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CANADIAN MANUFACTURER
AND INDUSTRIAL WORLD
DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION

VOL. 39.

TORONTO, AUGUST 4, 1899.

No. 3.

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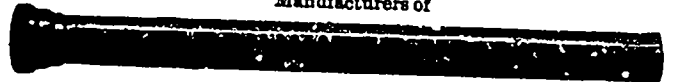
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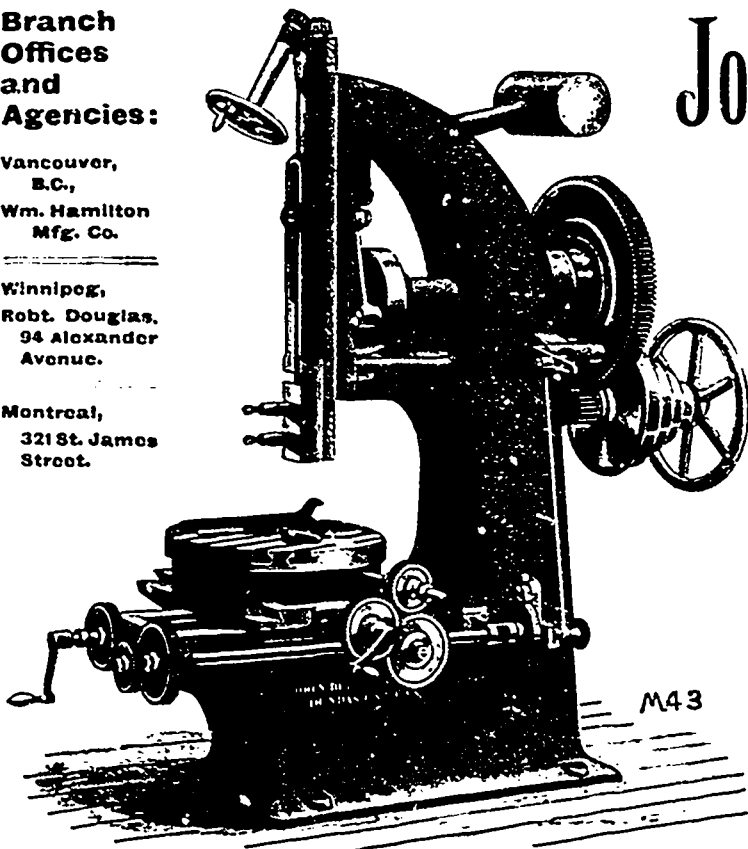
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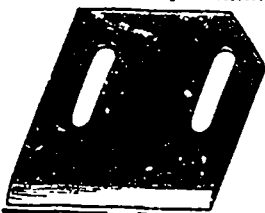
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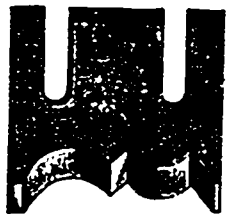
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The Polson Iron Works, TORONTO CANADA.

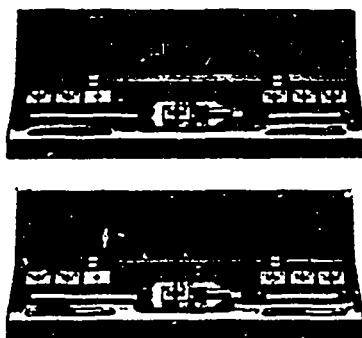
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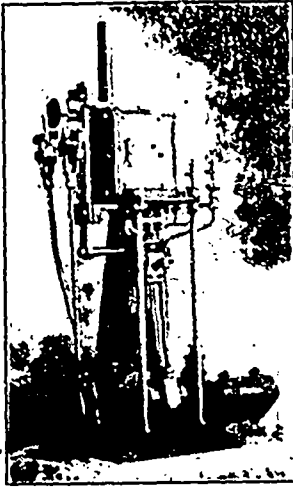


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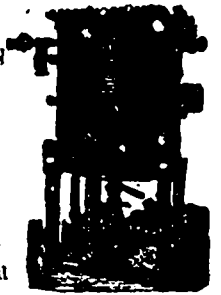
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BEFORE PURCHASING ELSEWHERE GET A BID FROM US.

Particular experience for ten years in this department of engineering, and the fact that over 1,000 Webster Heaters are in use is self-explanatory.

Satisfying particulars, embracing details of construction, materials, operation, and exclusive results will be sent on application. Built in several types and construction for special needs and service.

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DELIVERY MADE AT NEW YORK, MONTREAL OR HAMILTON.

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To decide which type of boiler will produce steam at the lowest cost it is necessary to consider the cost of the boiler, the evaporation of water per pound of fuel, and the expense of keeping the boiler in working order.

Compare our boiler, the "Mumford Improved" with a water tube boiler, and it will be found that ours has the advantage in all these points.

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EVAPORATION.—Our boiler is internally fired and, therefore, more heat is absorbed by the water. The water circulation, an important factor in evaporation, is similar to and probably more rapid than that of a water tube boiler. Tests made by disinterested parties, with the same coal, resulted in favor of our boiler.

EXPENSE.—The furnace of a water tube boiler requires re-lining with fire-brick frequently, a large item of expense which is not required with our boiler.

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The Wellington Mills, LONDON, ENG.

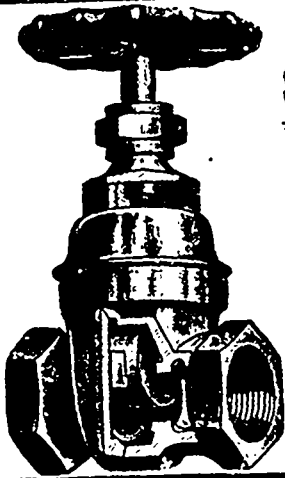
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Prize Medal and Highest Award Philadelphia, 1876. for Superiority
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Inquiries should be addressed to

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STRAITWAY VALVE

For
...Steam, Water or Gas...

EVERY VALVE TESTED.

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"FOR ALL DUTIES"

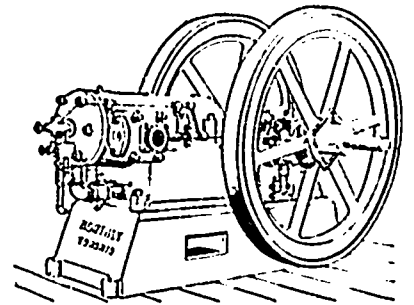
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We have equipped some of the largest manufactories in Canada with our Feed, General Service and Stuff Pumps. In no case have they failed to give entire satisfaction, nor in proving that the Northey Pumps for all duties are unsurpassed for design, up-to-date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

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PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

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

J. J. CASSIDEY, - - - Editor and Manager.

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

AS TO INSOLVENCY LEGISLATION.

In the Dominion House of Commons last week the following discussion occurred re Insolvency Legislation:—

Mr. Bergeron asked what the Government intended to do in the matter of passing an insolvency law for the Dominion.

Sir Wilfrid Laurier said that Quebec, Ontario and Nova Scotia had passed bankruptcy laws which appeared to be satisfactory, and all of which contained similar provisions. Perhaps the other provinces could be induced to pass Acts of like character. The Government had entered into correspondence with the Provincial Governments on the subject, and if they could be induced to act, he thought that nothing further would be heard of the demand for a Dominion Insolvency Act.

Mr. Clarke asked if strong addresses and petitions on this subject had not been received, and if such a law had not been strongly advocated by trade journals.

Sir Wilfrid Laurier replied that most of these petitions were from Great Britain. There was no demand from within the country. What was wanted was the prevention of preferences and the equitable distribution of assets.

Sir Charles Tupper said it was impossible to over-rate the importance of the question. The absence of such a law had been a great barrier to the increase of trade with Great Britain. It was enough to make Canadians hang their heads in shame to hear commercial men in England telling how they had been swindled, through lack of a fair and just insolvency law in Canada.

Mr. Fielding said he was deeply impressed with the effect exercised upon trade by the want of a uniform insolvency law. Uniformity was a point to which English traders attached great importance, and until it was secured there would always be complaint.

Whatever may be done at another session of the Dominion Parliament in the way of resurrecting this question, for the present it is dead—very dead, much to the disgust of the commercial element of Canada from the Atlantic to the Pacific. It may be that Nova Scotia, Quebec and Ontario already have bankruptcy laws that embody many satisfactory features, but there are other provinces in which there is woeful lack of efficient and equitable legislation, and it is because of this that Canada suffers. The demand of the whole commercial world with which Canada desires to do business is that there should be good and efficient laws bearing upon insolvency, and that these laws should prevail alike in every province of the Dominion. As Sir Charles

Tupper states, the absence of a law passed by the Dominion Parliament is a great barrier to the increase of trade not only with Great Britain, but with all countries including Canada.

In our opinion the Premier is mistaken in supposing that the demand for Dominion insolvency legislation comes mostly from Great Britain, and that there is no demand for it in Canada. The Canadian Manufacturers' Association have repeatedly requested it, the most recent demand having been made at the annual meeting of the Association held on April 12th last, when the following resolution was unanimously adopted:

Resolved:—That in the opinion of this Association it would be in the interest of Canadian manufacturers and merchants, and the community generally to have upon our statute book a Dominion Insolvency Act, which, while affording the same means of protection to creditors and relief to debtors, would do away with the unfair system of preferential assignments which at present obtain in some provinces.

A copy of this resolution was duly transmitted to Sir Wilfrid, and our understanding is that similar resolutions emanating from other large and influential bodies in Canada have also been sent to the Premier.

What all commercial men in other countries who desire to do business in Canada, and also commercial men in all parts of Canada, is, not that there shall be insolvency laws of provincial origin, which may differ widely in their scope and meaning, but Dominion laws that shall be applicable alike in every part of the country and in every province. The commercial interests of Canada are sadly handicapped for the lack of such legislation.

THE AMERICAN EXPORT EXPOSITION.

Every manufacturer in Canada who sells or desires to engage in selling his products to foreign countries should take a keen interest in the National Export Exposition which will open at Philadelphia on September 14th, and remain open until November 30th.

This show will be unique in the commercial history of the United States. There will be a complete display of American manufactures and products suitable for export and a department of samples of goods made abroad and now being sold in the various foreign markets or prepared in those markets for local consumption, which fully illustrates the requirements of foreign markets and intended to show American manufacturers what competition they must meet in each country. These samples of merchandise were purchased in foreign markets under authorization of Congress, through an appropriation of \$50,000. There will be no exhibits on the part of foreign manufacturers themselves. The exhibition is intended for the benefit of American manufacturers and buyers for foreign markets.

It is under the joint auspices of the Philadelphia Commercial Museum and the Franklin Institute, two great public institutions in Philadelphia, whose standing is such as to assure its success. The Franklin Institute, during its career of seventy-five years, has conducted thirty successful exhibitions.

The main building is 1,000 feet long and 400 feet wide. It includes three pavilions, two stories in height and a spacious

auditorium with a seating capacity of 5,000. In this auditorium the sessions of the International Commercial Congress will be held and concerts will be given every afternoon and evening by the leading musical organizations of the country. The building covers an area of nine acres and there is an area of floor space aggregating twelve and one-half acres.

Every line of American manufactured products which is, can or might be exported, from locomotives and the heaviest machinery to the smallest novelties, is to be exhibited.

Delegates from Chambers of Commerce and other commercial organizations all over the world will be present. Every foreign government has been invited, through the State Department at Washington, to send an official representative. The Philadelphia Commercial Museum has also invited 20,000 foreign business houses with which it is in close correspondence to send representatives to the Exposition.

In addition to the foreign exhibit of samples in foreign markets there will be a department in which will be shown how goods must be packed, labeled and shipped, in order to meet the requirements of foreign trade.

On October 10th, an International Commercial Congress will convene in the Exposition Auditorium in connection with the meeting of the International Advisory Board of the Philadelphia Commercial Museum. This Congress is likely to prove one of the most beneficent results of the exposition.

Canadian manufacturers and exporters should avail themselves of this opportunity to learn the lessons that their American competitors are preparing to teach.

THE FOURTH CONGRESS OF CHAMBERS OF COMMERCE OF THE BRITISH EMPIRE, 1900.

The London Chamber of Commerce, through its Secretary, Mr. Kenric B. Murray, has sent to the Canadian Manufacturers' Association a prospectus having reference to the Fourth Congress of Chambers of Commerce of the British Empire which is to convene in London towards the end of June next year. This date is selected as likely to be suitable to the convenience of a large number of Colonial merchants, who, it is expected, will be attending the Paris Exhibition in 1900. Mr. Murray was instructed to invite the Canadian Manufacturers' Association to co-operate in this Congress.

A representative Organizing Committee, which had been formed for the purpose, at a meeting held in June, approved of the following list of topics as likely to afford material for discussion at the Congress:—1. Commercial Relations between the Mother Country and her Colonies and Dependencies. 2. Inter-Colonial Trade Relations. 3. Foreign and Colonial Bounties. 4. Foreign Competition. 5. Boards of Labor Conciliation and Arbitration. 6. Codification of the Commercial Law of the Empire. 7. Bills of Exchange: Uniform Procedure. 8. Bills of Lading Reform. 9. Commercial Education. 10. The Decimal System of Weights, Measures and Currency. 11. Light Dues. 12. Railways: Light Railways: Railway Communication with India and the East. 13. Secret Commissions. 14. Arbitration for Internal Disputes. 15. Imperial Trade Marks Registration and Patent Law. 16. Cable Communication: Construction, Rates, Codes. 17. Steamship Communication: Rates, Subsidies, War Risks, Insurance. 18. Closer Connection between Governments and Chambers of Commerce by establishment

of Commercial Advisory or Consultative Councils, Home and Colonial. 19. Supply of Government Publications to Chambers of Commerce and Mutual Exchange of Documents. 20. Representation of United Kingdom in Colonies, and in other parts of the Empire for the promotion of Mutual Trade. 21. Appointment of an Imperial Council to consider commercial questions of Imperial interest. 22. Copyright. 23. Municipal Trading.

Included in the Organizing Committee as representing Canadian interests are Lord Strathcona, High Commissioner for Canada at London, and Lieut.-Gen. John W. Laurie, M.P., Chairman of the Canadian Trade Section of the London Chamber of Commerce.

The list of commercial associations invited to participate in the Congress embraces all the commercial bodies in the British Empire, including the Canadian Manufacturers' Association. It is quite certain that in due time the Association will appoint a strong delegation of experienced business men from the roster of its membership as representatives to the Congress.

AS TO ACETYLENE GAS.

The Canadian Electrical News publishes a tabulated statement covering four of its pages which purports to show a record of the acetylene gas plants installed throughout Canada, the summary showing the total number of generators to be 217; number discontinued 62, number in use 155, and number of accidents arising from their use 30.

We have not attempted to verify these figures, but from statements made by some of the manufacturers of acetylene lighting plants we are led to believe that the information contained in the Electrical News is very inaccurate, and it is certainly unfortunate that our contemporary should allow itself to set forth a condition that it cannot possibly prove. The production of calcium carbide by electrical energy for commercial purposes is a very recent Canadian discovery, and the utilization of the article for domestic lighting purposes has resulted in the establishment of a new industry not only in Canada but in many other countries, which has evidently come to stay. In this country there are already established quite a large number of factories for making acetylene gas generators, and we think we are quite within bounds when we estimate the number of such generators now in successful use as not less than one thousand. So-called "accidents" may result from their use, growing out of ignorance concerning the properties of the gas, the same as similar accidents result from the use of the ordinary illuminating gas, but such occurrences do not demand the abandonment of either.

The Electrical News should hasten to explain itself.

EDITORIAL NOTES.

NOTICE.—A general meeting of the Canadian Manufacturers' Association will be held in the Board Room on the grounds during the time of Toronto's Great Industrial Fair, which opens on August 29th. The meeting has been called for 2.30 o'clock in the afternoon of Tuesday, September 5th, and it is hoped that every member of the Association, and all manufacturers who may be in attendance at the Fair, will be present, as matters of much interest to them will be presented and discussed.

A contract was signed in London a few days ago by which the British Government subsidizes the Jamaica Fruit and Produce Association with £10,000 annually for five years, the association undertaking to establish a direct fortnightly fruit and passenger line of steamers, to make fifteen knots, between Jamaica and the United Kingdom, commencing May, 1900. The association also contracts to improve the wharfage at Kingston and elsewhere, to build hotels, and to push the fruit industry. The Imperial Government pays half of the subsidy.

According to figures compiled by the United States Government, that country has recently exported to the Philippines paper and paper manufactures valued at \$387,031, which, in comparison with other figures, represents an increase in quantity and a decrease in value. The commerce of the United States with the islands was 10.38 per cent. of the whole.

No other journal in Canada gives in detail and extenso the possibilities of our foreign trade as **THE CANADIAN MANUFACTURER**. Being the organ of the Canadian Manufacturers' Association, a large portion of its space is devoted to giving information in the direction indicated, obtained from official and other reliable sources. Subscription \$1.00 per year.

The Conciliation and Arbitration Act of New Zealand is one, the operation of which deserves the most careful watching from other colonies. A new development has been the formation in Christchurch by the retail grocers' assistants of a union, which brought before the Conciliation Board, in the form of an industrial dispute, the conditions as to the hours of work and rate of pay. The Conciliation Board, after taking evidence, was about to make recommendations in the matter when the master grocers intervened by raising the question whether the Grocers' Assistants' Union was a proper union under the Act, and whether the retail grocery trade can be regarded as an industry under the Act. These points will have to be settled by the President of the Arbitration Court, the court of appeal from the Conciliation Board.—Australian Ironmonger.

The United States Government is evidently taking a keen interest in the shipping industry of the Dominion. Consul-General Bittinger, at Montreal, has received instructions from Washington to prepare at once and forward to the United States Marine Department a statistical report of the maritime condition at Montreal. The letter asks for a report on the number of vessels now there from all countries, and the average number of vessels daily lying at that port; the amount of money received for Customs, on the value of products received from other countries, and also shipped abroad; the facilities for docking and the general condition of the harbor. One section of the letter dwells upon the shipbuilding industry, and asks for a full report upon the facilities for building war craft. The letter also asks for a report upon the defences, if any, in case of war, and the nearest American seaport town to each Canadian city with a deep sea harbor. The files of the Marine and Fisheries Department at Ottawa will be, we are told, looked through by Mr. Bittinger for statistics, regarding the shipping industry of Quebec province.

The representatives of the various countries stationed at Montreal will be asked to furnish a report of the merchant marine of their countries docking at Canadian ports. The Marine and Fisheries Department will be consulted upon the defences, and well-known commanders of vessels in the habit of entering the ports will be asked to make a comparison upon the marine of the United States and other countries.

People outside New South Wales believe that federation, accompanying inter-colonial free trade, will mean the establishment of many new factories, especially in that colony where the coal is close to deep water. The first definite indication of this movement comes this month, when we learn that a large iron foundry in the Newcastle district which has been closed for some years has been taken on a long lease by a South Australian iron founder. We are firmly convinced that this is but the first of a long series of similar transactions. It is rumored also that the Massey-Harris Co. contemplate starting large agricultural machinery works between Newcastle and Sydney.—Australian Ironmonger.

A concern has recently been organized in North Dakota known as the Northwestern Tow, Twine and Fiber Company, which proposes to establish several tow mills throughout North Dakota, and later to erect a big fiber mill to consume the product of the tow mills. The works are to be located in the Red River Valley, where flax has been successfully raised during the past few years, and they propose to handle the product of 5,000 acres of flax annually. They do not intend to turn out any finished goods, but propose to utilize flax straw, which has heretofore gone to waste, for the manufacture of fiber, and they own and control a patent process for threshing the straw without injury to the fiber. The straw, as grown at the present time, will not make the very highest grade of fiber, but will make a fiber that can be manufactured into twine and coarser products. Thousands of acres of Canadian lands are quite as well adapted to this industry as those of Dakota, and Canadian capital and enterprise should be quick to take the hint above given.

At a recent meeting of the Canadian Society of Civil Engineers Mr. George H. Webster read a paper on "The Inland Waterways of Northwestern Canada," which bore evidence of careful preparation. The paper offers a solution of the problem of the stimulation of Canadian trade in grain and other commodities. Mr. Webster says in part: "Is there no way of reaching a solution of a difficulty, one that will lead to a general lowering of freight rates between points far west of Winnipeg and the lakes?" The writer ventures to say that there is, and that this solution is to be found in the development of navigation on the numerous rivers and lakes between Lake Superior and the far west; in other words the writer believes that a magnificent system of waterways is capable of being opened, at a reasonable cost, that will reach from the lakes to the farthest bounds of the rich prairies of Manitoba and the territories. We have been singularly favored in possibilities in this respect. Probably no such extensive territory in the world, apart from the St. Lawrence and Mississippi valleys, is possessed of such advantages for

furnishing cheap transportation facilities as our vast prairie stretches. A most important feature, at the same time, in connection with these rivers and lakes is that they are all located on the line of our domestic and export traffic routes. The distance from Buffalo to New York is 504 miles and from Winnipeg to Fort William 453 miles. The former consists of 350 miles of contracted canal and 154 miles of deeper and wider water in the Hudson river. The latter consists of only 148 miles of contracted canal and 305 miles of deep rivers and lakes; but the advantage which this gives to the Winnipeg-Lake Superior route in sailing time over the Erie will be partly counterbalanced by the increased lockage of the former. It will be fair, then, to assume that the time required by a four-beat fleet to make the round trip between Winnipeg and Fort William will at least not exceed that required between Buffalo and New York.

The Canadian Manufacturers' Association have pleasure in announcing that at the forthcoming Toronto Fair it will occupy its usual office in the Press Building, where members of the Association and manufacturers generally will find a resting place, conveniences for writing, where business interviews may be had, and where information may be obtained regarding any exhibit or manufacturing exhibitor on the grounds.

A Canadian manufacturer of paper pulp, recently returned from the United States, states that during his travels in that country he was surprised to meet with a considerable amount of sentiment in favor of a Canadian export duty on pulp wood. The sentiment came from manufacturers of paper, especially of book paper, who do not make their own pulp. Having to buy this material, they want free access, if possible, to the widest market for it, and naturally would like to see Canadian pulp admitted to the United States free of duty. But as they are not likely to have the duty taken off, they look to another way of equalizing the conditions between them and their American competitors who have pulp mills of their own. This is by means of a Canadian export duty. Such an import would raise the cost of paper in American pulp and paper plants quite as much as the cost of producing paper from American paper plants is now raised by the American pulp duty. At present the American manufacturers who have pulp and paper plants have to pay no kind of import on their pulp; whereas those having only paper plants have to pay the customs duty on that material.

Niagara Falls will be the Pan-Americans' greatest exhibit.—
The Pan-American Herald.

Certainly—from the Canadian side.

Within the past few days four eminent members of the Canadian Manufacturers' Association have joined the great majority of those who have passed over into the unknown land. The first of these was Mr. Charles Boeckh, head of the now Boeckh Bros. and Co., Toronto, manufacturers of brushes, brooms, etc. The second was Hon. W. E. Sanford, head of the Sanford Manufacturing Co., Hamilton, Ont., manufacturers of clothing. The third was Mr. T. A. Heintzman, head of the well known piano manufacturing firm of Heintzman & Co., Toronto, and the fourth was Mr. A. M. Newlands, head of the firm of A. M. Newlands & Co., Galt,

Ont., manufacturers of glove linings, etc. These gentlemen were all active members of the Association, and had been identified with it ever since its inception twenty-five years ago. The memory of them will long be green spots in the minds of their co-workers and friends as having been illustrious captains of Canadian industry.

LITERARY NOTES.

Standard books are ever welcome when they come to us in forms and bindings representing all the embellishments of the art of bookmaking. Such a book is *The Story of the Philippines*, published by The Dominion Company, Chicago, a copy of which has just come to our desk. The contents are well arranged, the illustrations are fine, the print is clear and neat and the binding is superb. The Dominion Company is forging ahead as the leading western publishing house making a specialty of fine subscription books. Having salespeople in nearly every nook of the country, the company enjoys a large and growing trade. As this company has a known reputation for liberality towards its agents and fair treatment of them, an agency in this community for the above book, or some other published by this company, would be a source of considerable profit to the one fortunate enough to secure it. Interested readers should write the company for full particulars.

Outing for August is an exceedingly interesting and seasonable number, with the usual fine illustrations. The contents include: "Golf in Gotham," by Charles Turner, the literary father of golf in America; "Big Game in the Rockies," by J. N. Ostrom; "Lawn Tennis on the European Continent," by J. P. Paret; "An August Outing," by Ed. W. Sandys; "Canoeing Down the West Branch of the Penobscot," by W. A. Brooks; "The Best out of Three," by M. Gertrude Cundill; "Camp Cuisine," by H. C. Daniels; "A Stroll in the Black Forest," by Mary E. Blake; "Holiday Work with the Camera," by Dr. John Nicol; "The August Cruise of the New York Yacht Club," by A. J. Kenealy, and the usual poems, editorials and records, which include a full and expert account of the Golf Championship contest at Chicago by Willie Tucker, of St. Andrews.

The Fiction Number of Scribner's Magazine has come to be an annual event of importance to writers and readers of short stories. It is remarkable for its color printing, its brilliant pictures by young artists, and the high excellence of the short stories. The frontispiece and a story, "The Play's the Thing," show illustrations in color by a young man, W. Glackens, who has the cleverness of the modern French illustrators applied to New York themes. By an ingenious use of half-tone plates and hand engraving, the color pictures are reproduced with striking truth to the originals. In color work Maxfield Parrish has shown brilliant examples heretofore in Scribner's, but never has he been so successful as in the cover of this number. This number also contains the conclusion of Senator Hoar's article on Daniel Webster; more letters written by Stevenson from Bournemouth; a short paper on "Japanese Flower Arrangement," by Theodore Wores, illustrated from paintings by Mr. Wores; poems by E. S. Martin and J. Russell Taylor; also a brief article by the eminent painter, John La Farge.

Hamlin Garland, Anthony Hope, John Kendrick Bangs, Harold Richard Vynne, Anne Robeson Brown, "Josiah Allen's Wife," Clara Morris, Kate Whiting Patch and Anna Farquhar are among the half-score of writers of fiction who contribute stories to the August Ladies' Home Journal. The Midsummer Fiction Number of the Journal is in many respects a notable magazine. It has brought together in a single issue some of the most popular story writers, and the most capable black-and-white artists to illustrate their work. Fiction, of course, predominates, but there is an abundance of timely, practical articles especially appealing to home and family interests and tending to lighten and brighten women's work. The editorial departments are more interesting than usual. The Curtis Publishing Company, Philadelphia.

The Methodist Magazine for August has eleven admirably illustrated articles, among them are, "The Secret History of Prince Bismarck;" "In Shakespeare's Country;" "The Sault Ste. Marie Canal;" "The English Bible and its Translators;" "John Wesley," by Dean Farrar; "Dennis Patterson," a story of the days of Wesley; "Wireless Telegraphy;" "In the Klan dike;" "Bishop Newman;" "A Famous Scot," and "World's Progress." This is one of the best numbers of this family magazine yet issued.

St. Catharines; second vice-president, P. G. Gossler, Montreal, Executive Committee, J. W. Wright, Toronto; A. B. Smith, Toronto; O. Higman, Ottawa; George Black, Hamilton, and John Carroll, Montreal, D. R. Sweet, Ottawa; A. Saugster, Sherbrooke, Que., J. F. H. Wyse, Brantford, Ont., B. F. Reesor, Lindsay, Ont., and W. H. Browne, Montreal; secretary-treasurer, C. H. Mortimer, Toronto.

The next convention will be held at Ottawa.

WOOD PULP IN GREAT BRITAIN.

A letter from London dated July 1st states as follows.—

During the last two weeks the arrivals of mechanical (ground) wood pulp at British ports have included several hundred tons from Newfoundland. The sales in this country have evidently been effected at a low figure, as, according to the customs declarations, the value of the 2,100 tons to hand last week only amounted to £3,540. The week's supplies were chiefly from Norway, the quantity being 4,380 tons of the value of £9,380, the remainder of the imports being as follows: Sweden 780 tons of the value of £3,320; Canada 742 tons, valued at £2,500; and Belgium, five tons of the value of £24.

The British imports of chemical wood pulp last week amounted to 5,471 tons of the value of £43,133. Quite eighty per cent. of the value represented Swedish supplies, the remainder being contributed by Norway, Belgium, Germany, Portugal, Holland, United States, Canada and Denmark.

WEIGHING MACHINES IN JAPAN.

Makers of weighing machinery will be interested in a circular lately issued by the Chamber of Commerce at Yokohama, calling the attention of merchants and others to the necessity of providing scales based on the kin or kwan system, instead of on the English pound system. From January 1st next weighing machines in Japan will not receive legal recognition unless the kin and metric system is adopted. Not only will it be necessary to have the existing weighing machines altered from the English pound system, but all sales and business transactions will have to be carried out by the latter. Hitherto the English pound has been calculated as three-fourths of a Japanese kin, and in converting weights into Japanese measures, the Japanese kin has been taken as the equivalent of 1.333. In reality, however, a Japanese kin corresponds to 1.32277 English pounds. Consequently the new weighing machines, scales, and weights will have to be converted on the basis of 100 Japanese kin equalling 132.277 English pounds.

MINING MACHINERY IN JAPAN.

Mining machinery, pumps, and parts thereof are imported, chiefly from Great Britain, for use at the Kiushiu coal mines. These machines are imported direct by the Japanese firms owning mines at Kiushiu. Many of them have their own branches in Great Britain, and also arrange the purchase of machinery for smaller mining companies.—German Official Report from Nagasaki.

IRON BEDSTEDS IN BRITISH GUIANA.

Stump bedsteads, measuring from six feet to six feet six inches by two feet six inches to three feet; French bedsteads with top and bottom rails, from six feet six inches by three feet to four feet six inches; or with one inch bed posts and brass rails, in same sizes; four-post bedsteads, with seven-eighths of an inch posts and no foot rail; or with one inch or one and a half inches, no foot rail, all in above sizes; or with two inch posts, no foot rail, in sizes six feet six inches by four feet six inches to five feet—are the varieties imported. They come principally from Birmingham. The manufacturers' prices are:—Stumps, from \$2.76 to \$2.94; French, from \$5.14 to \$5.88; French, with one-inch posts and brass rails, from \$7.32 to \$8.04; four-post bedsteads, in the sizes above

stated, from \$5.28 to \$15.36. Discount, forty-five per cent. and five per cent. They retail at thirty-three and one-third per cent on landed cost, the latter including ten per cent. duty and sixty per cent on first cost. Transportation charges are from \$6 to \$7.20 per ton measurement of forty cubic feet. The goods are packed in cases for the better quality; the others in straw and bagging.—United States Consul at Demerara.

THE PAPER TRADE IN AUSTRALIA.

The large newspapers of Melbourne are using American paper, and they print from rolls. The bulk of the trade in newspaper in Victoria, however, is controlled by English mills, and they, as a rule, obtain a slightly higher price than the American. The last contract that was entered into by an American mill with one of the Melbourne daily papers was taken at what was considered a very low price.

There is a good sale in Melbourne for book paper and also for a good, clean wood pulp newspaper. The better classes of printing papers are all of British make. Samples of very good American wood pulp brown paper have been brought into notice in Melbourne, and its price is considerably higher than the paper imported from Sweden of the same class, but it is thought that for many purposes it will be preferred, even at the advanced price.

The total imports of writing, printing, wrapping and other papers into Victoria are to the value of £240,000. Of this about £38,000 worth is shown as coming from the United States, £184,000 worth from Great Britain, £16,000 worth from Germany and £2,000 worth from other countries.

COTTON HOSIERY YARNS.

A Canadian manufacturer of hosiery goods desiring to learn where certain descriptions of hosiery yarns not made in Canada could be obtained, at the request of the Canadian Manufacturers' Association Lord Strathcona, the High Commissioner for Canada in London, sends the following information: Leicester, England, may be termed the headquarters of the yarn industry in that country. Some of the well known manufacturers of yarns in that place are J. E. Pickard & Sons; Fielding & Johnson; J. Brierly & Sons; F. Denisthorpe & Sons; T. W. Rust & Co.; J. Whitmore & Co.; D. Sandeman & Co.; and W. Thompson & Sons.

Wm. Hollins & Co., Pleasley works, Mansfield, Nottingham, spin white and natural Botany yarns, but not carded and combed Egyptian.

H. Axon, Son & Co., Hope Mills, Bolton, and Fox Bros., & Co., Wellington, Somerset, are open to do business in all lines.

MATERIAL ASSISTANCE TO EXPORTERS.

There has sprung up in Austria lately a condition of affairs between the Government and the manufacturers and exporters that contain some valuable lessons for others than Austrians. For the promotion of the export trade, which is described as being in a desperate state, the Imperial Government proposed to render very material assistance to the exporters. There was to be an appropriation of \$100,000 a year for the express benefit of this trade and the money was to be spent in sending trained experts into the various countries with which Austria has been doing business. These men were to devote themselves to the study of all local and special conditions which affect trade, make themselves thoroughly conversant with the wants of the people, their language and habits, and render regular reports to the home Government.

MUSICAL INSTRUMENTS IN BRAZIL.

There is an unusually active demand in Para for musical instruments, including both those for house and street music, and there seems to me to be a golden opportunity here for some competent salesman.—United States Consul at Para.

PAPER IN CUBA.

Inquiries have recently been made by a New York export firm to ascertain if it were possible for a paper mill in the United States to take some substantial printing paper contracts for the Cuban market. After an investigation extending over more than two weeks they found that the American mills are not anxious for export trade, as the German prices for the quality of paper used in the island were from 10 to 12½ per cent. cheaper. The quantity of newspaper used in Havana alone, it is well known, would keep a large mill busy the entire year. The business is still going to Germany.—The Paper Mill.

HARDWARE IN SOUTH AFRICA.

Wrought steel hinges, bolts and butts, and tees for South Africa are principally obtained from America, on account, it is said, of their cheapness, better manufacture and neater wrapping than those obtained from Wolverhampton and district. Wolverhampton makers also print their names on the packages very large, and do not indicate the size of the contents, while American firms distinctly state the size and kind of article, and content themselves with very small print for their own names.—South African Export Gazette.

HONEY IN BELGIUM.

To succeed in this market cheap honeys must be supplied. Fine qualities come from the Ardennes, and are only used for table purposes. Ordinary foreign brands, which are purchased when the price of native honey is too high, come chiefly from America (Chile, California, etc.). Honey pays an import duty of eighteen francs per 100 kilos. The average price is from fifty to fifty-five francs per 100 kilos, ordinary, and 110-111 francs per 100 kilos, fine. The chief importers in Brussels are Messrs. Maussion, 1, galerie de la Reine; Huet, 142, rue de l'Intendance; Herlin, 115, boulevard Auspach; Vlebergh (F.), 20, rue Gallait; Vlebergh (J.), 79, rue du Midi; Secordel, 2 rue Læken.—French Chamber of Commerce at Brussels.

CANADA AND AUSTRALIA.

The development of the trade between Canada and Australia is proceeding rapidly. Mr. J. S. Larke, Commissioner for Canada, is working vigorously in this direction, and a variety of articles stocked by hardware stores have already been placed on the market in New South Wales, though not to the same extent in Victoria. In agricultural implements and machinery, the Massey-Harris Co. are doing a large business, while the Cockshutt ploughs are also being pushed. Window shades or blinds are being stocked by the leading houses. Massey-Harris bicycles, the Gould bicycles, and the Welland Vale Manufacturing Co.'s machines are all upon the market. Bent chairs are being sold both in Melbourne and Sydney. The Bell Organ & Piano Co., Ltd., have established themselves at 6 Bridge street, Sydney. Varnishes and paints of Canadian manufacture are being sold by several firms in Sydney. Fanning mills made by the Chatham Manufacturing Co. have been introduced into New Zealand, and the same firm are sending over waggon arms. Binder twines fall naturally to the Massey-Harris Co.—The Australasian Ironmonger, Sydney, N.S.W.

AGRICULTURAL MACHINERY IN RUSSIA.

The local trade in agricultural machinery has had a very good year, mostly in mowing machines. These latter, as made in Russia, are of primitive construction, and are known among the people by the name of Lobogreiki. In good years about 1,500 foreign mowing machines are sold here, whereas those of Russian make are placed to the extent of about 2,500. Next to mowing machines, steam threshing machines are the chief line sold. As yet they are obtained almost exclusively from England. They are also made in Russia, but by one firm only, viz., the Malzow Iron Foundry. The

demand for these machines is also subject to great fluctuations, according to the harvest results. Hungarian threshers, it is said, have not yet been offered for sale here. Ploughs are now made largely in Russia, but some kinds—constructed on special systems—are still obtained from abroad. Broadcast sowing machines are made principally in Russia, drills being still purchased partly abroad, although a good quality is now being also made in Russia. As regards the source of supply it may be said that about fifty per cent. of the entire demand is already covered by Russian factories, i.e., as regards mowing machines, seed drills, ploughs, etc.; twenty per cent. of the mowers, grass cutters, harrows, etc., falls to the United States; fifteen per cent. of the threshing machines, and some types of machines for grinding and crushing corn and barley by hand or horse power, are also obtained from England. Germany supplies about ten per cent. of the demand, viz., in ploughs, seed drills, small threshers for horse-gear, etc. Austria-Hungary is present with about three per cent, sending chiefly small horse-gear threshers (considered to be very good and cheap), and grain-cleaning machinery. The balance of two per cent. is divided amongst a few countries, such as Sweden with a certain kind of plough, Denmark with apparatus for dealing with milk, etc. Austrian scythes are imported in large quantities.—Austro-Hungarian Consulate-General at Rostov.

JEWELRY IN GUATEMALA.

Jewelry of the fourteen carat class sells well throughout the whole of Central America. German goods are preferred by jewelers because (1) they are more showy at the price, and (2) the Germans use more silver than the French in their fourteen carat alloys. In this way they can, for instance, turn out watch-chains which oxydize much less rapidly, whilst they are of a much whiter tint than French makes, which rapidly go black. High-class jewelry is of French origin, but the sales are slow.—French Minister at Guatemala.

LEATHER IN BULGARIA.

The imports of French sole leather have gone up from 57 to 123 tons. Italian competition seems to have relaxed, having fallen from 252 to 242 tons. In upper leathers we still keep in the front rank with a notable advance of from forty-seven to fifty-five tons. England exceeds us in weight, but takes a lower value. Germany supplied thirty-two tons, chiefly varnished and dyed leathers.—French Consul at Philippopolis.

NEW BUILDING MATERIAL IN GERMANY.

Consul Warner writes from Leipzig:

"My attention was recently called to an article headed 'A new building material: Keramo,' which appeared in the Leipziger Tageblatt, of which the following is the substance:

"Under the name of 'keramo,' a new building material, composed principally of glass and manufactured at Penzig, Silesia, has been placed on the market. As far as known, this material is made from powdered glass waste, which is hardened by a special devitrifying process and combined by means of strong pressure. In this way, the transparency, brittleness, and fragility of the glass are destroyed, but other prominent properties—extraordinary hardness, stability against exposure to the weather, nonconduction of heat, noninflammability, insensibility to oil, grease, acids, etc.—are retained in this new material.

"Keramo can be used with good results for wainscotings in the interior of buildings, for covering floors in houses, kitchens, washing rooms, verandas, balconies, etc., for rough casting of walls exposed to the weather, as well as for stair-cases which are to be fireproof. The color depends upon the color of the glass used in the manufacture. The price of keramo is about \$1.60 per square yard, and, so far, the trials which have been made with this product have been most successful."

A COMMERCIAL COLLECTION.

Mr. William Harper, of the Philadelphia Commercial Museum, now in London, Eng., who is just completing a two years' tour of the world collecting samples of the chief articles the various nations import, is forwarding to the United States a collection of most remarkable samples ever amassed. During the course of his quest Mr. Harper penetrated to the most remote corners of Russia, Asia, Africa, Australia and South America and compiled a vast amount of information as to the requirements of the various countries, samples of goods, models of implements, and photographs and specifications of all the leading articles of trade, all of which will be on exhibition in Philadelphia during the months of October and November.

BOOTS AND SHOES IN BRITISH GUIANA.

In reply to a letter from a Massachusetts Board of Trade, United States Consul Moulton writes from Demerara:

"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 either black, colored, or East Indian coolies, a majority of whom go barefooted 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 ending March 31, 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."

SASHES AND DOORS IN FRANCE.

"A series of questions having been put to me," writes the United States Consul at Marseilles, France, "concerning the possibility of introducing factory-made window sashes and doors in France, I wish to say first that the method of interior construction in this country does not resemble our own, and any manufacturer desiring to do business here should visit the country and study the local peculiarities. All building is done to stay, and the light pine doors and sashes often used in America would not do here at all. Furthermore, there are no window frames in France that slide up and down as they do in the United States. The sashes are as long as doors, a double sash being made for each window, opening inward, clamped with a special fastening, and provided with interior and exterior blinds. In this southern country where winds are severe, the outside shutters have immovable slats and are very heavy. Taking up the questions in detail, I have to say. There is no existing demand for factory-made doors. The notion prevails that ready made doors are inferior to the hand-made article, and a demand would have to be created. As to shapes and styles in use, they are many. Sliding doors are unusual. As a rule, even large double doors swing on hinges. The dimensions of single doors of the ordinary type are: Height,

2.20 to 2.25 meters (7.22 to 7.38 feet); width, 80 to 90 centimeters (1.4 inches). Doors generally are hung on simple hinges. As no factory-made doors are sold, prices can not be quoted. For hand made doors of the ordinary variety, the ruling price is seven francs (\$1.35) per square meter (10.76 square feet), or for double doors, ten francs (\$1.93) per square meter. One builder ventures to say that from three to five thousand doors are used annually in Marseilles. No dependence can be placed on the guess. The consumption obviously depends on the amount of building. Doors used here are of local manufacture, the lumber generally coming from Sweden and Norway. There are no special door factories in this city. I have no suggestions to make as to packing for exportation. No doors are imported. There are no local exporters of doors. Among the most important local contractors are the following: L. Gassier de Bastide, Rue Consolat, 63; H. Beranger, Rue Clothilde, 36, Jauffret Freres, Rue de la Rotonde, 23; Andre Capel, Rue Consolat, 138."

HOES AND PICKS IN SOUTH AFRICA.

Consul-General Stowe sends the following from Cape Town:

"I wish to call attention to the imports of Kaffir hoes and picks into South Africa, and to suggest that the United States ought to have a larger share of this trade. In 1897, the United Kingdom imported to the value of £5,252 (\$25,558.85) and the United States £71 (\$315.52). The cotton hoe used in the United States is similar, and manufacturers should ask for samples of the Kaffir hoes and picks. The duty is twelve cents each."

KNIFE SHIELDS IN GERMANY.

Consul Brodowski writes from Solingen:

"Millions of knives, razors, etc., are manufactured in this consular district, and the material for the shields is imported from all parts of the world, to the value of tens of thousands of dollars monthly. Any kind of hard wood (walnut excepted), bones of horses and other large animals, deer and buffalo horns, ebony, etc., are used. Cuban ebony and hard woods are preferred, and it seems in general that the American imports give the most satisfaction. A good deal has been lately imported from the Chicago stock yards. The largest firms in this branch here are Wilhelm Flucht and Carl Schurmann. I believe that I could do a good deal to further our export trade in this direction, if fair offers were made to importers here."

BARBER CHAIRS IN GERMANY.

More American barber chairs should find their way into Germany. In the large cities, shops of the first-class possess many chairs of American make. In the provincial towns a comfortable barber chair is seldom seen. The ordinary chair in Germany has a cane bottom with a wooden head rest.

In Germany, barbers shave customers to a certain extent in their own homes. Much time is spent each day in going from house to house. I think one reason may be the poor equipment of the shops.

The best way to introduce these chairs is for our manufacturers to secure membership in some one of our export associations which have established sample rooms in the large cities of Germany. The chairs should be put on exhibit, and I am sure some middleman would soon be found who would undertake the task of introducing them into the smaller towns and villages. I might further add that a few months' credit would greatly facilitate sales. Other barber supplies, such as razors, soaps, perfumed waters, mugs, brushes, etc., would, in my opinion find a smaller market, as these articles are exported more or less from Germany to other countries.—United States Consul Harris, at Eibenstock, Germany.

TRADE WITH PORT ELIZABETH.

Port Elizabeth is called the "Liverpool of Africa" and through this port most of the goods pass for the South African Republic. It is 839 miles from Cape Town by rail, has a population of over 25,000, and is the second city of Cape Colony in importance. Its exports are wool, hides, feathers, and aloes. The feather and wool market buildings—the feather building alone costing \$350,000—are very large and busy places, for this port is the principal port of export for the South African Republic products.

Our consular agency here was very busy during 1896 and 1897, when large quantities of wool and hides were exported to the United States; and I wish to state that the exports from Africa to the United States as published in statistical returns are not correct. For instance, there were exported from Port Elizabeth to the United States in 1897 nearly 1,000,000 hides, all via London; also, about 4,000 bales (100 in bale) of Angora goatskins, besides many of the common goatskins; also, ostrich feathers; and, of course, a large value in diamonds through the office of the Syndicate in London. I merely mention this to show that the United States received goods from this country of greater value than tabulated.

As a market for American-made goods, the port is well known, several large firms being engaged in this business. During my visit regrets were expressed by business men on account of the announcement that one of the direct lines of steamships from New York had been withdrawn.

I find this is a desirable plow market. For many years, the plow known as "No. 75" has had a large sale. This is a cast plow, with an adjustable wheel on beam, and in sizes from nine to twelve inch width of cut. It is now evident, from information received, that the cast-iron plow is being superseded by a plow after the same model as the No. 75, but with steel mold, share, and wrought standard, and with wood beam. Large quantities of these plows have arrived from New York and Kentucky makers and are well liked. I was informed that an all-steel plow like the pattern above described, but with steel beam and handles, would soon be needed, and some are coming in.

It is stated that German makers are producing an all-steel plow at a less price than is asked by Americans. German makers of plows are undoubtedly copying American plows, both walking and riding. It astonished me to learn to what an extent sulky and gang plows have been sold. I was informed by one merchant that he had sold 4,000 of a well-known Illinois riding plow in three years.

A market, I learn, is open for American "overalls," provided the makers will use a copper rivet at the bottom of the "flap" or fly, and at the pockets. I was told the American makers would not comply with the request.

It is to be regretted that so many German and Indian cigars are finding a market in Port Elizabeth. When Cuba once more produces tobacco, it is hoped that the United States will again have its share of the trade.

I found a large quantity of furniture from America. It comes "knocked down," and is put together on arrival in the usual way—with blocks and glue, but it is, so I am informed by a large importer, not possible to make it as strong as is done by the manufacturer, hence there is a demand for furniture that can be easily and strongly put together.—United States Consul General Stowe, at Cape Town.

PROPOSED CABLE TO ICELAND AND GREENLAND.

The meteorologists in Europe have for many years desired a telegraphic connection with Iceland, Faroe Islands, and Greenland. Daily telegraphic reports from Iceland would be of the utmost importance to the weather service, as well as to the large fishing interests in the North Atlantic. The British fishing interests have recently petitioned the Government to grant a yearly subvention to the proposed cable. The Danish Government looks favorably upon the plan, but is of the

opinion that it should be realized by private individuals. The Great Northern Telegraph Company, Limited, of Copenhagen, is willing to lay and work the cable, provided it is guaranteed a certain sum from the various governments and other parties interested. The royal Danish meteorological office, in Copenhagen, has issued circulars to kindred institutions throughout the world, requesting them to subscribe to daily weather bulletins from Iceland and Faroe Islands; the matter is also being seriously considered by our bodies, especially in Great Britain, and the prospects for a realization of the enterprise are promising.

THE BICYCLE TRADE IN CANADA.

From the tables of the trade and navigation of the Dominion of Canada for the year ending June 30th, 1898, recently issued, may be gathered some data of interest to the manufacturers of bicycles in the United States. The total number of bicycles sold in Canada during the year is estimated at 50,000, of which 27,262 were imported from the United States and 46 from Great Britain. In addition to this large importation of complete machines, the value of bicycle parts imported was \$279,752 (of which the United States furnished \$271,175), which is held to represent 12,000 complete machines at \$27 each. In round numbers, the total of imported bicycles sold, complete or in parts, was 40,000, averaging in cost \$22.20, on which a duty of 30 per cent. was assessed and \$179,250 collected, while on bicycle parts the duty collected was \$83,534.

In 1897, the importation of completed bicycles was 24,558, or 2,750 less than in 1898. The average cost in 1897 was \$32.40, against \$22.20 in 1898; and the duty, per machine, \$9.72, against \$6.66. These figures show that as the American manufacturer decreases the cost, the demand increases.

During the year ending June 30th, 1898, 18,617 bicycles were manufactured in Canada, of which only about 10,000 were sold at home. While the United States was encroaching on this market, Canadian manufacturers were reaching out for the trade in foreign countries, and sold 8,617 bicycles for \$373,383, Australia taking 5,229, Germany 1,441, Great Britain 616, France 490, and the United States 307, as their largest customers.

The prices seem to have been varied for each country, as follows: Great Britain and Australia, about \$46; France, about \$41; United States, about \$35; Germany, about \$30.

The indications at this writing (May 10th, 1899) point to the early organization of a trust among the bicycle manufacturers in Canada. Several wealthy capitalists of this city are interested, and it is thought that such an organization would result in closing the small factories and concentrating the manufacture at Hamilton and Toronto. The proposed capital is placed at \$3,000,000, of which \$2,000,000 is to be taken in preferred stock at 7 per cent.—United States Consul Shepard, at Hamilton, Ont.

COMMERCIAL WORK OF FRENCH CONSULS.

The following, dated Lyons, April 29, 1899, has been received from Consul Covert:

"Among the many efforts made to increase the trade of France in the Orient is one by which the consuls are to be brought into direct communication with the business men of their country. In pursuance of this plan, the Consul-General at Calcutta will hold a reception to meet the business men of Paris at the Ministry of Foreign affairs. The announcement is made that he will place himself at the disposition of persons who wish to consider the possible openings for French trade in British India, especially for rails, nails, automobiles, petroleum, velocipedes, textiles, silks, laces, woolens, cottons, jewelry, silverware, watches, clocks, machinery for flour mills, photographic apparatus, and Paris-made articles." The Consul at Calcutta will visit several

Industrial centres in France, for the purpose of discussing the same matters with business classes."

NEW FUEL IN BELGIUM.

I would submit the following translation from L'Echo International. Considering the popularity of this material, and the enormous profits from its manufacture, the article may be read with interest by many at home.

THE FIRE LIGHTER VESUVE.

It is under this denomination that a company is being formed in Belgium for the working of a patented process of manufacturing fire makers of peat and rosin. The low price, enabling all classes to buy it, the intensity of heat, and the extreme rapidity with which it takes fire have made it an article of necessity in every household. It will suppress the use of kindling wood and is superior to any fire lighter invented up to the present day. It does away with the deplorable habit of lighting by means of petroleum. A very little piece of "vesuve" gives instantaneously a good fire. This invention will meet with the same success upon its appearance on the Belgian market that it obtained in Germany.

On December 31, 1898, a dividend of twenty-five per cent. of the entire capital engaged was distributed by the enterprise. It has been demonstrated that on April 12th a profit had been realized sufficient to allow a dividend of seventy-five per cent. The consumption in summer will not be less than in winter, as it has been proven that a fire lighter "vesuve" of the dimensions of 4 $\frac{1}{2}$ by 2 by 2 inches and weighing from 2 to 2 $\frac{3}{4}$ ounces will burn for a period of ten minutes and give enough heat to boil water.—U.S. Consul Le Bert, at Ghent.

SHOES IN CHINA

The following is a summary of information received from U. S. Consul-General Goodnow, of Shanghai:

"There are no American-made men's shoes for sale here. A good line of shoes would find a market among the foreigners in China. Most of the foreign shoe dealers, however, being English, naturally prefer to handle English goods, and men's shoes come chiefly from that country. Foreign articles sell at \$14 Mexican (\$6.60 gold).

"All foreign clothing, including shoes, can be imported free into Shanghai and to other open ports in China, but when such goods are transhipped into the interior, they are subject to a duty of 2 $\frac{1}{2}$ per cent. ad valorem.

"American boots and shoes are preferred by most foreigners in China; but before beginning business here, it may be well to take into consideration the number of people here who would be likely to buy and the present condition of trade.

"The foreign population of Shanghai is in the neighborhood of 5,000 and the total number of foreigners all over China (including Hongkong, which is British) probably does not exceed 15,000. To meet their wants, shoes have hitherto been imported in small consignments from England, Germany, and the United States. There are also a number of native and Japanese shoemakers, who make shoes to order at reasonable prices; ladies' shoes, at \$1 Mexican (\$1.88 in United States currency); men's shoes, from \$4.50 to \$6 Mexican (\$2.12 to \$2.83). These prices include patent-leather shoes, which are hand sewed and comfortable as a rule, though in style they do not compare with the American shoe. Patent leather is popular. American and Japanese leather is used for the shoes made in Shanghai.

"As to banking facilities, Shanghai has connections with all parts of the civilized world, and the Hongkong and Shanghai Banking Corporation has agencies in San Francisco as well as in New York City, which will be found reliable and accommodating.

"The shoes which natives wear—peculiar to China—are made of cloth or leather. Their cloth boots and shoes have soles half an inch to one inch in thickness, which are made of rags and paper firmly stitched together; these can be bought from 25 cents (gold) upward.

"Native leather boots and shoes, shod with heavy iron nails, are worn in wet weather; they are worth 50 cents to \$1 (gold) per pair.

"If there can be put on the market here shoes as good in quality as those the Chinese make, at a lower price, an unlimited field is open to enterprise. It would hardly be worth while to have circulars, etc., translated."

SHOE TRADE IN ECUADOR.

The following table will show the volume of shoe imports into Ecuador:

Country exporting.	1897.		1898.	
	Silver.	Gold.	Silver.	Gold.
Belgium.....	\$50.00	\$22.45	\$500.00	\$210.50
England.....	13,769.00	6,182.28	22,229.00	9,358.41
France.....	48,190.00	21,637.31	8,369.00	3,523.35
Germany.....	4,627.00	2,077.52	2,980.00	1,254.58
Peru.....	1,200.00	538.80
Spain.....	2,329.00	980.51
United States.....	24,439.00	10,973.11	6,285.00	2,645.99

These figures are from the custom-house records and refer exclusively to foot wear of leather. Duties are charged by gross weight—\$1.67 silver per kilogram.

There is no prejudice against American goods in the country; American shoes are considered higher in grade, and perhaps in price, than those from other countries. The same is true of other lines. A number of prominent firms here carry a small line of American shoes.

Competent salesmen should visit the country, in order to obtain knowledge of requirements and scope of the trade.

Imported shoes are retailed at from \$3.50 to \$8 gold, according to quality. All varieties of finish are on the market, and only an expert can judge of technical requirements.

Trade manuals are useful only in Spanish, as a supplement to the exertions of a salesman; otherwise, they receive no attention and are money wasted.

The merchants of this city are exceptionally substantial, and representatives of firms who have visited this country find results very satisfactory. They would be much more so, were our commerce not handicapped by excessive freight rates via the Isthmus, double and triple those from Europe.—Consul-General P. M. de Leon, at Guayaquil.

CONDENSED MILK IN CHINA.

Fresh milk does not exist in China. Hence this country is an inexhaustible market for condensed milk. It is imported via London or Antwerp and sold by German and English firms. The line most preferred in Hong Kong is the "Milkmaid Brand of Condensed milk"; the label of which shows a Swiss girl carrying a jar of milk on her head together with the inscription "full cream," from the "Anglo-Swiss Condensed Milk Co., Cham, Switzerland.—French Official Report from Hong Kong.

BUTTER IN HOLLAND.

The Dutch journals and papers are full of the appearance of Australian butters on the Leenwarden market; the prices asked were very low, but the quality was found to be good in spite of the length of the journey. For some time past American, and especially Canadian, butters have been competing with native butter in the Friesland markets.—French Consul-General at Amsterdam.

THE AUSTRALIAN PAPER TRADE.

The London correspondent of The Paper Mill, an influential American journal devoted to the paper trades, shows how the United States is taking the Australian trade from Great Britain. He says:—

“British paper makers are making a great mistake in neglecting the Colonial markets that they have monopolized for years. Australia is a case in point, and the statistics recently published dealing with the imports of printings and news into New South Wales for 1898 reveal a state of things wholly unsatisfactory as far as the manufacturers of this country are concerned, but on the other hand a source of jubilation for the American paper maker. The two chief countries exporting to Australia are the United Kingdom and the United States, the business done by Germany and other Continental countries being comparatively small. During recent years American paper exporters have made wonderful headway in Victoria, New South Wales, and other Australian colonies, and have succeeded in capturing a large share of the trade that was formerly in the hands of the British.

“There can be no denying the fact that our paper makers have to recognize the successful competition of American manufacturers, not only in Great Britain, but in the majority of the British colonies. In regard to New South Wales, mentioned above, a few comparative figures will be interesting. During 1898 printings and news were received from Great Britain to the value of £65,019, a decrease of £14,183 compared with the previous year; from the United States, paper of a similar classification was received during 1898 to the value of £77,660, an increase of £17,989 compared with a year ago. Printings and news now used in New South Wales are chiefly of American manufacture, and the United Kingdom has been forced to take second place.

“The opening months of the present year do not show any improvement in regard to the shipments of British paper to Australasia. The following comparative figures dealing with the first four months of this and the two previous years will, no doubt, interest American readers :

Exports of British Printings and Writings in Australasia.

Jan.-April 1897.....	121,146	cwts.	£148,745
“ 1898.....	112,623	“	130,493
“ 1899.....	83,202	“	115,193

Other Kinds of Paper (Excluding Hangings.)

Jan.-April 1897.....	36,216	cwts.	£32,819
“ 1898.....	27,561	“	26,158
“ 1899.....	28,859	“	27,637

“During the four months mentioned a drop is shown this year of £13,821, compared with 1898. This business, no doubt, has been absorbed by the United States, who apparently finds an excellent market in Australasia—to the loss of

the British paper maker. Your correspondent does not know whether the mills in this country have any surplus paper for a large export trade, but there seems to be considerable apathy shown in regard to the matter.”

Canada should be a large participant in this Australian paper trade.

RASPBERRY PULP IN ENGLAND.

The Imperial Institute, London, has been in communication with the Ontario Department of Agriculture for some time in regard to the possibility of exporting fruit pulp to Great Britain for the purpose of manufacturing jam.

Mr. Harrison Watson, curator of the Canadian section of the Institute, has just written the department a letter, in which he states that there is a likelihood that there will be a slim crop of raspberries in England. This season, he thinks, will be a favorable one for Ontario fruit growers to try the Old Country market with raspberry pulp. Though it is a fact that if the price of raspberry pulp rises too high the makers of jam use other fruit pulp in its place.

An experiment was made last year with Canadian blueberries, but the manufacturers are unanimous in stating that they are not suitable for jam making.

BRITISH CANADIAN TRADE.

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

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

59. A north of England firm desires to find a market in Canada for English and Scotch wools.

60. A firm in the Midlands are wanting to import direct from Canada, cattle hides and other animal products, and wish to get into communication with suitable firms with a view to business.

61. An enquiry has been received from an important firm in the preserved provision line who desire to appoint reliable houses to represent them in the Dominion.

62. An agent at Gothenburg who is prepared to handle Canadian produce—especially flour and bacon—and who can work the whole of Sweden, desires to correspond with houses open to do business.

63. A gentleman in the North of England asks for the names of high-class firms who put up Canadian evaporated fruits.

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CAPTAINS OF INDUSTRY.

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

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

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, belting, 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.

Messrs. Millar & McCrombie, of Montrose, Scotland, are said to contemplate the erection near the City of Quebec, of what they claim will be the largest saw and planing mill in Canada.

Mr. William Jennings will probably build a saw and planing mill at Fenwick, Ont.

The Rat Portage Lumber Co. will erect a 125x50 feet brick and stone warehouse at Winnipeg, Man., at a cost of \$13,000.

The corporation of Fort William, Ont., are setting up in their new power house and pumping station a new 180 k.w. S.K.C. machine with switchboard, etc. They are also largely increasing their incandescent lighting. When completed this will be one of the most up-to-date and modern electric light and water power systems in the Dominion.

The tap of hammers, the whirr of machinery, the slow grind of lathes, the buzz of saws and planers, are all in evidence at the Polson machine shops and shipyards on the Esplanade. Among the work being turned out at this busy yard are two 200 h.p. engines for the Massey-Harris establishment, and a 150 h.p. engine for the Truth Publishing Company. Also two Heine boilers for "La Presse" newspaper, Montreal. The Heine water-tube boiler appears to be an improvement on the Belleville boiler. The Toronto Electric Company has ordered four of them from these works, 450 h.p. each, and one of 200 h.p. has just been delivered at the Central Prison. Large engines for the Winnipeg Electric Light Company are under construction here. But most ponderous of all is the

work undertaken for the Riordon Pulp mills, down east at Hawkesbury. Three pulp-digesters, egg-shaped, are being built of inch-and-quarter steel; they are of thirteen feet greatest diameter and fifty feet high. Each of these weighs fifty tons, and the construction of them involves enormous labor and no little ingenuity.—Monetary Times.

The Robb Engineering Co., Amherst, N.S., have recently received the following orders from British Columbia: From the Hastings Exploration Syndicate one for a sixty h.p. Mumford Improved boiler; from Hugh C. Baker, Rossland, a fifteen h.p., and Robertson & Hackett, Vancouver, a fifty h.p. Robb-Armstrong engine. The same company are making a 150 h.p. boiler for the city of Kamloops, B.C.

Morgan's Portland cement works near Montreal are being greatly enlarged. A new revolving kiln and gas producer have been installed, and when fairly working will be followed by another similar installation, bringing the capacity of the works up to nearly 300 barrels daily.

The Cobourg, Ont., Electric Light and Power Co. has been recently taken over by the Water Co., and extensive changes are being made in their power house as well as on their lines. They are installing a new 150 h.p. engine to drive the 2,000 light Royal dynamo which is just being installed. The water system is also being extended and put in first-class condition.

The Cushing Sulphite Fibre Co. are inviting tenders for the construction of a new pulp mill at that place.

The Beaver Clothing Co., Montreal, are applying for incorporation with a capital stock of \$50,000 to manufacture clothing, etc.

The Montreal Dry Plate Co., Montreal, is being incorporated with a capital stock of \$20,000 to manufacture photographers' dry plates, etc.

The St. Eustache Canning Co., with headquarters at St. Eustache, Que., are applying for incorporation with a capital stock of \$15,000 to manufacture canned fruits, vegetables, etc.

The capacity of the Dominion Pulp Company's pulp mill at Chatham, N.B., is to be largely increased by introduction of additional machinery, etc.

The Royal City Mills, New Westminster, B.C., has received an order from Australia for a sample shipment of ten thousand boxes suitable for shipping canned goods to Europe.

The Ymir Sawmill Co., of Ymir, B.C., have completed a novel tramway running from the mill to a timber limit which the company recently purchased from the Great Northern Railway Co. The tramway is two miles in length, and trees with the bark peeled off are used for rails. These are firmly bolted together, and upon them runs a car with large grooved wheels some ten inches thick. This car is capable of taking to the mill between two and three thousand feet of logs.

The United Electric Co., Toronto, have been awarded a contract by the Gowans-Kent Co., Toronto, to equip their large new warehouse in this city now nearing completion with a complete electric plant, consisting of a thirty k.w. generator, direct connected to high speed engine; also boiler, switchboard, three elevator motors, and the installation of lights and fixtures throughout the building.

The Montreal-Boundary Creek Mining Company, which owns the Sunset, Crown, Silver, C. O. D. and Florence Fraction, adjoining the Mother Lode, in the Boundary country, B.C., has just closed a contract with the James-Cooper Manufacturing Co., Montreal, for a twenty-drill air compressor plant.

The Hamilton Brass Works, of Hamilton, Ont., have followed the example of a number of other manufacturers in Hamilton and have installed in their factory a thirty h.p. S.K.C. motor, which is operated by current from the Cataract Power Co.'s lines.

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When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Messrs. O. Chalifoux & Fils, manufacturers of agricultural machinery, etc., St. Hyacinthe, Que., have sent us their new illustrated catalogue having reference to some of the lines of goods built by them. Allusions are made to their horse power treading machines as applied to grain threshing and cleaning machines, feed cutters, vanners and separators, hay baling machines, circular saw machines for cutting wood, etc., for farm use; cut off saws, and saw mill machinery generally; planing mill machinery, portable and semi-portable steam boilers and engines; stationary engines and boilers; gas and gasoline engines, etc. This concern was established fifty years ago by the late Mr. O. Chalifoux and is yet under the management of his sons and their sons, representing three generations.

The saw mill of Richard Kerton, at Glonville, near Newmarket, Ont., was destroyed by fire July 22nd, loss about \$1,500.

W. Gray & Co.'s collar and cuff factory at Chesley, Ont., was destroyed by fire July 24th, loss about \$1,500.

A prospectus has been issued for a new woollen factory to be started at Brantford, Ont. The capital stock is placed at \$95,000 a large portion of which has been subscribed. The provisional directors are Sheriff Watt, Ald. Leeming, F. Grabb, of the Massey-Harris Co.; Dr. Hart, and G. W. Brohman.

A forty h.p. S.K.C. induction motor has been installed by the Cataract Power Co., in the works of the Hamilton, Ont., Tack Co., which will add another smokeless chimney to the Electric City.

The Lancashire Insurance Co., Toronto, has purchased the office building, known as Nos. 27-29 Wellington street east and 36-38 Front street east. The company will spend a large sum of money in reconstruction, and will convert the building into a first-class, up-to-date office building, with all modern appliances and conveniences. They will themselves occupy the ground floor, and will have the balance of the building for rental.

The shovel factory of the D. F. Jones Mfg. Co., Gananoque, Ont., was scorched by fire July 27th, loss about \$1,000.

The Metropolitan Street Railway Co.'s new power plant at Bond Lake, Ont., is about completed. Included in it are two large cross compound Wheelock Engines made by the Goldie & McCulloch Co., Galt, Ont.

REDDAWAY'S ORIGINAL

CAMEL BRAND HAIR BELTING

STRONGEST BELT MADE. NO STRETCHING.

NOT AFFECTED BY DAMPNES,
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.

MORE MAGNETIC THAN EVER

Manufacturers

Who would increase their output—
Retain their present customers
and secure new ones, will
not fail to exhibit at



CANADA'S GREAT

Industrial Exposition

TORONTO
AUGUST 28 to SEPTEMBER 9, '99.

Great Demand for Space.

Applications should be made forthwith.

Entries Close Aug. 5.

For Prize Lists, Entry Forms and all information address the Manager.

JOHN J. WITHROW, President.
H. J. HILL, Manager, Toronto.

The attendance of Visitors last year was greater than ever before and this year will be greater still.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The corporation of Dundalk, Ont., a short time ago, passed a by-law to raise \$9,000 for the purchase of an electric lighting plant. The contract for the engines and boilers was awarded to E. Leonard & Sons, of London, Ont., and for the electrical equipment consisting of a thirty k.w. S.K.C. generator with switchboard, transformers, etc., to the Royal Electric Co., of Montreal. The plant is to be in operation by September 15th.

The Aberdeen hotel at Trenton, Ont., was destroyed by fire July 28th, loss about \$7,000.

The Crescent Bonding and Lumber Co.'s factory at London, Ont., was destroyed by fire July 28th, loss about \$2,000.

The Packard Electric Co., St. Catharines, Ont., announce that they have installed special apparatus for the renewing or re-filling of burned out incandescent lamps. They say that these lamps are fully guaranteed.

The Robb Engineering Co., Amherst, N.S., has recently received the following orders from British Columbia:—City of Kamloops, a 150 horse power, and the Hastings Exploration Syndicate a 60 horse power Mumford Improved boiler: Hugh C. Baker, Rossland, a 15 horse power, and Robertson & Hackett, Vancouver, a 50 horse power Robb-Armstrong engine.

Messrs. A. T. Paterson & Co., Montreal, announce that they have removed their offices and wool sample rooms from 35 St.

Francois Xavier street, to the London and Lancashire Life Insurance Building, 164 St. James street.

The Goldie & McCulloch Co., Galt, Ont., are furnishing the Dowling Milling Co., of Edmonton, N. W. T., with all machinery, engine, boilers, etc., for their new 175 bbl. flour mill. They are putting in the gyrator system.

R. Ford, of Portneuf, Que., is building a new pulp mill, the grinders for which are being built by McQuat & McRae, of Lachute.

The school house at Buckingham Landing, Que., has recently been seated with desks furnished by McQuat & McRae, of Lachute.

The shareholders of the Colonial Bleaching and Printing Company, which has recently been incorporated, held their first general meeting on Tuesday of last week, when they adopted by-laws and disposed of other formal business. The election of directors was then proceeded with and resulted in the selection of the following:—Messrs. H. S. Holt, Alphonse Racine, Frank Paul, E. N. Heney, Archibald McIntyre, George F. Hartt, and W. T. Whitehead. At a meeting of the Board held immediately after Mr. H. S. Holt was elected president, and Mr. Alphonse Racine vice-president. At the same time Mr. P. C. Shannon, long and favorably known as the secretary-treasurer of the Dominion Cotton Mills Company, was appointed to a like office in the Colonial. The new company begins business under most

promising auspices. Mr. W. T. Whitehead, was appointed managing director, Mr. A. W. Cochrane will manage the selling department, and Mr. William Herrick will be works manager. Mr. A. W. Cochrane has left for England to arrange matters regarding styles and patterns. Land has been secured at St. Henri, the contracts for the buildings have been given out, and the machinery has been contracted for. The buildings will be completed and the machinery placed by November first, and the mill will be running in January.—Montreal Shareholder.

The Turkish Bath Building Company, Toronto, is being incorporated with a capital stock of \$150,000. The advisory directorate includes quite a number of the most prominent business men in Toronto. It is the object of the company to immediately proceed with the erection of a building opposite the new City Hall which will have a frontage of 85 feet and a depth of 150 feet, six stories high, to be equipped with an elaborate system of Turkish and other baths, a modern restaurant, sleeping apartments, etc.

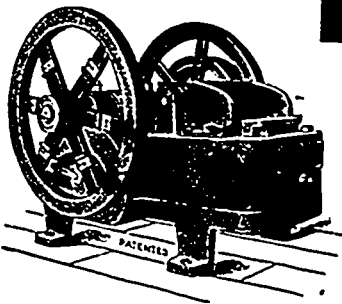
Messrs. Steinhoff & Gordon, of Wallaceburg, Ont., who are erecting a stove and heading mill at Tweed, Ont., have decided to add an electric lighting plant to light the town of Tweed. The order for the electrical apparatus, consisting of a forty k.w. S.K.C. generator with switchboard and complement of transformers, was given to the Royal Electric Co., of Montreal.

ONLY

FINE CRUSHER

FOR QUARTZ and ORES.

DOES WORK OF CRUSHER AND ROLLS COMBINED.



ROLL JAW CRUSHER.

STURTEVANT MILL CO.,

Send for Circular.

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 Schloman Mfg. Co., whose shirt factory at Montreal was recently destroyed by fire, will immediately proceed to erect another factory at Lachine, Que., the town council of which place have voted the company a bonus of \$20,000. At least 135 hands are to be employed. The factory building will be constructed of wood, veneered with brick, three stories high, and with machinery, etc., cost \$30,000.

A large company, in which a number of Torontonians are interested, has been incorporated under the title of the Stanstead Granite Quarry Company. The organization will have its headquarters at Beebe

Plain, Stanstead County, where extensive granite quarries will be operated. The capital of the company will be \$150,000, and the incorporators are.—Messrs. W. R. Brock, Harry Brock, Duncan McIntosh, John McIntosh, and D. T. McIntosh of Toronto, and H. W. Elder and J. W. Elder of Beebe Plain.

The Wingate Chemical Co., Montreal, have been incorporated with a capital stock of \$30,000 to manufacture drugs, chemicals, etc.

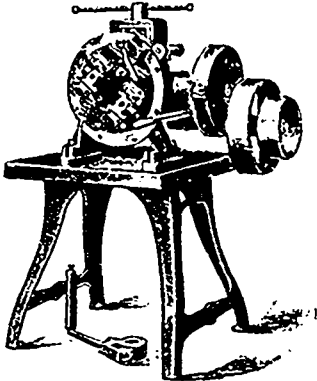
The Eureka Cigar Mfg. Co., Montreal, has been incorporated with a capital stock

of \$50,000, to manufacture cigars, tobacco, etc.

The Sturgeon Falls Pulp Co., Sturgeon Falls, Ont., will erect a very extensive plant for the manufacture of paper.

The Ontario Crown Lands Department is in receipt of statements in connection with the timber cut of the past twelvemonth, which show that in the past year 24,000,000 feet of logs were cut in the Rat Portage district, from thirty-five to forty per cent. of which was white pine. In Minnesota, across the line, it is said that 23,640,740 feet were cut.

THE BEST PIPE THREADING and CUTTING-OFF MACHINES



No. 00 Machine, Power Attachment.

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

Also Manufacturers of a FULL LINE of **ADJUSTABLE STOCKS and DIES** And **WATER, GAS and STEAM FITTERS' TOOLS.**

SEND FOR CATALOGUE 27.

Factory: BRIDGEPORT, CONN.

New York Office: 139 CENTRE STREET.

B. GREENING WIRE CO.
(LIMITED)
WIRE MANUFACTURERS
& METAL PERFORATORS
HAMILTON & MONTREAL.

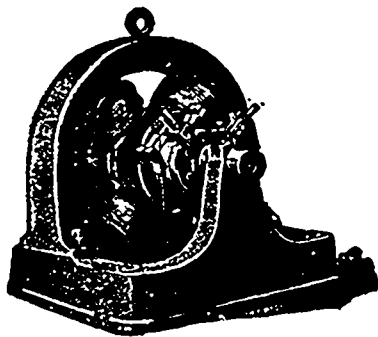
Wire Screens for Every Class of Material.

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

Special Attention given to Minors' Requirements.

Toronto and Hamilton ELECTRIC CO.

(Late KAY ELECTRICAL MANUFACTURING CO.)



ELECTRICAL MACHINERY HIGH-CLASS ONLY.

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

Engine Paeking, Magnesia Pipe Covering Lubricating Oils and Grease.

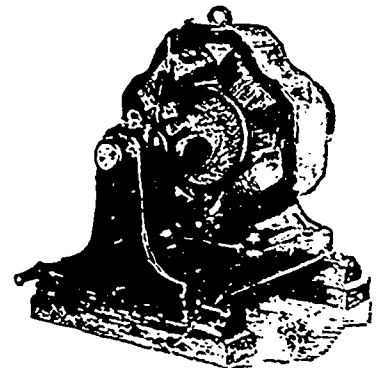


The

William C. Wilson Co. Limited

24 FRONT STREET EAST TORONTO, ONT.

Electrical Construction Co. of London, Limited.

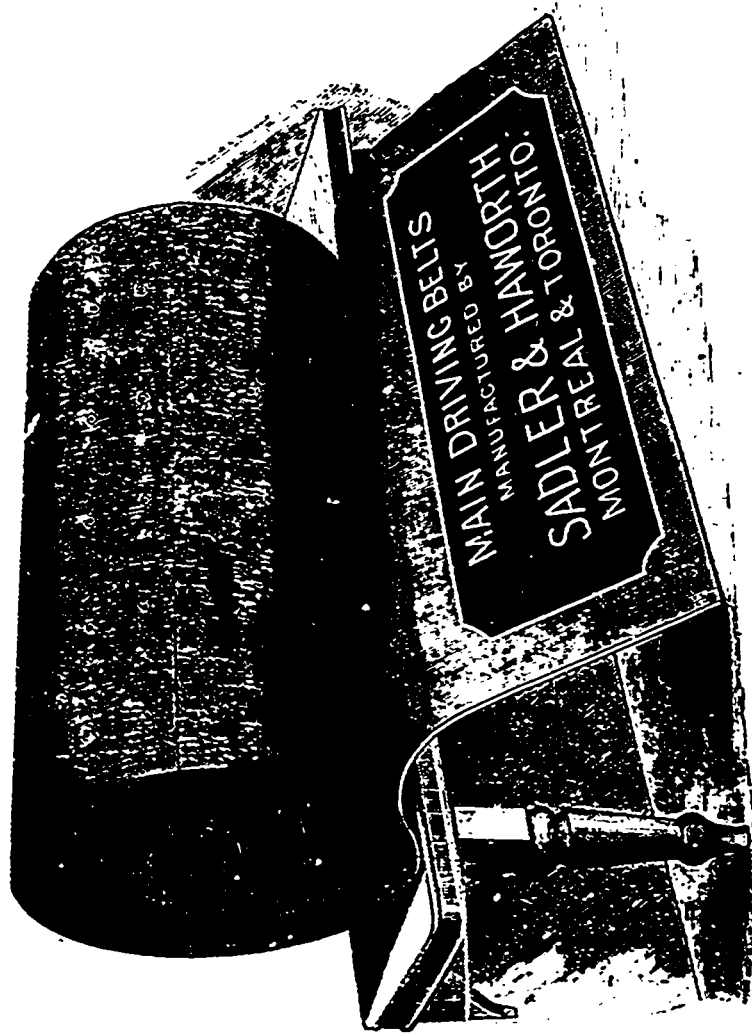


MULTIPOLAR MOTORS & DYNAMOS And Direct Connected Plants for Isolated Lighting. Repair Work a Specialty.

HEAD OFFICE AND FACTORY: No. 90 YORK STREET, London, Canada. 760 Main St., Winnipeg. 42 York St., Toronto. 131 Granville St. .fax.

MAIN DRIVING BELTS.

BELTS MADE
ANY THICKNESS,
WIDTH, LENGTH,
AND STRENGTH
DESIRED.



OUR BELTING
HAS BEEN TRIED
AND PROVED TO
MEET EVERY
REQUIREMENT.

SADLER & HAWORTH,

MANUFACTURERS,

MONTREAL and TORONTO.

A telegram from Montreal states that an American Syndicate has purchased timber limits in the Province of Quebec to the value of \$1,850,000. Charles Lionais, of Montreal, who is reported to have negotiated the deal, declines to give the names of the purchasers, but said that they were connected with the \$50,000,000 pulp trust which was so recently established in the United States. Mr. Lionais says that the limits include several large spruce tracts on the north shore of the Peninsula of Gaspe and the south shore of the St. Lawrence. The American company has a capital of \$10,000,000, and will erect at once two pulp and saw mills, which will cost \$1,000,000 each, the pulp mills to be of a capacity of 600 tons a day. A party of engineers have gone to locate the mills and make the necessary survey. It is also stated that within two weeks some 1,500 men will be at work under the direction of Mr. Lionais. Besides the above lands Mr. Lionais is said to have purchased from Quebecers 1,446 square miles of very valuable pulp and timber limits below Quebec. The new company will be called either the National Pulp Company, or the Labrador Pulp Company, it has not been definitely decided which.

The Granby Rubber Co., of Granby, Que., have placed their order with The McEachren Heating and Ventilating Co., of Galt, Ont., for a large steel plate fan and heater which is to be used for drying of rubber.

The Orillia, Ont., power scheme, which has been in a state of suspended animation for the past two or three months, because of the inability of the original contractors to carry out their contract, owing to heavy advances in materials, has been revived. Arrangements have been made with the Royal Electric Co. to carry out the work for \$71,000. This is \$3,800 more than the first contract price, but considerable additions

have since been made, which about represents this amount. The company undertakes to furnish lighting by November 1st, and power by December 1st. Orillia will now be in a position to renew negotiations with a number of manufacturers who think of locating here, in order that they may enjoy cheap power.

C. A. Zschorner, of Vienna, has obtained an Austrian patent for a process of converting peat turf into a pulp suitable for making paper, and also for rendering the fibres capable of being spun. Previous attempts to clean and soften the fibres have failed owing to the severe action of the chemicals, heat and pressure employed. By the present invention the peat, after being washed, is treated under a pressure of one or more atmospheres with a two per cent. caustic soda solution at a temperature of four degrees—twenty-five degrees centigrade. After ten to fourteen hours a dark brown lye is formed, which is drawn off and the peat well washed with water, and subsequently treated under pressure with a one per cent. solution of alkali. The fibres are preferably bleached with a solution of calcium or sodium hypochlorite of about two degrees B. at the ordinary temperature, but under pressure. It is stated that a large company has been formed in Vienna to manufacture peat paper, peat boards, and spun peat fibres, and that patents have been applied for in all countries of Europe and America.

A new product—a simple by-product—of the dairy is the manufacture of sizing to be used by the manufacturers of paper, to put the glazing on paper of fine quality, as it has been satisfactorily ascertained that a better and cheaper sizing is obtainable from skim milk than from any other source. So trustworthy is the article in this application that a five years' contract is said to have been made with one concern to furnish the liquid

to some large manufacturers. The skim milk to be used in this way is put in a vat, treated with chemicals, and heated until curd is formed, the curd being then washed, pressed and conveyed to the headquarters plant; here it is ground fine and put in a large and improved drying kiln, where it is dried in about twelve hours, then bagged and is ready for shipment. N. Y. Sun.

"It is reported," says Electricity, "that a use has been found for liquefied air, the possibilities of which have been matters of discussion among scientific men for some time. According to the Mining Reporter, a discovery was made recently by which it is now practicable to use liquefied air in underground work, such as mining, driving tunnels, and sinking shafts. It is said that under proper conditions the liberation of air from the liquid can be effective in generating power with which to run drills under ground, pumps, hoists, etc., while cool air can also be supplied in the deepest mines. The liquid air can also be used in freezing soft ground, making tunnel cutting less hazardous and tedious. If there is any reliability in this reported discovery, and its success can be practically demonstrated, it will make a new departure in the lines of work named, and once again make a genius of science the soul of industrial progress."

Owing to increase of their output the Southampton Manufacturing Co., Southampton, Ont., have had to increase the capacity of their lumber dry kilns. They have ordered a very large heater and fan from the McEachren Heating and Ventilating Co., of Galt, which they expect to instal this month.

A new process of galvanizing wire, by which the wire is coated without the necessity of unwinding the coils, has been invented, the modus operandi of which is as follows: The coils or bundles of wire are first cleansed by acid. The whole bundle is

THE CUMMER DRYERS.

FOR Mechanically Drying Everything

THE F. D. CUMMER & SON CO.,
HUNDREDS IN OPERATION. CLEVELAND, OHIO.

Use Syracuse Babbitt Metal

IT IS THE BEST AND CHEAPEST FOR

WORKS:
332 WILLIAM STREET,
MONTREAL,
Canada
AND
SYRACUSE,
N.Y.. U.S.



Paper and Pulp Mills, Saw and Wood Working Machinery, Cotton and Silk Dynamos, Marine Engines and all kinds of Machinery Bearings.

Pig Tin, Lead Ingot, Copper, Brass, Aluminum, Zinc, Spelter, Antimony, etc., furnished promptly.

SYRACUSE SMELTING WORKS.

AGENTS IN CANADA:—A. R. WILLIAMS MACHINERY CO., Toronto; MECHANICS SUPPLY CO., Quebec; JOHN J. BARRY, St. John, N.B.; H. H. FULLER & CO., Halifax, N.S.

then dipped into the bath of melted spelter, and when it has received a thorough coating it is quickly dropped into the basket of a centrifugal machine. For small or light coils the machine may be already in motion, while for heavier wire it must be started after the wire is put in. The surplus coating is almost instantly thrown from the wire, and an excessive speed is not required. The machine is stopped, and the bundle of wire

is removed as quickly as possible, and is jarred upon a block to prevent the wires from soldering together. Barbed wire has been successfully treated by the new process after it has been twisted into shape and formed into bundles. When wire is galvanized before being barbed and twisted much of the coating cracks and peels off, and the points quickly rust. Treated by the new process, the wire is said to be more durable. Wire cloth finer than eight meshes to the inch cannot be galvanized by the old method, while by the new process cloth of any fineness may be coated, if the speed of rotation is increased according to the fineness.

At a recent special meeting of the Toronto Board of Control the contract for boilers at the new Machinery hall at Exhibition park, to take the place of those recently destroyed by fire, was awarded to the Bertram Engine Works Company, Toronto, at \$975, and for shafting and pulleys to the Dodge Manufacturing Company, Toronto, at \$991.

The Wm. Cane & Sons Manufacturing Co., of Newmarket, Ont., have placed an order with the McEachren Heating and Ventilating Co., of Galt, Ont., for one of their fans and heater for a new dry-kiln. They intend to more than double their present drying capacity.

The Collingwood, Ont., Dry Dock and Wrecking Co., have just launched the steamer Germanic built for the Northern Navigation Co. She is 190 feet long, thirty-two feet beam, will draw about eleven feet of water with capacity of 1,300 tons. She will have stateroom accommodation for 200 first-class passengers.

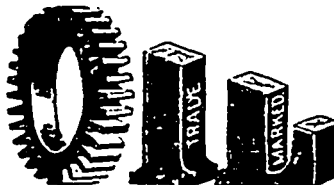
Goldie and McCulloch, of Galt, Ont., will supply a 100 horse power engine at \$1,200, and exhibit a 75 horse power engine, which, together, will supply power for the coming Exhibition. They will execute an order for a 175 horse power engine to be installed during the coming year.

Dr. C. J. Edgar, manager of the Eastern Townships Light & Power Company, has concluded the purchase of the water power at Nengle's Dam, near Rock Forest, Que. The company intends to transmit electrical energy for power and lighting purposes to the City of Sherbrooke, Que.

"Capitol" Cylinder

"RENOVN"
ENGINE

"ATLANTIC" RED



RELIABLE WELL-KNOWN BRANDS.

ALL ORDERS PROMPTLY FILLED

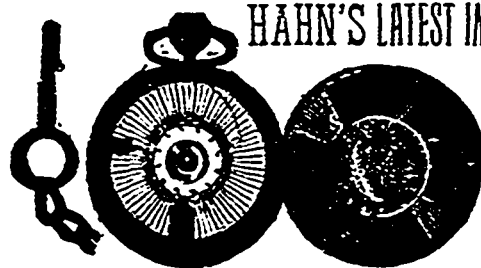
THE...

QUEEN CITY OIL CO.

LIMITED,

SAMUEL ROGERS, President.

TORONTO, CANADA.



HAHN'S LATEST IMPROVED WATCHMAN'S TIME DETECTOR

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 Detector, which mark either by holes or an impression on the dial, being the same for all stations.

For Circulars, prices and further information address

A. NANS & CO., 115 Chambers St.,
NEW YORK

This Clock received the First Prize at World's Fair

NAME PLATES FOR

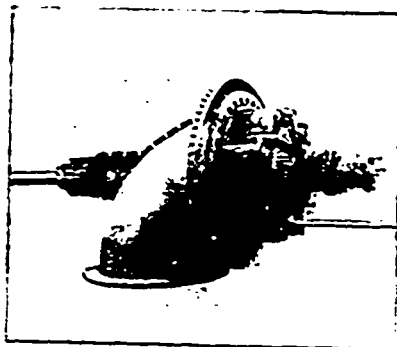
WRITE FOR PRICES.

BECKER NAME PLATE CO.,

34 OLIVER STREET. - BOSTON, MASS.

DYNAMOS,
MOTORS,
ANY TYPE OF
ELECTRICAL
APPARATUS
AND ALL KINDS
OF MACHINERY

The Economical Development of Water Power



Horizontal Setting, with Quarter Turn Elbow.

CHICAGO TIME PUMP COMPANY.

Requires, where the supply of water is limited, that every available foot pound of energy contained in it be properly set to work. On the other hand, if the source of power is abundant your interests suggest that the plant be made as compact and powerful as possible, to reduce the space occupied and the first cost.

The Crocker Patent Turbine...

Is peculiarly adapted for service under any of these conditions, as it possesses great efficiency under varying degrees of gate opening, and the ratio of power developed to diameter of wheel is remarkably large. To those interested we will supply catalogues and particulars of leading plants, together with a copy of latest official Holyoke test, 1892. Water powers reported upon, and estimates prepared. Correspondence invited.

The JENCKES MACHINE CO.,

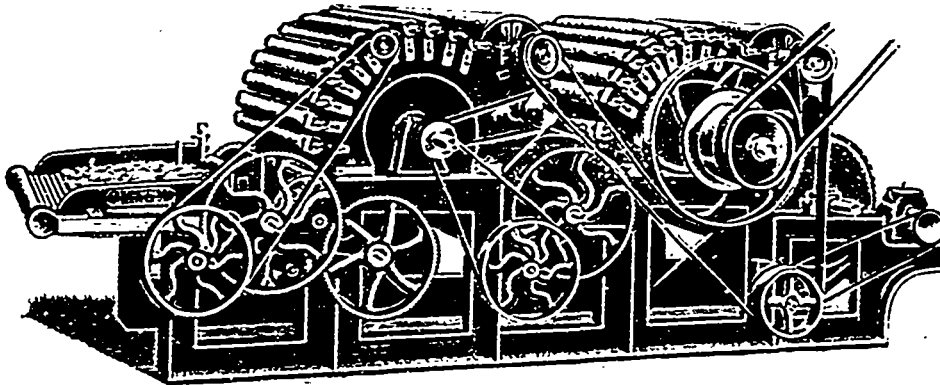
42 Lansdowne St., Sherbrooke, Que.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

P. & C. GARNETT, Limited

CLECKHEATON, YORKS, ENG.

TELEGRAMS, - GARNETT, CLECKHEATON.



THESE Machines have a world-wide reputation. They are made in various widths up to 60 inches on the wire, and with one, two, or three swifts. They can be clothed as fine as 24 rows per inch so as effectually to open the finest threads.

Waste Opener or Garnett Machine, for Opening Hard Twisted Woolen and Worsted Waste.

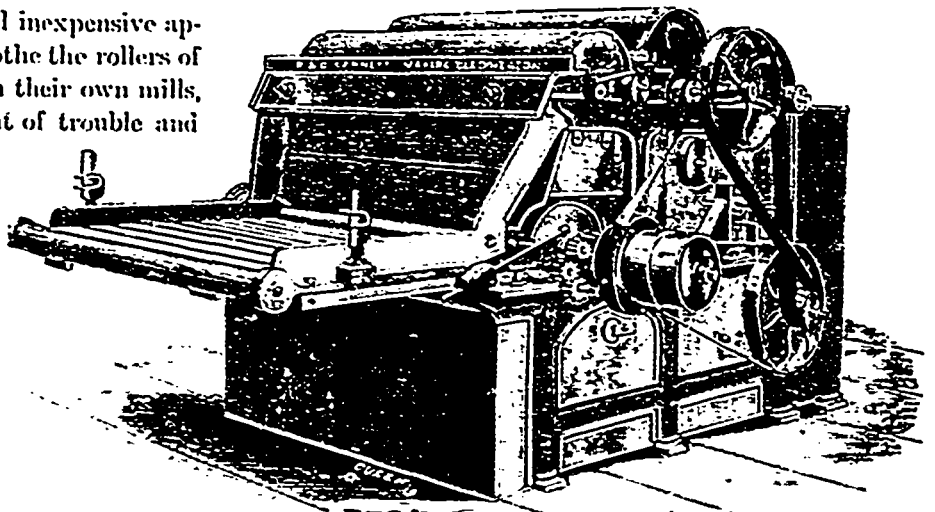


Garnett Wire.

Garnett Wire, or Metallic Card, made with any form of tooth, in Swedish Charcoal Iron or Cast Steel, with points hardened by electricity. This Wire is used for covering iron rollers, breasts of woolen cards, liechers of cotton cards, comber doffers, etc.

Patent Garnett Clothing Apparatus

BY means of this simple and inexpensive apparatus parties can re-clothe the rollers of their waste-opening machines in their own mills, and so save an immense amount of trouble and expense in sending their rollers away to be done.

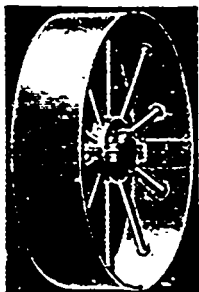


Improved Wool Cleaning or Burring Machine.

Capable of cleaning 1,500 pounds of wool per day. The very best and most economical machine made for the purpose.

WROUGHT IRON PULLEYS

Light, True and Unbreakable.



Cast Iron Pulleys.

*Iron and Steel Shafting, Couplings,
Flummer Blocks, W. I. Collars,
Hangers, Wall Boxes, etc.*

CONSULTING OLD DIRECTORIES.

SEEKING ANCESTORS AND CRIMINALS AT A SHILLING A SHOT.

There are three occasions in every man's life when the Government marks him down in its great ledger—when he is born, when he marries, and when he dies. What he does in between, where he goes, and how he lives, Government keeps no record, for there are no alphabetical indexes to voting-lists and tax books. But so long as Smith, Jones, Brown, or Robinson pays—or owes—rent for a house, an office, or a flat, there is one eye which is never off him. And that eye is the eye of the directory-maker.

There is a place in London—a gloomy, windowless room on the second floor of a handsome building in High Holborn—where most of what that eye has seen for a hundred years is registered. It costs you, at least, a shilling to get into that dark chamber, and it may cost you five or ten shillings before you come out again.

The mysterious apartment in question is the "file-cupboard" of Kelly's—the great firm of directory makers. A "file" is, in printers' parlance, a stock of specimen-issues, and a "file-copy" is a copy kept for office use or reference. Bound or unbound, books

or papers, all such reserved copies are said to be "filed."

In this particular "file-cupboard" there are the accumulations of a hundred-and-odd years; the famous "Post-Office Directory of London" has been running for a century now, and Kelly's, in addition to publishing a few scores of old-established directories for all parts of Britain, have bought up all sorts and sizes of directories, that go back even before the first issue of their own Directory. Most of these valuable volumes are kept in a massive locked case in an outer office—the "file-cupboard" proper is too dark and dusty for them. One little old book—the earliest authentic directory of London—bears the date 1783, and holds little more than seven thousand names. But these very old copies are not so often consulted as are the later and bulkier ones in the "file-cupboard."

If you should ever want to prove—in order to claim a dukedom or a marquise—that your ancestor William Higgins lived in Tomkinson street, Clerkenwell, in eighteen hundred and something, just step round to Kelly's and ask to see the file-copy for that year. You will have to fill in a little slip of paper to this effect, and pay a shilling. Then upstairs you go to the "file-cupboard," which has a special guardian all to itself, and

VALUABLE AIDS TO BUSINESS.

Kelly's Directory of the Merchants, Manufacturers and Shippers of the World.

The Standard Export Medium Endorsed by the British Government—Published Annually, price \$9.00.

Trade Directories of Great Britain.

	Price.
Cabinet Furniture and Upholstery Trades	\$6 00
Grocery and Oil and Color, and Provision Trades	10 00
Leather Trades	8 00
Stationers, Publishers, Printers, Booksellers and Paper Makers	7 00
Chemists and Druggists and Chemical Manufacturers	7 00
Engineers, Iron and Metal Trades	9 00
Manufacturers of Textile Fabrics	10 00
Watch and Clock, Goldsmith and Jewellers Trades	6 00
Building Trades	9 00
Wine and Spirit Trades, Brewers and Malsters	7 00
Post Office London Directory (100th annual edition)	10 00
Titled, Landed and Official Classes	5 00
Clergy List	3 00
Royal Blue Book	2 00

Colonial Directories.

	Price.
Queensland Official Directory	\$13 00
Post Office Directory of Victoria	13 00
" " New Zealand	13 00
" " New South Wales	13 00
" " Western Australia	5 00
" " South Australia	5 00
" " Tasmania	5 00
Directory of Belgium	7 00
General Directory of South Africa	7 00

All these Directories contain a classified Business list.

National Directories.

	Price.
Royal National Directory of Scotland	\$14 00
Royal National Directory of Ireland	11 00

PARIS EXPOSITION, 1900.

Kelly's Directories, Ltd., of London, Eng., desire to announce to their many patrons in the Dominion, and to Canadian Manufacturers generally, that they have made arrangements for prominent space in the Paris Exposition in 1900, in which to exhibit their

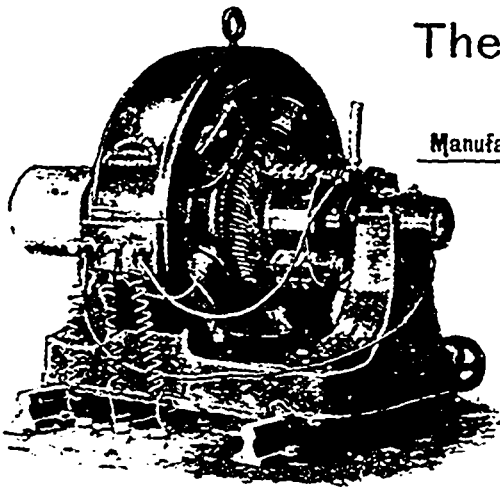
COMMERCIAL DIRECTORIES

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

N.B.—Special type-written lists furnished of all the Professions, Trades, Agricultural, Cattle and other industries of the whole of Australia, New Zealand, Tasmania and South Africa—for 30 cents per hundred; and rebate allowed on all envelopes returned to us post-marked "Can't find."

Prospectus with advertising rates and full particulars on application to

KELLY'S DIRECTORIES, LTD.,
28 VICTORIA ST., TORONTO, ONT.



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

ESTABLISHED 1823.

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

WILSON BROS. BOBBIN CO.

(LIMITED)

CORNHOLME MILLS, TODMORDEN, ENGLAND.

BOBBIN AND SHUTTLE MANUFACTURERS.

FORTY PRIZE MEDALS AWARDED.

HIGH-CLASS WORKMANSHIP. SEVENTY YEARS' REPUTATION.

LARGEST BOBBIN MAKERS IN THE WORLD—(Over 1,400 Workmen).

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BRANCH ESTABLISHMENT:

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in all required sizes and styles, and adapted to every possible use where iron, steel, brass, copper and other metals require to be annealed. Messrs. Rockwell & Co. will be pleased at all times to answer questions and quote prices on anything in the furnace line, and to advise their patrons as to the best style and size of furnace for any class of work, as well as the fuel best suited for such work.

ELECTRIC VENTILATING FANS IN THE BOSTON SUBWAY.

In the very thorough consideration given by the Transit Commissioners to all points of the design of the Boston subway the matter of ventilation was by no means neglected. This was intended to serve the double purpose of providing fresh air and of securing such circulation of that air as to

prevent any accession of dampness. From the latter trouble the subway has been remarkably free, but nevertheless, the original design, which contemplated the introduction of electrically driven fans at suitable points along the route, has been adhered to. Four of these have already been constructed and installed by the B. F. Sturtevant Co., of Boston. The space coming under the control of the fans is about 2,000,000 cubic feet.

The fans were, in each case, designed to have a capacity equivalent to an air change in each section once in about 15 minutes. The air is drawn from the subway and forced through the exit chamber to a point above the surface of the ground.

The fans are all of the Sturtevant cone type, each consisting of a cast iron conical centre with annular back-plate of steel attached thereto, and a series of reverse curved steel plate blades or floats, tapering from inlet to periphery, attached to the annular back plate containing the inlet opening.

The building of the new factory of the Colonial Bleaching and Printing Company at St. Henri, near Montreal, will be begun in a few days, and it is expected the works will be in operation by January next. The company will do a general printing, dyeing and finishing business, principally in cotton goods. The factory is to be of the most modern type. The main building will be 400 feet in length, and 60 feet wide, having two wings, each 150 by 60 feet. The main structure and the additions will be two stories high, of solid brick, and equipped with all the necessary appliances to ensure perfect sanitary conditions, and protection against fire.

..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.

3. IT MUST BE SIMPLE, POSITIVE, AND QUICK OF OPERATION.

The "CHICAGO" has less complicated mechanism than any other recorder made, and by the simple manner of operating employes 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.

SOLE AGENTS FOR CANADA:

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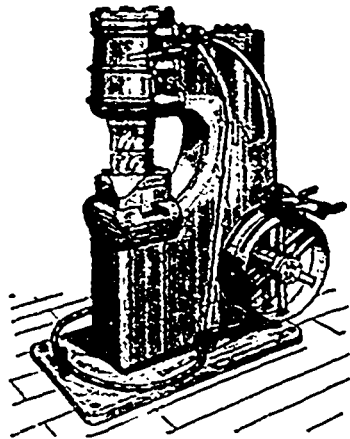
348 Markham Street

TORONTO, ONT.



Sight opening where the record appears each time you register.

Numerical (or Key) Recorder



The Yeakley Vacuum Hammer.

Canadian Patent November 9, 1877.

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

George Brush

EAGLE FOUNDRY, MONTREAL.

Dryden, Murney & Co.

MANUFACTURERS OF

Hydraulic, Steam,

Electric

and Hand-Power

.ELEVATORS.

78 ESPLANADE ST. W. TORONTO.

ACETYLENE GAS

Ideal Generator the only machine that submerges the carbide.

No Opening of generator.

No Heat in generator.

No Overgeneration.

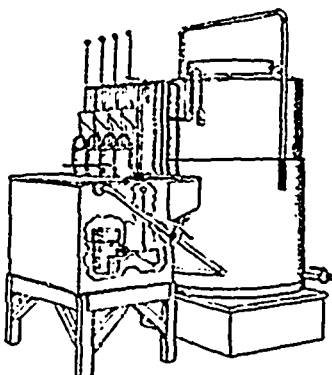
No Bad Odour through house.

No Danger.

Recognized by all EXPERTS as the PROPER PRINCIPLE

Town Lighting and Large Plants a Specialty

J. WALLACE & SON, 156 King St. East, Hamilton, Ont.



Sizes—25 light to 2,000 lights.

Dominion Oil Cloth Co.

Manufacturers of....

OIL-CLOTHS of Every Description

Floor Oil-Cloth, Table Oil-Cloth, Carriage Oil-Cloth.

Enamelled Oil-Cloth,

Stair Oil-Cloth, etc.

Office and Works

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

A VANISHING ASSET.

The following interesting statement relative to the rapid disappearance of the spruce forests of New England is furnished by Mr. George T. Crawford, one of the best posted men in the business. For the past forty years he has been connected with the logging business in one way or another, and for many years he was the timber land expert and buyer for three of the largest paper mills in New England. He knows probably every square mile of those forests of which he writes, and his authority is recognized throughout the trade.

Mr. Crawford says: In 1870 there stood in the mountain districts of New Hampshire about 1,600,000 acres of primeval spruce forest carrying about 10,000 feet, board measure, to the acre, or sixteen billion feet in all. At that date this was the best spruce forest in North America.

But few railroads then penetrated this great wilderness. Prior to 1870 logging in a small way had been carried on along the Connecticut, Merrimac and Saco Rivers and the cut driven on the streams to the markets below. Most of the spruce was situated long distances from drivable waters, and the average price per acre was about \$1, and purchasers were few even at that figure. The requirements of the lumber markets were supplied by these small cuttings in New Hampshire and from other small oper-

ations in what was then regarded as the limitless forests of Maine and New Brunswick.

The use of wood pulp in the manufacture of paper began about 1870, but at first it was thought that poplar was the only wood that could be used for this purpose. In a few years it was found that spruce was a better wood, and to-day but little poplar is used.

There is now standing in New Hampshire about 280,000 acres of virgin spruce forest, carrying the same 10,000 feet per acre. There is no increase in such virgin forest, as the decay equals the growth. Increased growth only begins after cutting mature trees.

From sixteen billion feet in 1870, the mature spruce of New Hampshire has been reduced to 2,800,000,000 feet in twenty-eight years by cutting, fires, etc., or on an average of 400,000,000 feet per annum for lumber and pulp. The consumption of spruce for pulp is increasing at the rate of fifteen per cent. a year.

The pulp mills own less than 50,000 of the 280,000 acres of virgin forest now left in New Hampshire. The balance is held in large blocks by saw mills and speculators at prices largely enhanced by the present and prospective demand for pulp wood, and by the recent advance in the price of lumber. In fact it is the pulp mill and not the saw mill that governs the price of spruce.

So far only the primeval forests of the

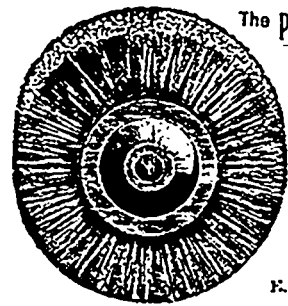
State have been discussed here. It should not be understood that all of the spruce now standing in the Granite State is on the above mentioned 280,000 acres. The average area cut over in that State more or less closely every year since 1870 is about 40,000 acres. The earlier cutting was not as close as has been the practice in later years, and large areas have grown and been cut over for the second and even the third time for saw logs. The great damage is now being done when the pulp mills buy these cut-over lands and sweep in every spruce tree standing down to sticks three inches in diameter, thereby postponing any reproduction by growth of any market value for a century at least.

All that has here been said about New Hampshire forests will apply with equal force to Vermont and to the Androscoggin drainage in Maine in proportion to their respective areas of primeval forest. In Maine, east of the Androscoggin basin are immense forests, but they never bore as much spruce to the acre as the forests of New Hampshire above described, and nearly every township in the State has been cut over more or less closely for spruce saw logs. About 8,000 square miles in the drainage of the St. John River in that State carry in the aggregate a large amount of pulp wood, but it is not available to pulp mills in our country. The Penobscot basin also has a large quantity of spruce for pulp available to present and prospective mills on that stream.

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

The Dominion Leather Board Co., MONTREAL, QUE.

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The **PRESTON BRUSH FACTORY**

Manufacturers of ALL KINDS OF BRUSHES.

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E. R. Salter, Prop. PRESTON, ONT.

THE SMART-EBY MACHINE CO., LIMITED

Steam and Gas Engines, Pumping Machinery, General Machinery.



193 BARTON STREET EAST HAMILTON, ONT.

CITY AGENTS WANTED.

WRITE US BEFORE PLACING YOUR ORDER.

TO FOUNDRYMEN

To the Superintendent of the Foundry Department: DURANGO, MEXICO, July 31, 1899.

DEAR SIR,—We are desirous to establish an agency in Toronto, Canada, and it will give us pleasure and you satisfaction to allow us to express to you a sample keg of hundred kilos of our new Ferro-Nickel Manganese Calcium Fluoride for trial in cupola and ladle use.

This alloy, like yeast, not an expensive article, gives new life to the metal in purity, ductility and softness.

Upon receipt of this, please telegraph at once to our exclusive Sole Agents, Messrs. Stahknecht y Cia., Bankers, Durango, Mexico, for a trial sample keg alloy, which we will be pleased to forward to you immediately by Wells, Fargo y Co.'s Express direct to your foundry. Twenty-four page catalogue free.

Awaiting your immediate reply, we are, your faithful servants,

The National Ore and Reduction Co.

DURANGO, MEXICO, P. O. BOX 83.

Howard Chemical Works, Howard Station, St. Louis, Mo., Agents for U.S.

ONTARIO GOLD MINING DISTRICT :

- Sultana Mine.
- Foley Mine.
- Mikado Mine.
- Olive Gold Mine.
- Cameron Island Mine.
- Hammond Reef Mine.

A Few Mines

WHO USE



BRITISH COLUMBIA :

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

CANADIAN RAND DRILL COMPANY, Montreal

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The Kennebec valley also has sufficient pulp wood to supply the mills and water-powers on that river, but the wood on these rivers cannot be made available to the large pulp and paper mills in Western Maine, New Hampshire, Vermont and New York, owing to long and expensive rail transportation.

When the vast capital invested in expensive water powers and pulp and paper mills in New York and New England is considered, making at least 720,000 tons of pulp for paper each year for domestic use and for export, requiring more than 700,000,000 square feet, board measure, of spruce, and under the prevailing system of cutting destroying 160,000 acres of average forest land each year, it is not a difficult problem to figure out how long this drain on the

forests above mentioned and available to these mills can continue. Moreover, the saw mills in those districts require for lumber a quantity of spruce equal at least to the demands of the pulp mills.

Paper must be made from spruce wood even at a price much greater than it is worth to-day.

THE DISCOVERY OF ACETYLENE GAS.

The facts relating to the discovery of acetylene gas which are vouched for are both novel and interesting. It appears that, some years ago, Thomas L. Wilson, of St. Catharines, Ont., was smelting for metallurgical purposes. From time to time he used a

good deal of rock salt in his furnace stock, and also limestone as a flux. Whenever these two materials were fused together, the slag produced by the intense electrical heat included a dirty grayish substance wholly unlike anything else he had ever seen. For weeks he noticed this substance without giving more than passing attention to it, dumping it into the stream upon the bank of which he had built his furnace. One day a curious thing occurred and at a time when the pile of slag had become so large that its top rose above the surface of the water. A minute or two after dumping the slag as usual into the stream, some of it going under and part of it remaining above the water in a red hot state, the sizzling and steaming was followed by a bright burst of flame. The

“KINDLY SEND THREE MORE.”

That's what one of the largest factories in Canada asked for. Probably couldn't decide who should keep the one copy we sent them.

You can't do better than to ask for one

IT'S A RECORD BREAKER.



IT'S HOT WEATHER....

But remember—If you pack the stuffing boxes with

To talk steam goods,

“Vuleabeston”

The Steam will stay inside.

THE FAIRBANKS COMPANY,

749 Craig Street,
...Montreal...

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.

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

For Estimates and other Information write

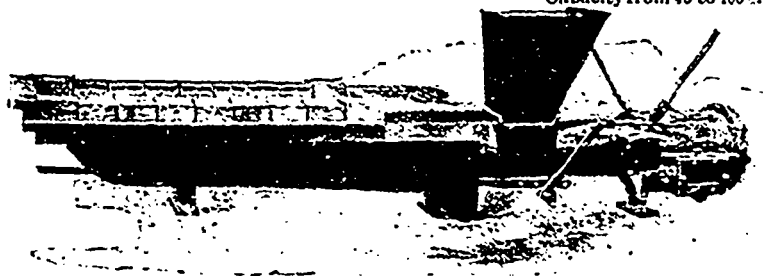
The General Engineering Co. Limited

SOLE MANUFACTURERS FOR CANADA,

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

Montreal—A. TREVETHICK, - Box 1123.

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next time Mr. Wilson used rock salt and limestone the blaze again appeared over the slag after it had been cast into the river, and, it being at night, he was much struck by the brilliant white light produced. The next time he had a batch of the queer grayish residuo to dispose of he did not waste it, but saved it and poured over it some water for experiment. To his surprise there was no flame, but after puzzling awhile over this feature, he held a lighted match over the pile, when instantly there was a white, glowing flame and Wilson knew he had found something worth while. His discovery was acetylene gas.

PAPER PULP FOR SHOE LASTS.

Some of the leading manufacturers of shoe lasts, boot trees and stretchers have been testing paper and wood pulp in various forms as a substitute for block wood, says an exchange. So far only samples of lasts have been made for practical use, and these were moulded and turned by hand. But as these pulp lasts do not split, warp, shrink or expand due to the enormous pressure to which the stock is subjected, and being very light and inexpensive, there is undoubtedly an interesting future in this line of work. There are no patent rights on the simple processes of preparing the stock, pressing and moulding it and finishing it off into the desired patterns of boot and shoe lasts. The lasts are cast about double the finish size and are reduced to the right proportion by pressure in steel forms. The grades of pulp consists, in the main, of cellulose fibre, waste clippings of cotton, linen, paper, etc., which are cleaned, washed and reduced to a paste in the heating engine and then run into the four tanks. Into one tank albuminates in small proportions are passed and mixed with the pulp. In another white lead and litharge are mixed. In another glutinous matter and in another turpentine. In each instance the ingredients thus added are equal to about one pound to thirty pounds of pulp.

Mr. H. G. Marsh will erect a saw mill at Welland, Ont.

ECO MAGNETO WATCHMAN'S ELECTRIC CLOCK.

Without Batteries.

Write for descriptive circular to

Eco Magneto Clock Co.,

Room 71, 620 Atlantic Avenue, BOSTON, MASS.

MONTREAL ELECTRIC CO.,

1898 Notre Dame Street, (Balmoral Hotel Block).

Agents for Province of Quebec.

John Starr, Son & Co. (Limited),

HALIFAX, N.S.,

Agents for the Maritime Provinces.

When writing to

SPOONER'S COPPERINE.

It has long been known to all who use heavy machinery, particularly in Canada, that Port Hope, Ontario, is the handsomest town on the American continent, and that the only place in the world where Spooner's Copperine is made is at Port Hope. We are quite safe in going further and saying that if Spooner is not the handsomest man in Canada, which he himself will bashfully admit, he is the only Spooner, for there are none like him.

This prelude leads us to remark that Mr. Spooner has sent us a circular having refer-

ence to his copperine, a part of which we reproduce as follows:

"Copperine" is as rich a metal as most men can handle without a crucible, an inexperienced man cannot handle a crucible, all you need is an iron ladle and a wood fire to heat "Copperine." Heat it hot and heat it slowly, don't skim it, pour when it all goes down level, it will run like water, and it will run up sharp the smallest or thinnest box, or the heaviest box required—don't try to pour it cold. If any man faults "Copperine," he lacks proper knowledge of handling good metal—it requires practice even to pour and make boxes well. It requires more experience to pour box-metal, than

Felts for Pulp Mills

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

HAMELIN & AYERS, Lachute Mills, P.Q.

THE "SAFETY" Acetylene Gas Machine

Manufactured by

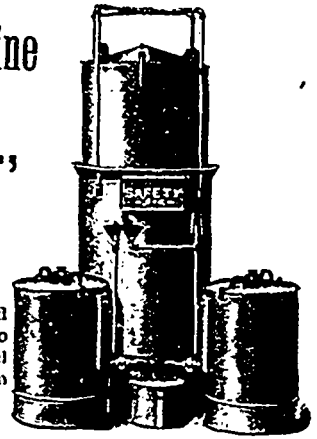
THE SAFETY LIGHT AND HEAT CO., DUNDAS, ONT.

WHAT SOME OF OUR FRIENDS SAY OF US:

DEAR SIR, -This certifies that the 15-light machine purchased from your Mr Sparling has been in use in my home for over two months, and is giving excellent satisfaction. It is the very model of simplicity and is very easy to operate. There is no waste from over-generation of gas, and the light is at all times clear and steady.

VERNON, B.C.

PRICE ELLISON, M.P.P.



The London Machine Tool Co., LONDON, ONT.

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

Having recently sold our patterns and plant to the A. H. 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, Plate, Etc.
- DRILLS—Standard, Sensitive, Multiple, Radial, Etc.
- MILLING MACHINES—Lincoln, Plain, Universal, Etc.
- SHAPING MACHINES—Whitworth, G. & E. Rack-Driven, Etc.
- HAMMERS—Steam, Sandage Drop, Stiles Drop.
- BULL-DOZERS for all purposes.
- PUNCHES AND SHEARS for Plate, Angles, Channels, Gauges, Etc.

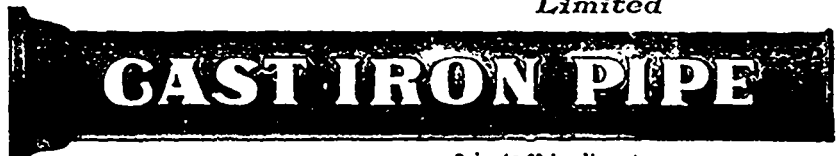
And we would call special attention to our PRESSES for Cutting, Stamping, Drawing, Wiring, Riveting, Etc. We shall also esteem it a pleasure to give quotations on Special and General Machinery in our line.

LONDON MACHINE TOOL CO.

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

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.

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to pour lead, in all degrees right up to brass, some men give themselves away badly on this point (they should always pour lead boxes to have it easy).

You will notice by this circular that I give some references and copy of two testimonials -- I have hundreds of them, from the finest mechanical engineers that Canada can produce, for this precious metal. That's a fine long feather for "Copperine" to wear, to be in the bearings of the largest engines on the continent of America. There was no scarcity of Babbit-Metals in Montreal, nor expert talkers, they were all after it. McGill College and the builders gave "Copperine" the preference head and shoulders above any of the others; it leads the "400."

When I struck "Copperine" it seemed necessary to compete with Babbit and other metals, until I discovered too late, they

were not in it, my prices were then down to bed rock, too cheap, and it's not easy to raise prices, mind you, consequently I am working with my coat off, "Still after the Woodchuck," drawing small pay -- bound to sell "Copperine" or bust a piece off the earth. e

And now, my friends, I must leave you, and attend to the furnace and crucible. I do earnestly solicit your trade and influence and your orders. I have spent a life-time on this thing and if there is anything I know well it's Babbit-Metal and "Copperine," and it's all I claim for it and far more, it will be for your comfort and advantage to use "Copperine" I believe there is such a thing as loyalty, I have been loyal to my friends always, it should reach to worthy men in trade, in our own country, if they make a good article at a reasonable price. I beg to subscribe myself, "Till the Master of all

Good Workmen shall set us to work Anew!" Sincerely yours, Alonzo W. Spooner.

MAMMOTH STEEL WORKS FOR CANADA.

At a meeting held in Montreal, June 22nd, the preliminary steps were taken for the establishment of what is expected to be one of the biggest iron and steel works in the world. A company, which will be known as the Nova Scotia Iron and Steel Company, with a capital of \$20,000,000 has been formed for the object of establishing iron and steel works at Sydney, C.B. Amongst those who are interested in the company are H. M. Whitney, of Boston, president of the Dominion Coal Company; Lord Strathcona and Mount Royal, Sir William Van Horne, Mr. R. B. Angus, Mr. Hugh McLennan.

JOHN J. KELLER & CO.

104 and 106 MURRAY ST.
NEW YORK

220 Church St., Philadelphia.
135 Pearl St., Boston.
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**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.
BASEL, 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.

**The
Best
of
Everything**

is not a bit too good for us. It is the kind of material we use in the manufacture of Shafting, Pulleys, Hangers, Tube Cutters, Pipe Cutting Machines, Swing Saws, Wood Lathes, Dough Mixers, and Paper Box Machinery.

Prices furnished
on application.

G. T. PENDRITH & CO.,

73 to 81
Adelaide St. West, TORONTO.

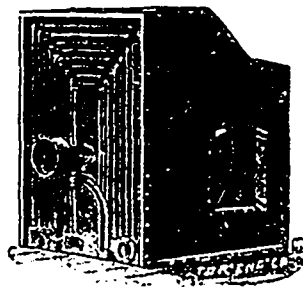
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The Fan System of Steam Heating for Heating
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Appliances for Drying

**Lumber, Brick, Wool, Cloth,
Hair, Soap, Glue, etc.**



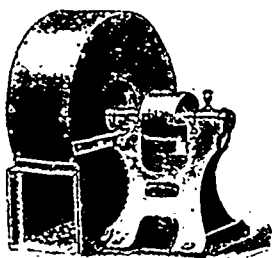
Heater and Housing.

VENTILATING . . .

Ventilating Fans for removal of Dust, Foul Air, etc.

WRITE FOR CATALOGUE AND PRICES.

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



Fan.

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F. E. ATTEAUX & CO.

53 Colborne Street,
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15 Lemoine Street, Montreal.

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

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

Mr. C. R. Hosmer, Mr. James Ross, Mr. Abner Kingman, all of Montreal; Senator George A. Cox, of Toronto; Mr. T. E. Kenney, of Halifax; Senator McKeen, of Nova Scotia; and B. F. Pierson.

The Dominion Coal Company is largely interested in the new project, inasmuch as the coal supply which the new company will use in the production of iron and steel will be obtained from them, and this will amount to many hundreds of thousands of tons a year. The company will obtain a part at least of the iron ore from Newfoundland, which, it is claimed, is easily accessible from Sydney. It is stated that Sydney for the home of such a mammoth works as this will be an ideal spot, and that, with Newfoundland iron at their doors as it were, with a harbour at Louisburg, which is open all the year round, with coal on the spot, and, lastly, within easy and convenient distance of all the large world's centres, their position will be unexcelled.

It is estimated that works the size of the one which it is proposed to erect will employ some four or five thousand people.

At the recent annual meeting of the Dominion Coal Company, Mr. Whitney, the president of the company, stated that this iron and steel company proposed giving the Dominion Coal Company a contract for from 1,000,000 to 1,500,000 tons of coal per annum.

The new company, which will be known as the Dominion Steel Smelter Company, was organized with the following executive officers:—President, H. M. Whitney, Boston; Vice-president, R. B. Angus, Montreal; Treasurer, John S. McLennan; Secretary, T. B. Penson. The Board of Directors includes Senator Cox, Toronto; Senator

THE....

A. R. WILLIAMS MACHINERY CO.

(Limited)

Head Office, - SOHO MACHINE WORKS, TORONTO

Manufacturers of and Dealers in

High-Class Iron Tools,

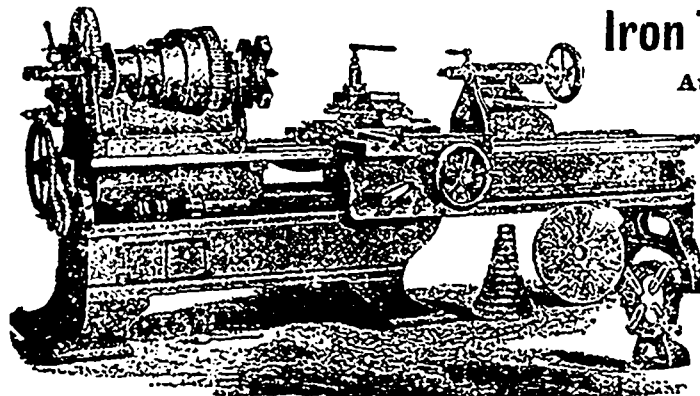
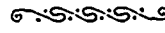
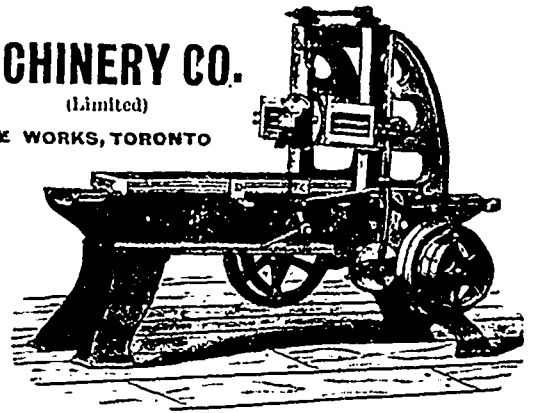
Wood-working Machinery,

Engines, Boilers,

Motors, Water Wheels,

General Machinery

and Supplies.



Iron Tool Works

At London.

BRANCHES

193 Colborne St.,
BRANTFORD

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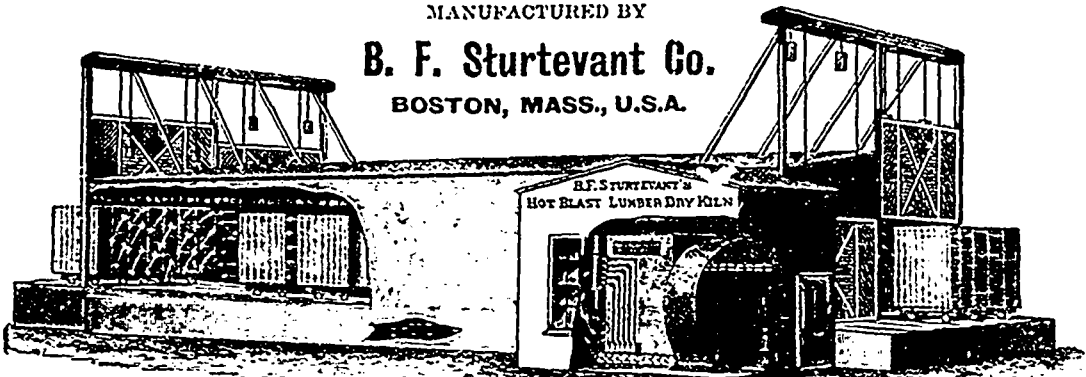
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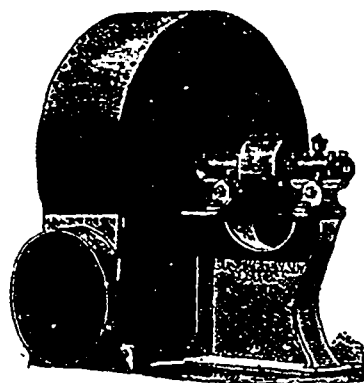


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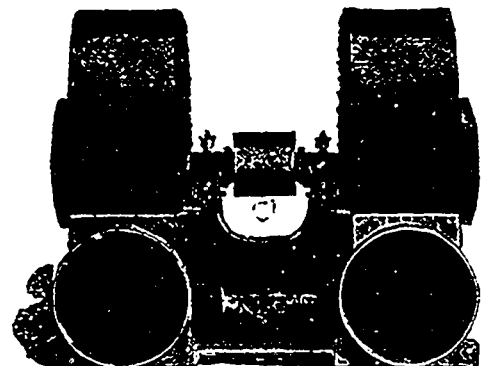
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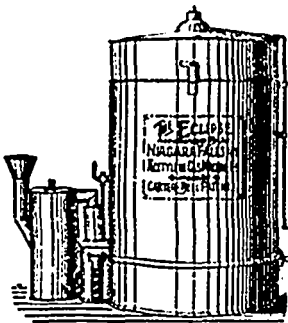
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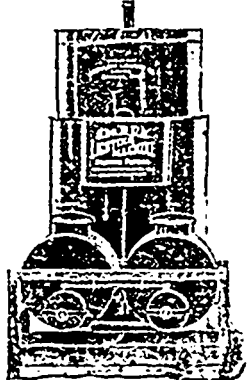
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McKeen, Nova Scotia; Sir William Van Horne, James Ross, and Robert McKay, of Montreal; Michael Dwyer, Halifax, and J. Paget, of London, England.

It is said that this company are contemplating purchasing the Wellington nickel mines at Sudbury, Ont. This mineral deposit, which has the reputation of being the richest nickel mine in the world has not been worked for several years.

It seems that Mr. B. F. Pierson, secretary of the Dominion Steel and Iron Company, has approached some of the shareholders of the company in Montreal with a view of negotiating for the purchase of the mines. The Sudbury property would, it is thought, be a valuable addition to the Dominion Steel and Iron Company.

JACQUES CARTIER WATER POWER

An interesting article upon the hydraulic works in course of construction upon the Jacques Cartier River, near Quebec City, is given in the French daily, Le Soleil, of that city. It is written by Ulric Barthe, who has given a good deal of attention to developments of water-power in Quebec province. Some of the descriptive portions of the article are worth reproducing.

People, says Mr. Barthe, are beginning to go to Jacques Cartier as they go to Grand Mere, and as they will go very soon to Shawiniqua, where two or three hundred men have just been put to work. The Jacques Cartier is one of the great tributaries of the St. Lawrence. The broad and deep channel of the river is scattered with falls and rapids. The spot chosen by the Jacques Cartier Power Company is well situated for a work of the kind projected, being about fifteen or sixteen miles in a straight line from Quebec, and just below the great bridge crossed by

the Lake St. John Railway before reaching St. Gabriel station. Just above the falls which is to be harnessed, the river, 350 feet wide at that point, is divided by a wooded island 600 feet long. The first part of the company's plan of development has consisted in blocking one of these arms of water—the northern channel—by means of a dam of strong masonry at the head of the island. Hence the old bed of the stream on the north side of the island is now dry, and what was once an island is no longer one. The whole volume of the river above the island now forms itself through the southern channel where they leap down in a fine waterfall. In this channel is a dam made of masonry with vertical walls, which crosses nearly half the water-course, where the bulkheads are to be, and a dam of lesser height for the purpose of raising the level of the water for floatage.

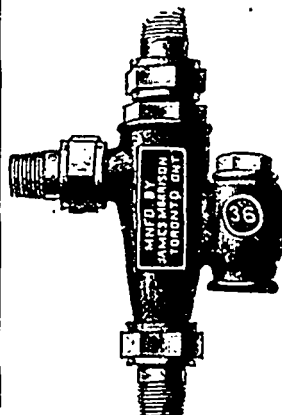
An idea of the work actually done is given. The little causeway blocking the north channel is completed, and the main dam is also finished, except the casing and the planking. The bulkhead is finished, and the outline of the conduits is marked out. The steelwork of the bulkhead is completed. The steel supports on which the main pipes will rest have arrived, as have also the turbines and all the materials. Upon the power house operations have been begun, as well as upon the tail race, which is to be fifty feet wide. The power house will be of brick, on a foundation of heavy masonry, with a concrete floor. Its groundwork dimensions are to be 58 x 38 feet. The two main pipes leading water to the turbines have a diameter of fourteen feet, the discharge through the two being equivalent to a stream fifty feet wide and six feet deep. The head of water is thirty feet.

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The contractors of the hydraulic part hope to have their work finished by the end of July, and the company expects to be able to furnish electricity to Quebec by next winter. It has begun to place its line of posts across the country. The contract for the masonry, etc., is in the hands of Ross, Barry and McRae, the same who have undertaken the building of the section of the Great Northern Railway to Hawkesbury. The International Hydraulic Company, of New York, is putting in the waterworks system.

MECHANICAL DRAFT FOR STEAM BOILERS.

The chimney has so long served as the sole means of producing draft for steam boilers, that any change from this method at once awakens interest. It is for this reason that the subject of mechanical draft has received so much attention from the engineering

public. Instead of a chimney the draft is by this method produced by means of a fan-blower, arranged either to force air into the ash pits beneath the fires, or to act like a chimney and exhaust it from the flue. The chimney can then be omitted, and in its place there can be substituted a short smoke pipe, extending just above the roof of the building.

When the draft is produced by mechanical means, it is independent of the weather, and may be made as strong as necessary for the burning of the cheapest kind of fuels. When draft is produced by means of a chimney, from 20 to 30 per cent. of the heat of the coal is needed to make it draw well. The fan requires but very little power to operate it, and much of this waste heat can be utilized.

The efficiency of any boiler plant depends first on the primary cost of the entire plant, and the fixed charges thereon; second on the amount of heat which is transferred from the fuel to the water; and third on the operating expenses, which include the cost of fuel. The average cost of nine different

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mechanical draft plants varied from 18.7 per cent. to 42.6 per cent. of that of a brick

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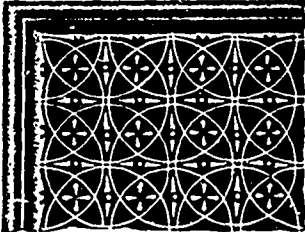
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chimney, according to the method of mechanical draft production employed.

The cost of the mechanical draft being less, the fixed charges are also less. In a certain 2400 h.p. boiler plant, the cost of a chimney with damper regulators was \$11,100, and the cost of a mechanical draft plant to take its place would have been \$4,700, showing a saving in first cost of \$6,400. It also made possible the reducing of the rated h.p. of the boilers, and the forcing of the remaining number to do more work.

In the matter of economy of operating expenses, it may be stated that in the case of the United States Cotton Co., of Central Falls, R.I., where a plant was installed costing about \$850, it made possible the reduction of the annual fuel bill by \$6,500. This was effected by substituting a very low grade fuel, which it was impossible to burn with chimney draft, but which was easily burned when the fan was in operation.

Another case is that of the Hotel Iroquois at Buffalo, N.Y., where a saving of fully twenty-five per cent. was made in the fuel bill by introducing a fan and substituting low grade fuel.

When a fan is employed for draft production, it is generally made of steel plate, and therefore can be constructed in any shape required, and supported without heavy foundations. In operating it is both positive and flexible, and can be regulated with the finest degree of adjustment to the necessities of the fire. It can be automatically controlled so as to require no attention whatever, and at the same time maintain absolutely constant steam pressure.

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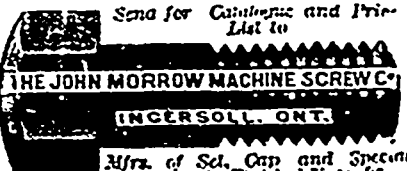
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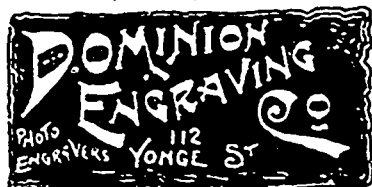
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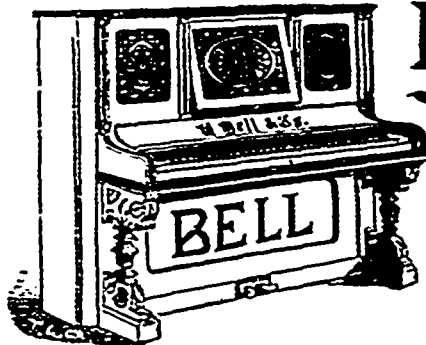
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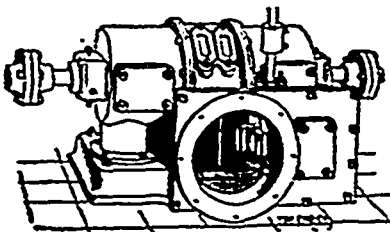
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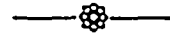
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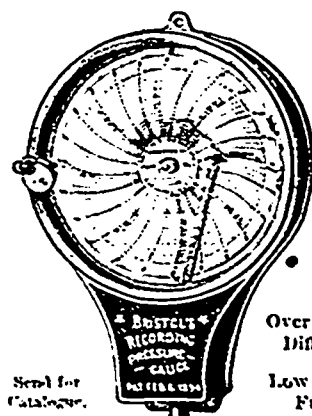
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