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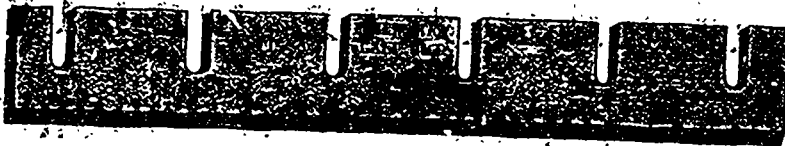
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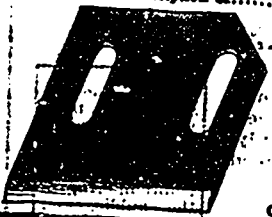
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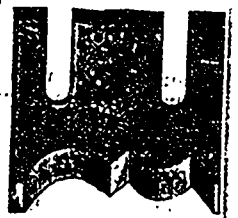
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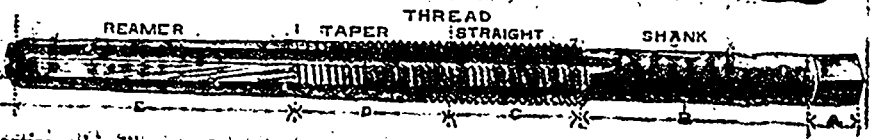
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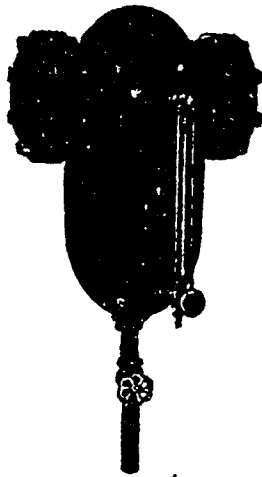
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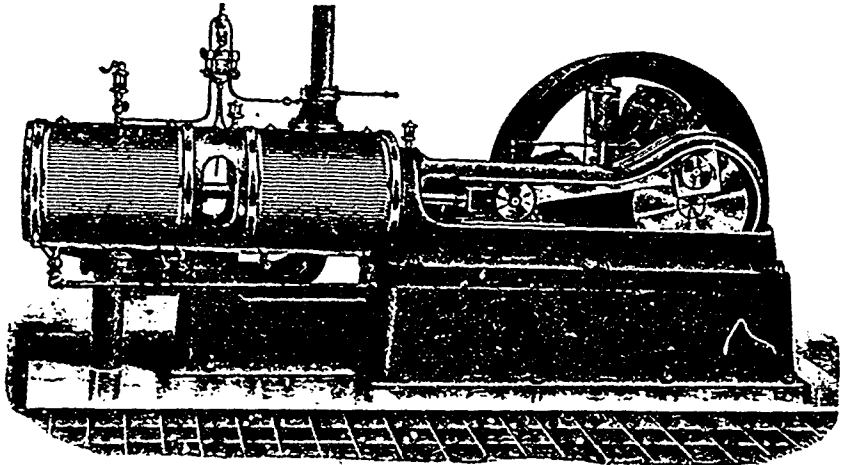
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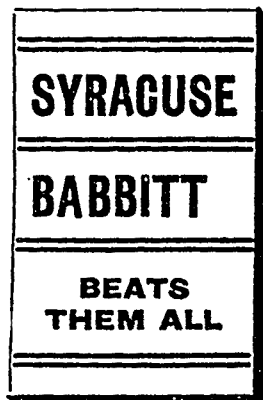
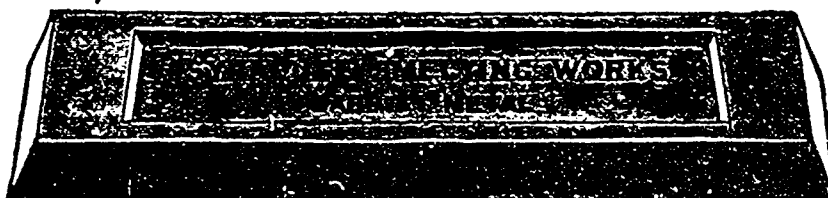
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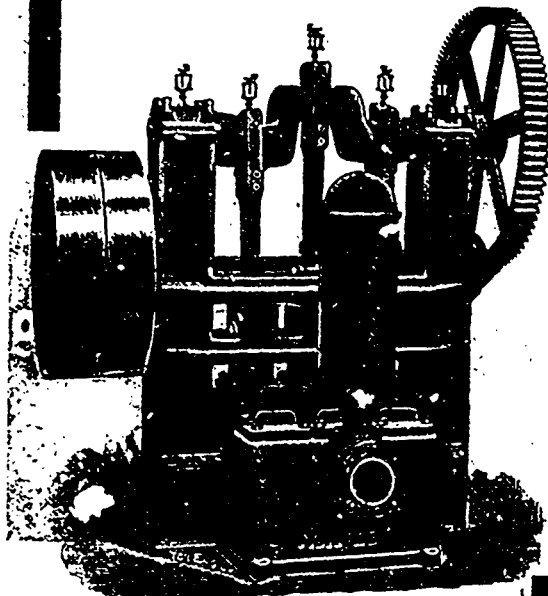
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MESSRS. DAVISON & CO.,
164 Federal Street, Boston, Mass.
AGENTS FOR UNITED STATES.

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J. J. CASSIDY, Editor and Manager

CANADA GAINING IN EXPORT GRAIN TRADE.

A few days ago the canal committee of the Produce Exchange of New York issued a table of statistics to show that Canada was fast encroaching upon the lead of the United States in the export grain trade to the detriment of New York more than to any other American port. The figures are put out as an additional argument for the construction of a barge canal between Buffalo and New York. The table shows that the shipments for the week ending June 28 were as follows:

	Flour barrels.	Wheat bushels.	Corn bushels.
Mobile.....	2,269	.....	2,996
New Orleans.....	15,353	353,740	7,809
Galveston.....	1,806	224,460	.....
Total.....	19,428	578,200	10,805
Total grain (bushels) by gulf ports.....			589,005
Total by other United States ports.....			742,806
Total by all American Ports.....			1,331,811
Total by Canadian routes.....			1,002,265

Of more significance, in the long run, than the distribution of the traffic, of course, is the great falling off in American exports of grain. Wheat exports are slightly above the average of years, but no corn whatever is being shipped out. It is just this falling off, a sequel of the corn crop failure of 1901, which is largely accountable for the present preponderance of shipments via Canadian ports.

"There is no Indian corn going out," said David Bingham, chairman of the Produce Exchange committee on discrimination in freight rates, "and there is more than the usual volume of wheat going from Manitoba to Europe. It is to the interest of Canadian transportation companies to carry this freight as far as possible on their own lines. Besides, the Manitoba wheat normally goes by Montreal. Then, too, the railways, acting, no doubt, through their joint traffic association, put up the rate from Buffalo to New York to 4½ cents a bushel. That rise diverted some American wheat to Canadian routes. The rate was later reduced to 3.9 cents, but, even at that, it failed to attract much freight.

"In the second place, the Atlantic steamship lines have fixed a minimum rate of 1½ d. per 60 lbs. of grain shipped from American ports to London and Liverpool. Portland they do not control, nor is their authority complete at Montreal and Quebec. The effect of any cuts in ocean freights at Canadian ports would be to divert shipments from New York. As a matter of fact, however, the ocean freight rate from

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Reaches all the Blast Furnaces, Iron and Steel Works, Rolling Mills, Manufacturers of Iron and Wood-Working Machinery, Steam Engines and Boilers, Pumping and Mining Machinery, Electric Machinery and Appliances, Machinery Dealers and Steam Fitters' Supplies, all Hardware Dealers, Cotton, Woolen, Knitting and Yarn Mills, Pulp and Paper Mills, etc., in Canada.

Montreal to British ports is about the same as from New York. Where shippers by Canadian routes have an advantage is in inland rates. The rate to Montreal from the foot of Lake Erie is about 1 cent lower per bushel than from Buffalo to New York, thanks to the Welland and St. Lawrence chain of canals. From the head of the lakes—say near Duluth—the rate is about 1½ cents a bushel less, thanks to those same canals.

"Notwithstanding all this, I am satisfied that when, after normal crops, this country begins again to export a normal quantity of grain, New York will again obtain a fair share of the export business in grain, provided, of course, that the railway and steamship lines put no new obstacles in her way. Had we only the advantage of an Erie canal capable of floating thousand-ton barges we should suffer now considerably less from Canadian canal competition than we do in the present condition of that waterway. One oppressive incident of existing circumstances is the fact that our grain moved by Canadian routes the Canadians monopolize the profits and commissions. On business through Gulf ports New York dealers are given better chances to trade. Our position relative to the Canadians, taking into consideration fixed railway tariffs and minimum steamship rates, together with the possibility of attracting all the business by very slight shading of such charges, is best compared to that of the man who holds the candle while his competitor is selling out. One comfort, nevertheless, remains. If we do have a huge corn crop, it won't move, in time, to be shipped by water. Montreal will be frozen up before the corn is shipped, and New York will finally find its chance."

A railway traffic expert, whose familiarity with the grain trade is exact, was inclined to think the canal committee's figures on the advantage of shipping by Canadian routes somewhat high. The through rate from the head of the lakes to Liverpool via Montreal, he was inclined to estimate at not more than one-half or three-quarter cent less, per bushel than via New York. He also pointed out that most of the wheat exported was Manitoba wheat; that farmers of that province had neither the warehouses nor the cash to hold wheat; that when no buyer presented they even shipped the grain to London for sale on commission; that Canadian railroads were likely to make concessions to keep the freight on their tracks till the port of shipment was reached, and that some cutting of ocean freights might be going on at Montreal. In any case, that port had an advantage over New York in low port charges and nominal elevator charges.

Steamship men admitted that wheat had been taken from Montreal to certain British ports at 6d. the quarter, or just one-half the agreed minimum of 1½d. per bushel; but they said that such transactions, at less even than ballast rates, were permissible under the agreement of the lines when stiffening was needed for ships. Neither steamship nor railway men seemed much to fear that when a large volume of American grown grain was in movement toward Europe, New York would lose much of its rank as a grain-exporting port.

SNIDE TRADE JOURNALISM.

The Monetary Times deserves credit for the spirited manner in which it is exposing the methods of certain Canadian trade journals in obtaining advertising business by doubtful methods from unsuspecting manufacturers and others, notably in Great Britain, who desire to sell their products in Canada. While the subject our contemporary discusses may be new to most of its readers it is an old and exceedingly disagreeable song to the publishers of trade journals who hold themselves above practising the wiles of the charlatan and deceiver. The publication of trade journals is an honorable and useful occupation, and when properly managed not only reflect credit upon those who conduct them, but are of great advantage both to those who have things to sell and to those who wish to buy. Both seller and buyer learn quickly the value or otherwise of a trade journal, and are as quick to appreciate the value of those which observe honest dealing and truthful representation as they are to despise those which are actuated by unworthy and sordid motives. The conditions of which the correspondents of the Monetary Times complain have prevailed for a long time, but we bear in mind the adage that a lie can travel many leagues while truth is pulling on its boots. The game has been worked upon the unsuspecting in Canada and the United States so repeatedly until the chief perpetrator of it finds other climates decidedly more healthy, and now the easy-going Britisher finds it easier to gracefully succumb to the hypnotic influences of an unprincipled advertising solicitor than to entrap him in his false representations and place him behind prison bars.

Following is a portion of a letter from a British manufacturer which our contemporary publishes, and which describes a character quite as well known on this side the Atlantic as in Great Britain.

A certain person in regal equipment called at our office, and from his wonderful story of trade waiting for us, and what he could do for us, we were at first under the impression that he was a special envoy from the Canadian Government sent over to foster the trade between England and Canada. Subsequently, however, it transpired that he represented a certain journal, the _____, and under promise of doing a trade that would "startle us" we gave them our advertisement. We, moreover, undertook to send out over a hundred costly catalogues, together with a circular letter dictated by the gentleman in question, copy of which we enclose for your information. Needless to say we have not had a single enquiry from anybody. . . . We wrote several other firms who had been caught in the same manner around our locality, and were not surprised to find they had the same experience. Needless to say we have cancelled our advertisement and refused payment altogether. We again thank you for your clear article—you have done English manufacturers a great service.

INDUSTRIAL ARBITRATION.

"The Industrial and Conciliation Act passed by the West Australian Parliament, copies closely the provisions of the earlier New Zealand legislation," says Australian Hardware and Machinery. "Too closely indeed for the conciliation

clauses, which have proved little more than an irritation, and which on that account have been omitted in the New South Wales Act, as well as in the bill attempted in Victoria, have been retained. As in New Zealand, the machinery may be set in motion by either employers or employees, but only when associated in keeping with the provisions and not by individuals. The 'worker' who may take advantage of the Act is defined as 'any person of the age of sixteen years and upwards of either sex, employed or usually employed by an employer to do any skilled or unskilled manual or clerical work for hire or reward in any industry,' while 'employer' includes persons, business firms, companies, and corporations employing one or more workers. Both employers and employed must be combined in 'industrial unions,' two or more of the former employing at least fifty workers, and not less than fifteen of the latter being eligible for registration. Two or more of such industrial unions may in turn be registered as 'industrial associations,' through their councils or other representatives. For the purposes of conciliation, the Governor-in-Council is empowered to divide the State into such 'industrial districts' as he thinks fit, and to appoint for each a clerk at a stipulated salary. The 'Boards of Conciliation' are to consist of three, five or seven members, as the Governor may determine. An even number of the members are to be elected by the industrial unions within the district, half by the employers and half by the workers. These members, when elected, will select an outside chairman. They will hold office for three years. In addition to these bodies, special boards of 'Conciliators' may be appointed by the Governor in any place, whether included in an industrial district or not. Disputes may be brought before such boards by industrial unions or associations of workers, by industrial unions or associations of employers, or by individual employers. The boards are given power to summon witnesses and take evidence, but not to order the production of books. Any recommendation arrived at, after hearing a case, must state the term over which it is to extend, such term to be not less than six months nor more than three years. If neither party makes appeal to a higher tribunal within one month, the recommendation takes effect. As in New Zealand and New South Wales, there is only one Court of Arbitration for the whole State. It will consist of three members appointed by the Government, one on the recommendation of employers and one on the recommendation of the workers, the third, a judge of the Supreme Court, to be president. The court will hear appeals from the conciliation boards, or deal with cases brought before it direct. It has power not only to summon witnesses as in the case of the conciliation boards, but to order the production of employers' books. In issuing its award the court is given the right to prescribe a minimum rate of wages or remuneration, with special provision for a lower rate in the case of any worker unable to earn this minimum. The New South Wales Act provides for the two members of the court being paid a stipulated salary, but the West Australian Act leaves this and other matters to be prescribed by the Governor-in-Council."

ANSWERS TO ENQUIRERS—THE METRIC SYSTEM.

In its "Answers to Enquirers" our esteemed contemporary The Monetary Times publishes the following:

Mechanic, Hamilton.—We did not expect to receive such a letter as yours on the Metric System from a Hamilton man. Evidently you are not aware that the system is so far from being deemed "utterly impracticable," as you call it, that the High School arithmetic, for Ontario, compiled by your

Hamilton Inspector of Schools, Mr. Ballard, and the principal of your Collegiate Institute, Mr. Thompson, contain six or eight pages of problems in the Metric System, dealing with the very kilometres, cubic metres, litres and hectares which you despise. The world moves, whether we move or not.

There are some who agree with the Hamilton mechanic in considering the metric system of weights, measure and values "utterly impracticable" for the use of the present generation, although the High School Arithmetic for Ontario contain six or eight pages of problems dealing with it. It may be that the compilers of the arithmetic, and The Monetary Times also, entertain the idea that when six or eight pages of problems are presented all the objections to the system are swept away, and with all due respect to such high authority we venture to remark that they differ considerably from a large number of other very wise men in Great Britain, United States and in Canada also, else movement of the world would long since have carried them into an advocacy of a system that they do not now adhere to. The Hamilton mechanic need not be overcome with a feeling of absolute loneliness when he reads the opinion of Prof. I. J. Chapman, of Pittsburg, Pa., as expressed in The Gazette of that city, in which, in reply to the question What is the Metric System? says:

The proposition now before Congress to change our present system of weights and measures for what is called the metric system is certainly not well understood by the people or a protest would go up that would call a halt to such a proceeding. This proposition contemplates the abolition of our entire system of weights and measures and the substitution of another of which the very terms are so long and difficult as to be startling. The old familiar inch, foot, mile, etc., are to disappear, and in their places we are to have the meter, millimeter, centimeter, dekameter, kilometer; instead of the old-time bushel, peck, quart, etc., we shall buy and sell by the liter, centiliter, dekaliter, etc.; and instead of ton, pound, ounce, etc., we shall deal in grams, milligrams, kilograms, quintals, tonneaus, etc.

To most reflecting minds this invasion of our English language by a host of foreign words and the displacement of the terms familiar from our childhood by a string of difficult words of Latin, Greek, and French origin is very distasteful. Apart from mere sentiment, however, there are very grave objections of a practical character. For one thing, to all succeeding generations all our present literature and science would be largely unmeaning, or at least difficult to be understood. Every line of poetry in which any term of distance, weight, or measure occurs would have to be reconstructed. To every present book a glossary of obsolete terms would have to be added. Just as the ancient terms homer, hin, and cubit, used occasionally in our translation of the Bible, are indefinite or unmeaning to the average reader, so, only on an infinitely greater scale, would be all the terms now used in millions of instances in our present literature.

Another objection is that all our appliances for determining weights and measurements would be rendered useless. All our scales, yardsticks, quart measures, and so on, would have to go to the junk heap. Millions of dollars would be required to replace them with standards of the new system. These are considerations that one would think ought to give our legislators reason to pause. Yet men of whom one would have expected wiser counsel have been using their influence to have this enormity imposed upon the people, and the Congressional committee having this matter in charge has gone so far as to sanction a bill to this end.

The inconvenience of this system for practical purposes is appalling. An inch is 2.54 centimeters; an acre is .4047 of a hektare. A peck of beans is .0881 of a heکتoliter. Shylock's "pound of flesh" becomes a demand for .4536 of a kilo. The area of Pennsylvania expands into a territory of 119,140 square kilometers. Does all this add any clearness to our ideas of size and distance? Milton's fallen angel drops plumb down not "10,000 fathoms deep" but a distance of 1 myriameter 8 kilometers 2 hektometers 8 dekameters and 8 meters. Only think of it! There are only a few specimen beauties of the proposed scheme.

The metric system may have, and likely has, some advantages, but they can never counterbalance the enormous disadvantages mentioned.

AGAINST THE NATIONAL POLICY.

It is stated that as a result of the recent visit of Mr. Robert Munro, president of the Canadian Manufacturers' Association, to the West Indies, a movement is on foot looking to the establishment of better trade relations with these islands. The great hindrance which stands in the way of creating a good market for Canadian products in Jamaica is the lack of transportation facilities, and it is proposed that a small duty be imposed upon bananas and oranges imported from the West Indies into Canada via the United States. This, it is claimed, would encourage imports from Jamaica through Canadian seaports, and would also be an advantage to Canadian railways, putting us in direct touch with a market importing goods to the value of \$8,275,000 a year, Canada's share of which is now very small.

In 1901 Canada's imports of bananas and other citrus fruits were valued at \$582,528, of which only \$1,483 came direct from the British West Indies, less than \$100 worth coming in from any other country except the United States, and of the \$86,066 worth of pineapples imported, only \$602 worth came direct from the British West Indies. These fruits are admitted duty free.

Our imports of oranges, lemons and limes in 1901 were valued at \$922,003, of which we received direct from the British West Indies \$33,870 worth. The rates of duty charged upon these articles vary according to the size of the package in which they are contained. A considerable portion of these fruits are of Mediterranean origin, and \$593,089 worth—nearly two thirds—came via United States ports.

It is not in accord with the principles of the National Policy of tariff protection to home industries to impose duties upon things that we cannot produce at home, and when such duties are imposed, as upon oranges, lemons and limes, it is for revenue purposes only.

As we have shown, the consumption of these semi-tropical fruits in Canada is very large, and can in no sense be considered luxuries. In fact they are in as strong demand among the poor and lowly as among the rich, and it is doubtful if the Government could be induced to increase the cost to consumers, even to encourage our maritime shipping interests.

A CANADIAN TRADE INDEX.

In view of the fact that the two editions of what was called a "Canadian Trade Index," published by the Canadian Manufacturers' Association, proved to possess but very little of value, seeing that they included the names and nature of products manufactured by only a few hundred concerns which happened to be members, quite a number of whom were not manufacturers at all, while to the knowledge of the Association there were perhaps twenty thousand other bonafide manufacturers in Canada to whom no allusion whatever was made, and supposing that at an early day another Trade Index will be published by the Association, we commend to those whose duty it may be to prepare the matter for it a preliminary study of "The Industrial Directory of New Jersey," compiled and prepared by William Stainsby, Esq., chief of the Bureau of Statistics of that State, a copy of which has been sent us by Mr. Stainsby. The Directory, which contains some 300 pages, includes the names and location of every city, town and village in the State in which any manufacturing concern is located, described in alphabetical order,

with the names of the firms and companies in each place, a description of the goods they make and number of employees, and there is a classified directory of the manufacturers. Such a directory or trade index, as applied to Canada, would be of infinite benefit to our manufacturers and to the country generally, and would do good service in making known the advantages possessed by our industrial centres which offer tempting facilities for the location of other industries and also in advertising the numerous mills, factories and workshops with which the country is already studded. There is plenty of room in Canada for more manufacturing industries. The generous distribution of such a directory in other countries would be of great benefit not only to the Association but to this great Canada of ours.

THE COLONIAL CONFERENCE.

A number of the subjects to be discussed by the colonial premiers with the Imperial authorities at their Conference now being held in London are announced as follows :

The following subjects were selected by the Colonial Office :
The political relations of Great Britain and the colonies.
Imperial defence.

The commercial relations of the empire.

The relations of Australia and New Zealand with the islands in the Pacific.

The following subjects were selected by New Zealand :

Preferential tariffs by way of rebate duties on British manufactured goods carried in British-owned ships.

Rebate on duty in the Mother Country on colonial products which are now taxable.

An imperial reserve force for service in case of emergency outside the dominion or colony in which such reserve is formed, the cost of maintaining and equipping to be agreed upon between the Imperial and Colonial Governments; the Australian squadron to be strengthened on the lines of existing arrangements.

That subsidized mail services be established between Australia, New Zealand, Canada and Great Britain, the steamships to be British owned and so fitted that in time of war they may be armed and used as cruisers.

That in South Africa members of the learned and skilled professions who have been admitted to practice in Canada, Australia and New Zealand be allowed to practice.

That triennial conferences be held between the Imperial secretaries of state for the colonies and the premiers of self-governing colonies.

The following was suggested by the Natal and Cape Governments :

That the naturalization of aliens in any part of the British Empire will be sufficient for the whole of the Empire.

These were suggested by Australia :

That preference be given to colonies in army and navy contracts.

The construction of ocean cables and the purchase thereof.

The establishment of an Imperial court of appeal.

The mutual protection of patents against loss.

The most favored nation treatment, and if a British preferential tariff is given, imperial stamp charges on colonial bonds.

No official information is available as to the suggestions made by Canada.

EDITORIAL NOTES.

As recorded in *Industrial Canada* at the June meeting of the Executive Council of the Canadian Manufacturers' Association, a communication was read from Mr. Jas. Cassidy, desiring an appropriation for a series of articles to be written on the industrial progress of Canada, which was referred to the commercial intelligence committee. To prevent misapprehension we would say that the Mr. Cassidy alluded to is in no way connected with *THE CANADIAN MANUFACTURER*.

The next annual meeting of the Canadian Manufacturers' Association will be held in Halifax, N.S., on August 13 and 14. Much interest is being taken in the work of the Association by manufacturers in the Province of Nova Scotia, a branch having recently been established in Halifax. The programme for the forthcoming annual meeting includes the discussion of several very interesting subjects. To members who reside in the more western parts of Canada attendance at the convention implies a most delightful excursion through one of the most beautiful portions of God's green earth.

Australian Hardware and Machinery, alluding to an editorial recently published in *THE CANADIAN MANUFACTURER*, asks "What's in a name" and says :

Some fervid Scotchmen at home and abroad object to the use of the terms "English" and "England" when applied to the affairs of the whole kingdom. Admitting that England is the "dominant partner," they claim recognition in the trade name of the concern. A former Governor of Victoria, with tactful respect for this feeling, made it a point always to speak of the "British Army," "British trade," and so on. Could he have found an adjective comprehensive enough to have included that other member of the more or less united firm he would, doubtless, have employed it. For surely Ould Ireland's coat-tail should be as sacred even from Vice-Regal toes as the fringe of auld Scotia's plaid. A sentiment of similar character is now finding expression in the great world of the west. Canadian newspapers are being castigated by patriotic correspondents for habitually calling the people of the United States "Americans." As if Canadians were not Americans, forsooth! As if it were not enough that President Roosevelt's 75 millions should push their dark designs for the Americanization of Canada without Canadian editors aiding and abetting them! Canadian editors, it must be confessed, are inclined to smile at the outburst, he of *THE CANADIAN MANUFACTURER* cruelly referring to it as a windmill fight. It is not likely that our Lady of the Snows will catch this sensitive fever, spite the propagating efforts of the Knights of La Mancha. Her head is too cool.

The Canadian Manufacturers' Association has appointed Mr. S. M. Wickett as a special representative of the Association, to visit the Yukon country to investigate the trade conditions there, and to make arrangement, as far as he can, for members to place their goods upon that market. Dr. Wickett is a member of the firm of Wickett & Craig, leather merchants, of Toronto. Mr. Wickett, we understand, expects to be away about two months; and it is to be regretted that he cannot give more of his time to his mission. The journey there and back is a long one, and but comparatively few days will be allowed him to make satisfactory investigations relating to the many different lines produced by the 1,000 members of the Association.

Members of the Canadian Manufacturers' Association should bear in mind that the annual meeting of this Association is to be held in Halifax, N.S., on August 13 and 14. According to *Industrial Canada* the programme for the meeting includes discussions regarding the tariff, transportation, legislation export trade, etc., and also the policy of the Association for the coming year. The clause of the constitution of the Association governing amendments thereto is as follows: "The Constitution may be amended only by a two-thirds majority (of members) present at any general meeting, thirty days' notice in writing of such amendment having been given the secretary; and it shall be the duty of the secretary to include in his circulars calling the next general meeting a notice of such amendment, both such notices to include the clause or clauses to be amended." As the meeting will occur in less than thirty days from this time, and as the secretary, in his

circular calling the meeting, has made no mention of any proposed amendments to the constitution, it does not seem that any such amendments can be considered.

The "Made-in-Canada" claim of Industrial Canada, a so-called trade paper published in Toronto, is as salty as a last year's Nova Scotia cod fish. In its June issue it announced that it was permitted on that occasion to wear upon its face the expression, "Made in Canada," and declared that it went to press with a "Canadian cover, Canadian type and Canadian ideas." It was a big, new and unusual claim, and perhaps it was truthful—perhaps not. In its July, 1901, issue it informed its readers that its managers had recommended that "a handsome and attractive cover be provided for the publication, and that a prize of \$50 be offered for the most suitable design for it;" and the August, 1901, issue appeared with the new cover, with the announcement that the \$50 prize for the design had been awarded to a New York artist—a foreigner. That design has appeared on the outside front cover of Industrial Canada ever since, and therefore the claim that the cover is a Canadian idea is not borne out by the fact. The claim also that the paper is printed with Canadian made type is equally astray, as there is no concern in Canada who manufactures such type. As to the claim for Canadian "ideas," in view of the other claims, our readers must judge for themselves. As "the official organ of an institution which is intensely and proudly Canadian," this "Made-in-Canada" claim is ridiculous.

The wide suspicion among our commercial competitors that Mr. Chamberlain is hatching some scheme of Imperial Federation that will give our Colonies and Dependencies preference over them in commercial intercourse is causing quite a flutter in their dove-cotes. The Evening Post, of New York, professes to see danger to America in the Colonial Secretary's Imperial Federation projects. It thinks that the refusal to take off the corn tax indicates that the Ministry is also committed, and urges Congress to forestall any injury to American farmers through the import of colonial wheat on preferential terms by promptly negotiating a reciprocity treaty with Canada. If the course so dreaded by our contemporaries were adopted, we should see much unbending of what have hitherto been regarded as inflexible protective methods. They are inflexible only so long as the conviction remains strong that nothing whatever will induce us to diverge from the policy to which we have clung with such mistaken tenacity, so greatly to the advantage of other nations and the detriment of ourselves.—Manchester, Eng., Textile Mercury.

To gain his ends in Life's fierce tussle,
Man's two best friends are Hope and Hustle.

Before Premier Laurier went to England his attention was drawn by the Ogilvie Milling Co., Montreal, to a notice sent out by the British naval authorities at Bermuda, inviting tenders for supplying flour to the fleet. The document in question stipulated that the flour must be "the best American Pillsbury." This was regarded by the Montreal firm as an unfair discrimination against a product in which Canada excels. The Premier's intervention was asked in order to remove this embargo against Canadian flour, and it is understood that Sir Wilfrid cabled at the time to Lord Strathcona on the subject. The naval officers at Bermuda seem to stand in need of a good shaking up. They are evidently unconscious of the fact that there is such a country as Canada, or that it produces the finest wheat and the finest flour in the world.

At the annual meeting of the Montreal Branch of the Canadian Manufacturers' Association held in that city July 10, the election of officers for the ensuing year resulted as follows: Chairman, Hon. J. D. Roland; vice-chairman, Mr. W. McMaster; executive committee, Messrs. F. W. Thompson, E. Tougas, W. W. Watson, Robert Muuro, J. J. McGill, James Davidson, G. W. Sadler, Edgar McDougall, J. T. Hagar, Geo. Esplin, R. R. Stevenson, J. C. Holden, R. Gardner, J. E. Matthews, J. S. N. Dougall, R. C. Wilkins, A. H. Simms, J. H. Sherrard, John Baillie, C. W. Davis, W. T. Whitehead, C. C. Ballantyne, Geo. E. Drummond, Horsfall and G. J. Kilpin. The following nominations in connection with the General Council of the association were made: Quebec, vice-president, Mr. J. J. McGill, Montreal. Montreal representatives on the Executive Council, Messrs. F. W. Thompson, E. Tougas, W. W. Watson, J. J. McGill, Jas. Davidson, G. W. Sadler, J. T. Hagar, R. R. Stevenson, J. C. Holden, J. S. N. Dougall, A. H. Simms, George E. Drummond. Quebec (miscellaneous), representatives on Executive Council, Messrs. G. E. Amyot, Quebec; Brock Willett, Chambly Canton; E. Guillet, Marieville, and J. A. Gunn, Montreal.

The annual meeting of the Toronto Branch of the Canadian Manufacturers' Association was held in Toronto July 15. The election of officers resulted as follows: Chairman, W. P. Gundy, of W. J. Gage & Co.; vice-chairman, C. N. Candee, of Gutta Percha & Rubber Mfg. Co. Executive committee, Messrs. R. J. Christie, of Christie Brown & Co.; J. H. Paterson, of Toronto Hardware Mfg. Co.; J. T. Sheridan, of Pease Furnace Co.; D. T. McIntosh, of McIntosh Granite & Marble Co.; Robt. Crean, of Robert Crean & Co.; J. B. Fetherstonhaugh, of F. B. Fetherstonhaugh & Co.; J. P. Murray, of Toronto Carpet Mfg. Co.; Wm. Stone, of Toronto Lithographing Co.; J. H. Housser, of Massey-Harris Co.; A. W. Thomas, of Copp, Clark & Co., all of Toronto. Past presidents of the association and past chairmen of the local branch are also members ex-officio. Representatives to the Toronto Technical School Board, Harold Van der Linde, A. W. Thomas, Gerhard Heintzman, F. J. Smail. Representatives on Industrial Exhibition Board, to be elected at Halifax, W. K. McNaught, W. K. George, George Booth, J. O. Thorn, H. G. Nicholls, J. R. Shaw, W. B. Rogers, T. C. Moffatt, jr., J. T. Sheridan, T. A. Russell, R. B. Andrew and F. Stanley. The following were nominated for members of the council of the Canadian Manufacturers' Association, to be balloted for at the annual meeting at Halifax: J. P. Murray, Wm. Stone, J. O. Thorn, R. J. Christie, J. H. Housser, T. A. Russell, C. N. Candee, W. P. Gundy, Frederic Nicholls, S. M. Wickett, Thomas Roden, J. H. Patterson, A. W. Thomas, Geo. H. Hees, P. H. Burton, Gerhard Heintzman, R. Millichamp, Frederick A. Ritchie.

THE CANADIAN MANUFACTURER declares that Canada cannot stand any further reduction of duty on British goods, even in return for a preference in the British market. Imperialism, on the economic side, has a hard row to hoe.—London Advertiser.

The question naturally presents itself, for whom does the Canadian Parliament legislate? The supposition is that any legislation that may be enacted would be in the interests of Canada. But how can Imperialism benefit Canada if we are to sacrifice our home industries for the sake of giving British manufacturers freer entry into our home market than they now enjoy? We love our British kinsmen but we are not called upon to strangle our own industries to enable them to live.

Never was the art of advertisement put to better uses than in the case of the Canadian Coronation arch, now rapidly nearing completion in the very heart of Whitehall. Every visitor to London must see and appreciate its striking eloquent testimony to the worth of "the granary of the Empire," and only those who know something of the ways of English official life can appreciate what it has meant to secure this signal representation of Canada's resources at the very door of Official Britain and at the gateway of British Parliamentary life. The High Commissioner and Mr. W. T. R. Preston may be most heartily congratulated upon the already assured success of the effort.—The Canadian Gazette, London, Eng.

Mr. Wm. Hutchison, Director of Exhibitions, has submitted to Hon. Sydney Fisher, Dominion Minister of Agriculture, a memorandum in favor of establishing permanent rooms or headquarters at Ottawa. Mr. Hutchison's idea is to gather in these rooms collections which shall illustrate the agricultural, horticultural, mineral and forest resources and wealth of the country, and which, whenever Canada participates in an international exhibition, can be easily drawn upon at a minimum of cost and inconvenience. Furthermore, he would have on view at the bureau, for the benefit of Canadian manufacturers and producers, samples of the products of the Dominion put up in the manner best suited to the needs of the foreign market. The conditions of a market vary with the country catered for, and the climate is often an important factor to be considered. Mr. Hutchison would have on exhibition the products wanted by our most promising customers put up in the manner which they favor most.

The Semi-Centennial of the Sault Ste. Marie Michigan Canal, dating from the breaking of ground for construction, will occur on June 4, 1903. A movement is now on foot to celebrate this occasion, and a memorial which had been sent to Congress to this end asking for \$50,000, states that at that canal can be witnessed the greatest concentration of commercial tonnage traffic on the globe. During 1901 over 28,000,000 tons of paying freight, valued at nearly \$300,000,000, passed through this 200-foot wide channel. This is a greater volume of freight than passed between Europe and America in the same time; and the Suez Canal tonnage for 1901 was less than one-third of that of the Sault Canal. Fifty years ago a dozen horses, operating a flat-rail tramway and plank road, moved all the freight then passing to or from Lake Superior.

This sonnet on Opportunity was written by the late John J. Ingalls, formerly United States Senator.

Master of human destinies am I!
 Fame, love and fortune on my footsteps wait,
 Cities and fields I walk. I penetrate
 Deserts and seas remote, and passing by
 Hovel and mart and palace, soon or late
 I knock unbidden once at every gate!
 If sleeping, wake; if feasting rise before
 I turn away. It is the hour of fate,
 And they who follow me reach every state
 Mortals desire, and conquer every foe
 Save death, but those who doubt or hesitate
 Condemned to failure, penury and woe.
 Seek me in vain and uselessly implore
 I answer not, and I return no more!

Commercial organizations of St. Louis have invited Charles M. Schwab, president of the United States Steel Corporation, to visit St. Louis with a view of selecting a site for a \$5,000,000 tube plant. Ground has been looked over both at McKeesport,

Pa., and also at Chicago, and St. Louis has done the right thing in submitting its own advantages to the steel magnates. The building of such a plant in any city would add enormously to its own advantages to the steel magnates. The building of such a plant in any city would add enormously to its industrial prestige and prosperity, and it is worth taking all kinds of pains to secure. It is evident that the great corporation will not make a blind movement in their choice of a location, and by putting St. Louis on their inspection programme, they will be adding to their chances of locating a gigantic industry in the right place.—The Age of Steel.

We suggest to the Canadian Manufacturers' Association the advisability of inviting Mr. Schwab to visit Canada with a view to the investment here of some of the capital he represents in an important iron or steel industry.

The administration of the office of some of the builders of power machinery and appliances is such as to lead one to wonder if they really want business. We recently had occasion to look up for a prospective customer some points in regard to an apparatus of considerable magnitude connected with a steam plant. The boy in charge of the office looked up from the novel which he was reading long enough to reply "Nope" to our enquiry as to whether Mr. So-and-So was in. Equally unsatisfactory replies were given to questions as to the possibility of seeing the engineer or anybody who could give information regarding the apparatus, no effort made to identify the caller, who might have been looking to place a large order, or to find out what he wanted, and we left with the impression that scunter courtesy could hardly have been shown to a man who was trying to collect a bill or to serve a warrant. This might be excused on the ground that the works are out of the city, and that it would not pay to keep a competent attendant for the small office which is maintained, but much the same experience may be had in many large offices. There seems to be no one in charge to meet a caller courteously, find out what he wants with some degree of intelligence and direct or conduct him to the person with whom he should deal. A good deal more attention could advantageously be given to that side of a manufacturing establishment which comes in contact with the public.—Power.

In view of the Budget statement of the British Chancellor of the Exchequer, it may be of interest to remark that the rate of fifteen pence in the pound—equivalent to about six cents in the dollar—income tax to be levied in the current year is the highest rate of income tax since the years 1855-57. Until the outbreak of the Boer War the highest sum levied since 1857 had been eight pence in the pound. The lowest was two pence in the pound, in Lord Beaconsfield's administrations, 1874-76. In 1857 an income tax of sixteen pence in the pound produced £16,000,000; last year twelve pence in the pound produced £27,500,000. The total population of the United Kingdom in 1857 was about 28,000,000; in 1901 it had reached 41,605,220. These figures clearly show that the wealth of the country has increased in greater proportion than has the population. If we turn to the Public or National Debt, we find that in 1816 the amount stood at £900,436,000, towards which amount the war which brought about independence of American colonies contributed £121,000,000, and the twenty-three years of conflict, due to the French Revolution, which ended with Waterloo, cost £601,500,343. The Crimean War only added £33,000,000, for, by 1855, the nation was in a position to pay much of its cost by added taxation, instead of continuing the practice of the days of Pitt, which threw almost the entire burthen upon posterity. By March, 1899, the National Debt, which stood at £788,000,000 when Queen Victoria ascended the throne in 1837, had been reduced to £635,040,965. So far, independently of what the Chancellor of the Exchequer decides to add to the funded debt during the financial year which ends in March, 1903, the South African War is responsible for £65,000,000, omitting of course the sums realized by extra taxation.—Montreal Star.

CAPTAINS OF INDUSTRY.

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

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

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, bolting, lubricants, machinery supplies, wood or iron working machinery, ventilating and drying apparatus; pumps, valves, packing, dynamos, motors, wire, arc and incandescent lamps, and an infinite variety of electrical supplies, chemicals, acids, alkalies, etc. It is well worth the while of every reader of the Canadian Manufacturer to closely inspect all items under the head of Captains of Industry.

Messrs. Rutherford & McKay, Owen Sound, Ont., will erect a 70x24 foot brick carriage shop, three stories high.

Mayor Arbutnot, Winnipeg, Man., will erect a planing mill at that place.

The Montreal Silicate Brick Co., Montreal, will erect a factory there for manufacturing building and paving brick.

The Canada Switch & Spring Co., Montreal, will erect an addition to their factory at a cost of about \$4,000.

Qu'Appelle, Man., will have a sewerage system constructed at a cost of about \$6,000.

A factory will be erected at St. Henri, Que., by the Simplex Railway Appliance Co., Hammond, Ind.

The Blonde Lumber & Mfg. Co., Chatham, Ont., will erect a 100x50 foot three story brick planing mill.

The foundry of Pascal Amesse, Montreal, was destroyed by fire July 5. Loss about \$10,000.

The Wire & Cable Co., Montreal, will erect a two story addition to their factory at a cost of about \$7,000.

The new dredge, the J. Israel Tarte, built by the Polson Iron Works, Toronto, is now working in the channel of Lake St. Peter, near Sorel Que. It works in bents of 5 feet at a time and the dredgings are conveyed through a three-foot tube, a distance of 2,100 feet from the dredge. It is estimated that at present working the dredge excavates a depth of

seven feet the whole width of the channel, some 300 feet by a length of 500 feet for every working day of 24 hours. There is a crew of 27 men and the average consumption of coal is 23 tons per working day. There are four boilers tested to a carrying capacity of 160 pounds. Some 4,000 feet of the channel in Lake St. Peter has been dredged since the dredge began work. The new iron tug, Lake St. Peter, acts as tender for the dredge.

The Hamilton Bridge Co., Hamilton, Ont., will erect a two story steel building 200x200 feet at that place. The new building will enable the company to double its capacity, and probably twice the number of hands will be employed.

The Frontenac Cereal Co., Kingston, Ont., has been incorporated with a capital stock of \$600,000 to manufacture cereal foods. The company will acquire the plants of the Frontenac Milling Co., and the Kingston Elevator & Transit Co. The provisional directors include Hon. Wm. Harty, George Richardson and Henry Mooers.

If satisfactory arrangements can be made the J. S. Kemp Co., Newark Valley, N. Y., manufacturers of manure and fertilizer spreaders, will erect a branch factory at Stratford, Ont. The building will be three stories high and 160x150 feet. The company will employ about 70 men the first year.

A new export to the British West India Islands from these parts, says the Mari-

time Merchant, is sulphide of ammonia, a bye-product of the coke ovens at Sydney, N.S. Pickford & Black now have orders booked for about 500 tons, for delivery during the fall months. The difficulty so far has been to get supplies as fast as the people required them.

A tobacco firm in Pittsburg, Pa., has written Mr. George Johnson, the Dominion statistician, for details respecting the cultivation of tobacco in Canada, with a view, if circumstances are favorable, of establishing a large factory for the manufacture of the same. A reply has been sent stating that the consumption per head of the population was in 1899 a little over 2 1-6; in 1900, 2 3-10 pounds, and in 1901, 2 4-10 pounds. There is little limit to the quantity which can be grown. In 1871 the production of tobacco amounted to 1,500,000 pounds grown. In 1881 it reached 2,400,000 pounds, and in 1891 it had grown to 4,300,000 pounds. Tobacco is grown in Ontario and Quebec, and it is reported that the climate of British Columbia also is suited to its production.

The Hon. James Dunsmuir, the Premier of British Columbia, who is now in England, inherited money from coal, and he inherited coal also. His father, Robt. Dunsmuir, was a miner on Vancouver Island when the coal industry was in its infancy there. One day Mr. Dunsmuir was wandering in the woods when a leaf of rather large size struck his fancy. He stooped to pick it up, and his hand swept clean a small portion of earth, exposing a coal seam. From that moment Robert Dunsmuir never looked back. He interested Mr. Crocker, the wealthy San Francisco merchant, in his mines, built the only railway on Vancouver Island, and became a wealthy man. His son inherits his business acumen.

It is stated that Mr. F. H. Clergue will build a 500-foot dry dock at Sault Ste. Marie. It will be a gravity dock, built on the Lake Superior level, the water discharging into Saint Mary's River level, doing away with the necessity of pumping out the dock. The dock will accommodate the largest boats on the lakes, and will be blasted out of the solid rock.

The Pejecot paper mills, Brunswick, Me., are receiving large supplies of pulp from Nova Scotian sources.

Pneumatic Tools and Appliances ARE GREAT MONEY SAVERS.

Air Hoists,
Baggage Hand-
lers, Agitation
of Liquids or
Syrups in Re-
frigerators.
Cushion and Car-
pet Cleaners,
Chipping Tools
for use by Ma-
chinists, Boiler
Makers, Stone-
cutters and
Marble Works.
Calking and Drill-
ing, Air Brushes

INGERSOLL-SERGEANT

PISTON AIR COMPRESSORS FOR ALL DUTIES
INLET

THE JAMES COOPER MFG. CO. LIMITED

299 St. James St., Montreal

BRANCHES - - ROSSLAND, B.C. RAT PORTAGE, Ont. HALIFAX, N.S.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Pneumatic
Augers,
Punches,
Hammers,
Rammers,
Rotary Drills,
and Augers.
Reversible
Boring Machine,
Fluo Cutters,
Rollers and
Welders,
Air Lift Pumps,
Jacks,
Paint Spreaders,
Bolt Nippers.

The Dominion Coal & Steel Co., Sydney, N.S., have now six open-hearth furnaces in operation, which yield about 400 tons of steel daily. Satisfactory progress is being made with the construction work of the rail mills. The output of coal will, it is said, exceed three million tons this year.

The paint manufacturing works of Henderson & Potts, Montreal, were destroyed by fire July 11. Loss about \$25,000.

The brick planing mill of the M. Brennan & Sons Mfg. Co., Hamilton, Ont., was destroyed by fire July 11. Loss about \$50,000.

A company with a capitalization of \$25,000 has been formed at North Sydney, N.S., for the manufacture of an invention patented by W. H. Russel, of Miramichi. Mr. Russel claims to be able to harness hydraulic jacks so as to automatically produce power. A plant for the manufacture of the patent is to be built at North Sydney at first on a small scale in order to ascertain the workability of the invention.—Maritime Merchant.

The Northwestern Elevator Co., composed principally of Minneapolis capitalists, propose erecting about 30 elevators in Manitoba and the North-West Territories.

A man at Stanbridge, Que., has invented a bricklaying machine. The machine, worked by two men and a lad, will lay 400 to 600 bricks per hour. Door and window spaces cause only a slight delay. The machine is suited for all

plain work, such as walls, sheds, mills, factories, rows of cottages, piers of bridges, etc. Considerable pressure is put on the bricks, and it is claimed that the work is more firmly done than by hand. The invention will do the work of six or seven skilled bricklayers, and it is believed that a machine adapted to build a factory covering about 60 by 40 feet could be put on the market for \$500. The apparatus can be readily worked after a fortnight's instruction.

The General Electric Co. is establishing a plant at Ottawa for the manufacture of mica. They have leased the works formerly occupied by the Ottawa Porcelain Co., and will employ 150 hands immediately and about 400 in the near future. This, it is said, is only one of the many United States concerns which are gradually establishing plants in different sections of Canada.

The Canadian Government propose constructing 100 miles of wire fence along the international border line between Montana and Alberta and Assiniboia.

The ratepayers of Brockville, Ont., have voted favorably on a by-law to grant a bonus of \$20,000, to the Union Hat Co., St. John's Que., to remove their factory to Brockville.

The Montreal Rolling Mills Co's works at Londonderry, N.S., were destroyed by fire July 7. The works will be rebuilt on a larger scale.

The Brantford Starch Co., Brantford, Ont., will rebuild their factory which was

destroyed by fire. The new premises will consist of a wheat starch factory 100x70 feet, three stories high, and a corn starch factory, 132x90 feet, three stories high.

The Ontario Government Diamond drill, which has been working for some time on iron and gold locations in the neighborhood of Sundridge, has been ordered to the Township of Falconbridge, in the Sudbury district, where it is to be used in exploring nickel lands in which Mr. Lewis Stockton and others of Buffalo, N. Y., are interested.

The Burt Mfg. Co., Akron, Ohio, announce that they have just furnished two very large Cross oil filters to the U.S. Steel Corporation for their works at Youngstown, Ohio, making 108 of their filters now in use by this company.

The ratepayers of Fort William, Ont., will vote on a by-law to grant W. J. and H. E. Copp \$15,000 to erect a foundry.

The George B. Meadows Co., Toronto, will erect a new factory for the manufacture of ornamental iron, etc.

The Hamilton Wheel & Foundry Co's premises, Hamilton, Ont., were damaged by fire, July 14, to the extent of about \$200.

Messrs. Donaldson & Patterson, Hamilton, Ont., will erect a factory at a cost of about \$15,500.

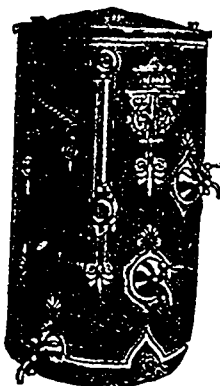
The Massey-Harris Co., will erect a large warehouse in Sperling, Man.

The Canadian Pacific Railway Co., will erect new shops at Perth, Ont., to be about 300 feet long.

FACTS AND FIGURES

is a combination that leaves no room for argument. Read what the Queen City Electric Light Company, of Gadsden, Ala., say about the

Cross Oil Filter



THE BURT MFG. CO.,
Akron, Ohio.

GENTLEMEN, — Yours of May 13th received. Regarding the Cross Oil Filter we are pleased to say this much: We have been using the above mentioned filter for a period of three years and have reduced our oil bill from one hundred and sixty-eight dollars and seventy-eight cents (\$168.78) to sixty-five dollars and fifty-four cents (\$65.54) per annum.

We have made a saving of about two hundred and fifty dollars (\$250.00) on an investment of \$15.00.

Very truly,
QUEEN CITY ELECTRIC
LIGHT CO.

Easy enough to find out what a Cross Oil Filter will save in your own case—let us send one on 30 days' trial. Pay for it if pleased; if not, return it at our expense. The risk is all ours.

THE BURT MFG. CO.

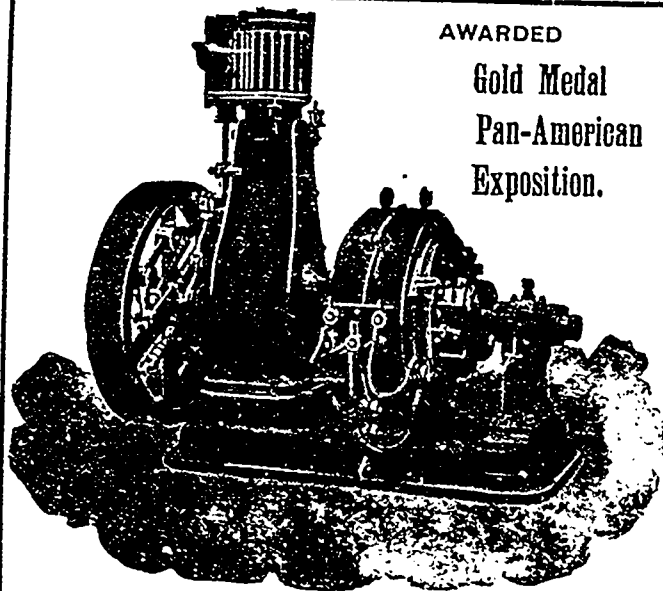
The Largest Mfrs. of Oil Filters in the World.
AKRON, OHIO, U.S.A.

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

BUFFALO HIGH SPEED ENGINES

HORIZONTAL
VERTICAL
BELTED

SIMPLE
COMPOUND
DIRECT CONNECTED



AWARDED

Gold Medal
Pan-American
Exposition.

BUFFALO FORGE COMPANY,
BUFFALO, N.Y., U.S.A.

The first six months of the year has been an unusually active period in building operations in Toronto. Permits issued represented an expenditure of nearly \$2,000,000, an increase of \$750,000 over the same period of 1901. The increase is accounted for by additions to the new King Edward Hotel, the new exhibition buildings, and a large number of new residences.

The Tudhope Carriage Co., Orillia, Ont., will erect two new brick factory buildings, one 510x120 feet, and the other 100x70 feet.

The Heintzman Piano Co., will erect an extension 70x50 feet to their factory at Toronto Junction, at a cost of about \$15,000.

A press despatch from Tacoma, Wash., states that the Tacoma Steel Co., has had plans prepared and has chosen a site there for the erection of a 250-ton blast furnace. It will be the first modern blast furnace erected on the Pacific coast. Iron ores and limestone will be brought from the company's properties in British Col-

umbia, while it will make its own coke. Rolling mills and a shipbuilding plant will also be constructed by the company, which, by purchase and leases, has secured control of the largest iron deposits on Vancouver and adjacent islands. The United States British Columbian Corporation has been incorporated with a capital of \$5,000,000 to carry out a similar project at Everett or elsewhere, on Puget Sound. The organizer is J. F. Bledsoe, engineer, who controls extensive deposits of iron and limestone in British Columbia. An export duty on Canadian iron ore would undoubtedly convince the company that their blast furnace should have been erected in British Columbia.

Holding on is the winning card in advertising. The bull dog, the most successful fighter of the canine family, catches hold and stays. Results rarely are immediate in any adventure or enterprise. As soon should one expect to reap in the evening a crop from the sowing of the morning as that the advertiser should think that every dollar he puts in publi-

city will bring results by the return mail. Time is a factor in advertising, and one which it is well to consider if one would escape disappointment.

A New York financial journal prints the following interesting interview with Sir Thomas G. Shaughnessy, president of the Canadian Pacific Railway: By the end of 1903 Canada's transcontinental highway will not have a wooden trestle or a temporary structure of any kind from Montreal to the Pacific, and throughout that distance the main line will be laid with 80-pound steel rails. Millions of dollars have already been spent in replacing the temporary structures, and at the present time 80 per cent. of the line from Montreal westward has been transformed into a permanent road. I believe that to-day there are less trestles on the Canadian Pacific Railway than on any of the other roads, and I think that when our permanent work is completed we will have a roadbed equal to that of any other railway on the American continent. With these improvements com-

CAMEL BRAND
BALATA
RUBBER
BELTING

Linen Fire Hose,

Water and Steam Hose,

Packings, Etc., Etc.

THE STANDARD



COLD WATER PAINT

WEATHER PROOF, FIRE PROOF
 WHITE AND COLORS.

MILL SUPPLIES

Lubricating Oils and Greases

PAINT, PAINT OILS, ETC.

W. A. FLEMING & CO.

Montreal and St. John, N.B.

"RATHBUN'S
 STAR."

Portland Cement

"BEAVER"
 BRAND

MANUFACTURED BY

THE CANADIAN PORTLAND CEMENT CO.
 LIMITED

Capacity of Works—500,000 Barrels per Year.

THE RATHBUN COMPANY,
 310-312 Front Street West.

Telephone Main 1379.

TORONTO, ONT.

SALES
 AGENTS

ST. LAWRENCE PORTLAND CEMENT CO.,
 2664 Notre Dame St. W.

Telephone Main 3987.

MONTREAL, QUE.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

pleted, we will have reached the standard aimed at by the officials of the company, and we shall be able to run much faster trains than at present. The Imperial Limited is now crossing the continent in ninety-seven hours, and in the near future we will be able to knock off six or seven hours from this time. Of course, all this means an outlay of capital, but in a short time it will greatly increase the earnings of the company.

The Pan Empire Mfg. Co., Toronto, has been incorporated with a capital stock of \$40,000, to manufacture cooking utensils, etc. The provisional directors include George Harvey, Richard Ivens and Edward Newton, all of Toronto.

The Canadian Machine Telephone Co., Ottawa, has been incorporated with a capital stock of \$250,000, to manufacture materials and supplies necessary for the operating of a telephone line. The provisional directors include J. E. Ganong, St. Stephen, N.B., Hon. G. E. Foster and J. A. Phin, both of Toronto.

The Nova Scotia Wood Pulp & Paper Co's pulp mill, Mill Village, N.S., was recently destroyed by fire. Loss about \$40,000.

The Eureka Speciality Co., Toronto, has been incorporated with a capital stock of \$40,000, to manufacture camp furniture, etc. The provisional directors include J. G. Sing, Edward Newton and Philip Hield, all of Toronto.

The Metallic Roofing Co., Toronto, are building a large extension to their already

big factory, at the corner of Dufferin and King streets. The building will be completed by exhibition time, and the company will this year have one of the best exhibits in the city. The close proximity of the factory to the fair grounds enables visitors to inspect the exhibit without inconvenience.

The Dominion Motor & Machine Co., Toronto, have met with great success with their gasoline engines. For the agricultural classes they are manufacturing a portable engine, which has been proven to be one of the most economical engines of the kind on the market.

The McClary Mfg. Co., London, Ont., will construct a new plant at that place, giving employment to about 400 hands. The foundry will be 230x200 feet, mounting shop 300x75 feet, and the moulding shop, power house and storage and polishing shop, will be of proportionate dimensions.

The Butler Shingle & Mfg. Co., Vancouver, B.C., has been incorporated, and will operate a shingle mill at that place, with a capacity of 1,000,000 shingles per week.

Messrs. Clark & Demill, Galt, Ont., recently shipped a new drop press, weighing eight tons, to the Metal Shingle & Siding Co., Preston, Ont.

The Canadian Pneumatic Tool Co., Montreal, has been incorporated with a capital stock of \$50,000, to manufacture pneumatic tools, appliances, machinery,

etc. The provisional directors include S. A. Stephens, J. H. Elliott both of Montreal, and F. P. Jones Sydney, N.S.

The shingle mill of the Metis Lumber Co., Price's Village, Que., was destroyed by fire recently. Loss about \$2,000.

The Tuckett Cigar Co., Hamilton, Ont., has increased its capital stock from \$150,000 to \$250,000.

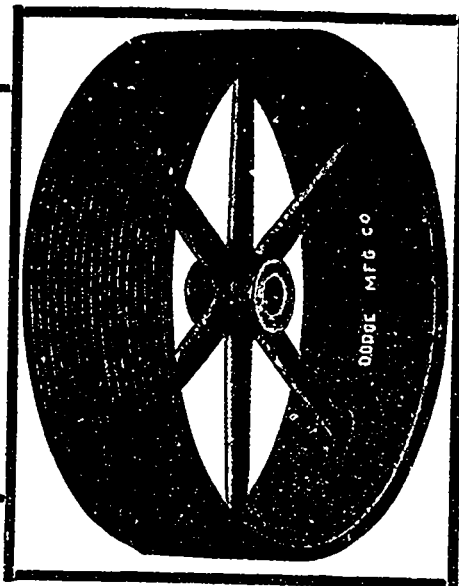
Mr. F. H. Clergue has announced that his syndicate will erect a paper mill at Sault Ste. Marie, Mich., at a cost of about \$1,500,000. News and wrapping paper will be manufactured principally. Pulp for the mill will be imported from the Clergue mills on the Canadian side. The wood for the latter comes from the extensive pulpwood land owned by the Clergue company, making the chain from the standing timber to the finished production complete.

The Trenton Electric Co., Trenton, Ont., will develop 600 h.p. additional, and will build a second transmission line to Belleville, Ont.

The St. George Pulp & Paper Co., St. George, N.B., will erect pulp mills at that place. The company has purchased fifty square miles of timber land. A strong dam, 120x15 feet is being constructed. The water power will be carried from the dam, through a steel tube 475 feet long to the mills. The mill will be 120x65 feet, and have eight grinders. The wheels are being manufactured by the Jenckes Machine Co., Sherbrooke, Que.

IRON GROOVED PULLEYS

Spiral Steel Conveyor.
Elevator Buckets.
Detachable Chain.
Sprocket Wheels.
Belt Conveyors.
Friction Clutch Pulleys.



Clutch Couplings.
Machine Moulded
Iron Pulleys.
Steel Shafting.
Flange and Compression Couplings.

..Improved Ball and Socket Adjustable Hangers..

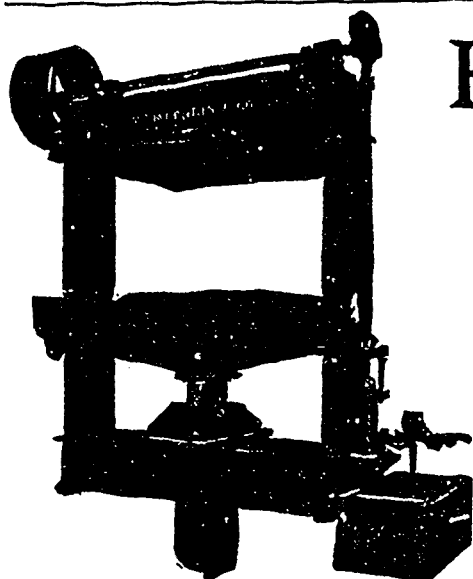
DROP AND POST, SAFETY COLLARS, ETC.

Power Transmission Machinery. GRAIN HANDLING MACHINERY.

SEND FOR CATALOGUE.

DODGE MANUFACTURING CO., - TORONTO, ONT.

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Hydraulic **PRESSES**

We Build Presses
for...

PRESSING VENEERS
TANNERS' USES
BALING, Etc.

SEND FOR
CATALOGUE
AND PRICES

William R. Perrin & Company

TORONTO, - CANADA

The Holmedale Liven Co., Brantford, Ont., has been incorporated with a capital stock of \$150,000. The company will erect a factory suitable for their purpose. The provisional directors include E. B. Crompton, Brantford, Ont.; J. M. Young, Hamilton, Ont.; and R. C. Gavin, Toronto.

The Cornwall, Ont., council has given the contract for the new hydraulic pumping plant for that town to the Goulds Mfg. Co., New York City. They agree to furnish a pump with a capacity of 1,500,000 gallons per day and a Jenckes' water-wheel set up for \$7,490. The contract for masonry and excavation was awarded to Williams & Fallon of Cornwall.

The Sapphire Corundum Co., London, England, is being formed with a capital stock of £1,000,000, to acquire and work corundum mines and property in Peterborough, Ont. The directors include J. R. Stratton, Peterborough, and Frederick Cook, Ottawa.

Last winter a company was incorporated for the purpose of bridging the Strait of Canso. Recently, J. A. L. Waddell, a famous American bridge engineer, together with H. Donkin and P. S. Archibald, visited the proposed site and Mr. Waddell has made a report declaring the project to be feasible. The bridge pro-

posed is a cantilever with a span of 1,800 feet and a height of 150 feet above high water. The estimated cost is five million dollars and the bridge if constructed, will have double railway tracks.—Maritime Merchant.

The Canadian Aluminum Works, Montreal, has been incorporated with a capital stock of \$100,000, to manufacture aluminum, etc. The charter members include J. E. Shoemaker, H. C. Dodds, both of Montreal, and S. T. Willett, Chambly Canton, Que.

The blacksmith shop, machine shop, oilhouse, main offices, four box cars, and a large amount of valuable machinery in the buildings of the Canadian Pacific Railway Co., at Perth, Ont., were destroyed by fire July 5. The shops will be rebuilt immediately.

A new medical school building will be erected in connection with the Toronto University, to be three stories high, and cost about \$125,000.

The Menzie Mfg. Co., Toronto, has received a permit for the erection of a three-story brick factory, at a cost of about \$7,000.

The Sanderson, Percy Paint Co., Toronto, have received a permit for the erection of a one-story brick varnish factory, to be used in connection with their works.

Messrs Gooderham & Worts, Toronto, and F. H. Walker, Walkerville, Ont., are interested in a company who contemplate the erection of a new distillery in Toronto for the purpose of converting the residue from beet root sugar and other refineries into alcohol for use in the arts, and generally for non-potable purposes.

The Dominion Furniture Mfg. Co., Ste. Therese, Que., has been incorporated with a capital stock of \$100,000, to manufacture furniture, etc. The charter members include Andrew Gunn, Toronto; Charles Langlois, Montreal, and J. B. Waddell, Ste. Therese, Que.

According to the report of the Montreal building inspector, building operations for the month of June in that city were very satisfactory. The report shows that permits were issued for 78 houses, 5 stores, 3 warehouses, 3 factories, 4 offices and 2 sheds. The value of the new buildings amounted to \$402,325.

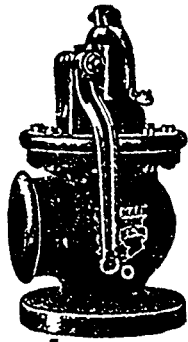
The buildings of the Montreal Pipe Foundry Co., Acadia Mines, N.S., were destroyed by fire July 7.

The ratepayers of Cornwall, Ont., will vote on a by-law to grant a bonus of \$15,000 to a furniture company, of whom T. S. Aspinall, Toronto, and James Wilder, Montreal, are promoters. The company is to erect a factory and employ not less than 80 hands.

ROCK
DRILLS

THE CANADIAN RAND DRILL CO
SHERBROOKE, QUE.
BRANCH OFFICES IN
MONTREAL, QUE. TORONTO, ONT. HALIFAX, N.S.
ROSSLAND, B.C. RAT-PORTAGE, ONT. GREENWOOD, B.C.
VANCOUVER, B.C.

AIR
COMPRESSORS
GAS



A VALVE YOU CAN RELY ON
SEND FOR PRICES

CROSBY STEAM APPLIANCES EXCEL

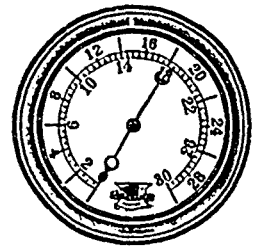
Steam Engine Indicators.
Recording Gages.
Revolution Counters.
Pressure and Vacuum Gages.
Lubricators, etc.



Stationary and Marine Valves.
Water Relief Valves.
Blow-off Valves.
Globe and Angle Valves
Single Bell Chime Whistles.
SEND FOR CATALOGUE

CROSBY STEAM GAGE and VALVE CO.
BOSTON, NEW YORK, CHICAGO, LONDON

A TRUTHFUL GAGE IS THE ONLY GOOD GAGE



C. Lamarre & Co's sash factory, St. Remi, Que., was destroyed by fire July 14. Loss about \$90,000. The Grand Trunk Railway Co's station buildings at the same place were also destroyed by fire. Loss about \$10,000.

The contract for the brick work of the new foundry of the McClary Mfg. Co., London, Ont., has been awarded. The foundry, which will be one of a series of buildings to be erected, will cover more than an acre of land. It will be 222x194 feet.

The Northern Cereal Co., Toronto, has been incorporated with \$2,000,000 capital stock, to manufacture cereals, etc. The provisional directors include W. D. Douglas, Cedar Rapids, Iowa; J. S. Lovell and E. W. McNeill, both of Toronto.

THE CENTRAL ONTARIO POWER COMPANY.

Mr. J. A. Culverwell, manager of the Central Ontario Power Co., Peterborough, Ont., has purchased the greater portion of the properties at Healy's Falls, and has opened offices at Campbellford, Ont. He has also purchased half of the Crow Bay Falls.

Healy's Falls, which has a head of

over 70 feet on the Trent River, is within four miles of Campbellford, and Crow Bay Falls has a head of about 30 feet. These two powers having a minimum power development in a dry season of some 15,000 h.p.

Mr. Culverwell, whose company owns Burleigh Falls, also purchased recently the Buckhorn Falls, both being within twenty miles of Peterborough. He states he has arranged a deal in New York to complete the development of the last two properties.

Mr. Culverwell has thrown great energy into the development of these interests and he shows he has met all obstacles successfully. His experience as a hydraulic engineer, supplemented by a legal knowledge along the line of the law affecting such matters, have brought these properties to his ownership.

Mr. Culverwell can claim credit for being a pioneer of the electrical business in Canada, having started from its inception in Western Ontario, the Edison Electric Co. of New York, in 1891.

THE DODGE MFG. CO.

The Dodge Mfg. Co., Toronto, has sent us a copy of their booklet having reference to the standard wood split pulleys

manufactured by them, regarding the construction of which they say:

Our arms and bushings are manufactured from selected hard maple. Air and kiln dried, thoroughly seasoned. Our rims are manufactured from prime soft maple, thoroughly air seasoned and kiln dried. Rims are glued up hot under great pressure. We use high grade cabinet glue only. Our joints are absolutely stronger than the wood itself. We guarantee this. Arms are anchor bolted to rims, with special bolts and malleable iron anchor nuts. All bolts are manufactured in our own shops, pointed and threaded standard. Cold pressed hexagon nuts used throughout. Every pulley is turned both inside and outside, and perfectly balanced, insuring a perfect and true running pulley. Every pulley is thoroughly coated with full body boiled oil, afterwards painted with genuine lead and oil pulley paint, and finally coated over all with waterproof varnish, thus coming as near as possible to a waterproof finish. Every pulley bears our registered label, which is a guarantee of pulley quality.

The company state that their capacity is 300 pulleys daily.

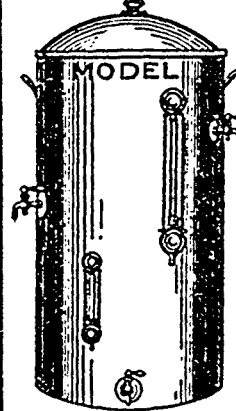
Their friction clutch pulley, they say, is fast superseding tight and loose pulleys for general line shaft service. They do away

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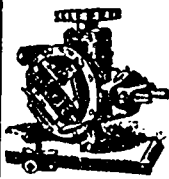
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with noisy, troublesome shifters, wear and tear on belts, and save much power, owing to the fact that the belt movement is stopped at the line shaft. Belts run with clutch pulleys last much longer than where shifted. There are no trappy parts, but they are so simple that an ordinary workman can easily adjust and operate them.

By having a split clutch, no removals or changes are necessary to erect one on a shaft, and repairs are quickly and easily made.

We manufacture them with removable babbitted sleeves for pulleys, gears, sheaves, etc.

The Dodge Mfg. Co. manufacture a full line of power transmission machinery and appliances, and will, on application, send catalogues and further information.

NIAGARA FALLS POWER.

Good progress is being made in the development of the water power for electrical purposes at Queen Victoria Park, Niagara Falls, Ont.

About a year ago the Canadian Niagara Power Co. began operations in the park, and now has nearly five hundred men employed in the various works of construction. This company will take water from the river a quarter of a mile or so above the falls, through a broad basin, and in pipes carried down an immense chamber cut in the rock to the water wheels at the bottom of the chamber. These wheels are to have long, upright shafts, with the electric generators at the top, in the power house, the same principle being adopted as on the American side, only that on the Canadian side the water wheels and electric machines will be double the size. After turning the water wheels, a tunnel cut in the rock

will carry away the exhaust water to the river below the falls.

Substantial progress has been made in carrying out this great enterprise. A coffer dam has been constructed in the rapids to keep out the river from the excavations in progress; the basin has been taken down to nearly its proper depth; the wheel pit is down about one-third of its depth, and the headings from the hydraulic tunnel have been driven for over one-half of its total length. This work has, of course, involved a very large outlay by the company, as much of it requires the employment of skilled labor, and the entire cost of the works when completed is estimated to be in the neighborhood of five millions of dollars.

In addition to the works of the Canadian Niagara Co. referred to, the Ontario Power Co. has also secured rights in the park, and active operations have been begun upon this competitive scheme. Under its agreement the company is to take water from the Welland River, two miles distant, and lead it to the park, where an open canal will carry it on to the penstocks, by which it will be taken down the cliff to the power house in the gorge below the falls.

The works already executed by this company consist of a deep cutting along the line selected for its open canal.

The Ontario Power Co. has made an application for some changes in its agreement. It is stated that the company had obtained additional rights as will permit of water being taken from the Niagara River, above the Dufferin Islands, as an auxiliary to the Welland River privileges, previously conferred. For these rights the company is to pay an increased rental; to restrict the manufacturing of electricity to one power house, and that one to be in the gorge; to put all its works for

conveying the water supply through the park underneath the surface of the ground. In fact, none of this company's works will after completion be in evidence in the park, excepting the penstock chambers near Table Rock, the powerhouse below the bank, which will not obstruct the views of the falls, and, indeed, will hardly be observed from the Canadian side, and the intake works at the islands, which are to be so arranged as to conform to a condition of nature as much as possible.

MESSRS. JAMES DOUGALL & SONS.

Messrs. James Dougall & Sons, proprietors of the Bonny-side fire clay works, Bonnybridge, Scotland, manufacturers of all kinds of silica and fire bricks for steel and iron furnaces; coke ovens and chemical works, have sent us an illustrated catalogue having reference to their fire clay bricks, blocks, etc., some of the illustrations showing the squares, scones or splits, side arch, crown, end arch, feather sides and ends, side and end skews, jamb bricks, etc.

The company refine and prepare ganister for steel furnaces, foundries, etc. Regarding the manufactures of their Bonny-side works they say:

The Bonny-side fire brick and ganister works, the manufactures of which are already widely and favorably known in Scotland and the North of England, and are regularly exported to Russia, Germany, France, North and South America, and British Colonies, are situated on the North British Railway, 20 miles east of Glasgow. They were erected a few years ago to develop the well-known ganister and fire clay seams of Bonny-side Estate. The ganister there existing is said to be the largest known field in Scotland, and

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You run no risk. Return at our expense if not satisfactory. These belts are twice the strength of leather, more durable, 30% cheaper.

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its highly refractory nature is rapidly introducing it into all the commercial processes of heating and smelting where exceptional heat-resisting power is required, especially in steel manufacture, where it is used for pouring shoots, ladle linings, etc., no other material being found equally suitable for withstanding the wash of molten steel. For these purposes used for furnace building, foundry cupolas, and kindred work, its exceptional merit is beyond dispute, and references can be given, when required, to some of the largest steel and iron works in Scotland.

In Bonnyside works are manufactured all kinds of fire clay bricks and other material for furnace work in steel and iron manufactures, chemical works, and potteries, gas works, etc.

Mr. R. E. H. Buckner, 20 Russell Street, Toronto, is the sole sales agent for Canada, and will furnish further information on application.

ADJUSTABLE SHUNT FIELD COIL.

The recent radical improvements in the Thomson Recording Wattmeter include

the addition of the adjustable shunt field coil. The introduction of this device provides for the close adjustment of friction-compensation, and also to offset at the critical period, any increase in friction resulting from dirt, etc. In earlier meter practice it was regarded as essential to good meter operation to clean the commutator of the Thomson Recording Wattmeter, and in other respects to restore the meter to its initial condition periodically, provided it was desired to secure the highest degree of accuracy in operation.

Recent investigations have established the fact that the friction effect becomes practically constant after a comparatively brief period of use. Beyond this point friction increases but little, and, if instead of cleaning the commutator and restoring it to its initial condition, compensation is made for the increased friction, the meter will, except under unusual conditions, remain in a permanent condition and retain its light load accuracy.

The adjustable shunt field coil is designed to provide the compensation. With this device attached to a Thomson Re-

ording Wattmeter the light load accuracy may be adjusted through a range of 10 to 20% without affecting the meter's general calibration. Thus the meter, which after a period of use may run from 5 to 10% slow at light load, may be adjusted to normal accuracy in a few minutes by moving in the adjustable shunt field coil. This adjustment can be made without moving the meter and without detaching it from the service. All Thomson Recording Wattmeters, up to and including 1,200 amperes, are now provided with an adjustable shunt field coil.

That users of the Thomson Recording Wattmeter may bring the meters which are already in use up to the present standard in respect to light load adjustment, an adjustable coil has been designed for use with all standard Thomson Recording Wattmeters of earlier manufacture.

The holder of the present standard form can be universally used in all sizes of Thomson Recording Wattmeters up to and including 1,200 amperes. When ordering, the serial number of each meter should preferably be given, although this is not necessary if the form letters from

DEAN BROS.

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AGENTS

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the name plate of the meter are noted on the order.

Adjustable shunt field coils may be attached to meters not originally provided with them, although the resistance of the adjustable coil considerably exceeds that of the fixed coils, which will be found in the meters to be converted, and for this reason it is necessary to make certain changes in the meter when the separate adjustable coil is inserted, in order that the total resistance of the armature circuit may remain substantially unchanged. The process of making this change is covered by instructions which accompany each shipment. A tag is pasted on the outside of the coil, stating the number of turns, resistance and whether for right or left-hand field.

For further particulars write the Canadian General Electric Co. Toronto.

THE CANADIAN OTIS ELEVATOR COMPANY.

The Canadian Otis Elevator Co., Hamilton, Ont., have awarded contracts for building their machine shop to Messrs. Donaldson & Patterson, of that city. This building will be the first one of the large plant that this company will erect on their property at the foot of Victoria avenue, Hamilton. The building will be of brick construction, 176 feet long by 70 feet wide. It will have a 15 ton electric crane running the entire length. All the heavy tools such as planers, lathes, boring mills,

etc., will be on the main floor, so that they can be reached conveniently by the overhead crane. In the two galleries will be placed all the light machinery, wood working tools, etc. A little later on, a large foundry, carpenter and blacksmith shop will be erected. The contract for tools has been given to the John Bertram & Sons Co., Dundas Ont. This plant, when completed, will be, it is claimed, one of the most modern elevator plants in the world. It will be equipped as far as possible, with Canadian made tools, and it should be a credit to Canada.

The Canadian Otis Elevator Co., has just been awarded the contract to supply two hydraulic elevators for the Guardian Assurance Co's building in Montreal. They have also within the past month, closed contracts for some twenty elevators of different kinds, and are running their present plant to its fullest capacity.

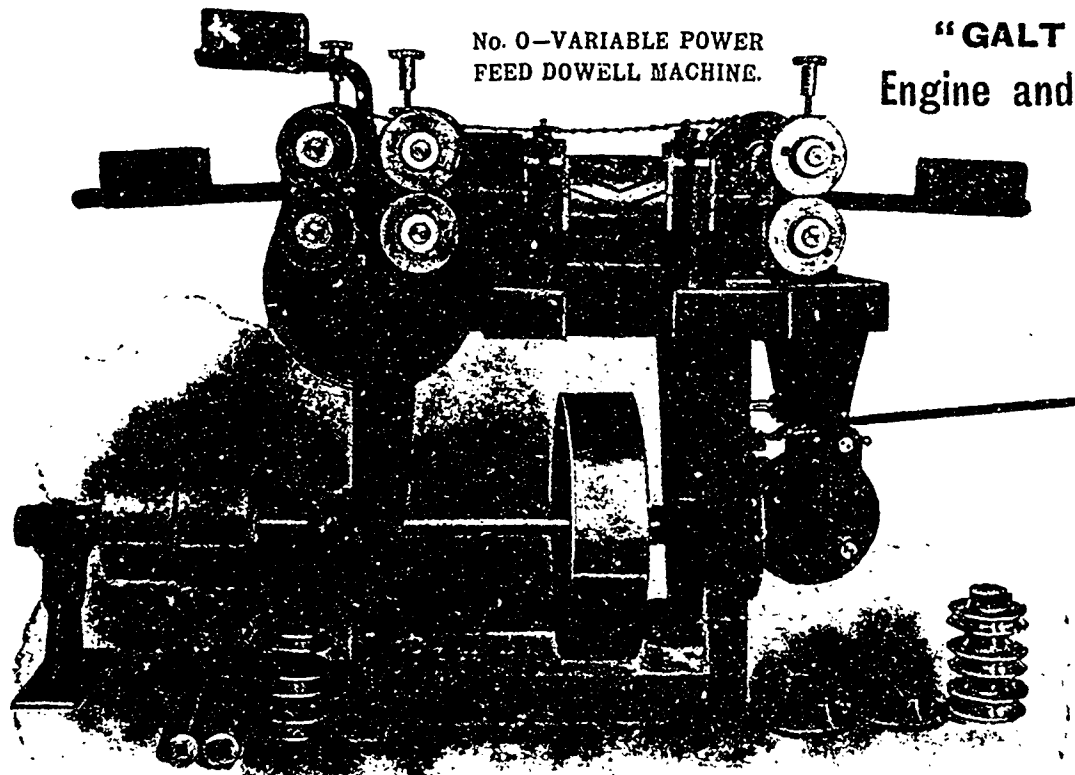
The Otis company have just been awarded the contract for putting in a complete electric elevator installation in the building of the Montreal Star. This is said to be the first electric machine installed in Canada that will be operated by electric control complete.

THE CONSOLIDATED LAKE SUPERIOR Co.—The Bulletin of the American Iron and Steel Association contains a communication written evidently by an officer of the above-named company, as follows: The Consolidated Lake Superior Co., which conducts large operations on both

sides of the St. Mary's river, located principally at the town of Sault Ste. Marie, Ont., is chiefly a Philadelphia enterprise, having been organized by Philadelphians and the larger part of its capital having been supplied by Philadelphia capitalists. The general offices of the company are in the North American Building, in Philadelphia, where all the financial operations of the company are centered. The various industrial operations controlled by it are directed from the offices at Sault Ste. Marie, Ont. The Consolidated Lake Superior Co. has an authorized capital of \$35,000,000 7 per cent. preferred stock, and \$32,000,000 common stock, and the operations thus far undertaken represent an actual expenditure of about \$25,000,000. The company is the parent organization, which owns the stock of a number of subsidiary corporations by which the various industrial operations are conducted. Among these subsidiary interests are the following:

- (1) Lake Superior Power Co., which owns lands and water rights at Sault Ste. Marie, Ont., with a power canal which yields about 20,000 horsepower, this being supplemented by a second canal on the Canadian side soon to be constructed;
- (2) The Michigan Lake Superior Power Co., which owns the water power rights on the Michigan side and is constructing a canal which will yield over 40,000 horse power and which will be complete and in operation during the present year;
- (3) The Sault Ste. Marie Pulp & Paper Co.,

COWAN & CO., of GALT, Limited



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"GALT FOUNDRY"
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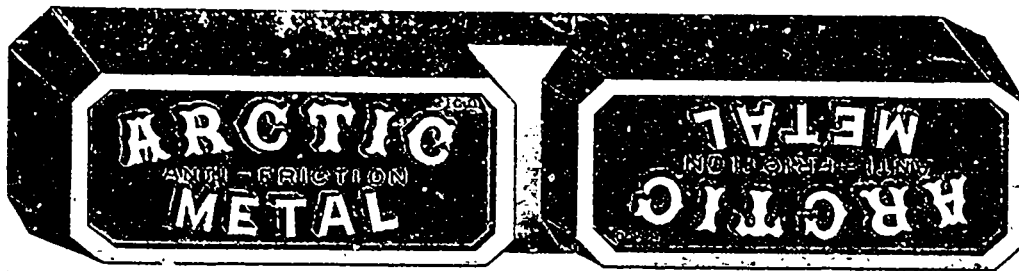
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which operates a ground wood pulp mill capable of producing 100 tons a day of pulp, and also a sulphite mill of about 60 tons a day, both of which are on the Canadian side and operated by power from the Canadian canal; (4) The Tagona Water & Light Co., which supplies water and light to the town of Sault Ste. Marie, Ont.; (5) The Algoma Steel Co., which operates a Bessemer steel plant and rolling mill; (6) The Ontario Lake Superior Co., which, while controlled by the Consolidated Lake Superior Co., is a corporation that owns and controls a number of subsidiary interests on the Canadian side, among them the Algoma Central and Hudson Bay Railway, which is now under construction northward from Sault Ste. Marie to the Helen and Josephine mines in the Michipicoten district, Ontario; and the Algoma Commercial Co., which conducts extensive land, timber and mineral operations upon the lands granted by the Canadian Government for the construction of the railroad.

Mining operations are being conducted

upon an extensive scale at the Helen iron ore mine, which is located about twelve miles from Michipicoten harbor, and the ore is carried on the company's boats to the lower lake ports. In the vicinity of Sudbury extensive mining operations are conducted in the nickel and copper deposits. Smelters have been erected for the treatment of portions of the ore at the mines, while part of the ferro-nickel ore is roasted at the works at Sault Ste. Marie, Ont., and made into briquettes, which are subsequently smelted into ferro-nickel—a pig iron containing a high percentage of nickel. The steel rail mill which rolled its first turn on May 5, is now running regularly and is rapidly reaching its full capacity of between 500 and 600 tons per day.

The officers of the Consolidated Lake Superior Co. are: President, E. V. Douglas; vice-president and general manager, F. H. Clergue; vice-president and treasurer, T. C. Search; vice-president, F. S. Lewis; vice-president, E. C. Lee; secretary, W. P. Douglas; assistant sec-

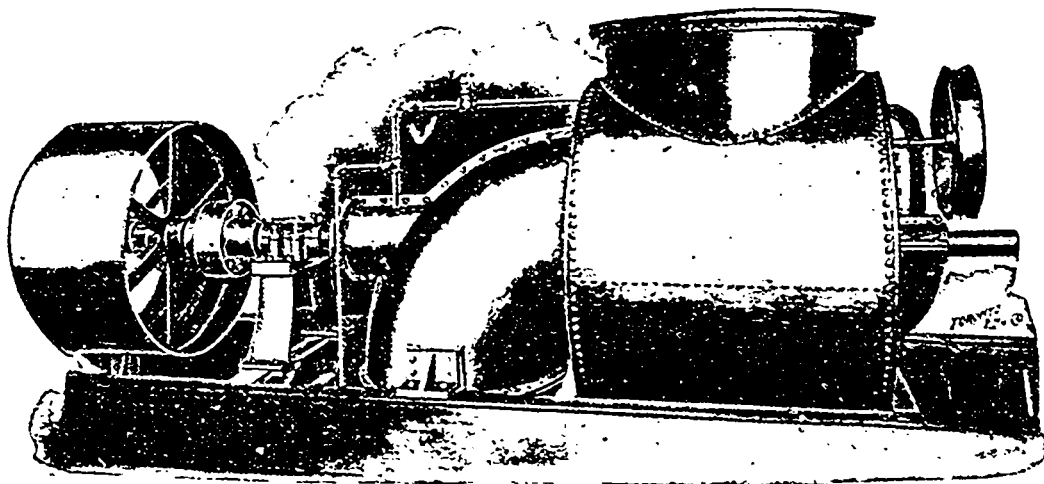
retary and assistant to president, Edward H. Sanborn.

TO BORE FOR STEAM.—Startled by the volcanic occurrences in the West Indies, Colonel Henry C. Demming, a geologist of the United States Geological Survey, has evolved an extraordinary scheme, whereby he says the human race can get all its steam power for nothing.

Col. Demming says that while the events of the last two months are appalling in the loss of life, it seemed that nature was emphatically calling the attention of men to an enormous power not utilized for human wants and comfort. The deepest hole in Pennsylvania, in Pittsburg, nearly 6,000 feet, produces hot water; 3,000 feet further, and, he says, it would produce steam.

Continuing, Col. Demming says:

As Prof. Wm. Hallock, of Columbian University, says, in order to give the steam commercial value, a method must be provided for dropping water to the hot area, allowing it time to heat, and yet



The above engraving represents a style of setting sometimes adopted in connection with our

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Our Bulletin No. 200 will interest owners of water power and prospective users. Free on request.

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having it returned to the surface as steam without interrupting the flow. To effect this, two holes might be bored into the earth 12,000 feet deep and perhaps fifty feet apart.

There would be a temperature far above the boiling point of water. Then, if very heavy charges of dynamite or some other explosive were lowered to the bottom of each hole and exploded simultaneously a sufficient connection might be established between the two holes. The rock would be cracked and fissured in all directions, and shattering it thus around the base of the holes would turn the surrounding area into an immense water heater.

The water poured into one hole would be heated and turned into steam, which would pass through the second hole to the earth's surface.

The pressure of such a column of

steam would be enormous, for, aside from its initial velocity, the descending column of cold water would exert a pressure of at least 5,000 pounds to the square inch, which would drive everything movable through the second hole. The problem is therefore a mechanical one, concerned chiefly with connecting the two holes. This accomplished, the water heater would operate itself and establish a source of power that would surpass anything now in use.

In case of seismic disturbances these holes, if we had them in every city and town in Pennsylvania, would serve as vents and tend to lessen any serious shaking of the earth in any part of the State. We have harnessed the lightning; why can we not now put at least the bridle on the heat beneath us to our benefit?

ADVANCE OF IRON INDUSTRY IN CAN-

ADA.—We are accustomed to hear so much of the remarkable progress being made in every direction by the United States, that the advances and achievements of the other half of the North American continent are liable to be overlooked and minimized. Nevertheless, it is a moot point whether the recent development of Canadian industries, and especially those connected with the manufacture and use of iron and steel, has not been the more phenomenal case of the two. Three or four years ago Canada could hardly be said to have had any iron industry at all. In 1896 the total Canadian output of pig iron was only 37,829 tons, and the total production of steel was 16,000 tons. To-day the capacity of the Canadian works is equal to about 1,100,000 tons of pig iron, 838,000 tons of steel ingots and castings, and 982,000 tons of rolled products. Five years ago no one seemed to believe that Canada had any future connected with the iron trade, whereas, latterly, it has been the basis of the wildest speculation and the most extravagant expectations. Many new enterprises have been and are still being put forward to develop mines of coal and iron ore, to build new blast furnaces, and to construct steel works and engineering works of large dimensions, and there are those who affect to believe that the future of the iron markets of the world must naturally pass from both Great Britain and the United States to our Canadian fellow-subjects in Cape Breton or Nova Scotia.

Factory and Warehouse Trucks

WE SELL MORE TRUCKS THAN ANY OTHER MAKER IN CANADA.

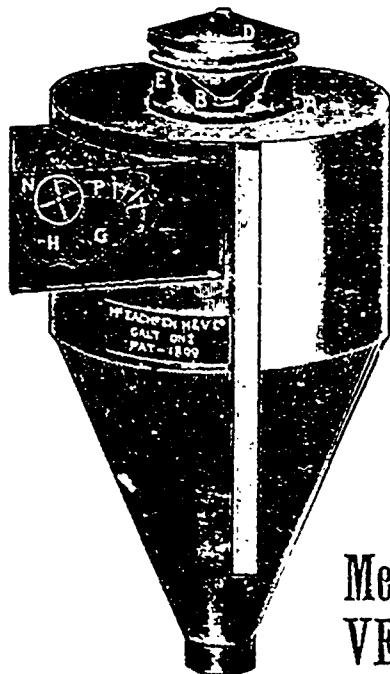
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Because we sell the Best Truck for the Least Money.

YOU CAN SAVE 30 PER CENT. BY WRITING US.

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Dust and Shavings Separators

FOR WOOD REFUSE

The air carrying the refuse enters the separator at the top and whirls around inside. The shavings being heavier than the air are carried by centrifugal force to the outer shell of the separator and they then take up a spiral path for the outlet at the bottom, the air passing out of the opening at the top.

Write us for prices and particulars of Separators, Fans, Etc.

McEACHREN HEATING and VENTILATING CO., GALT, ONT., CANADA.

LONG DISTANCE PHONE 1103.

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Multipolar or Bipolar, Direct-Connected or Belted.

OVER 1500 OF OUR MACHINES IN USE.

We contract for complete installations, including wiring of factories.

We repair machines of any make. Descriptive matter and estimates furnished on application.

BRANCHES AT Vancouver, Winnipeg, Toronto, Montreal, Halifax.

POWER LOST IN FLYWHEELS.—The resistance which a flywheel offers to the air may give rise in some cases to a considerable expenditure of energy. Some tests were made in the Nürenberg central station which showed this very clearly. The station is provided with two tandem compound engines of 450 h.p., direct coupled to the dynamos and working at 95 revolutions per minute. In order to equalize the running with the great variations of load which occur, a very heavy flywheel was used with arms of a channel section. It was found that these arms offered a great resistance to the air, and created a powerful draft, and so it was decided to cover the wheel with sheet iron in order to reduce the resistance and thus gain considerable power. In order to test the amount of energy lost, the dynamo was made to run as a motor and thus drove the engine and flywheel at no load. When the latter had no protecting covering it was found to absorb 13,300 watts, but when the covering was replaced it took only 9,874 watts, thus showing a gain of 3,426 watts, or 5.7 h. p., this being 1.2 per cent. of the power of the engine. Counting the current price per kilowatt hour and a day's run of 17 hours, it was found that this represented an economy of nearly \$270 annually. Another test of a similar nature was made by M. Ingliss upon a 630 h.p. engine and showed an economy as high as 30 h.p., or 4.8 per cent. of the engine power, which was gained by properly diminishing the resistance of the flywheel.—Scientific American.

TRADE IN MINING MACHINERY.—The opening up and equipment of many new mines throughout the country continues to create an active demand for mining, milling and smelting machinery and all our Canadian shops are well supplied with orders, many of them working double time. The imports for the first four months of the year, however, are somewhat less than in 1901, as will be seen from the following table:

MONTH	1901			1902		
	Free	Dutiable	Total	Free	Dutiable	Total
January	\$111,134	\$4,196	\$115,330	\$92,984	\$2,549	\$95,533
February	162,030	9,689	171,719	43,123	2,380	45,503
March	62,185	806	62,991	55,255	1,720	56,975
April	52,921	517	53,438	61,227	5,579	66,806
Total	\$388,270	\$15,208	\$403,478	\$252,589	\$12,228	\$264,817

MONTH	1901				1902			
	From United States		From Great Britain	From Other Countries	From United States		From Great Britain	From Other Countries
	Free	Dutiable	Free		Free	Dutiable	Free	
January	\$111,129	\$4,196	\$5	....	\$66,236	\$2,549	\$26,328	\$420
February ...	162,030	9,689	....	....	42,486	2,380	....	....
March	58,980	806	....	\$3,205	54,980	1,720	275	....
April	51,971	517	950	....	55,648	4,997	....	....
Total	\$384,110	\$15,208	\$955	\$3,205	\$219,350	\$11,646	\$26,603	\$420

—Canadian Mining Review.

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THE METALLIC ROOFING CO., LIMITED

WHOLESALE MANUFACTURERS

TORONTO

MONTREAL

WINNIPEG

PIG IRON IN CANADA.—The condition of stocks of pig iron in Canada necessitates steady buying. Representatives of the furnaces report that they are taking a large number of orders for delivery for the first half of next year, and, from what we can gather, a larger quantity of pig iron has been already sold for 1903 than there was up to February last for 1902.

A new feature in the situation is the demand which has arisen for iron on steel-rail-making account. The Clergue works, at Sault Ste. Marie, since they began operations, have turned out steel rails at the rate of 500 tons per day. Before the rail mills were started, the company bought from one blast furnace alone 30,000 tons of pig iron, and it has since repeated the order.

It is the general opinion among authorities that the consumption of pig iron in Canada since the starting up of the Clergue steel rail mills is in excess of the quantity that is being turned out by the home furnaces. This, however, is only a temporary matter, as, when all the furnaces are in blast, the quantity will, of course, be more than sufficient to supply the home market.

Since beginning operations the Sydney furnaces have exported over 50,000 tons to Great Britain alone. The official returns show that from the whole of Canada during the first ten months of the past fiscal year, ending April last, the total quantity exported to all countries was 92,571 tons, valued at \$902,492. Of this quantity 87,000 tons went to Great Britain alone. For the whole twelve months of the fiscal year 1901 the total quantity of pig iron exported from Canada only amounted to 5,623 tons, of which but 1,607 tons went to Great Britain.

That the steel works at Sault Ste. Marie will be a large consumer of pig iron for some time to come is evident from the

fact that it already has on its books orders for about 100,000 tons of steel rails.

DECLINE IN BRITISH IRON TRADE.—Returns for the six months just ended show the production of all classes of manufactured iron in the North of England district to have been the smallest recorded in the history of the trade. The total was only 41,900 tons, compared with 46,206 tons for the same period of 1901, which was the previous worst half year. Compared with 1899, this year's output shows a diminution of 51 per cent.

OPPORTUNITIES.

The following enquiries have been received at the offices of the High Commissioner for Canada in London, and at the Canadian Section of the Imperial Institute, London, England.

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

S18. A north of England firm enquires for names of Canadian manufacturers of wood chimney pieces or overmantels.

S19. A Hamburg firm ask to be referred to Canadian wood pulp manufacturers desiring representation on the Continent.

S20. A London firm in a position to act as agent between producer and retailer desire to get into touch with Canadian dairy and poultry producers seeking a market in England.

S21. An English firm are open to take

up the agency for Canadian manufacturers of pig iron, steel rails, etc.

S22. A London firm of produce importers have asked for the names of Canadian shippers of Caraqueet oysters.

S23. A commission house established for some years in London are open to do business with Canadian exporters of wood pulp, pulp wood, food and dairy products, such as cheese, butter, eggs, etc., and fruit pulp.

S24. Enquiry is made by a Canadian firm of manufacturing stationers for names of some large envelope and paper bag makers in England, Germany, France, etc.

S25. A Canadian agent writes to get into touch with one or two leading bristle merchants in London handling Russian and China bristles.

S26. An enquiry has been received from Quebec for names of manufacturers in Scotland of building, paving, fire and other bricks.

S27. A London firm is desirous of representing Canadian exporters of wood pulp, phosphate of lime, and other chemical products.

S28. Enquiry is made for names of Canadian manufacturers of thin boiling starch.

S29. A firm in the Midlands is open to represent on commission Canadian exporters of produce such as eggs and butter, especially pickled eggs.

S30. A Liverpool house is open to extend its business with Canada, and asks to be furnished with the addresses of first class shippers of wood pulp and other products suitable for the English market.

S31. A firm of spinners of all classes of woollen carpet and rug yarns wish to get into communication with Canadian buyers of such goods.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

MARKETS.

This Department of THE CANADIAN MANUFACTURER is devoted to the interests of the Hardware Trade.

THE CANADIAN MANUFACTURER is distributed to the Wholesale and Retail dealers in Hardware, to manufacturers of Agricultural Implements, of Iron and Wood-working Machinery, of Electrical Appliances, of Steam Engines and Boilers, to Engineers and Foundrymen, and to Dealers in Machinery and Steam Fitters' Supplies throughout Canada. There are more than 10,000 manufacturing concerns in Canada which use Steam as a Motive Power. We reach them all. Every recipient of this paper is a buyer of Hardware of one kind or another, and Advertisers will do well to bear this in mind.

Following are reports and observations relating to the markets of Canada and elsewhere, having reference to Hardware, Metals, Paints, Oils and such specialties as are usually handled by jobbers and dealers in such goods. Following these items will be found current market quotations on such goods, and the trade are requested to suggest to the publishers any improvements by which it is believed the quotations may be rendered as correct and valuable as possible.

Toronto, July 18, 1902.

Toronto has been in mourning for five brave firemen who lost their lives while on duty at a fire which destroyed the large storehouse and mill of the P. McIntosh Co. When discovered, the fire had gained considerable headway, and shortly after the brigade arrived the walls fell outward, burying three men under tons of brick on the east side of the building, and two in a lane on the west side. The loss of life is now being investigated by the coroner, and the evidence so far given shows that the building was a fire trap and that its construction was well-known to the officers of the fire department. The result of the investigation will probably call for the appointment of an official whose duty will include the making of returns of the construction of all buildings for the benefit of the firemen. These returns should also embody an official statement of the best and safest positions to fight a fire should one break out in the buildings reported upon. In the fire under investigation, everything points to the fact that Fire Chief Thompson exercised the greatest care in placing his men, and it was only a few minutes before the walls fell that he ordered the men to take a position that would enable them to continue the fight without endangering their lives.

There has been a fair movement in wholesale trade, and now that the weather is more favorable, summer goods will move more freely. Reports from

the agricultural districts say that the crops are getting into a better condition. Retailers are more disposed to order large parcels for the fall trade. The firmness of staple goods is adding to the general confidence felt in wholesale and retail circles. The mills are refusing to shade prices to induce sales, and it looks as if values will be well maintained. The expansion of trade in the West as well as in Ontario is now very marked, while the difficulty in getting repeat orders booked by the manufacturers in some cases, even at previous prices, is keeping the whole market firm. Payments are most satisfactory, and the last report of failures throughout the Dominion is a record one—only seven merchants being compelled to abandon their estates.

There is a feeling of confidence in local financial circles. Good crops, with general activity in trade and the industries, are the encouraging features. Money, too, is easy, with bankers offering funds at 5 per cent. on stock collateral. New York drafts are dull, bankers asking par with 1/32 discount bid. On the local share market there is increased activity, with values seeking a higher level. Bank issues are apparently wanted, but holders show no anxiety to sell, even at the advanced bid prices.

Delegates from all parts of the United States and Canada are in session here in connection with the business of the Iron Moulders' Union. One of the most important questions under consideration is

that pertaining to the number of apprentices to be employed. In discussing this question the employers are allowed to place their views before the union delegates, and for this purpose, Messrs. C. H. Castle, president of the Stove Founders National Defence Association, Quincy, Ill.; J. Dwyer, of the Michigan Stove Co., Detroit, Mich.; Henry Cribben, of the Cribben & Sexton Co., Chicago, Ill.; and Thomas J. Hogan, secretary of the Stove Founders' Association, will attend the conference. That the wealthy stove manufacturers of North America are forced to confer with the Moulders' International Union when they wish to rearrange the scale of employes in the great factories, indicates just how thoroughly organized this branch of labor is at present. The employers want to be permitted to have one apprentice for each five journeymen.

The hardware business keeps up well, orders for harvest tools becoming heavy. The demand for guns and ammunition of all kinds is on the increase. Trade in building paper and in all lines of building material is heavy. The general movement in both shelf and heavy hardware continues good, and quite a few orders are being received for lumbermen's supplies. The advent of the preserving season is causing activity in some lines of enamelled ware.

The Customs Department has issued an order placing on the free list refined cotton seed oil (edible) used for canning fish.

The cost of furniture has advanced from 10 per cent. upwards, and this is another indication that the cost of living is increasing daily; in fact, the increased cost of living is placed as one of the causes for the advance in furniture.

The executive of the Canadian Pacific having approved of certain of the plans for the proposed Hochelaga shops, have instructed Mr. D. H. McHenry, engineer-in-chief, to arrange for their immediate construction. Consequently, Mr. Henry Goldmark, assistant engineer, who has been specially engaged drawing up the plans, is getting the specifications ready, and tenders are being called for. Four car shops for the construction of freight

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FLEXIBLE AND FLANGE PIPE.

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and passenger coaches and one planing mill will be required. The passenger car shops will be about 100 feet wide by 500 feet long, and those for freight cars 100 feet by 500. The planing mill will be 125 feet wide by 500 feet long. All are to have stone foundations, with brick walls, with wooden and glass material in the roofs. Mr. Goldmark says he hopes to see the foundations and brick work finished this year. The machine and locomotive shops, which are not so simple in detail as the car shops, have not yet been definitely decided upon, but it is safe to say they will be the most up-to-date on the continent. The general plan will be to have the erecting and repair shop parallel with the machine shop. The locomotives for repair will be run in and by means of travelling cranes stripped of their pilots, cabs and working gear. Between each locomotive stand will be racks for the reception of the working portions, while right in rear, adjoining this building, will be the machine shops, where the necessary repairs will be made. The erecting process will be similar. The boiler will be run in, blocked up, and the working gear brought in and affixed from the adjoining fitting shop. These shops will be high, light and airy, and will have room for about fifty locomotives.

Throughout the whole world, at the present time, there is perhaps no country which gives better promise for the future than Canada. We have had our seasons of prosperity, but always the eyes of the world were directed in other directions, for the reason that other countries were enjoying even greater prosperity. Our mining booms were a drawing card while they lasted, but unfortunately, for a variety of reasons, these have received a set-back for the time being. It remained for the great wheat lands of the West to place us in a position where we can with confidence look to the future, knowing that we have resources which are unsurpassed by any country on the face of the earth. And what is even better, others are commencing to know it also. Even now immigrants from north and south, east and west, are clamoring at our gates, and everyone who comes sends back word of the free and fruitful land he has found.

These are our most convincing advertising mediums and our most successful immigration agents.

A failure in the crops of the North-West this year would deprive us of a considerable portion of the reputation gained by the bumper crop of last season. But it would appear that we are to be spared this calamity, for, according to latest reports the crop, in the aggregate, will exceed even the enormous one of last year. Letters received report the crops looking in splendid shape. Fully half the reports indicated an increased acreage, some of them double and treble last year's, while others went so far as to indicate another increase for next year.

Turning to other parts of Canada, much the same state of affairs is found. Ontario reports are almost entirely satisfactory, the fruit crops being particularly

promising. Apples and small fruits are unusually free from insects, and everything points to an immense yield.

Compare these optimistic reports with those from other lands.

New South Wales and Queensland have had a partial drouth for about seven years, and this condition is now spreading to portions of Victoria and South Australia. It is said that forty millions of sheep are slowly starving. South Africa is just emerging from a war; India has had a series of famines; Europe, speaking generally, was unfortunate last year, and reports are not very encouraging this year, while the United States had a corn crop failure last year, and recent reports from several sections are again becoming pessimistic in tone.

Canada, as a whole, seems to have a brighter outlook from an agricultural standpoint, than any other of the larger countries.

This should make the manufacturer, the merchant, and the business man, generally, feel very hopeful. It means that more boots, more hats and more clothing of all descriptions, will be worn, that more groceries and provisions will be consumed, that more furniture, more vehicles and more machinery of various kinds will be required. In fact, there is not a single line of industry that will not thrill with the life infused into it through the good crops and the consequent prosperity of the agricultural community.

With the bumper crops promised for this season Canada's reputation throughout the world should be established.

BUFFALO PIG IRON MARKET.—Office of Rogers, Brown & Co., Buffalo, N.Y., July 15, 1902.

Interest is now centered in the market for the early months of next year and while a good many buyers have not yet taken the subject under active consideration, the number of orders which have already been placed aggregate a considerable tonnage. There seems to be a difference of opinion as to the probable trend of the market after the close of the present year but it is a noticeable fact that some of the shrewdest and most conservative buyers have deemed it wise to cover for their requirements during the first half of 1903.

In the meantime consumption continues at a rapid rate. A great many furnaces are now banked or out of blast on account of the labor troubles in the coal fields, and the resultant gap in the available supply of pig iron has been keenly felt by many foundries in Western New York.

BRITISH PIG IRON MARKETS.—Messrs. Wm. Jacks & Co., 49 Leadenhall Street, London, E.C., England, under date of July 4, 1902, quote as follows:

Since writing you last the iron market here has remained strong with a good demand for foundry iron of every description.

To-day's prices are as follows:—No. 1 Gartscherrie 67/-per ton, f.o.b. Glasgow,

including dues. No. 3 Gartscherrie 58/3 per ton, f.o.b. Glasgow including dues. Nos. 1, 2 and 3, Cumberland Hematite 67/-per ton, f.o.b. Liverpool. Nos. 1, 2 and 3 Cumberland Hematite to special analysis, 72/-per ton, f.o.b. Liverpool. Refined D.T.N. Hematite in small pigs, 85/-f.o.b. Liverpool.

AMERICAN METAL MARKET REPORTS.—The following quotations and comments are collated from the American Metal Market, New York, and represent the latest conditions in the United States market.

IRON AND STEEL.—Statistics of pig iron production on July 1 are somewhat surprising. The weekly output was at a new high record of 352,590 tons, notwithstanding the shortage of fuel. As it was well known that numerous furnaces had suspended operations, a moderate reduction in iron making was expected, but this factor was evidently more than offset by the resumption of plants formerly banked because of strikes. Consumption during the past twelve months is succinctly shown by comparing the increase of weekly output from 310,950 tons to 352,590 tons, and the decrease in furnace stocks from 392,598 tons held a year ago to 75,037 reported on July 1, 1902. This unprecedented use of pig iron has continued in the face of steadily rising quotations averaging between six and seven dollars. Just at present the pressure is especially noticeable for foundry iron especially at the West, where furnaces are sold far into next year. In steel the situation is mixed, heavy line falling further behind orders, while a number of rod wire and nail mills in the Pittsburg region have shut down for the usual vacation. Structural steel and railway supplies are urgently sought, so much new business being placed that activity is assured well into 1903. Despite the full operation of every available oven, coke scarcity is still reported, and should soft coal miners decide to strike at the convention next week, the iron and steel industry would be completely demoralized.

COPPER.—The local copper market is unchanged from what it was last week. If a buyer demanded certain brands of Lake he would have to pay from 12½c. to 12¼c. If he specified certain makes of Electrolytic he would pay from 12c. to 12½c. The market is unquestionably very dull, but there is as yet no evidence of weakness in prices among producers. The coal question is becoming a serious one to Lake mines. None of the mines are receiving their full quota of coal, and any further delay or interruption to the supply would result in reduced production of copper.

TIN.—Market closes easier on account of the lower foreign prices, but the spot and July market is very sensitive, caused by the small arrivals and the comparatively limited amounts that can arrive to deliver this month. The prospect of an enormous crop and pack of canned goods increases every day with the favorable weather and good prices for the canned material.

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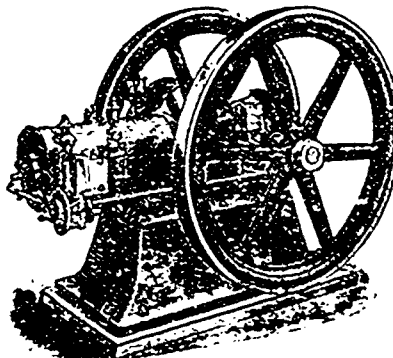
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3 to 21 Horse Power.

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SHEET ZINC.—Ex store New York, in cask lots, 9x36, we quote \$6.75.

SPELTER.—Prices remain nominally 5.25 for spot, 5.10 for July shipment.

NICKEL.—The International Nickel Co., it seems, has not yet obtained entire control of the nickel market. One independent concern, supposed to be a German one, has been offering nickel in the New York market at under current quotations. American consumers do not take kindly to foreign nickel, not considering it equal to American makes, but there is no doubt that this competition has kept prices from advancing. The market cannot be quoted accurately but for large lots it is believed to be from 48 to 50c. per 1,000 lb. lots 51c. per lb. and smaller lots according to quantity as high as 60c. per lb.

PLATINUM.—Market is \$19.00 per oz. in New York. Chemical ware (crucibles and dishes) best hammered metal from store in large quantities, is worth 76c. per gram.

QUICKSILVER.—The quotation in New York is \$48 per flask for large orders.

OLD RUBBER.—Prices for old rubber boots and shoes seem to be slightly on the advance and \$7.50 delivered to the mills is the figure asked for carload lots although no actual sales are reported as having been made. Dealers feel that the conditions that existed the same time last year are practically in force to-day and are not at all anxious to sell even at the advance as they look for around 8c. within the next two months. White, black and red remain the same with demand good.

PRODUCTION OF SILVER.—The United States continues to lead in the production of silver, with Mexico second, these two countries yielding about 70 per cent. of the total world's output. The balance of the production was furnished mainly by Australasia, Germany and Bolivia, in the order named. The conditions surrounding the extraction of silver from its ores are so markedly different from those attending the production of gold that the increase or decrease in the output of one metal is not necessarily reflected in the other. The great bulk of the silver output of the United States is obtained in the smelting of lead ores, the silver ores either occurring with the lead ores, or are added to the smelting charge for the lead furnace. At the present time fully 85 per cent. of the silver produced in the United States is derived from lead smelting, and with this in mind it is interesting to note that the production of lead in the United States during 1901 was less than 1900. Our production of silver last year was slightly larger (about 90,000 ounces) than in 1900; but owing to the decline in price the value fell off a little over \$1,400,000. —Engineering and Mining Journal.

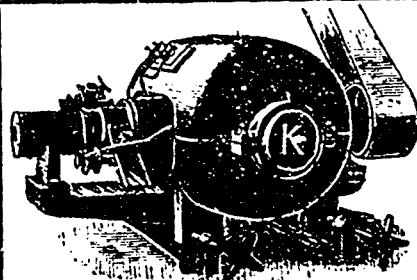
UNITED STATES CONSUMPTION OF TIN.—The United States Census, speaking of the consumption of tin in that country says:

During the calendar year 1900 the total imports of tin into the United States

in bars, blocks, pigs, etc., were 69,068,568 pounds, valued at \$19,458,586; in 1899 they were 71,248,407 pounds, valued at \$16,746,105; and in 1898, 62,748,399 pounds, valued at \$8,770,221. The average value of this tin at the foreign port of shipment was over 28 cents per pound in 1900, and over 23.5 cents per pound in 1899. In 1898, however, it was a little less than 14 cents per pound, the increase

in price in 1900 as compared with 1898 amounting to over 100 per cent.

The world's production of pig tin has largely increased in late years, especially since the development of the tin plate industry in the United States. In 1884, according to the best available statistics, the world's production amounted to 50,299 metric tons. In 1890 the production had increased to 61,538 tons, in 1891

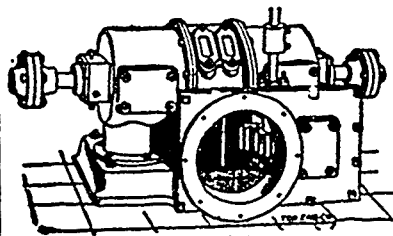


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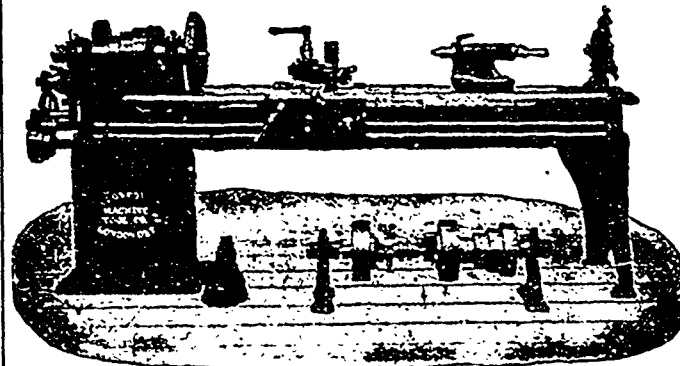
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HORIZONTAL AND VERTICAL BUILT IN 44 SIZES.

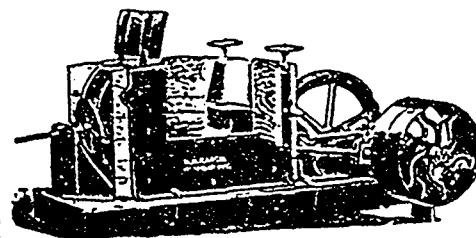
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- Patent Double-Acting Gig Dyeing Machines.

Established  1799.

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Highest Award, Gold Medal, Paris, 1900
For further particulars, apply.

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A Few Extracts from Letters from British Consuls, etc.

"I have to thank you very heartily for the copy of your Directory for 1901. I have always found it most valuable in supplying reliable information in answer to inquiries."—*H. B. M.'s Consul at Asuncion, Paraguay, Aug. 20th, 1901.*

"I am directed to thank you for the book and to express the opinion of this Consul that the work is one which cannot fail to be very useful to the commercial community."—*The Secretary of the Chamber of Commerce of Georgetown, Demerara, Aug. 12th, 1901.*

"I consider your Directory a most useful publication. Consuls are inundated with inquiries, which a reference to your work would have answered at once, and manufacturers would effect a large economy in wasted clerical work, postage and advertising, by purchasing the Directory."—*H. B. M.'s Consul at Anou.*

"As a work of reference I consider it to be most useful. By keeping it up-to-date you are improving it in the best possible manner."—*H. B. M.'s Consul at Para.*

"I have to thank you for the two volumes of your work, which are very acceptable, as containing much useful information."—*H. B. M.'s Consul at Callao.*

"I beg to thank you for the copy of your Merchants' Directory, which is a most useful work, and one to which I am constantly referring, business people who send inquiries to this Consul for the names and addresses of houses connected with different trades."—*H. B. M.'s Consul at Cadiz.*

"I have the last copy of the Directory, a most useful work, but which I think is not consulted by exporters as much as it deserves to be, as I am constantly receiving letters asking for information which could be obtained from its pages."—*H. B. M.'s Vice-Consul at Paysandu.*

"I beg to inform you that I shall be very pleased to offer you every assistance in my power to facilitate your very interesting work for the benefit of commerce and industry."—*H. B. M.'s Consul at Jaffa.*

"I have duly received your valuable and useful Directory of Merchants, Manufacturers and Shippers for 1899, and beg to express my best thanks for same."—*British Vice-Consul, Spezia (Italy)*

"I am constantly receiving letters of enquiry for information that in most cases could be obtained in your Directory."—*British Consulate, Uruguay.*

"The only book consulted in Kelly's Directory."—*From British Consular Return, Kiga.*

"Many of these inquiries would have been rendered superfluous by a reference to Kelly's Directory."—*Report from British Consul, Genoa.*

"The Directory has been of the greatest service to me in my former Consular posts, and will, I believe, be doubly useful here."—*B. C. Chicago.*

"We beg to express our appreciation of the thorough and exhaustive character of the Directory, which covers exactly the fields we desire to reach."—*Messrs. H. M. Anthony Co., New York.*

"The copy of Kelly's Directory has already been of great use to me."—*B. F. C. Thorshavn.*

"It is a Directory which is very often consulted by the Merchants of our town."—*B. F. C. Dedeaatch, Turkey.*

"Your Directory was useful to me and the merchants in general."—*British Consular Agent, Tzuan.*

to 65,062 tons, in 1892 to 69,560 tons, in 1893 to 74,658 tons, in 1894 to 83,387 tons, and in 1895 to 83,425 tons. In 1896 it fell to about 83,250 tons, in 1897 to about 75,400 tons, and in 1898 to about 75,200 tons. In 1899 it increased to about 78,850 tons, and in 1900 to approximately 80,000 tons.

Reducing to gross tons the imports of pig tin into the United States in 1900, 1899, and 1898, and assuming that the entire quantity was consumed within its boundaries, which is practically the case, it will be found that in 1900 that country consumed 30,834 tons of pig tin; in 1899,

31,807 tons; and in 1898, 28,013 tons; in each case more than three-eighths of the world's total production for the year. During the decade from 1880 to 1890, however, and before the establishment of the tin plate industry, the imports of pig tin amounted on an average to about 12,215 gross tons, the total quantity imported in the fiscal year 1884 being 11,621 gross tons, or less than one-fourth of the world's production in that year. A large part of the pig tin imported prior to 1890 was consumed by the stamping companies of the United States in the production of their various specialties.

FAVORABLE FAILURE FIGURES.—Failures in Canada and the United States as reported to Bradstreet's, whether for the past month, the quarter or the half year, are in a high degree favorable. Only once in nine years have the June failures been fewer in number than last month, and the same remark is true of the quarter's returns, while only twice since 1888, in 1900 and 1899, were there fewer failures for the half year than there were in the six months ending June 30. Canadian failures number 603 for the first six months, with liabilities of \$5,103,404, and assets of \$2,247,210, a decrease of 15 per cent. from a year ago in number and of 20 per cent. in liabilities from a year ago.

The following is a detail statement as reported to Bradstreet's, of business failures in Canada and Newfoundland for six months of 1902 and 1901:

PROVINCES.	NO. OF FAILURES.		ASSETS.		LIABILITIES.	
	1902	1901	1902	1901	1902	1901
Ontario	230	251	\$655,631	\$1,124,533	\$1,782,133	\$2,574,436
Quebec	224	262	734,500	817,750	1,770,500	2,312,128
New Brunswick	17	36	52,025	110,310	112,525	206,725
Nova Scotia	40	53	66,651	117,618	118,782	196,306
Prince Edward Island	5	6	17,800	31,000	35,925	37,600
Manitoba	21	47	39,998	103,615	81,300	257,700
North-West Territories	12	11	51,385	51,200	88,265	110,073
British Columbia	53	51	624,220	464,500	1,073,791	717,550
Yukon Territory	1	.....	5,000	.....	10,000	.....
TOTALS CANADA	603	717	2,247,210	2,830,556	5,103,404	6,412,518
NEWFOUNDLAND	3	2	3,739	200	13,707	4,500
ST. PIERRE ET MIQUELON	1	1	200	4,000	3,000	8,000

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A NEW USE FOR STEEL.—Under the auspices of the Steel Roads Committee of the Automobile Club of America, a thorough demonstration will very soon be made in this city of the merits of the steel highway system under various conditions of service. The chief difficulty was to get the special shape of steel rolled. None of the outside mills were willing to furnish, or even to take an order for regular sizes requiring prompt delivery.

When Chairman Seligman of the committee met President Schwab he found him in full sympathy with the movement,

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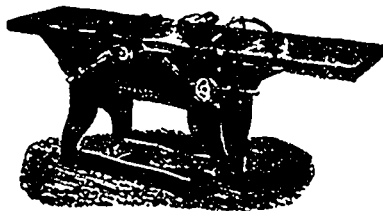
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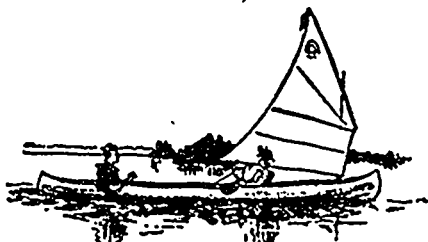
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and ready not only to furnish the special forms and deliver them promptly, but to contribute the steel for a mile of road as a free gift.

General Stone, the designer of the proposed road, has already conferred with the steel corporation's experts on the details of construction, and the material will be delivered in six weeks.

Borough President Cantor has directed Chief Engineer Olney to recommend suitable locations for sections of the road. It is intended to place one in the heavy trucking district down town, another in a street of general travel, and a third on a suburban earth road.

The track plates will be twelve inches wide, and will be laid on special foundations of broken stone.

An English engineer who recently inspected the steel road at Valencia, in Spain, reports in the highest praise of it in every particular. This road has been in use for ten years.—American Metal Market.

FOR THE BENEFIT OF TRAVELLERS.—For the information of those whom it may concern the United States Secretary of the Treasury has issued a pamphlet containing a brief summary of the tariff schedule that shows generally the rates of duty chargeable on articles that may be brought into that country. In concluding the pamphlet he warns travellers not to try to evade the law, and adds:

"No custom official or employee is allowed to accept gratuities or 'tips' of any kind under penalty of prompt dismissal. Please do not tempt them, but promptly report to the collector any intimation on the part of any official or employee that a 'tip' would be acceptable." The table of rates is as follows:

Apparel, wearing—50 per cent. ad valorem to 44 cents per pound and 60 per cent. ad valorem.

Books—25 per cent. ad valorem.

Books, printed more than twenty years—free.

Books, printed exclusively in languages other than English—free.

Bottles, toilet—45 or 60 per cent. ad valorem.

Cameos, not set—10 per cent. ad valorem.

Cameos, set or in frame—60 per cent. ad valorem.

Chinaware, decorated—60 per cent. ad valorem.

Cigars and cigarettes—\$4.50 per pound and 25 per cent. ad valorem and internal revenue tax.

Coral, all manufactures of—50 to 60 per cent. ad valorem.

Cut glass, all articles of—60 per cent. ad valorem.

Diamonds, not jewelry, rough or uncut, free; cut, but not set—10 per cent. ad valorem.

Drawing instruments—45 per cent. ad valorem.

Drawings, pen and ink—20 per cent. ad valorem.

Dress ornaments and trimmings—60 per cent. ad valorem to 50 cents per pound and 60 per cent. ad valorem.

Embroideries and embroidered articles—60 per cent. ad valorem to 50 cents per pound and 60 per cent. ad valorem.

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JOHN DRYDEN, Minister of Agriculture.

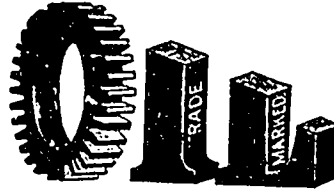
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Handkerchiefs—45 per cent. ad valorem to 60 per cent. ad valorem.

Handkerchiefs, silk—various rates according to character, but not less than 50 per cent. ad valorem.

Hosiery—from 50 cents per dozen pairs and 15 per cent. ad valorem to \$2 per dozen pairs and 50 per cent. ad valorem.

Ivory, manufactures of—35 per cent. ad valorem.

Jewelry, all articles commonly known as "jewelry"—60 per cent. ad valorem.

Metal, manufactures of, except jewelry—45 per cent. ad valorem.

Musical instruments—45 per cent. ad valorem.

Music, in loose sheets or bound—25 per cent. ad valorem.

Ostrich feathers—50 per cent. ad valorem.

Pearls, set or strung—60 per cent. ad valorem.

Pearls, in their natural state, not set or strung—10 per cent. ad valorem.

Perfumery—50 per cent. ad valorem to 60 cents per pound and 45 per cent. ad valorem.

Photographs—25 per cent. ad valorem.

Precious stones, cut and not set—10 per cent. ad valorem.

Precious stones, set—60 per cent. ad valorem.

Ribbons—45 per cent. ad valorem to 50 per cent. ad valorem.

Ribbons, velvet or plush—\$1.50 per pound and 15 per cent. ad valorem.

Shawls—50 per cent. ad valorem to 50 cents per pound and 60 per cent. ad valorem.

Shirts and underwear, knit, cotton—60 cents per dozen and 15 per cent. ad valorem to 44 cents per pound and 60 per cent. ad valorem.

Shirts, other—50 per cent. ad valorem to 44 cents per pound and 60 per cent. ad valorem.

Shoes, leather—25 per cent. ad valorem.

Silk articles, except such as are composed in part of wool—50 per cent. ad valorem to 60 per cent. ad valorem.

Velvets, plushes, etc., silk—\$1 per pound and 15 per cent. ad valorem to \$1.50 per pound and 15 per cent. ad valorem, but not less than 50 per cent. ad valorem.

IRON vs. STEEL FOUNDRIES.—The Iron and Coal Trades Review of London says: One of the questions that appear to be occupying the minds of the foundry interest in most countries at the present time is the extent to which steel foundries are likely in the near future to displace those devoted to the manufacture of iron castings. The number of new iron foundries erected during the last few

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years is probably a good deal below the number of similar steel foundries. The use of steel has recently replaced cast iron for a great many different requirements. As a single case in point, out of many that might be cited, we need only name its much more general employment for rolls and housings. The iron foundry can hardly as yet be said to have much felt the pinch of steel castings, because the general conditions of trade have been so prosperous, but there are those who believe that many of the iron foundries will be among the first to experience the effects of a slump. The true character and dimensions of the contest between the two metals cannot as yet be accurately gauged, for many reasons. It is certain that iron foundries are, and have for a long time past, been full of work, and there are many who believe that iron castings will long continue to hold their own. The British foundry interest would do well to keep their eyes upon the course of events in the United States, where economic and manufacturing conditions are so readily responsive to new demands and improved and cheapened applications.

Regarding which the American Metal Market, a good authority, says: The statement above that there have been more steel foundries than iron foundries erected in the past few years is not true of this country. The growth of the steel casting industry in this country in the past year is shown by the following figures, compiled by the American Iron

and Steel Association. Total production of open hearth steel castings in 1900 was 177,491 tons, in 1901 it was 301,622 tons, an increase in 1901 of 124,131 gross tons, equal to 70 per cent.

New methods of making steel castings are coming into use, which bid fair to still further increase the volume of the industry.

Mr. S. S. Deemer, a large manufacturer of steel at Reading, Penn., writing of the Bookwalter process, says:

I have had a few years' experience in making steel castings by different processes almost constantly since 1877—namely, McHaffee, open hearth, Robert, Tropenaz, and at the present time Bookwalter, which I consider under proper conditions superior to any known process. A visit to our plant will convince the most skeptical. I am willing to make a broad assertion that with a small converter that will turn out about 5,000 pounds of finished metal every half hour you can make any grade the open hearth people can, and also a great many that they cannot. For instance, after decarbonizing a 5,000 pound heat, you can make two or three different kinds of steel out of the one melted bath. Following is the analysis of three different grades of steel made out of one heat: First ladle, 2,000 pounds, 0.10 car.; mang. trace; sil., 0.01; second ladle, 2,000 pounds, car., 0.25; mang., 0.60; sil., 0.25; third ladle, 2,000 pounds, car., 0.55; mang., 0.85; sil., 0.28. The first of these the open hearth steel casting

people cannot make at all, for they could not get it out of the ladle; however, they might a scull. I claim the small converter will produce hotter steel, with more life to it than the open hearth, and the claim is not "fallacious." You can decarbonize one 5,000-pound heat, pour it into an open ladle, and hold the metal hot enough until you finish the second heat, then pour it into the same ladle and pour the entire mass into one mould over the lip of the ladle without any scull. You can take a small shank ladle with about 100 pounds of melted steel from the converter, let two men carry it about 75 feet, and pour it over the lip to the ladle, the same as you would iron, and have no scull. The open hearth people could not get it to run, even into a plain mould. We can run anything, from one ounce up. I predict in the near future that almost every steel casting plant will install a small converter for special grades of castings. Of course it requires constant attention and careful practice. I write this simply because the small converters have been ridiculed by different ones, when they did not understand or give them proper attention.

AMERICAN IRON.—In the American Iron and Steel Association's annual report, made public this week in its complete form, are contained some highly interesting comparison of prices during the past few years. A clear idea may be obtained from these figures as to the actual movement of steel and iron pro-

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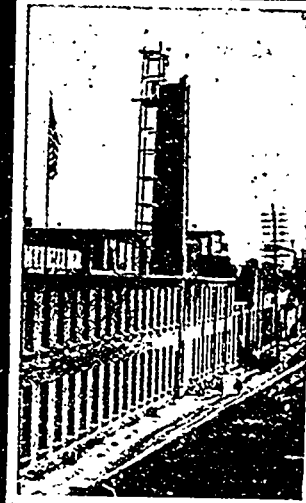


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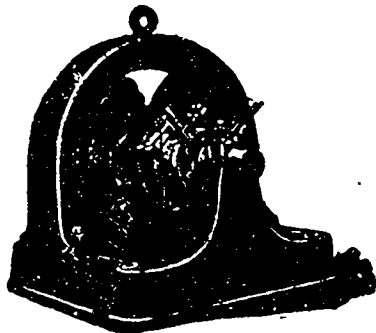
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ducts during this period. Particularly noticeable are the violent advances of the 1898-99 period, the relapse of 1900, and the subsequent upward movement towards new high levels.

In the subjoined tables, the 1902 figures are the averages for last month only. Figures for years prior to 1902 are average prices for the entire year. Iron products compare as follows, per ton :

	No. 1 foundry iron at Philadelphia.	Bar iron at mills.	Old rails at Pittsburg.
1897.....	\$12.10	\$1.10	\$12.49
1898.....	11.66	1.07	12.39
1899.....	19.36	1.95	20.36
1900.....	19.98	2.15	19.51
1901.....	15.87	1.80	19.32
1902.....	20.50	2.02	25.00

Finished steel products make the following comparison, all in prices per ton at mill :

	Rolls.	Billets.	Bars.
1897.....	\$18.75	\$15.08	\$0.97
1898.....	17.62	15.31	0.98
1899.....	26.12	31.12	1.93
1900.....	32.29	25.06	1.63
1901.....	27.33	24.13	1.47
1902.....	28.00	32.20	1.80

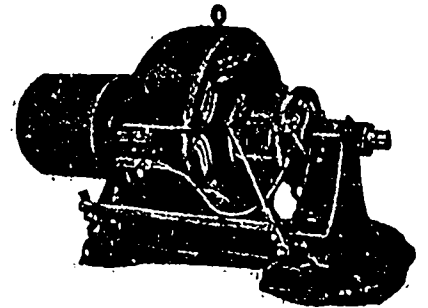
It will be seen that old iron rails, steel billets, and steel bars have doubled in price within four years.

CONTRACTS TO STAY OUT OF BUSINESS INVALID.—A suit of much importance was recently decided by Judge Thompson in the United States Circuit Court at Columbus, O. The decision was made in the suit brought by the S. Jarvis Adams Co., of Pittsburg, against Sanford A. Knapp and J. M. Bossert as individuals and the Coshocton Iron Co., of Coshocton, O., a corporation.

The suit was brought by the Pittsburg company against the defendants to enjoin them from manufacturing or selling bell dies or tong dies or axle balls similar to those made by the Pittsburg corporation. The Adams company, prior to 1901, had in its employ Knapp and Bossert. Before 1900 Mr. Adams was the owner of the business. In that year the corporation was formed. Bossert and Knapp were given salaries of \$2,500 per year and \$25,000 in capital stock, to be paid for out of the earnings. In 1901 they resigned, but the company declined to pay the earnings on the stock unless they signed a contract not to engage in a similar business in this country. The contract was signed, the money paid over, and shortly afterwards the Coshocton company was formed to manufacture the same class of products as the Adams company. The Adams company brought suit to enjoin the defendants. The petition was demurred to, the defense being that the contract was against public policy and entered into for the purpose of stifling competition.

Judge Thompson held that this was true. The demurrer was sustained and the petition dismissed. The court said it was admitted that the plaintiff controls 75 per cent. of the business in the United States, and by stifling competition and buying out manufacturers would soon have a monopoly. The naked contract showed that it had been entered into to

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THOMAS C. IRVING, Gen'l Manager Western Canada, TORONTO.

JOHN A. FULTON, Gen'l Manager Eastern Canada, MONTREAL.

restrain competition, and there was no counterbalancing claim. Such a contract for such a scheme was plainly unlawful, the Court said. The plaintiff had not given anything or secured anything that should be protected. Judge Thompson said the money paid to the defendants was not paid justly, and the plaintiff had the right to sue to recover it. The defendants, however, could not be molested in their business nor restrained from manufacturing anything they saw fit.

CARNEGIE STEEL COMPANY ADVANCE WAGES.—The wages of 15,000 employees of the Carnegie Steel Co. have been increased 10 per cent. This advance is to all, except the men working under wage scales, and it is reported that they will also get more money. The lowest wages paid until to-day by the Carnegie Co. for common laborers was \$1.50 per day. The increase includes the laborers, machinists and engineers and many men earning as high as \$4 per day. This advance came as a surprise, it not having been announced until they had received the advance in their pay envelopes.

DOMINION FINANCES.—Full returns are not yet compiled for the fiscal year which ended with June 30, but a safe estimate places the customs revenue of the Dominion at \$3,000,000 greater than that of the previous year. Figures already available show a revenue of \$32,052,791 as compared with \$29,129,819 for the previous year, a gain of \$2,922,972. It is estimated that the receipts not yet in will aggregate \$100,000. The revenue for June, exclusive of outstanding receipts, was \$2,887,213 and the total returns for June, 1901, were \$2,787,031.

ELECTRIC LIGHT FEES.—The Dominion Government has passed an order-in-council establishing at once the following registration fees to be paid by electric

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light companies, as follows: The fee for all companies having an installation of 500 incandescent lamps and under, \$5 a year; all companies having an installation of over 500 and not exceeding 2,000 incandescent lamps, \$10 a year; and all companies having an installation in excess of 2,000 incandescent lamps, \$25 a year. For the purpose of this regulation each arc lamp shall be deemed equal to ten incandescent lamps. Each company registering shall be entitled to a test of voltage and a comparison of their measuring instruments with the departmental standard once in each year free of charge.

EXTRUDED METALS.—A Connecticut brass manufacturing company has a new process of extruding metals by which they will manufacture bars of malleable brass, alloys, manganese bronze, Muntz metal, etc. The process consists of forcing the heated metal by hydraulic pres-

sure through a die of any desired shape. It is said that extruded bars can be made ranging from light sections to heavy round, square or hexagon bars. It is believed that extruded metal will be used in structural work in many places in place of steel, where a strong non-rustible metal is desired.

CHILE.—Official returns for the year 1901 show that the exports from Chile for that year were valued at \$62,385,922 American gold, as compared with \$59,270,203 for the preceding year. Imports for the past year aggregated \$49,724,299, as against \$46,916,422. The increased exports were due to greater quantities of copper exported and to a rise in the price of nitrate. The quantity of nitrate exported diminished by 173,978 tons, amounting to 1,291,957 tons in all. The value, on the other hand, of the total exports was greater than in 1900 by more

Main Factory—BRADFORD, ENG.

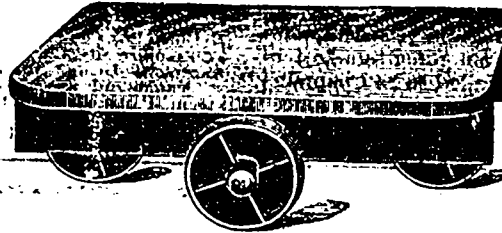
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than \$3,000,000 (American). Chile exported 325,042 tons of coal, of which practically all was for the use of steamers touching at Chilean ports. Aside from mineral exports Chile sends very little to foreign countries, her exports of agricultural products, animals and manufactures amounting to but little over one million dollars, in American currency, each. Of the imports the principal group is textiles, the total value of which is fully \$14,000,000. Imports of oils, paints, colors and polishes amount annually to more than six million dollars, machinery to more than three, and perfumery, drugs and chemicals to about a million dollars annually, while imports of paper are valued at a million and a half. The value of liquor and drinks imported is comparatively small, less than half a million. The remainder of the imports consist of vegetable, animal and mineral products.

AN AFFECTIONATE FAREWELL.—The Rev. Mr. Hahn recently took leave of his little flock in a New Jersey town with the following words: "Brothers and sisters, I have come to say good-bye. I don't think God loves this church, because none of you ever die. I don't think you love each other, because none of you marry. I don't think you love me, because you haven't paid my salary. Your donations are moldy fruit and wormy apples, and 'by their fruits ye shall know them.' Brothers, I am going to a better place. I have been called to be Chaplain of a penitentiary. I go to prepare a place for you, that where I am there ye may be

also. May the Lord have mercy on your souls. Good-bye."

WESTERN EDITION OF THE CANADA LUMBERMAN.—Sixty-four pages are contained in the July number of the Canada Lumberman, which is designated a Western Edition. The contents are of special interest to the lumber trade of Western Canada. In addition to descriptions and illustrations of many of the leading saw and shingle mills of the West, there appear nearly one hundred portraits of members of the Western Retail Lumbermen's Association, the headquarters of which are at Winnipeg; also several articles bearing upon the conduct of a retail lumber yard. The C. H. Mortimer Co., Toronto, are the publishers.

BUSINESS CHANGES.

FROM BRADSTREETS.

ONTARIO.

APPLE HILL.—J. Byron Coulthart, mfr. cheese boxes, assigned to John G. Harkness, Cornwall.

BRACEBRIDGE.—Bracebridge Brilliant Light Mfg. Co., obtained charter.

HAMILTON.—M. Brennan & Sons Mfg. Co., mfrs. lumber, etc., mill burned.

OTTAWA.—Canadian Machine Telephone Co., obtained charter.

Wright Mfg. Co., assets sold.

ST. THOMAS.—Dunwick Gas & Oil Co., obtained charter.

TORONTO.—Alpha Paving Co., obtained charter.

Excelsior Shoe Co., obtained charter.

P. McIntosh & Son, wholesale flour and feed and mfr. cereals, burned.

National Box Co., mfrs., loss by fire.

Pan Empire Mfg. Co., obtained charter.

WARKWORTH.—George Dunn, saw, shingle and planing mill, advertising business for sale.

WINDSOR.—Canadian Household Supply Mfg. Co., obtained charter.

WOLVERTON.—Wolverton Milling Co., burned out.

QUEBEC.

BOLTON GLKN.—Moffat & Mienler, lumber mfrs., dissolved.

DESCHAMBAULT.—Gauthier & Gauthier, sawmill, registered.

GRANDY.—Gullino Horse Collar Co., dissolved.

MONTREAL.—P. Amesse, foundry, burnt out.

Canadian Aluminum Works, obtained charter.

Canadian Pneumatic Tool Co., incorporated.

Champion Mfg. Co., registered.

Continental Engineering & Contracting Co., registered.

P. Dansereau & Co, carriage makers, etc., registered.

Henderson & Potts Co., mfrs. paints, etc., loss by fire.

Lockhart & Stoddard, mfrs. bedding, registered.

Locomotive & Machine Co., incorporated.

Lymburner & Frere, mfrs., dissolved.

Lymburner & Mathews, pass foundry, etc., dissolved, new partnership registered.

Peck Rolling Mills, incorporated.

W. J. Smith, Jr., brick mfr., assets to be sold.

PRICE'S VILLAGE.—Metis Lumber Co., shingle mill destroyed by fire.

ST. THERESE.—Dominion Furniture Mfg. Co., incorporated.

SHERBROOKE.—Sherbrooke Iron & Metal Co., dissolved, Isaac Smith now registered proprietor.

VICTORIAVILLE.—Gagnon, Achille & Co., electric light, tanners, etc., meeting of creditors.

NEW BRUNSWICK.

CAMPBELLTON.—Shives Lumber Co., incorporated.

UPPER BRIGHTON.—J. F. Alcorn & Co., saw mill, burned out.

NOVA SCOTIA

HALIFAX.—Peoples' Heat & Light Co., property adv. for sale.

MILL VILLAGE.—N. S. Wood, Pulp & Paper Co., mill burnt.

RIVER JOHN.—John Mitchell, sawmill, etc., Mitchell & Blair succeed.

MANITOBA.

BRANDON.—Brandon Hardware Co., incorporated.

MORDEN.—Shaw & Whitlam, agri. implements and grain, sold elevator to C. McKay.

PURVES.—Purves Farmers Elevator Co., applying for incorporation.

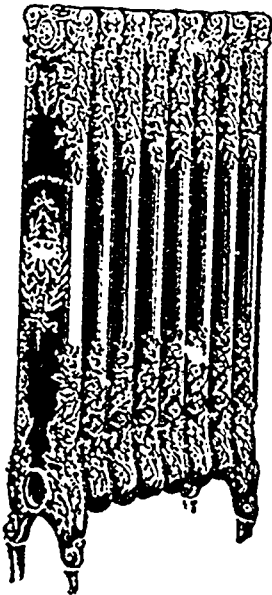
WINNIPEG.—Western Implement Mfg. Co., incorporated.

NORTH-WEST TERRITORIES.

CARDSTON.—Cardston Implement Co., incorporated.

RED DEER.—Red Deer Lumber Co., incorporated.

YORKTON.—North-West Electric Co., incorporated.



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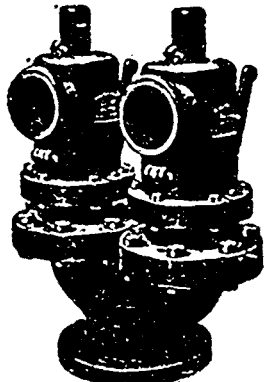
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