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Vol. 39.

TORONTO, NOVEMBER 17, 1897.

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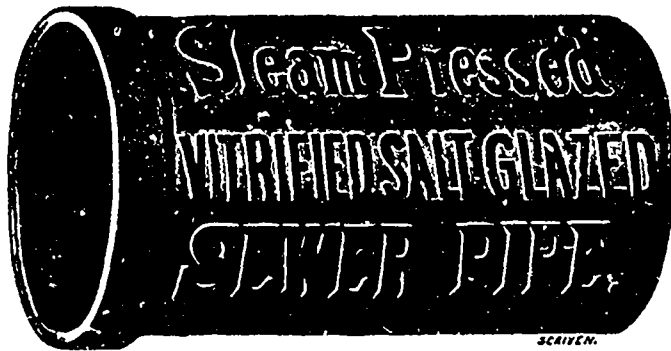
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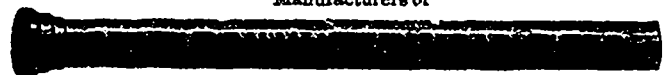
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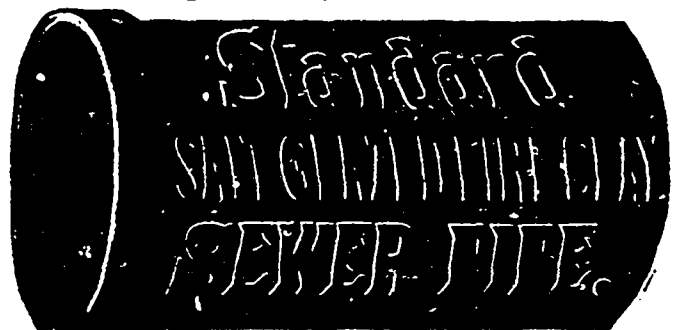
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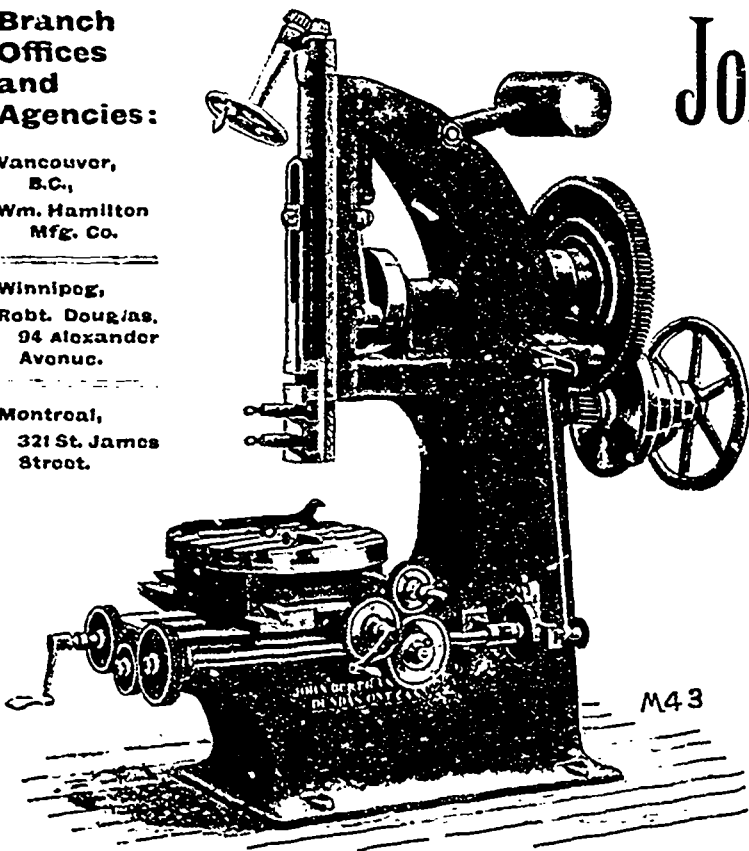
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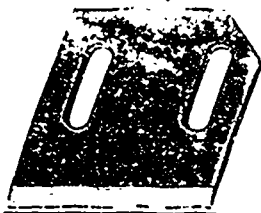
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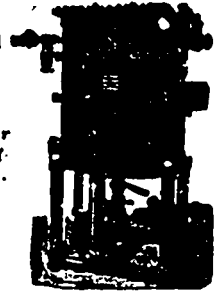
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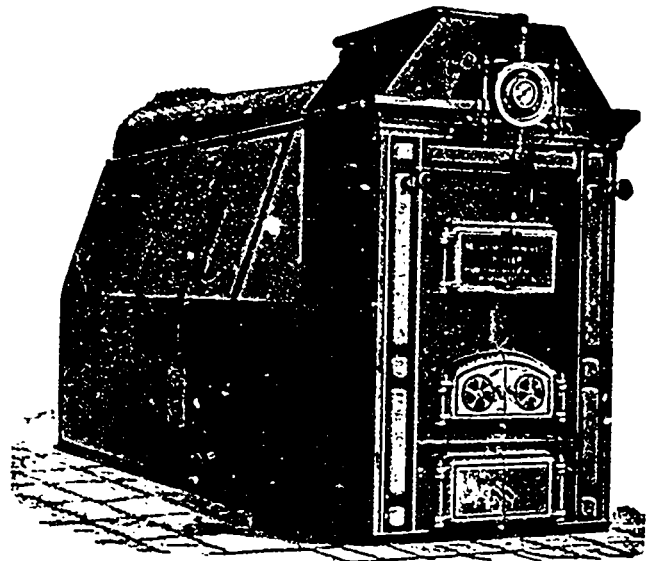
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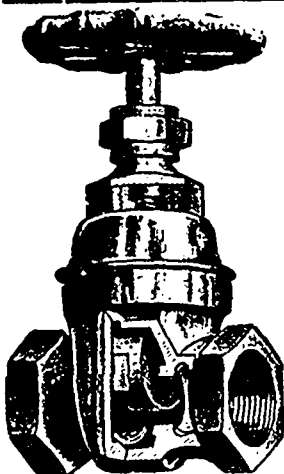


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"FOR ALL DUTIES"

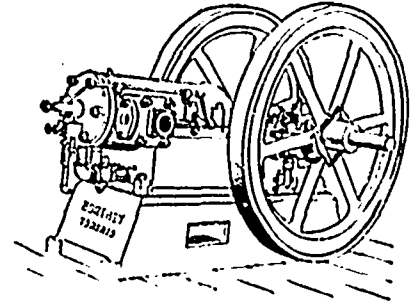
We have equipped some of the largest manufactories in Canada with our Feed, General Service and Stuff Pumps. In no case have they failed to give entire satisfaction, nor in proving that the Northey Pumps for all duties are unsurpassed for design, up-to-date features and reliability.

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ESTABLISHED IN 1890.

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*Official Organ of the Canadian Manufacturers' Association.***SUBSCRIPTIONS :**

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 STERLING PER YEAR, INCLUDING POSTAGE.

The Canadian Manufacturer Publishing Co., Limited.*McKinnon Building, Cor. Melinda and Jordan Sts., Toronto.***J. J. CASSIDY, - - - Editor and Manager****THE GROWING TIME FOR ONTARIO.**

At Renfrew, Ont., on November 10th, Hon. George W. Ross addressed the first political meeting he has attended since he became Premier of Ontario. His address has attracted a great deal of attention, and very deservedly so, seeing that in it he outlined what is to be the policy of his Government.

Mr. Ross said the time had arrived, in his judgment, when, having ascertained the financial position of the province, the Government should take five or six courageous steps forward. If the finances would warrant it, why should they not go to work to develop New Ontario? The average land occupied in the province was equal to sixteen acres on a hundred-acre farm, the other 84 acres being forest, swamp or woodland. He proposed to make an effort to develop the other 84 acres. The Government desired to put 100,000 more settlers into the northwestern portion of the province. Why should they not endeavor to secure the settlement of that section by young men of our own flesh and blood, rather than permit them to drift over to the United States? The Government intended, therefore, to have a thorough exploration of New Ontario, ascertaining more fully its resources, and find some means of settling or developing a territory embracing one hundred thousand square miles.

He wanted to see Ontario with a port on Hudson Bay. A railway to Moose Factory would be of incalculable advantage to the older portions of the province. The benefits which a railway conferred upon a country was well exemplified by the construction of the Canada Atlantic Railroad to Parry Sound. No public man could foresee what a great future was in store for that line. Mr. J. R. Booth did, however, and was to-day reaping the fruits of his enterprise.

The Government proposed a general policy for the opening up of the country. He would like to see the northern portion of the province gridironed by railways, which would mean settlement all through it. There was enough land in Northern Ontario to make 230 counties of the average size of the 45 existing counties. He hoped the day was not far distant when Ontario would have a population of ten millions, instead of two and a half.

Another feature of the Government's policy would be to endeavor to develop the raw material of the province and to manufacture it within our own borders. He was in favor of home manufactures as far as possible. Our forest products should be manufactured in Canada, not simply the sawing of the logs. His Government would seek to encourage skilled labour in the province, so that the raw material in the province could be converted into manufactures in our midst and sold in the different markets of the world.

The policy of the Government would be a progressive policy—to develop the waste lands of New Ontario, and to develop the mineral and timber resources. The Government was on the friendliest terms with the lumbermen; it would see that their interests were protected; that the pine forests were not swept away too hurriedly. There were in the province some million acres of swamp lands. He thought the Government should have a general survey of the province, and ascertain whether something could be done for the drainage of these lands. The Government, further, wanted to direct the agriculturist in a way to find larger compensation for his industry. There should be a greater diffusion of agricultural instruction, more Dairy Schools, more Farmers' Institutes, and more agricultural literature.

One of the great difficulties confronting the farmer was as to transportation of his products to the British market. He cited the exports of food products from the other colonies to Great Britain. There were splendid lines of steamers between Australia and England. These steamers were fitted with cold storage accommodation, the result being that Australian beef and mutton arrived in the Old Land in splendid condition. The farmers of Ontario should rise in their might and insist that similar facilities should be given. It would be part of the policy of this Government to see that something was done in that direction.

Another thing the Government hoped to do, and it was a most important thing in his judgment, was to establish throughout the country cold storage collecting stations for perishable goods. In this way farmers could store their produce until such times as the markets were not glutted, and thus secure better prices.

DEPARTMENTAL STORES.

In a recent issue of this journal allusion was made to an iniquitous law recently passed by the State of Missouri, the object of which is to suppress departmental stores. We expressed the opinion that the object could never be accomplished, because it is not in the interest of the community to suppress them.

Ancient this question, in one of its recent lessons in economics The Toronto Globe propounds as follows :

The complaint that big departmental stores are doing away with small merchants, leaving stores idle and lessening rents, is of the same nature as any other complaint against a labor-saving innovation. The object of a store is not to keep a building occupied nor to find employment for a merchant. The object is to transfer goods from the maker to the consumer, and to convey payments back from the consumer to the maker. If that could be accomplished without the use of any mercantile establishment and without employing either merchant or clerk it would be so much the better. But as yet human ingenuity has not devised a means of dispensing entirely with such implements of commerce, nor with the

men who operate them. But men will naturally adopt the system or method that accomplishes the desired end with the least expenditure of labor. If the departmental store accomplishes the object in view with less outlay of labor than is expended on smaller individual establishments, it will supersede them. The locomotive engine superseded the freight wagon, not because it gave somebody work, but because the former accomplished the transportation of goods with less labor than the latter. The test of ease in accomplishing aims is applied to every system and every device.

There may be two sides to the question, as there usually is to all questions. From one standpoint—that of the consumer—it seems that the smaller the expense and the less labor and trouble involved in placing goods in the hands of consumers, the less expense to be incurred and the cheaper the goods, and the same applies to the manufacturer or producer of the goods. This, it is claimed, can be done through a few departmental stores better than through a large number of smaller concerns. Apparently the opponents of departmental stores are the large numbers of would-be proprietors of smaller concerns, who, as a class, cannot, for obvious reasons, purchase from the manufacturer or producer on as favorable terms as his more wealthy and larger competitor. Neither can he afford to sell his wares on as favorable terms to his customers. Neither can he afford to refuse credit to his neighbors who are his customers. Neither can he possibly keep the fixed charges upon his business, and his general expense, account at as low a percentage according to the volume of business transacted. The small merchant appeals to the kindly feelings of his neighbors to confer their custom upon him, but very few people with money in pocket and wants to be satisfied will purchase at a small store when a material saving can be effected by trading at a large one. It is the old story of the survival of the fittest, and in the fierce struggle the weaker one goes to the wall.

We speak of the opponents of departmental stores as being, apparently, the would-be proprietors of small stores, but in our opinion the power that impels these latter to put up a constant warfare against the larger concerns, are the landlords who have small stores to rent, and who observe that their income from this source is being rapidly diminished. Landlordism, as we see it around us every day, is the most potent factor in grinding the faces of the poor—poor small dealers and poor people generally, and those who are misdirecting their sympathies in behalf of small dealers who imagine that they are being grievously wronged by the presence of departmental stores, should look further and see that the most colossal grinding machine in the land is the landlord, who, like the lily of the field, toils not, neither does he spin, but accumulates wealth by the increment of values of his land created by the progressiveness of the community,

It is interesting to watch the war that is now being waged in Missouri against departmental stores. The law that has just gone into effect in that State is a remarkable piece of special legislation. It applies only to the cities of St. Louis, Kansas City and St. Joseph.

To permit the small dealers to keep any commodities they can find customers for, the bill exempts stores employing less than fifteen persons. The bill divides merchandise into eighty-eight classes, and exacts license fees of \$300 and \$500 for the sale of each class of goods where more than one class is handled in a store employing fifteen or more persons. The

bill makes such minute subdivisions of trade that a dry goods merchant will be subject to special license taxes at these preposterous rates if he also sells ribbons, spool silk, notions, gloves, ready made garments, millinery, boots and shoes and art work. This is a very radical invasion of what has always been regarded as a man's natural right to handle any sort of merchandise that he thought he could sell profitably, and its restriction to the large stores in three cities, deprives it of every semblance of general legislation, either for revenue or other legitimate purposes.

The department stores are said to derive most of their advantage over places limited to smaller varieties of goods from their advertising. They claim to sell cheaper than stores of smaller extent and less variety, but the general body of retailers admit nothing of this sort, and a certain small dealer is credited with saying, "If I could afford to advertise a page a day in the newspapers, I could sell as much goods as the departmental stores." Perhaps it would be in order for the legislature of Missouri to amend its iniquitous law by making it an offence, punishable by heavy fine, for the departmental stores to advertise in the daily papers. Such legislation would be quite as special and quite as indefensible.

And still there are those who profess great concern for the welfare of Canadian manufacturers—manufacturers who sell their products to departmental stores—and at the same time advocate the enactment here of such an obnoxious law as that recently passed in Missouri and celebrated in St. Louis.

CANADIAN IMPORTS.

George Johnson, Esq., Dominion Statistician, in his Statistical Year Book of Canada for 1898, gives the following table showing the imports of certain articles into Canada from Great Britain and the United States respectively during five year periods, as indicated, and for the fiscal year ending June 30, 1898, as follows:—

	—FIVE YEAR PERIODS—			
	1882-86	1887-91	1892-96	Fiscal year 1898.
1. Interchangeable Mechanism—				
Imp. from Great Britain..	\$620,305	\$309,745	\$171,789	\$21,311
" " United States..	4,749,556	2,547,892	4,322,107	1,844,166
Prop. " Great Britain..	11.5 p.c.	10.8 p.c.	3.8 p.c.	1.5 p.c.
" " United States..	88.5 "	89.2 "	96.2 "	98.5 "
2. Hardware, cutlery and edge tools—				
Imp. from Great Britain..	\$1,759,913	\$3,096,052	\$2,043,628	\$46,029
" " United States..	\$,431,503	6,698,444	6,721,274	1,735,499
Prop. " Great Britain..	36.0 p.c.	31.6 p.c.	23.3 p.c.	20.4 p.c.
" " United States..	64.0 "	68.4 "	76.7 "	79.6 "
3. Machinery—				
Imp. from Great Britain..	\$2,475,474	\$1,490,846	\$1,065,371	\$208,902
" " United States..	7,335,114	6,902,313	7,601,588	2,079,447
Prop. " Great Britain..	25.4 p.c.	17.8 p.c.	12.3 p.c.	9.1 p.c.
" " United States..	74.6 "	82.2 "	87.7 "	90.9 "
4. Castings and forgings—				
Imp. from Great Britain..	\$1,433,952	\$696,483	\$180,634	\$15,761
" " United States..	1,780,414	979,898	1,316,345	364,228
Prop. " Great Britain..	44.6 p.c.	39.2 p.c.	12.1 p.c.	4.1 p.c.
" " United States..	55.4 "	60.8 "	87.9 "	95.9 "
5. Railway supplies and rails—				
Imp. from Great Britain..	\$12,629,781	\$10,889,048	\$4,545,246	\$143,851
" " United States..	3,104,146	1,295,371	3,426,396	1,943,227
Prop. " Great Britain..	80.2 p.c.	80.9 p.c.	57.0 p.c.	6.9 p.c.
" " United States..	9.8 "	9.1 "	43.0 "	93.1 "
6. Other forms of iron and steel—				
Imp. from Great Britain..	\$19,757,893	\$20,403,933	\$11,550,718	\$2,482,766
" " United States..	2,961,816	7,821,896	16,480,126	5,731,813
Prop. " Great Britain..	87.0 p.c.	72.3 p.c.	41.1 p.c.	30.2 p.c.
" " United States..	13.0 "	27.7 "	58.9 "	69.8 "
7. Pig iron—				
Imp. from Great Britain..	\$2,747,947	\$2,822,265	\$437,913	\$51,528
" " United States..	1,297,640	1,916,681	1,601,406	366,242
Prop. " Great Britain..	67.9 p.c.	60.0 p.c.	21.5 p.c.	12.3 p.c.
" " United States..	32.1 "	40.0 "	78.5 "	87.7 "

Interchangeable mechanism refers to that class of articles in the manufacture of which the highest skill and workmanship is required, and includes sewing machines, fire arms, locomotive engines and agricultural implements.

Classes 6 and 7 include (a) pig iron, the basis of the iron and steel industries, and (b) other forms of iron and steel in the making of which skilled labor enters to a limited extent. They constitute the raw material entering into the manufacture of articles of iron and steel by Canadian workmen, and are, in addition to pig iron, bar iron rolled or hammered, boiler plate, steel bloom ends, rolled iron for horse shoe nails, steel for skates, files or saws, wrought scrap iron, etc., and parts of articles in other respects manufactured in Canada.

The foregoing statement applies only to Canada's imports from Great Britain and the United States, from which two countries came, in the three 5-year periods therein considered 98 per cent. 95 per cent. and 97 per cent. respectively of the whole imports of the articles alluded to.

EDITORIAL NOTES.

Mr. Thomas C. Irving, who for a number of years has been Superintendent of Bradstreet's Toronto office, has been made General Manager for Western Canada. Mr. Irving has also been, we understand, added to the list of Executive officers of the Company. These promotions are well deserved in view of the efficient and satisfactory service that has always characterized his intercourse with the Canadian business community.

The Editor is in receipt of the following note from London which explains itself:—

DEAR SIR.—Lord Strathcona desires me to convey his thanks to you for a copy of THE CANADIAN MANUFACTURER of October 6th which you were good enough to forward, and to inform you that he has perused the article by Mr. George Johnson with much interest. I am, yours faithfully,
J. G. COLMER.

The editor is also in receipt of a note from Mr. Johnson in which he says: "Kindly send me a few more copies of THE CANADIAN MANUFACTURER of October 6th. I have received numerous applications from England and the United States, notably from Bradstreet's, which I can no longer supply as I have only one copy left."

There has been a remarkable demand for copies of this journal which contained Mr. Johnson's statistical article entitled "Canadian Exports of Manufactures—The Record for Thirty-one Years," and the edition is now exhausted.

Last winter the biggest poultry show ever held in America was held in Toronto, and the Toronto Poultry Association have resolved to duplicate that exhibition next month. The poultry industry is not only a large one, but one capable of great expansion. Last year it was worth \$5,000,000 to this Province alone, a single firm shipping no less than 60,000 turkeys to Great Britain. Under such circumstances, it is apparent that the poultry industry ranks next only to the live stock industry. For lack of a suitable building, the Provincial Christmas Fat Cattle Show is never held in Toronto, but it is to be hoped the poultry men will receive

such encouragement from citizens and the Council as will maintain this city as the chief centre of no great poultry interests. Dr. A. W. Bell, assistant manager of the Toronto Industrial Exhibition, has the poultry show in hand, and is very enthusiastic over the prospects. He states that, as last year, when the entries were larger than had ever been at any similar show in America, so, this, a number of American poultry and pet bird organizations intend to hold their annual meetings in Toronto, thus making the exhibit a thoroughly international one. As liberal prizes are offered for pigeons and domestic pets, the show has an educational side for young people that should not be lost sight of.

Hon. George E. Foster delivered an address in Oshawa a few days ago in which he stated that there were then people in that town who were workers in iron, who could easily see how employment was given to their hands and brains by the demand for facilities to move the immense crops of the country. The allusion had reference to the prosperity of the iron industry in Oshawa under the Government of which Mr. Foster was Finance Minister. During Mr. Foster's administration the tariff duty on such iron goods as were produced in the largest establishment in Oshawa, or in Canada, was, we believe, rated at specifically twenty dollars per ton and twenty per cent. ad valorem. Is this the same Mr. Foster who, as Finance Minister, removed the specific duty? The iron workers of Oshawa no doubt remember that the big iron works there were out of operation a long time after that event. They are in full swing now.

Owing to Canada's vastly increased trade with Britain since the adoption of a preferential tariff there has been a great growth of shipping facilities between the Dominion and British ports, while the competition between Canadian and United States products has likewise greatly increased. During last year there were twenty-three steamers under contract or agreement, or by subsidy, plying between Canadian and British ports. Through the cold storage service in carrying butter, eggs and fruit, and the care on the part of the exporters, Canadian articles of the kind mentioned have achieved great popularity in the British market.

From an investigation of new patents and patent applications at Washington it is evident the inventors are turning largely to the attractive field of effort found in devices for the taking the place of ice. So successful are some of these that enthusiastic promoters already predict the passing of the ice-man. Devices for producing artificial cold are multiplying with great rapidity and while some of these are of but limited and costly utility others give promise of being able to meet common wants and necessities in the heated season. Even at present large business concerns have almost abandoned the use of ice for ammonia gas and other chemical devices, and it is predicted that before long it will be possible to moderate the heat of summer just as rapidly as the cold of winter is now regulated in houses by steam heat. In other words, that cold may be turned on at pleasure and a uniform temperature be maintained in city dwellings all the year. As yet, however, these glittering and pleasant promises are not in the way of immediate fulfillment. The expense of cold-generating

plants and appliance at present makes them not available except in the case of great manufacturing plants. Their ingenuity and invention will yet conquer the difficulties and make it possible to supply cold as gas, heat and electricity are now furnished in the modern house seems entirely probable.

The Dominion Department of the Interior, of which Hon. Clifford Sifton is Minister, is attempting a new departure in respect to immigration. The idea is to inaugurate a system for assisting emigrants to come to Canada and settle on the vacant lands of the Canadian North-West, and whatever aid is to be granted in this way would be placed as a lien on the newcomers' land. Many years ago assisted passages were given to emigrants, but in the vast majority of cases the wrong persons got the money. In other words, instead of agriculturists, mechanics and others were merely afforded facilities to come to this country and go into competition with Canadians for a class of work for which there was a sufficient supply. It is to guard against this that the present Government has to contend. Since Mr. Sifton has taken hold of this branch of his department, he has thrown a great deal of energy into it, and has obtained very satisfactory results. In 1895, the year previous to that in which Mr. Sifton became Minister, the number of immigrants that arrived was 18,790. It was in the fall of 1896 that Mr. Sifton took office. The season's work was over, but the new Minister proceeded at once to reorganize the immigration branch. The number of arrivals for that year was 17,535. For the next year the number was 27,716. In 1898 the number reached 31,900. When the figures for this year are made up the number will be in the neighborhood of 45,000. The vast majority of these have settled in Manitoba and the North-West.

At the recent annual convention of the Ontario Lord's Day Alliance, held in Toronto, speaking of the influences that operated against the work the Alliance have in hand to suppress labor on the Sabbath day, Principal Caven, a very respectable clergyman, made the assertion that many manufacturers were banded together to oppose it and that in endeavoring to prevent the desecration of the Sabbath the Alliance had found that as a rule the Lord's day was considered as but a very secondary matter when dividends were liable to be interfered with. It is very remarkable, but a very common occurrence that very respectable clergymen like Rev. Mr. Caven should so persistently slander their neighbors. How do they expect respectable gentlemen to entertain feelings of respect for them when they say such untruthful things?

The British disaster at Ladysmith has been explained. It was the mules. They were southern mules, from Missouri, Arkansas, Mississippi, Louisiana, Alabama and Georgia. In all these States a nigger and a mule go together. In buying the mules the British purchasing agent neglected to employ the colored man who alone can give confidence and repose to a southern mule. Those British drivers only inspired distrust. The mules knew they were in bad hands, and the chances are they sympathized with the Boers anyhow. All they needed was a pretext for running away, and when the Boers rolled a few rocks down the hillside the mules with the small ammunition and the battery mules alike gave a big hee-haw and started right into the Boer camp with the ammunition for the infantry and the guns of the artillery, so the British could only camp out over night, fire what few shots they had

and then give in. The action of the mules ought not to discourage exports of those useful animals. If drivers that know how to handle them are taken along they will perform miracles in the way of work. The British purchasing agent should take the lesson to heart. Send no more mules out with British attendants.—New York Financial News.

This is an insidious attempt on the part of our American contemporary to settle a social problem that is most perplexing to the people of the United States, by stampeding the Southern negroes to South Africa. It wants the negroes and the mules to go together, and it could well afford to see all the mules in the South go to Africa if so be the negroes would go with them. But should the stampede occur what would the chivalry of the South do for amusement when they would have no niggers to burn?

The sub-Committee of the Toronto City Council appointed to consider the matter of the reconstruction of the Technical School Board, on November 9, recommended that the Board be comprised as follows:

City Council, four members; Manufacturers' Association, two members; Trades and Labor Council, three members; Federated Council of Building Trade, two members; Board of Trade, two members; Stationary Engineers, one member; Architectural Guild, one member; Builders' Exchange, two members. These members are to be chosen by the different bodies which they represent. The members already chosen by the Canadian Manufacturers' Association are Messrs. F. B. Hayes and R. Y. Ellis.

The Commercial congress at Philadelphia is a capital illustration of the shrewdness of the business men of the Quaker city. The congress was inaugurated by the business men of Philadelphia, was largely subsidized by the city, and later by the state government. Fine buildings were erected and filled with a wonderful collection of manufactured goods, and, better still, of the raw materials from which the goods were manufactured. Last month a congress of delegates from various governments and boards of trade was held. Over 300 delegates were present, coming from Europe, North and South America, and from far-off Australia. The invitations were widely distributed throughout the world. Reduced railroad fares were offered from any point in the world to Philadelphia, and on arrival at Philadelphia the delegates were taken in hand by the congress committee and housed and entertained—given the liberty of the city, it may be said—entirely free of cost. The object of all this great outlay of money and affability was of course to induce the delegates to leave large orders with the manufacturers represented at the congress, or at least to take away with them such pleasing remembrances of the congress and the vastness of the exhibits as to be good for orders later on. But the most remarkable point in the whole affair was the practical unanimity of the city and state to make the affair a success. Not only did those directly interested contribute largely, as did also the city and state, but large corporations which benefited indirectly were liberal. As an instance, it was said that the Pennsylvania railroad had erected a magnificent five-story building, costing many thousands of dollars, and had rented it to the congress for the nominal sum of \$5 a year. Such enterprise as this is an object lesson to Canadians. It shows that the manufacturers across the border are hustlers, and that they have good friends at their back.—Hamilton Spectator.

CANADIAN MANUFACTURERS' ASSOCIATION.

President:
J. F. ELLIS.

First Vice-President:
P. W. ELLIS.

Second Vice-President:
R. E. MENZIE.

Treasurer:
GEORGE BOOTH.

Chairman Executive Committee:
R. W. ELLIOT.

Chairman Tariff Committee:
W. K. McNAUGHT.

The Executive Committee meet on the
Firs 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, JAR. KENDREY, M.P.

WOOLEN MANUFACTURERS' ASSOCIATION,
President, . . . BENNETT ROSAMOND, M.P.

KNIT GOODS MANUFACTURERS' ASSOCIATION,
President, JOHN PENMAN.

CARPET MANUFACTURERS' ASSOCIATION,
President, J. P. MURRAY.

CLOVE MANUFACTURERS' ASSOCIATION,
President, A. R. CLARKE.

REPRESENTATIVES TO

TORONTO INDUSTRIAL EXHIBITION ASSOCIATION.

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

CANADA'S COMMERCIAL AGENTS.

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

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

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

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

IMPORTANT.—An enquiry addressed to J. J. Cassidey, Secretary Canadian Manufacturers' Association, Toronto, Canada, will place you in communication with the leading Canadian Manufacturers of the articles you mention. Merchants and Importers in all parts of the world are invited to make free and full use of the facilities afforded by this Association when they desire information about anything produced in Canada.

No charge whatever for answering inquiries.

BRITISH CANADIAN TRADE.

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

90. A firm of export agents offer their services for the introduction of any kind of Canadian goods in the European, Indian and Australian markets.

91. Attention has been drawn by a well known agent who acts for contractors supplying the War Office and other Government departments with preserved goods, to the large quantities of compressed dried vegetables now in requisition. Canadian contractors for this class of product who are able to supply them in sufficient quantity and who desire to participate in the business can be placed in communication with the agent in question.

THE METRIC SYSTEM OF WEIGHTS AND MEASURES.

At the last regular meeting of the Executive Committee of the Canadian Manufacturers' Association the sub-committee, consisting of Messrs. R. W. Elliot, A. E. Kemp, P. H. Burton, George Booth, John Taylor, W. K. McNaught and J. J. Cassidey, which had been appointed to investigate and report in the matter of the desirability of the adoption by Canada of the metric system of weights and measures, as suggested by Hon. Sir Henri Joly de Lotbiniere, Minister of Inland Revenue, made the following report to the Committee, which was received, discussed and adopted, and the Secretary instructed to forward a copy thereof to Sir Henri. The report is as follows:

The Canadian Manufacturers' Association is indebted to Hon. Sir Henri Joly de Lotbiniere, Minister of Inland Revenue,

for a set of metric weights and measures, together with a chart showing graphically their names and relations to each other.

The Committee appointed to consider the question of the adoption of this system for general use in the Dominion, having made a careful enquiry, begs to report as follows:—

There can be no difference of opinion as to the superior convenience of a decimal system in making any kind of computation, but when the expense of changing the entire standards of weights, measures of extension and measures of bulk, together with providing new containers for liquids is taken into account, it is found to involve a present cost computed at about two million dollars. So far as retail transactions are concerned, they would be much complicated by the fact that there is no common unit of departure in converting pounds, ounces and grains into kilogrammes and grammes, nor from yards, feet and inches, to metres and centimetres.

The Canadas, about forty years since, changed the currency from Halifax pounds, shillings and pence to dollars and cents; this was easily effected. The pound became four dollars, a shilling twenty cents and half-penny tokens are today in circulation as cents. This change has proved entirely convenient and useful.

In 1880, the Government of the day enforced an Act, passed in 1873, altering the standard of liquid measure from the wine gallon of 231 cubic inches to the Imperial gallon of about 277½ cubic inches.

Though affecting liquids only, the cost of new measures and containers rendered useless by the alteration, was computed to have been half a million dollars. The expenditure was in no way beneficial, throwing us out of line with the peoples of

the North American Continent, while liquids from Britain, such as oils, etc., are sold by weight and not by the gallon.

It would appear that in any case such a change as is under consideration should be preceded by a thorough course of instruction in all schools throughout the Dominion.

Your Committee note that for years metric standards have been legalized in Great Britain and the United States, with which countries Canada does over ninety per cent. of her external trade, and it would therefore seem prudent, that we should wait until metric weights and measures are the common standard of domestic as well as foreign trade among the English speaking people, before taking any decided steps in the matter.

So far as wholesale import transactions are concerned, it is thought that little difficulty is found in translating foreign moneys, weights and measures into existing Canadian standards, those requiring this knowledge being but a few hundred of persons; but for common every day buying, selling, making, measuring and weighing, millions will have to be educated before any benefit can be derived.

The most serious objection to the existing system is that it prevents the development of export trade to countries using metric weights and measures.

A copy of the foregoing report was forwarded to Sir Henri, in acknowledgement of which he replied as follows:

OTTAWA, November 11, 1899.

J. J. CASSIDY, Esq.,

Secretary Canadian Manufacturers' Association,
Toronto.

MY DEAR SIR:—I duly received your letter dated the 10th instant, enclosing the report of the sub-committee of the Executive Committee of the Canadian Manufacturers' Association, to which was referred the question of the metric system of weights and measures, and I am very grateful for the trouble the association has taken to study the question so carefully.

I am pleased to find that your committee duly appreciates the superior convenience of a decimal system of weights and measures. Your committee alludes to the expense of changing the entire standard of weights and measures. There is no doubt that it will be considerable, especially for measures of bulk and capacity, for measuring liquids. As for solids, especially for grain, the habit is becoming more and more general of measuring by weight instead of bulk. As for measures of weight, for all beam scales, it will only require the effacing of the present figures and the substituting of new ones to meet the metric weights. It is well to remember that the difference in weight between a kilogram and two pounds is so slight that the old weights could be used with the addition of a lead plug and the stamping of the denomination by our inspectors; this might obviate the necessity of purchasing additional metric weights for such scales, which scales would not otherwise require to be remodelled.

But where your committee mistakes completely the intention of the Government is in thinking that it is intended to make the adoption of the metric system compulsory in advance of the steps to that effect which will likely be taken before long by England and the United States. Our present intention is to make the system widely understood by teaching it in our schools and by submitting its details to the business community, so that when it has become practically adopted in the two countries with which we deal most largely, England and the United States, we shall be prepared to welcome it instead of having to adopt it under compulsion. I have done my best to make this clearly understood, and I hope there may be no further doubt on the subject.

Believe me, yours very truly,

(Signed) H. G. JOLY DE LOHNIERE,
Minister of Inland Revenue.

BRITISH PREFERENTIAL TARIFF—1898.

The chief features of the tariff preference shown by Canada to Great Britain and certain British dependencies are: (1.) A completion of the pro-British tariff of 1897 providing that, beginning August 1, 1898, all imports from Great Britain shall come into Canada on paying a duty of customs twenty-five per cent. less than that levied on similar goods coming from other countries; (2.) A provision to aid the British West Indies by admitting their products at the full reduction of twenty-five per cent.; a similar provision for any other British colony or possession the customs tariff of which is, on the whole, as favorable to Canada as the British preferential tariff is to such colony or possession, provided, however (a) that manufactured articles admitted under such preferential tariff are bona fide manufactures of a country or countries entitled to the benefit of such tariff; (b) That such benefits shall not extend to the importation of articles into the production of which there has not been entered a substantial portion of the labor of such countries; (3.) A provision that the reduction is not to apply to wines, malt liquors, spirits, spirituous liquors, liquid medicines and articles containing alcohol, tobacco, cigars and cigarettes.

The following portions of the British Empire are now included in the British preferential arrangement: The United Kingdom, Bermuda, the British West Indies including Bahamas, Jamaica, Turk's Island, Carcos Island, Leeward Islands, Windward Islands, Barbados, Trinidad and Tobago, also British Guiana, also British India Ceylon, New South Wales and Straits Settlement.

NEW USE FOR DRIED APPLES IN FRANCE.

It is a curious fact that the consumption of wine in France is steadily diminishing. This results from a variety of causes, prominent among which is a general belief among the common people that the product of the vine is apt to be deleteriously adulterated. Whether this is true or not, it is a matter of such universal comment that they naturally make it an excuse for discarding wine and indulging in a beverage which they declare is too cheap for anybody to dream of adulterating. Their first resort was to the product of the apple and pear orchards of Normandy and Brittany. In 1895 the consumption of cider in Paris amounted to 10,000,000 gallons, but in consequence of the bad apple harvests of 1896 and 1897, this fell in 1898 to an utterly insignificant figure.

The importation of cider to meet the demand was impossible, because of the prohibitive duties of 8.50 francs per hectoliter, amounting with the octroi duty to about sixteen cents a gallon in Paris. Of course, no man could pay a tax of four cents a quart and furnish a drink cheap enough to meet the demand for cider, which could not be diluted to any extent with water and retain its peculiar "tang." It became necessary, therefore, to find a substitute.

With the English or American taste, this substitute would probably have been found in a sort of beer or some mere alcoholic product. But the Frenchman, if he is not addicted to absinth, usually cares little for the alcoholic character of his favorite tippie. What he wants is, not to become intoxicated, but to have a pleasant drink which he can sip by the hour in company with his friends at the buvette. Two things are essential—first, it must have a pleasant, fruity flavor (if a little piquant, so much the better); and, second, it must not make too heavy a drain upon his purse. The bourgeois rarely allows his palate to make him forget his pocket. Cheapness and briskness are essential elements of a popular drink for the French people.

Out of these conditions, aided by the genius of some unknown mixer of drinks in Paris, was evolved "piquette," a sparkling fruity beverage, composed of dried apples, raisins, and water, allowed to stand until fermentation takes place and then bottled, with the addition of a little sugar, or served directly from the cask. Two cents a glass is the ordinary charge at the buvette for this spicy, and, as a rule, harmless beverage.

A franc (20 cents) will furnish a man a "treat" which is good for a two hours' sitting at the buvette, but hardly develops enough alcoholic influence to perceptibly reduce the ordinary liveliness of the tongue.

The following is the receipt given me for its preparation by one of the lead^g manufacturers of Bordeaux :

Five pounds of raisins, five pounds of dried apples, and five gallons of water. Put in an open cask and let stand for three days ; bottle with a half teaspoonful of sugar and a bit of cinnamon in each bottle. Vary the flavor to suit the taste.

It is really a pleasant summer beverage and if made in the United States might take the place of some of our mysterious decoctions with decided advantage to health.

The special American interest in piquette, however, is found at present in the fact that the dried apples out of which it is made are imported from the United States.* In 1898, 50,000,000 gallons of this piquant beverage were consumed in France, against 35,000,000 in 1897. The dried apples used in its manufacture are the lowest grade of windfalls—sliced, including skins, cores, and "inhabitants," without distinction as to quality or variety, except as follows :

(1) The thin slices must be well dried and securely packed, so as not to color or heat upon the voyage. The slices must be white and have a spicy odor or they will not sell.

(2) Decayed or over-ripe fruit should not be used, as it gives too dark a color to the product and will not bring a price sufficient to pay cost of shipment.

The consumption of this beverage is rapidly increasing in France, and it is said that the cider crop of this year is likely to be so short as to create an even greater demand for it. Made of carefully assorted fruit, it should be a valuable addition to our household drinks, since but little need be made at a time and it is both piquant and practically innocuous.—United States Consul Tourgee at Bourdeaux, France.

*I would note in this connection that of 500 barrels of dried apples which I recently examined, 200 were a dead loss to the shipper, because of lack of care in drying and packing.

PUMPS IN CAPE COLONY.

I desire to call the attention of manufacturers of well drills, pumps and windmills to the demand for wells and pumping apparatus by the farmers of South Africa, and to present some statistics on the subject. In 1890, the first boring was made in this country by a diamond drill for water, and from that year to the present time the government has carried on the work, owning the drills and charging a less price than the farmer would have to pay if he owned the drill. It is estimated that a successful bore made by the government costs the farmer £19 (\$92.46), against £29 (\$141.13) when he does the work himself, and more successful results have been obtained. The result has been, for 1898 alone, to add 3,000,000 gallons to the daily water supply of this colony.

The government is still inundated with applications, and with the present supply of drills the work can not be done fast enough. It is expected that by the time the applications now on hand are taken care of, 1,000 more will be waiting. It is an established fact that there is an excellent supply of underground water almost all over the colony, at a reasonable depth below the surface. The rainfall of this colony is not greatly inferior to that of other countries. Several dams are being built, and in one over 1,400,000 gallons have passed through the sluices, and there is still sufficient water to fill the dam when completed.

The wells being bored will need pumping appliances of various kinds, and windmills appear to be the most inexpensive ; those just arriving have been readily sold. The government may yet assist the farmers in purchasing such appliances.

In 1898, there were nineteen government water drills at work ; 206 applicants were served and 547 applied ; 367 bore holes, ten feet or more deep, were made ; 26,573 feet were bored, the drills (nineteen) making an average of 1,399 feet each ;

258 holes produced 1,000 gallons per day and upwards ; and the estimated total yield of water per diem was 3,000,000 gallons. In 106 holes water flowed to the surface to the extent of 783,000 gallons per diem ; and by pumping, a supply of 2,217,000 gallons can be obtained from the other 219 holes.

Recently a large steam-power drill was purchased in England for the purpose of making a trial deep-bore hole. The first boring, when between 120 and 171 feet from the surface, struck a supply of water yielding 21,400 gallons per diem, and a steam pump failed to lower it. Another bore has been made to the depth of 1,504 feet, and discontinued, owing to the exhaustion of the special fund set apart by the government.—United States Consul-General Stowe at Cape Town, South Africa.

THE MANCHESTER SHIP CANAL.

A very entertaining and instructive lecture was given in Toronto a few days ago by Mr. R. D. Harling on the Port of Manchester and its Ship Canal, at which the Hon. John Dryden acted as Chairman. In introducing the lecturer Mr. Dryden said that he was personally and officially interested in the Manchester ship canal, because it had an important bearing on the transportation and marketing of our various products. The English market was at present the best for us, and the ship canal helped to solve the difficulty of putting Canadian products before the consumers in good condition.

Mr. Harling introduced his subject by stating that the construction of the ship canal had changed the position of Manchester from an inland town to a commercial port of the first order. Manchester was the centre of an enormous number of industries, and of a large population. In the county of Lancashire there were 1,750 cotton mills employing 43,000,000 of spindles, and within twelve miles of Manchester there were 35,000,000 of spindles. In 1875 Manchester found that its trade was beginning slowly to decline, and by 1879 many mills had to be closed down. Competition had become so fine, and the charges at the seaboard for raw material and also for shipment to the mills were so excessive that no profits could be made. The ship canal was conceived for the purpose of reducing these charges and so regaining trade. The canal was 35½ miles long, but as it commenced at Eastham, six miles from Liverpool landing stage, it was practically 41½ miles long. The company had had to buy an enormous quantity of land, and in round numbers about 2,500 acres more than they wanted ; to cut their way through 2½ miles of solid red sandstone rock, to build five locks, and to construct enormous gates, but in spite of all the canal was opened by the Queen in January, 1894. The capital originally proposed was £5,000,000 but ultimately the amount had to be increased to £15,000,000, to which the city corporation patriotically subscribed £5,000,000. The business of the canal had steadily increased, and in the latter part of 1898 the interest was paid to the preference shareholders, and £20,000 paid off the corporation debt. The first half of the present year £16,000 had been paid off. The first year of the canal showed a trade of 925,000 tons, which this year had increased to 2,502,815. It was expected that the business next year would reach three million tons. As an example of the importance of the Manchester district, he said that the city had 177 neighboring towns, of which eleven had a population of more than 100,000. Within a radius of twenty miles there were six millions of people. The canal had effected a saving of 20 to 25 per cent. on the charges, as compared with other ports. As an instance of how the canal had reduced prices of transport, the export of cotton goods to Hamburg, which used to be thirty-two shillings and sixpence per ton, was now reduced to twenty shillings, and similarly the sugar was imported at twelve and six a ton where it used to be twenty shillings. There were steamship services from Manchester to all parts of the world. Canada had been extremely well favored from the fact that a line was brought into existence in 1898 to trade between Manchester and

Canadian ports, with a capital of five millions. They ran nineteen voyages last year, carrying a large quantity of Canadian produce. Since then they had put on the stocks seven new steamers, with a tonnage of from seven to nine thousand, and with cold storage and all modern equipments. A number of lime-light view were shown on the screen, giving panoramic views of the canal from the sea to Manchester, and showing the elevators, storehouse, abattoirs, railway facilities, locks, cattle sheds, carcass houses, and foreign animal wharves along the route, and winding up with views of some of the leading buildings in the city.

NICARAGUA WANTS CHEAP GOODS.

British Consul Chambers, writing from Nicaragua, declares that in "a country like this, the question of price in buying an article is of supreme importance, and if an enamelled saucepan of low quality, lasting, we will say, for six months, can be bought at a fraction lower than a really good one that would last five times as long, in nine cases out of ten the cheaper one sells in preference, and the same thing happens with nearly everything. Thus, of the cotton goods imported from Great Britain, more than 50 per cent. consists of the cheapest, flimsiest kind of grey cloths, drills, prints, lawns, muslins shirtings, etc., it is possible to obtain, and very often split cloths. What Great Britain does in cottons Germany does in other goods, and if British firms would go in more for cheap inferior articles, instead of keeping to better qualities, they would undoubtedly increase the trade to such countries as this." The Consul makes some observations which do not represent British houses in so bad a light as they are generally placed in respecting their representatives. He says:—"Of the travellers for foreign houses passing through this country, possibly 70 per cent. of them represent British or American firms, and in every case they are fairly proficient with the language, and are good business men. Travellers for German houses are rare, as also representatives of French firms, but the former make up the deficiency by freely sending out patterns, and an abundance of correspondence soliciting business. With very few exceptions, all English travellers represent Manchester, Nottingham, and Glasgow houses only, and carry with them vast quantities of samples of all description of cotton goods."

AGRICULTURAL MACHINERY IN EGYPT.

Owing to the growth of agriculture, and the consequent rise in the wages of agricultural laborers, this country is becoming a more and more important market for agricultural machinery of all kinds. As regards portable steam engines for irrigating plant, I may say that last year most of those came from England (£. 254,000 value), the remainder, to the value of £. 7060, coming from France. As when the Nile is low the authorities more easily permit the erection of a stationary instead of a portable engine, and demand for the latter has now decreased somewhat. The portable engines imported from England are of 6, 8, and 10 nominal h.p., single cylinder, and of 12, 14, and 16 h.p. with double cylinders (compound). Egyptian buyers, it may be pointed out, always calculate prices and sizes on a nominal h.p. basis, the nominal h.p. being equal to $2\frac{1}{2}$ effective h.p.'s, or 3 indicated h.p.'s. Ploughs and land rollers are the most important item worthy of attention, as the trade in them is capable of great extension. Egyptian farmers are very conservative, hence the best way to effect this would be for makers of these apparatus to send two or three of their workmen here for a couple of years. These men could till the lands of prominent farmers with the manufacturers' ploughs and harrows, and compare the results with those obtained by the old system. The following systems have so far been introduced into Egypt:—French Brabant double ploughs, at 167 £.; American Ollivier ploughs, from 19 £.; English stronger-made Ollivier ploughs, at 38 £.—French Consular Report.

AUSTRALIAN TRADE—MR. LARKE'S REPORT.

Mr. J. S. Larke, Canadian Commercial Agent at Sydney, N.S.W., under date of September 25, 1899, writes the Minister of Trade and Commerce as follows:

The trade of the Colony of Victoria was:—

	1897	1898
Imports.....	£15,454,482	£16,768,904
Exports.....	16,739,670	15,872,246

Although there is a marked increase in the volume of imports, the decrease in exports does not, apparently, fulfill the expectations of a year ago that the colony was on the eve of better times. The decline of exports is made up mainly of specie, butter, live animals and some re-exports. The first result of a better season is to keep animals for re-stocking the pastures instead of killing them and exporting their products. There is also a decrease in the exports of a number of lines of local manufactures, indicating a better demand at home. The largest increase in imports is in gold bullion. There is a small but general increase in manufactured goods.

As in past years the returns give but little indication of the trade with Canada. The figures are:—

	1896	1897	1898
Imports.....	£19,523	£11,682	£33,745
Exports.....		424	654

The items from Canada, 1898, were:—

Deals.....	£5,941
Undressed timber.....	20,036
Oregon.....	7,390
Pickets.....	201
Laths.....	57
Cotton piece goods.....	62

The balance of £58 was not of Canadian origin. As in former years agricultural implements, bicycles, cotton goods, furniture, musical instruments, which form the large bulk of the imports from Canada, are credited to other countries.

The chief exports were:—

Molasses.....	£160
Preserved vegetables.....	426
Brandy.....	49
Sauces.....	10

In the lines that have been pushed Canada is doing as large a trade in Victoria as in any Colony. Besides the fish, timber, bicycles, agricultural implements and cotton goods alluded to above, some trade is done in steam fittings, carriage material, window shades, woodenware and confectionery. Other lines of which Victoria imports in considerable quantities have been left almost untouched. There is an importation of rubber goods to the value of nearly £90,000; leather to a like amount; boots and shoes, £30,000; mineral lubricating oil, £42,439; lampware, machinery, paints and colors, wallpaper, lamps and lampware, plated ware, articles Canada can supply, have as yet been unattempted or but feebly. This is attributable mainly to the fact that agencies for Australia have been arranged for with parties who, doing business at Sydney, have not had the facilities for doing a trade in the other colonies. This is in part being changed and agencies have been opened in some lines that will overcome this deficiency.

Travellers and principals who have come from Canada to do business too frequently have limited themselves to so short a time that they have found themselves without the means to try the trade of the other colonies after having got through with that of Sydney, the port of landing.

Recently this has been changed for the better. Even two months is too short a time in which to visit the wholesale centres of Australasia, and this is the maximum commonly arranged for. In the majority of lines four weeks is necessary for Sydney alone. It is the chief point for Canadian trade and business cannot be hurried. At least two months more should be set aside for the other cities. In making a second trip when the man and his goods are known much less time would be required.

The outlook for trade continues to be favorable. The rainfall in New South Wales has been more general than for some years, and grass and the crops are coming on well. It is nearly as favorable in all the colonies, with the exception of Western Queensland. Prices of wool have advanced from 10 to 15 per cent. and as nearly all the wool has yet to be marketed the producers will get the benefit of the rise. The other articles of export also bring good prices. The gold output is still increasing and shows an advance of nearly 14 per cent. so far over the production of last year. This has produced increases in the value of stocks and some increases in imports. Those of Sydney are nearly two millions in excess of the same period last year.

Orders for what are known as "American" lines have rather declined. This is attributable largely to an advance in prices that has lately been made, and purchases are being made in England and the Continent instead of the United States. The extension of Canadian trade is still hampered by inability to fill orders. I am in receipt of letters by every mail from Canadian firms regretting that it is not possible to pursue Australian business at present but promising attention to it later on or as soon as the unusual pressure of orders at home will permit. In some cases preparation is being made for this event by looking over the ground now and arranging for the trade expected to be done later on. All things point to larger demands in these colonies but business cannot be created in a day. The orders that would go forward for a twelve month or more would not in most instances be large, and to fill them should not strain any ordinary business. They would, however, open up a channel that may be very useful to the Canadians not long hence.

The representatives of two Canadian firms have just gone home and both are well satisfied with what they have accomplished. They have not only opened up new avenues of business, but taken sufficient orders, the profits of which will more than pay the expenses of the trip. It is advisable that when any Canadian exporter arranges for representation in Australia he should notify me of the fact. I could then be of service to both principal and agent in helping on their transactions. It is not impossible that an agency may be held for some time by one who does nothing to secure any business. A change is needed in the interest of the Canadian exporter, but unless he keeps me informed I am unable to do anything. The agent who does nothing will certainly not inform me of it, and it is only by accident that I can become aware that he has had any Canadian relations if not informed from Canada.

The Canadian steamers have full cargoes both in and out. The last steamer from Vancouver was unable to take all offering. Flour to Australia, and sugar from it constitute the principal articles. The trade would justify the company in replacing two of its fleet with larger and more powerful ships. It is impossible with the ships it now has that it can command the passenger business it should get, or accommodate the freight that will offer itself for the greater portion of each year.

The Pacific cable.—The Premiers of the four colonies interested had come to an agreement as to the selection of the three Australian representatives on the Cable Commission when the government of New South Wales resigned owing to the passage of an adverse vote in the Legislative Assembly. This has delayed the selection, but there is little doubt the new Premier will soon take action.

TARIFF PROTECTION IN AUSTRALIA.

Speaking of the to be policy of tariff protection to manufacturing industries in the new Australian Confederation, the Australian Ironmonger, Sydney, N. S. W., of October 2nd says:—

The Federal Tariff is to be discussed in Melbourne at an early date by representatives of the New South Wales, Victorian, and South Australian Chambers of Manufactures. It is hoped that the manufacturers of Tasmania and Queensland

may also be represented. The object of the conference is to frame a Federal Tariff for submission as a recommendation to the Commonwealth Parliament when it comes into existence. Naturally enough, the tariff will be prepared from the manufacturers' point of view, but the result of their labors may afterwards be submitted to a joint conference with the various Chambers of Commerce. In New South Wales a committee is at work collecting evidence with a view to ascertain what rates are necessary in the interests of Australian industry. It was first suggested to meet at Adelaide during the currency of the Arts and Industries Exhibition from March 15 to April 16, 1900, but this was considered too distant a date, and the present proposal is to meet in Melbourne in October or November of the present year, and then, if thought fit, meet again at Adelaide in the following March. In supporting such a conference in the New South Wales Chamber, Mr. E. Braby said the heavy revenue to be raised under Federation meant a protective tariff, and manufacturers should see that it was not constructed in a haphazard way. He would divide goods into three classes—(1) materials used in manufacture which could not be produced in Australasia; (2) materials which could be so produced; and (3) manufactured articles. The first he would admit free. In his opinion, wherever practicable, specific duties should be imposed in preference to ad valorem duties, as the latter did not fall equally and opened the door to falsification of invoices. Mr. W. Sanford, of Lithgow, who recently returned from Europe, also supported the proposal, expressing the opinion that the uniform tariff here should be framed somewhat on the lines of the Dingley tariff in America. The iron trade, he went on to say, was the barometer as to all other business in England. In New South Wales there was an unlimited supply of iron ore and cheap coal. That colony would be the great iron and steel producing colony of the Federation. All the other colonies might claim that iron and steel were their raw materials of manufacture, and should be admitted within their territories free. The matter would have to be considered in view of that possibility. The feeling in Great Britain now towards Australian enterprise was different from that of two years ago. Then money could not be got for investment in our industries, but now, in view of Federation, it could be obtained, only those who were to provide it said, "First give us a tariff." Mr. Sanford, it must be remembered, is a pronounced protectionist. Specific duties could be fixed upon satisfactorily by finding out the rate of wages paid in the colonies upon articles manufactured in Australia and then putting on sufficient protection to cover that rate, thus placing every manufacturer in Australia in the same position as a manufacturer in any other part of the world.

Walkers' Limited, of Maryborough, Queensland, says the Brisbane Courier, are by far the largest ironfounders and machinery makers in that colony. Their managing director recently in London in a letter to a friend in Brisbane, writes: "I hope to see you early in December, and I hope the Commonwealth Bill will be passed throughout Australia by the time I get to Queensland." This is accepted as proof that that company are not afraid of competition under a free-trade policy between the colonies. The Federal Tariff, says the Ironmonger, will come into operation certainly not earlier than January, 1901, and more probably January, 1902. June 30 is the end of the financial year in several of the colonies, and it is possible that that date in 1901 may be fixed.

WAGES FOR CHILDREN IN GERMANY.

Vice Consul-General Hanauer at Frankford, writes that in the official report of the Government inspector of factories for Coburg-Gotha, details are given as to the labor of children under 14 years engaged in their homes in making buttons, toys, etc. It appears that in this district, 5,455 such children are employed. They work from four and one-quarter to six hours per day and earn in button making from 4 to 30 pfennigs (fifteen-sixteenths of 1 cent to 7 cents); in making dolls, 2 1-8 to 18 1-2 cents; in work on toys, 1 7-8 to 14 cents.

SEEKING FOREIGN TRADE.

Up to a certain point in the industrial development of the United States, says the Iron Age, there was no thought of the possibility of overproduction; and this idea applies with equal force to Canadian industries. There was, says our contemporary, always room for more factories in the pioneer days, because the demand for their products grew both with the increase of population and with the improvements in the standard of living. This is still true to a certain extent, but the factory capacity in many lines has been developed beyond the needs of the home market, even after having displaced an important share of the former import trade. And yet the tendency of productive capacity is to increase. A concern doing a profitable manufacturing business is tempted to add to its plant whenever larger orders come in, while people on the outside, seeking fields for investment, naturally select one in which others have won success, without always considering how much it may be crowded. Hence the present need for wider markets than our own country offers—in some lines to tide over those seasons when for any reason the home demand falls off, and in some others because the capacity, both of machinery and of highly specialized workers, is greater at all times than is needed for the home trade. Otherwise these facilities must become idle.

The attention of the world has been attracted lately to some important American exports of railway, bridge and ship-building materials. Of course merit and enterprise have contributed to the development of this trade, and yet the success of Americans in securing certain orders may have been due to the inability of competitors—for temporary reasons—to accept them. In other cases, perhaps, orders have been lost to European concerns through their failure to consider the possibility of America figuring as a competitor. At another time, when the pressure of work in certain engineering establishments abroad has been tightened, and the proprietors are no longer napping with regard to the capacity of Americans to compete for foreign business, such orders may be more difficult to obtain.

Important as some of these orders have been, if we are to control an important share of the export trade of the world we cannot depend on occasional shipments of a cargo of rails here, a lot of locomotives there, or a bridge yonder. The demand for such items of production is not steady, even if all the orders come to a single country. But there must be considered also the smaller articles of consumption—those within the buying capacity of individuals and suited to individual use, but yet of such a class that their manufacture must be confined to the countries which have reached the highest degree of industrial advancement. Already our exports of builders' hardware amount to more in value than our exports of steel rails; mowers and reapers to more than locomotives; bicycles, typewriters and sewing machines, to more than heavy machinery. What is more, a demand for these lighter lines, when once started, will continue to grow, in whatever part of the world, whereas the demand for railway material and the like will always fluctuate and be dependent on circumstances beyond ordinary control.

But the traffic in these smaller products is not going to grow without careful nursing. The countries that buy our wheat for the reason that they must do so or starve are not obliged to buy American small manufactures, because similar articles and possibly as good ones may perhaps be bought elsewhere for less money. That country will possess a great advantage in respect to exports whose manufacturers and merchants are most alert to cultivate different markets and to open channels for the sale of goods, instead of merely making them and holding them for sale. There are some things which are staple the world over. That is to say, if a railway is to be built in India, or Africa, or anywhere else, rails must be bought, and while types may differ somewhat, and the weight per yards, practically a rail is a rail, certainly one does not have to go abroad to urge its use. Likewise, a single order, say, for railway material, may reach a large total in value—large

enough to cover a handsome commission to the agent who makes the sale. On the other hand, a line of smaller manufactures, to amount to as much as a single order for rails or a bridge, may represent a year's distribution over an entire continent, through the hands of thousands of persons, making the store of profit of each very small. Such articles are bound to come into use, but they are not bound to be ordered from any one country. Whatever else may be true, it may be depended upon that the advantage with respect to the exporting of a great many manufactures will rest with the country whose producers and manufacturers study most carefully the tastes of people abroad, and thus become prepared to supply goods to suit in style, quality, appearance, size of package, method of shipping and the like. Everybody knows how careful the American manufacturer is to consult the wants of the home trade; no less care is needed in selling goods everywhere else.

BOOTS AND SHOES IN BRITISH GUIANA.

Imports into British Guiana are mostly from England, some come from the United States. Surinam imports from England and Germany; Cayenne from France. Men's low shoes sell here at \$1.20 to \$1.68; a few at \$2.40 to \$3.84. Boots sell up to \$5. Split hide and satin hide are used; calf quarters and kid uppers in black. Tan shoes are popular. Footwear for this market must have wide fittings, 4 and 5 English. The Portuguese, who number about 12,000, universally wear shoes made on the Mexican last, which is pointed and has an upward curve to the toe. Out of a total population of 278,000 in this colony, 217,000 people are black, coloured, or East Indian coolies, a majority of whom go bare-footed a great portion of the time, for the reason that their occupation or their personal comfort does not require them to be shod; nor will their limited means permit the expense. Hence the conformation of their feet is such that to crowd them into the elegant and fashionable American boot, on the special occasions like Sundays or holidays, would induce such a fine frenzy of misery that neither religious devotion, peace of mind, nor graceful deportment would be promoted. It is estimated that about 5,000 pairs are made by hand in this city. Probably not more than 30,000 of the total population wear shoes habitually the year round. During the year ended March 31st, 1898, boots and shoes to the value of \$137,590 were imported into British Guiana, of which \$10,000 worth came from the United States and the balance from England. A portion of this importation went to Surinam, Dutch Guiana. —United States Consul at Demerara.

TRADE OF FIJI ISLANDS.

If an improvement in the trade between Canada and Australia is not brought about it will not be for want of reports from Mr. J. S. Larke, the commercial agent of the Dominion at Sydney. Mr. Larke's last report deals with the trade of the Fiji Islands. He says that the imports for the past few years show very little improvement, being £229,000 for 1898, as compared with £244,000 for 1897. The exports for the past few years have largely increased. Of the trade of the islands, Canada's share last year was £3,656 for imports and £11,359 for exports. The imports comprised flour, timber, some vegetables and merchandise, while the exports were principally sugar. In regard to New South Wales, Mr. Larke says that the wheat acreage is 1,800,000, as compared with 1,632,000 last year.

BELGIAN DEMAND FOR REFRIGERATORS.

The firm of Dutry-Colson, rue des Champs, of this city, requests names and addresses of manufacturers of refrigerators. This firm is thoroughly reliable and one of the largest in its line in Belgium. There is a good field here for American refrigerators.—United States Consul Le Bert, at Ghent.

CYCLES IN BANGKOK.

British Consular-Assistant Carlisle, at Bangkok, states:—Bicycles are not given a separate heading in the Customs returns. American and German makes have been leading. Bicycling is of recent growth in Siam, but has already attained considerable popularity, which has been assisted by the opening of several new roads in Bangkok. American machines found a good sale, partly on account of their lightness, but more because they could be sold at cheaper rates. They were mostly old patterns of three or four years ago, which could not be sold elsewhere. It is said that they were not found entirely satisfactory, and that complaints are made of their getting out of order. It may be hoped that now his Majesty the king and many of the princes and nobles cycle, a demand for a better class of machine may arise and the English-built cycle be more in evidence. As the Siamese are a small, light race, heavy machines would be out of place. At the same time the roughness of most of the roads requires a certain amount of strength in them. Of course, there is no guarantee that the present turn for cycling will last, as such fancies are liable to pass, especially in Siam.

OIL WELL MACHINERY FOR GALICIA.

The Anglo-Galician Oil Company has recently been formed in London, with a capital of \$2,850,000, and have purchased the oil wells which hitherto were the property of Gartenberg Brothers, of Schodnica, Galicia, Austro-Hungary. It is reported that quite a large number of rich new wells have been discovered in that field and that many new shafts will be sunk in the near future. The company have also secured the right to open wells in the districts of Baligood and Komancha. Canadian manufacturers should make strong efforts to get a share of the orders for the machinery the new company will need.

NEGLECTING TRADE WITH AUSTRALIA.

In a late report to the Department of Trade and Commerce, Commissioner Larke, writing from Sydney, again calls attention to the manner in which Canadian manufacturers and exporters are neglecting their opportunities in Australia. He says that orders are not filled promptly, and in many cases their receipt has not even been acknowledged; packing cases are defective, the contents of cases not marked upon them, and invoices are made out at prices higher than are quoted in the first instance.

He points out the splendid opportunities for trade in different lines. For instance, in the matter of boots and shoes, only a spasmodic effort has been put forward by Canadian firms to capture the trade of \$3,000,000 per annum which the Australians expend in these goods. Canadian flour is selling for \$15 per ton over the local product, but it is suffering from the fact that inferior United States flour branded "Manitoba" is finding its way into Australia. In canned fruits espe-

cially strawberries and raspberries, Canada could do a good trade.

Mr Larke also calls the attention of manufacturers of rubber goods, leather merchants, saw, and bicycle makers to the great possibilities in the Australian markets. Ground mica is being imported from India, and commanding \$40 per ton. Mr. Larke thinks that Canadian handlers of mica might find a profitable market in Australia.

A SUGGESTION TO EXPORTERS.

Consul Tourgee, of Bourdeaux, France, suggests that it would be advisable for exporters to let consuls know something about the success or failure of enterprises in which they engage in their districts. As it is now, he says, they write asking information about dealers, opportunities, etc. The consul writes perhaps a score of letters to get the information they want, tells them what they must do, and then hears nothing more from them. It is impossible for him to learn what is done or being done along the lines he has recommended. The French authorities report importations in a manner so different from our own, that reliable comparison is literally impossible. Mr. Tourgee adds:

The French dealer is suspicious itself. He thinks anyone who asks about his business is an enemy, and the American exporter apparently imagines the consul has no interest in his business until his help is needed to collect a bad debt, which might never have been incurred if the consul had been informed with whom he was dealing and been asked to have an eye on his affairs. In my opinion, a consul is worth twice as much in looking after an enterprise already begun as in advising as to its institution.

BELGIAN ARTIFICIAL STONE.

An artificial stone from Belgium has recently been introduced into the French market, which is said to have four times the force of resistance of French free stone and which has nearly all of the properties of Cobestang granite. It has been tried in the Malines arsenal and is found to be insensible to the action of cold, absorbs only six to seven per cent. of water, even after a long dry spell, and can not be crushed under a pressure of 40 kilograms (88.184 pounds) to the square centimeter. This artificial stone is manufactured at Uccles, near Brussels, in the following manner: Eighty parts of extremely clean and dry coarse sand are mixed with twenty parts of hydraulic lime reduced to a fine dry dust; this mixture is put into an iron box, which is plunged into a boiler of water, and this is hermetically closed. During seventy-two hours, the cooking goes on under a pressure of six atmospheres, the temperature being maintained at 165°. At the end of this time, the iron box contains a perfect homogenous mass of stone, which rapidly hardens upon exposure to the air. The most varied colors are given to this stone, and its manufacture costs only two cents per cubic foot.

Transfer Ornaments, AMERICAN MADE.

TRADE MARKS, DECORATIONS, NAME PLATES, ETC.

For **HARDWARE, BICYCLES, VEHICLES, POTTERY, FURNITURE, etc.**

Sketches submitted free of charge. Being home makers can deliver promptly. Write us.

THE MEYERCORD CO., Inc., MAIN OFFICE— CHAMBER OF COMMERCE, - CHICAGO.

Canadian Travelling Representative,
CHAS. H. JAGGAR, Buffalo, N.Y.

Largest Makers in the World Guaranteed Decalcomania Transfers.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

CAPTAINS OF INDUSTRY.

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

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

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, bolting, lubricants, machinery supplies, wood or iron working machinery, ventilating and drying apparatus; pumps, valves, packing, dynamos, motors, wire, arc and incandescent lamps, and an infinite variety of electrical supplies, chemicals, acids, 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.

Fire in Molino & Robertson's picture frame factory, Montreal, on November 4th, did damage to the extent of about \$10,000.

The Farmers' Binder Twine Company, of Brantford, Ont., has declared a dividend of 100 per cent. on their entire paid-up capital stock for the year 1899. Last year the same company declared a dividend of 60 per cent.

The Lennoxville Water Works, with head office at Montreal, is applying for incorporation with a capital stock of \$50,000 to construct water works anywhere in Canada, etc. Messrs. T. J. Drummond, G. E. Drummond, J. T. McCall, C. E. Gudewill and Frank Thompson are to be provisional directors.

The R. M. Beal Leather Co., Lindsay, Ont., has been incorporated with a capital stock of \$99,000 to acquire the business of R. M. Beal and manufacture leather, etc. R. M. Beal, John Welsh and Andrew Patterson are provisional directors.

The Canada Corundum Co., with head office at Toronto, has been incorporated with a capital stock of \$250,000 to operate corundum mines, to manufacture corundum goods, etc. The provisional directors are Messrs. J. N. Sheustone, B. A. C. Craig and Lloyd Harris.

The high character and educational value of the literature issued by the B. F. Sturtevant Co., of Boston, is well evidenced by the following extract from a letter recently received by them:—"I am much indebted to you for a gift of a copy of your Treatise on Mechanical Draft. It will be of much aid to me in the preparation of my hand-

book. Previously, when I had needed to consult it, I have made a trip of twenty-five miles to Syracuse to consult the copy in the Syracuse Public Library." This book is an authoritative work of some 400 pages, and deals not only with the problem of mechanical draft, but with all the important factors concerned in steam boiler practice. Although originally issued for free distribution, the constantly increasing demand for it has necessitated placing a nominal price of \$1.50 upon it. The second revised edition has just been issued.

Nanaimo, B.C., will grant a bonus of \$3,000 for a large boot and shoe factory to be erected there.

Messrs. Bullock & Son, at Molita, Man., will enlarge their grain elevator and warehouse.

J. Woods will erect a brick warehouse at Ottawa, which will be five stories high and 100x40 feet.

Parinton's grist and saw mills at Richmond Corners, N.B., were recently destroyed by fire.

The Record Foundry & Machine Company's establishment at Moncton, N.B., which was recently destroyed by fire, will be rebuilt.

The Kingston Locomotive and Engine Works, Kingston, Ont., will erect an addition to their buildings and plant at an expenditure of \$50,000.

Messrs. W. R. Brock, W. D. Matthews, Frederic Nicholls, T. W. Horn, and E. B. Osler, of Toronto; Wm. Hendrie, of Hamilton; and W. H. Winslow, of Chicago,

have been incorporated "to carry on a general foundry and machine shop business, to manufacture every description of iron, steel and other metal work, and to deal in the same, the corporate name of the company to be The Canada Foundry Company, Limited, with head office in Toronto.

The Northern Pacific Railway Co. will erect a station and elevator at Beaver Creek, Man.

Dubu's vinegar factory at St. Hyacinthe, Que., was destroyed by fire November 10th. Loss about \$5,000.

The Canadian Pacific has placed an order with the Richmond, Va., Locomotive Machine Works for twelve compound consolidation locomotives, to be delivered in May, 1900. The specifications for an engine to weigh in working order 150,000 pounds, with high pressure cylinders twenty-one by twenty-six inches, and low pressure cylinders thirty-three by twenty-six inches. The boiler to be of the Belpaire type, with a diameter at the smallest ring of 60 inches and working pressure of 200 pounds. The firebox is to be 109 inches long and 42 inches wide. The tubes are to be 255 in number, 12 ft. 11 1/2 inches long and two inches in diameter. Tender frames of steel, water capacity of tank 4,000 gallons. The special equipment is not yet decided.

The Metagama Lumber Co., Orillia, Ont., has been incorporated with a capital stock of \$100,000.

The Canadian Nickel Co., Worthington, Ont., has been incorporated with a capital stock of \$90,000.

The Canada Foundry Co., Toronto, has been incorporated with a capital stock of \$1,000,000.

The Spanish River Pulp and Paper Co., Toronto, has been incorporated with a capital stock of \$1,500,000.

The waterworks and electric light system of Grand Forks, B.C., will be enlarged at a cost of \$30,000.

Tenders are called for the introduction of an electric light system to be worked by water power, by the town of Newcastle, N.B.

A glue factory, 120x60, will be erected immediately at Vancouver, B.C.

Port Colborne, Ont., will grant a bonus of \$25,000 towards a blast furnace it is proposed to erect at that place, to cost \$300,000.

There is a movement on foot to introduce waterworks and electric light at Windsor Mills, Que.

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.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Since the 21st of October, the town of Dundalk, Ont., has been basking in the rays of the electric light, their new plant having been started upon that day, everything moving smoothly. The plant is owned and operated by the Municipal Council, and consists of Leonard engine and boilers, and an S.K.C. 30 k.w. dynamo. The streets are lighted with incandescent lamps, and make a very nice appearance.

The Palmerston Carriage Company of Palmerston, Ont., have decided that the old-fashioned kerosene lamps are not good enough for them, and have placed their order with the Royal Electric Company for a complete electric lighting equipment, consisting of a 100-light dynamo, switchboard, and all necessary wiring throughout the factory.

Fire and an explosion caused by water falling into a retort of the Dominion Carbide Company's works at Ottawa on Nov. 6th, nearly destroyed the establishment.

The Schultz Bros. Company are about to make an extensive addition to their factory at Brantford, Ont. The immense growth of the firm's business during the past few years has been crowding the factory to such an extent that it was well nigh impossible to get the work done. The firm have prepared plans for a very extensive addition to the works.

Shurly & Dietrich new bedstead factory at Galt, Ont., is a very compact and substantial structure in two parts. The moulding shop is a large and well-lighted building, a part of which will also be used for painting the beds. This building is almost finished. The main factory has not yet got the roof on. It will practically be three stories high. The two main flats will be left whole, two rows of big square posts running from end to end. The building is constructed on modern factory lines. We understand that Messrs. Shurly & Dietrich intend next summer to erect more buildings alongside their present ones.—Galt Reporter.

A consignment of about one million feet of choice lumber, for shipbuilding purposes, is being sent from Vancouver, B.C., to the Cramp Shipbuilding Co. at Philadelphia, to be used in the construction of some of the war vessels that concern is constructing for the United States Government.

The premises and contents of the Ontario Power and Flats Company, Toronto, were destroyed by fire November 4th; loss about

\$17,500. The upper portion of the building was occupied by Messrs. W. Spamer & Co., Gilchrist & Co., and Fraser & Co., as furniture factories. The portion occupied by the Ontario Power & Flats Co. was equipped with valuable drying kilns, which were destroyed, together with a quantity of valuable lumber sent there to be dried, belonging to Messrs. A. A. Barthelme & Co., manufacturers of piano actions, and to Messrs. Menzies, Turner & Co., manufacturers of picture frames, etc. both of Toronto. The whole plant is kept up to the highest standard, and every reasonable allowance is made for wear and tear.

The New York Air Compressor Company has just been organized with a capital stock of \$100,000, to manufacture a complete line of air-compressing machinery. The company have purchased a complete foundry and machine shop plant at Arlington, N.J., their head office being at 120 Liberty street, New York. The officers of the company are J. W. Duntley, president; Alexander McKay, vice-president, and W. P. Pressinger, secretary-treasurer.

At the National Convention of Ice Manufacturers at Indianapolis, Ind., last summer, while the question of the best method of filtering was being discussed, one of the leading manufacturers made a statement that he had tried every scheme of which he had ever heard for cleansing distilled water from oil without satisfactory results, until about a year ago, when he put in an Austin Oil Separator, manufactured by the Austin Separator Co., Detroit, Mich. Since that time he has had absolutely no trouble, and has secured perfectly clear ice. As he used water distilled from exhaust steam, his experience will go far to clear up the problems which confront so many engineers who use exhaust steam, and have the trouble consequent to feeding oil in the boiler, or steam pipes where exhaust is used for heating. The Austin Steam Separator is also said to do equally good work in eliminating moisture from live steam.

A Niagara Falls press telegram speaking regarding the project for an immense paper mill to be backed by the Edward Lloyd Company, Limited, of London, and others, say: Among the actual steps that have already been taken by the syndicate is the acquiring of 3,000 square miles of timber land in Canada, also the right to the use of water representing 20,000 horse-power. The plant will be erected on the Canadian side

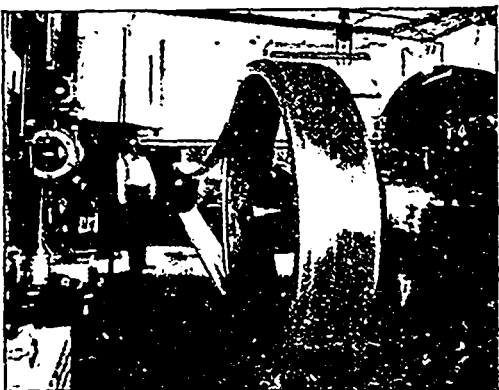
of the river in the immediate vicinity of Niagara Falls, and its construction and equipment will cost, it is said, between \$5,000,000 and \$6,000,000. Ground will be broken in the spring. Two thousand men will be employed when the mill is running full blast, and its capacity will be 600 tons a day, Manila and book paper, and bleached sulphite pulps for ruling and fine paper. It is understood that some of the machinery has already been ordered.

The property owners of Shipton, one of the eastern townships of Quebec, have voted favorably on a by-law to authorize the Municipal Council to lend to A. J. Morrill \$10,000, to be used in the construction of a pulp mill at his water power at Nicolot Falls. Mr. Morrill binds himself to expend in labor and material for the manufacture of pulp \$1,000 per month. A condition of the loan is that the work must be begun within twelve months, and that the money is not to be paid until the machinery is in the mill. The water power which Mr. Morrill proposes to utilize is known to be one of the best in the Eastern Townships. It has 55 feet of head.

It is stated in a recent bulletin of the French Chamber of Commerce in Montreal that the caviar made by the Americans from the roe of sturgeon caught at the mouth of the River Delaware is inferior to the article made by Canadians from sturgeon roe taken on the great Lakes Huron, Erie, Ontario, and on Lake Winnipeg. There is a caviar factory on the Lake of the Woods, which turns out about \$30,000 pounds per year, valued at \$20,000. There is an establishment of the kind at Norman, on the Lake of the Woods.

The removal of the Phoenix Bridge and Iron Works from 29 McGill street, Montreal, to Outremont, near that city, is contemplated. Owing to the expansion of the business, the present premises have become too cramped for carrying on the firm's operations. As it is impossible for the firm to purchase land in the vicinity of the present works, the moving to a suburb is the only solution of the difficulty. If the change is made the company will give employment to about 200 hands.

The Richmond Electric Company, of Richmond, Que., have installed a second 75 k.w. S.K.C. generator to meet the increasing demand for electric lights. They have also installed a number of motors of from 5 to 15 h.p., operated from the S.K.C. system.



BROWN, DURRELL & CO.

CLING-SURFACE MFG. CO., Buffalo, N.Y.
DEAR SIR,—Having tried Cling-Surface on my 12" dynamo belt 116 feet between centres I have been able to carry full load with 27" sag on belt with no perceptible slip. It surpasses my expectations, and I can recommend it to do all that is claimed for it, if directions are followed.
Yours respectfully,
E. R. PITSFORD, Engineer.

FOUR
MONTHS
AGO

THIS BELT WAS AS TIGHT AS A FIDDLE STRING UNDER ABOUT 1000 lbs. INITIAL TENSION, AND YET WAS SLIPPING. THERE IS NO SLIP NOW, FOR IT RUNS SLACK. CLING-SURFACE DID IT.

Boston Branch:

170 Summer Street.

CLING-SURFACE MFG. CO.

120-126 Virginia St., BUFFALO, N.Y.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

It is announced that a syndicate is being formed for the purpose of erecting a number of hotels at different points among the Muskoka lakes, north of Toronto. The intention of the promoters, who are backed by the Grand Trunk Railway, is to erect at least five first-class hotels suited for the best class of tourist traffic. The buildings would be of wood or brick, as circumstances permit, and would have every modern improvement, including thirty bathrooms in each. Each hotel would accommodate 300 guests, the rates running from \$3 to \$8 per day. The whole circuit would be under one central management.

A press telegram from Montreal states that the Montreal Rolling Mill Company of that city are making overtures to the Town Council of Sydney, N.S., looking to the establishment there of large works by the Rolling Mill Company. If an arrangement is made, it is probable large iron and steel works will be established at Sydney.

The Ontario Provincial Secretary's Department, during the month of October, received upwards of \$10,000 in fees for the granting of charters to joint stock companies. This is the highest record for any month in the history of the province, and surpasses the yearly totals for some years in the past.

D. I. Hamlink's evaporating works, Port Hope, Ont., was destroyed by fire Nov. 5th. Loss about \$4,000.

Webster & Boyes' carriage factory, at Napanee, Ont., was destroyed by fire Nov. 5th. Loss about \$1,600.

The Gallagher Hull Meat & Packing Co., of Edmonton, N.W.T., is applying for incorporation with a capital stock of \$75,000 to operate a meat packing industry. The provisional directors will be Cornelius Gallagher, W. H. Hull and J. S. Wilmott.

The McBurney-Beattie Co., Toronto, has been incorporated with a capital stock of \$40,000 to manufacture and deal in bicycles, horseless vehicles, etc. The provisional directors are James McBurney, J. A. Coulter and Rebecca M. Morrow.

The Magann-Fawke Lumber Co. has been incorporated with a capital stock of \$300,000 to manufacture lumber, etc. Head office at Toronto. Provisional directors, G. P. Magann, Alexander Fraser and E. J. Fawke.

The Finchwood Preservative and Paint Company, Toronto, has been incorporated with a capital stock of \$20,000 to manufacture the Finch wood preservative, paints, etc. The provisional directors are David Bell, Alexander McDonald, J. D. Bell and W. P. Bull.

The McLaughlin & Sons Co., Limited, Owen Sound, Ont., has been incorporated with a capital stock of \$150,000 to acquire the business of Messrs. J. McLaughlin & Sons and manufacture confectionery, biscuit, etc.

The Ontario Power & Flats Company's drying kilns, Toronto, were destroyed by fire November 4th. Loss about \$17,500.

The Dowling Milling Co., Edmonton, N.W.T., has become incorporated with a capital stock of \$40,000 to erect and operate flour mills, grain elevators, etc. William Dowling, R. P. Ottwell and J. H. Dowling are provisional directors.

The capital stock of the Merchant Cotton Company, Montreal, has been increased from \$1,000,000 to \$2,000,000.

The Harriston Pork-Packing Co., are about erecting works at Harriston, Ont., and the town will guarantee the company's bonds to the extent of \$20,000.

The Toronto Rubber Shoe Mfg. Co., whose head office is in Toronto, is applying for authority to have its power extended to enable it to carry on the business of generating electric light for commercial purposes.

The name of the Schlomann Mfg. Co., Montreal, has been changed to the Empire Mfg. Co.

The capital stock of the Light, Heat and Power Co., of Lindsay, Ont., has been increased from \$70,000 to \$125,000.

The Barrio Wicker Work Mfg. Co., Barrio, Ont., has been incorporated with a capital stock of \$10,000 to manufacture rattan and wicker work, baskets, furniture, etc. H. H. Strathy, G. H. Esten and Samuel Wesley are provisional directors.

The Walkerville Novelty Co., Walkerville, Ont., has been incorporated with a capital stock of \$10,000 to manufacture laundry buttons, advertising, and other novelties, etc. S. A. King, C. J. Stodgell and H. B. White are provisional directors.

The Goldie-McCulloch Co., Galt, Ont., have received a photograph of one of their safes which passed through the great fire at New Westminster, B.C., on September 10th last. The safe is labelled: "This safe passed through the New Westminster fire of September 10th with its contents uninjured."

B. A. Gordon's planing mill at Glencoe, Ont., was recently destroyed by fire.

The Vulcan Iron Co., Winnipeg, Man., have received an order for the valves and pipes for the softening works, in connection with the new waterworks system, which is being established in Winnipeg.

Toner's flour mills, Kingston, Ont., were partially destroyed by fire November 6th.

REDDAWAY'S ORIGINAL

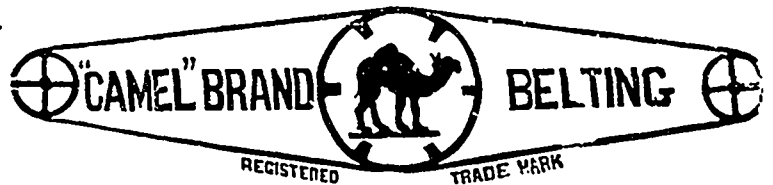
CAMEL BRAND HAIR BELTING

STRONGEST BELT MADE. NO STRETCHING.

NOT AFFECTED BY DAMPNESS,
HEAT OR STEAM.

WRITE FOR PARTICULARS. LARGE STOCK ON HAND.

Fire Hose, Steam Hose, General Mill Supplies.



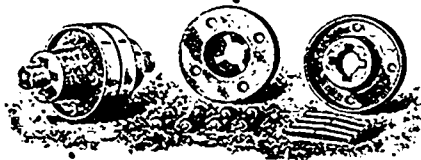
W. A. FLEMING & CO., SOLE AGENTS FOR CANADA, 57 St. Francois-Xavier St., Montreal.

Nicholson Patent Flanged Face Compression Shaft Coupling

Is easily and quickly attached to or detached from shafting.

Will adjust to a somewhat larger or smaller than standard size shaft.

Has DOUBLE the grip of other COMPRESSION COUPLINGS and is the most perfect-fitting coupling made.



Saves cost of key-seating shafts, fitting keys, and refacing couplings after being keyed on shaft.

Holds the shafts in accurate alignment with each other, the jaws being full length of coupling and extending over both shafts.

Has a very powerful grip equally exerted from FOUR sides (not on two sides as with the majority of couplings).

PRICE LIST AND DISCOUNT ON APPLICATION.

Our New Supply Catalogue (Desk or Pocket Size), will be mailed free to anyone on application.

WE CARRY WOOD SPLIT PULLEYS, STEEL SHAFTING, LEATHER AND RUBBER BELTING, COUPLINGS AND SAFETY COLLARS IN STOCK

THE FAIRBANKS COMPANY, 749 CRAIG STREET, MONTREAL

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The plant of the Sun Oil Refining Co., at Hamilton, Ont., was destroyed by fire November 3rd. Loss about \$10,500.

The Brackman-Ker Milling Co., Victoria, B.C., has been incorporated with a capital stock of \$500,000, to acquire the business of the Brackman & Ker Milling Company.

Kaddatz' saw mill at Sebastopol, Ont., was destroyed by fire recently. Loss about \$1,800.

The Coldbrook Rolling Mills Co., St. John, N.B., are erecting a warehouse 100x50 feet, two storeys high.

The Jonquiere Pulp Company, St. Dominique de Jonquiere, Quebec, has been incorporated with a capital stock of \$40,000.

One of the most interesting features of the altogether novel equipment of the United States repair ship Vulcan, which did such good service in the late Spanish-American war, was a complete foundry plant. This consisted of a 28-inch cupola, with a maximum capacity of 4,000 lbs. at one heat. Blast was provided by a No. 5 Sturtevant blower, which, in connection with the sys-

tems of blast piping and engine equipment for driving the fans, was installed by the B. F. Sturtevant Co. of Boston, Mass.

Messrs. Richardson & Sons, Bedford, N.S., have purchased a complete electric lighting plant from the Royal Electric Company for their factory. The Maritime Electric Company of Halifax are making the installation.

Malone & Robertson's picture factory, Montreal, was destroyed by fire Nov. 4th.

Some months ago the B. F. Sturtevant Co., of Boston, in a neat little pamphlet entitled "Draft Without a Chimney," presented their experience with mechanical draft, and pointed out its salient advantages. The demand for information has necessitated the publication of a third edition, which has just been issued, and may be had upon application.

The Trent River Paper Company, of Frankford, Ont., have placed their order with the Royal Electric Company for one of their 40 k.w., S.K.C. two-phase generators, with full complement of transformers and supplies. It is the intention of this

company to not only light their own large premises, but also the following neighboring villages, viz Frankford (one mile distant), Stirling (two miles distant), and possibly Foxboro and Wooler (six miles distant). Work of excavation was commenced on the 27th of May last, and the fact that within the next two weeks this company will be making paper is an evidence of the capabilities of the manager, Mr. Walter S. Miller.

Additional machinery is being placed in the rope department at the Central Prison, Toronto. There has been a big demand for certain classes of rope, and the extra machines are to supply the demand. The factory at present is turning out nearly five tons of rope and twine per day.

Miller's Tanning Extract Co., of Miller-ton, N.B., make, on an average, 325 barrels of hemlock extract every week, to do which forty-five cords of hemlock are required.

Edmonton, N.W.T., offers a free site and exemption from taxes for ten years, to any practical men with sufficient capital, who will build and operate a machine shop and foundry at that place.

THE CUMMER DRYERS.

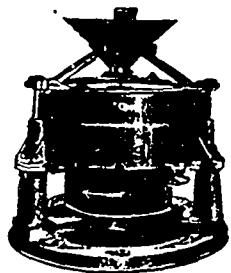
FOR Mechanically Drying Everything

THE F. D. CUMMER & SON CO.,

HUNDREDS IN OPERATION.

CLEVELAND, OHIO.

ROCK



SEND FOR CIRCULAR.

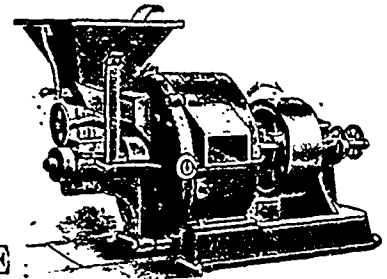
EMERY

MILLSTONES

CHEAP. DURABLE.

EMERY STONES are Made to Fit ANY MILL FRAME :

MILLS



GRINDS EVERYTHING.

STURTEVANT MILL CO., BOSTON, MASS.

Shafting—Hangers—Pulleys

FRICITION CLUTCH PULLEYS AND COUPLINGS

Rope Transmission of Power.

HANDSOME ILLUSTRATED CATALOGUE ON APPLICATION.

DODGE MANUFACTURING CO. OF TORONTO, Limited, - - TORONTO.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The steamer Sardinian, which is now transporting the Canadian contingent to South Africa, is well supplied with artificial illumination for "The Soldiers of the Queen." The Royal Electric Company of Montreal began the installation of a complete electric lighting equipment on this steamer on October 21, and turned over the plant, consisting of one 20 k.w. direct current generator, with 325 lights installed, complete in operating condition on October 26th.

The Clement & Clement Co., Montreal, manufacturers of addressograph machines, etc., having procured a fine new factory building well equipped with best modern machinery, are prepared to accept orders for light and accurate machinery, dies and tools, etc.

It will be noticed that the Rex Cash Register Co., Toronto, are offering for sale their complete factory plant in which is included lathes, drills, milling machines, dies, etc., and also their cash register patents for Canada and the United States. We are informed that the tools and appliances of their factory have been but very little used and are in first-class condition. The plant

is offered for sale owing to the death of the managing director. This is an excellent opportunity to purchase a first-class plant on reasonable terms.

John Forman, Esq., Montreal, importer of electrical supplies, etc., has removed his office and warehouse from 644 Craig street, to new and larger premises at 708-710 Craig street.

An instructive illustration of the results attending the use of mechanical draft is presented in the experience of the Utica-Portland Cement Co., Utica, Illinois. The change was recently made from a chimney to a Sturtevant fan as a means of draft production. They say, "We formerly used five boilers and had trouble to keep up steam with a good grade of coal. We now use four boilers, and coal costing us 35 cents per ton less, and have no trouble in keeping a good head of steam."

The factory of the Ontario Puro Foods Co., St. Catharines, Ont., was destroyed by fire November 5th

The town of Barrie, Ont., is to have a second electric light company. Mr. W. H. Meldrum, with a number of local people,

have formed a new company, and purchased a complete outfit, consisting of a Leonard-Ball engine and boilers, and from the Royal Electric Company a complete "S.K.C." two phase system, the dynamo having a capacity of 50 k.w. The work of installing the new plant is now under way.

The much talked of Ayr, Ont., electric road, according to the Ayr News, will soon be commenced. The cost, including equipment, will be nearly \$2,000,000, to which amount it is stated some \$100,000 will be contributed by municipalities through which the line will pass. The proposed route is from Port Dover, through Simcoe, Waterford, Brantford, Paris, Ayr, Rossville, Blair and Berlin. It will at Galt make connection with the electric road running from this place to Hespeler.

The ratepayers of Goderich, Ont., will vote on a by-law to raise a bonus of \$55,000 by debentures, to assist a Belgian manufacturer to establish a glass factory in that town.

The fruit evaporating factory of D. I. Hamlink, at Port Hope, Ont., was destroyed by fire on November 5th; loss about \$4,000.

THOMPSON & CO.

Manufacturers of **BOBBINS and SPOOLS**

FROM SELECTED STOCK.

Correspondence Solicited.
Orders Promptly Filled.

Sherbrooke, P.Q.

BELTING

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Leather Belting,
Lancashire Hair,
English
Card Clothing,

D. K. McLAREN

Head Office and Factory—
MONTREAL

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WESTERN TRADE—TORONTO STOCK DEPOT,

Phone 374

88 BAY STREET.



HORIZONTAL—Sizes 14 to 12 inches.
VERTICAL—Sizes 14 to 10 inches.

DRY STEAM—CLEAN EXHAUST.

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Exhaust Steam is now used in all up-to-date power plants, and in order that it be used to best advantage it is necessary to get rid of the oil and other impurities which it contains.

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WIRE MANUFACTURERS
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HAMILTON & MONTREAL.



Wire Screens for Every Class of Material.

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

Special Attention given to Minors' Requirments.

THE HAMILTON BLAST FURNACE.

The furnace of the Hamilton Blast Furnace Company is to be practically rebuilt and many valuable improvements made, regarding which The Spectator says:

The smelting works people a short time ago had an expert here for several days making a thorough examination of their furnace, and his report, which contained some very unpalatable news, was considered yesterday by the directors. The expert says that the furnace has practically to be rebuilt, and the company must erect another stove and put in another blowing engine, at a cost to them of at least \$50,000. Mr. Wilcox has gone to Philadelphia to make a contract with an engineering company there for this work, and as soon as the material is on the ground and the contractors are ready, which it is expected will be within the next two months, the furnace will have to be closed down for thirty days to allow the repairs and additions to the plant to be made. The life of a furnace, like that of a man, is most uncertain. They have been known to last for seven years, although frequently three to four years is the limit. While they are about it, as the expense is not much more, the company will enlarge

the bosh so that the furnace will have an ultimate capacity for turning out 250 tons of iron per day. It was originally built to make 200 tons, but the company found that there was no market for more than 100 tons, and so reduced the size of bosh about two years ago to produce that amount. The new steel plant will consume about fifty tons a day, and, as owing to the great scarcity of iron in the United States, there is at present a larger demand for the company's product, the directors consider it good business to have the plant put in shape to produce the greatest amount it is capable of. The directors think they can sell 150 tons per day while the present boom lasts, and Hamilton will then have a furnace capable of turning out 90,000 tons of iron per year, more than has ever been used in Canada in one year.

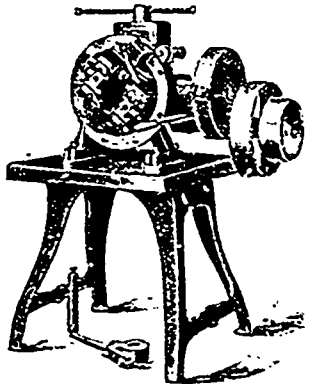
The Bridge and Tool Company has completed the new buildings for the steel works, and will commence its construction within a few days, and the company hopes to have the steel plant going by the time the furnace is put in blast, after the contemplated repairs are made.

It is said that an immense pulp mill is to be erected next spring in the neighborhood

of Ottawa, on the Gatineau River, to have a capacity of about 300 tons of pulp per day. The machinery, most of which has been ordered, and a great part already completed, is of American make, and is in every respect of the most scientific and modern manufacture. The product of the mill will include book and newspaper, fine paper, manila paper, and bleached sulphite paper for railing. When running at full time the mill will employ from 1,800 to 2,000 workmen, and the cost of its establishment will be between \$5,000,000 and \$6,000,000. It is expected by the promoters of the scheme that the mill will be in operation by next autumn. British capital is behind the enterprise. Negotiations are on foot for acquiring 3,000 miles of spruce limits on the Upper Gatineau, with a view to supplying the proposed mill with raw material.

Among the shipments made recently by the Goldie-McCulloch Co., Galt, Ont., were two gas engines, one large banker's safe, a large Waukegan engine to the Berlin, Ont., Rubber Co., one gyrator to a flour mill at Amherstburg, Ont., two cars of sugar machinery to Mexico, two cars of machinery and several express boxes to St. John, N.B., and two heavy vault doors.

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No. 60 Machine, Power Attachment.

ARE MADE BY THE **ARMSTRONG MFG. CO.**
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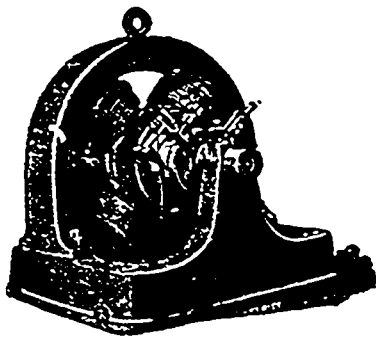
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A NEW SHIPBUILDING PLANT.

Mr. J. J. Long, president of the Collingwood, Ont., Dry Dock Company, states that arrangements are about complete for establishing at Collingwood a modern shipbuilding plant of very large proportions, at first capable of building four full canal-sized ships at once, or, if necessary, to build a 500-foot ship. The machine tools and entire equipment will be capable of turning out any steel ship that will be required in lake or canal trade. Arrangements for all this have been quietly going on for several months, and lately Captain Alexander McDougall of Duluth, formerly General Manager of the American Steel Barge Company, has decided to become a large stockholder and director in the company, and is at present helping the other directors to select machinery, machine tools, superintendents, foremen and men to properly start the enterprise. It is expected to have the works in full operation in four or five months, and so that the first steel ship can be launched by the middle of next summer.

Some special arrangements have been made in regard to the ship plate and material which cannot be explained at present. The Collingwood dry dock and grounds will be turned over to the new company, who will enlarge and rebuild the present dry dock up to the full requirements of trade.

ANOTHER IMMENSE CANADIAN INDUSTRY.

James Conmee, Esq., M.P.P., was in Toronto this week and states that Mr. F. H. Clergue, president of the Sault Ste. Marie Pulp and Paper Co., and largely interested in other industrial enterprises in Algoma, is the moving spirit in the organization of the Ontario Lake Superior Company with a capital stock of \$20,000,000 to acquire the control of the Algoma Commercial Company and the Algoma Central Railway Company, by which the new company will come into possession of some 2,000 square miles of timber and mineral lands in that county. A railroad line is being built as part of

the project, and forty miles is to be in operation next year, from Michipicoten harbor, on Lake Superior, to two hematite iron mines, one of which is the Helen mine, owned by the Consolidated Lake Superior Company, in the Michipicoten range. The plan is eventually to extend the road 120 miles to connect with the Canadian Pacific at or near Missanabic.

It is estimated that the company will handle during its first year 1,500,000 tons of ore for the Consolidated Lake Superior Company.

Mr. Conmee, who has charge of the construction work on the railway, states that 2,000 men are at present employed in connection with the company's projects.

CANADIAN GRAPHITE.

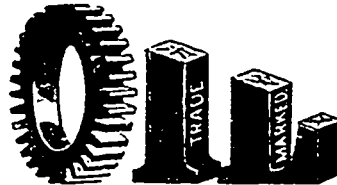
Mr. J. H. Orr, of Wilkesbarre, Pa., visited Canada some weeks ago looking for asbestos or timber rights, and in his explorations stumbled upon one of the finest graphite finds that has been made in this country. This graphite is claimed to be of the purest quality, and that there never has been anything brought on to the market or put in the hands of the mineralogist for analysis that can be compared with it for purity.

The mine is located near Pointe au Chene, Ont., and after a week's prospecting Mr. Orr is more than satisfied that he had made a valuable discovery. A gang of men have been employed on the find and they have succeeded in proving the property very thoroughly. The result of the prospecting is that they have made several openings and the graphite brought to light is of the highest grade. Competent judges state that

"Capitol" Cylinder

"RENOVN" ENGINE

"ATLANTIC" RED



RELIABLE WELL-KNOWN BRANDS.

ALL ORDERS PROMPTLY FILLED

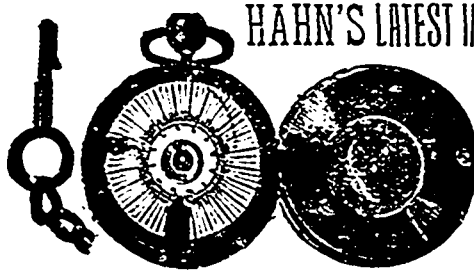
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QUEEN CITY OIL CO.

LIMITED,

SAMUEL ROGERS, President.

TORONTO, CANADA.



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This Clock is adapted for six or twelve stations, and the keys are all different, ranging from 1 to 6, and 1 to 12, instead of as in the old style Time Detectors, which mark either by holes or an impression on the dial, being the same for all stations.

For Circulars, prices and further information address

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This Clock received the First Prize at World's Fair.



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The Diamond Machine & Screw Co. Manufacturers of TORONTO, Limited.

MACHINE SCREWS and BICYCLE PARTS OF EVERY DESCRIPTION



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Recognizing the importance to the manufacturing industries of Canada of all matters touching Export Trade we have decided to open a Bureau of Information embracing every point of interest connected with this subject, and which Bureau is available to all our many patrons.

The very great experience of this house in this and in all commercial affairs an experience extending over one hundred years, and our connection with the British consuls throughout the world, enables us to extend to our patrons information both valuable and reliable - for instance:

To give them the names and addresses of ACTUAL BUYERS in any line of trade, and in any country in the world.

To answer special inquiries of every character relating to trade interests.

To give PRIVATE information of a Commercial nature.

To quote Tariffs, Imports and Exports of any country, and leading industry of any City in the World.

To give Rates of Freight and Marine Insurance, and to advise as to the manner of shipping goods and collecting accounts, etc., and we cordially invite our Patrons to make use of this Bureau of Information free of charge, and also to make full use of our offices in Toronto and abroad, and all other reasonable information and services to promote the export of Canadian manufactures.

KELLY'S DIRECTORIES, Limited

25 Victoria St., Toronto, Ont.

both for quality and density they never saw anything to compare with it.

Mr. Orr, in speaking of the find, said that he did not intend to take any chances when he made the discovery, so he took off his coat and went to work with the idea of proving the property himself. This he did to his entire satisfaction.

A sample of the graphite is on exhibition in the Star office window, on St. James St. Mr. Orr states that this, with other samples which he has sent to different parts of the

country, are taken from the top of the mine, and there is every indication that lower down the vein becomes even richer and heavier.

Graphite is largely used as a lubricator, and is to be found in electric light works as well as in machine shops generally. It is considered a very valuable mineral, particularly when found in any quantity. Mr. Orr is perfectly satisfied that he has struck pure decemonte graphite, and in such quantities that the value of the property is an assured fact.--Montreal Star.

CROW'S NEST COAL.

Mr. J. A. Gemmill of Ottawa, a director and the solicitor of the Crow's Nest Pass Coal Company, was in Toronto a few days ago on his return from Fernie, B.C., near which place his company's mines are. Speaking to a reporter Mr. Gemmill said:

"I first visited Fernie, B.C., in July, 1898. It was then a place of most primitive appearance, with wooden shacks filled with navvies and other workmen about railways.

John R. Barber, President.

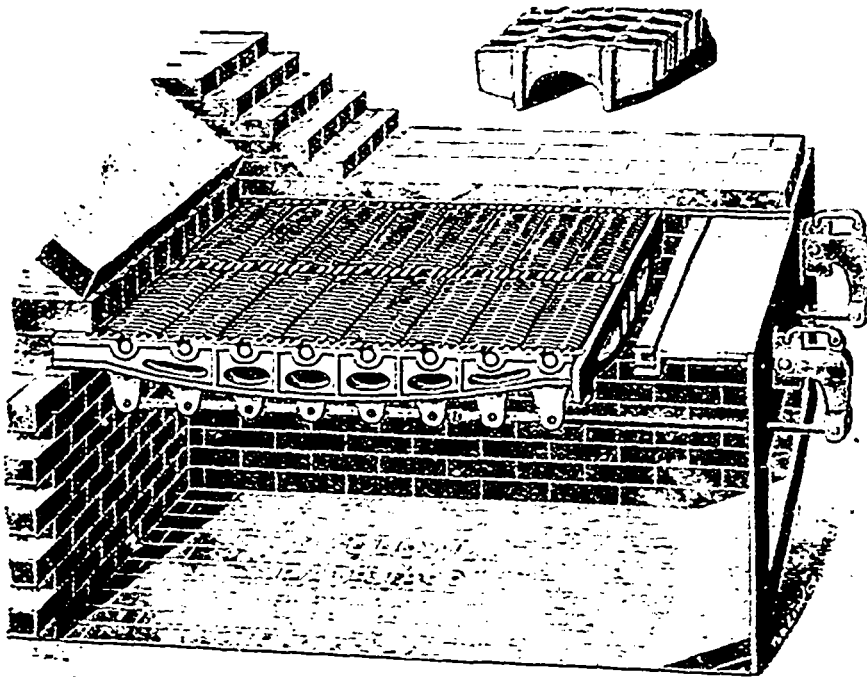
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Henry Truesdell, Bus. Man.

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Economy of Fuel and Increased Boiler Efficiency Guaranteed.

Cut shows construction of the Grate. No alteration of Plant necessary.



**SIMPLICITY,
DURABILITY,
ECONOMY.**

Burns the Cheapest
Fuel with the
Best Results.

*A Boy Can
Operate It.*

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TESTIMONIALS.

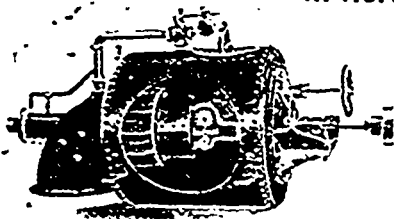
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by...

Cyclone Grate Bar Co.,

10 KING STREET WEST,
TORONTO, CAN.

THE **Crocker Patent Turbine**

In Horizontal Setting, with Quarter Turn Elbow.



Where the nature of the location will permit its use this type has many advantages. It is very suitable for direct connection to dynamos, and many are in operation in this class of service.

Notice how complete and compact this arrangement is, and how easily it may be installed. Can you use anything of this kind? Your inquiries will receive prompt attention.

WATER POWERS examined and
Reports made. Estimates
submitted for Complete Equip-
ments.

The JENCKES MACHINE CO.,
42 Lansdowne St., Sherbrooke, Que.

"On my recent visit, at the end of October, I found in place of it an elegantly laid out town, with numerous buildings, comprising stores, hotels and private residences. These were lit by electric light and supplied with a water service, and there was a population of about 1500 people. There were besides over 200 coking ovens, two-thirds of which were in full operation, and numerous cars loaded with coal and coke, going east and west. At the coal mines, four miles distant, as great a change presented itself.

"In the interval since I was there last one mine had been excavated to the extent of sixty acres and over 100,000 tons taken out. Another mine, while not so extensively worked, presented a 12-foot seam of excellent coal, at which miners were busily at work. Surrounding the works were excellent houses for miners and other operators. The marvel was that all this had been accomplished within the short period of one year. Previous to that these coal mines were practically inaccessible, there being no habitations or railway conveniences nearer than 150 miles. The directorate of the company had been most active in their efforts to develop this property and meet the public demand for cheap coal and coke.

"There are at present over 250 men employed in the mines, and the average output is 700 tons a day. Of this over 300 tons a

day is converted into coke and sold to the smelters of British Columbia and the adjoining American States. The demand for the coke is most encouraging and confirms the opinion of chemical experts that its quality was the best on the continent. The coal itself is excellent and finds ready purchasers for railway and domestic purposes.

"The Crow's Nest Pass Railway proceeds from Lethbridge through the company's property on to the foot of Kootenay Lake, where connection is made with Nelson."

Toronto will shortly have another important manufacturing industry. Application has been made for a charter of incorporation for the Canada Foundry Company, with a capital of \$1,000,000, and as soon as the necessary formalities have been observed operations will be commenced. The personnel of the company includes Messrs. E. B. Osler, M.P., W. R. Brock, W. D. Matthews and Frederic Nicholls, of Toronto; Wm. Hendrie of Hamilton; T. W. Horn and W. H. Winslow of the Chicago firm of Winslow Bros., said to be the largest architectural iron workers on the continent. Mr. Winslow will be the practical man of the company, and superintendent operations. It is the intention to establish a foundry in Toronto, and later on another in the west, probably at Vancouver. All kinds of cast-iron work, including every branch of architec-

tural work, will be turned out. In the development of Canada the iron industry has not kept pace with the other lines, and large consumers like the Canadian Pacific and Grand Trunk Railways have been compelled to go outside the country to get their work done. The Canada Foundry Company propose, by having an establishment up to date in every respect, constructed and equipped under Mr. Winslow's supervision, to be able to cater to all the requirements of Canadian consumers.

The Tycoon Mining Company this week closed an order with Mr. George J. Ross, of the Jencks Machine Co. for a complete hoisting plant, consisting of standard 6x8-in. double cylinder single drill hoisting engine, with 30 horse power boiler, also wire ropes, sheave wheel, ore bucket, pumps and all accessories. When the new machinery is installed Manager Griffin purposes pushing development as rapidly as possible. The results this season have been very gratifying, and have warranted this expenditure on machinery.—Rat Portage Miner.

..CHICAGO.. TIME RECORDER

A RELIABLE TIME RECORDER MUST POSSESS THESE THREE QUALIFICATIONS.

1. It must be an accurate Timepiece.

We use the famous SETH THOMAS CLOCK.

2. —IT MUST PRODUCE A CLEAR RECORD, AND ONE THAT CANNOT BE DISPUTED.

Our Sight-opening feature, whereby each man can inspect his record when made, eliminates all chance for dispute.

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The "CHICAGO" has less complicated mechanism than any other Recorder made, and by the simple manner of operating employees can register two-fold more rapidly than on any other.

If you have none you pay for it in lost time every year.

CHICAGO TIME REGISTER CO., CHICAGO, ILL.

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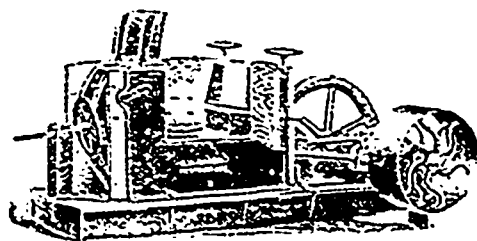
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IRON FOUNDER and MACHINIST

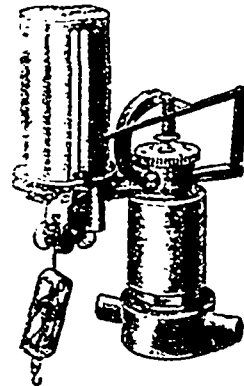
Manufacturer of

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 Gig Dyeing Machines.

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The McInnes Indicator...



(Patented).

With Vulcanite Sheathing for all Speeds and Pressures. Adopted by the British Admiralty.

SPECIAL INDICATORS

For Gas and Explosive Engines, Ammonia Compression Machines, Torpedo Boats, Launches and Locomotives.

Patent Flexible Unstretchable Wire Cord for Indicator Leads.

Catalogue on application. SOLE MAKERS

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HARDWARE and METAL

Bar Iron, Steel, Boiler Plate Tubes.

MACHINIST TOOLS, PIPE FITTINGS.

A COMPLETE STOCK OF STOCKS and DIES. PIPE VICES.

STILLSON & TRIMO WRENCHES.

STEAM PIPE.

Cor. King and Victoria, TORONTO

CLING-SURFACE FOR BELTING.

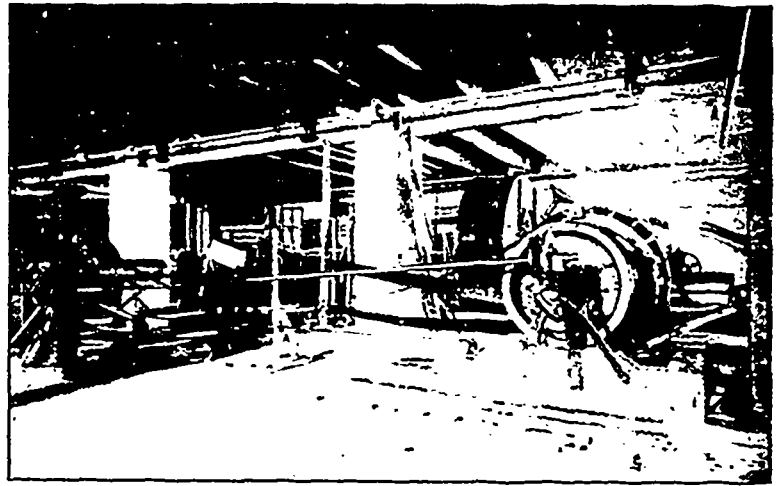
Every user of power who has occasion to transmit power by means of belts knows that he is handicapped to greater or less extent by loss of power arising from slipping of his belts. He knows also that it is to his advantage to prevent this loss if possible, but how best to effect the saving is a conundrum that he is not always prepared to answer. If the belt is too tight it is liable to break, and if it is not tight it is apt to slip. The thing to be desired is something that will allow of the least possible amount of tension without slipping.

Having reference to an exhibit at the New York Electrical Exhibition a few months ago, the Electrical World and Engineer says:—

Those interested in belt transmission of power find in the display of the Cling-Surface Mfg. Company, of Buffalo, N.Y., an object lesson that is well worth, and generally receives, their careful attention. This exhibit is a practical one, for the practical man, and is devoid of any fancy frills which might detract from its real purpose. The object aimed at is to demonstrate that an average of 40 per cent. more power can be transmitted by a belt treated with Cling-Surface than with one not so treated. This is done by means of machines arranged in this manner: A direct current 10-hp 110-

volt Westinghouse motor, running at 750-rpm, drives, by means of two four-inch belts on its one pulley, two 3½-kw, 125-volt Westinghouse multipolar dynamos, each running at 1000-rpm. Thus the two dynamos being of the same capacity and deriving their power from the same source enable a comparison of the performance of the two belts, which are of the same size, and made from the same piece of leather. The tension on the belts is obtained by means of heavy spring scales pulling at the back of the machines. The belt treated with Cling-Surface has a tension of 115 lbs., while that without Cling-Surface pulls on its machine with a tension of 200 lbs. The Cling-Surface belt runs slack while the other one runs tight, and the slackness of the former belt may be varied within a considerable range with but little effect on the lamps. A similar variation in the tension on the tight belt, however, produces a very marked

change in the light. Tests are made to show that there is no slip on the Cling-Surface belt, while on the other there is constant slippage. It is claimed that belts treated with Cling-Surface do not slip and that they will transmit power up to their breaking limit. In this exhibit the loose belt does twice the work of the tight belt, thus demonstrating the advantage to be gained by the use of Cling-Surface. The load on the machines consists of two lamp signs at the back of the booth, reading: "Without Cling-Surface," and "With Cling-Surface." These two signs



Belt Testing Machine, Sibley College.

Experimental Engineering in Sibley College, Cornell University, at Ithaca, New York, who in writing to Cling-Surface Mfg. Company, of Buffalo, N.Y., says:—

GENTLEMEN:—I beg leave to report that the Laboratory force of Sibley College have, under my directions, tested the effect of applying Cling-Surface to belt-

ing. The tests were in every case made on the belt-testing machine owned by Sibley College: this is so constructed that the belt can be tested under ordinary running conditions and measurements can be made for determining the power supplied, the power delivered, the tension of the belt, the arc of contact on either pulley and the slip. This machine has been used in extensive investigations for determining the efficiency of belting and is described in Volume XV., Transactions American Society of Mechanical Engineers. Three belts have been tested each before and after testing with Cling-

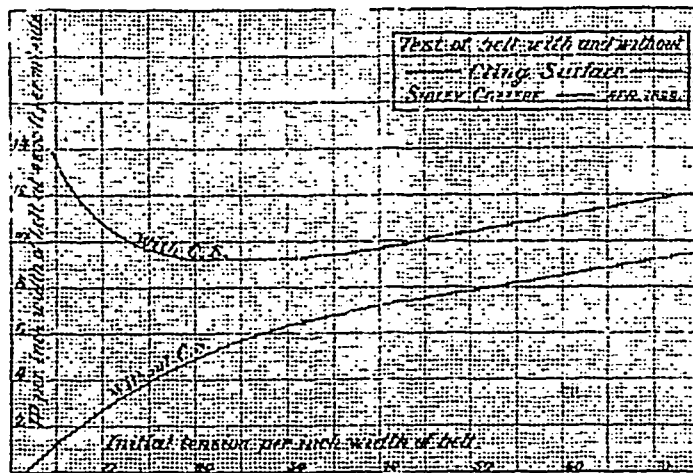


Fig 1.

Surface and each under various conditions of loading. In all over fifty tests have been made; a considerable number of observations have been repeated in order to check the accuracy of the results. The belts before testing were in every case clean and in good condition and running under rather better than average conditions.

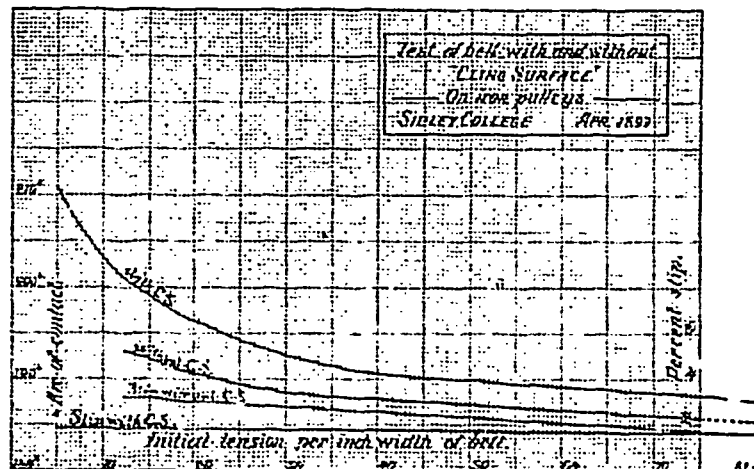


Fig 2.

enable a comparison of the results of using treated and untreated belts.

From this it may very reasonably be inferred that Cling-Surface has revolutionised the method of running belts, from tight belts with their attendant troubles and annoyance,

to slack belts with no slipping and the minimum amount of tension—that we are entering upon an era of peace for belt users.

The accompanying illustrations have reference to the tests recently made with Cling-Surface by Professor R C Carpenter, in the Department of

Surface and each under various conditions of loading. In all over fifty tests have been made; a considerable number of observations have been repeated in order to check the accuracy of the results.

The belts before testing were in every case clean and in good condition and running under rather better than average conditions.

The Cling-Surface was applied on several successive days and in small quantities in accordance with the directions supplied by the manufacturers, before commencing the tests. The material was almost wholly absorbed at the time of starting the test, and none has since been applied. The material made the belt soft and pliable and gave it an inner surface somewhat resembling patent leather. This surface was only in the least degree sticky to the touch.

The general results of the test with Cling-Surface show an increased transmitting power as compared with the same belt in an untreated condition; it also shows an increased arc of contact, and very much less slip. It shows a very high transmitting power when the belt is run extremely loose or with very little tension on the pulleys, the reverse of which is true with the untreated belt. It will be seen by consulting the data that the

greatest transmission capacity for the belt treated with Cling-Surface was found when there was the least possible tension on the belt and when the belt was running so slack that the sides very nearly touched. It will be noted also that the slip of a treated belt is much less, and the arc of contact greater for a given total tension than with the untreated belt.

The falling off in carrying capacity with increase of belt tension for the treated belt is doubtless due to the rapid change in the arc of contact, which diminishes with increase of tension. This causes a diminution in the transmitting power which is greater than that produced by the increase of pressure due to the increased tension on the belt. With the untreated belt such change is very slight, and consequently a falling off in carrying capacity for light tension takes place.

In regard to the questions raised as to the preservative qualities of Cling-Surface and to the permanency of the effect produced by

its application, the writer would say that our tests have of necessity been of too short duration to give conclusive answers. The general effect of the Cling-Surface is to soften the belt and put it apparently in the best condition for transmitting power and retaining its good qualities. The surface produced by the Cling-Surface remains apparently unchanged after several weeks of use, and the inference to be drawn is that the material has an effect which continues permanent for some time at least.

The foregoing report was written in April last. Since when in October, Prof. Carpenter again writes to the Cling-Surface Mfg. Co. :-

Later tests of the use of Cling-Surface on belting substantiate in every particular the statements made in my report of April 17th. They also indicate higher efficiency of transmission and less loss of power than in the case of belts treated with Cling-Surface than in the case of belts not so treated,

when working under the conditions prevailing at the time of the earlier test. This is due to the fact that the slipping of a belt causes considerable loss of power, the power so lost passing off in heat. The use of Cling-Surface reduces the slipping and consequently reduces the loss of power occasioned by the use of belts that slip.

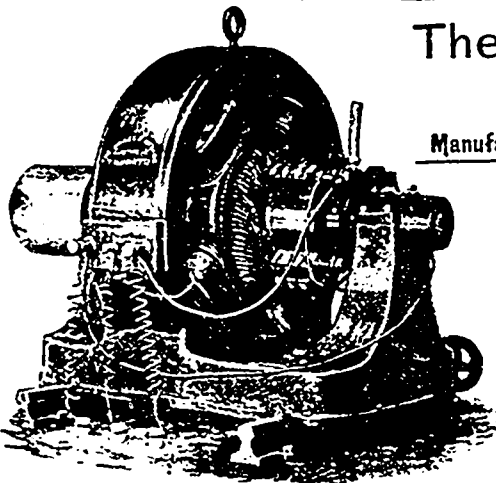
During the past six months I have had occasion to observe the practical use of Cling-Surface in a number of instances. In all such cases Cling-Surface has improved the belts by softening them, and as far as I can determine in the limited time (seven months) tends to preserve the leather of which they are constructed.

THE LITCHFIELD CAN FAUCET.

The Can Faucet shown in the accompanying illustration is being marketed by J. M.



Litchfield, 105 Beekman-street, New York. The special claim made for this faucet is its



The Jones & Moore Electric Co.,

Manufacturers and Contractors

All Work Fully Guaranteed

ELECTRIC LIGHT and POWER PLANTS a Specialty

A Few Second-Hand A 1 Machines For Sale Cheap

20 and 22 ADELAIDE STREET WEST TORONTO

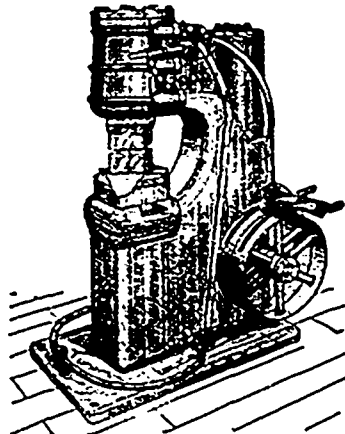
The Yeakley Vacuum Hammer.

Canadian Patent November 9, 1897.

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

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EAGLE FOUNDRY, MONTREAL.



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FLOUR, SPICE AND

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MACHINES MADE TO ORDER

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Warehouse Elevator Works Electric or Steam.
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"IDEAL" ACETYLENE GAS BURNERS

\$2.40 per dozen; \$20.00 per gross.

FOUR LIGHT CLUSTER—\$2.00 each. Larger sizes on application.

"IDEAL" Carbide Sub-Merging Acetylene Gas Machines,

15 to 2,000 Lights. WRITE FOR PRICES.

"IDEAL" BURNERS and MACHINES are the BEST in AMERICA.

Manufactured by **J. WALLACE & SON,**

GET THE "IDEAL."

HAMILTON, ONT.

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 Parthons's Sts.,
MONTREAL, Que.

low cost, which, however, the manufacturers state, does not mean an inferior quality of workmanship.

It is simple in construction, nickel plated and neatly finished. It is made in sizes of $\frac{3}{4}$ and $\frac{1}{2}$ inch, with plain shank or with long threaded hexagonal nut.

This faucet is used in very large quantities by manufacturers of oil cans, filters, coolers, incubators, etc. They are all well made so that they work smoothly and are capable of long service without leaking.

THE IOWA STOCK FOUNTAIN.

The accompanying illustration shows the Iowa Stock Fountain as attached to barrel or tank, with parts broken away to show the working parts. Water runs from the barrel or tank through hose (B). When cup (A) fills to proper depth, it overcomes the adjustable weight on back end of drinking cup and it tips forward, compresses the hose and stops the flow. When water is drunk from cup (A) it tips back, letting in a new supply.

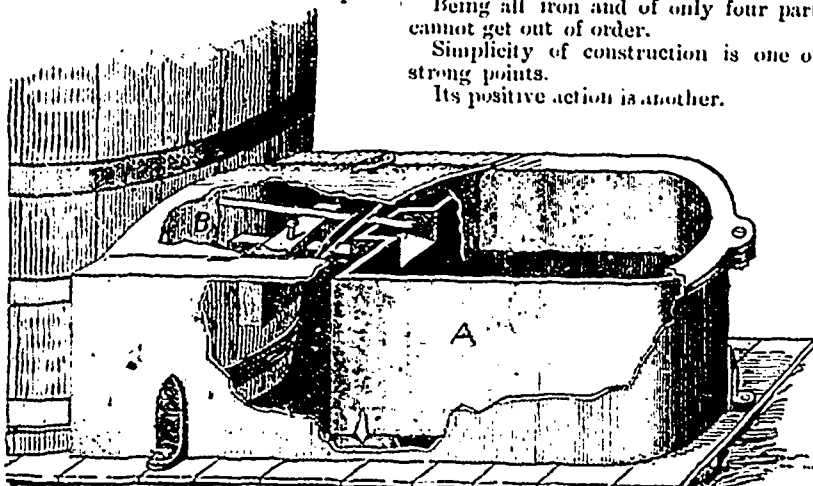
It works on the principle of a weighing scale, and is just as positive in its action. The stock drink the water, the fountain does the rest.

Hogs positively cannot run the water out of barrel or tank with this machine. The harder they push on the bottom the more securely is the water shut off.

Being all iron and of only four parts it cannot get out of order.

Simplicity of construction is one of its strong points.

Its positive action is another.



MR. G. B. THISTLETHWAYTE
OF SYDNEY, NEW SOUTH WALES,

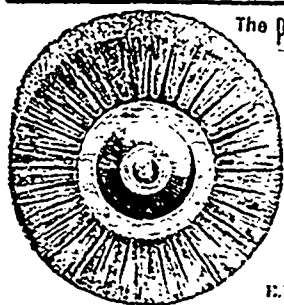
Will be in Canada about November 1st, to arrange for Australian agencies. If you have no agents in that country please write, stating lines of goods you make suitable for that trade. Best of references. Address

THE CANADIAN MANUFACTURER,
McKinnon Building, Toronto.

FRICTION PULLEY BOARD If you are not yet using it, send for sample.

The Dominion Leather Board Co.,
MONTREAL, QUE.

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FACTORY

Manufacturers of
ALL KINDS
OF BRUSHES.

ORDERED
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BRADSTREET'S

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Offices Throughout the Civilized World.

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

THE BRADSTREET COMPANY gathers information that reflects the financial condition and the controlling circumstances of every seeker of mercantile credit. Its business may be defined as of the merchants, by the merchants, for the merchants. In procuring, verifying, and promulgating information no effort is spared, and no reasonable expense considered too great that the results may justify its claim as an authority on all matters affecting commercial affairs and mercantile credit. Its offices and connections have been steadily extended, and it furnishes information concerning mercantile persons throughout the civilized world. Subscriptions are based on the service furnished, and are available only by reputable wholesale, jobbing and manufacturing concerns and by respectable and worthy financial, fiduciary and business corporations. Specific terms may be obtained by addressing the Company at any of its offices. **CORRESPONDENCE INVITED.**

Toronto Office, - Cor. Jordan and Melinda Streets.

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THOMAS C. IRVING, - - General Manager Western Canada, - - TORONTO.

THE SMART-EBY MACHINE CO.,

Steam and Gas Engines,
Pumping Machinery,
General Machinery.

LIMITED

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WRITE US BEFORE PLACING YOUR ORDER.

ONTARIO GOLD MINING DISTRICT :

- Sultana Mine.
- Foley Mine.
- Mikado Mine.
- Olive Gold Mine.
- Cameron Island Mine.
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A Few Mines



WHO USE

BRITISH COLUMBIA :

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

CANADIAN RAND DRILL COMPANY, Montreal

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

No push valve to run your tank empty.
No float to water-log, corrode and become worthless.

No leather valves to curl up or rot.
No complicated arrangement of screws, locknuts, washers, etc., to need repairing continually.

Just the fountain every farmer wants. A fountain that a mischievous colt or horse cannot destroy. A fountain that an old sow cannot run to suit herself. One that is a credit to a farmer's hog-lot and not a nuisance.

This device is fully covered by patents in United States and Canada, and the proprietors desire to dispose of their Canadian patent right. The utility of it commends itself, and the low cost at which it can be manufactured should induce some enterprising manufacturer or foundryman to take hold of it. For further information correspond with Allon Glenn, Esq., Scranton, Iowa.

THE CYCLONE GRATE BAR.

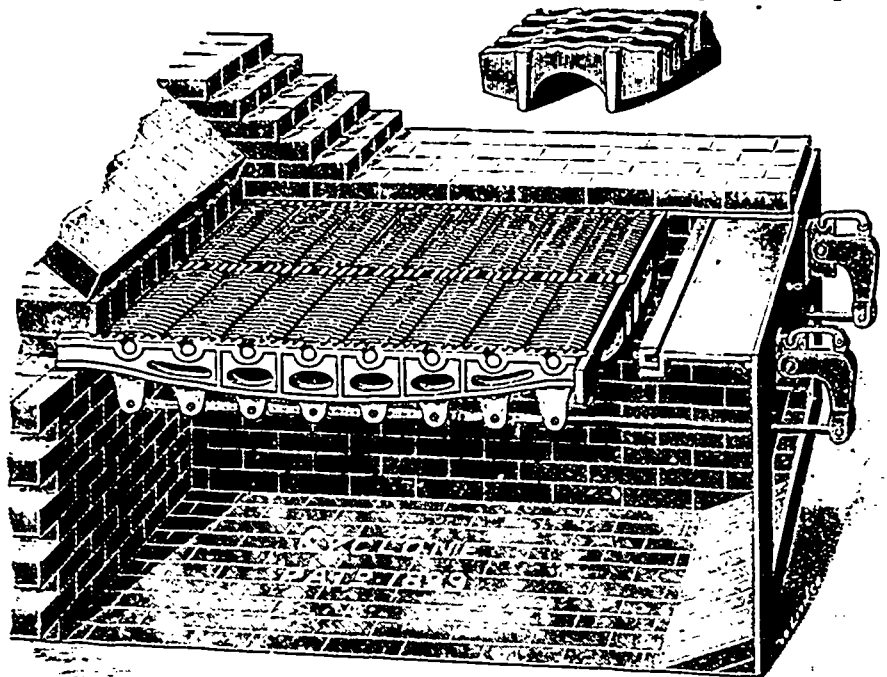
The accompanying illustration is of the Cyclone Grate Bar, manufactured by the Cyclone Grate Bar Co., Toronto.

This apparatus is the invention of Mr. Henry Truesdell, a mechanical engineer of many years' experience in connection with some of the largest and most important manufacturing concerns in Toronto, a most desirable feature of it being that it is perfectly well adapted to use under any steam boiler.

Some of the more prominent features claimed for the Cyclone Grate Bar are.— Its simplicity, durability and economy in fuel, its superiority as a draft grate, no rockers nor complicated parts to get out

of order underneath the bar to obstruct the draft, the rolling and lifting movement, when shaken, keeps the air space open and causes no friction on the draft passing through the bar, it has ninety per cent.

most practical bar for round furnaces and range ovens, it is a perfect bar for all internal fire boilers, there being no part in the way to prevent the fireman cleaning out the ashes, the air is passed through and



under draft, the frame locks together without bolts, and is easily placed under the boiler, it will not lock nor bind in frame. Always shake freely, space in ash pit same as in ordinary bar, its adaptability as a

over top of frame—keeps frame cool and cannot warp, all parts of the bar and frame are trussed and bridged, it will burn the cheapest fuel with the best results, it will evaporate the maximum of water per pound

When were
Your
BOILERS
Last
Inspected?

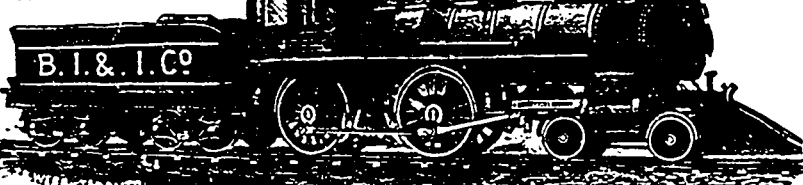
Consulting Engineers—
G. O. ROBB, Chief Engineer
A. FRASER, Sec. Treasurer

JOHN L. BLAIKIE ESQ.
PRES.

EW. RATHBUN ESQ.
VICE PRES.



OF CANADA



Head Office, - TORONTO.

Are You
sure they
are **SAFE**
and in
Good Con-
dition?

Reduce Your Fuel Bills
Increase Your Output...

BY USING
The IMPROVED JONES UNDERFEED STOKER

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

NO ASHES. NO SMOKE. NO TROUBLE. NO MONEY REQUIRED IF GUARANTEES ARE NOT FULFILLED
The First and Only Successful Underfeed Stoker.

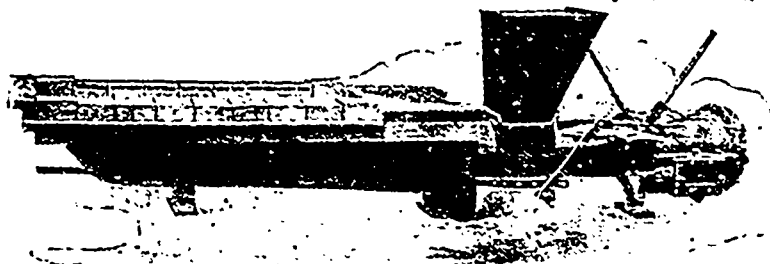
No Underfeed Stoker is successful without infringing our Patents, and the public are warned against importing or using infringing devices.
NB Have you seen our Underfeed as applied to Houses, Schools, Churches, etc. (Send for Circular).

For Estimates and other Information write
The General Engineering Co. Limited

SOLE MANUFACTURERS FOR CANADA,

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

Montreal—A. TREVETHICK, - Box 1123.



When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

of coal, it is level at all times when locked; no bars stick up in the fire to burn off, it will not break the boiler front when shaking. A boy can operate it.

Last May Mr. W. Cross, general master mechanic of the Canadian Pacific Railway shops at Winnipeg, Man., caused a test of the relative merits of the Cyclone and another grate to be made in his shops, and reporting thereon to Mr. Truesdell stated that the Cyclone showed up much more favorably than the other, and that the report of the inspector was also favorable, showing that the Cyclone was more easily managed and not as liable to get out of order. The test showed a saving of one ton of coal in each five hours of steaming, an increase in boiler capacity of 25.77 per cent. and an increase of revolutions of the engine 12.3 per minute.

Under date of July 25, 1899, the Gurney Foundry Company wrote Mr. Truesdell as follows:—"We have examined the Cyclone grate and Mr. Truesdell's ideas of same, and have so much confidence in the simplicity, durability and common sense construction, and find that it covers all the objections of the best grates now on the market, that we have arranged with Mr. Truesdell to manufacture same for our entire line of heating boilers, and have already gone to a very heavy expense in changing our grates, as we believe the advantages in using this grate in our line will more than repay us for this large outlay."

Mr. Walker, of the Walker House, Toronto, under date of July 28, 1899, writes: "In regard to your enquiry about the Cyclone Grate. We have had two sets under our boilers for the last six months, and can safely say that they have done all that is claimed for them. They work as perfectly and as easily as when put in, and we think there can be no better draft grate. Our ashes show good combustion with no waste of coal, and it cleans the fire evenly all over the surface, when shaken. Numerous engineers and experts have come here to see them, and all have gone away pleased with the workings of the grate. The simplicity, durability and economy of the Cyclone Grate places it up to the 100th mark. We take pleasure in recommending

it to all steam users, and are pleased to show the grate at work at the Walker House under boiler."

An agreement has recently been made with Mr. White, General Manager of the Western Division of the Canadian Pacific Railway, for the right of that company to

manufacture the Cyclone Grate for its entire system.

The personnel of the Cyclone Grate Bar Company includes John R. Barber, Esq., M.P.P., president, George E. Challes, secretary-treasurer, and Henry Truesdell, business manager.

STEEL PLATE ELECTRIC FAN WITH ENCLOSED MOTOR.

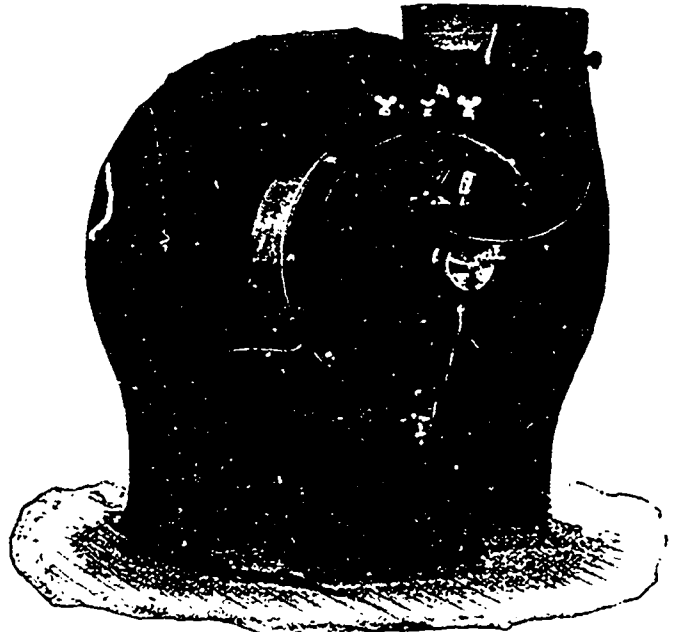
One of the greatest difficulties in employing an electric fan under certain conditions lies in the prevalence of dust in the atmosphere, which would ultimately injure or derange the motor. To obviate this difficulty a special type of fan with enclosed motor has been designed, and is being built by the B. F. Sturtevant Co. of Boston, Mass.

As shown in the illustration, the fan itself is of their usual steel plate construction. To its side is attached a cast iron plate having three projecting lugs. These center and support the field ring, while a light cast iron support renders the whole arrangement entirely stable.

The motor itself is of the four pole type, the armature being barrel wound, and the general construction such as to best suit the conditions specified.

Carbon brushes and reaction holders are employed, and the entire design is made such as to insure continuous operation without sparking even when left unattended for considerable periods of time.

The hemispherical castings which are



Fan With Enclosed Motor.

The London Machine Tool Co., LONDON, ONT.

Toronto Office, {PHONE} MANUFACTURERS GENERAL MACHINERY....
42 York Street. { 293 } OF

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—Engine, Gap, Break, Turret, 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.

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

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

THE GARTSHORE-THOMSON PIPE & FOUNDRY CO. Limited



3 in. to 60 in. diameter.

For Water, Gas, Culverts and Sewers

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

THE CANADIAN COLORED COTTON MILLS COMPANY.

- Cottonades, Tickings, Denims,
- Awnings, Shirtings,
- Flannelettes, Ginghams,
- Zephyrs, Skirtings,
- Dress Goods, Lawns,
- Cotton Blankets,
- Angolas, Yarns, etc.

Only Wholesale Trade Supplied.

D. MORRICE, SONS & CO.

AGENTS

MONTREAL and TORONTO.

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bolted to the sides of the field ring, serve to entirely enclose the motor, while the floor in the outer casing renders it perfectly accessible.

Ring oiler bearings support the shaft, and all trouble from oil is absolutely avoided. Fans of this style are primarily constructed for ventilating purposes, and under such conditions create pressures of about 1 oz. per sq. in. They can however be constructed to create higher pressures, and to serve as exhaust fans for the handling of refuse material.

A LARGE STORAGE BATTERY INSTALLATION.

The Ottawa Electric Co., according to the Ottawa Evening Journal, is installing in connection with its supply of power an auto-

matic storage battery, which is intended to do away with the fluctuations in the supply of power caused by the sudden stoppage or start of a considerable amount of current.

In Ottawa the supplying of electric power has not yet reached very great proportions, and is made up of numerous small motors, a good proportion of which are for elevators, which are started and stopped suddenly, and which make the load on the generators fluctuate greatly; it has been the experience of the company that it is impossible with the water wheel, even with the best governors on the market, to prevent considerable fluctuations of pressure. This, of course, causes the motors to move faster or slower as the case may be, and in some classes of work this is very objectionable.

In order to overcome and provide a reserve from which the motors can be supplied in

case of a temporary interruption at the power house, this storage battery plant is being installed. This plant comprises 250 cells of chloride accumulators. Each cell is set up in a square glass jar about 14 inches square by 20 inches high, standing on a wooden tray filled with fine sand, the tray insulated from the bench by porcelain legs. They are set up in rows to occupy a space about 60x14 feet and will weigh about fifteen tons.

This storage battery will act very much as an auxiliary reservoir to a water supply. When the pressure in the line is above the normal the battery takes up the electrical energy, and when the pressure falls, the battery feeds into the line helping out the generator and maintaining an even pressure at all times. The variations in speed will disappear, and all fluctuations of pressure will be taken care of so that the generators at

JOHN J. KELLER & CO.

104 and 106 MURRAY ST.
NEW YORK

220 Church St., Philadelphia.
135 Pearl St., Boston.
18 Pryor St., Atlanta, Ga.

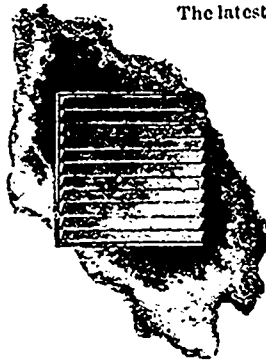
**Aniline Colors,
Dyewood Extracts,
Sumac and
Nutmeg Extracts.**

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

MANUFACTURED BY
JOHN R. GEIGY & CO.
BASLE, SWITZERLAND

**LIGHT YOUR
FACTORY WITH**

LUXFER PRISMS



The latest device for

LIGHTING

dark rooms and
offices

By Daylight

For catalogue
and estimates
write to

Luxfer Prism
Co'y, Limited.

58 Yonge Street, - TORONTO.

**You
Are
Thinking**

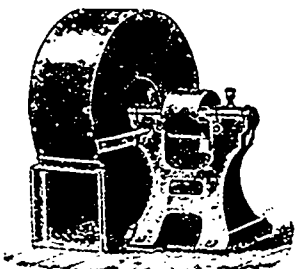
of putting in New Shafting,
Pulleys, Hangers, Tube Cut-
ters, Pipe Cutting Machines,
Swing Saws, Wood Lathes,
Dough Mixers, or Paper Box
Machinery.

We

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

G. T. PENDRITH & CO.,

73 to 81 Adelaide St. West,
TORONTO.



Fan.

**PLANING MILL STEEL PLATE
EXHAUST FANS**

For removal of refuse from Wood-Working
Machinery.

**CYCLONE DUST
SEPARATORS**

Made of Galvanized Steel. All Sizes for Fans
from 30 inches and up.

Estimates cheerfully given for Complete Installations of Fans,
Piping, Gates, Hoods and Separators, with or without
Shavings Feed Attachment to Boiler Fires.

McEACHREN HEATING AND VENTILATING CO.,
GALT, - ONT.

WE MAKE

Forge, Cupola and Disc Fans, Electric Fans, Heaters and Fans for
Lumber and Wool Drying, etc., and for Heating of Factories.

STEAM TRAPS, OIL SEPARATORS, ETC.

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F. E. ATTEAUX & CO.

53 Colborne Street,
Toronto.

15 Lemoine Street, Montreal.

Boston, New York,
Philadelphia, Chicago, and
Gloversville, N.Y.

**Dyewood Extracts,
One Dip Alizarines,
Aniline Colors,
Dyestuffs and
Chemicals.**

The Canadian Manufacturer, Toronto, Canada.

Devoted to the Manufacturing Industries of the Dominion.

J. J. CASSIDY, - - - Editor and Manager.

the station might be cut off and put on without consumers noticing it. The action of the battery is entirely automatic.

A UNIQUE ELECTRICAL INSTALLATION.

The United Electric Company, Toronto, give us some important and interesting information regarding an electric installation very recently completed by them in the large new warehouse of Messrs. Gowans, Kent & Co., in Front Street East, Toronto. It includes a complete direct connected 250 volt electric plant for lighting and power service in the warehouse alluded to, which operates some 400 incandescent lamps—250 volts—also three elevator motors, which they believe is the first complete installation in Canada operating 250 volt lamps.

In evidence of the completeness of this installation, and of the satisfaction it gives, the United Electric Company send us a copy of a letter dated November 8th instant from Messrs. Gowans, Kent & Co., in which they say:—

"We are pleased to say that the electric plant which you installed for us in September last, consisting of 30 k.w. multipolar generator direct connected to 9x10 Robb engine and Mumford boiler is giving the best of satisfaction. We are glad that we followed your suggestion to adopt the 250 volts pressure instead of 110 as we contemplated, thus enabling us to operate our light and motors jointly, with greater economy, and also to connect our circuits at any time to the commercial power circuit should we not desire to operate our engine.

"We heartily recommend the adoption of this system for isolated power and light plants and you are welcome to bring prospective customers to examine our plant."

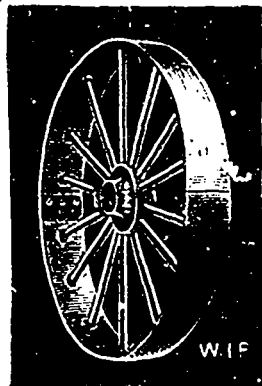
RAILWAY BUILDING IN MANITOBA AND THE WEST.

There has been a great deal of railroad construction by the C.P.R. during the past season and advantage will be taken of this



THE UNBREAKABLE PULLEY
and MILL GEARING CO., Limited.
 HUNTERS LANE, WEST CORTON, MANCHESTER, ENGLAND.

Agents Wanted.



PULLEYS . .
BEARINGS . .
SHAFTING . .
Gas Engines.

If you want your building effect
 ively heated

THE
STURTEVANT SYSTEM

will do it

If you want it thoroughly venti-
 lated at the same time

THE
STURTEVANT SYSTEM

will do it

If you want to utilize your ex-
 haust steam

THE
STURTEVANT SYSTEM

will do it

If you want to eliminate all direct
 steam pipe

THE
STURTEVANT SYSTEM

will do it

If you want to cool and ventilate
 your building in summer

THE
STURTEVANT SYSTEM

will do it

If you want to centralize your en-
 tire heating plant and
 place it under one man's
 control

THE
STURTEVANT SYSTEM

will do it

If you want to know all about
 THE

STURTEVANT SYSTEM

of heating and ventilation by
 a forced circulation of warm
 air, send for Catalogue No. 84

B. F. STURTEVANT Co.
 BOSTON, MASS.

New York Philadelphia Chicago London

present fine weather to continue as long as the season will permit. Following is a list of the extensions :

The Snowflake branch, 17½ miles from a place known as First Siding. West Larioviere, southeast of Snowflake, has been completed.

Wiskada branch, running southwest from Doloraine, six miles, and then 12¼ miles due west, is being pushed to completion.

Pipestone branch is being extended forty-seven miles, running west from Antler. Over thirty miles of the line will be completed this year.

Macgregor branch, to Varcoe, on the G.N.W. Central Railway, forty-nine miles, twenty-four of which will be graded this year.

Lac du Bonnet branch, twenty-four miles of which will be completed this winter.

North Star branch from Cranbrook, B.C., to Kimberly, twenty-two miles, will be completed in about a month.

Arrowhead and Kootenay Railway, along the north arm of Kootenay Lake, running towards Revelstoke, will be completed this year.

Boundary Creek Line, from Robson to Midway, is just about completed, a distance of 120 miles. This road may be continued next year.

The G.N.W. Central line, going west of Hamiota, a distance of twenty-five miles, will also be completed this year.

The Lake of the Woods Milling Co. will erect offices and warehouse in Montreal.

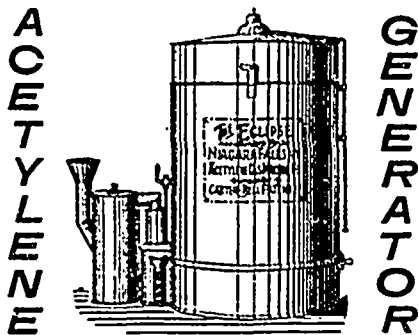
THE PULP INDUSTRY IN NOVA SCOTIA.

The Sissiboo Pulp and Paper Company, composed of Montreal, New York, Halifax and Weymouth, N.S., capitalists principally, commenced operations on November 1st, and their enterprise will be rapidly pushed on.

A few days ago the company took over the mill of the Sissiboo Falls Pulp Company, and purchased some twenty thousand acres of excellent woodland on the Sissiboo River and its tributaries, and have so far expended about \$150,000 in acquiring properties, franchises, etc.

Their location is on the Sissiboo River, Nova Scotia, where a pulp mill has already

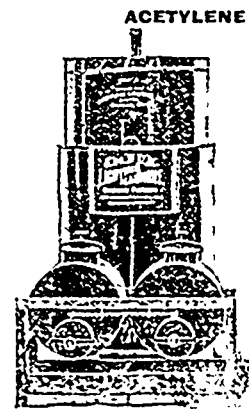
The ECLIPSE



BUILT ESPECIALLY
For Private Residences,
Offices or Small Stores.
PRICE COMPLETE, - \$25.00
Write for particulars.

NIAGARA FALLS ACETYLENE
GAS MACHINE CO., Limited,
Niagara Falls, Ont. or N.Y.

Sun Lighting Machine.



The Acme of Perfection in Lighting.

At the Minimum of Cost.

Suitable for any place where Artificial Light is required. Dwellings, Stores, Churches, Factories, Hotels, Street Lighting, etc.

Write for Catalogue.

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

THE "SAFETY" Acetylene Gas Machine

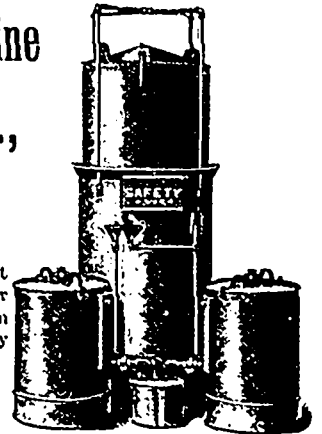
Manufactured by

THE SAFETY LIGHT AND HEAT CO.,
DUNDAS, ONT.

WHAT SOME OF OUR FRIENDS SAY OF US:

GENTLEMEN.—The machine placed in our church by your agent works perfectly, doing exactly what you claimed. The light is far superior to anything we have yet seen, being exceedingly free from any tendency to irritate the eye. The cost is far below that of any illuminant we know of.

REV. F. W. MURRAY,
"The Mause," Milltown, N.B.



Felts for Pulp Mills

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

HAMELIN & AYERS, Lachute Mills, P.Q.

McLachlan Electric & Gasoline Motor Co., LIMITED.

94 ADELAIDE T. WEST. TORONTO.
Gas or Gasoline Engines from 1 h.p. to 6 h.p.
Stationary or Marine and Electric Motors from ½ h.p. up.
Motor Carriages for Pleasure or Business. One cent spent for a postal will bring you any information you wish.

All Kinds of Machinery

Light and Accurate Machinery more specially manufactured under contract. Model and Experimental Work Developed. Dies and Tool Makers. Correspondence solicited.

Clement & Clement Co. Limited, 17 Street Railway Chambers, Montreal.

The Packard Electric Co., Limited.

MAKERS OF

Lamps and Transformers

Sole Agents for SCHEEFFER RECORDING WATT METERS
ST. CATHARINES, ONT.

been in operation for some years. It is just above the town of Weymouth, in Digby county, on the line of the Dominion Atlantic Railway. They have acquired the present mill, which has a fine water power

GALVANIZING

We are prepared to attend to all orders **Promptly and Economically.**
WINDMILLS, PUMPS, TANKS, Etc.
ONTARIO WIND ENGINE and PUMP CO. LIMITED,
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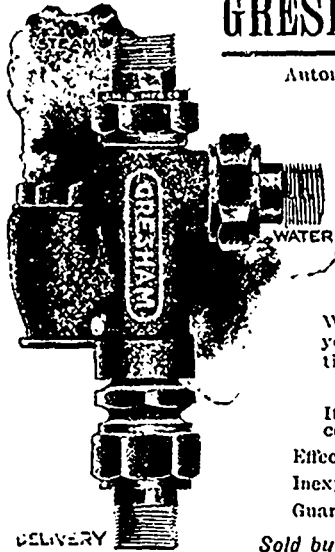
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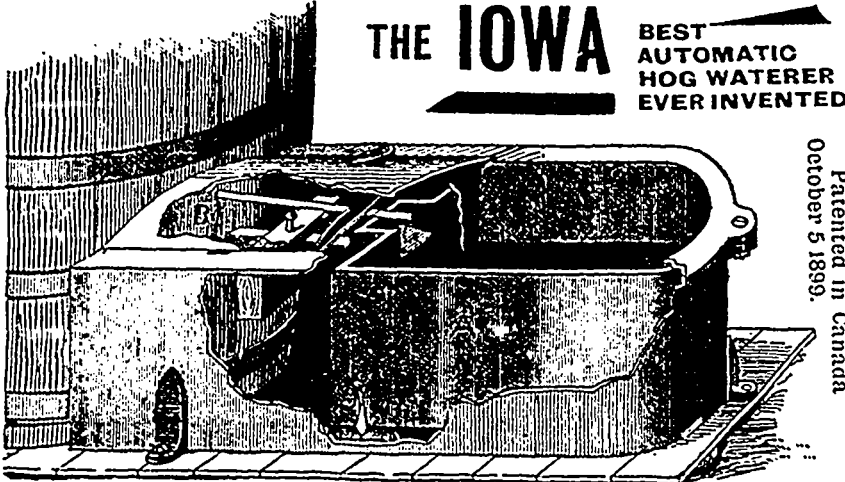
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of the Bay of Fundy, at Weymouth Bridge, where there are good loading berths with eighteen feet of water. Weymouth Bridge is at present a lumber shipping port, and one of the principal stations on the line of the Dominion Atlantic Railway.

A new settlement, started by a party of gentlemen from the neighborhood of Marselles, France, and known as New France, is a few miles away and being connected with the tidal waters at the Bridge by means of a pole railway, on which steam locomotives are used.

The Nissiboo Pulp and Paper Company's railway will be operated by electric trolley system, run by water power. The directors of this new company are: Robert Mackay, Andrew F. Gault, James Crahern and R. Wilson-Smith, of Montreal; George Faulkner, S.F., of Halifax, N.S.; and Charles Burrill, of Weymouth, N.S. As stated a short time ago, the company have a capital of \$550,000, and financial arrangements have been completed.

Canadian piano factories are working at night now, in order to keep up with the demand, which is altogether unprecedented in the history of the piano trade of the Dominion. Higher wages are being paid in some departments of the work of piano-making, and this with the wages paid for overtime is giving the trade better wages than for many years. This department of Canadian trade is purely to supply a luxury to the Canadian public, and unusual activity in such a branch of industry indicates in a particularly satisfactory manner an amount of prosperity in the country to which the population of the Dominion is unaccustomed. The activity in the piano factories, however, is no more marked than it is in other branches of Canadian industry. The cotton mills of Canada are unusually active. Some have orders already on hand, which, without an order for another yard of goods, would keep them busy till next May. Orders for six months ahead show a condition of business our mill have never before experienced and it promises prosperity not only for the mills and a satisfactory condition of investments for those who have their money in mill stocks but steady employment for large numbers of working people, and a steady demand upon the retail merchants for the ordinary necessities of life. The condition of trade in the piano industry and the cotton industry is much the same in all departments of manufacturing in Canada to day, and the result is that we are entering the winter with fewer unemployed in the country than ever before. - The Globe.

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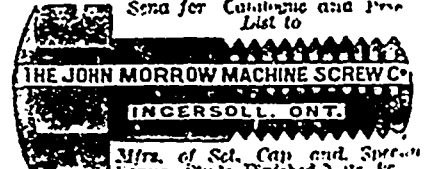
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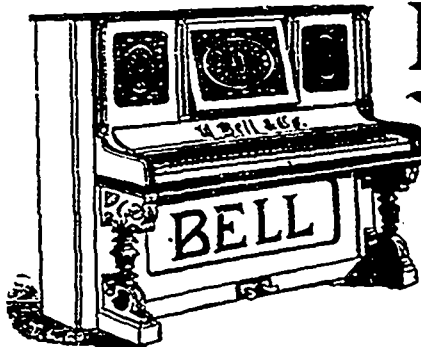
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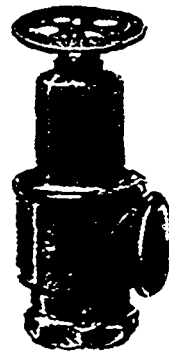
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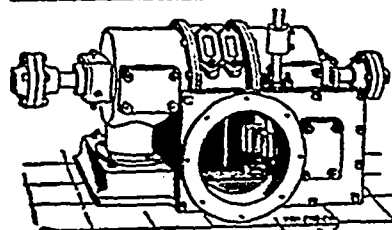
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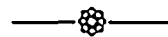
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