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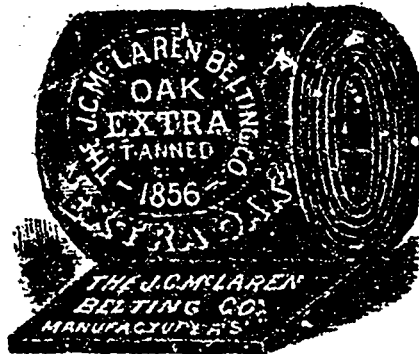
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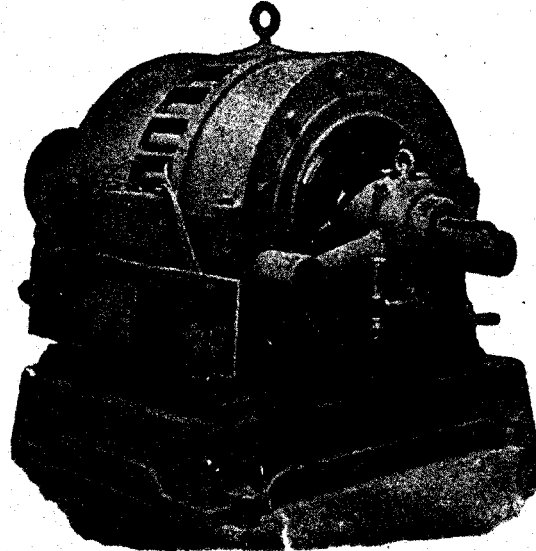
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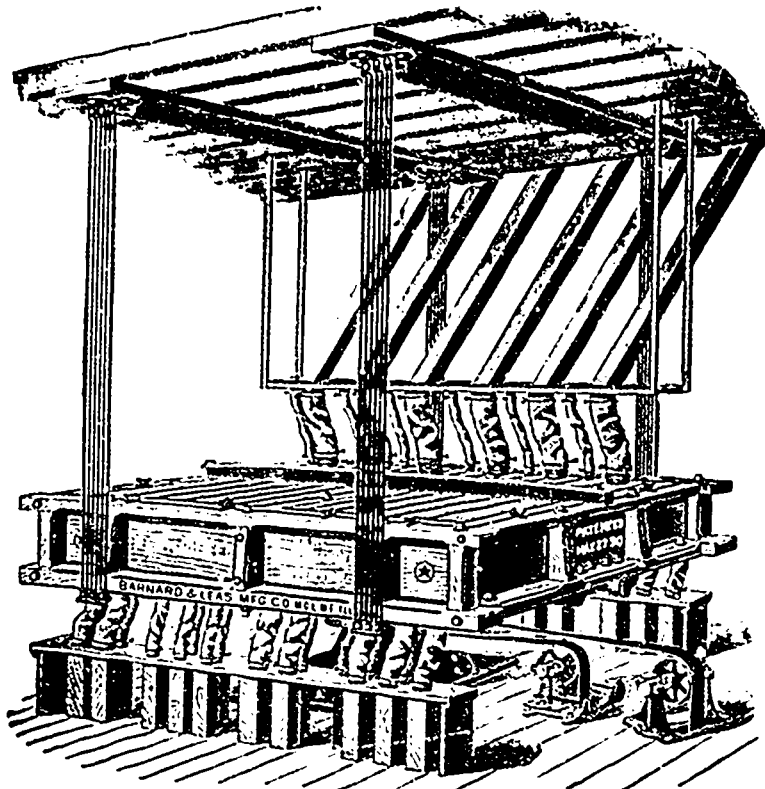
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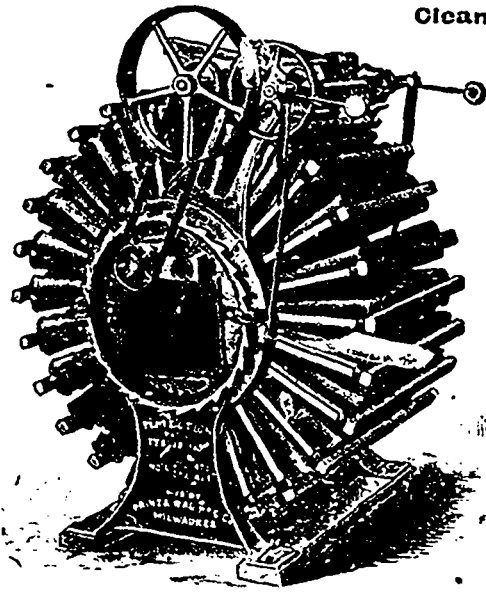
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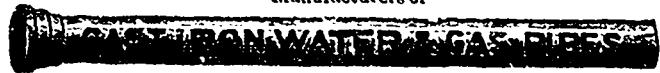
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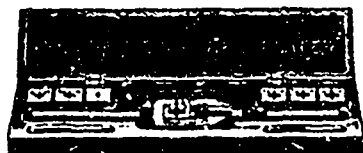
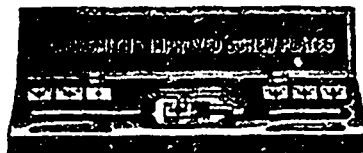
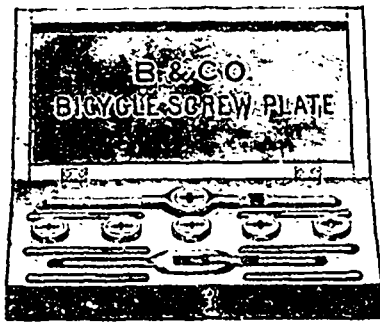
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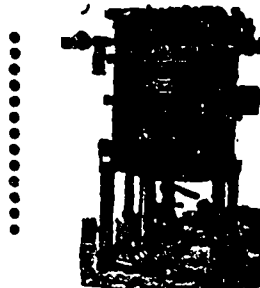
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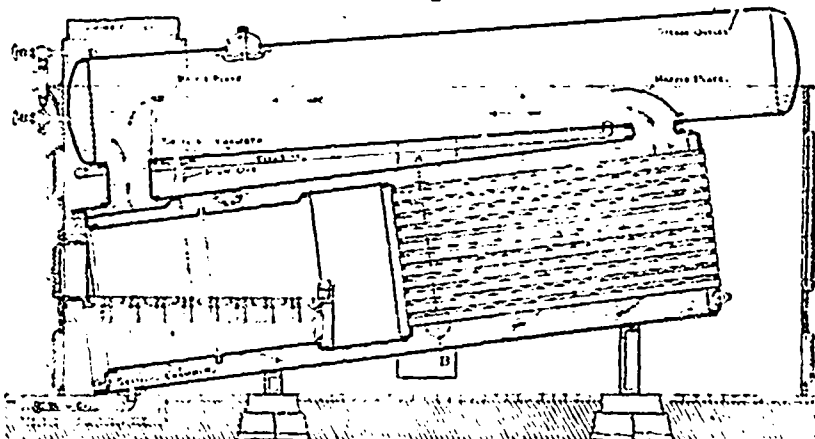
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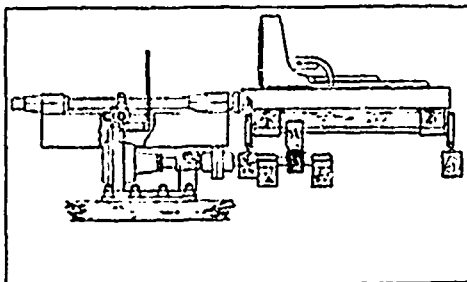
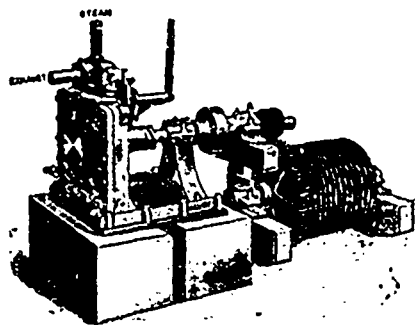
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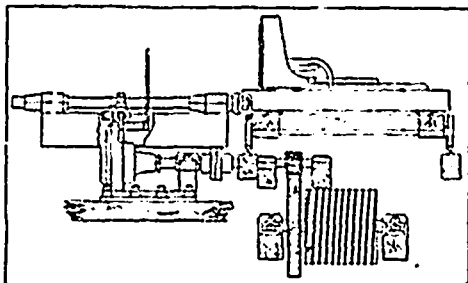
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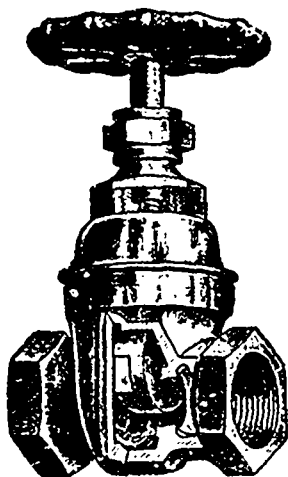
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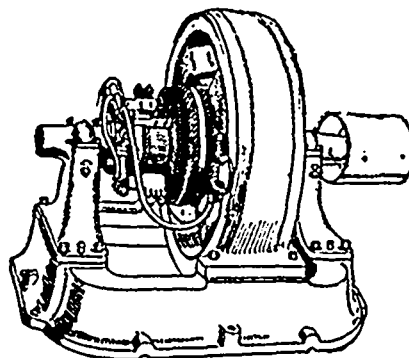
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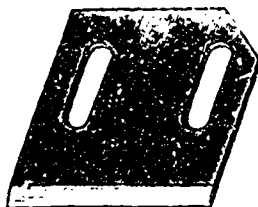
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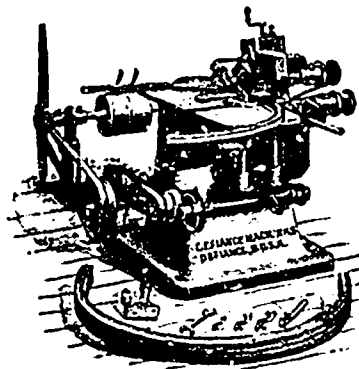
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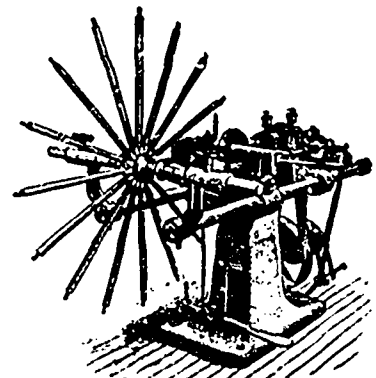
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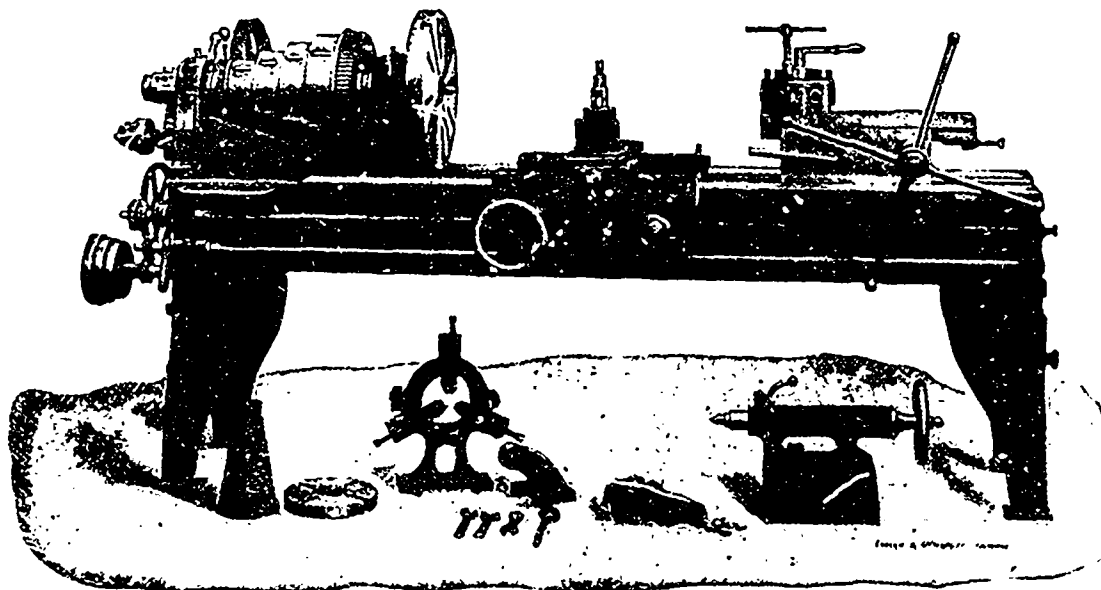
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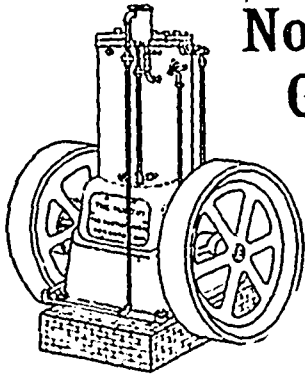
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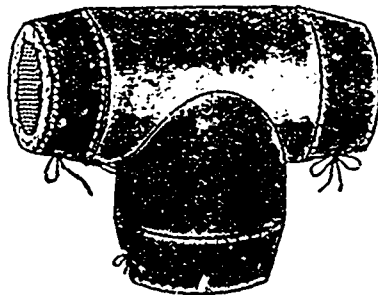
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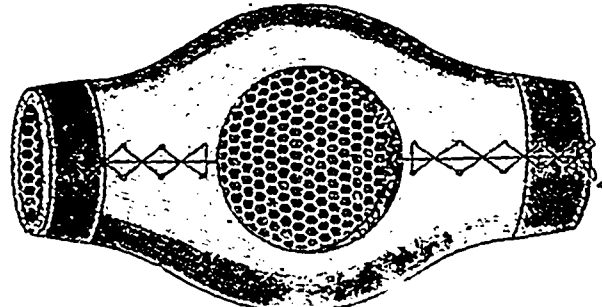
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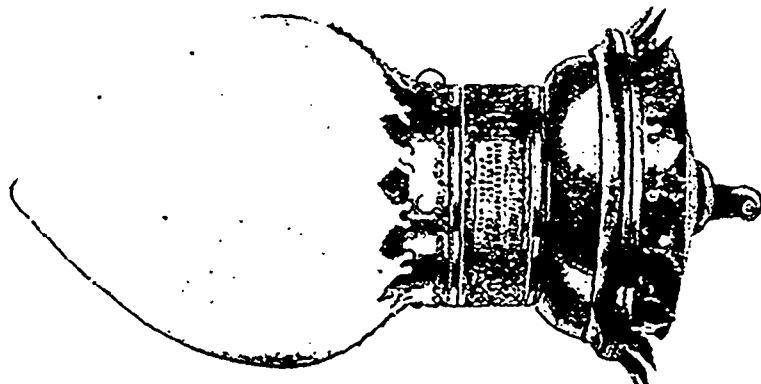
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PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

Official Organ of the Canadian Manufacturers' Association.

Subscription, \$1.00 per year.

ADVERTISING RATES:

\$12.00 Per Column inch per year; Thirty inches to Page.

The Canadian Manufacturer Publishing Co., Limited.

McKinnon Building, Cor. Melinda and Jordan Sts., Toronto.

J. J. CASSIDY, - - - - - Editor
J. G. GARDNER, - - - - - Business Manager.

C. A. G. BROWNE, 145 Fleet St., London, E.C., Eng., Sole Agent in Great Britain.

THE NEW CLASSIFICATION.

Attention is directed to a tabulated statement in this issue of THE CANADIAN MANUFACTURER "Exports of Canadian Manufactured Products," in which is shown the total values of the exports of manufactured articles of domestic production from and including the year 1868, in which occurred the confederation known as the Dominion of Canada, to and including the fiscal year ending with June 30, 1897, a period of thirty years. The table also indicates the countries to which these exports were sent.

Inasmuch as this classification is not identical with that heretofore observed by the Government, as published in the Trade and Navigation Returns, we deem it essential to reproduce that classification as observed by Mr. George Johnson, Dominion Statistician, in a table prepared by him for this journal and published in our issue of May 20, 1898. That table showed the value of exports of manufactured articles of domestic production during the fiscal years ended June 30, 1895, 1896 and 1897, as follows:—

STATEMENT A.

ARTICLES.	1895.	1896.	1897.
Agricultural Implements..	\$663,718	\$593,464	\$761,842
Books.....	59,014	59,056	80,549
Bread and Biscuits.....	16,423	19,208	16,530
Carriages, Carts, Wagons and parts of.....	54,153	97,241	44,723
Bicycles, and parts of.....			312,805
Cottons.....	546,168	766,812	915,327
Clothing, Hats and Caps..	38,501	56,174	43,934
Cordage, Junk and Oakum	63,827	144,878	125,701
Furs.....	15,616	7,345	12,560
Glass.....	4,738	6,881	7,203
Gypsum and Lime.....	108,151	99,783	75,430
Extract of Hemlock Bark	115,894	174,819	97,483
Explosives, etc.....	98,083	92,763	76,578
Household Effects.....	991,735	1,237,293	945,855
Iron, Scrap.....	6,010	8,986	5,030
Iron and Hardware.....	183,448	269,611	336,736
Leather.....	1,292,823	1,919,156	1,444,584
Boots and Shoes.....	74,241	75,919	97,148
Machinery.....	104,052	198,519	166,868
Musical Instruments.....	297,882	342,232	359,725
Oil Cakes.....	94,224	121,424	195,039
Rags.....	63,819	33,702	78,564
Sewing Machines.....	15,201	29,830	14,354
Stone, Wrought.....	19,802	6,688	4,983

ARTICLES	1895.	1896.	1897.
Salt.....	1,136	767	1,168
Soap.....	4,541	17,925	15,114
Sugar.....	112,354	3,008	76,235
Tow.....	92,148	93,195	84,728
Tobacco, Snuff and Cigars.	84,968	73,270	68,602
Woolens.....	71,942	62,393	47,884
*Wood.....	19,663,446	22,663,053	26,844,461
Ale and Beer.....	11,823	10,448	6,832
Whiskey and other Spirits.	329,774	375,528	450,702
Ships sold to other countries	172,563	99,392	105,164
Other articles.....	672,158	716,129	755,034

Total Manufactures... \$26,144,376 \$30,476,932 \$34,715,480

*Includes ashes, pot, pearl, leached and all other; Shingles, Box Shooks and Sawn Lumber of all kinds.

It will be observed in the above table that the item "Wood" does not give the names of the articles included in that item, and that the foot note does not give them in a satisfactory or exhaustive manner. To remedy this defect we herewith give the following table:

STATEMENT B.

Showing the value of the principal articles of manufactures of wood exported from Canada during the fiscal years 1895, 1896 and 1897:—

ARTICLES.	1895.	1896.	1897.
Manufactures of Wood			
Ashes, pot, pearl, leached and all other.....	\$123,222	\$110,092	\$101,590
Lumber, viz.:			
Battens.....	5,922	35,267	24,594
Deals, pine.....	2,311,915	3,037,791	3,266,087
" spruce and other	5,271,898	5,579,746	7,094,485
Deal Ends.....	464,260	520,646	637,193
Laths.....	452,973	492,224	471,341
Palings.....	13,716	10,378	8,403
Pickets.....	26,255	25,793	35,532
Planks and Boards....	7,407,584	8,513,419	10,817,912
Joists.....	7,534	14,747	23,531
Scantlings.....	177,146	387,707	414,443
Staves, standard.....	3,153	2,828	94,906
" other and Head's	635,119	699,155	604,475
All other lumber, n.e.s.	632,130	653,001	315,660
Shingles.....	687,391	899,541	1,201,366
Shooks, box.....	121,487	72,111	56,435
" other.....	32,119	53,499	24,191
Barrels, empty.....	9,012	5,523	3,331
Household Furniture....	97,005	75,447	115,863
Doors, Sashes and Blinds.	139,402	190,004	285,161
Matches and Match Splints	172,153	195,836	151,276
Mouldings, Trimmings, etc	26,378	18,118	16,121
Pails, Tubs, Churns, etc..	7,026	11,602	12,789
Spool Wood and Spools.	75,125	99,022	85,770
Wood Pulp.....	590,874	675,777	741,959
Other manufactures of....	172,647	283,779	240,047
Totals.....	\$19,663,446	\$22,663,053	\$26,844,461

It is quite apparent to those who may make the comparison that there is a great difference between the values of all manufactured articles exported from Canada, as shown in Statement A, and that given in the Trade and Navigation Returns for the same years; and to facilitate that comparison we give the following:—

STATEMENT C.

The Trade and Navigation Returns give the following classifications of Exports from Canada during the fiscal years 1895, 1896 and 1897:

Year	The Mine.	The Fisheries.	The Forest.	Animals and their products.	Agricultural products.
1895	\$6,983,227	\$10,692,247	\$23,891,166	\$4,387,770	\$15,719,128
1896	8,059,650	11,077,765	27,175,686	36,507,641	14,083,361
1897	11,298,915	10,314,323	31,258,729	39,245,252	17,982,646

EXPORTS OF CANADIAN MANUFACTURED PRODUCTS.

Values of manufactured articles of domestic production exported from the Dominion of Canada during every year since confederation in 1868, prepared expressly for THE CANADIAN MANUFACTURER by Mr. George Johnson, Dominion Statistician. These values are collated in accordance with the classification heretofore made by Mr. Johnson for this journal and published in our issue of May 20, 1898.

Year.	Total Value.	G. Britain.	U. States.	France.	Germany.	Other Foreign Countries.	B.N.A. Provinces.	British West Indies.
	\$	\$	\$	\$	\$	\$	\$	\$
1868.....	15,675,271	6,442,994	7,493,350	72,690	18,122	968,921	237,246	441,951
1869.....	17,456,059	8,092,560	7,382,783	106,730	22,382	1,101,989	241,396	508,219
1870.....	18,327,691	7,197,742	8,778,562	182,064	6,745	1,408,876	353,974	399,228
1871.....	18,473,242	7,121,926	8,830,564	44,729	7,998	1,535,775	383,823	549,327
1872.....	19,469,457	7,362,105	9,310,852	26,566	31,343	1,630,649	456,540	651,402
1873.....	24,460,673	9,128,103	11,899,246	24,039	70,153	2,129,787	730,472	478,873
1874.....	22,916,431	10,932,460	9,106,326	37,368	52,026	1,798,245	313,031	676,975
1875.....	20,025,925	11,284,634	6,090,060	174,869	47,796	1,386,891	371,529	670,140
1876.....	19,542,107	12,013,209	4,915,829	41,645	125,768	981,594	388,379	438,303
1877.....	18,955,036	11,787,548	4,540,716	248,821	19,975	1,388,704	506,747	462,525
1878.....	17,780,775	10,822,876	4,440,673	283,952	47,201	1,235,179	500,428	450,467
1879.....	13,087,305	6,619,974	4,172,634	250,261	16,885	1,176,640	382,162	468,646
1880.....	16,197,348	7,696,506	6,372,689	310,379	29,953	1,072,912	308,956	465,953
1881.....	20,366,131	10,044,048	7,953,129	592,593	24,375	1,009,482	287,267	455,237
1882.....	21,247,393	9,013,985	9,256,393	687,535	20,942	1,518,451	326,682	393,405
1883.....	21,976,375	9,458,573	9,452,112	482,752	18,491	1,777,099	323,287	464,091
1884.....	22,400,981	10,067,796	9,312,498	359,983	50,239	1,829,649	395,202	385,614
1885.....	19,256,270	9,470,011	9,075,394	245,266	33,009	1,826,161	300,900	305,529
1886.....	18,959,271	8,517,960	8,276,684	215,648	21,269	1,458,639	243,206	225,865
1887.....	19,999,296	8,507,033	9,319,884	243,719	29,095	1,449,178	212,738	237,649
1888.....	20,382,594	8,225,313	10,118,179	139,035	38,253	1,213,169	359,898	278,747
1889.....	22,292,516	8,732,300	10,849,578	135,000	27,571	1,986,926	297,419	263,725
1890.....	25,541,644	11,572,049	10,960,002	129,100	70,971	2,212,279	300,293	297,150
1891.....	25,145,071	10,293,901	12,466,846	148,286	63,624	1,384,865	262,817	524,732
1892.....	24,035,488	9,432,071	11,852,456	200,196	58,294	1,887,546	314,442	290,483
1893.....	28,462,031	10,805,655	14,330,152	122,614	59,806	1,919,761	851,015	373,028
1894.....	27,215,691	11,873,701	11,678,176	124,271	79,143	2,104,634	954,184	401,582
1895.....	26,144,376	11,076,889	11,870,206	161,890	152,937	2,100,911	473,192	305,352
1896.....	30,476,932	13,182,798	13,820,937	184,336	154,605	2,351,330	554,299	228,627
1897.....	34,715,480	15,295,987	14,998,722	223,265	149,174	3,210,410	566,464	272,358

[NOTE.—The column "British North American Provinces" is put in the plural because in the earlier years and until 1873 Prince Edward Island was not a part of the Dominion of Canada, and the reference is to that Province and to Newfoundland. Since that date the reference is to Newfoundland exclusively.]

Year.	Manuf'rs.	Misc'ous.	Coin and Bullion.	Estimated amt short returned at In'd Ports.	Total Exports, domestic.
1895.....	\$7,768,875	\$85,938	\$256,571	\$3,300,090	\$103,085,012
1896.....	9,365,381	109,265	207,532	3,329,053	109,915,337
1897.....	9,522,014	63,531	327,298	3,947,130	123,959,838

A NEW CLASSIFICATION.

For a number of years students of Canadian trade have observed that the classification of general items, or divisions of exports were, several of them, incorrect and misleading, and to remedy this erroneous classification, the statistician has made a new arrangement by which some special lines have been taken from the classes in which they were included, and placed in those to which they properly belong. Thus under the new classification the following articles have been transferred from "The Mine" and "The Forest" to "Manufactures." From "The Mine," salt and oil, refined, and from "The Forest," ashes—pot, pearl, leached and all other; and sawn lumber of all kinds, viz., battens, deals and deal ends, laths, paling, pickets, planks and boards, joists scantling, staves and headings, other lumber, n.e.s., shingles, shooks—box and other.

STATEMENT D.

Under this new classification the exports in the years named were as follows:—

Year.	The Mine.	The Fisheries.	The Forest.	Animals and their products.	Agricultural products.
1895.....	\$6,981,550	\$10,692,247	\$5,517,342	\$34,387,770	\$15,719,128
1896.....	8,056,020	11,077,765	6,067,741	36,507,641	14,083,361
1897.....	11,297,593	10,314,323	6,066,585	39,245,252	17,982,646

Year.	Manuf'rs.	Misc'ous.	Coin and Bullion.	Estimated amt short returned at In'd Ports.	Total Exports, domestic.
1895.....	\$26,144,376	\$85,938	\$256,571	\$3,300,090	\$103,085,012
1896.....	30,476,959	109,265	207,532	3,329,053	109,915,337
1897.....	31,715,480	63,531	327,298	3,947,130	123,959,838

STATEMENT E.

The difference in the value of exports of The Forest and of manufactures according to the two classifications for the years under consideration is as follows:—

The Forest.

	Old Classification.	New Classification.
1895.....	\$23,891,116	\$5,517,342
1896.....	27,175,680	6,067,741
1897.....	31,258,729	6,066,585

Manufactures.

	Old Classification.	New Classification.
1895.....	\$7,768,875	\$26,144,376
1896.....	9,365,384	30,476,959
1897.....	9,522,014	34,715,480

For the three years under consideration the average value

of exports of manufactures under the old classification was but \$8,885,424, while under the new classification the value was \$30,445,604, an increase of some 300 per cent. The average total exports for the three years was \$112,320,062 per year, of which, under the old classification, manufactures were credited with but about seven per cent. while under the new classification the credit amounted to over twenty-seven per cent.

STATEMENT F.

The following statement shows the average value of the exports of Canadian products, for the fiscal years, 1895, 1896 and 1897, according to the new classifications, and the percentage each class bears to the whole.

		Per cent. of whole.
The Mine.....	\$8,788,400	7.82
The Fisheries.....	10,694,800	9.321
The Forest.....	5,871,556	5.22
Animals and their products...	36,714,551	32.326
Agricultural products.....	15,929,380	14.173
Manufactures	30,445,604	27.1
Miscellaneous	86,545	.7
Coin and bullion.....	263,800	.2
Short returns.....	3,525,423	3.14
Total exports.....	\$112,326,062	100.

Statement A shows the value of all manufactured articles exported during the years named.

Statement B shows the export value of manufactures of wood, in detail, including wood pulp.

Statement C gives the total value of exports of domestic produce from Canada, including coin and bullion, according to the several general classifications, according to the Trade and Navigation Returns.

Statement D gives the total value of all exports, enumerated in Statement C, modified according to the new classification.

Statement E shows the difference in the value of the exports of products of the forest and of manufactures, as shown in the Trade and Navigation Returns and in the new classification.

Statement F shows the relative value of each of the several general classes of exports on the basis of the average value thereof for the years under consideration as compared with the grand total of exports for the same years.

NATIONAL WHEAT STORES IN THE UNITED KINGDOM.

Broomhall's Liverpool Corn Trade News has devoted considerable space in three of its recent issues to a report dated May 3, 1898, by an Agricultural Committee appointed for the consideration of the above subject. The Committee consisted of twelve prominent agriculturists, six of whom were appointed by the Council of the Central and Associated Chambers of Agriculture. The Committee held fifteen meetings, and examined fifty-four witnesses, including grain dealers, tenant farmers and millers, all representative men in their particular vocations.

Although not especially charged to consider whether a reserve of wheat is necessary as a safeguard against famine in the event of war, the discussion showed that the question must be considered from a national as well as from the agricultural point of view. A large number of the witnesses who were examined, with only one or two exceptions, agreed that the

dependence of the nation on sea-borne supplies of breadstuffs demanded serious attention and the adoption of precautionary measures. With respect to the reliance to be placed upon the navy as an efficient security for the supply of breadstuffs, two naval officers held that a national reserve of wheat would give greater mobility to the fleet, which would then have a freer hand, by being relieved from the necessity of preventing, even temporarily, any interruption of grain supplies. With regard to the proposition of a system of national insurance by which the Government should guarantee merchants against the loss of grain ships or their cargoes in time of war, it was held that while this might protect merchants against risk, it would not insure the people against scarcity. On this point, Colonel Kozier, secretary of Lloyd's, said that "national insurance is chimerical," and that no form of Government insurance is practical except keeping up a strong navy and army, and, as a second line of defence, a reserve of wheat to free the hands of the navy. He further stated that a sufficient food reserve would greatly strengthen the position.

Having unanimously concluded that a large reserve of breadstuffs is necessary, three propositions designed to accomplish this object were considered:— (1) A stimulus to wheat-growing in the United Kingdom; (2) A subsidy to millers on flour held for a specified term; (3) National stores of breadstuffs.

As to the first of these propositions, it was rejected. While all agreed that the reduction of over fifty per cent. in the acreage of wheat in the United Kingdom during the past thirty or forty years was greatly to be deplored, it is not to be expected that the adoption of protective duties on corn would remedy this. It was suggested that a bounty might be granted of so much per acre on wheat land, or on wheat when the average price was less than 35s. or 36s. The discussion on this point was not as to its advantage to farmers, but as to its efficacy in securing the necessary reserves. The agriculturalists themselves admitted that the policy proposed was impracticable. The bounty per acre was objectionable because it might lead to the cultivation of this grain on unsuitable soils. A bounty on wheat, even on condition that it should only be on grain held over for a stipulated time, would prove inadequate to provide for national reserves, because, although it might increase the wheat production, the nation might find that after paying the bounty for several years, a rise in price when war broke out might induce every farmer to sell his wheat and forfeit the bounty.

The proposition of granting a subsidy to millers to induce them to hold large reserves of flour, did not commend itself to the Committee, as this would not secure the quantity of reserves considered necessary. Such a subsidy would only provide an assurance that a certain quantity of flour would be held in the country, under normal conditions, but would be under the control of parties who, in anticipation of war, might forego the subsidy, or, when war broke out, might hold for exorbitant prices, although they had been subsidized out of the Exchequer.

The above propositions having been rejected, the Committee was thrown back on the question of National Stores, which was the question which they were primarily to consider. This was submitted by Mr. Chapman in the following shape:— Government should, as a matter of Imperial defence, erect forty stores or granaries, having an aggregate capacity for storing ten million quarters of wheat, to be purchased by

Government; that the purchase of this wheat should be spread over three years; that space for two million quarters should be reserved, in which English farmers might store their wheat on their own account, if they so desired, subject to specified charges for storage; that after the stores were filled, one-third of the quantity should be sold and replaced annually; that the sale and purchase should be as nearly as possible simultaneous, so as not to affect the supply and demand in the markets; that the stores should be equipped for drying and cleaning the wheat.

It was generally considered that English farmers would not avail themselves of the privilege of storing their wheat on the terms proposed, or at any rate, to any great extent. Mr. Chapman estimated the cost of construction of the forty granaries and appliances at £3,900,000; the cost of eight million quarters of foreign wheat, presumed to be purchased at 35s. per quarter, £14,000,000, in all, £17,900,000. This to be paid for by an issue of Consols or Terminal Annuities for fifty years. If annual interest is two per cent., this would amount to £358,000; the annual working expenditure for maintenance, depreciation, insurance, wages, superintendance, coal and material was estimated at £282,213, making, with interest, an annual charge of £640,213. He admits that the rate of interest might possibly be 2½ per cent., which would increase the annual charge to that extent. If ten million quarters were purchased (rejecting the proposition of two million quarters of native wheat) the capital expenditure would be increased, and also the annual charge for interest. But on the other hand, the question arises whether it would be necessary to pay as high as 35s. per quarter for the wheat.

The question of the possibility of storing wheat for a long time, without deterioration, was closely considered. From the evidence taken, the Committee was satisfied that, provided wheat is sufficiently dry when stored, and is properly kept under skilful supervision, being moved periodically for aeration, there should be no difficulty in keeping it for several years. It was claimed, indeed, that so far from deteriorating under proper storage, it would be improved in value. The Committee considered different systems for drying which were submitted to them, and concluded that there would be no difficulty in erecting apparatus capable of preserving any wheat, British or foreign, without affecting its flavor or changing its character in any way except by reducing the percentage of moisture. A suggestion was made that a national reserve of breadstuffs might consist wholly or partly of flour. Mr. Fletcher described a process of compressing flour which, it was claimed, would enable it to be kept for a lengthened period without deterioration. The Committee, however, failed to see the advantage of the substitution of flour for wheat as a national reserve of food.

Some of the conclusions arrived at were:—That if a reserve of wheat existed in the country, and war should break out, it is evident that the price would not rise to the same height as if no reserve existed; if it be true that preparedness for war is the best security for peace, it may be fairly contended that the establishment of a reserve of wheat would be of the greatest advantage to the nation; That Government be most strongly urged to obtain the appointment, at the earliest possible date, of a Royal Commission, comprising representatives of agriculture, the corn trade, shipping, and the army and navy, to conduct an exhaustive enquiry into the whole subject of the national food supply in case of war.

It is rather remarkable that during the proceedings of the Committee, no special reference was made to the question of supply of breadstuffs from the colonies. It may be true that hitherto the proportion of this supply obtained from the colonies has been very insignificant, but quite a number of the witnesses who appeared before the Committee are well informed as to the capability for production which exists in some of these colonies, and especially in Canada, where, with a very little preference in English markets, there would be an immense expansion of export capacity in a very few years. Canada has many warm friends in the corn trade in England, who are heartily disposed in favor of preferential treatment for colonial produce, and who might have been glad to advocate this policy before the Committee, but of what avail would this have been in the face of the unequivocal declaration of the Premier of the Dominion, that Canada neither desired nor expected any preference, but on the contrary, wished that its produce should receive the same treatment as that of foreign countries.

COMMERCIAL RECIPROCITY.

Our American friends seem never to have fully comprehended the value of the Canadian market to their manufacturers until brought face to face, as they now are, with the operation of the Canadian tariff that discriminates to the extent of twenty-five per cent. in favor of British products. It goes without contradiction that for a number of years past the trade in certain manufactured products from the United States to Canada has progressed by leaps and bounds, while similar trade between Great Britain and Canada is actually and rapidly decreasing. The reasons for this condition need not now be discussed, as we only desire to emphasize the fact.

We mention this fact, however, with a view to showing that it is of the greatest importance that the Commission who are to take up and settle all the various questions of difference between Canada and the United States should give particular attention to that of commercial reciprocity between the two countries. It is well that there should be a delimitation of the international boundary lines, that there should be an amicable understanding regarding the fishery question, that a uniformity should exist in the mining regulations of the two countries, and that there should be no unfriendly laws on either side regarding immigration; and now that an era of good will and friendly feeling has appeared, there should be no difficulty whatever in settling these questions to the entire satisfaction of all concerned.

But there is another question of as great importance that should be settled and quieted now, by the Commission if possible, and if not by that, then by some other arrangement. We allude to those clauses of the American tariff that are levelled directly against Canadian interests. Unfortunately for the harmony and good feeling that should have always prevailed between the two peoples, our American neighbors, resenting our clinging to our connection with the mother country and desiring to absorb us into their own; and viewing Canada as fruit that should fall into their basket, have for years endeavored to force us into their way of thinking. They seem never until now to realize the fact that come weal, come woe, Canada would prefer to follow its des-

tiny separate and distinct from that of the United States, and to maintain at its own good will and pleasure its connection as an integral part of the great British Empire. They never believed that Canada was sincere in this profession, and never realized until now that if commercial hostility was to be the fixed policy of the United States, we could withdraw our trade from that country and transfer it to Great Britain where our views were more highly appreciated. But now they find that a just resentment on the part of Canada has resulted in giving British merchandise a very decided preference over theirs in our market, they are willing to make concessions that will place them on at least equal terms with their British competitors. It may be true that, other things being equal, they can hold the Canadian market in many of their products, but they also know that it will be almost impossible to hold the advantages they have gained here in the face of our tariff discrimination against them. And now they want a reciprocity in trade that will remove this barrier, and which cannot be hoped for nor obtained without liberal concessions on their part.

Discussing this matter *The Manufacturer*, of Philadelphia, one of the strongest protectionist journals in the United States, says:—

The most cursory examination of the figures bearing upon the trade between the two countries for a period of years will confirm us absolutely in such a view. The facts should be as freely recognized on this side of the line as on the other, and it is for this reason that we must look upon the British Zollverein scheme as a temporary expedient. It is in contradiction to nature and out of joint with the facts, and a time must soon come, if it is not already at hand, when the two governments will be in a mood to make some terms with each other with respect to tariff rates on important lines of goods passing back and forth over the frontier. If the Commission is not to deal with this subject the manufacturers of the United States will look to Mr. Kasson soon to give it the special treatment which it deserves. The preferential rate of twenty-five per cent in favor of British goods and against our own comes into force on August 1st next, when we will be brought forcibly to realize the mistake we have made. We have never thought that Sir Wilfrid Laurier was in earnest with his Preferential British Tariff. He and his Liberal party have long stood for reciprocity with the United States, but they were not going to get down on their knees to Dingley last year. The best way to gain ends sometimes is to go towards them backwards, and the Canadian Prime Minister probably knows this as well as the next man. All New England and much of Pennsylvania, Ohio and New York will be in favor of reciprocity with Canada inside of a few months, and when this is the case our battle will be won. The way to learn sometimes is through the ruler on the back out in the woodshed, rather than by way of the head and the reasoning faculties, and that is how we are going to learn this lesson.

CANADIAN TARIFF AMENDMENTS.

Chapter 37 of the laws recently passed by the Dominion Parliament, assented to June 13, 1898, reads as follows:

1. Section 6 of the Customs Tariff, 1897, is hereby repealed, and the following is substituted therefor:—

"6. The importation into Canada of any of the goods enumerated, described or referred to in Schedule C to this Act is prohibited; and any such goods imported shall thereby become forfeited to the Crown and shall be destroyed or otherwise dealt with as the Minister of Customs directs; and any person importing any such prohibited goods, or causing or

permitting them to be imported, shall for each offence incur a penalty not exceeding two hundred dollars."

2. On and after the first day of August, on thousand eight hundred and ninety-eight, Section 17 of the said Act shall be repealed and the following shall be substituted therefor:—

"17. Articles which are the growth, produce or manufacture of any of the following countries may, when imported direct into Canada from any of such countries, be entered for duty or taken out of warehouse for consumption in Canada at the reduced rate of duty provided in the British Preferential Tariff set forth in Schedule D to this Act:—

(a.) The United Kingdom;

(b.) The British colony of Bermuda;

(c.) The British colonies commonly called the British West Indies, including the following:—

The Bahamas;

Jamaica;

Turks and Caicos Islands;

The Leeward Islands (Antigua, St. Christopher-Nevis, Dominica, Montserrat, and the Virgin Islands);

The Windward Islands (Grenada, St. Vincent and St. Lucia);

Barbados;

Trinidad and Tobago;

(d.) British Guiana;

(e.) Any other British colony or possession the customs tariff of which is, on the whole, as favorable to Canada as the British preferential tariff herein referred to is to such colony or possession.

Provided, however, that manufactured articles to be admitted under such preferential tariff shall be bona fide the manufactures of a country or countries entitled to the benefits of such tariff, and that such benefits shall not extend to the importation of articles into the production of which there has not entered a substantial portion of the labor of such countries. Any question arising as to any article being entitled to such benefits shall be decided by the Minister of Customs, whose decision shall be final.

"2. Raw sugar, including all sugar described in item 436 of Schedule A, may, when imported direct from any British colony or possession, be entered for duty or taken out of warehouse for consumption in Canada at the reduced rate of duty provided in the British Preferential Tariff.

"3. The Minister of Customs, with the approval of the Governor in Council, shall determine what British colonies or possessions shall be entitled to the benefits of the preferential tariff under paragraph (e) of subsection 1 of this section.

"4. The Minister of Customs may, with the approval of the Governor in Council, make such regulations as are deemed necessary for carrying out the intention of this section."

3. Item 221 in Schedule A to the said Act is hereby repealed and the following substituted therefor:—

"221. India rubber boots and shoes; rubber belting, rubber cement and all manufactures of India rubber and gutta percha, n.o.p., twenty five per cent. ad valorem . . . 25 p.c."

4. Items 435 and 436 in Schedule A to the said Act are hereby repealed and the following are substituted therefor:—

"435. All sugar above number sixteen Dutch standard in color, and all refined sugars of whatever kinds, grades or standards, testing not more than eighty-eight degrees by the

polariscope, one dollar and eight cents per one hundred pounds, and for each additional degree one and one-half cent per one hundred pounds. Fractions of five-tenths of a degree or less not to be subject to duty, and fractions of more than five-tenths to be dutiable as a degree.

"436. Sugar n.e.s. not above number sixteen Dutch standard in color, sugar drainings or pumpings drained in transit, melado or concentrated molado, tank bottoms and sugar concrete, testing not more than seventy-five degrees by the polariscope, forty cents per one hundred pounds, and for each additional degree one and one-half cents per one hundred pounds. Fractions of five-tenths of a degree or less not to be subject to duty, and fractions of more than five-tenths to be dutiable as a degree. The usual packages in which imported to be free."

5. On and after the first day of July, one thousand eight hundred and ninety-eight, items 445 and 446 in Schedule A to the said Act shall be repealed.

6. On and after the said first day of July, the following item shall be inserted in schedule B to the said Act instead of item 616:—

"616. Tobacco, unmanufactured, for excise purposes under conditions of the Inland Revenue Act."

7. On and after the first day of August, one thousand eight hundred and ninety-eight Schedule D to the said Act shall be repealed and the following substituted therefor:—

SCHEDULE D.

BRITISH PREFERENTIAL TARIFF.

"On articles entitled to the benefits of this preferential tariff under section seventeen, the duties mentioned in Schedule A shall be reduced as follows: The reduction shall be one-fourth of the duty mentioned in Schedule A, and the duty to be levied, collected and paid shall be three-fourths of the duty mentioned in Schedule A.

Provide, however, that this reduction shall not apply to any of the following articles, and that such articles shall in all cases be subject to the duties mentioned in Schedule A, viz. wines, malt liquors, spirits, spirituous liquors, liquid medicines and articles containing alcohol; tobacco, cigars and cigarettes.

Provided further, that the reduction shall only apply to refined sugar, when evidence satisfactory to the Minister of Customs is furnished that such refined sugar has been manufactured wholly from raw sugar produced in the British colonies or possessions."

8. Except as herein otherwise provided, this Act shall be held to have come into force on the sixth day of April, in the present year, one thousand eight hundred and ninety-eight.

EDITORIAL NOTES.

It is said that an agreement has been entered into between the Cataract Power Company, of Hamilton, Ont., and the Hamilton Electric Light and Power Company, by which the former will furnish power for electric lighting and take over the business of the last-mentioned concern. Mr. Patterson, of the Cataract Power Company, says that the Electric Light Company would remain an independent concern, and that his company would furnish the power.

The provisions of Chapter 6 of the Dominion Statutes of 1897, intituled, An Act to provide for Bounties on Iron and

Steel made in Canada, are held by the Government to have come into force on the twenty-third day of April, 1897.

Mr. T. C. Irving, Toronto, Superintendent of the Bradstreet's Mercantile Agency, has sent us the following report of business failures in Canada for six months in two years, with assets and liabilities as follows:

	No. of Failures.		Assets.		Liabilities.	
	1898.	1897.	1898.	1897.	1898.	1897.
Ontario.....	388	495	\$1,321,777	\$1,329,312	\$2,496,025	\$3,097,731
Quebec.....	218	374	753,509	1,009,311	2,159,723	3,151,893
New Brunswick.....	39	31	133,526	91,090	296,680	183,500
Nova Scotia.....	68	95	191,921	216,910	396,379	511,161
Prince Ed. Island..	2	7	19,503	25,700	31,500	58,102
Manitoba.....	22	30	134,216	137,082	292,686	388,551
Northwest Territory	3	6	6,500	31,700	15,000	62,812
British Columbia..	33	31	82,100	93,275	111,630	173,850
Totals, Canada..	813	1,074	\$2,616,070	\$3,020,169	\$5,799,613	\$7,618,613
Newfoundland.....	21	9	61,270	6,400	107,636	11,000

As will be seen by the above, the business failures for the last six months number 813; 24 per cent. fewer than in the corresponding period a year ago, while liabilities of such failing traders aggregate \$5,799,613, a decrease of almost identically the same per cent.

The Canadian Electrical Association, which held its annual convention in Montreal a couple of weeks ago, as heretofore announced in these pages. At the election of officers for the ensuing year, Mr. John Yule, of Guelph, the president for the past two years, declined to be re-elected for a third year, and Messrs. W. H. Brown, general manager of the Royal Electric Company, of Montreal, and C. B. Hunt, manager of the London Electric Company, London, Ont., were nominated for the office. Mr. Hunt, who was the present vice-president, having for reasons that commended themselves to the association, declined to stand, Mr. Brown was unanimously elected president. Mr. Brown thanked the association for the honor they had done him in this election, and assured the members that he would do all in his power to further the interests of the association. Mr. Mortimer, of Toronto, was unanimously re-elected secretary-treasurer, a post which he has filled for many years with credit to himself and the association. The Executive was chosen in two divisions, five being chosen by ballot from the old committee, and five from the association at large. The completed list of officers is as follows:—President, W. H. Brown, Royal Electric Co., Montreal; First Vice-President, H. P. Dwight, general manager G.N.W. Tel. Co., Toronto; Second Vice-President, A. A. Dion, Ottawa Electric Co., Ottawa; Secretary-Treasurer, C. H. Mortimer, Toronto; Executive Committee, J. J. Wright, manager Toronto Electric Light Co.; John Carroll, Eugene Phillips, Electrical Works, Montreal; Ormond Higman, Ottawa; A. B. Smith, supt. G.N.W. Tel. Co., Toronto; Wm. Thompson, supt. Water Works, and Electric Light, Montreal West; McLen Walbank, Lachine Power Co., Montreal; E. E. Carey, St. Catharines; E. J. Henderson, H. R. Leydon and Geo. Black, Hamilton. After the usual votes of thanks the convention adjourned to meet in Hamilton next year.

Messrs. Pawson & Brailsford, High Street, Sheffield, Eng., the publishers, have sent us a copy of "The Foreign Buyers' Catalogue," published for the purpose of giving foreign buyers and importers of English manufactured goods all necessary information respecting the trade marks and specialties of each firm therein represented. We quite agree with the publishers that the list will supply a long-felt want in placing before buyers and importers a representative list of eminent Sheffield and a few other firms whose products have a world wide reputation.

CANADIAN MANUFACTURERS' ASSOCIATION.

President:

J. F. ELLIS.

First Vice-President:

JAMES KENDRY, M.P.

Second Vice-President:

P. W. ELLIS.

Treasurer:

GEORGE BOOTH.

Chairman Executive Committee:

R. W. ELLIOT.

Chairman Tariff Committee:

W. K. McNAUGHT.

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

OFFICES

McKinnon Building,

TORONTO.

Tel. 1274.

J. J. CASSIDEY, - SECRETARY.

THE OBJECTS OF THIS ASSOCIATION ARE:

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

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

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

CANADIAN INDUSTRIAL LEAGUE.

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

WOOLEN MANUFACTURERS' ASSOCIATION,

President, **BENNETT 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.

WHAT THE ASSOCIATION ADVOCATES.

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

THE NATIONAL POLICY.

Whereas, from its geographical position and commercial environment the prosperity of the Dominion of Canada depends largely upon the maintenance of a fiscal policy which will foster our agricultural, mining, commercial and industrial enterprises, and which will make the interests of Canadians paramount to those of foreigners, by preventing this from being made a slaughter market for the surplus products of foreign countries; and

Whereas, the observance of such policy gives confidence and stability to capital and enables our artisans to obtain wages far in excess of those which prevail in European countries, and which keeps them in the country by the payment of wages which enable them to live in comfort; and which provides a home market for many lines of agricultural products, which cannot be exported; a policy which also attracts foreign capital and inaugurates industries by inducing those who desire to participate in the benefits of our market to manufacture their products here; a policy which encourages and develops inter-provincial trade, and produces amongst the people a feeling of security, of national pride, and commercial and industrial independence, highly conducive to the welfare of the whole people, without which we can never attain to the acme of national prosperity; and

Whereas, the revival of the mining industry in this country has given an impetus, not only to agricultural, but to many other industrial enterprises, as nearly everything used or consumed in the mining regions has to be brought from outside sources;

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

PREFERENTIAL TRADE.

While heartily commending the Dominion Government for their desire to confine the scope of the Preferential Tariff exclusively to the Mother Country and the British Colonies, this Association is strongly of the opinion:

1. That our Preferential Tariff should not be extended to any colony, unless such colony accords to us a tariff preference in their market, equivalent to the discrimination allowed by us in its favor.
2. Where our minimum Preferential Tariff is applied, the minimum rate of duty thereunder should be high enough to protect existing Canadian industries from the competition of countries having lower priced labor, cheaper raw materials and capital, and whose long-established industries give them great advantages over those of Canada.
3. That although the minimum Preferential Tariff has already been extended to Great Britain without any corresponding preference to Canada, we would strongly impress upon the Dominion Government the necessity of obtaining reciprocal concessions from the Mother Country as speedily as possible.

CANADA'S COMMERCIAL AGENTS.

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

- J. S. Lurke**, 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, 10 St. Enoch Square, Glasgow, Scotland.
Harrison Watson, Curator Imperial Institute, London, England.

RAILWAYS IN SOUTH AFRICA.

It will interest Canadian manufacturers, shippers, exporters and railway supply men to have definite knowledge of the railways in South Africa and the names and addresses of the managers of them. United States Consul, General Stowe, at Cape Town, supplies this information as follows:—

The steam railways in South Africa are as follows:

- The Cape Government Railways. General Manager, C. B. Elliott, Cape Town.
 The Orange Free State Railways. Director General, R. E. Brounger, Bloemfontein.
 The Netherlands South African Railway Company. Managing Director, G. A. A. Middleberg, Pretoria.
 The Natal Government Railways. General Manager, D. Hunter, Durban, Natal.
 The Bechuanaland Railway Company, Limited. Secretary, J. A. Stevens, Cape Town.

The Indwe Railway Company. Managing Director, Colonel Scherbrucker, Cape Town.

The New Cape Central Railway Company. Agent, Sir Thomas Scanlen, Cape Town.

The Pretoria-Pietersburg Railway (in construction). General Manager, G. Mayo, Pretoria.

The Grand Junction Railways, Limited (in construction). Secretary, S. Tonkin, Cape Town.

Kowio Railway Syndicate. Manager, H. Putt, Grahams-town.

Portuguese Railways, Mozambique. Engineer Director, C. Albers, Lorenzo Marquez, East Africa.

Particulars of the Cape Government Railways I have pleasure in appending, but for details as to the other railways mentioned I must refer to the principal officers named in each.

The principal officers of the Cape Government Railways, besides the general manager, are: Engineer-in-chief, John Brown, Cape Town; chief locomotive superintendent, H. M. Beatty, Salt River; chief traffic manager, T. R. Price, Cape

Town; financial secretary, James Easton, Cape Town; accounting officer, A. J. Robb, Cape Town; chief railway storekeeper, W. Sinclair, Cape Town; agent general in London, Sir David Tennant, Westminster; commercial agent in New York, M. Berliner, Whitehall street.

The Cape Government Railways are divided into following four systems:

Western system, 592 miles open, from Cape Town to De Aar, including the Malmesbury, Sir Lowry's Pass, Wynberg, and Simonstown branches.

Midland system, 704 miles, from Port Elizabeth to De Aar, including the Grahamstown and Colesberg branches.

Eastern system, 331 miles, from East London to Bethulie Bridge, including the King Williams Town and Aliwal North branches.

Northern system, 273 miles, from De Aar to Vryburg, principal station, Kimberley; no branches.

There are at present no lines under construction by the Government or by contractors on behalf of the Government. Several routes are, or have been lately, under survey; but Consul Stowe is not at present in a position to say anything as to the prospects of building.

COMMERCIAL CONDITIONS IN CAPE COLONY.

United States Consul, General Stowe, reports to his Government from Cape Town, South Africa regarding the commercial condition in Cape Colony many facts that are of much interest to Canadian manufacturers and exporters.

Speaking of dock facilities and the availability of native coal for steaming purposes he says:

There appears to be a feeling among some, at least, of the export commission houses in the United States, that unnecessary delay in unloading vessels sailing from the United States is caused by partiality on the part of the dock authorities.

I have been unable to discover, after much inquiry among merchants who buy American goods, that delay in unloading is caused by any favoritism; it is rather due to inadequate dock facilities. I am pleased to report that these have been materially improved. New and commodious docks are being built, with large warehouses thereon. Several traction engines have been purchased, each capable of hauling heavily loaded drays or wagons. I therefore believe that the complaints mentioned will soon be of the past.

All coal used in this colony and on several lines of steamers that touch here is brought from Cardiff, South Wales. Coal of good quality has been found here, and 200 tons per day is now being delivered in Cape Town. If, on full trial, this coal proves to have the necessary steaming qualities, the present dock, with the extensions now in course of erection, will be more than ample. Vessels that are now obliged to go out in ballast can then load with coal if they wish to enter other ports, which will be a source of revenue not only to the colony, but to the owners of vessels as well; and freight rates, which are now based on outward cargo alone, can then be reduced on part at least of the homeward cargo.

Again, the difference in the price of coal will be of advantage to owners of vessels homeward bound. Seven dollars and twenty-five cents per ton is the present price of Cardiff coal, against \$4.12 per ton for Cape Colony coal, which will lessen as the output increases.

Regarding rates for freight Consul Stowe says: I think that shippers from the United States to this country have no reason to complain of the freight rates, as compared with those from other countries, although some of the vessels that transport American goods to the ports of South Africa are owned in those very countries.

The New York rate is now about \$2 per ton of forty cubic feet less than from Hull, England. At one time the difference was greater in favor of the United States, but complaints by other countries brought about a reduction in their favor.

With better docking facilities and cheaper coal for homeward voyages, freights must be, in time, materially reduced.

Recently a new German line of steamers, known as the German-Australian Steamship Company (the Deutsch Australische Dampfschiffs Gesellschaft), has entered the field and will cause keen competition, as a reduction of 25s. (\$5.85) per ton is offered to Port Elizabeth, on the African coast. The service will be every four weeks from Hamburg and Antwerp; but goods are also taken from other ports in Europe and for other ports in South Africa. From June, 1898, the service will be doubled and made fortnightly. The company is an old established one, and is not dependent upon this trade alone; being thus free from the consideration of return cargo from South Africa, which plays such a part in the high rates of existing lines.

And this about commission houses:

Some of the most important merchants in this country are desirous of purchasing direct from the manufacturers of the United States, without the intervention of what is known as "export commission houses," or middlemen, and while this is a subject I approach with some hesitation, yet I offer my views, with the desire to benefit our manufacturers and producers. That in time this direct purchasing will be advantageous I admit, but at present the legitimate export commission houses are the opposite of detrimental to the extension of our foreign trade. I refer to the class of houses that act as agents, buying such goods only as their clients may order, contracting the freight and insurance, and paying the manufacturer cash on receipt of the goods. Being large buyers, they are enabled to purchase at low prices, and being large shippers, they are enabled to contract lower rates of freight. They are able to sell more goods at less expense than would the manufacturers. Representing as they do varied lines, they are sure to sell some line meeting the need of the customer, and it is for their interest, as they work on commission, to use every energy to sell all the goods.

There is some complaint against so-called "export jobbers," who buy of the manufacturers at the lowest possible cost and sell to the foreign buyers at the highest price they can secure; and who often resort to substitution of goods of lower quality or bought of a different manufacturer than the one the foreign buyer may have specified, thus damaging the interests of both foreign buyer and manufacturer.

There are also, it is alleged, those who publish so-called "prices current," on which are advertised goods of various manufacturers. They often quote prices that they cannot meet when the order is received.

The legitimate export commission houses pay all expenses, and take fair compensation for service and credit granted; in short, they act as the banker for a foreign buyer and are the bridge between the American maker and the foreign buyer. The manufacturer is saved the expense of introduction and all risk.

The Consul gives the following illustration of the conditions when an exporting house ships goods and draws drafts to cover value:

If the draft is drawn on New York through British bankers or their agents, the charges for, say, a ninety days' draft are:

	Per cent.
Charge for collection.....	1
Charge for four months' interest at six per cent.	2
Charge for two months' interest.....	1
Total	4

The second charge is to cover time of transit of draft and the ninety days from acceptance to payment. The banker here in South Africa remits to the New York banker a ninety days' draft on London, so that by the time this gets to New York it has two months yet to run, and for this the last charge of one per cent. for interest is made.

This is not the only loss. When the original draft is made, sterling is worth, say, \$4.85 to the pound, but during the five months covered by the draft before it gets back to New York

exchange may go down, so that the shipper may get \$4.78, or perhaps only \$4.75; so that the additional loss is the difference of, say, nine cents on every pound sterling.

American manufacturers are dependent on competitors in foreign countries to ship their goods and collect their drafts. An American bank (international) would help to increase the export trade. Two months' interest might be saved, as well as all exchange, for then draft could be made for dollars and dollars received. In addition, American manufacturers, producers and exporters would be able to receive reliable information as to the financial standing of foreign merchants, which cannot be done through British banks or their agencies.

Speaking of the development of South Africa and the proper method of selling goods there Consul Stowe says:

The development of South Africa will be speedy as soon as certain questions are settled and irrigation introduced, and it is for this time that our manufacturers should prepare. Men of experience should be sent to canvass and ascertain the needs of the market, the competitors, the prices paid, etc.

Our manufacturers object to carrying out the wishes of foreign customers when such views conflict with their own: they dislike to change methods, and consequently do not cater to foreign wants as do the manufacturers of other countries, particularly England and Germany. If the foreign trade desires nails packed in kegs of 112 pounds, instead of the American keg of 100 pounds; if it desires certain cheap cloths dyed in the yarn instead of the piece; if it wants vehicles with seats six inches wider, and with no wider "track;" if it desires the boxes in which goods are shipped dovetailed at the corners, or strapped with iron; if it wants goods sent in bags of a certain quality, when barrels have previously been used; if it desires a change of style of package—all these wishes should be complied with.

The Germans particularly are willing to do anything to get the business, and with their ships reducing freight rates, they naturally obtain their share of the trade. They also gladly sell on ninety days' time. At present, business is dull, the drought, rinderpest and fly, and the state of affairs in the South African Republic, causing hindrance to trade; but these conditions can not last.

When orders are given, they must be large, for the reason that good stocks must be carried, as communication with foreign countries is slow. The stores (and I have visited all of them) carry stocks of which many of our jobbers in the United States would be proud. It must be borne in mind that Cape Colony demands £25 (\$121.50) per year, for license to sell, and the South African Republic £20 (\$97.20). A duty on samples is also asked.

UNITED STATES GAIN—BRITAIN'S LOSS.

The London, England, Iron and Steel Trades Journal of a recent date published an article with an explanatory diagram, concerning the rapidly decreasing trade of Great Britain with Canada in manufacturers of iron and steel, and the transference of that trade to the United States. The diagram shows that in 1887 Great Britain sold to Canada £609,926 value of such goods, and that ten years later, in 1897, the value had decreased to £216,791, while in 1887 the sales of the United States were valued at £118,613, which, in 1897 had increased to £400,907.

Commenting upon this remarkable spectacle, the American Economist says:—

The two contemporary commercial histories presented in the diagram are as gratifying to protectionists as they are disconcerting to free-traders. No branch of industry was more thoroughly protected in the United States while it needed protection than that embracing iron and steel manufacture. Nor has it yet passed wholly out of that need, although in

certain imported lines it now neither requires nor receives more than a very small degree of protection.

No branch of industry has more thoroughly justified the application of protection, as is shown by the diagram, portraying the history of the past ten years in the experience of free-trade England and protective United States in capturing the markets of a prominent English colony.

This record does not cause manufacturers of iron and steel in the United States to shed any tears, for the other slant line of the diagram shows that while England lost two-thirds of her trade, the United States more than trebled the value of her sales of iron and steel manufactures to Canada.

Why? Is it because England is hampered by ocean freights? The ocean rolled between England and Canada ten years ago, just as it does now, and ocean freights were dearer then than now. Is it because labor is cheap in the United States? Mr. Archibald P. Head of London, recently reported to the South Staffordshire Institute of Iron and Steel Works Managers that "Labor was, on the average, fifty per cent. dearer than in England."

And yet, in the face of cheaper ocean freights and dearer labor, protective United States is taking free-trade England's Canadian iron and steel market away from her so rapidly that it would appear that another ten years would totally wipe it out of existence. Ten years ago England sold to Canada more than five times as much iron and steel products as the United States did. Last year the United States not only sold to Canada as much as England did, but almost twice as much.

"And," says the Economist, "these are English figures. No wonder English trade journals are sounding the tocsin of alarm."

And Canada is doing all it can to accentuate the situation by lowering the duties on American manufactures of iron and steel that even the twenty-five per cent reduction of duty in favor of British goods will be impotent to change.

All Over Canada...

IN ALL KINDS OF BUILDINGS

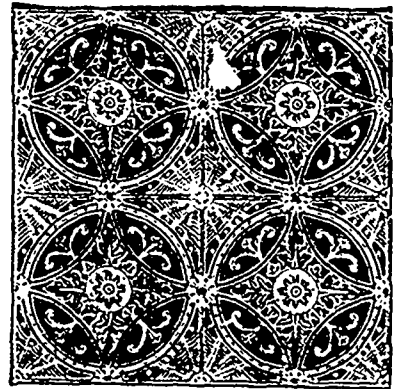
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Metallic Ceilings

AND

Walls

Are the Most Popular
Interior Finish.



We make an immense variety of artistic patterns, with borders and mouldings to match—they can be easily applied (over plaster if desired in old buildings)—are durable and economical, fireproof and hygienic.

The serviceable beauty of this finish commends it to all practical people.

If you would like an estimate and further information send us an outline showing shape and measurements of the walls or ceilings to be covered.

METALLIC ROOFING CO.

(LIMITED.)

1181 King Street W., TORONTO.

The telegram of Mr. Reid, the Premier of New South Wales, to the other Premiers who agreed to support the federation scheme, suggesting a conference to reconsider the proposed constitution for Federal Australia, shows that "anti-federation" is not popular even in New South Wales, and proves that Mr. Reid has by this time become alive to the fact. There was, it will be remembered, a slight, though not a sufficient, majority for the scheme in that colony. The proposals, which were adopted at a conference, after mature consideration, cannot be cut about to suit this and that colony; but, none the less, it may be hoped that New South Wales may be persuaded to vote upon the scheme a second time. It is necessary for the security of the Empire that Australia should federate, and this should be enough.—London Daily Mail.

Canadian food products are being brought more and more conspicuously to the notice of the English consumer, in essentially the right way, i.e. as Canadian produce which by virtue of its excellence is entitled to top price in the market. Thus, at the Army and Navy Stores, Canadian bacon, cheese and ham are on view, labelled as such, cheek by jowl, with similar "American" produce, and commanding prices one penny per pound higher than the latter. What better object-lesson could be devised? Similarly significant testimony is, however, to be found in the leading trade journals. One large firm, of admitted position, advertising in *The Grocer*, refers to the great hold which Canadian bacon now has with the trade throughout the country, and predicts that the day is not far distant when the Dominion "will enable us to entirely ignore the foreigner."—Canadian Gazette, London, Eng.

The Canadian Commercial Agent at Trinidad, W.I., has written to the Government that the people of Trinidad at least have been thoroughly informed of the action of the Canadian Government in extending to the British West Indies the privilege of the preferential tariff. The *Port of Spain Gazette* and the *Trinidad Mirror*, for the first week in May, contain editorial articles, letters and advertisements calling attention to the action of the Canadian Parliament, and pointing out that produce hitherto purchased from the United States—such as cheese—should now be imported to Trinidad from Canada. The *Gazette* announces that in some quarters the notice of a closer connection with Canada is not favorably regarded, it being feared that such would interfere with their chances of obtaining a reciprocity treaty with the United States.

The Canadian Government framed preferential tariffs for countries willing to trade fairly with them. Those countries which do not shut out Canadian products by heavy duties became entitled last year to a reduction of one-eighth on the general tariff for all their goods imported into Canada, and after June next the reduction will be increased to one-fourth. Under these conditions both Great Britain and India received relief, but as the commercial relations between India and Canada are very circumscribed the concession will not have any appreciable effect upon Indian trade, except indirectly through the fillip the reduction is expected to give to British textile industries. As a step forward in the direction of Imperial Federation upon lines of commercial reciprocity it is, however, of the utmost interest to all Imperialists.—*Times of India*.

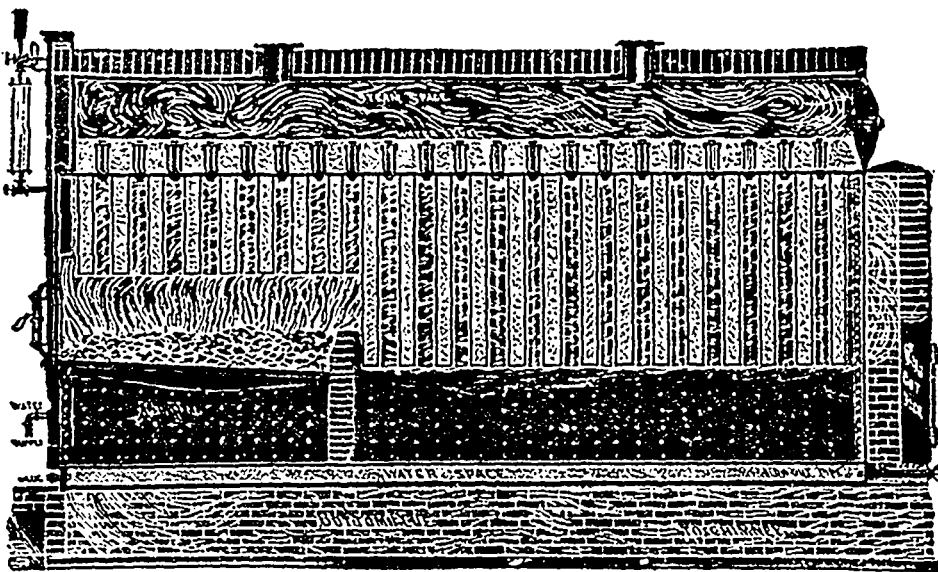
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Bell Telephone Building, - MONTREAL, QUE.

HEAD CANADIAN OFFICE FOR

KINGSLEY WATER TUBE BOILERS

Manufactured in Montreal,
Ottawa and Toronto.



*For Steam, Power
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Installations....*

*The Most Economical Boiler,
and the Cheapest, when
based on Evaporat-
ing Capacity.*

Can be installed in any Basement,
requiring only 6 1/2 feet in height.

GUARANTEED: A Saving in Fuel of 30 per cent. over Return Tubular Boilers.
A Saving in Fuel of 50 per cent. over any Cast Iron Heater.

...Catalogue Free.

CAPTAINS OF INDUSTRY.

The following items of information, which are classified under the title "Captains of Industry," relate to matters that are of special interest to every advertiser on those 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 vote on the by-laws will be taken at an early date to raise \$10,000 for the construction by the town of Prescott, Ont., of water works and sewerage systems.

A by-law has been passed by the village of Beeton, to raise \$3,500 for an electric light plant.

A new church will be erected at Stottsville, Que., to replace the one recently destroyed by fire.

The Hamilton, Ont., Young Woman's Christian Association is making an appeal to citizens for subscriptions to erect a new building. Estimated cost, \$15,000.

A representative of Mitchell Bros., Liverpool, Eng., and Berkley, Ont., will visit Woodstock, N.B. on St. John river, to look into the chances for a mill to cut about 1,500,000 feet of maple blocks each year for the British market.

The planing mill of Thos. Ebbage, Acton, Ont., was destroyed by fire June 29th.

A large transaction has been completed in Quebec, whereby the Quebec, Montmorency & Charlevoix Railway Company took over the electric railway system of the Quebec District Railway Company. The bonds of the amalgamated concerns, amounting to \$1,500,000, were sold to Messrs. Hanson Bros., of Montreal, and on Thursday they accepted delivery of and paid for some \$1,150,000 of the issue. The remaining \$350,000 of the bonds has been lodged with the trustees, the Montreal Trust and Deposit Company, and the proceeds of the sale of these are to be used for further extending the present city electrical system, and electrifying the steam system of the Quebec, Montmorency & Charlevoix Railway.

The Hamilton Coffee and Spice Co., Hamilton, Ont., will erect a large mill.

The by-law submitted to the ratepayers to loan the Southampton Mfg. Co., Southampton, Ont., \$10,000 for fifteen years was carried.

A. Hill & Co., lumber dealers, of Midland, Ont., have just shipped \$50,000 worth of saw logs to Saginaw, Michigan, to be manufactured. As these logs were cut before April, they do not come under the new enactment of the Ontario Government, prohibiting the exportation of logs.

The Mooers Elevator Co., Kingston, Ont., are constructing a three hundred barrel flour mill in connection with their elevator at that place.

The building formerly occupied by J. Y. Shantz & Son, Berlin, Ont., as a button factory, but now occupied by the Berlin Brush Co., and Oelschlager Bros., as a machine shop and foundry, was destroyed by fire July 11th. Loss to Brush Co., about \$12,500 and to Oelschlager Bros., about \$2,000.

The Maritime Wrapper Factory, Woodstock, N.B., is running full time. They manufacture about twenty dozen wrappers a day, which find a good market all over Canada.

The factory of the Gale Mfg. Co., Toronto, was destroyed by fire July 5th. The company are occupying premises on Front St. E. while their new building is being erected, which will be on the site of the burned building.

The Palmerston Pork Packing Co., Palmerston, Ont., has been incorporated with a capital stock of \$9,999 to carry on a general pork packing and curing business.

The waterworks system at Ottawa will probably be improved at an early date. It is advocated that the pumping machinery should be increased to a capacity of 26,000,000 gallons per day, the present aqueduct enlarged, and hydraulic pumps provided. By special act of the Ontario Legislature, passed last year, the corporation of Ottawa was empowered to issue debentures to the extent of \$75,000 for improving this system. Of this amount, only \$15,000 has been spent, leaving \$60,000 still available.

The London Cold Storage and Warehousing Co., London, Ont., are applying for incorporation with a capital stock of \$75,000 to carry on the business of cold storage, etc.

The Keyes Somerville Printing Co., Brantford, Ont., are applying for incorporation with a capital stock of \$20,000 to carry on the business of lithographing, engraving, etc.

Burley & Gallagan's machine shop at Rat Portage, Ont., was burned June 15th. Loss about \$40,000.

The N. S. Le Page Glue Co., Victoria, B.C., has been incorporated with a capital stock of \$50,000 to make fish glue, fish oil, etc.

The Hamilton Bridge Co., Hamilton, Ont., have been awarded the contract for building a bridge across the Twenty-Mile creek between Lincoln and Wentworth counties, Ont. Cost \$540.

The Sieling Furniture Co., of Ontario, Hanover, Ont., has been incorporated with a capital stock of \$20,000 to manufacture furniture, etc.

The steel hull and machinery of the Canadian Pacific Railway Co.'s stern-wheel steamer Tyrrell were built by the Polson Engine Works, Toronto.

M. McLaughlin is erecting a large flour mill at Buctouche, N.B.

Sandford Ingraham is building a new steam flour mill at Middle Simonds, N.B.

McCullough & Herriott are pushing the work on their new flour mill at Souris, Man.

The sash and door factory of Jos. Cote & Cie, Pierreville, Que., was destroyed by fire June 29th.

Messrs. R. B. Bisset & Co. have received machinery for a planing mill they are building at South Edmonton, N.W.T.

The ratepayers of Ashburnham, Ont., will shortly vote on the question of raising \$15,000 by debentures to provide for the establishment of a waterworks system.

The Dominion Radiator Co., Toronto, Ont., has been incorporated with a capital stock of \$300,000 to manufacture radiators, boilers, etc.

INGERSOLL-SERGEANT Rock Drills

FOR MINES, TUNNELS AND QUARRIES

PISTON INLET **Air Compressors** STRAIGHT LINE
 DUPLEX and
 COMPOUND.

FOR ALL DUTIES.

... COMPLETE MINE EQUIPMENT ...

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

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

The Miller Bros. Co., Montreal, are applying for incorporation with a capital stock of \$300,000 to manufacture paper, pulp, etc.

The most important building now under construction in Shediac, N.B., is the mill being built by Senator Poirier. It is over fifty feet high and will be equipped with the very best machinery obtainable. Senator Poirier spent considerable time in Ontario visiting the leading flour mills, where he obtained many valuable suggestions. It will have a capacity of one hundred and twenty or thirty barrels per day, and will be equipped with machinery for grinding buckwheat, corn, barley, etc., and a shingle mill is to be run in connection. The mill is three storeys, with a large basement. The outside will be covered with galvanized iron. The engine room is separate from the main building. The engine and boiler were manufactured by the Robb Engineering Co., of Amherst, N.S. The mill will be complete in about a month.—Sackville Post.

It appears that the manufacturers of New Glasgow, Nova Scotia, can obtain Cape Breton coal more cheaply than that which is mined almost at their very doors, or else they prefer the quality of the Cape Breton coal. At any rate, we are told that fifty thousand tons of coal will be hauled over the Intercolonial during the next twelve months from the Dominion Coal Company's mines in Cape Breton for the Nova Scotia Steel Co. at New Glasgow. The rate of carriage is 75 cents a ton. This, it seems to us, says the New Glasgow Chronicle, will be a serious matter for our mines here. Two or three shipments have arrived here recently from Cape Breton. Not only culm, but coarse coal as well, for the steel works at Trenton.

D. A. Davidson, Kingston, Ont., is the patentee of an invention for putting on the caulk of shoes on horses without the shoes being removed. These shoes and caulks have been fully tested, and a company is now being formed at Kingston to manufacture them.

James Burns, Chairman of Property Committee of the Toronto Public School Board, is advertising for tenders for the erection of three school buildings and the enlargement of another. C. H. Bishop, Superintendent of Buildings, Toronto, can give further information.

The Court House, jail and all the county officials' offices at St. Thomas, Ont., were destroyed by fire July 1st.

The Brantford Starch Co., Brantford, Ont., have given out a contract for putting another story on their factory, which will give them room for six more kilns and enable them to run steadily the year through. Mr. Ruddy, the new manager, is making a number of improvements to the works, among which is the use of filtered spring water instead of water from the canal, which will improve the quality of the starch; also the installing of a complete new plant for the manufacture of thin boiling wheat starch for laundry purposes.

The first international trip ever made by an electric car was made over the upper steel arch bridge at Niagara Falls by a car of the Niagara Falls Park and River Railroad on June 30th, starting from the Canadian side. The car was decorated with Canadian and American flags and when it reached the American bank was cheered to the echo by the large crowd that had gathered on the bank to witness the event. During the summer months cars will run over the bridge every five minutes.

Tests are about completed of the new electric machinery in the power house on the Canadian side of the Niagara. It consists of two three-phase, belt-driven generators of 500 horse-power each. The current is to be 2,400 volts alternating. There are also two 20-horse-power direct current multipolar generators to be used as exciters. A new 1,300-horse-power induction motor is to be placed at once in the electric light station on that side of the river. The Corborundum Company, which is building a factory on the Canadian side, has ordered a 200-horse-power transformer for reducing the current from 2,000 volts to 100 volts.

At a meeting of the Grand Falls Power Company held in St. John, N.B., on June 17th, it was decided to begin at once the operations already approved by the Provincial government. It is intended to dig the canal, erect a powerful plant, and utilize the power of the Falls for manufacturing purposes. Pulp mills are the first of the projects that will be proceeded with when the power developments are sufficiently advanced. The works to be begun at once involve the expenditure of \$1,000,000.

It is understood that the Standard Oil Company, which during the last few years has spent between \$300,000 and \$400,000 in establishing refineries at Sarnia, has effected the purchase of the Imperial Oil Works at Petrolia, Ont., and has leased every other refining plant in Canada for five years. It has thus secured an absolute monopoly of oil refining in Canada. The Company are preparing to make other large additions to their Canadian works.

The directors of the Toronto Rubber Shoe Company, who were to build a factory at Hull, Que., and who were voted a bonus for that purpose by the corporation of that town, have decided not to build there, as the water-power they had chosen is not sufficiently strong to run the proposed factory.

The latest addition to R. Dunsmuir & Son's fleet is the tug Pilot, the hull of which has been built under the supervision of Captain J. S. Gibson, at Chemainus, B.C., where she was launched May 30th, after she was towed to Victoria for completion. She will be fitted with the most modern appliances, including a towing machine, which is the latest device known to shipbuilders. It consists of a small steam engine fashioned somewhat after the style of a winch, which replaces the solid bits usually used. By using this machine there is no strain on the tug or its tow, as the drum of

the machine gives and takes as the hawser is tightened or slackened. She will have a large electric light plant with a 3,000 candle power searchlight, a patent windlass, and a large quantity of wrecking appliances, so that she may be a wrecker as well as a tug. She is 132 ft. long, 24 ft. on the beam, 12 ft. 6 in. deep, and has an 8 in. close frame. Her keel is 14x20, her keelson 18x20, and sister keelsons 18x18, making a most solid backbone. In her hull 168,000 ft. of lumber have been used, 5,000 locust treenails and fifteen tons of copper and iron fastenings. Her engines and boilers are ready and will be put in at once, and a force of shipwrights put to work on her to finish her. She will be ready for service about the middle of July. The Pilot is to be fashioned somewhat differently from the usual style in which tugs are built, and the forward part housed in from the bow to the towing machines, only the space aft being left open to allow play to the hawser. A hurricane deck will cover the forward house, and on this will be built a wheel house and chart room similar to that of the Lorne. She is built expressly for ocean towing, taking long tows, such as to Alaska or San Francisco, and for wrecking purposes, in which work she will undoubtedly be of much profit to her owners; for since the Whitelaw was lost there has been no wrecking vessel on the B.C. coast. She will have two masts and be schooner rigged. The crew will have quarters in the after hold and the officers and engineers in the deck houses forward.—Victoria Colonist.

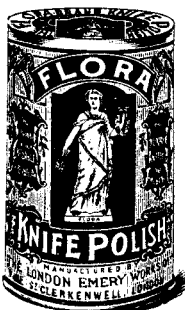
Messrs. John Bertram & Sons, proprietors of the Canada Tool Works, Dundas, Ont., have made arrangements by which they will manufacture the "Optimates" power hammer for Mr. W. H. Law, the inventor and proprietor, recently of the Central Bridge and Engineering Co., Peterborough, Ont. Mr. Law has made quite a number of improvements in his hammer, one of which will be set up and in operation at the forthcoming Toronto Fair, at which he will be present to explain the advantages of it.

Hon. T. Berthiaume, of La Presse, has purchased ground at corner James St. and St. Lambert Hill, Montreal, on which he will erect a large newspaper office.

The Canadian Pacific Railway Cos' shops at Perth, Ont., are turning out from eight to ten a day of the thirty-ton, thirty-five ft. box cars, of which 1,000 are being built. Three hundred of these will be equipped with metal instead of wooden bolsters.

One of the latest industries that has taken up the attention of Winnipeg's mechanics is a boat for the Athabasca River which will be driven like a tandem bicycle. The pedals, cranks, sprocket wheels and chains are exactly as on a high-gear tandem, but the rear axle is bevel-gear to a shaft which drives a three-blade screw at high speed. Sails and oars are also provided, so that the traveller has a choice of three kinds of motive power.

The Canadian Pacific Railway Co.'s station at Winnipeg will be enlarged.



Emery

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"FLORA" Knife Polish
in 3d. 6d. & 1/ Tins.

Ground, Washed & Flour

WHEELS of highest
quality for general
& special purposes.

Grinding Machinery.



The Sherbrooke Gas and Water Co., Sherbrooke, Que., will make extensive changes to their electric lighting plant. Its capacity will be increased one-third. Cost \$10,000.

The Ashcroft, B.C., Water and Power Co., will erect a power house on the Bonaparte river, and install an electric light and power plant.

The Ontario Malleable Iron Co., are erecting a new building at Oshawa, Ont.

Tenders are invited for a stone addition to the McEachren Heating and Ventilating Co.'s factory at Galt, Ont.

J. W. Cochrane is erecting a 30,000 bushel elevator at Stockton, Man.

Tenders are being invited for an addition to the east ward school at Portage la Prairie, Man.

The tender for the construction of a bridge over the Assiniboine river, by T. F. Patterson, of Birtle, Man., has been accepted.

Metcalfe & Sons elevator at Portage la Prairie, Man., which is to be fitted with all the modern machinery, is nearly completed.

Messrs. Pratt & Watkins, Hamilton, Ont., have purchased property on James St., that city, where they will construct a first-class departmental store building.

The Canadian Pacific Railway Co. will build a spur line from Hartney, B.C., running easterly for about twenty miles.

The Lake Manitoba Railway and Canal Co., are pushing their work through on the extension from Sifton, Man., to the Saskat-

chewan river. A yard has been laid out at Sifton.

Haverhill Ladies' College, Toronto, was partially destroyed by fire on July 7th. Loss about \$10,000.

Mount St. Bernard Ladies' College, Antigonish, N.S., was destroyed by fire July 5th, loss about \$30,000.

The carriage factory of D. Conboy, Toronto, was damaged by fire July 5th. Loss about \$2,000.

The Euclid Ave. Methodist Church, Toronto, will erect a new edifice next year.

A twenty stamp mill will be erected at Cochrane Hill, N.S. The Truro Foundry Co., Truro, N.S., will supply the necessary machinery.

The by-law to raise \$19,500 for waterworks and electric light purposes in Listowel, Ont., has been defeated.

A large hotel will be built on the site of the burned Clifton House at Niagara Falls, Ont. It will be of stone, iron, and brick, and cost \$150,000.

Tenders will be invited for the erection of a steel bridge on the Dundas road between Peel and York counties.

The Ashbourne mill near Bullock's Corners, leased by G. B. Harper, was burned a few days ago. Loss about \$10,000.

The ten sleeping cars which are being completed in the Canadian Pacific Railway Co.'s shops at Montreal, will be far ahead of any now in use by that company.

The Bennett Lake and Klondike Navigation Co., Victoria, B.C., announce that three swift steamers will shortly be running from the head of Lake Bennett to Dawson City.

The Canadian General Electric Co., have sent us a very beautiful souvenir of the recent convention in Montreal of the Canadian Electrical Association. It is intended for a desk paper weight, and is an imitation of an electric motor. It is nicely nicked, and admirably answers the purpose for which it is intended.

Mr. William Chisholm, Halifax, N.S., is the promotor and representative of a company now being organized at that city to build and operate a large plant to be erected at Dartmouth, N.S., to manufacture sulphite, wood pulp and paper. The authorities of Dartmouth have granted valuable exemptions and privileges to the company who will invest some \$300,000 in their enterprise.

The Truro Milk Condensing Co., Truro, N.S., has rebuilt its factory which was burned recently.

The Pioneer Steam Navigation Co., Wabigoon, Ont., is building two propellers, each sixty-five ft. long, with twelve ft. beam. One will run on Rainy Lake, the other on Wabigoon Lake in conjunction with the Company's other two steamers, making a through connection from Wabigoon to Fort Francis and Mine Centre in twenty hours. This new route is directly through the Wabigoon and Manitou mining districts, and will provide transportation for places which have hitherto been practically inaccessible.

H. B. Hunt, will erect a flour mill near Beeton, Ont.

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

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

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

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



Pure Chemicals

- Phosphorous,
- Sal. Ammoniac,
- Muriate Ammonia,
- Sal. Soda,
- Bicarb. Soda,
- Epsom Salts.

FINEST QUALITY.

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WIRE MANUFACTURERS
& METAL PERFORATORS
**HAMILTON
& MONTREAL.**

Wire Screens for Every Class of Material.

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

Special Attention given to Minor's Requirements.

A new High School building will be erected at Chatham, N.B. Cost, \$20,000.

Tenders for dynamos, lamps, poles, etc., for full equipment of a 350 2,000 c.p. electric are light plant and all necessary engines, boilers, etc., required to operate same will be received at London, Ont.

McCurdy & Co., Antigonish, N.S., are enlarging their electric light plant, and have a contract to light the streets of the town. A sixty horse power engine and boiler has been ordered from the Robb Engineering Co.

The People's Telephone Co., London, Ont., has been incorporated with a capital stock of \$100,000, to carry on a general telephone business in London and the county of Middlesex.

The Toronto Carpet Manufacturing Co., Toronto, have applied for a lease for part of the old drill shed, in which to put twenty looms. They will build an addition to their factory which will be ready in a few months.

The Toronto Paper Manufacturing Co., Toronto, Ont., has increased its capital stock from \$250,000 to \$300,000.

The Winnipeg Oatmeal Mills recently purchased by the Ogilvie Milling Co., will be enlarged.

The ratepayers of Hamilton will vote on the question of the purchase of the street railway system by the city corporation, or extension of the franchise to the present company. They will also vote on a by-law to raise \$50,000 to build new sewers.

The Niagara Falls Metallic Furniture Co., Niagara Falls, Ont., has been incorporated with a capital stock of \$24,000.

The Canadian Office and School Furniture Co., Preston, Ont., have received an order for nearly \$10,000 worth of goods for McGill College, Montreal, and about \$5,500 for Toronto Public Schools.

Messrs. C. M. Walker and R. Clegg have started a factory in Wingham, Ont., and will manufacture upholstered goods, mattresses, etc.

The Anglo-American Iron Co., Trenton, Ont., want prices for a portable sawmill.

The Ontario Lumber Co. will build a large planing mill at Point Edward.

The Brandon Machine Works Co., Brandon, Man., are applying for incorporation with a capital stock of \$40,000.

Spencer Bros., Winnipeg, Man., have the contract for the edifice to be built for the Brandon Methodist Church, to cost \$25,000.

Tenders are being asked for building a new Presbyterian Church at St. John, N.B., from plans by A. B. Pickett.

A new convent is being erected by the Sisters of St. Mary and Jesus at St. Boniface, Man.



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For Heads of 3 Feet to 2000 Feet.

ADAPTED TO MILLING AND ALL POWER PURPOSES.

Recent tests at Holyoke enable us to guarantee:

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

Write for pamphlet, stating your Head.

JAMES LEFFE & CO., Springfield, Ohio, U.S.A.

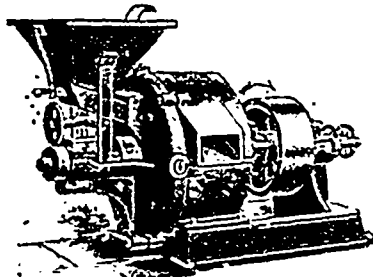
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Pipe and Boiler Coverings, Engine Packings,

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

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ROCK EMERY MILLS

CRUSHERS AND MILLSTONES.

FRENCH BUHR AND ESOPUS STONES. *Send for Circular.* **STURTEVANT MILL CO.**
BOSTON, MASS.

THE

Crocker Patent Turbine



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

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

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

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

CIRCULARS AND PRICES ON APPLICATION.

The JENCKES MACHINE CO.,

28 LANSDOWNE STREET
SHERBROOKE, QUE.

The Roman Catholic Church, at Somerset, Que., will be reconstructed from plans prepared by Tanguay & Vallee.

Plans have been prepared for an addition to the building in Ottawa belonging to the Sisters of the Precious Blood.

A new Roman Catholic Church will be erected at Berlin, Ont., to cost about \$10,000.

The Sherbrooke, Que., Catholic School Commissioners will erect a new school to cost \$8,000.

The Robb Engineering Co., Amherst, N.S., recently filled an order from the Verity Plough Co., Brantford, Ont., for two thirty horse power engines.

The Fredericton, N.B., Town Council has voted to have plans prepared for necessary improvements to the pumping station, including a new boiler.

The Charlottetown, P.E.I., Light and Power Company held its first general meeting recently. Mr. L. L. Beer was chosen president. The appointment of engineer and manager was conferred upon Henry R. Lordly, C.E., and after he has completed the surveys and the remodelling of the gas plant he will be sent to England to consult with parties who control a new electric motor, to be used for street cars.

The St. John, Nfld., Electric Co. have placed an order with the Robb Engineering Co., Amherst, N.S., for a tandem compound engine of 150 h.p.

The Canadian Pacific Railway Co. have adopted the consolidation type of locomotive, with compound cylinders, as the standard for its freight service.

The Laprairie Bay Ice Co., Montreal, will be organized with a capital stock of \$100,000 to supply ice to Canada, United States and Great Britain. The ice will be cut by an electric ice cutting machine.

The Victoria, B.C., Iron Works Co. have built a steamboat, the Marquis of Dufferin, for the British America Corporation.

W. P. Neil & Co., New Glasgow, N.S., has been awarded by the Nova Scotia government the contracts to build four iron bridges.

McDonald & Moffatt, of North Sydney, C.B., have secured the contract for the construction of the new public wharf at Merigomish, N.S.

The Klondike, Yukon and Stewart River Pioneer Co.'s stern-wheel steamer, James Donville, is now on her way to St. Michaels, Alaska.

Tenders are invited for the erection of a brick school house in connection with the Presbyterian church at Meaford, Ont.

The congregation of the First Methodist Church, at Picton, Ont., will erect a new edifice to cost about \$22,000. Power & Son, Kingston, Ont., architects.

Plans have been prepared for alterations to the Berlin, Ont., High School, plumbing and hot water heating included. Cost \$5,200.

Plans are being prepared for the enlargement of the Brunswick St. Methodist Church, Truro, N.S.

The following is a list of works in the Province of Quebec for which appropriations have been made: Wharf at St. Alexis, \$4,000; dredging at Lake St. John, \$10,000; wharf at Point Esquimaux, \$1,500; improvements at St. Fulgence, \$1,500; repairs to wharf at St. Alphonse, \$2,000; dredging the Saguenay at Chleoutimi, \$5,000; continuation of the telegraphic service on north shore of St. Lawrence, \$20,000.

The Vancouver, B.C., Smelting Co., are considering the erection of a smelter in that province.

H. C. Baird & Co., Park Hill, Ont., may install an incandescence lighting plant.

The village of Sutton, Que., will borrow \$13,000 for the construction of a waterworks system.

The ratepayers of Calgary, N.W.T., granted a bonus to the Canadian Pacific Railway of \$25,000 to establish repair shops at that place.

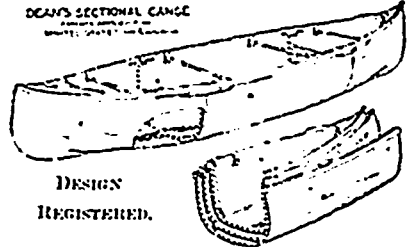
A. C. NEFF, Chartered Accountant. JAMES WOOD, Late Sec. The T. Eaton Co., Ltd. **NEFF & WOOD** PUBLIC ACCOUNTANTS, AUDITORS ASSIGNEES, ETC. Room 500 McKinnon Bldg., Toronto

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

H. F. STRICKLAND, Electrical Contractor. 77 ADELAIDE ST. E., TORONTO. Telephone 1838.

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

DEAN'S Sectional Canoe. Patent applied for United States and Canada.



The only Klondike Canoes carried by the Express Companies. Bulkheads may be placed between the sections when bolted together, making each section a water tight compartment. The only serviceable Portable Canoe made. Write for catalogue and prices. WALTER DEAN, Toronto, Can.

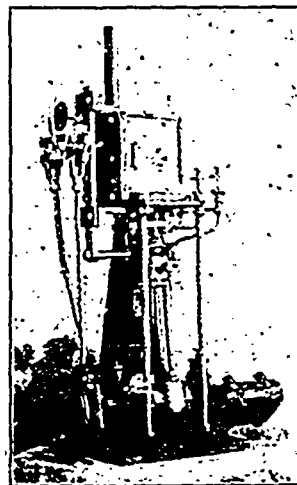
ROBT. A. ROSS, E.E., Consultant to Canadian Pacific Ry., and Boiler Inspection Co. **CONSULTING ENGINEER.** Specifications, plans, advice upon Steam and Electric Plants, Power transmission and distribution. Special machines designed. 17 St. John Street, MONTREAL.

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

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

ALBERT BELL ENGINE WORKS

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



WRITE FOR CIRCULARS

FLEMING & CHAPIN, PHILADELPHIA. **TAPES** Common Superfine Extra Superfine

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

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

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

PATENT FOR SALE. Canadian Patent No. 33178 relating to apparatus for rapidly discharging cargo from vessels, whereby the necessity of shoveling grain, coal, etc., in small quantities is avoided. Apply to **JOHN W. GLAHLIN, Nanaimo, B.C.**

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

S. Phillips & Co's planing mill, Toronto Junction, Ont., was damaged by fire a few days ago.

The factory of the Cowan-Ramsay Co., Toronto, Ont., was partially destroyed by fire July 4th.

The Ottawa Suburban Water Works Co., Ottawa, Ont., has been granted a charter.

The Mastigouche Lumber Co's mill, St. Gabriel de Brandon, Que., was destroyed by fire July 8th. Loss about \$2,000.

The Lake of the Woods Browing Co., Rat Portage, Ont., has obtained a charter.

W. W. Doherty, Campbellton, N.B., will rebuild his mill which was recently destroyed by fire.

W. Doherty & Co., organ manufacturers, Clinton, Ont., have installed two 15 h.p. multipolar type motors made for them by the London, Ont., Electric Construction Co.

Windsor & Detroit Soo Line have bought a 150 light multipolar type dynamo of the Electric Construction Co., of London, Ont., for their steamer Carmona.

The Otto Heigle Piano Action Co., Toronto, have given an order to the Electric Construction Co., London, Ont., for a 19 k.w. multipolar type motor, for their new factory on King street west.

The Jones & Moore Electric Co., Toronto, inform us that they have recently installed a complete electric light plant on the steamer White Star, with marble switch board, etc.; an electric light plant for R. N. Loblanc & Co., Bonaventure, Que.; power generator and motor for the J. & J. Taylor Safe Works, Toronto; electric motor in the Canadian Bank of Commerce, Toronto; electric motor, Geo. T. Slater & Sons, Montreal; A. B. Terry, Lindsay, Ont.; Thompson Bros., Toronto; Lailey, Watson & Co., Toronto; John Forman, Montreal; E. & D. Bicycle Co., Toronto; Wheeler & Bain, Toronto; The Scottish Colonial Brokerage Co., Toronto; E. Walker, Toronto; Minerva Manufacturing Co., Toronto; Brown Bros., Toronto; J. Stinson, Toronto; Creber Bros., Toronto; A. R. Price, Toronto; W. Groves, Toronto; East & Co., Toronto; Henderson Bicycle Co., Toronto; C. Hopkins, Toronto; Hunter, Ross & Co., Toronto, two additional machines, and they have also sent machines to Berlin and Smith's Falls, Ont. They have also installed a complete telephone system for the Saugeen Electric Co., to connect their power house with the towns of Port Elgin and Southampton, Ont.; also a complete system for the new offices of the Toronto Street Railway Co. We notice by the advertisement of the company that they have an arc lighting plant for sale, which we learn was purchased from the estate of R. Walker & Sons and is in perfect condition.

ROOFS FOR THE KLONDIKE



Roofs must be chosen with care and judgment in any country, and especially so in Canada.

All our products are constructed for use in Canada, and ample provision is allowed for contraction and expansion, and we guarantee them to be water, wind, and storm proof.

Up-to-date information and fully illustrated catalogues of Steel Roofings, Sidings and Ceilings sent free for the asking.

The Pedlar Metal Roofing Co.
OSHAWA, ONT.

MALCOLM MILLS CO.

Manufacturers of
Fancy Twist Yarns, in Worsted, Silk Cotton, etc. Polished Threads.
Silk Nolle Yarns.
Metal Threads and Tinsels.
MILLS - Frankford, Pa.
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BLACKWELL UP-TO-DATE VARNISHES
For Finishing Pianos, Carriages, and Railway Coaches.
BLACKWELL & CO., TORONTO.

Dominion Oil Cloth Co.

Manufacturers of....
OIL-CLOTHS of Every Description
Floor Oil-Cloth, Table Oil-Cloth,
Carriage Oil-Cloth,
Enamelled Oil-Cloth,
Stair Oil-Cloth, etc.
Office and Works
Cor. St. Catharino and Parthenals Sts.,
MONTREAL, Que.

Felts for Pulp Mills

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

HAMELIN & AYERS, Lachine Mills, P.Q.

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

ELECTRIC REPAIR & CONTRACTING CO.

GEO. E. MATTHEWS, Manager. 621 LaGauchetière St., MONTREAL. TEL. 2177.
COMPLETE ELECTRIC PLANTS INSTALLED.
ELECTRIC APPARATUS OF ALL KINDS REPAIRED ON THE SHORTEST NOTICE.
Armatures Rewound for all Systems. Commutators Refilled.
Write us, our Prices are reasonable and work good.

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

SEND FOR CATALOGUE and PRICE LIST.

Inventor F. A. Knapp has for some time been in Washington endeavoring to interest the Government there in his roller boat, with a view to making a large one, or at least, what an ordinary person would call large, though perhaps it would only be a toy to Mr. Knapp, one that would accommodate 30,000 men or so, and having a speed of some fifty miles an hour. Of course, the boat could go faster than that if it wished, but fifty miles would be the minimum. Eight hundred feet long, this boat will be, and 200 feet high, and besides being able to carry 30,000 tons of coal, she will, says a circular, be built of such strength as to be able to repel any attack. This boat will have an armament of eight rapid firing guns, and Mr. Knapp laughs at torpedoes, the distance from what might be called the outer peel to the core being so great that persons inside at dinner would experience a sensation as if the cook had tripped in the kitchen, experiencing a slight jar. As may be gathered from the figures, this boat will be larger and faster than the one Mr. Knapp had in Toronto Bay, which went some four and one-half miles an hour at a spurt. But then Mr. Knapp let them put the engines in when he was not looking, on the gravity plan, which does not enter into this gentleman's theories. He is eight or nine cycles ahead of gravity, and is a very clever inventor. Mr. Knapp has distributed circulars regarding his boat offering to build one in ninety days for the Government.

Mr. Geo. Schmidt, Delhi, Ont., is building a tannery at that place.

The Tobique Manufacturing Co. have been incorporated and propose to obtain power by damming the Tobique River at Oxford, N.B.

Messrs. Ker & Harcourt, Walkerton, Ont., are arranging to build a spool and bobbin factory at Parry Sound, Ont.

The ratepayers of Thorold, Ont., will be asked to sanction a loan of \$7,000, to extend the electric light plant there.

The St. Hyacinthe and Granby Railway Company will build a bridge across the Yamaska river.

The ratepayers of Madoc, Que., will vote on the question of purchasing a steam fire engine.

The C. Beck Mfg. Co., Penetanguishene, Ont., have shipped nearly one million feet of lumber to Manitoba points this season.

The Coleman planing and lumber mill, Burlington, Ont., was completely destroyed by fire June 21st.

Messrs. Adams & Routery have opened a factory for the manufacture of infants' footwear, on Parliament St., Toronto.

The Lancaster Machine Works, Lancaster, Ont., have received an order from Messrs. Duclou & Payan, St. Hyacinthe, Que., for machinery.

The Ontario Malleable Iron Co., Oshawa, Ont., are adding a building 150 feet long by 200 feet in width, to be used as annealing and moulding rooms.

The Wm. Cane & Sons Manufacturing Co., Newmarket, Ont., have placed an order with the Canadian General Electric Co.,

Toronto, for a lighting plant for their factory premises.

Tenders will be invited for the erection of a 300 barrel mill and 100,000 bushel elevator in Carberry, Man.

A large driving wheel was completed in Stuart's foundry, Thorold, Ont., recently, for the Riordan Paper Mills.

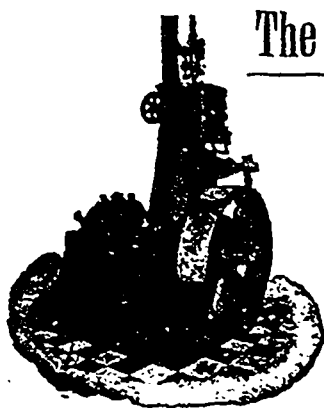
Mr. J. E. A. Dubuc, managing director of the Chicoutimi Pulp Company, was in Montreal a few days ago, and had a good deal to say for publication about the progress of this great Saguenay enterprise. The company has a subscribed capital of \$125,000. He referred to the cargo carried out by the steamer Louisiana a short time ago as notable for the reason that it is the first steamship cargo made up wholly of pulp. There were 2,200 tons on board. Another equally large cargo is to be ready early next month. Eighty hands are now employed day and night at the mill. The present output is thirty tons per day, or sixty tons gross weight. When the mill is complete the daily output will be seventy tons net. Mr. Dubuc says the demand is far beyond the supply, and that the company has inquiries not only from England but also from France and Germany. The company has 800 square miles of spruce limits.

Sealed tenders will be received for completing the harbor and river works in course of reconstruction at Goderich, Ont.

The Electric Storage Battery Co., Philadelphia, Penn., have sent in an illustrated descriptive circular having reference to the application of storage batteries to isolated lighting plants, particularly to that at the residence of a gentleman living in the country near that city. The illustrations are of

the power house, how it is divided and the electrical plant contained therein, particularly the chloride accumulators; and much useful information is given as to how such plants are installed, operated, etc.

The London Machine Tool Company, manufacturers of general machinery, London, Ont., request the CANADIAN MANUFACTURER to announce that they are rapidly putting in new machinery into their works from new and improved designs, and are now in a position to receive orders for all standard tools for metal working in all branches. They say that it will be their 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 they intend to deal directly with the manufacturers, they will be enabled to get their machinery at first cost. They say that as they will not be able to personally visit each manufacturer, it is for this purpose that they make this announcement - that this is their agent who is going about to solicit a share of the patronage of buyers. All correspondence relating to the following tools will be promptly answered, viz. - Lathes - Engine, gap, break, turret, Fox, spinning, etc.; Planers - Standard, crank, plate, 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. They also call special attention to their presses for cutting, stamping, drawing, wiring, riveting, etc.



The Whitelaw-Shepherd

...ENGINE...

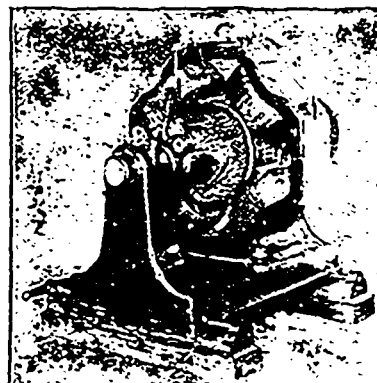
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PERFECT REGULATION,
ECONOMY,
AUTOMATIC LUBRICATION.

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

R. WHITELAW, Woodstock, Ont.

The Electrical Construction Co., OF LONDON, LIMITED.



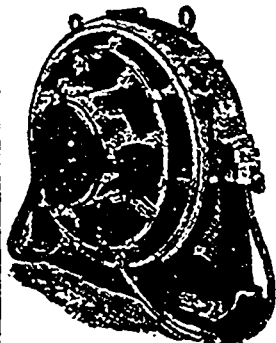
MULTIPOLAR MOTORS AND DYNAMOS

AND
Direct Connected Plants
FOR ISOLATED LIGHTING.

Head Office and Factory:
**No. 90 York St.,
LONDON, Can.**

760 Main Street,
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Westinghouse
Direct Current,
Direct-Connected
Generators,

The Standard to which
all others are compared.

Isolated Plants.

Most Perfectly Ventilated.
Lowest Temperature,
Most Efficient,
Most Pleasing in Appearance.

The name of
WESTINGHOUSE
Is a guarantee.

Least Attendance,
Fixed Commutation Point—
No Sparking,
No Metallic Shell for
Field Bobbins.

Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

100 K W
Westinghouse Engine-Type
Generator.

New York, Boston, Chicago, Philadelphia, St. Louis, San Francisco, Buffalo, Syracuse, Atlanta, Tacoma.
Mountain Electric Co., Denver. For Canada, Ahearn & Soper, Ottawa. Westinghouse Electric Co., Ltd.,
32 Victoria St., London.

KERR Water Motors

1/8 to 20 HORSE POWER.

Noisiest. Running, Require No Attention, operated with water at a pressure of 30 pounds and upwards.

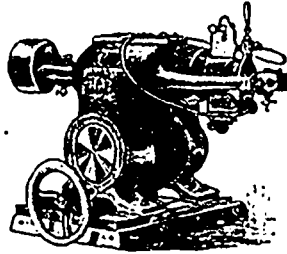


Reliable intending purchasers can have our Motors on trial by writing us, stating water pressure available, power required and class of work to be done. Our Motors are sold on their merits. Our prices are low. Enquiries solicited and cheerfully answered.

... WRITE US ...

KERR WATER MOTOR CO.,
NIAGARA FALLS, CANADA.

Jones & Moore Electric Company



ELECTRIC LIGHT ...AND... POWER PLANTS

Multipolar Machines
25 to 100 K. W.

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

22 Adelaide Street West, - Toronto.

A company is being formed in Winnipeg to build and equip a steamer to operate a pneumatic caisson and elevator on Yukon rivers.

The Brockville Packing and Provision Co., Brockville, has been incorporated with a capital stock of \$150,000.

The ratopayers of Listowel have voted down the proposition to expend nearly \$20,000 for waterworks and electric lighting.

The Lawry Co., Hamilton, Ont., is making extensive improvements to their factory. They are putting in a 120 h.p. boiler.

Five grain warehouses are to be built on the new Dauphin, Man., road, the capacity of which will be 125,000 bushels.

A block of buildings, at Colborne, Ont., occupied by the Great North Western Telegraph Co., A. J. Kemp, tin shop and S. S. Scripture, agricultural implements, was destroyed by fire July 9th.

Mr. Chas. Smith's foundry, Durham, Ont., was damaged by fire July 12th, loss about \$2,500.

The Park, Blackwell Co., Toronto, has increased their capital stock from \$150,000 to \$200,000.

The Bertram Engine Works Co., Toronto, have been awarded the contract by the Richelieu and Ontario Navigation Co., to build another steamer in all respects similar to the Toronto, which was launched by them a few days ago. She is to be ready for next year's service.

Messrs. John Bertram & Sons, proprietors of the Canada Tool Works, Dundas, Ont., builders of machine tools for working iron, steel, brass, etc., have sent us their midsummer calendar for July. It is printed on heavy cardboard and is illustrated with one of their machines for working iron, and is just the thing for the desk of a business man.

The Electric Construction Co., London, Ont., are installing a 6 h.p. motor and pump for the corporation of Burlington, Ont., to pump the water for street sprinklers.

Mr. Charles Riordon, who owns a large paper mill at Merriton, Ont., has about completed arrangements with the town of Hawkesbury, Que., to build a \$200,000 pulp and paper mill in that municipality, promising that he will not begin with less than 100 hands. The town gives several valuable concessions, such as freedom from taxation, a large area of land, etc., and work will be begun immediately. Mr. Riordon has purchased extensive timber limits in the vicinity.

Owing to the increasing demand for and higher price of copper, which is due in great part to the extensive use of this metal in electrical appliances. Newfoundland copper deposits have attracted great attention of late. Even at present, the ancient colony is said to be the sixth largest copper-producing country in the world. The indications are that this demand will continue to grow with the spread of electrical development, a consideration which is cheering to the Newfoundlanders. The Harris Sulphur and Copper Company of Glasgow, Scotland, realizing this fact, has secured options on several mines in Newfoundland, which were secured by an expert sent out to examine them. These properties include the Colchester, Robert's Arm and Sunday Cove mines, all situated on North Dams Bay, as well as a lease of the Silver Cliff mine on Placentia Bay.

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Bar Iron, Steel, Boiler Plate, Rivets, Tubes,
Tube Expanders, Hammers, Metallic
Letters and Figures for Patterns.

RICE LEWIS & SON, (LIMITED).

COR. KING AND VICTORIA STS., - ...TORONTO.

Keep your Belts from Slipping and Preserve them by using

STICK FAST FELT DRESSING.

Guaranteed to keep any Belt from slipping the moment it is applied; also to keep Belts from cracking.

This Dressing will save you power and money.

Give it a trial order. Hundreds of testimonials from users.

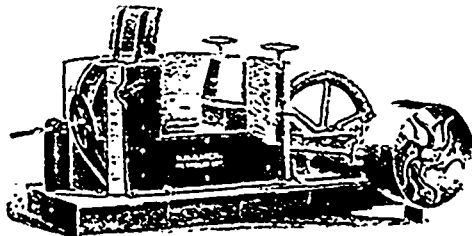


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H. R. RIDOUT & CO.,

Railway, Mill, Foundry and Engineers' Supplies.

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IRON FOUNDER and MACHINIST

Manufacturer of

WOOLEN MACHINERY,

Rotary Fulling Mills, Kicker Fulling Mills, Soaping Machines,
Cloth Washers, Wool and Waste Dusters, Rag Dusters, Drum Spool Winders,
Reels, Spooling and Doubling Machines, Ring Twisters, Card Creels,
Dead Spindle Spooler for Warp or Dresser Spools,
Patent Double-Acting Glg Dyeing Machines.

ONTARIO FORESTS.

The clerk of forestry for the province of Ontario has issued his annual report covering the year 1897. He observes that the mistaken notion, so commonly and persistently held, that Ontario's supply of the best timber is inexhaustible has begun to give way, and that the necessity for giving the forests a better chance for reproducing themselves is recognized. Another idea that has been exploded is that the white pine, once cut away, would not be succeeded by another crop. What gave ground for this belief was the incontestable fact that white pine forests were nearly always succeeded by a short-lived growth of aspen, poplar and less valuable trees. This, however, it has been ascertained, was not due to any natural inability of the pine to reproduce itself in the soil which had yielded a forest of it, but to the fact that in nearly every case the ground had been overrun by fire after the timber was taken off.

Under the head of manufacturing development the clerk of forestry says: "The rapid development of the manufacture of paper from wood has altered the relative values of our forest trees, making some of them formerly of little use to us, very valuable indeed. This is notably the case with spruce, which in Ontario, south of the height of land, is rarely found large enough for board timber. The seeds of the spruce

germinate readily and grow so thickly in many parts of Ontario, especially in moist soil, that they attain but small diameter in a long period of growth, and because of this, lumbermen in estimating the value of timber limits in former years, when their license included all sorts of timber, took no account of any but pine. The rapidly developing demand for spruce for paper has recently caused a considerable value to be placed on many limits from which the merchantable pine has been taken. In this reference is made to the limits that were disposed of prior to 1892, since which time the spruce has been reserved by the crown."

WHEAT IN THE FAR NORTH.

The question how far north wheat may be successfully grown is a question both interesting in itself and important in its bearings upon commerce. The Canadians are especially interested in this problem in view of the immense stretches of still unoccupied lands lying north of those now inhabited by white settlers.

In the west it is common knowledge that the wheat belt has been steadily widening to the north for a number of years, and is already known to reach far up into Athabasca, where the climate is moderated by the Chinooks, or warm winds from the Pacific. It has at least been demonstrated that flowers bloom on the shores of Great Slave Lake as

early as at Winnipeg. To the east, however, there has been more uncertainty as to the northern limits of the wheat area, the general supposition being, however, that the lands draining into James Bay, east of the central bad lands, although in the same latitude as Manitoba, were not suited to wheat culture. This view has lately been dispelled by Mr. Henry O'Sullivan, a surveyor in the employ of the Province of Quebec, who announces that he knows of his own knowledge that wheat will ripen far north of the divide and well up toward James Bay, having known at Waswanipi, a Hudson Bay Company's post, an agent who had not only grown abundant vegetables there, but also, at least two crops of wheat, which in quality compared favorably with wheat grown elsewhere in the province. This would extend the belt at least 200 miles further north of Toronto, the country between the divide and James Bay being all rich, level clay land. At Moose Fort, at the extreme southern end of James Bay, the missionary bishop annually raises his crops of vegetables.

The beto noir of the wheat grower in this northern country has been the summer frosts; but it would seem on examination that this danger is largely one of altitude.

It would appear, then, from this statement of facts, that the wheat belt of Canada averages 500 miles in width, by 2,000 miles in length, thus covering a greater area than any other part of the world possesses, ex-

THE - - - -

WM. HAMILTON MANUFACTURING CO., Limited

MANUFACTURERS OF

THE "RELIANCE"

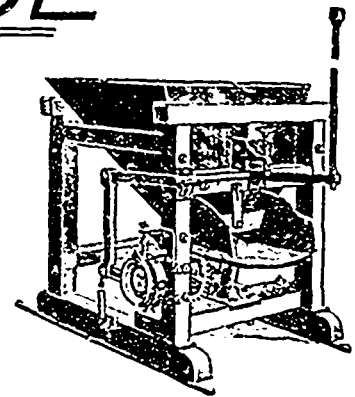
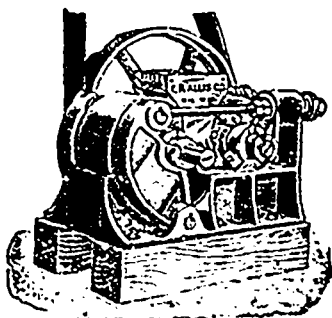
Mining, Milling

AND

Smelting Machinery

FOR THE DOMINION OF CANADA

(Under License from The E. P. ALLIS CO., Milwaukee, Wis.)



Crushers, Rolls, Jigs, Concentrators, Screens, Stamps, Pumps, Compressors, Hoists, Boilers, Engines, Water Wheels, Etc.

Branch Office
VANCOUVER, B.C.

PETERBOROUGH, ONT.

copting Russia and Siberia; and the bulk of this territory lies west of Lake Superior, with the city of Winnipeg as its natural market.—American Miller.

WATER POWER TRANSMISSION.

It is one of the ironies of nature, says the Montreal Herald, that the latest and most incomprehensible of material forces is likely to derive its chief importance from the oldest and most commonplace of them. When the pioneers came to this country some one or more of them in every section set up a mill

beside a waterfall. The pioneers brought their grain down rivers and across roads to the place where the fall chanced to be. Later, when steam engines came into fashion, the mills by the remote waterfalls were abandoned, and their ruins may be seen by the hundreds to-day in the older provinces. The mill moved into the centre of the grain-growing district, or near to the line of railway. The cities, too, may be said to have grown up around the steam cylinder. Steam made possible the effective use of machinery and machinery made possible the subdivision of labor. Out of this in time arose the

present crowded urban life, which embraces nearly half the population. Now, however, it begins to appear that, as a result of electrical research, the water power is again to become the chief motive force. The masters of electrical science are greater than Mahomet, for the mountain would not come to the prophet, but they bring the power of the falling water to the city—be the distance five or fifty or thrice the number of miles.

In discussing this subject at the Electrical Convention the other day, Mr. L. D. W. Magie showed how the combination of the world-old waterfall and the twentieth century electricity is working to take down a few pegs the reputation of steam, that wonder-worker of the nineteenth century.

"In mills and factorior," he says, "where both sources of power have been tried, electric power is displacing the steam plant. Owners having experience with both invariably state that they would not be willing to return to their former power plants, even if power could be produced as cheap or cheaper than they are now obtaining it for electrically. The reasons for this are very numerous. The power is always on tap day and night, year in and year out; there is no waiting for boilers to be fired, nor shut-downs on account of strikes at some distant coal field; less room is required, and consequently floor space formerly occupied by belts and shafting can now be utilized for manufacturing purposes; also electric power can be easily sub-divided into any number or sizes of units, and thus independent departments and machinery can be worked separately, instead of from one big unit. Overtime work in any department is much cheaper, for by having departments separately operated they can be run independently at will, without running all the other machinery in the mill. The fire risks are less and rates of insurance less for mills operated electrically than by other means."

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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.

Zinkolene Saves Money

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THE OTTAWA PORCELAIN AND CARBON CO., Limited, OTTAWA, ONT. . . .

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A Saving.

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

"THE REEVES" PATENT WOOD SPLIT PULLEY

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

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

Also COLUMBUS, IND.

- REEVES PULLEY CO., Toronto, Ont.

THE NICKEL REFINING INDUSTRY.

Mr. John Loughrin, who was in Toronto recently, stated to the correspondent of an American newspaper, that Mr. Clergue, president of the Sault Ste. Marie Pulp Company, had decided to erect a nickel refinery costing \$1,000,000 at the Sault. This is not the first we have heard of such a proposal. It is more than a year ago since it was announced that such an industry would be started in connection with the pulp works at Sault Ste. Marie. At that time, as was duly stated in these columns, a considerable tract presumed to be rich in nickel, was acquired by Mr. Clergue and others associated with him. The nickel refining works which, it was said, would be forthcoming were, however, to be employed not only on the product of this tract but also on custom ore, or on ore marketed with them. Mr. Loughrin, at that time as at the present, was the man who explained the purpose of this nickel manufacturing scheme to the public.

In connection with this nickel refinery idea, Mr. Loughrin said before that the members of the Sault Ste. Marie Pulp Company behind it had in view the obtaining of the sulphur present in the ore, the sulphur to be used in the manufacture of sulphurous acid which the pulp company would use in the production of sulphite fibre. At that time he considered it would be necessary for the government to place an export duty on

nickel ore and matte to stop the movement of this raw material to nickel manufacturing works across the border. But if the government would grant a liberal bounty on every pound of refined nickel produced by the company he thought it would be equally acceptable. So far the government has done neither of these things, yet Mr. Loughrin says the capitalists he is speaking for have now made up their mind to put up works costing a million dollars, and that they have entered into a contract with him calling for the delivery of 100 tons of nickel ore daily for five years.

The interest which the Cramps are presumed to have in the Sault Ste. Marie Pulp Company leads to the supposition that the real motive for this refinery project is to obtain a supply of cheap nickel for use in ship building. Canada's nickel fields are the richest in the world. They supply all the nickel that is amalgamated with steel in the ship armor made in the United States. From the mines near Sudbury in Algoma district, Ontario, the ore is taken, roasted on the spot to expel the sulphur, then smelted in furnaces near the mines to drive out all the rest of the dross. The resultant metallic compound, called matte, is shipped to the refining works of the Orford Copper Company, at Constable Point, New Jersey, where it is separated into its refined constituents, mainly nickel and copper. The Canadian Copper Company, whose headquarters

are at Cleveland, Ohio, owns the mines from which the ore is taken, and by its arrangement with the refining company the business of producing nickel from the ore is kept practically a monopoly. The manufacturers of nickel steel have to pay the prices for nickel that the Canadian Copper Company fixes for it. It would be quite a stroke of enterprise for the Cramps to join in establishing nickel refining works near the rich ore fields in Canada, and thus reduce the cost of the nickel consumed in the material required for their armor plate.

Messrs. Davis & Sons, King, Ont., will erect an addition to their beam house which will give them double their present capacity.

Mr. A. H. St. Germain, of Toronto, the inventor of an auto-motor carriage, and an enthusiastic believer in the utility of it, and who has one built here in Toronto, which is very frequently seen on the streets, has placed an order with the Canadian Motor Syndicate for several such vehicles, which are intended for exhibition at the forthcoming Toronto Fair. Mr. St. Germain has been awarded a contract for carrying the mail regularly between the Toronto Post Office and the post office at Todmorden, a distance of eight miles, the first time in the history of Canada that such a service has been contracted for to be performed by such a vehicle.

GEO. REID & CO.,

Dealers in

Textile Machinery and Supplies,

TORONTO, ONT.

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

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

Write at once for Prices and particulars.

EMERALD-BOILER-OIL

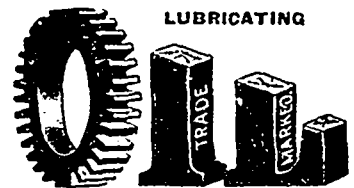
1-16 of an inch of Boiler Scale adds 15 per cent. to the fuel account. Emerald Boiler Oil gives the most perfect results with all kinds of water. It's a Pure Petroleum Extract. It is an effective agent for removing scale from Boilers.

"ATLANTIC RED" "BAYONNE" ENGINE.
"CAPITOL" CYLINDER. "RENOWN" do.

The Very Best that is Made.
All information and Samples Furnished Freely.

The Queen City Oil Co., Limited,

SAMUEL ROGERS, President. TORONTO.



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Leather Belting,
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VICTORIA SQUARE, - MONTREAL
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WESTERN TRADE:—

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

STORAGE BATTERIES

THE LIGHTEST. THE STRONGEST. THE BEST.

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

The Croftan Storage Battery Co.

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BOBBINS
SPOOLS
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ROLLS, Etc.



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THOMPSON & CO., Manufacturers of

BOBBINS and SPOOLS

FROM SELECTED STOCK.

Correspondence Solicited
Orders Promptly Filled.....

• SHERBROOKE, P. Q.

THE J. C. McLAREN BELTING CO.

The following is the substance of a very neat folder addressed "To The Management of Electric Light and Power Stations," and distributed to the attendants at the recent convention of the Canadian Electrical Association at Montreal.

It is very gratifying for us to be able to say that we have handled the largest individual order for belting an electric plant that has so far been placed in Canada.

Doubtless you will be visiting our city shortly when the annual convention of the Canadian Electrical Association will be in session this month.

In all probability amongst other points of interest that will be visited will be the generating station of the Montreal Street Railway system, acknowledged by all to be the best equipped on this continent, and in this connection we beg to draw your attention to the belting transmitting the 7,000 h.p.

Our contract for this work covered the maintenance of these belts for two years from their starting up. It will surprise you to learn that the total expense to us in this connection did not amount to 1½ per cent. of the total value of the purchase.

These belts are all made from genuine English oak-tanned stock, a tannage that has properties especially adapted for the exacting work peculiar to electric plant.

So that you may better appreciate the magnitude of this contract, we give below a memo covering the number of hides and the total weight of the leather, also a memo of the lengths and widths that comprised the various drives, consisting as you will note of twelve twenty-four inch double, and three fifty-four inch three ply belts.

Number of hides, 1,630; Total weight of leather, 15,000 lbs.

One belt.	140 ft. long,	54 in. wide,	3 ply.
"	138 "	54 "	"
"	132 "	54 "	"
"	128 "	24 "	2 ply.
"	143 "	24 "	"
"	135 "	24 "	"
"	147 "	24 "	"
"	125½ "	24 "	"
"	122 "	24 "	"
"	138½ "	24 "	"
"	125 "	24 "	"
"	136 "	24 "	"
"	178 "	24 "	"
"	136 "	24 "	"
"	124 "	24 "	"

PULP WOOD AND PAPER PULP.

Paper is now chiefly made from wood ground up into a very fine substance. Soft wood is required. Basswood, poplar and spruce are preferred by paper makers. As spruce can be found in larger quantities than other varieties of soft wood, spruce is mostly used. The evergreen trees are in vast numbers on both sides of the Ottawa, and along many of the tributaries of that great river. Spruce is found in great abundance in Labrador and in Quebec, as well as along the rivers that flow into Hudson's Bay.

In Manitoba spruce exists in large forests around Lake Winnipeg, Lake Winnipegosis, also on the Riding and Duck Mountains, and along many of the rivers that take their rise on these ranges of hills. When scattered on open ground the trees are generally covered by branches far down the trunk: such trees are of little value, but in extensive forests

where the trees stand closer together the spruce are very tall and free from branches a long way up. The bark of the spruce is rough and scaly, and the needles are stiff and pointed so that when pressed by the hand there is a feeling as if a brush were touched. Spruce gum gathers on the bark where one tree has rubbed on another, or where limbs have been torn off by tempests. The gum is harder than the gum of any other species of evergreen tree. The wood contains a great deal of moisture, and when sawed into lumber the boards are more inclined to shrink than is the case with any other timber. Excepting the white birch no other tree grows so far north as the spruce, and the trees are found in great numbers even in Alaska. There is what is known as the black and white spruce, but any difference that exists is more owing to the situation in which the trees grow than to a change in character.

For the manufacture of paper, good, clean trees from six inches in diameter and upwards are cut into logs that contain all the good portion of the trees, and are usually floated down the rivers to where the pulp mills are situated. The logs are then sawn into two-foot lengths, and the bark is removed rapidly by machinery. The wood is ground up until it resembles sawdust, and is then placed in large wooden tanks of a circular form, water is added, and the whole is agitated by a machine, moved by steam or water power, until a coarse paste is formed. The paste is allowed to pass between warm iron rollers and coarse sheets of a papery substance are produced that are about an eighth of an inch in thickness. The pulp is again dissolved and beaten up or kept in motion until a thin, milky paste is formed.

The Canadian Manufacturer

TORONTO, CANADA.

The Official Organ of the Canadian Manufacturers' Association,

Which Represents all the Important Manufacturing Industries of the Dominion.

EXPORTERS FROM CANADA

Desiring information regarding the best facilities for shipment abroad, with whom Correspondence may be had, and to whom Consignments may be made, should correspond with

THE CANADIAN MANUFACTURER,

TORONTO, CANADA.

NO CHARGE MADE FOR GIVING INFORMATION.

The paste is then passed between many warm, smooth rollers until the perfect paper is prepared. The finer kinds of paper require more smoothing than the coarser sorts. Paper making in Manitoba should be a most profitable employment, as both poplar and spruce are suitable woods. The bark and other refuse from the logs would supply fuel for the production of steam. As the process of paper making is simple and suitable wood abundant, it is likely that some enterprising men will soon see the opportunity that exists for a profitable business.—Western Prairie.

A CANADIAN COAL TOWN.

The town of Lethbridge, N.W.T., whose 2,000 inhabitants are spread over an area of about two miles square, presents to the visitor many features of life and ways of living unknown to Ontario. The sole industry of the town itself is the mining of the apparently inexhaustible wealth of coal lying beneath it. This coal is bituminous, and is said to be the best steam coal on the North American continent.

The mine shafts sink to a depth of about 300 ft., and upward of ten miles of track are laid beneath the surface. The output of the mines during the present dull season is in the neighborhood of 600 tons a day.

The town has a decidedly primitive water-works system. There are no wells, for the simple reason that there is nothing below but coal. Water is pumped from the river to a reservoir, from which it is carried in tanks to the consumers. A modern water-works plan is proposed.

Local capital has invested in an excellent electric lighting plant, streets and houses being incandescently lighted. For the house service a charge of ten cents a lamp per month is made, upon a basis of five lights.

Coal is the only fuel used, and is to be had at \$2.75 a ton at the mines, or \$3.25 delivered. The minors are allowed a reduction and get theirs for \$2 at the mines.

There is a movement on foot to construct an irrigation ditch from St. Mary's, about fifty miles distant. The estimated cost of this work runs into the millions of dollars, and little or no capital not native is interested.

PORTLAND CEMENT IN ONTARIO.

Mr. Loton S. Hunt, United States Consul at Palmerston, Ont., writing to his Government regarding Portland cement in Ontario says:—A grade of Portland cement, claimed to be fully equal in point of excellence to the English, German, or even the Belgian product, is made of the natural deposit obtained from the bed of Shallow Lake, in the township of Keppell, Grey County, Ontario, nine miles west of Owen Sound. Its manufacture was begun in 1889 by the Owen Sound Portland Cement Company, and was attended with very great difficulties at first, owing to the fact that but little was known about the processes of its manufacture, and suitable machinery was not readily obtainable.

The lake floods every spring and fall to a depth of several feet, the water leaving, through fissures in the bottom and rock-bound shores, usually about the month of June. Men and teams are then employed to remove a few inches of the waste surface, beneath which the marl lies to a depth of about three feet. Under the marl is found the clay, which forms the other ingredient and which is removed with the aid of a

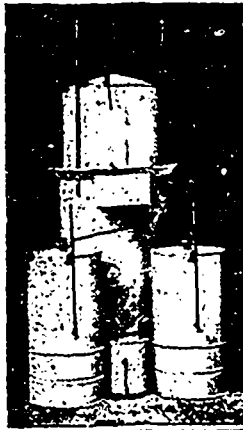
derrick, loaded on dump cars, and hauled to the factory on the shore of the lake. A large force of men and teams is usually employed for from six weeks to two months, in order to obtain sufficient material for manufacture during the ensuing fall, winter, and spring.

The quality of the cement has been conclusively tested in the construction of the canal at Sault Ste. Marie and other water-

ways, as well as in buildings throughout the Dominion.

The supply of ingredients is practically inexhaustible, the lake covering about 600 acres. The daily capacity of the factory is at present 125 barrels, which will be increased to 300 at an early date. The company was originally formed at Owen Sound, where the principal office is now located.

Although the entire plant was destroyed



The "SAFETY" ACETYLENE GAS MACHINE

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

Manufactured by..... **EVERY MACHINE GUARANTEED.**

THE SAFETY LIGHT & HEAT CO., Dundas, Ont.

Proprietors and Sole Manufacturers for the Dominion of the celebrated **CLIFF-WARDLAW GENERATORS.**

HAMILTON COTTON CO.

HAMILTON, ONTARIO.

YARN MANUFACTURERS, DYERS, AND BLEACHERS,

Warp Yarns of all descriptions, in Skein, Chain or on Beams.

Hosiery Yarns in Single or Double; in Cop, Skein or Cone.

Yarns of all kinds for Manufacturers' use.

Twines, Lampwicks, Webbing, Etc.

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

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THE GARTSHORE-THOMSON PIPE & FOUNDRY CO.

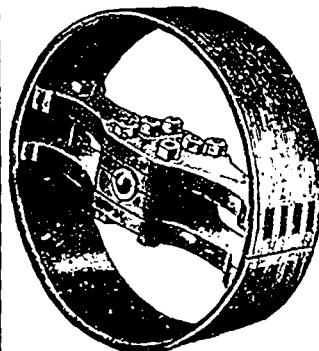
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For Water, Gas, Culverts and Sewers

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



BENT WOOD SPLIT PULLEYS, (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.

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

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

As we shall not be able to 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.

All correspondence relating to the following Tools will be promptly answered, viz:
LATHES—Engino, 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 Plato, Angles, Channels, Gauges, Etc.
PRESSES for Cutting, Stamping, Drawing

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

by fire in 1895, the erection of the present extensive factory was immediately begun and will cost, when finished, fully \$125,000. Excellent railway facilities, with sidings to storehouses and coke sheds, are furnished by the Grand Trunk Railway Company. About seven carloads of Pennsylvania coke per week are consumed in the manufacture of the cement.

Prevailing prices are \$1.90 in jute sacks and \$2.10 in barrels, per barrel of 350 pounds, net.

The business card of the company above alluded to is to be found in page 2 of this journal.

NEW DYESTUFFS.

New Patent Blue B, and New Patent Blue 4 B.—These are two recent additions to the ever growing list of level dyeing wool colors. The shade of the B brand lies between a green and a blue (and as may be seen by pattern card No. 678), closely resembles the well known color fast green extra bluish, but is considerably brighter in shade. The 4 B brand dyes a very clear and pronounced blue. Both dyestuffs are homogeneous products, and are equally as fast to light as the fast greens, also fast to alkalis and sufficiently so to acids. Their fastness to washing and milling is satisfactory for goods not heavily milled; when dyed on a chrome mordant their fastness to milling is increased. They also stand stoving well. On account of their level dyeing properties, they are very suitable for dyeing ladies dress goods, and fine yarns, as well as billiard cloths, etc. Bright navy blue shades are obtainable by mixing new patent blue with azo fuchsine or fast acid magenta B. These colors can further be used to advantage in dyeing silk, leather, feathers paper, and for the manufacture of ink.

Directions for dyeing on wool. Dye one hour boiling with the addition of twenty glauber salt, two per cent. sulphuric acid.

Samples and pattern cards mailed gratis on application to the Dominion Dyewood and Chemical Co., Toronto, sole agents in Canada for the Farbenfabriken, vorm Friedr Bayer & Co., Elberfeld, Germany.

Alizarine Sapphirole B.—The Farbenfabriken of Elberfeld have just prepared a neat pattern card of the above new product in conjunction with indigo carmine, and so conveniently arranged for exposure to light by customers who will then be convinced of the high degree of fastness to light of alizarine sapphirole B as compared to indigo carmine. The latter has served, up to the present as the standard of blue level dyeing colors. When exposing this card to sunlight it is advisable to examine it every few days to determine correctly to what extent the sun has acted upon the dyed patterns. It will be noticed that indigo carmine has faded long before any change is found in the alizarine sapphirole.

NEWFOUNDLAND MINES.

Newfoundland is already attracting considerable attention on the part of capitalists as a field for profitable mining investment, and those who should know predict great things for the future.

When R. G. Reid, of Montreal, undertook to build the railway from Port au Basque to St. John's for a land subsidy, he was ridiculed by many in Canada, but Mr. Reid is a shrewd business man and knew what he was about. He is now, probably, the largest landed proprietor in the world, and

JOHN J. KELLER & CO.

104 and 106 MURRAY ST.
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220 Church St., Philadelphia.

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**Aniline Colors,
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FAST COLORS for Wool Dyeing,
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 and Specialties for Calico
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LUXFER PRISMS

The latest device for

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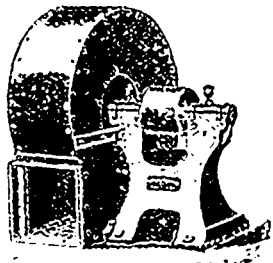
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By Daylight

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 and estimates
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58 Yonge Street, - **TORONTO.**



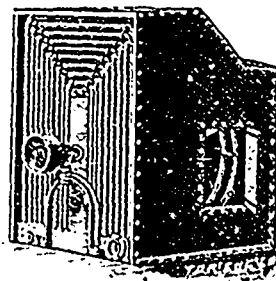
**Ventilating Steel-Plate
 Fans, Blowers and
 Exhausters.**

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

THE ABOVE ARE FOR SALE CHEAP.

Write for Prices and Send for Catalogue.

**McEachren Heating and
 Ventilating Co., GALT, ONT.**



is working an eight-foot seam of excellent coal on his property at Grand Lake. This coal is near tide water, but Mr. Reid has also found a market near the mine's mouth in the development of the immense iron ore deposits on Conception Bay.

The Newfoundland Iron Ore Company, (Limited), is the name of the company which has been formed to work these deposits, with a capital of £150,000. It is said to include some of the largest iron masters in England, and many Newfoundlanders are interested. These gentlemen entered upon the enterprise on the report of Henry Moore, of Whitehaven, England, who was very much impressed with the richness of the deposits and their extent, after having made thorough tests. The ore is said to be equal to that found on Lake Superior, containing sixty per cent. of metallic base, and the deposits have been traced for sixteen miles. Mr. Moore sank shafts and dug trenches which led him to report:

"All these pits and trenches prove beyond a doubt the existence of a long straight vein, sixteen miles long, and the main shaft, behind Lower Island Cove, which is about 300 feet above sea level, proves that there is plenty of ore at the lower depth. The formation of the rock along the claims is very regular, dipping northwest at an angle of twenty-five degrees. I consider the regularity of the measures very much in favor of the vein. The best shipping place is undoubtedly Old Pelican on Trinity Bay, a distance of six miles from where the first shaft would be sunk."

He estimates that to a depth of 1,000 feet there are 40,000,000 tons of ore in sight.

Two shafts are to be sunk at once by the

company, which will furnish a supply of 1,000 tons a week and a line of tramway is to be built to Old Pelican, where a landing pier is projected. These works will cost £35,000, and take a year to complete. The engineer figures on an available output of 500,000 tons when the properties are developed.

The Laurentide Pulp Company's works are being pushed towards completion at a rapid rate. The completed mills will have a daily productive capacity of 40 tons of news, 30 tons of cardboard, 75 tons of sulphite fibre and 100 tons of ground wood. The company will use 15,000 horse power.

The Fairbanks Company, the well-known manufacturers of standard scales, who have for many long years been supplying the people of the United States and other countries with accurate and reliable weighing machines, to meet the demands of their Canadian trade and in order to give better attention to their Canadian customers, have opened a new warehouse at 749 Craig street, Montreal, where they will keep on hand an extensive stock and assortment of Fairbanks Standard Scales, Fairbanks asbestos disc valves, asbestos packed cocks, store and warehouse trucks, portable forges, factory and mill supplies, etc. The company make a specialty of railroad truck, hay, hopper, grocer and counter scales, which embody all the latest and most useful improvements in weighing apparatus, and the same high quality which has made these goods so popular throughout the world. They are manufactured to order for all purposes, and in conformity with Canadian requirements.

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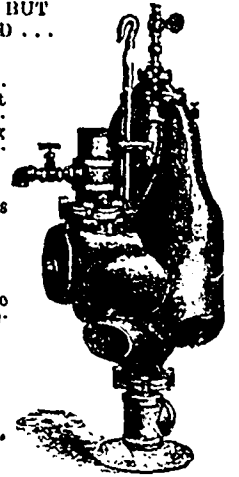
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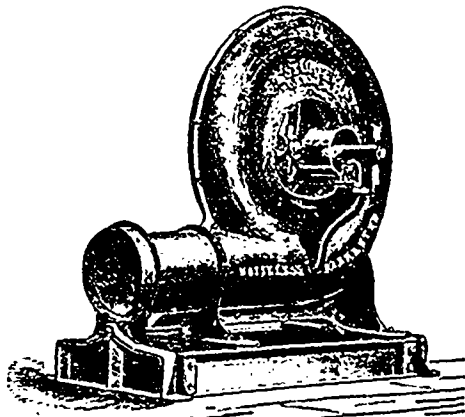
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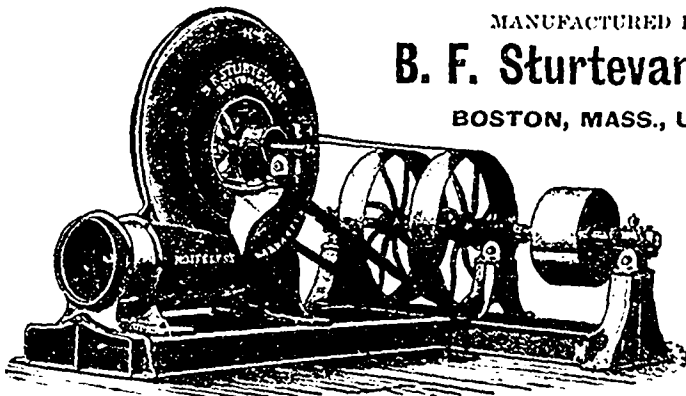


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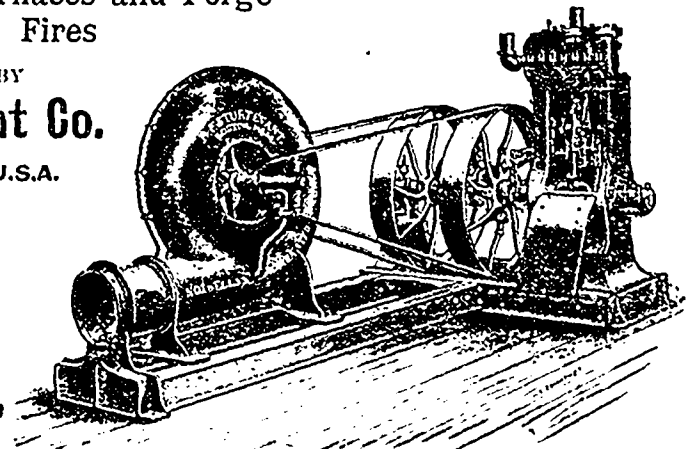
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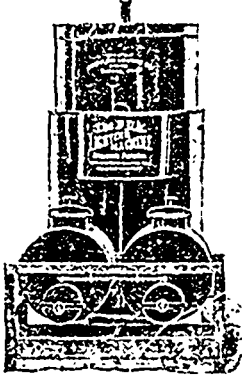
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THE ELECTRICAL INDUSTRIES AT SAULT STE. MARIE.

There was a meeting of the North-western Electrical Association at Sault Ste. Marie on June 11th, to whom Mr. F. H. Clergue, of the Sault Ste. Marie Pulp and Paper Co., who is also largely interested in other industries there, made a welcoming address. Speaking of the electrical industries of the place Mr. Clergue said:—

The progress of electricity has developed this one fact which is familiar to all of those who are practically conscious of the progress of that science, and that is that the power

necessary to develop light, heat or electricity, or any other manifestation of force, must be produced by some method more economical than that of steam power, if it is to be applied to those commoner uses of mankind, such as the production of necessary articles of low intrinsic value which the civilized races put most to their uses—the metals.

We now have before us the manifestation that it is cheaper to-day to smelt common iron worth \$12 a ton in an electric furnace than it is to use coke at \$4 a ton for that purpose, to produce the same degree of heat. This is a remarkable statement, but it is proven in the twin cities of the Sault.

You are on a journey of great consequence to the region you visit. It is of importance to this community that you should understand what are our relations to the industry which you especially represent. When you pass these locks you will have crossed the threshold of the most important storehouse of wealth on the face of the globe.

The author then referred to the enormous wheat districts tributary to Lake Superior, the tremendous quantity of lumber available in the wilderness of Canada, north of the lake, and spoke as follows of the metals:

It is a fact shown by statistics that out of this lock, through which you pass to-morrow, there went last year out of Lake Superior 4,000,000 tons more of iron ore than all Great Britain made into pig iron in twelve months of the same year. The greatest in extent and purest in quality of all the iron ore beds ever discovered are those on the shores of Lake Superior. Steel rails in the United States are produced at a cost of from \$4 to \$5 a ton less than they are in England. It is a fact that at the Sault the first necessary ingredient, except ore, for the production of coke pig iron, viz., coke, could be delivered to smelters here at Sault Ste. Marie at half a dollar a ton less than coke costs delivered to smelters in Great Britain. Steel plates for ship building on the shores of these lakes are produced and delivered at \$7 a ton less than in Great Britain. It is true also that within five years the centre of iron ship building will not be in England, but in America. It is true that on these great lakes, at Chicago, Cleveland and at Superior, iron ship building can be done at a cost of several dollars less per ton than is possible in Great Britain.

The next metal in importance is copper. Except the Anaconda mine in Montana, the

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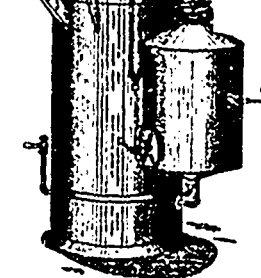
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AGENTS

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largest and most productive mines in the world are those you are about to visit to-morrow at Houghton. These copper mines are of native metal, and the only separation required is a purely mechanical one, which means simply the separation of the rock from the metal. It is true, however, that the copper metal, when separated, contains a very appreciable and very valuable percentage of silver. The silver, however, except where it is found in the veins of copper as native silver, has not yet in that region been utilized, and consequently if you were to take down the copper wires of this town and make an analysis of them you would find that the percentage of silver is so large that with silver at a dollar an ounce, you could afford to take the copper wire down and extract the silver. The only practical way of separating the silver from the copper at a profit is by electrolysis, such as is used at the Anaconda mines. We have recently at our works been approached by some of the principal owners of those mines in the Calumet and Hecla regions, with the suggestions that we receive that ore here and treat it by electrolysis. As a result of that enquiry I had an investigation made and the result is that we are now preparing a 10,000 h.p. apparatus to be applied to the treatment of the ores of the region in which you are now to make a visit; and if our calculations do not disappoint us we expect to use not less than 30,000 horse-power in the reduction of the ores of the Calumet and Hecla district for the purpose of securing the silver contained.

After copper and iron in the series of metals of low cost, that which has at the present time attracted the most serious attention is nickel. Those of you who have given any attention to metallurgy know very well that the American warships, now engaged in trying to settle a little disagreeable difficulty, are clad with a plate called nickel steel. You

will also probably know that the American projectiles which are being used to batter down the forts of the enemy are also made with a nickel-steel casing. The reason why nickel is used for that purpose is the fact that a small admixture of nickel, as two and one-half to three per cent, in a large admixture of iron, if made into steel and properly tempered, produces a substance very remarkable in its tenacity and in its strength against penetration. The United States Government made a very careful investigation of the subject several years ago, and as a result adopted that class of armor plate for their modern navy, and for that reason it is claimed by the advocates of the present American navy that they can stand a bettering which no other navy could endure and live.

The copper region I refer to is distant from here only about 100 miles; the iron region 200 and 300. The nickel region exists in the territory of Canada, about 150 miles from here. The present process of treating that ore for use in the arts and for the manufacture of nickel steel and other purposes, has been to treat the ore by chemical processes, by which the crude ore from the mine has separated from it first the silver which it contains in large quantity; second, the copper in smaller quantity, and third, the nickel which is the chiefly valuable ingredient. That product costs actually perhaps twenty cents a pound and the present market price is about thirty cents a pound.

Among other ores which we have tested by electrical processes were, of course, those of the nickel district, and we subjected the product to a series of experiments for the production of ferro nickel and nickel steel directly from that ore. This took some years of investigation, and we made careful enquiry among European metallurgists of skill and experience. But the experience of foreign nations in metallurgical processes, as applied

to electricity, has been very limited, and we found little advice to be had, and we were obliged to begin here "de novo" to conduct experiments without scientific advice. The consequences of our experimentation so clearly indicated success that during the past winter I thought it was safe to approach the users of nickel steel and ferro nickel to ascertain what market we could secure for this product. The well-known house of Krupp, in Essen, Germany, is the principal user of this commodity in the world, as in the manufacture of guns and armor its output far exceeds that of any other concern. I visited these works and after a rather technical and scientific discussion of the proposed new product I succeeded in imbuing the scientific staff of that great establishment with the belief that our product would be a success, and with sufficient assurances from them of a market for the product, I returned to our works and continued those experiments. The result has been that within the present week I have received cable advices from Krupp's works, announcing its test of the product of our electrical furnaces here in the line of ferro nickel and nickel steel, and they state to us that their technical and practical tests of our production have been satisfactory, and a contract which I had already negotiated with them, depending upon the samples proving satisfactory, was by cable confirmed, and we are now about to put 20,000 horse-power on the American side to this new use, the production of ferro nickel and nickel steel.

Among the industries which we have also fostered and developed here has been the production of calcium carbide. Acetylene gas you are all familiar with, and to-morrow morning, by the courtesy of the owners of those works, you will have an opportunity of making an examination of the process as in use here. That is another illustration, and a very strong one, of what patient application can accomplish in

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the science to which you are devoting your lives. Calcium carbide, a product in the electrical furnaces of two years ago, was not a commercial commodity, because it could not be produced at a price which would permit of its use as an illuminating material in competition with ordinary electric lighting, or with ordinary gas. That was the condition of that industry when it first attracted our attention. We secured the services of some people very practical in your science, and chemists to afford necessary chemical assistance, and began not only a scientific but a practical test of what could be accomplished in the electric furnace in the production of calcium carbide. The result of a year or fourteen months' operation was the invention of a furnace by our electrical engineer, who will read a paper to you during some session of your convention, and this process has resulted in the reduction of the cost of calcium carbide nearly 200 per cent. The result of those experiments has been the organization of a company called the Union Carbide Company, which has effected a combination of all the calcium carbide interests of this continent, capital \$3,000,000, and a contract between our company and the Calcium Carbide Company has been made for a period of twenty-five years, for the use of 20,000 horse-power and additional from our canal.

While we began in the electrical industry here in the development of new electrical processes, only two or three years ago, we have already accomplished this much, that we are under contract to deliver 40,000 horse-power for electrical uses, all to be supplied within two years. We have already developed on the Canadian side 20,000 horse-power and are about to undertake the construction of another canal on the Canadian side to produce 50,000 horse-power.

It is the fall of twenty feet from Lake Superior to Lake Huron that has created the existing enterprises here, and which gives us such great hope for the future industrial prosperity of this region.

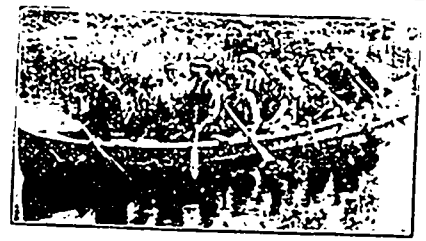
The Ontario Wind, Engine and Pump Co., Toronto, have lately shipped some large tanks—five 55,000 gals. each to the N. W. T. for the C.P.R., and one 40,000 gals. to Montreal.

No less than seven expeditions are now in Labrador, drawn to that inhospitable coast by the magic word, gold. Five of these have been organized in Halifax, one in Boston and the seventh has just started out from St. John's, Newfoundland. It will be known as the Labrador and Newfoundland Exploration Company, and there are eleven persons in the party, the leader being A. White, who was for many years manager of the Little Bay Copper Mine in Notre Dame Bay, Newfoundland. He has as his assistant E. R. Burgess, who knows the whole Labrador coast, having

spent many years there as a collector of customs. They purpose to explore the country from Battle Harbor to Cape Mugford, a distance of about 700 miles, and to ascend the principal rivers, such as Eagle River, Sandwich Bay and the Northwest River, where Sir Donald Smith, now Lord Strathcona, spent several years in the service of the Hudson Bay Company. It is not known that gold exists in any quantities, but specimens of ore have been brought out of the country which are regarded as very promising.

A recent visitor tells the Maritime Merchant that Rhodes, Curry & Co., of Amherst, are busily engaged in erecting a large hotel 500 feet long by about 120 feet wide for the accommodation of workmen and others who will be required in the future development of a Nova Scotia mine. A number of cottages are also being built by the same firm. The informant further tells that the coal mine at that point, so far as opened, is ahead of any working in Cape Breton. The quality of the coal is excellent and the available blocks of working ground ample. There is a seam of clear coal 6½ feet, with a perfect roof and floor to support it.

The Canadian Pacific Railway Co. are building a number of baggage cars which are not provided with either platforms or hoods. This reduces the weight about one and one-half tons, and does not rob them of any decided advantage in construction.



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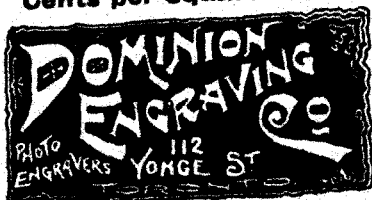
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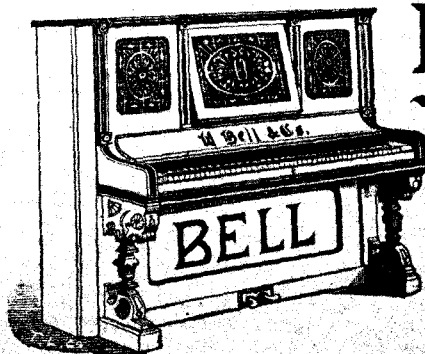


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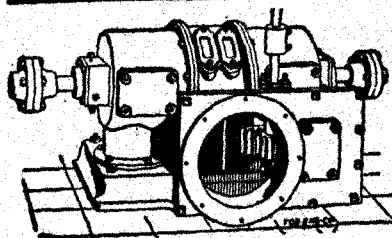
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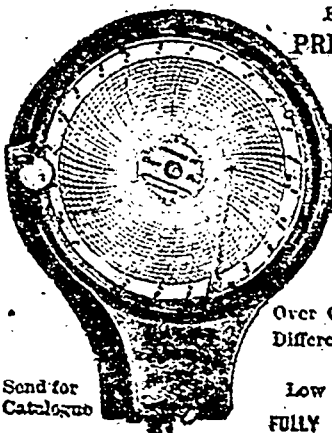
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