week a resolution was passed expressing alarm at the serious injury to British and colonial trade arising from the continued and threatened extension of foreign competition. Mr. Anderson, of the Anchor line, said America and Germany were taking markets where Great Britain had long been pre-eminent. He added that British subjects had not received just support from the Government, asserted that the Board of Trade has assumed the character of police, and claimed the Foreign Office only moved when the steed was stolen.

In "Modern Machinery" is described a Maxim gun mounted on a tricycle. During the late Easter manoeuvres at Aldershot, the 26th Middlesex (Cyclists' Corps) experimented with a De Dion and Bouton moto-cycle (electric ignition) equipped with a service Maxim gun. The wheels of the tricycle are fitted with pneumatic tires and ball bearings, and, should the electric power prove insufficient, an ingenious arrangement provides for four separate safety cycles being coupled together and attached to the polo of the gun carriage. The result of the experiment was watched with

interest, as it is generally considered that a large demand is likely to arise for this class of motor-driven vehicle. The gun was limbered up and towed by four cyclists on an ordinary road at fifteen miles per hour.

The keen disappointment in Ottawa business circles at the Government's failure to deal with the insolvency law this session will be widely echoed in this country. It seems difficult to believe that either the Premier or Mr. Fielding could possibly need the reminder they received in the petition presented on behalf of some 300 English firms doing business with the country, that this is, above all others, the most pressing question which it is possible for the Government to tackle in connection with the development of Anglo-Canadian trade. No doubt the Government programme for the session is heavy enough as it is. But in this particular matter a duty lies upon Ministers which, for the credit of their own and their country's reputation, should have been discharged long since. As Mr. Fielding's figures recently showed, a preferential tariff which is not accompanied by a legitimate measure of legal protection for the interests of the British trader, is likely to prove a strictly limited boon.—The Canadian Gazette, London, Eng.

The Toronto World publishes a cartoon in which the N. P. is represented as an immense elephant being led by Sir Wilfrid Laurier. The legend above it is "Stolen from the Tory Party," while below the animal is made to say, "Oh, yes, they may try to disguise me, but I'm the same old Jumbo they considered dangerous and wanted to destroy a few years ago." The World and the Conservative papers and politicians seem to regret very much that the Liberals have charge of the elephant, but so long as it is the same old Jumbo that has always been such a favorite with Canada, the people are not unhappy because of the change of keepers.

Representatives of the 350,000 travelling men in United States will meet in Albany, N.Y., on June 30th at the fifth annual convention of the Commercial Travellers' National League. Nearly a thousand delegates are expected. The principal object of the convention is to form plans to combat the combines. It is estimated that 50,000 commercial travellers in that country have been thrown out of employment within the past few years by these great combinations of capital.

Some one credits a Detroit vessel agent with figuring up the total loss of the grain shovelers' strike at Buffalo in this way:—Loss suffered by marine and elevator interests on grain vessels about \$1,000 an hour, and for twenty days this would bring the loss to \$480,000. The tie-up of twenty-nine freighters with package freight for twenty days is estimated to be fully \$288,000. The loss of the sale of 500,000 bushels of grain is estimated at \$100,000. This, together with losses on the tie-up of ore, fuel and coal, will bring the total loss up to \$1,038,000. The loss to the strikers is estimated at \$278,000 for twenty days. It is needless to say that these figures are anything but inclusive or complete and only touch on the fringe of the loss. It is questionable if any individual could sum up the absolute total loss caused by the striking long-shoremen, anyway, the above estimate is far and away below the actual.

The report that the Anglo American Commission which has been considering Canadian questions would not come together again is happily unfounded. At any rate, negotiations are not to be broken off because of inability to agree, which was the assertion lately circulated in the daily papers. It may be that the arrangements for a treaty have proceeded so far that the rest of the work can be done through ordinary diplomatic channels without the mediation of the special commission. The latter has already held two sessions, one at Quebec last summer and a second at Washington during the winter. If nothing intervenes it will meet again in Canada during the coming summer. There is hope expressed that even the trade questions may be satisfactorily adjusted and that reciprocity on some terms may now be within reasonable distance of realization. This is by no means certain, but it is significant after so much had been said on the subject that it should yet be reckoned among the probabilities. In any case if they get nothing more, the American commissioners ought to be able to avert Canada's threatened export charge on logs. That is a negative kind of treatment from which the people of the United States should be spared if there is any power in the commission to ward it off.—The Manufacturer, Philadelphia.

If the people of the United States really desire to be spared from the consequence of a Canadian export duty on logs the remedy is in the hands of their own Government. Free logs for free lumber. American duty on Canadian lumber means Canadian export duty on logs. The services of a commission are not required to arrange the matter.

"The Influence of Mechanical Draft Upon the Ultimate Efficiency of Steam Boilers," by Walter B. Snow, of the engineering staff of the B. F. Sturtevant Co., Boston, Mass., is the text of a lecture delivered before the Engineering Society of Columbia University, New York City, in December last. It is a discussion of the influence of mechanical draft upon the ultimate efficiency of steam boilers with special reference to the apparatus and method employed in its production, and embodying a description of the application of a fan blower enclosed in a case and provided with the necessary means for its operation. The book is profusely illustrated with representations of the apparatus as used in different positions and under varying circumstances and diagrams explanatory thereof. The subject is one of deep interest to all steam users. The Sturtevant Co. will, we are informed, take pleasure in sending copies of this lecture upon application.

The June number of the American Newspaper Directory has already found its way into our office. It is a frequent and regular visitor, being published four times a year. It contains a description of all the newspapers and periodicals published in the United States, Canada and Newfoundland, and of the towns and cities in which they are published.

The second edition of the Canadian Newspaper Directory, published by Messrs. A. McKim & Co., Montreal, has been laid upon our desk. The book is really first-class in every respect. It is well and handsomely bound, containing over 430 pages printed in fine paper with new type. The work seems to place before the advertiser everything that he wants to know about each and every publication in Canada in the shape of a newspaper or magazine, and in various forms so that the special information desired may be turned to it once. There are also lithographed maps of each province, setting forth conspicuously every newspaper town in Canada; one sees at a glance the density or sparseness of newspaper publications in any district. The directory also contains articles on advertising, some very useful information about customs tariff, as affecting newspapers and publications generally, the law regarding libel, etc., etc. The circulation of this newspaper directory among advertisers throughout Great Britain and the United States as well as at home will certainly be of great benefit to the Canadian press. It is a work much needed and fulfils in a marked degree the expectations we should have of any work issued by this enterprising and successful firm of advertising experts.

FLOUR MILLING MACHINERY IN GREECE.

There are now fourteen steam flour mills at the Piraeus, the Greek port, and new mills are about to be erected. American manufacturers should avail themselves of this opportunity for the sale of their milling machinery.

RE UNDERVALUATION.

At a meeting of the Executive Committee of The Canadian Manufacturers' Association, held June 12, 1899, the following resolution was passed:

Resolved:—That The Canadian Manufacturers' Association heartily approve of the action of the Board of Trade in endeavoring to forward technical education in this country, which they consider absolutely necessary to the proper conduct and progress of the manufacturing interests.

That they also heartily approve of the sentiments uttered by the Hon. Geo. W. Ross, Minister of Education, to the effect that an agricultural country must be a sparsely settled country, as you cannot force everyone on to farm work, and consequently many left this country for industrial employment which they could not find here. This is quite in accord with the experience of all countries and cities—the manufacturing districts increase and the agricultural decrease or remain stationary.

We might refer to the wonderful growth of Montreal, a city now of some 350,000 inhabitants, largely occupied in manufactures, cotton mills, boot and shoe factories, clothing, underwear, furs, and all sorts of ready made goods. Rolling mills, iron and leather industries, flour mills, sugar refinery, foundries, metal workers, jewellers, etc., etc., all earning and distributing money which without these industries would be sent abroad to pay foreign labor, if indeed the people, deprived of these means of support, would have the money at all.

That they also approve of the action of the present Government in refraining from making any change in the Tariff this session, as continuity of tariff policy is necessary to the encouragement of investment in manufacturing industries. They have had their attention called lately to the question of undervaluation of invoices chiefly from foreign manufacturers, having nothing at stake in this country, and consigning their wares at the lowest possible prices they think they can get through the customs irrespective of the law which says that the value for duty must be the price at which the goods are sold in the open market for consumption in the country of production. This has always been treated as a question affecting importers only, but it also affects in a very real manner, the manufacturers also. If goods can be entered at two thirds the proper value, it is evident that only two-thirds of the duty will be paid, so that articles dutiable at thirty per cent. will get through at only twenty per cent. This places the manufacturer in a false position before the public, for he gets only twenty per cent. protection while the public think he has thirty per cent.

They therefore call upon the Government to scrutinize most carefully all entries from foreign countries in which the goods are consigned to agents or brokers, who have no available assets which could be seized to satisfy any just claim the Government might have against them, and they further recommend that no entries of over two hundred dollars shall be received from such persons unless they can furnish proper bonds and securities for the amounts of all their entries, and that on all such entries the signatures of the owners of the goods must be appended to the entries as well as those of the brokers.

They further recommend that some such penalty as is now enforced in the United States, should be enacted and enforced here—to wit, that in addition to exacting the full duty in all cases of undervaluation (which is no penalty at all) the full amount of the undervaluation should be also exacted, so that if the undervaluation is twenty per cent. the penalty should also be twenty per cent. and so on. The only way to suppress fraud is to make it at once so expensive that it will not pay.

That a copy of this resolution be sent to all the members of the Association, and a special request made to them that they bring this matter before the members of Parliament in their constituencies, requesting them to take all possible action in the matter for the proper protection of their interests.

That copies be also sent to the Premier, the Minister of Customs, and the Members for Toronto with a request for their special attention and action in the premises.

CANADIAN MANUFACTURERS' ASSOCIATION.

President:

J. F. ELLIS.

First Vice-President:

P. W. ELLIS.

Second Vice-President:

R. E. MENZIE.

Treasurer:

GEORGE BOOTH.

Chairman Executive Committee:

R. W. ELLIOT.

Chairman Tariff Committee:

W. K. McNAUGHT.

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

OFFICES

McKinnon Building,

TORONTO.

Vol. 1274.

J. J. CASSIDEY, - SECRETARY.

THE OBJECTS OF THIS ASSOCIATION ARE:

To secure by all legitimate means the aid of both Public Opinion and Governmental Policy in favor of the development of home industry and the promotion of Canadian manufacturing enterprises.

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

To maintain Canada for Canadians.
Any person directly interested in any Canadian manufacturing industry is eligible for membership.

CANADIAN INDUSTRIAL LEAGUE.

President, **JAS. KENDREY, M.P.**

WOOLEN MANUFACTURERS' ASSOCIATION,

President, **BENNETT ROBAMOND, M.P.**

KNIT GOODS MANUFACTURERS' ASSOCIATION,

President, **JOHN PENMAN.**

CARPET MANUFACTURERS' ASSOCIATION,

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

CLOVE MANUFACTURERS' ASSOCIATION,

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

REPRESENTATIVES TO

TORONTO INDUSTRIAL EXHIBITION ASSOCIATION.

R. W. ELLIOT.

GEORGE BOOTH.

W. K. McNAUGHT.

A. E. KEMP.

J. J. CASSIDEY.

CANADA'S COMMERCIAL AGENTS.

The following Canadian Commercial Agents (whose addresses are given) will answer correspondence relative to commercial and trade matters, and give information to those interested as to local trade requirements in the districts they represent.

J. S. Larko, Sydney, N.S.W., agent for Australasia.

G. Eustace Burke, Kingston, Jamaica, agent for Jamaica.

Robert Bryson, St. John, Antigua, agent for Antigua, Montserrat and Dominica.

S. L. Horsford, St. Kitts, agent for St. Kitts, Nevis and Virgin Islands.

Edgar Tripp, Port of Spain, Trinidad, agent for Trinidad and Tobago.

C. E. Sontum, Christiania, Norway, agent for Sweden and Denmark.

D. M. Rennie, Buenos Ayres, Argentine Republic, agent for Argentine Republic and Uruguay.

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

J. G. Colmer, 17 Victoria Street, London, S.W., England.

Thomas Moffat, 16 Church Street, Cape Town, South Africa.

G. H. Mitchell, 15 Water Street, Liverpool, England.

H. M. Murray, 40 St. Enoch Square, Glasgow, Scotland.

Harrison Watson, Curator Imperial Institute, London, England.

IMPORTANT.—An enquiry addressed to **J. J. Cassidey, Secretary Canadian Manufacturers' Association, Toronto, Canada,** will place you in communication with the leading Canadian Manufacturers of the articles you mention. Merchants and Importers in all parts of the world are invited to make free and full use of the facilities afforded by this Association when they desire information about anything produced in Canada. No charge whatever for answering inquiries.

DOORS IN GERMANY.

Some months ago an instruction was sent to the United States consul-general at Berlin and Frankfort, asking for information concerning the import and manufacture of doors in Germany. The answers are given below.

Berlin:—Consul-General Day says: After a very thorough investigation, I have ascertained that there are no imports into Germany of ready-made doors, sashes, or blinds. Doors, sashes, and blinds are manufactured in this country only to order; no factory carries any stock or set designs, as there appears to be no standard of size. Therefore, I have been unable to procure any catalogues whatever. The exports of these articles to Germany, as recorded in the United States Treasury export returns, are doubtless merely samples sent to Bremen and Hamburg firms.

Frankfort:—Consul-General Mason writes: Until within the past ten or fifteen years, it may be said that the use of ready-made doors, sash, and various mouldings in wood for building purposes was practically unknown in Germany. Every architect designed doors and windows according to his own ideas; each builder made them by hand as required; no two architects or builders used habitually doors or windows of the same size or design; in fact, a single building would often include doors of a dozen or more different sizes. Lumber was costly, labor cheap, houses were built mainly with rough brick or stone walls covered with stucco, and from motives of economy and immunity from fire, wood was used as sparingly as possible in construction.

To a very large extent, the same conditions still prevail in this section of Germany. In a city so modern and progressive in character as Frankfort, where building is as active and constant as in any American town of equal size, there

are more than a hundred competent builders, either firms or individuals, who undertake contracts to construct almost any kind of a building for residential or business purposes, and who will make by hand every door, window frame, sash, blind, or moulding that may be required, and this will be done with substantially the same tools that have been used for a century past.

On the other hand, there are in this city two establishments which represent the dawn of a new era in this respect, and where machine-made doors, panelings, and frames for doors and windows, besides brackets and various beveled and chamfered mouldings, used in interior finishing, are kept in stock, and are being rapidly and successfully introduced.

Venetian blinds, hung upon hinges, such as are usually used in the United States, are very rare in this part of Germany, their place being filled by what is known as the "Rolladen," in which the slats overlap each other and are hung on flexible webbing or canvas bands that wind up over a roller set inside the upper casing of the window, so that the blind is drawn up or lowered by a strap passing over a pulley at the end of the roller. These blinds are attractive in appearance and can not slam if left unfastened in a high wind; but they are expensive, and the strap and pulley device for hoisting is somewhat liable to get out of order.

From what has been thus indicated, it will be readily inferred that all this class of prepared building materials is far more expensive in Germany than when made by improved machinery from the cheap, abundant lumber of the United States. The fact that such materials, both of home and Swedish manufacture, are now sold and used in considerable quantities, would indicate that there is a ready field for the introduction of the American product, provided it can be

adapted in respect to size, form and general character to the requirements of German builders and architects. It would no doubt greatly facilitate the development of this trade if American exporters could send an expert to confer with German dealers, architects and builders, and thereby ascertain precisely the forms, sizes, and other specifications that are best adapted to the requirements of this market.

Catalogues and price lists intended for use in this country should be in the German language and currency; dimensions in metric measurements. It is useless to offer materials measured by feet and inches to a builder who understands practically only meters and centimeters.

It will also be necessary, in this as in all other lines of export trade, to remember that Europe is not America, and that some concession must be made to German methods of business, which usually involve longer credits than are customary in the United States; but the percentage of profit here may—and should—be proportionately higher.

American staves and pine and oak lumber for flooring and general building purposes have already found a large and steadily increasing sale in this country. The imports of sawed lumber from the United States in 1897 amounted to 152,863 metric tons, besides a large quantity of wood—chiefly oak, poplar, and walnut—imported in the form of squared logs to be sawed after arrival. American lumber of the best grades is highly esteemed here for its clean, straight grain and its freedom from knots, cracks and other defects.

BICYCLES IN HONGKONG

Probably no class of manufacturers in the United States spends more money in letters and circulars to attract foreign trade than bicycle makers. Every mail brings enquiries from different makers, all asking the same questions and requesting the same attention. The National Board of Trade of Cycle Manufacturers, New York, propounds a series of questions which so thoroughly covers the subject that I am using their letter as a guide in making this report.

To thoroughly understand this market, it is necessary to describe the highway conditions of the colony. Hongkong is built on the side of a mountain 1,800 feet high, and all streets above sea level are terraces broken by flights of steps, making the majority of them unavailable for cycling purposes. Consequently, the available roads are reduced to two, although there are numerous excursions that the daring rider can take throughout the island. The favorite, and in fact only, road for ladies borders the harbor front, and is about eight miles long. This road has a hard, metaled surface, and is beautifully kept up. The view and scenery along it is unrivaled, and the breeze that comes sweeping in from the ocean is most refreshing. Every evening from five until seven it is alive with bicyclists with the most heterogeneous lot of machines ever seen. Bicycles of all dates run side by side. The other road referred to is called the Aberdeen road, which is also eight miles long. This road contains some heavy grades which a strong rider can take, but they do not commend themselves to the majority.

This is a free port; consequently, custom-house duties do not have to be considered in the purchase of bicycles or bicycle parts. There are no real importers of bicycles, although there are two small bicycle repair shops which always keep a few on sale. On the other hand, every firm, from the largest to the smallest, handles bicycles for the convenience of customers, who are scattered all over China and the Philippine Islands. Possibly half of those which are in use here were purchased by their owners direct from San Francisco, and probably two-thirds of all the machines in use here are American. There is no favorite make, and all wheels have equal chances in this market. There has been very little money spent in advertising any particular make, in consequence of which they all go under the generic name of "bicycles," and are not distinguished by names. The Chinese, who are becoming the largest users of bicycles on this coast, are utterly indifferent to name or reputation.

To reiterate what I have repeatedly written bicycle manufacturers, what this market demands is a low-grade, low-priced machine—one that would sell for, say, \$20 gold in America wholesale. If you add, say \$3 50 freight from New York to Hongkong, the machine could be sold here at a nice profit. The high grades of American machines are at present selling in this market for \$185 Mexican, and where one could be sold at this price, one hundred at the cheaper figure would find a market. It is not necessary that the machine should even be of a late model. The 1896 make would command just as good a price as the 1899. I consider this a magnificent field for bicycle manufacturers to unload their old stock. I do not overlook the few enthusiastic riders here who are always in touch with the latest improvements, but am referring to the market as a whole. All bicycles should be fitted with brakes, lamps and bells, as the streets are crowded with rickshaws and sedan chairs, and darkness comes on almost without warning. Since the occupation of Manila by the Americans, there has been something of a boom in the bicycle trade here, as Hongkong has for years been the feeder for the Philippine Islands, as well as its warehouse. In time, of course, agencies will be opened in Manila for bicycles; but until that time arrives, Hongkong will be the distributing center.

I would not advise bicycle makers to sell indiscriminately to the unknown individual purchaser on credit, as there are no collection agencies here. The same conditions exist with regard to bicycles as to all other shipments, the shipper drawing for his shipment and negotiating his draft through a bank, with complete documents attached.

I do not wish it to be understood that by a "low-grade machine" I mean a shoddy article.—United States Consul-General Wildman, at Hongkong.

TRADE CONDITIONS IN AUSTRALASIA.

United States Consul-General Bray at Melbourne, writes:—

The marked improvement which has obtained in the importation of goods of American manufacture into the Australasian colonies has been due primarily to the fact that our manufacturers have taken the trouble to consult and consider the requirements of the Australian importers, and have maintained a uniform standard of quality and finish in their goods, and have made few alterations in prices. In instances where quality has been deliberately varied and prices have been advanced, on the supposition that the market has been "corralled" the results have been disastrous to the exporters, and have had a reflex action on manufacturers in similar lines of business.

That these colonies present a vast opening for the introduction of our goods is evident by the fact that more than half of the agricultural implements imported are of American manufacture and origin, and those which are manufactured in these colonies are copies or travesties of the originals from the States. I propose to briefly review some of the goods which are imported into Australasia.

Canned Meats.—In spite of the local canning, there is a large demand for American meat, which should be encouraged and stimulated by judicious advertising and efforts.

Baking Powder.—Made in this country and of good quality.

Fish.—The canned article from the Pacific slope has absolute command of the salmon trade. The British exports are competing strongly in other lines. There is a very good opening here for tinned and other lines of fish, as the exigencies of the climate in the tropical lands cause an extensive consumption of these goods.

Hardware.—It is a fact that most of the household articles used in this country are imported from the United States, simply on account of their cheapness and adaptability. In heavy lines, Sheffield and Wolverhampton, and once in awhile Germany, continue to hold their own in edge tools and engineers' and blacksmiths' hammers. Carpenters' tools are entirely from the United States.

Farm and Garden Implements.—These are of American origin, and as long as they are neatly produced and the price

is kept within reasonable limits, the United States will continue to fill Australian wants in this direction.

Axes.—These are all of American production, and are likely to remain so, if the quality is kept up to the present standard, but the action of some of our manufacturers in making a cheap axe at a very low price will, if not checked, have a deleterious influence on the trade and provoke competition. The Swedish makers are already doing their best to compete with the American axe, and, as soon as they get a little more experience, will become formidable rivals. The fact remains, however that so far, they have to get their handles from the United States.

Saws.—Persistent advertising, combined with cheapness and good quality, have succeeded in making the product of an American firm easily the favorite. The firm referred to is being very closely run by other American competitors, who are getting a proportion of the trade. America will control the market for hand saws. Circular saws, however, are still recognized as having their origin in Sheffield, and the Sheffield trade-mark is usually a guaranty of good quality. A Philadelphia firm is making strenuous efforts to gain the trade. The Sheffield people have been losing ground lately, owing to competition and reduction of quality to meet prices; but good makers are maintaining price, quality, and reputation.

Builders' ironmongery.—The manufacturers of the United States get a considerable proportion of the trade, and with the exception of brass foundry works, will maintain this position. The brass foundry is imported almost entirely from Birmingham, and this trade will probably never be disturbed.

Locks.—In first-class heavy locks, Great Britain maintains its position, but in padlocks, the United States has the trade. Rim locks and mortise locks are imported from the United States, but not in the same proportion as from Great Britain.

Bird Cages.—These are almost entirely of United States manufacture.

Pumps and Windmills.—Pumps are almost all of American manufacture, except steam pumps, in which British manufacturers still hold first position. Windmills are all American.

Stoves.—America had at one time all the trade in portable cooking stoves; but Scotland has made a desperate attempt to recover prestige in this class of castings, and is more than partially successful.

Wooden Ware.—The United States controls this market; and so long as our manufacturers maintain their standard of excellence, they need fear no competition.

Carriages and Buggies.—The demand is not increasing, simply by reason of the excellence of the local production, though all the parts necessary to the equipment of a first-class carriage or buggy are imported from the United States.

Boots and Shoes.—The excellency of the American manufacture is universally admitted, and those makers who are turning out lasts to meet Australian requirements are deriving profit. But this industry is essentially a colonial one, and, in time, Australasia will produce all she requires in this line.

Lamps.—The United States has all the cheap trade now, and for better class goods, the demand is increasing every day. A little attention to the style of British productions would enable our manufacturers to supply the whole of Australasia.

Pressed Glassware.—The United States controls this line for nearly all Australasia, but it will be long before we can compete with the better class of European goods, which are cheap and of good quality. Our manufacturers ought to make an effort to gain this business, especially in the cut-glass trade.

Cotton Goods.—Denims and heavy cloths are finding a market here, and Canada is a strong competitor with Great Britain. There is an excellent opening here for American cotton cloths, but our manufacturers must find exactly what is wanted, and meet the market.

Underwear.—Cotton underwear finds no demand here, for climatic reasons, but woolen or union goods would sell readily if adapted to the Australian requirements which are essentially different from the American. Combination suits, for instance, should be "fashioned," and have no legs.

Freights.—The recent irregularity in freights has given rise to a great deal of trouble, and some uncertainty. They must be maintained uniform, and the advent of steamers into this trade will be of great benefit to American exportation. While freight ought to be remunerative to shippers, it is sincerely to be hoped that competition will restrain them from the extravagant rates persisted in by the recent shipping ring.

TRADE SUGGESTIONS FOR SCOTLAND.

United States Consul Fleming, at Edinburgh, writes:—
"Some months ago in a brief report on suiting methods to markets, I expressed the opinion that the great majority of Scottish business men handling American manufactures, or willing to handle our goods, preferred to deal directly with the manufacturers rather than with middlemen, either on this side or on the other side. Certain exceptions to this rule were noted, such as the bicycle trade, which are specialities and have been managed in an exceptional way from the start. Further observation in and intercourse with the business community have confirmed this opinion. The Scottish wholesale dealer, who is in the habit of getting five per cent. discount on the invoiced price for cash or 2½ per cent. at one month in general lines of merchandise, does not like to look upon an invoice that he thinks may contain a middleman's commission. He does not object to paying a price which may include an agent's commission, but he draws a broad line at that. I have talked with agents on this subject. They quite agree on the proposition that an American manufacturing company or firm seeking to extend its trade in this country should offer to deal directly with buyers, and take all orders directly, not to be duplicated to a representative company or bureau. In undertaking to secure an agent in Edinburgh for an association in one of the Middle States, representing manufacturers in various lines and requiring a duplication of orders, I have met with a very emphatic objection:

"This will not do. The goods are expected to yield a profit to the manufacturer, a commission to the middleman, a commission to the agent, and a profit to the dealer on this side. That's too many slices of pie, and all must be thin."

"In the keen competition for trade the commission agents or merchants—who are the essential men—offering American goods find themselves at a disadvantage, as a rule, if the goods are not shipped from America to Glasgow, Edinburgh, or Dundee, or the nearest port to customer. For instance, an Edinburgh man who represented an American manufacturing company having a general agent and warehouse in London severed his connection with the business recently, because he could not meet the prices of another American company in the same line shipping direct to a Scottish port. The freight rate on the wares from New York to Edinburgh is but slightly, if any, higher than the rate from New York to London. The rate from London to Edinburgh by water is as high as from New York to Edinburgh or Glasgow. By rail, the rate on goods from London to this city is considerably more than the steamship rate charged from New York to Edinburgh. On goods of the kind handled by this agent, the freight from London for a quantity worth about \$50 is \$7.20. This made it impossible for him to compete with the company shipping from New York to Glasgow, and, as I have said, he resigned the agency."

"The American manufacturer who gets closest to the market—to the local dealers—will get the trade. Take the case of a large American furniture-manufacturing company, as an illustration of one way to make business in a foreign country. This country sent its own men over to 'set up shop' in London and Glasgow. The furniture—household and office—is shipped from the factories to this side in the rough. Being in parts and tightly packed, it occupies little space and pays the minimum rate. It is put together and finished in the London and Glasgow workshops of the company, and salesmen place the furniture before dealers in England and Scotland. This enterprising company, has, I am told, a profitable and growing trade.

"With reference to business methods, it may be worth nothing that the commercial traveler as a factor in trade getting in the United Kingdom was never so prominent as he is now. Some of these traveling salesmen are paid salaries without commission and others have salaries with commission. Of those resident in Scotland with headquarters in Glasgow, Edinburgh, or Dundee, I have met several, each of whom represents a London house in one line of goods and under his contract can handle at the same time different lines of goods for foreign houses if he chooses to do so. To introduce their goods, American manufacturers or exporters who would not feel justified in going to the expense of maintaining traveling agents of their own could hardly do better than to secure the services of such men to sell on commission. Some American manufacturers have made good connections of this kind. This has been the practice of German houses in beginning business in the United Kingdom. In a recent conversation, an Edinburgh commercial traveler told me that he built up an excellent trade for a German manufacturing company in the chemical line a year or two ago, which was so highly appreciated that the company sent over a man of their own 'just to meet a few of our customers,' and he has not returned to Germany, but he has taken charge of the flourishing business in this country, dispensing with the agent who had created the business or at least promoted it.

"It is almost needless to say that, next to an active and reliable agent with a thorough knowledge of the wholesale and retail trade, the best connection an American manufacturer can make is with a wholesale house buying direct. A useful article will win its way if put on the market at a moderate price, even if it be not advertised or otherwise pushed to the front. As a notable instance, a little device, of American invention and manufacture, for perforating checks and drafts with the figures of the amounts for which they are drawn has had a wide sale in Scotland during the past two years, although no special effort has been made to bring it before the public. Much of the same thing is true of several other American specialties and of a few lines of staple goods and various kinds of machinery. They gain a market—slowly, perhaps, but surely—by commending themselves."

DEMAND FOR HARDWARE AT MALTA.

A few years ago some Maltese decided to erect in the city of Valletta an apartment house. The matter was an experiment with them, as flats had been unknown here. The owners endeavored to incorporate in the construction the most modern ideas, and the result is to-day a fine building occupying a whole block on one of the best streets in the city. So successful was the experiment that every flat in the building, numbering about thirty, has been constantly occupied. By reason of their success, the owners have concluded to erect in the near future more buildings of this class, the demand fully warranting the enterprise. Land has been selected and construction is now under consideration.

Experience has brought to light many defects in the present building, which it is proposed to remedy or improve upon in the new buildings. For one thing, it is desired that the most modern electric outfits, such as bells, etc., be secured. Passenger elevators and new ideas in plumbing are also desired.

American goods are well thought of at Malta; but, unfortunately, the representation is somewhat limited, due to a great extent to lack of direct communication with the United States. I have had several conversations with the party referred to, in relation to their procuring American goods for the new buildings, and have explained to them, as far as I have been able, how our flat buildings are constructed and finished and the fittings used. The result is that they have become interested to such an extent as to request me to procure for them illustrated catalogues and price lists of goods appertaining to the interior fitting up of buildings of the above class, and especially of door locks, hinges, bolts, window fastenings, and house hardware in general.

I suggest that our manufacturers interested in these lines send suitably printed and illustrated matter, giving as full descriptions as possible, with lowest export prices and terms. Such matter should be addressed to F. C. Lawrence, Great Britain Hotel, Valletta, Malta. I have interested myself in this matter, believing that if I can induce the parties to adopt goods of our manufacture in the proposed work, it will be the means of opening trade. Any further information that may be desired on the subject, I will give promptly upon application.—United States Consul Grout, at Malta.

CANADIAN FURNITURE IN GREAT BRITAIN.

Manufacturers of furniture in the United States are looking to their laurels gained in their export trade. Speaking of the activity of Canadian furniture manufacturers in British markets, the London correspondent of the Manufacturer, Philadelphia, says:—

There is no doubt that unless United States exporters of certain lines rouse themselves, they will find, so far as the English trade is concerned, that their Canadian rivals have secured the business. For instance, the Canadians are working the United Kingdom for all it is worth as regards the furniture trade, and they have done exceedingly well up to the present. Just to clear the way, I will show you the exact value of the imports of United States and Canadian furniture respectively:

<i>Exports of United States Furniture to United Kingdom.</i>	
1896.....	\$794,564
1897.....	995,701
1898.....	1,024,937
<i>Exports of Canadian Furniture to United Kingdom.</i>	
1896.....	\$32,348
1897.....	68,014
1898.....	167,321

We see that in three years the value of the Canadian exports has increased more than five-fold. The Canadians are, as a rule, more attentive to requirements and more careful with details, and that may account for them doing so well. Some time ago a Canadian house sent a representative to Ireland to see what the market there was like. In one week he took orders from the leading city in the north (Belfast) for \$5,000 worth of goods, and then went on to Dublin in the south and just doubled that sum. He pushed two leading specialties—chairs and desks. One of his catalogues (called a "chair" catalogue) contained 165 pages devoted exclusively to chairs of every description, together with a price list, a key to the catalogue, etc. The whole thing was well got up, splendidly illustrated and printed. The same sort of catalogue was being prepared for other lines—such as bedroom suites, extension tables, chiffoniers, sideboards, and roll desks. It is quite evident from this fact—together with the information that several other Canadian houses are doing the same business—that the United States exporters must look to their laurels unless they wish to lose their hold of the trade. In fact these Canadians are simply taking a leaf out of the Germans' book by sending live agents about who have a thorough knowledge of their business. These men who have been in Ireland and England, first of all, ascertain the style and class of furniture most in use, that which is most popular and sells best. They then agree to duplicate English designs and makes at much lower prices than the home manufacturers, and they also take orders for any quantity and in any pattern from three suites upward, finally agreeing to deliver the goods carriage paid.

Many of the United States' dealers make the initial mistake of trying to force the American styles and ideas upon their British clients. Now, I may say at once that that style of business will never be successful here. What is liked in New York, Philadelphia, Chicago and other American cities does not necessarily sell well in London, Manchester, Birmingham or Liverpool. What your exporters of furniture do now with England is only a mere trifle compared with what they might sell if they really studied this market sys-

tematically. There is an immense market here for furniture of fairly good make and style, suitable for the homes of clerks, mechanics and small farmers; also for furniture of good make with some pretensions to style, moderate in price, and suitable for well-to-do farmers, merchants, etc. Make your goods to suit the tastes of the people here, and your dealers will not lack orders. That is one of the reasons why the Canadians have got on so well lately.

Comparatively small things show which way the winds blows, and the following illustration may save American dealers a lot of trouble. In the ordinary English-made furniture, the carving (although it may be machine work) is cut out of the solid wood, and is not scroll work stuck on to the furniture, as is often the case with American furniture shipped to England, and large numbers of orders are undoubtedly lost in consequence of this procedure; and then, too, complaints are made that United States houses will not make goods as per drawings forwarded to them. A large importing house in Manchester tried for three years to get what they wanted from the United States, and only succeeded after that time. They now do a good business, but it has only been after a wearying struggle to get the designs wanted.

A good trade might also be done in supplying duplicate designs of furniture "in the white" (i. e. the unfinished condition). The goods are made ready for putting together, and when they arrive at their destination they are fitted up, upholstered and completed ready for the market. This system also saves expense in packing, the goods taking up a smaller space, and they can be handled much better. Care, however, must be taken to see that all parts are properly numbered, and they should also be fitted together before shipment and not leave it to mere luck to fit all right when they come to be shown in the English warehouse. Your manufacturers should show greater attention to packing. For instance, the agent of an American house has been selling a large number of desks, suitable for parlor and ladies' boudoir use. He has sold these quickly, but complains that there has been a great deal of loss by bad packing. In packing these desks for shipment, they are wrapped in paper, and it frequently happens that they need another 24 hours in drying, for a piece of paper sticking to the varnish, though it covers only a quarter of an inch of surface, ruins the entire article. This is another instance of the indifference shown to details by the American exporters.

One of the United States Consuls in England wrote some time back that the trade in furniture in the United Kingdom "is rapidly growing, and will undoubtedly soon be a very large one. The Canadian manufacturers seem to be alive to its possibilities, while those of the United States are either indifferent or are not aware of its value. British official figures as to the extent of this trade are misleading, for the reason that Canadian exports made from New York and other ports of the United States are generally credited to the United States and not to Canada." And he added these

words: "Two things are certain. 1, Canadian furniture makers have a large and increasing market in England, 2, that of American furniture manufacturers is comparatively small. The explanation is simple—the Canadian manufacturers meet the peculiarities of the English trade and adopt the English styles, while manufacturers of the United States do not." What the Consul wrote was very largely correct, and now, having pointed out the danger, it must remain with the exporter to meet it successfully.

CANADIAN EXPORTS TO NEW SOUTH WALES.

The following statement gives the principal articles of Canadian export to New South Wales in 1897:—

Bicycles	£23,667
Flour	119,858
Wheat	14,978
Agricultural machinery.....	2,710
Other machinery.....	801
Printing and other paper.....	1,137
Timber, rough.....	8,317
" dressed	920
Cordage, ropes, etc.....	620
Drapery, etc.....	1,941
Boots and shoes.....	500
Carriage makers' materials.....	907
Furniture upholstery.....	1,139
Hardware and ironmongery.....	489
Hogs	569
Pianos	949
Other articles	7,929
	£187,291

WOOD-WORKING MACHINERY IN FRANCE.

One of the leading business men of Nantes informs me that certain American wood-working machines used in dovetailing lumber for packing cases would find a market here. The gentleman was unable to give the name of the manufacturer, or the exact name of the machine, but said he saw them working in England, and that they did their work neatly and rapidly. An immense amount of lumber is constantly used here in making the cases in which small sardine boxes and packages of conserves are packed for shipment. Not only could the machine be used in Nantes in dovetailing lumber for boxes, but also at Brest, Lorient and Concarneau, where other large sardine factories are located, and at Samur, where quantities of fine wines are packed for shipment. Thousands of cases are also used by the extensive biscuit factories of Nantes.—United States Consul at Nantes.

TRADE IN LIBERIA, AFRICA.

Several English firms have repeatedly endeavored to settle down here, but all have collapsed, as they could not compete with German houses. The only one that remains in existence is that of Brown & King, which is doing very good business; it is represented by the British Vice Consul, Mr. W. A. King.—French Consular Agent at Monrovia.

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Guaranteed Quality.

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When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

CAPTAINS OF INDUSTRY.

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

If a new manufacturing enterprise of any kind is being started, or an electric lighting plant instituted, or an electric railroad, or a 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, alkalies, etc. It is well worth the while of every reader of the Canadian Manufacturer to closely inspect all items under the head of Captains of Industry.

THE ELECTRICAL CONVENTION.

The programme for the Canadian Electrical Association Convention, to be held at Hamilton, June 28th, 29th and 30th, is an interesting one. The opening session will include reading reports, presentation of papers and discussions thereon. The second day will include consideration of reports, selection of place and time for next meeting, etc., and the election of officers for the ensuing year will be held on the morning of the third day.

The list of papers to be read include:--

1. "Meters": meter rates; system of discounts; method of metering; meter rates for different classes of service. A. A. Dion, Ottawa.
2. "Cost of Power": cost of steam power delivered by shafting for factories, and cost of same electrically delivered; relative cost of steam and water power developments; operation and maintenance. C. B. Hunt, London, Ont.
3. "Inspection": compulsory inspection of installation; Montreal Fire Commissioners' Report as to causes of fire. W. J. Plewes, Montreal.
4. "The Enclosed Arc Lamp and Its Use." W. A. Turbayne, Hamilton, Ont.
5. "The Incandescent Lamp for Central Stations," considering efficiency, candlepower, distribution of light, regulation, and whether 220 to 240 volt lamps are likely to come into general use; also a reference to the Nernst Lamp. E. E. Cary, St. Catharines, Ont.
6. "Central Station Accounting from a Business Standpoint." P. H. Hart, Montreal.
7. "Transformer Economy." F. E. Leonard, Jr., Montreal.

In addition to the papers, there will be a few matters for general discussion, including an oral description of the Cataract High

Power Tension Distribution, by H. R. Leyden; also a "Question Box."

The social features will be, on Wednesday, trip to Burlington Beach and excursion on the lake, returning by Hamilton Radial Railway, visiting en route the power stations of the Hamilton Street Railway Co., and the Hamilton Radial Railway Company.

On Thursday, trip to Grimsby over the Hamilton, Grimsby & Beamsville Electric Railway, and on return visit to the Hamilton Electric Light & Power Company's power station, and in the evening the annual Association banquet.

On Friday, take train on Grand Trunk Railway for visit of inspection to the Cataract Power Company's works at DeCew Falls.

The Ontario Wind Engine & Pump Company, Limited, have applied for space for one of their well-known "Canadian Airmotors" on a steel tower for the Paris Exposition. Their export trade having become quite an important feature in their business, they deem it indispensable to bring before the world the merits of their goods.

The B. F. Sturtevant Co., of Boston, Mass., early recognized the demand for electrically driven fans, which was sure to follow the general distribution of electricity for power purposes. Its first fan motors were built about ten years ago, since which time designs have been perfected, the number of types greatly increased, and a large electrical department established. Some of the recent products of this company in the way of special electric fans are presented in their Bulletins H. and M. The former relates to the enclosed fans; the latter to propeller ventilating wheels.

An application has been made for a charter for the Hoepfner Refining Co., with a capital

stock of \$600,000. The incorporators are:— Carl Hoepfner, Ph. D., Frankfort-on-the-Main; A. T. Wood, Hamilton; David MacLaren, Ottawa; Nathaniel Dymont, Barrie; Hon. J. M. Gibson, John Moodie and John Patterson, Hamilton; Henry Necarsulmer and Albert F. Fuerst, New York. The objects of the company will be the mining and refining of zinc, lead, silver, nickel and copper ores. The headquarters of the company will be at Hamilton, Ont.

The Niagara Falls Gorge Electric Railway Co. was reorganized a few days ago with Gen. Francis V. Greene, of New York, as president, and Godfrey Morgan as general manager. By an agreement with the Niagara Falls Park and River Railroad, the cars of the Gorge Company will cross the new bridge at Lewiston, return to the Falls on the Canadian side of the river and cross the river again, forming a twenty-mile belt line.

The Berlin, Ont., Rubber Company have purchased a site from the Breithaupt estate in that city, and will begin work on the erection of their rubber factory at once.

The Semmens-Evel Co., of Hamilton, are having their wood-working machinery, which was recently damaged by fire, overhauled and repaired by the Smart-Eby Machine Co., Limited.

Messrs. Gerhard Heintzman & Co., piano manufacturers, Toronto, have found it necessary to enlarge their factory owing to the rapidly increasing demand for their instruments. They are now building an extension in the rear of their factory on Sherbourne street, the estimated cost of which is \$20,000. It will be a five-storey brick structure, 30 x 160 feet, furnished with the most modern appliances in the way of machinery, etc., and will have electric lighting throughout. With this extension, the factory will have a producing capacity of seventy-five pianos a month. It is expected that the new building will be completed by September 1st.

A charter has been granted William Christie, R. J. Christie, R. Harvey, M. J. Christie and C. E. Edmonds, creating a corporation to purchase the business carried on under the name of "Christie, Brown & Co.," in Toronto. The name of the company will be Christie, Brown & Co., Limited, with a capital of \$500,000.

The Conley Church Organ and Piano Company of Madoc, Ont., has absorbed the Aerial Meech Church Pipe Organ Co., of Toronto. The price paid was \$28,000. The Toronto plant will not be removed to Madoc.

The Kerr Engine Company, of Walkerville, Ont., are to be given the contract for supplying new pumping machinery for the Ottawa waterworks. The pump is to be of eight million gallons capacity, and the contract price is \$22,905.

INGERSOLL-SERGEANT Rock Drills

FOR MINES, TUNNELS AND QUARRIES

PISTON INLET Air Compressors

STRAIGHT LINE
DUPLEX and
COMPOUND.

FOR ALL DUTIES.

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

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

It is announced that the Canadian Pacific Railway Co. will erect a mammoth hotel in Winnipeg, Man., this year.

Sir William C. Van Horne intends to make East Selkirk, Man., his place of residence for a certain portion of the year, where he has established a large farm. He has called for tenders for the construction of a substantial two-storey residence building, 40 x 90 feet, and stables, cowsheds and barns, covering a space of 300 x 30 feet.

The immense saw milling and lumber works of Alfred Dickie, at Lower Stewiacke, N.S., were completely destroyed by fire, May 31st. The mill was situated close to the track of the I.C.R., forty-two miles from Halifax.

Messrs. Baxter & Galloway, of Burlington, Ont., have placed an order with the Smart-Eby Machine Co., Limited, of Hamilton, for a fifty h.p. gasolene engine to be used in driving their new flour mill.

The wonderful endurance of a well designed and thoroughly constructed fan blower is very emphatically evidenced by a recent statement of The William Kennedy & Sons, Limited, Owen Sound, Canada, to this effect: "We have two Sturtevant Pressure Blowers in use, one of which has run over thirty-two years steady, and often twenty-four hours per day, and is apparently as good as when installed, although no one has as yet seen the inside of it. The other has been used for foundry purposes, and has been in use for about thirty years or so.

The Canadian Motor Syndicate, Toronto, have just finished an electric motor wagon for Messrs. R. Parker & Co., Toronto.

The ratepayers of the town of St. Atford, Ont., have voted against municipal ownership of the waterworks system of that town.

The ratepayers of the town of Woodstock, Ont., have assented to the by-law to raise \$7,000 for the purpose of erecting a fire hall and installing an electric fire alarm system.

Another interesting relic disappeared from the Detroit river when the old United States revenue cutter Andy Johnson made her exit. She has lain at Walkerville, Ont., for a long time, having been out of commission for the past three or four years. Her engine was put into the steamer Flora, which was rebuilt by the Walkers last winter for the Port Stanley-Conneaut route. Capt. Andrew Hackett, of Amherstburg, purchased the hull, and after removing the rest of her machinery, will have the old stager converted into a lighter.

A handsome little passenger steamer is now being built and fitted out by the Polson Iron Works Co., Toronto, for the Ottawa River Navigation Co. The hull is constructed of Ohio oak. She is 100 feet long, with twenty feet beam, has a compound engine, a Fitzgibbon boiler, and is expected to make fourteen or fifteen knots per hour. She will ply between Thurso and Ottawa city, making daily trips, and is built especially for excursion traffic. She is expected to carry 300 passengers. The interior fittings are of the finest; the ladies' cabin is carpeted with fine

Brussels and finished with metallic lincresta work, beautifully tinted and relieved with gold striping, while the panel work is in mahogany. The gentlemen's saloon is furnished in cherry. All the space has been advantageously utilized, and even the quarters for the crew are convenient and comfortable. She is fitted up with incandescent lights, and the staterooms, saloons, etc., are provided with radiators for steam heating in cool weather.

The Canadian Colored Cotton Co. has ordered a number of large dyeing machines from the Smart-Eby Machine Co., Limited, of Hamilton.

A. J. Ashton, of New York, representing the National Wall Paper Company, was in Toronto recently, making inquiries for a site on which to establish a branch manufactory.

The Dominion Brussels Carpet Co., Elora, Ont., advise us that owing to the damage done by the late floods to the buildings they occupy, they have been compelled to hasten their removal, and have now completed arrangements to remove to Sherbrooke, Que., where they have secured a fine site with ample water power and a good equipment of factory buildings thereon, which will only require a few weeks to put in order, so that they hope to be running again early in July, and under conditions immeasurably better than heretofore. They say that they will be in position to deliver goods at the usual time this fall.

The annual meeting of the Canadian Cotton Mills Company was held in Montreal May 30th. The statement which was read showed the net profits, after all interest charges and other deductions had been made, to be \$210,877. A dividend of two per cent. had been declared, amounting to \$54,000, during the year, and the sum of \$156,877 had been carried forward to profit and loss. The profit and loss account now has \$784,000 to its credit. The president, Mr. David Morrice, stated that the company carried no bad stock, and the position was considered to be excellent. Changes were being made, so that the company would be capable of making a higher class of goods than had heretofore been turned out. The capital account had been increased \$117,000 in order to purchase and instal the new machines.

The Commander Motor Co., manufacturers of motors, dynamos and special electrical machinery, 20 Sheppard Street, Toronto, is a new concern who are now appealing to the public, who require such goods, for a share of their favor. They are now placing upon the market their new "Commander No. 3" motor, which is very beautiful in appearance, and which they say is perfect in design, economical in current, of moderate speed, and sparkless in operation under any load. It is of rigid frame, jointless magnetic circuit, and built to last.

An American company, it is stated, is going to build a dam on the Trent River above Glen Miller, Ont., the object being to obtain power for a paper mill.

The Ontario Box Co., of Hamilton, has placed an order with the Smart-Eby Machine Co., Limited, of that city, for one of their patent clamping machines for clamping and trimming box shooks.

The Dufferin Falls, Ont., Pulp and Paper Company, which has limits of 1,400 square miles extending along the River du Lieve, will begin active operations during the present season. The mills are to be at Buckingham, Que., where the Lieve joins the Ottawa. The persons interested in this company are W. and F. P. Currie, of the Dominion Paper Company, James T. Sheater, M. S. Foley, Hon. J. A. Ouimet, W. T. Fee. They are reported to have paid \$130,000 for the rights they are now to turn to account. It is also said that when in England recently, Mr. Foley made arrangements for the delivery of 50,000 tons of sulphite per annum.

Messrs. F. Mack & Son, Cornwall, Ont., have recently been installing considerable new machinery into their flour mill.

James Lister is making arrangements to build a new flour mill at York Mills, N.B. He has applied for the Government bonus, and expects to have the mill completed before the fall.

The London correspondent of The Paper Mill, speaking of the fact that British paper makers are looking to Canada for their supplies of paper pulp, says:—Although considerable interest appears to be taken by British paper makers in Canadian enterprises, it may be noted that the arrivals of wood pulp at British ports from that country do not compare so favorably as with those received a year ago. Shipments of chemical pulp from the United States have been on a fairly large scale. Probably the imports of Canadian pulp will largely increase when the schemes in which Capt. Partington, Edward Lloyd, Limited, and others are interested are completed. Some very big developments appear to be going on in Canada in connection with the wood pulp and paper industries, judging from the incorporation of the British America Pulp and Paper Company, the New Brunswick Pulp and Paper Company, Limited, and other concerns in which British capital is more or less associated.

Hart & McKay, millers, of Boissevain, Man., have dissolved partnership. The business is being continued by J. S. McKay.

The City of Hamilton has placed an order with the Smart-Eby Machine Co., Limited, of that city, for a duplex sludge pump, fitted with special water valves for handling the sewerage for the city. This pump is to replace one of those at present in the Sewage Disposal Works.

The Ogilvie Milling Company, of Montreal, Que., is sending out to the trade a very handsome hanger as an advertisement of its popular brands of flour.

The Farmers' Elevator Co., of Forest, Ont., has been incorporated with a capital stock of \$3,000. The incorporators are G. M. Van Walkenburg and others.

REDDAWAY'S ORIGINAL

CAMEL BRAND HAIR BELTING

STRONGEST BELT MADE. NO STRETCHING.

NOT AFFECTED BY DAMPNESS, HEAT OR STEAM.

WRITE FOR PARTICULARS. LARGE STOCK ON HAND.

Fire Hose, Steam Hose, General Mill Supplies.



W. A. FLEMING & CO., SOLE AGENTS FOR CANADA, **57 St. Francois-Xavier St., Montreal.**

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Some ten years ago a French missionary started the systematic rearing of two kinds of spiders for their web. Now a spider web factory is in successful operation at Chalais-Meudon, near Paris, where ropes are made of spider web intended for balloons for the French military aeronautic section. The spiders are arranged in groups of twelve above a reel, upon which the threads are wound. It is by no means easy work for the spiders, for they are not released until they have furnished from thirty to forty yards of thread each. The web is washed, and thus freed of the outer reddish and sticky cover. Eight of the washed threads are then taken together, and of this rather strong yarn cords are woven, which are stronger and much lighter than cords of silk of the same thickness. These spider web ropes are very much more expensive than silk ones, but it is hoped to reduce their cost somewhat in the future.

The new swing bridge over the Canadian canal at Sault Ste. Marie, of which the superstructure is 408 feet long, is the longest swing bridge in Canada. It was built in place without any interruption of railway traffic. The new bridge does away with the objectionable pier which stood in the center of the canal as a menace to shipping, and which is now being taken out, so that this season vessels using the Canadian lock will have an entrance 150 feet wide.

Messrs. Mauzer & Finlay will build a new flour mill at Leduc, Man.

A Pennsylvania paper describes some very curious rocks that cover several acres at Pottstown, that State. They have a metallic sound when struck with a hammer, and hence are called "Ringing Rocks." During a thunderstorm recently the night was quite dark. Persons passing the rocks were startled to see a light bluish flame rise from the ground and spread over a space ten or twelve yards square. This flame rose and fell after the manner of the northern lights, sometimes entirely disappearing and then flaming up again, lighting up the darkness around it. They watched this mysterious light from a distance, and then went close to it to see what cause there was for it. Some old residents in that neighborhood said they had seen the strange lights on nights during violent storms. They explained that the rocks were so metallic in formation that they attracted all the electricity in the atmosphere for miles around, and through some natural cause the electricity became luminous like phosphorescent glow, that lit up like the northern lights. To some the fire looked like a flame rising up from the huge rocks whose cavernous depths below have never been explored. These metallic or ringing rocks look as if they had been dumped into a vast lake and thoroughly filled it, so that the water entirely disappeared. Small pebbles dropped through the crevices of the rocks can be heard dropping from ledge to

ledge until the sound is lost fifty feet below. On some of the surfaces imprints of human feet or feet of beasts or birds can be seen, as if they had passed over the rocks when they were soft enough to receive an impression, and then hardened and retained them. There was a story that a ghost that emitted fire from its nostrils haunted the rocks, but scientific men declare that the rocks are so highly charged with magnetism that any electric disturbance will cause the glow.

The Charles Roger & Sons Co., Toronto, who furnished the interior fittings of the new steamer Toronto, of the Richelieu & Ontario Navigation Co.'s line, performed that service in a most acceptable manner. The dining-room and its furniture is finished in mahogany with cream enamel, the entrance hall in malachite oak, and the smoking-room and private cabins in prima vera. The whole of the interior upholstery work is as beautiful and elegant as good taste can produce.

The Louiseville Shirt Mfg. Co., Louiseville, Que., has been incorporated, with a capital stock of \$25,000, to manufacture shirts, blouses, women's underclothing, etc.

It is said that the Dufferin Falls Pulp and Paper Company, having acquired areas reaching over 1,400 square miles along the River du Lievre, Que., will begin active operations during the present season. The mills are at Buckingham, and it said that three hundred men will be engaged.

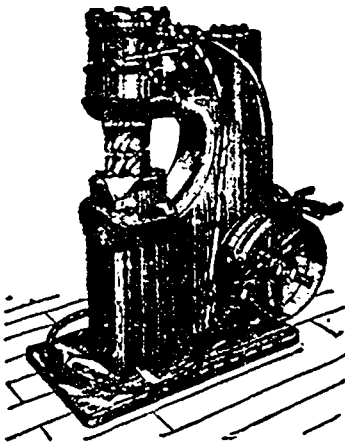
The project of a direct steamship connection between Canada and France seems about to be realized. A line is to be started without a Government subsidy. It is being brought into existence by the efforts of Canadians, the President of the French Chamber of Commerce of Montreal having taken a prominent part in the agitation, which has ended in the formation of the company. It is believed that the line will be the means of greatly increas-

ing the trade between France and Canada. When Mr. F. H. Clergue endeavored to launch another scheme for establishing a steamship service between the two countries, he undertook to supply a large proportion of the Canadian freight from the works of the Sault Ste. Marie Pulp and Paper Company. France's demand for Canadian pulp has been greatly developed by Mr. Clergue's own enterprise. The steamship project he was connected with did not go through, the Government having not seen its way to granting a subsidy.

In view of the fact that the entire interests of the H. C. Frick Coke Company, the largest coke operators in the world, will be taken over by the new Carnegie Steel Company, now in process of formation, it may be of some interest to give a brief statement of the holdings of that concern. We can state that the H. C. Frick Coke Company own 50 coke plants, aggregating 11,000 ovens. Of these plants 17 are drifts, 21 slopes, 12 are shafts. They own 10,000 acres of coal, have 21,400 acres of surface land, three water plants, three coke crushers, one fire brick works, 2,500 individual railroad cars, 60 miles of standard gauge railroad tracks, 305 miles mine tracks, 6,000 mine wagons, 18 air compressors, 12 electric light plants, 145 pairs stationary engines, 35 locomotives, 263 steam boilers, and 1,000 horses and mules.

A German inventor has patented the following method of waterproofing paper: The sheet is coated on both sides with a solution consisting of one part gelatine, four parts water and one part glycerine. When dry, the paper is immersed in a ten per cent. solution of formalin. After this treatment the paper is said to become impervious even to steam.

A newly-discovered mineral, which is of a lustrous black color, and which, as a fuel, surpasses coal and all other substances heretofore known, is described by the "Journal of Geo-



The Yeakley Vacuum Hammer.

Canadian Patent November 9, 1897.

is now Manufactured and for Sale by
the undersigned Sole Proprietors
of the Canadian Patent:

George Brush,

EAGLE FOUNDRY,

MONTREAL.

Shafting, - Hangers, - Pulleys.

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logy." It is found on the Island of Barbados, in the Lesser Antilles, where the natives call it "manjak." It is thought that manjak is petrified petroleum, great quantities of petroleum being found on the same island. It contains only two per cent. of water, and fully twenty-seven per cent. of solid organic matter, thus surpassing in utility the best asphalt of Trinidad, in which thirty per cent. of water is contained, and which has been classed so far as the very finest fuel. Mixed with turf, it gives heat far superior to any known.

Cleaning machinery by means of blotting-paper has been tried in German workshops. Tow, woolen refuse, sponge cloths, jute waste, etc., are the materials usually employed for the cleaning of machines and parts of engines which are soiled by lubricating substances and dust. The better varieties of cotton waste are excellent for scouring, but the cheaper grades are charged with dust, making necessary the use of a sponge cloth specially manufactured for that purpose. In employing blotting-paper for scouring purposes, not only can the use of cotton waste be decreased, but the sponge cloths can be entirely dispensed with. The German workman formerly received on an average 250 grams of cotton waste, one new sponge cloth, and one or two renovated ones, per week; now he is supplied with 150 grams

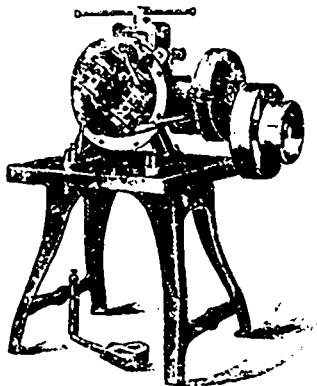
of cotton waste and eight to ten sheets of blotting paper, at the cost of two and a half cents, or about one third of that of the waste, etc. The paper is not only cheaper, but it cannot soil the machine with fibres and dust like sponge cloth and woolen refuse, and it is far preferable to cotton waste. Beyond this, it is not so combustible as other cleaning materials, and if it should get caught while parts of engines in motion are being cleaned it tears easily and runs no risk of drawing the hand of the workman into the machinery.

The use of the diamond saw for cutting stone is facilitating the erection of the buildings for the Exhibition of 1900 at Paris. This new circular saw is due to Mr Felix Fromholt, a Parisian engineer. The diamonds which form the cutting teeth of the saw are common crystals, worth about \$2.50 a carat, and they are fixed in a steel disk over six feet in diameter, which is mounted on a spindle, and revolved by steam power, like an ordinary circular saw. For sawing hard stones there are 200 diamonds in the cutting edge, and the speed is 300 turns a minute. It advances into the stone about a foot in that time. For soft stones the teeth are of steel, with diamonds at intervals of every five teeth, and at a speed of twelve turns a minute the saw advances about a yard in that time.

The new saw has been at work in the workshops of the Champs Elysees for several months, and has given general satisfaction. It cuts and dresses the stone on all sides, and gives it sharp outlines. Moreover, it does so at one-eighth to one-tenth the cost of hand labor. A saw of this kind with an alternative movement, sawing stones four to six feet high, is to be set up.

"Sawdust," says the National Druggist, "in spite of the various uses to which it has been put in the arts and industries, still constitutes a waste product, in America at least. It has recently been found, however, that not only the sawdust, but all the refuse of saw-mills may be advantageously utilized in the manufacture of calcium carbide. For this purpose the dust, scraps, slabs, etc., are carbonized by a rapid and simple process, and in this condition furnishes a charcoal especially valuable in this direction. The charcoal is run through an apparatus for reducing it to a fine powder, and this latter is mixed with an equal quantity of quicklime, and the mixture submitted for ten hours to an electrical current of intensity sufficient to melt iron. The production of the carbide commences at once, and in the stated time is complete, the resultant material being in masses convenient to go at once into commerce."

THE BEST PIPE THREADING and CUTTING-OFF MACHINES



No. 00 Machine, Power Attachment.

ARE MADE BY THE **ARMSTRONG MFG. CO.**
BRIDGEPORT, CONN.

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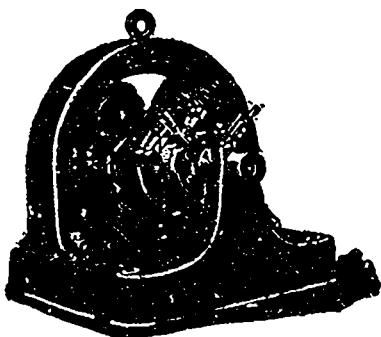
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HIGH-CLASS ONLY.

255-7 James St. N., HAMILTON.
'Phone 958.

Engine Packing,
Magnesia Pipe Covering
Lubricating Oils
and Grease.

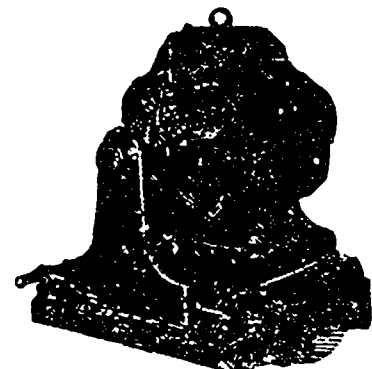


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MULTIPOLAR MOTORS & DYNAMOS

And Direct Connected Plants
for Isolated Lighting.
Repair Work a Specialty.

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ON TO CANADA.

As has been frequently pointed out in these pages, the spruce forests in the United States are rapidly being depleted, and the paper makers must of necessity look elsewhere for their supplies of pulp. The Boston Gazette publishes an interesting article on this question, which we here reproduce as follows:—

The common spruce tree of the American forests furnishes the great bulk of the wood pulp that is daily converted into printing paper—practically all that goes into news paper. The word "common" is chosen advisedly. Time was when in New England and the northern tier of States spruce trees were as familiar to the people and almost as plentiful as the grass of the fields.

Beginning approximately a third of a century ago the use of wood pulp instead of rags and other refuse in the manufacture of paper increased so rapidly and the business became so profitable that in the early eighties the water power sections of Northern New York

and New England were dotted all over with pulp mills, and the business of the saw mills began to fall off perceptibly. For the spruce-land owners there was much more money in pulp logs than in deals or "dimensions," and the stripping of the spruce lands went merrily on. Then the West and the lake region caught the infection and, as the people there never do anything by halves, a new pace was set for spruce-forest denudation. Every tree, young or old, that would yield pulp was marked for the woodman's axe. A note of warning was now and then sounded, but what was the use? There all over the country, all over the world, in fact, was the demand for the pulp; here was the spruce, and the spruce must go. Like the apostles of our new imperialism, these wood-choppers went ruthlessly on through fire and slaughter there "was dollars in the job." Pulp mills multiplied, competition became fiercer, paper became cheaper, spruce logs were still more in demand, and the inevitable result has been

so rapid a contraction of the available spruce area in the United States that many of our paper manufacturers have been forced already to go over the border into Canada for spruce logs. The situation is not keenly critical, but it would be folly to declare that it is not alarming. American ingenuity may yet discover something to take the place of spruce pulp in the making of paper, but up to date, it surely has not done so. Upon the best "inside" authority it has been lately declared that, if the present pace of spruce-land denudation is kept up, in five years from now there will not be a "stick" of the timber standing in the United States.

Forestry and pulp manufacturing data are, in some instances, difficult of access, but the most reliable sources of information, after the most careful investigation, yield the following facts.

Practically the only large spruce areas available for pulp now left in America—that is, for the supply beyond the immediate future—are in parts of Maine and in the British Provinces.

In the mountains of West Virginia there are small tracts of land still standing and open to purchase, but the trees are more suitable for lumber than for pulp with, of course, some exceptions.

Vermont and New Hampshire have still some standing spruce, very limited in amount, however, and like that of the States in the lake region of the West, it is practically all in the hands of a few strong companies which will not sell it, but are rapidly consuming it in their own factories.

Maine has been a most attractive field for spruce pulp operations. She was a pioneer in the industry, and she now finds most of her own spruce contiguous to water power cut off. On the Androscoggin River there are numerous pulp mills which, when there worked to their full capacity, require about 250,000,000 feet of spruce logs annually. and it is reported on good authority that the standing spruce in the territory tributary to these mills cannot last over four years longer at the present rate of consumption. "Why," was the recent remark of a Boston manufacturer, "they are already grinding up bean poles and boughs for pulp down on the Androscoggin—this, to save the larger trees—and God only knows what they will do for spruce five years from now." Contiguous to the Kennebec River the spruce lands have been so nearly stripped that they can no longer supply the pulp and saw mills with logs.

In Northern Maine the water-ways that

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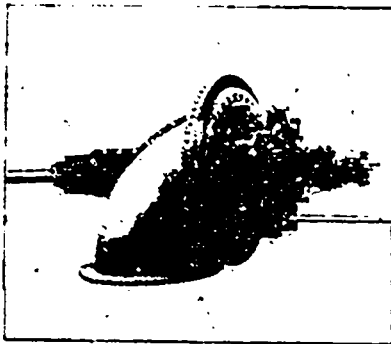
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The Crocker Patent Turbine....

Is peculiarly adapted for service under any of these conditions, as it possesses great efficiency under varying degrees of gate opening, and the ratio of power developed to diameter of wheel is remarkably large. To those interested we will supply catalogues and particulars of leading plants, together with a copy of latest official Holyoke test, 1899. Water powers reported upon, and estimates prepared. Correspondence invited.

The JENCKES MACHINE CO.,

42 Lansdowne St., Sherbrooke, Que.

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flow into the St. John River above Grand Falls, in Canada, have most of the smaller growth of spruce still standing along their banks and for many miles inland. This is because there was profit to the lumber men only in large logs. The cost of driving and booming to the mills was over \$2.50 per thousand feet on an average, and it did not pay to cut and drive the small growth. And here is the only part of Maine where large pulp and paper mills can now find a supply of good pulp timber. Where there is good water power convenient to these spruce tracks and transportation is sufficiently cheap these properties are being rapidly developed, or at least being bought up by paper capitalists as a safe guard for the future. But, compared with the enormously increasing consumption of white paper both in this country and in Europe, the spruce pulp product of the remaining forest lands in Northern Maine promises to put off an evil day of actual exhaustion only a year or two at the best.

It is to Canada, then, that we must turn for our spruce in the future—the very near future,

too. And this condition has already awakened our provincial neighbors to the opportunity which they possess for developing the pulp and paper industry along their own waterways, so that, if our manufacturers here in the States would provide early for the inevitable, they have no time to lose in the matter of selection and purchase of Canada lands. The price is already advancing, and the comparatively few water powers are becoming scarce on the market.

The cry of the paper manufacturer is "On to Canada!"

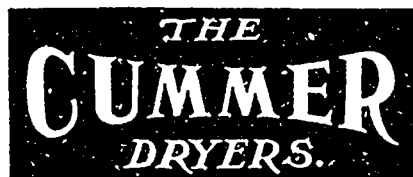
SOAP AND PAINT MINES IN BRITISH COLUMBIA

A natural soap mine and a paint mine are two of the latest mineral discoveries in British Columbia. Several soda lakes have been found in the foothills near Ashcroft, B.C. Their bottoms and shores are encrusted with a natural washing compound, containing borax and soda. No two analysts agree exactly as to the composition of the material.

A New York analysis gives 26 per cent. borax, while a Montreal chemist, from the same sample, gives 19 per cent. borax. Tests prove the substance to be equal to the washing powders in common use for cleansing purposes.

Trials by blacksmiths and farm workmen show that it will remove grease and dirt quicker than soap. After many such tests a syndicate of British Columbia men has been formed to put the product on the market. One of the members is now in New York for that purpose. About 275 tons of the compound have been cut and taken out of one lake. It is handled precisely as ice is handled. The blocks are more than nine inches in thickness, are sawed in blocks 15x18 inches, and weigh 50 pounds each. It is estimated that this lake alone contains 20,000 tons, proving that the industry, if successful, will reach large proportions.

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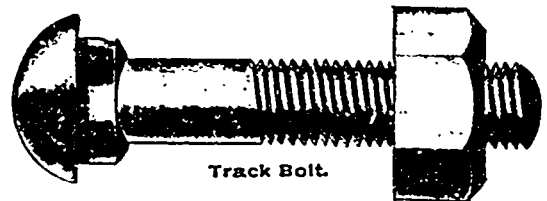
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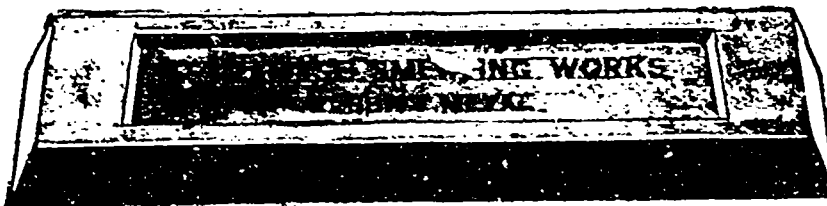
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WALL PAPER.

It is a little strange to be told that almost the earliest examples of wall papers in use are to be found in China, where they have been used in some provinces for several centuries. In Europe it would seem that the idea was first taken up in England, and in the sixteenth century wall coverings made to imitate, as far as possible, the velvet wall hangings of the great Genoese and Florentine merchant princes were occasionally introduced into wealthy English mansions, and the conventional patterns chosen were rarely altered or changed.

Up to about a hundred years since the patterns were printed on small square pieces of paper from wooden blocks, with the design cut in relief, one for each color, and, of course, printed by hand. Great care was, of course, necessary to obtain an accurate register, and all this made the better qualities very expensive. The blocks generally used in England were some twenty-one inches wide, so as to be convenient for handling, as larger ones would have been too bulky for ready use. In "flock" papers, which in the days of our grandfathers were mostly in use, the design was first printed on size; the flock, i.e., wool of the necessary color cut very fine, or metallic powder, was then sprinkled carefully and evenly over the paper and, of course, adhered only to the pattern. If a fairly well marked relief is required the process is repeated, and the whole paper pressed between rollers. At the present day, however, all such antiquated methods are of course impossible, and, although the ancient process often produced a good result still much better

effects can now be produced by machinery at a fraction of the former cost, for the improvement in color printing machinery and in preparing colors has been one of the chief features of progress during the present reign.

Until a comparatively recent date it has been found difficult to make use of very many colors, but now even this obstacle is being removed, and machines specially designed for wall paper printing are manufactured which will print as many as twenty four colors, and, moreover, produce results as artistically and as technically perfect as hand printing. The progress of mural decoration for the house is therefore well worth careful attention, and on the other side of the water, art papers of a high grade are usually kept in stock by the leading stationery establishments. In England, where the division and specialization of function is much more marked than in the newer countries across the sea, stationers have not done so much in this line of business as perhaps they might, but we think that in the rush and hurry of competition, extensions in the direction here indicated would be found very advantageous to all concerned.—Stationery Trade Journal.

EXPORTS VIA ST. LAWRENCE.

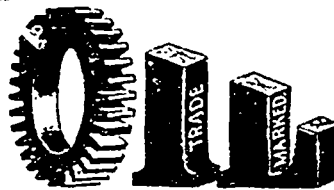
The peculiar physical conformation of the Great Lakes region gives great natural advantages to Canada for the export of grain, ores and other products from the interior of the continent, both in our own States of the Northwest and from the Canadian region north of the lakes. One of these advantages

was utilized many years ago by the construction of the Welland Canal, connecting Lakes Erie and Ontario, but the canal was calculated for the small sailing vessels of that period, and no great use has been made of it. It has now been deepened so that the large vessels of the lakes can pass through it, and the new project, substantially backed, for erecting extensive elevators at Ports Colborne and Dalhousie, the canal terminus, and at Montreal, with lines of carrying steamers of great capacity, which have been ordered built, contemplates a very serious diversion of lake traffic to Montreal that formerly came to Buffalo and thence to our Atlantic ports. It is estimated that within two years this diversion of grain will amount to 150,000,000 bushels. If there is anything approaching such a diversion, then Canadian development will not stop with the Welland canal. There is a very feasible line, with less difficulties than were experienced in constructing the Welland Canal, by which a canal can be built from Georgian Bay to Lake Ontario, completely cutting out Lake Huron, St. Clair and Detroit Rivers, Lake Erie, Black and Niagara Rivers and a part of Lake Ontario, and bringing the great Northwest region practically as close to tide water as Northern Ohio. And the Ottawa Canal is still another scheme now made a live thing, a company to build it having been just successfully formed in London. Canada has long been sleeping on enormous natural advantages for giving her control, as against our States, between the Lakes and the Atlantic of the export and largely of the import trade between Europe and the Lake country region on either side of the line. It is a matter of capital and organization, two things which in recent years have been most wonderfully concentrated and developed. Canadian development is likely to be a great feature in the coming decade.—New York Financial Record.

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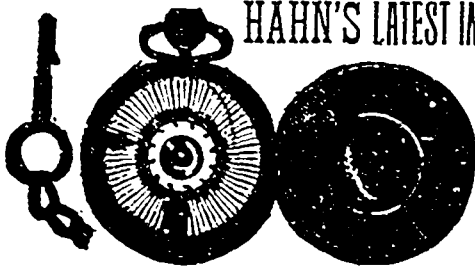
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MAKING PULP WARE.

Pressed wood pulp ware is said to be gaining favor, says an English paper, as a substitute for certain grades of china, glass, earthenware, and even wood and metal. One firm in Thetford has produced and sold within the past few years over 2,500,000 articles of this kind, including 50,000 water carriers supplied to the government. The raw material for the Thetford factory comes from Norway and Sweden. After being

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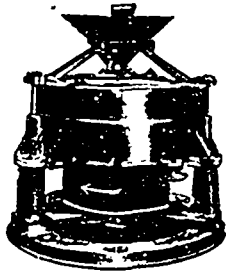
TORONTO.

ground and wetted it is stored in vats, whence it is forced into a tank and then taken out and moulded into forms having a rough outline resembling to the finished article. These shapes of loosely formed pulp are then treated in the hydraulic presses. These apply the first pressure, with the object of compressing the pulp and hardening the surface of the ware. From the presses the

goods are taken to a large drying shed, where any excess of moisture is removed by the action of the atmosphere. The shapes, when dried, pass to the embossing rooms, fitted with a number of presses by which the pulp is still further compressed and the surface still more refined. The amount of pressure required varies from five tons to twenty tons, according to the size and weight of the

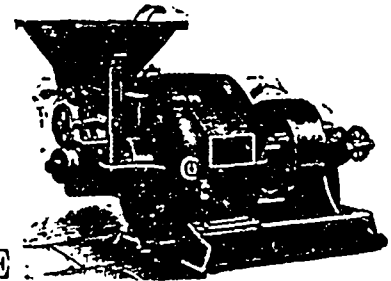
article being made. The next process is the cutting and trimming, this work being done by machines, which at a single stroke cut away all superfluous material. The finishing of the article then begins. They are placed in ovens to be indurated or hardened, and much of the life of pulp ware depends upon the thoroughness with which this is done.

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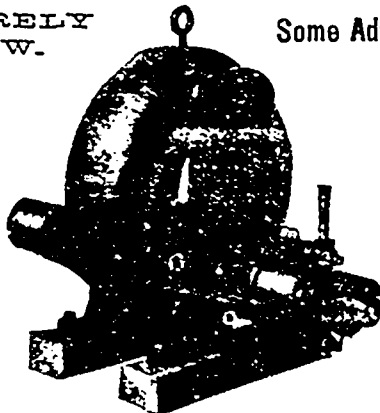
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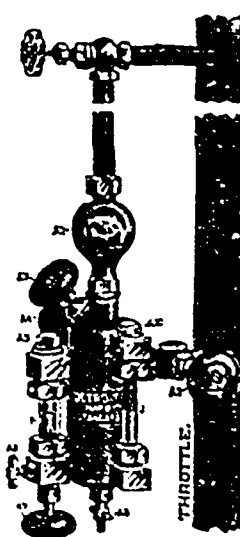
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SEND FOR RATES.

THE GASPE, QUE., OIL FIELD.

Oil was discovered many years ago in the peninsula of Gaspé. Borings were made by the Gaspé Oil Company on a small scale until 1865, when the company purchased about 30,000 acres of land and sank three wells in the vicinity of Sandy Beach and another at Silver Brook. These wells had to be abandoned at a depth of 600 feet, after small veins of brown oil were struck, owing to the insufficiency of the boring apparatus used. In 1889 an English company known as the Petroleum Oil Trust Co., Limited, of London, England, was organized, with a capital of £430,000 to work the 30,000 acres of the old Gaspé Oil Co., as well as the 20,000 acres afterward acquired. This company is the only one that has worked seriously, with the exception of the International Oil Co., which sank a well about 2,000 feet deep on sections A.B. of Block 41, in the Township of Larocque, without obtaining any results.

Since the Petroleum Oil Trust Company commenced its operations it has prospected regularly, first in the vicinity of Sandy Beach, Haldimand Town and Seal Cove, later in Gaspé Bay South, as well as on both sides of the York River, and to the south of St. John River, and at present it is boring about twenty miles west from Gaspé Basin to the north of York River, at a place known as Mississippi Brook; consequently, work has been done over a large extent of territory. But it was hitherto impossible to learn much about their operations, for the officials were bound to secrecy. Even the Provincial Government was refused information as to the character of the "strikes," if there were any.

In his last report, dated March, 1899, Mr. J. Obrulski, the Inspector of Mines for the Province of Quebec, says:—

"In my previous reports I have frequently mentioned the Petroleum deposits in the vicinity of Gaspé Basin, prospected by the Petroleum Oil Trust Company (Limited), London, but I have not been able to give

detailed information respecting these works owing to the method adopted by that company, which compels all its employees to keep its operations secret.

During the summer of 1897, the newspapers and public rumor asserted that the Petroleum Oil Trust had made numerous discoveries of oil in the vicinity of the Mississippi Brook, situate on Block 40, in the Township of Larocque. Seeing that the company was increasing its already vast territory and taking out prospecting licenses in the vicinity of the well, the public naturally became excited and prospecting licenses were taken out in the same region, and difficulties arose between the Petroleum Oil Trust and the Department of Mines, as the company claimed that it had not obtained from the Government all the privileges it expected.

"Mr. James Brodie of Quebec, and other persons purchased 2,000 acres in Block 45 on the south bank of York River; the manager of the company claimed to have rights on these lands and temporarily suspended its work, and the company decided to keep secret the developments on Block 40, as the territory in question is in the vicinity.

"I visited the works of the company and the wells in operation, as well as those about to be bored, but the manager told me that for the reasons above given he was compelled to refuse to place the books of the company at my disposal, which would have helped me to trace the stratification and all the work done up to date. And yet such a report, with the searches made, as I would have wished to have them made from a geological and technical point of view, would certainly have been of a nature to further the progress of the company by encouraging other companies to come and prospect, and thus contribute to a more thorough exploration and a better stratigraphical knowledge of the vast territory known as the petroliferous formation of Gaspé.

"When I visited the region there were thirty-three wells completed or in operation. Some of these wells had been sunk to a great

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COMMERCIAL DIRECTORIES

prominent amongst which are the Merchants, Manufacturers and Shippers of the World. Employes conversant with the French, German, Italian, Spanish and other languages will be in daily attendance, and the names and addresses of British and Colonial Manufacturers will be furnished all enquirers interested therein.

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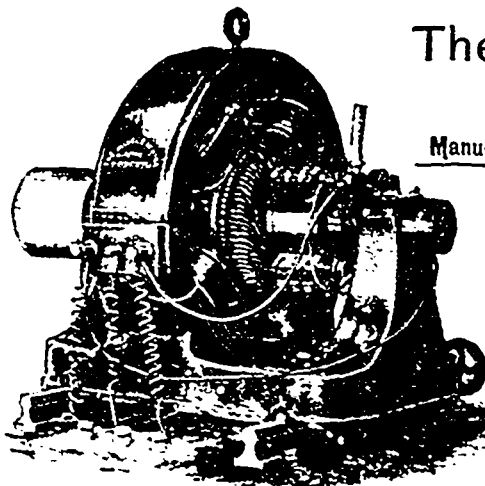
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depth, the deepest being 3,600 feet, but I consider that the average depth of the wells that would have to be sunk in future should not exceed 2,000 feet. This is based on actual indications, for oil has been found in greater or less quantities in mostly all the wells. In two cases the oil flowed naturally, but since then pumps have had to be used. The latest important discovery was made in the summer of 1897, in well No. 27. As it was not expected that oil would be found at so slight a depth no preparations had been made, and before the stream could be controlled about 1,000 barrels were lost. After tubing the well and connecting it with a tank it continued to flow in an intermittent manner for some time, but after that a pump was put in and three wooden tanks were built, sixteen feet in diameter by

twelve feet in height, and pumping was carried on daily. I was assured that these three tanks had been filled.

"At the beginning of June, 1898, during a period of drouth, a fire broke out which was caused by sparks from the boiler furnace setting fire to the engine house. The fire spread to the derrick, and before it could be extinguished, owing to the combustible nature of the surrounding objects and to a high wind, all the buildings were destroyed, including the tanks. When I visited the spot, about two weeks later, the derrick was being rebuilt and five new wells had been begun in the neighborhood. At that time about forty men were employed, well 33 being then in operation. I was led to believe that, owing to the contestation about Block 45 and the unpleasantness that arose from it, the company had considerably diminished its operations, and the manager informed me that its works would not be resumed on so large a scale until satisfactory arrangements had been made in connection with the land in dispute.

"Most of the wells sunk have been pumped more or less with a view of ascertaining their capacity, but until the oil is carried to the sea shore by pipes, it is impossible to convey it in quantities by any other paying manner, and in order that the company may be justified in establishing that line of pipes the territory must first be sufficiently prospected and efforts be made to ascertain as far as possible the rich regions and the probable yield of oil so that the line with its branches may be made as advantageously and as economically as possible.

"Since the above information was obtained, that is since the autumn, I have not received news of any importance from that district, but I see by the Quebec Official Gazette that the company is applying to the local Government for power to construct and operate a pipe line to convey the oil from the wells to the wharves at Gaspe Basin.

ESTABLISHED 1849.

CHARLES F. CLARK, President.

JARED CHITTENDEN, Treasurer.

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346 and 348 BROADWAY, New York City, U.S.A.

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The Bradstreet Company, Toronto Office:— Cop. Jordan & Melinda Sts.

THOS. C. IRVING, - - - Superintendent.



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Manufacturers of....
Machine Screws
OF EVERY DESCRIPTION.

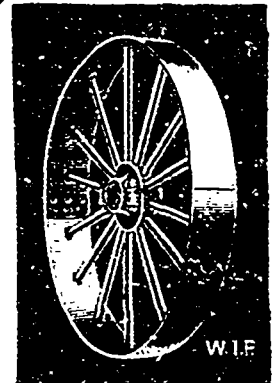
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Is open to buy on commission, Yarns, Nolls, Shoddy Pieces, etc. Apply J. C. COATES, 19 Bolton Road, Bradford, Eng.

MR. G. B. THISTLETHWAYTE
OF SYDNEY, NEW SOUTH WALES,
Purposes being in Canada from about July 14th to Sept. 1st, and is open to accept manufacturers' agencies.
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THE CANADIAN MANUFACTURER,
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THOMPSON & CO.,
Manufacturers of
BOBBINS and SPOOLS
FROM SELECTED STOCK.
Correspondence Solicited . .
Orders Promptly Filled
SHERBROOKE, P.Q.

"The work done up to the present, though extending over a long period and representing a comparatively large expenditure, is only of a preliminary nature. Petroleum exists in the region; it is of superior quality, and it remains to be seen whether it is to be found in paying quantities."

The Petroleum Oil Trust since then has found it necessary to raise more money in England to carry on operations and accordingly has been obliged to give some further details to the investing public.

It has just published in the London papers the prospectus of a company to be known as the Canada Petroleum Company, with a capital of £300,000 in shares of £1 each, of which 100,000 shares will be taken by the vendors in part payment of the purchase consideration. Two hundred thousand shares were offered for public subscription at par. The prospectus says in part:—The Canada Petroleum Company has been formed to acquire valuable rights and privileges from the owners of very extensive and proved petroleum fields in the oil bearing region of Gaspé, Province of Quebec, Canada, with a view to supplying high-flash illuminating or lamp oil, and petroleum products to Great Britain, the Dominion of Canada, and elsewhere. Such owners possess about 38,000 acres of freehold land and perpetual mining rights over a further 5,000 acres.

In addition to the extensive petroleum mining operations which have been carried

on, the lands have been generally developed by the construction of roads and by the erection of wharves, warehouses, etc., at the harbor or basin of Gaspé.

Since the acquisition of the lands by the Petroleum Oil Trust, a number of wells have been sunk in various localities, with favorable results. Two subsidiary companies, herein mentioned, formed to sink wells, have struck oil. The time has now arrived to make arrangements for laying pipe lines to the harbor, and marketing the products of these petroleum fields.

The most important feature of the Gaspé district is the excellent quality of the crude petroleum obtained. Samples of the crude oils have been submitted to eminent experts, whose examinations and analysis show that they are of very high quality; that they give a large percentage of kerosene of a remarkable free burning kind, with a flashing point above the legal minimum in this country and on the European continent.

In addition to acquiring the supplies of oil from the existing wells, it is intended to sink new wells as soon as possible in the most favorable districts of the already proved portions of the properties where oils of the highest class have been discovered.

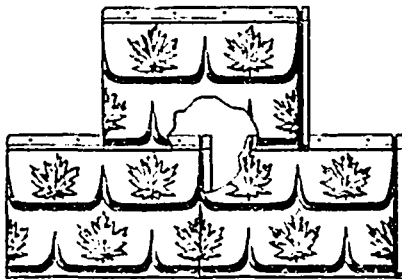
Owing to the duty of five cents per gallon, or 8s. 9d. per barrel, on refined or crude oils entering the Dominion from the United States or other sources, the company hopes to secure a large proportion of the increasing

Canadian trade, the annual consumption being estimated at 30,000,000 gallons, of which 22,000,000 are for illuminating purposes. At the present prices of the best quality of kerosene sold in Canada, 16s. per barrel of 42 gallons may be taken as the margin of profit upon home products.

The Bagnall Oil company, whose wharves, storage tanks and railways at the Manchester Ship Canal Dock Yard are now utilized for the distribution of millions of gallons of oil, has agreed to purchase under contract the whole of the oil, the Canada Petroleum Company may desire to export to the United Kingdom during the next three years, with the option to this company of extending the period. An immediate opening in the British Isles for the sale of the Gaspé oils, the high standard of which should command the market, is thus secured.

IF PEOPLE ONLY KNEW

the advantages of using metal roofing constructed on our patent "SAFE-LOCK" principles they would not accept a substitute.



OUR "SAFE-LOCK" SHINGLES

interlock each other on all four sides—leaving no openings for snow or rain to get in. They are easily put on by anyone—are practically fire and lightning proof and give a building a neat finished appearance. We can tell you more. Ask for free catalogue and samples.

THE METAL SHINGLE & SIDING CO.
(LIMITED)
PRESTON, - ONTARIO.

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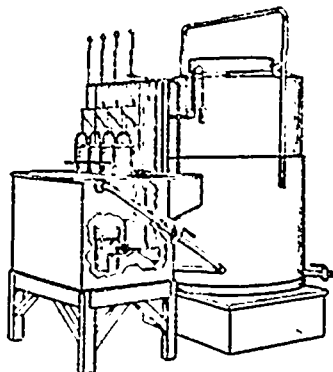
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LARGE THREE-STORY BRICK FACTORY

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ACTIVE SOLICITORS WANTED EVERYWHERE for "The Story of the Philippines," by Murat Halstead, commissioned by the Government as Official Historian to the War Department. The book was written in army camps at San Francisco, on the Pacific with General Merritt, in the hospitals at Honolulu, in Hong Kong, in the American trenches at Manila, in the insurgent camps with Aguinaldo, on the deck of the Olympia with Dewey, and in the roar of battle at the fall of Manila. Bonanza for agents. Brimful of original pictures taken by government photographers on the spot. Large book. Low prices. Big profits. Freight paid. Credit given. Drop all trashy unofficial war books. Outfit free. Address, H. L. Barber, Gen. Mgr., 356 Dearborn Street, Chicago.



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Ideal Generator the only machine that submerges the carbide.

No Opening of generator.

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No Overgeneration.

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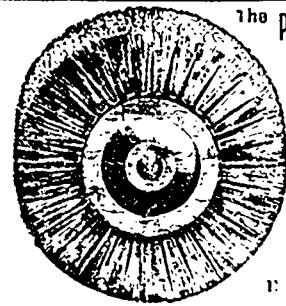
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Manufacturers of ALL KINDS OF BRUSHES.

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The Dominion Leather Board Co.,
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Dominion Oil Cloth Co.

Manufacturers of...

OIL-CLOTHS of Every Description

Floor Oil-Cloth, Table Oil-Cloth,

Carriage Oil-Cloth,

Enamelled Oil-Cloth,

Stair Oil-Cloth, etc.

Office and Works

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

THE "MODEL" GAS AND GASOLINE ENGINE.

The Goldie & McCulloch Co., Galt, Ont., have sent us a very beautiful little brochure bearing the above title, intended to direct the attention of those desirous of obtaining such an engine to its remarkable simplicity, efficiency and excellence.

Referring to this method of obtaining power, the book says:—Gas engines of various types have been in use for many years, but gas and gasoline engines, simple in construction, may be said to be of recent date. A constant demand from users of small power for a simple engine that could be operated with little expense, and one that would do its work well without the aid of an experienced engineer, has brought into existence the "Model" Gas and Gasoline Engine, and so very simple is this engine in its construction, that it can be started and run by any person of ordinary intelligence.

At first thought, one might doubt the ability

of the "Model" Gas and Gasoline Engine to perform its work satisfactorily with so little mechanism, but on more careful consideration it will be seen that an abundance of intricate working parts would be a great source of annoyance and expense, for some one or more of these would constantly be getting out of order, but the absence of complicated parts in the "Model" Engine makes it extremely simple and easily understood. There is not a lever, rod, or working portion of any description inside the bed plate. Every part is in plain view, and within convenient reach of the operator. Even the cylinder is made in one solid casting, having no head to leak or to be constantly repacked.

Among the advantages of this engine are:— It can be run at trifling expense; no expense when not running; gas or gasoline used in proportion to the work being done; no engineer needed; requires little space; no smoke, dirt or noise; ready in five minutes; can be operated by a boy; can be run with either gas or gasoline; no wood or coal

needed; no cylinder head to leak or be repacked; no ashes to be removed; no water for steam; no boiler to keep in repair; the "Model" requires no dangerous methods of vaporizing the gasoline, but automatically pumps the gasoline direct from a tank; only a very small quantity of gasoline kept in the building.

The "Model" Gas and Gasoline Engine is built by The Goldie & McCulloch Co., Limited, Galt, Ont., who have had years of experience in high grade engine building. Their name alone is sufficient guarantee for the completeness of the "Model," and for any purpose where gas and gasoline engines are practical, this engine will, beyond all doubt, fill every requirement with credit to itself and its makers. It will at once be seen that the "Model," possessed of so many advantages distinctly its own, can be heartily recommended as a power producer, capable of satisfactorily performing the work it is calculated to do. The company will send further information upon application.



HOTELS,
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LODGE ROOMS,
PUBLIC HALLS,
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can all be appropriately decorated with Pedlar's Steel Ceiling, not a substitute but superior to lath and plaster, will not crack and fall off, absolutely fire-proof, handsome in appearance. Estimates furnished on receipt of plans.

Pedlar Metal Roofing Co.
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THE SMART'-EBY MACHINE CO.,

Steam and Gas Engines,
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CITY AGENTS WANTED.

WRITE US BEFORE PLACING YOUR ORDER.

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CORRECTLY
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CIVILITY
CAREFULNESS
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DO YOU KNOW

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

IF YOU DO NOT BUY

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

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ONTARIO GOLD MINING DISTRICT :

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- Olive Gold Mine.
- Cameron Island Mine.
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A Few Mines



WHO USE

BRITISH COLUMBIA :

- Le Roi Mine.
- War Eagle Mine.
- Old Ironsides Mine.
- Centre Star Mine.
- Crown Point Mine.
- Knob Hill Mine.

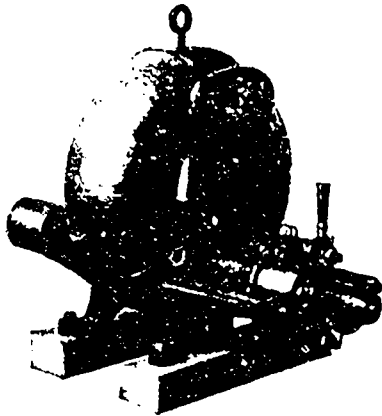
CANADIAN RAND DRILL COMPANY, Montreal

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THE COMMANDER MOTOR.

The accompanying illustration shows the Commander direct current bi-polar motor, one of a new line of machines being placed on the market by The Commander Motor Co., Shepard street, Toronto.

It is a fact that no line of machinery has such a marked difference in quality and



efficiency as electrical machinery. The Commander machines have been carefully designed electrically and mechanically, with a view to economical efficiency, strength, durability and ease of operation.

Special features:—Powerful field magnets of the ideal circular form, ensuring absolute rigidity, and a faultless magnetic circuit of large capacity, reducing the exciting power to a minimum. The field coils are wound by a machine of ingenious construction, permitting the work to be uniformly and quickly done. The armature is of the smooth core laminated disc style. The brush holders are

of modern type and perfect adjustment, ensuring a firm even tension and full consumption of the brushes.

The commutator is composed of a large number of sections, made with more than an average depth of good copper, insulated with the best crystallized mica; the number and depth of sections prevent unnecessary noise and ensures long wear.

Bearings are self-oiling and self-aligning, with hard brass rings for oil circulation, and oil from an overflow cannot run in on rocker arm or wire on the end of armature. With revolving centres, low, and as the tendency of the magnets to draw the armature toward the yoke acts against the weight of the armature, causes it to run light in the bearings.

These machines are adapted to all electric power purposes, and are built of from one to forty horse-power, and wound for circuits of 110, 250 and 500 volts. All parts are interchangeable, and being of the fewest possible number, the cost of repair is small.

These motors are rated on the amount of power developed at the belt, and not as with other motors, on the amount of current consumed, and from which must be deducted the loss through inefficiency, overheating and sparking. In an exhaustive test made at the School of Practical Science, Toronto, this motor, although of a small size, being the No. 3, showed a commercial or practical efficiency of eighty per cent., and a gross efficiency, or efficiency of conversion of 94.5 per cent., at an average pressure of 237 volts, on the 250 volt winding.

There is no undue heating in any of the parts, neither armature nor field coils rise in temperature more than forty-five degrees above the surrounding atmosphere under full load. They will carry heavy temporary overloads without sparking and without shifting of brushes.

Every machine is tested far beyond the

given capacity before leaving the factory and an entry of the test is filed.

The above description also applies to the direct current dynamos, the form, materials and general construction being the same, with the addition of a compound winding, to insure perfect regulation of voltage.

Write the company for further particulars, and when writing mention THE CANADIAN MANUFACTURER.

A NOVEL MARINE ILLUMINATING DEVICE.

A demonstration of the capabilities of the Wilson illuminating shell, a novel marine device, which took place recently in Baltimore, Md., is thus described in the Herald of that city:

The shell is an apparatus for lighting up the sea at night. It is in the shape of an ordinary projectile, and may be thrown from a gun in the direction of an enemy or dropped overboard alongside a ship as the occasion may require. It is buoyant, and, striking the water, becomes an illuminating plant of itself, shedding a powerful light over the water.

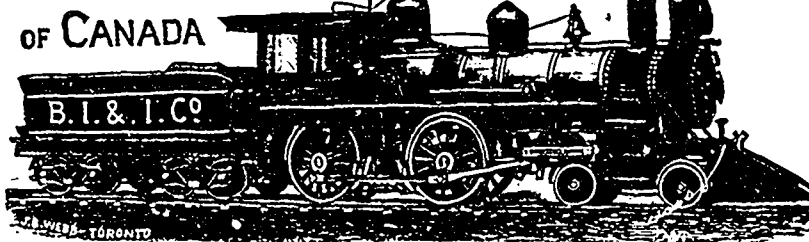
It is the invention of Col. William J. Wilson, the acetylene gas expert, and consists of a hollow cylinder, made from drawn steel tubing in sizes from three to six inches or more in diameter, and from three to five feet in length, according to the purpose for which it is to be used. The shell is loaded with calcium carbide, from which acetylene gas is generated instantly upon contact with water. At one end of the shell are the burners, from which the gas escapes as generated and is lighted by electricity generated by a battery within the shell. It takes less than thirty seconds to make the shell ready for firing from a gun or throwing overboard. On falling into the water it floats a quarter of its length above the surface, and the water, entering small

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Good Con-
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Reduce Your Fuel Bills
Increase Your Output...

BY USING

The IMPROVED JONES UNDERFEED STOKER

Guaranteed Increased Economy, from 15 to 50% | Guaranteed Increased Boiler Capacity from 40 to 100%.

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The First and Only Successful Underfeed Stoker.

No Underfeed Stoker is successful without infringing our Patents, and the public are warned against importing or using infringing devices.

N.B. Have you seen our Underfeed as applied to Houses, Schools, Churches, etc.? (Send for Circular).

For Estimates and other Information write

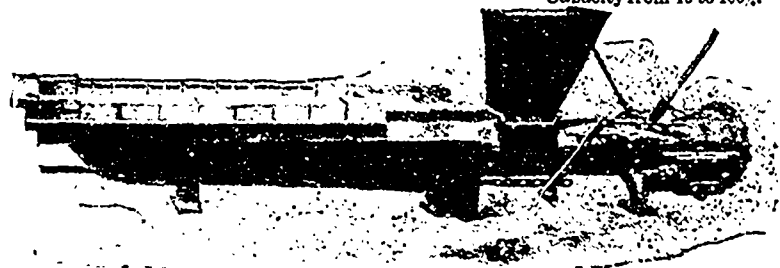
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SOLE MANUFACTURERS FOR CANADA,

Head Office.... **80 CANADA LIFE BUILDING, - TORONTO.**

Montreal—A. TREVETHICK, - Box 1123.

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holes near the base, comes in contact with the calcium carbide, which is instantly converted into acetylene gas, which in turn is at once ignited at the burners by the self-generating electric current.

A large tank of water was used in connection with the experiment. No sooner was the big shell plunged into the water than it sank, then rose like a can buoy, righted itself, and from the burners at the top there shot a white flame that dazzled the eyes of the beholders. The clustered burners emitted a blaze, which at sea, on a dark night, would have been a powerful beacon. The shell was forced under the surface as though submerged by a powerful wave, and on the water there appeared a flame such as is created by oil burning on the surface. The burners were then from three to four inches under. Again the shell was sent below, and this time the light was entirely extinguished. Being released it came to the surface like a cork, and instantly the little electric plant in the shell fired the gas and the burners were ablaze. This experiment was tried again and again. The device cannot be permanently extinguished by water washing over it, and cannot be put out by natural or mechanical current of air. It is stated that the shell would be invaluable as an adjunct to the life saving service, as well as in naval warfare, and, in fact, for any service that requires illumination of the sea. The shell is being manufactured by the American Illuminating Shell Company, a Baltimore corporation.

BRITISH DEMAND FOR CANADIAN PULP.

In his annual report to the Canadian Minister of Trade and Commerce, Lord Strathcona, the Canadian High Commissioner in London, says that the British demand for pulp is increasing, and that it is generally recognized the future of the trade must be largely in Canadian hands. Scandinavians and other countries are doing everything possible to meet Canadian competition, but capitalists interested in the matter are investing considerable sums of money in the establishment of mills in Canada, in order to secure for the paper trade regular supplies of the qualities of pulp that are needed. He further says he has had frequent communications during the year with paper makers on the subject, and that he has been instrumental in arranging for the

Felts for Pulp Mills

20 years in the business —the first to make Felts in Canada; capacity 1,000 lbs. per day. All our Felts are woven endless, without a splice. Our Felts will last longer and make dryer Pulp. All up-to-date mills use our Felts. New mills, when in need, write for samples and prices.

HAMELIN & AYERS, Lachute Mills, P.Q.

THE "SAFETY" Acetylene Gas Machine

Manufactured by

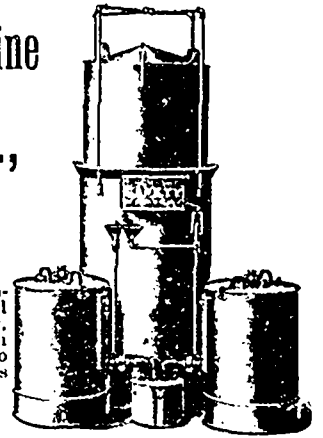
THE SAFETY LIGHT AND HEAT CO.,

DUNDAS, ONT.

WHAT SOME OF OUR FRIENDS SAY OF US:

DEAR SIRS.—The 30-light machine we got from you last November is working to our entire satisfaction. The light is clear and steady. Comparing the cost with that of coal oil it is much cheaper, and, while it costs us as much to light our premises as it did with Pittsburg lamps, the results are such that we would not go back to the oil lamps if they cost nothing. Compared with other business places in town we appear to be having a celebration.

BROADVIEW, N.W.T. THORBURN & SONS, General Merchants.



The London Machine Tool Co., LONDON, ONT.

Toronto Office, 42 York Street. (PHONE 293) MANUFACTURERS OF GENERAL MACHINERY...

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

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

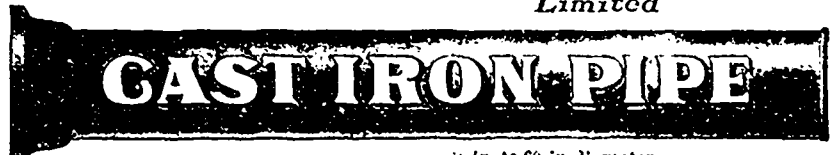
- LATHES—Engine, Gap, Break, Turrot, Fox, Spinning, Etc.
- PLANERS—Standard, Crank, Plato, Etc.
- DRILLS—Standard, Sensitive, Multiple, Radial, Etc.
- MILLING MACHINES—Lincoln, Plain, Universal, Etc.
- SHAPING MACHINES—Whitworth, G. & E. Rack-Driven, Etc.
- HAMMERS—Steam, Sandage Drop, Stiles Drop.
-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

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

ALEX. GARTSHORE, President. J. G. ALLAN, Sec.-Treas. JAS. THOMSON, Vice-Pres. and Gen. Mngr.

THE GARTSHORE-THOMSON PIPE & FOUNDRY CO.

Limited



3 in. to 60 in. diameter.

For Water, Gas, Culverts and Sewers

Special Castings and all kinds of WATER WORKS SUPPLIES FLEXIBLE AND FLANGE PIPE. HAMILTON, ONT.

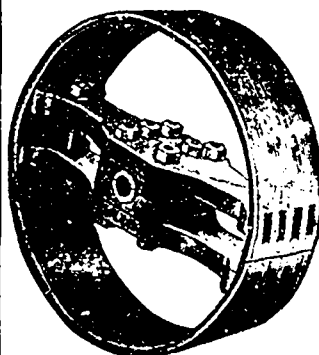
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Only Wholesale Trade Supplied.

D. MORRICE, SONS & CO.

AGENTS MONTREAL and TORONTO.



BENT WOOD SPLIT PULLEYS, RIM... (REID'S PATENT).

The Strongest, Lightest and Best Belt Surface in the World

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

EVERY PULLEY GUARANTEED.

The Reid Bros. Manufacturing Co., of Toronto, 257 King St. West, Toronto.

visit of experts to Canada to report on the matter to their principals in the United Kingdom. There is a strong feeling, he reports, in the British trade that it is not wise to allow the unrestricted export of pulp wood from Canada to the United States, as it tends not only to restrict the market for Canadian pulp, but enables the Americans to manufacture large quantities of paper, the surplus of which is sent to England at low prices to compete with the paper which would otherwise be manufactured in the United Kingdom from Canadian pulp. Lord Strathcona then quotes the following from one of his correspondents:

"Canada holds the future of the cheaper grades of paper in her own grasp, if she cares to do so. She can give employment to vast armies of workmen by supplying the greater part of the civilized world with its news paper and paper for popular literature, to say nothing of wrapping papers, boxboards, etc. Interested parties may say there is little profit

in such undertakings, and that Canada would be wise to sell her timber and pulp, and let others make the paper. Such statements will not bear investigation. The paper making trade is, or should be, a natural Canadian industry, and I hope before long to see Canadian statement and capitalists giving this subject more practical consideration and attention."

THE WOLF GYRATOR.

"The Blazing Sun of the Flour Miller's Sky" is the title of a wee booklet sent us by The Goldie & McCulloch Co., Galt, Ont., upon the front cover of which is a representation of a Wolf Gyrator, which is supposed to be the blazing sun alluded to.

The object of this booklet, we are told, is not particularly to tell of the many advantages of the gyrator over the old time systems of milling, such, for instance, as its great saving in power—or requiring less floor space—or

less spouting—or about the sieves being interchangeable and easy to get at, and what an important feature this is—or its great economy in bolting cloth—or its few wearing parts—or the many other advantages, but rather to let those speak who have had actual experience with this wonderful flour maker.

Then follows the "speak" of a number of practical millers, one of whom, Messrs. Shirk & Snider, of Bridgeport, Ont., writing Messrs. Goldie & McCulloch, says:—

"Dear Sirs,—The 'Wolf' Gyrators that you put in our mill at Baden are giving us every satisfaction; the quality of flour and the finish of offal are all that we desire. We are pleased that we followed your advice and put in your full Gyrator System to do all our scalping, grading and bolting, as we are now satisfied that we have the best system of bolting now in use, and as for the capacity of gyrators, it is only measured by the inability of our rolls to grind enough for them. The

JOHN J. KELLER & CO.

104 and 106 MURRAY ST.
NEW YORK

220 Church St., Philadelphia.

135 Pearl St., Boston.

18 Pryor St., Atlanta, Ga.

**Aniline Colors,
Dyewood Extracts,
Sumac and
Nutmeg Extracts.**

FAST COLORS for Wool Dyeing,
One Dip Cotton Colors, Novelties
and Specialties for Calico
Printing.

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BASEL, SWITZERLAND

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FACTORY WITH**

LUXFER PRISMS

The latest device for

LIGHTING

dark rooms and
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By Daylight

For catalogue
and estimates
write to

**Luxfer Prism
Co'y, Limited.**

58 Yonge Street, - TORONTO.



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of putting in New Shafting,
Pulleys, Hangers, Tube Cut-
ters, Pipe Cutting Machines,
Swing Saws, Wood Lathes,
Dough Mixers, or Paper Box
Machinery.

We

Make all these lines, and can
quote you as good, if not bet-
ter prices than other people.

G. T. PENDRITH & CO.,

73 to 81 Adelaide St. West,
TORONTO.

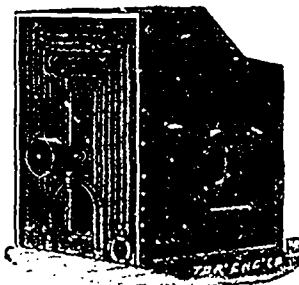
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The Fan System of Steam Heating for Heating
of Factories and all Classes of Buildings.

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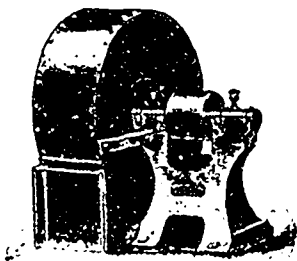
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Fan.

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flour from any section of gyrators is perfectly dry. The cloth-cleaning device is all that you claim for it, the sieves being interchangeable, make machine very convenient for us to change from one kind of wheat to another, and practically without loss of time, and the driving parts of machines are so simple and easy of access that we do not see how it can get out of order. We have no stops or delays from any cause since starting up, and the more we work the gyrators, the better we like them as being the simplest, the most complete and light running bolting machine in the market. We predict for your gyrator system every success."

The book contains a double-page illustration of the gyrator, which quite fully and at a glance shows its mechanism and operation.

KELLY'S DIRECTORIES.

We publish in every issue of this journal lists of business chances, being a record of inquiries made at the Canadian Government offices in London, by British or foreign merchants who are desirous of entering into commercial relations, with Canadian manufacturers and merchants. In the two weeks just past, for instance, are recorded inquiries from Great Britain concerning lumber, wood, flour, eggs, turkeys, salmon, chair parts and birch squares; from South Africa about wool; and from Russia about Canadian manufactures. These inquiries indicate that merchants abroad are alive to the possibilities in a business way, of this country.

Many manufacturers are also receiving communications direct from foreign houses, and in most instances these inquiring firms are subscribers to Kelly's Directory of the merchants, manufacturers and shippers of the world, in which work they find the names and addresses of the manufacturers and wholesale

merchants of Canada and of all other countries and from which they select such addresses as may seem desirable to them.

We desire to call the attention of Canadian manufacturers who are desirous of opening up, or extending their export trade, to this Directory, as a means of putting them in touch with the buyers of the world, by means of circularizing and also of advertising, it being a standard medium for exporters, patronized by the British Government, and to a large extent compiled by British consuls.

The Kelly's Directories card appears on page 28 of this issue, and we recommend to such of our patrons as may be interested in export matters their consideration of it.

The firm also publish other directories, all of interest to commercial men, and their library of their own directory publications at 28 Victoria street, Toronto, is one of the largest, most unique, and complete published by any one firm. Their oldest and largest publication, the London Post Office Directory, first appeared in 1799, and consequently is now in its 100th annual edition.

It would be difficult to limit the possibilities of this firm in the way of furnishing commercial addresses. As an illustration, a Canadian concern recently applied to them for a list of the names and addresses of the newspaper publishers and printers of the Australian continent; another desired the names and addresses of all the paper mills in Great Britain, with number of mill, description of paper made, etc.; another required a list of the cotton and woollen mills of Great Britain, number of looms and spindles used and quality of goods. Another wanted the iron furnaces, rolling mills, etc., with capacity of output; and still another asked for a complete list of the farmers, dairymen, and butter and cheese makers of New South Wales, Victoria, South and Western Australia, New Zealand and South Africa, and in each instance these

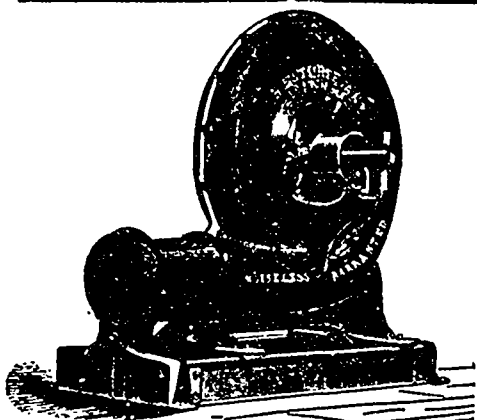
several demands were complied with, and from the firm's own publications. They can also give equally as full information touching the oil, color, leather, tobacco, confectionery, building, furniture, wine and spirits, brewers and maltsters, chemicals, jewelers, and other trades.

NEW PULP MILL IN NEW BRUNSWICK.

At Mispec, N.B., the new pulp mill of the St. John Sulphite Pulp Company is nearly ready for business. It is expected to start before the first of June. It is on the bank of the Mispec, and about ten miles from St. John. Its output is to be thirty tons per day. The dam, which is built of solid masonry, is fifty-four feet high and 240 feet long at the top. Its length at the bottom of the gorge is eighty feet. It is 120 feet wide at the base, and tapers off to eight feet at the top. The stonework is faced with timber on the water side. The flume, which is made of iron is five feet in diameter. It leads from the dam on the surface of the ground down to the water wheels in the mill, and is 830 feet long. There are four water wheels in all, one for each department, which will develop 600 horse-power. In addition to this, the company have a 250 horse-power compound steam engine as an auxiliary. In the boiler-room there is 500 horse-power of steam boilers for use in the cooking and drying of the pulp. A pipe runs through the flume, by means of which the water required for the boilers is taken into the mill.

A REMARKABLE DEPOSIT OF ALUM.

A discovery which promises to be valuable, and is most certainly interesting from a scientific point of view, has recently been made in East Kootenay, not far from Windermere, B.C. A peculiar soft white earthy

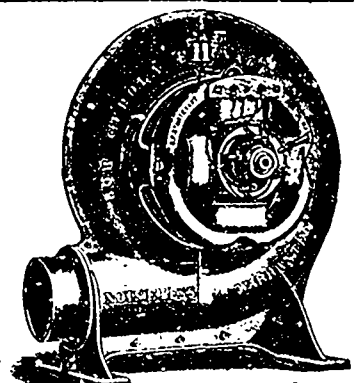


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Blowers**

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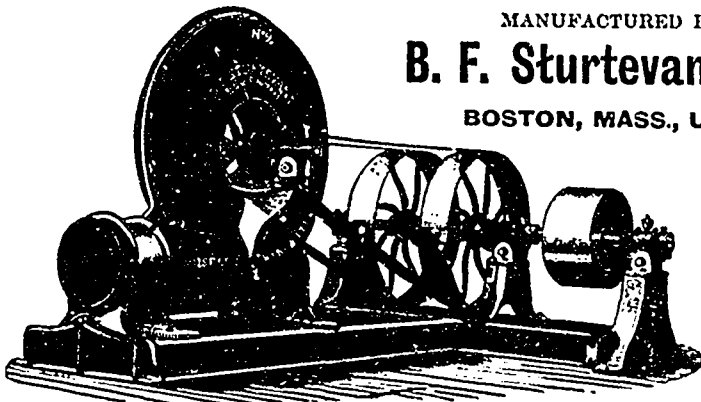


Blower with Electric Motor.

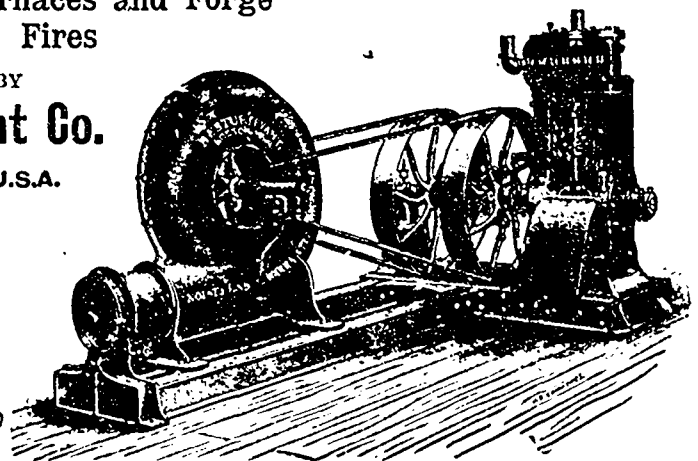
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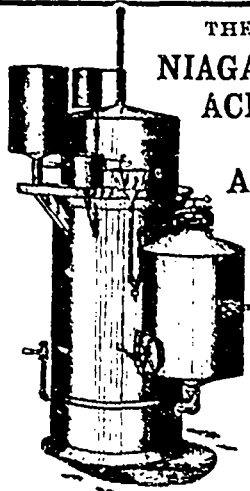


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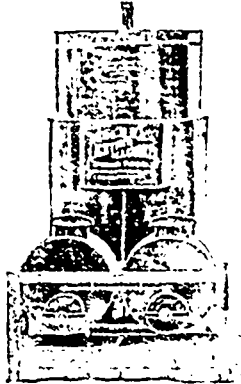
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Write for Catalogue.

THE **Acetylene Lighting Co. (LIMITED).** LONDON, ONTARIO.

mineral was sent from that district lately by the finder, Mr. Holdich, of Nelson, who thought it might be meerschaum, but a short examination proved it to be nothing more or less than alum, though not crystallized.

The importance of the discovery lies in the fact that this deposit (said to be of great thickness) is remarkably free from those impurities which are so detrimental in the commercial article, and occasionally render it quite useless for some of the purposes to which it is applied in the arts and manufactures.

As is well known, alum is most extensively used in dyeing and calico printing, also in leather dressing, and in rendering fabrics more or less fire proof. It has also been successfully used in lining fire proof safes, and in numberless other ways. The method of preparing commercial alum from this lately discovered deposit will be extremely simple, as it is merely necessary to dissolve it in water, filter it from sand or other insoluble matter, and evaporate the clear solution till it crystallizes. In the neighborhood of this alum is found a large amount of epsom salt, and also certain forms of gypsum, all of which have been undoubtedly derived from water which has taken up the salts from the rocks through which it passed, and in course of time re-deposited them where they are now found.

THE CANADIAN PATENT OFFICE.

The work of the Canadian Patent Office has of late been considerably delayed owing to changes in the corps of examiners.

Examiner Bailey has been granted six months' leave of absence, owing to impaired eyesight, and Examiner Farmer has resigned.

Messrs. Campbell, McGill, Richard and Thompson have been appointed examiners to take the places of the absentees, and they may be relied upon to bring the work up to date, as they become more and more familiar with their duties.

Few people have any conception of the responsibilities of an examiner of the Patent Office, their duties necessitating not only an education of a superior order, but an intimate knowledge of the vast field of modern invention, which can only be acquired by actual experience and hard work.

The following is a list of Canadian patents recently granted to clients of Messrs. Marion & Marion, solicitors of patents and experts, New York Life Building, Montreal:—

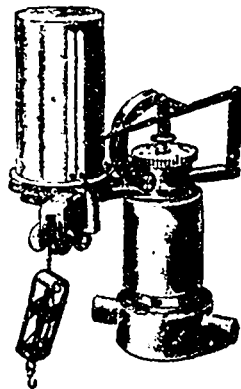
- 63,080—Julius Otto Zwarz, Freiberg, Germany, microphones.
- 63,096—John D. Oligny, Montreal, Que., artificial fuel.
- 63,097—Joseph Arthur Vaillancourt, Jr., Montreal, batter presses.
- 63,106—Paul R. Trethewey, Muskoka Falls, Ont., boat-propelling mechanism.
- 63,110—Delphis Desorey, St. Malo d'Auckland, Que., boats.
- 63,144—Elias Jones, Winnipeg, Man., straw stacker.
- 63,140—Joseph A. Plante, Quebec, Que., acetylene gas generating apparatus.
- 63,139—Odilon Arhambault, St. Hyacinthe, Que., acetylene gas generators.
- 63,138—Louis M. Destroismaisons, Ste. Anne de la Pocatiere, Que., acetylene gas generator.
- 63,135—John Robert Stroud, Milford Bay, Ont., wrenches.

FORCED DRAFT FOR MARINE BOILERS.

Although forced draft for increasing the rate of combustion was used in the United States navy during the Civil War, it did not come into general use for naval vessels until about 1882, and in the merchant service still later, but since that time its use has become universal. Indeed, were it not for forced draft, boiler weights would be so great as to have long ago set the limit to speeds of the faster class of vessels.

When natural draft alone was used, the maximum rate of combustion with the best free-burning coal and good chimney draft did not reach 20 lbs. per sq. ft. of grate. With forced draft in large cylindrical boilers, there are now numerous reliable records of 40 lbs.

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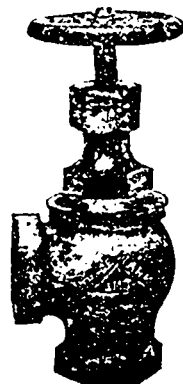
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per sq. ft., while in the locomotive and water tube boilers, 80 lbs. is now a common rate, and data have been published of over 100 lbs.

While the economy of evaporation at these high rates of combustion is not so great as under natural draft, the enormous reduction in boiler rates is very marked. Trials of the boiler of the United States torpedo boat

Cushing, for example, show an increase in I.H.P. per ton of boiler of over 50 per cent., when the rate of combustion is increased from 24 to 40 lbs. per sq. ft. of grate, which means a decrease in weight of over 33 per cent. per I.H.P.

Except on Mr. Howden's part, the question of economy under forcing was for a long time ignored, designers being content with the great gain in power. At the present time, however, the question of economy under forcing is receiving great attention, and we may confidently anticipate this as one of the features of marine engineering.—Commodore George W. Melville, U.S.N., in Cassier's Magazine.

ELECTRIC WINDOW LAMPS.

The Packard Electric Co., St. Catharines, Ont., as we have frequently mentioned, send out from time to time to their friends reminders of their business. Among these are monthly calendars printed upon desk blotting pads, which also contain illustrated descriptions of some of their products, that for June having reference to a spherical bulb, or so-called electric window lamp; and they say of it that it has proven itself especially adapted for decorative purposes, and is largely used in special shades. It is furnished in eight, ten and sixteen c.p., any voltage or base.

This Company also manufacture Packard "High Grade" Incandescent Lamps, five candle power to 500 candle power efficiencies; three watts to four watts per candle power; Type "L" Transformers, Scheefer Recording Watt Meters, for direct and alternating currents, etc. They are prepared to quote lowest market prices upon all electrical supplies f.o.b. St. Catharines or Montreal.

As the temperature increases, so does the desire to keep cool. To this end a positive circulation renewal of air is necessary, and may be secured in the simplest manner by an electrically driven fan. A most carefully designed apparatus of this type is that illustrated and described by the B. F. Sturtevant Co. in their Bulletin M. The fan is designed to move air in large volumes, not merely to agitate it. The Bulletin will be sent free on application.

Mr. John Martin, Rat Portage, Ont., is making gratifying progress in organizing a large company to erect a pulp mill in or near that place. The mill is to be erected on the Keewatin power dam. It is not yet definitely

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ACTIVE SOLICITORS WANTED EVERYWHERE for "The Story of the Philippines," by Murat Halstead, commissioned by the Government as Official Historian to the War Department. The book was written in army camps at San Francisco, on the Pacific with General Merritt, in the hospital at Honolulu, in Hong Kong, in the American trenches at Manila, in the insurgent camps with Aguinaldo, on the deck of the Olympia with Dewey, and in the roar of battle at the fall of Manila. Bonanza for agents. Brimful of original pictures taken by government photographers on the spot. Large book. Low prices. Big profits. Freight paid. Credit given. Drop all trashy unofficial war books. Outfit free. Address, H. L. Barber, Gen. Mgr., 356 Dearborn Street, Chicago.

announced whether the company will go into the manufacture of paper or not. Along the Rainy River the supply of pulp wood is almost inexhaustible. Other large areas of the district are covered with forests of spruce, tamarac, poplar and birch, all suitable for sulphite fibre.

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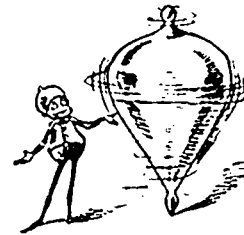
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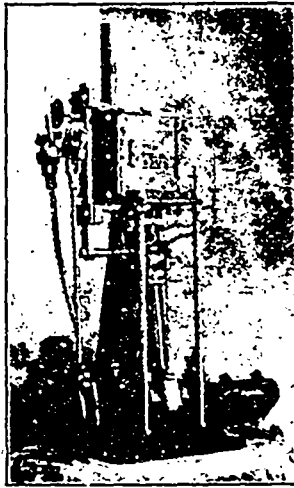
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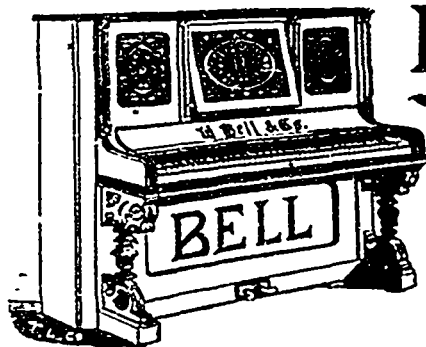
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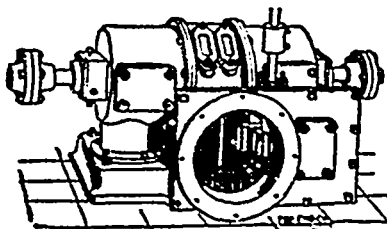
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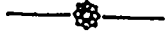
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