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**CANADIAN MANUFACTURER**  
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VOL. 44.

TORONTO, JANUARY 17, 1902.

No. 2

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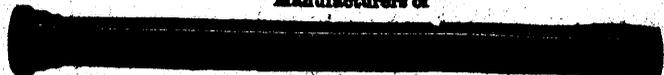
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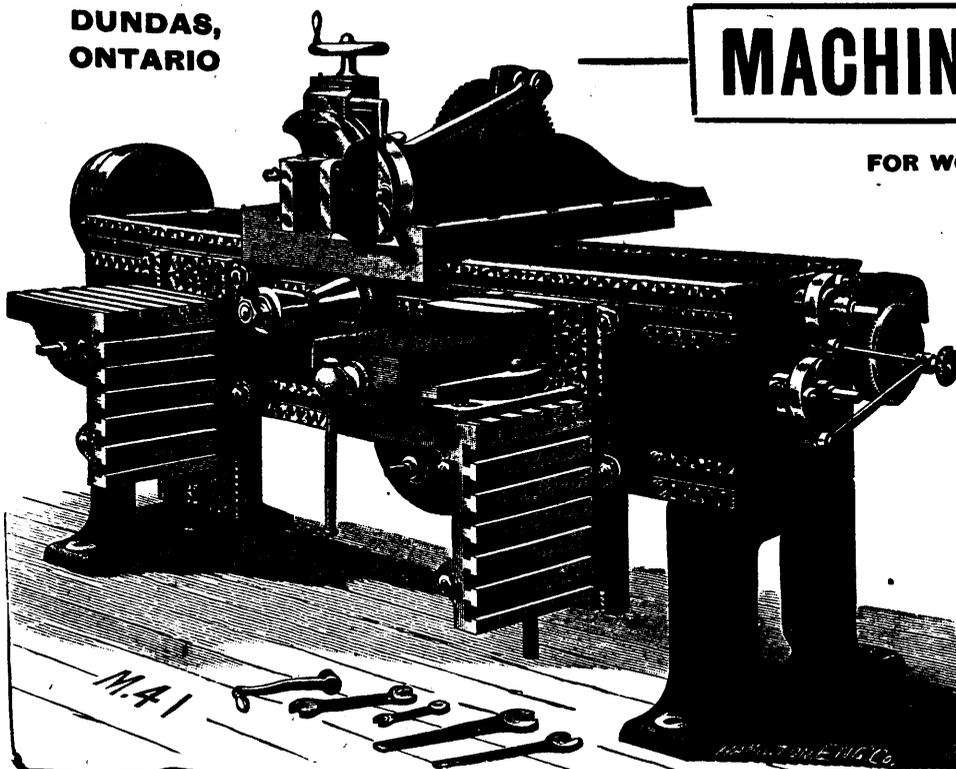
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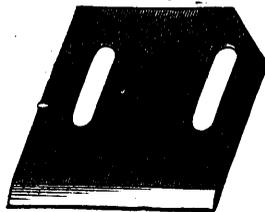
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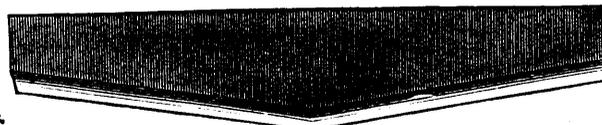
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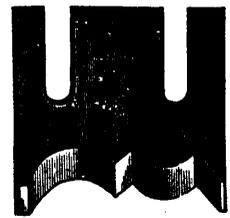
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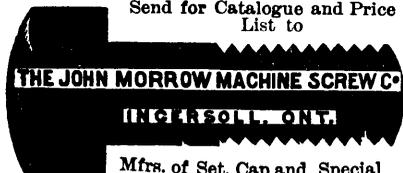
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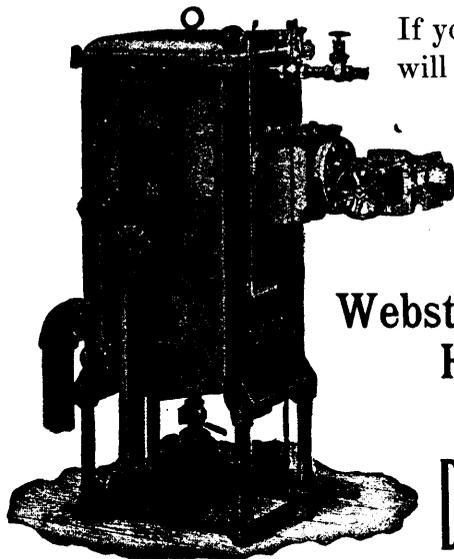
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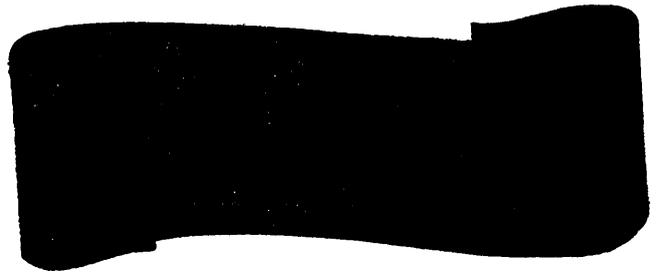
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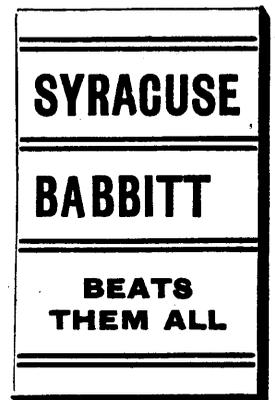
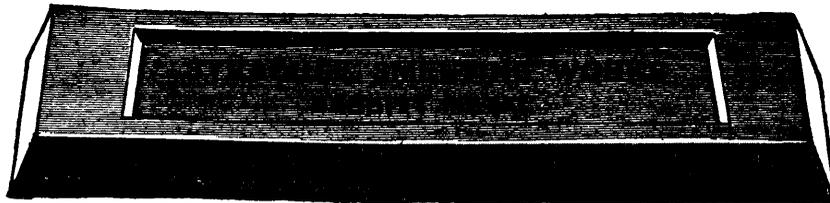
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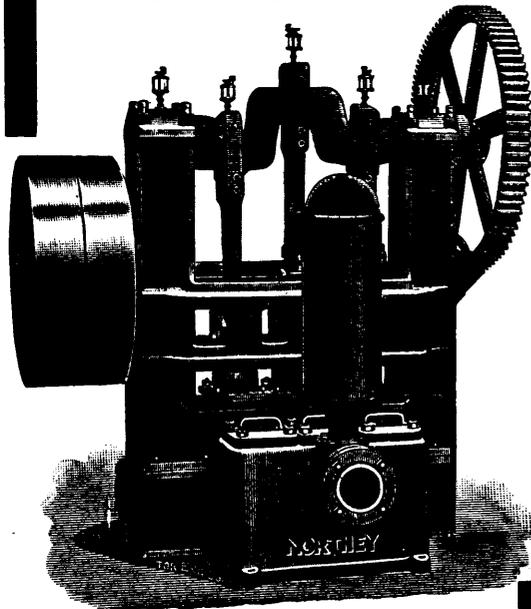
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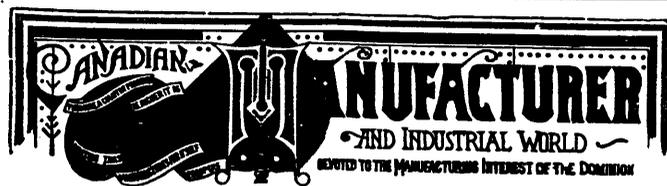
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Cable address: "CANAMAN." Western Union Telegraphic Code used.**MESSRS. DAVISON & CO.,**164 Federal Street, Boston, Mass.  
AGENTS FOR UNITED STATES.

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I. J. CASSIDEY, Editor and Manager

**THE HISTORIAN.**

The historian of the Canadian Manufacturers' Association, in the November issue of *Industrial Canada*, records the transactions of the Association for the past ten years in precisely five lines as follows:—

From 1891 down to about a year and a half ago the attention of the Association was given mainly to tariff matters, but as the tariff remained fairly satisfactory, the Association lost considerably in vigor and aggressiveness.

On the occasion of the nineteenth annual meeting of the Association, held in Toronto February 15, 1894, a banquet was tendered to Hon. Mackenzie Bowell, who was then Minister of Trade and Commerce, who had then but recently returned to Canada from an extended trip to the Australasian provinces, the object of which was to enlarge the trade between them and this country. The banquet was held in Webb's Parlors, and more than two hundred members and invited guests were seated at the tables, presided over by John Bertram, Esq., Dundas, Ont., the then president, assisted by George E. Drummond, Montreal, the first vice-president. Minister Bowell occupied the seat of honor, and beside him was Mr. James Huddart, an influential British steamship owner who had recently established a line of large and commodious steamers between Vancouver, B.C. and some of the Australian ports. In those days the attention of the Association was not given wholly to tariff matters; and it was because of the interest taken by the Association in promoting and extending the outside trade of the country, that Minister Bowell had been invited to become the chief guest, so that the members might hear from him personally what he had to relate about the possibilities of foreign trade; and those who were present will not forget the very forcible presentation of the matter by Minister Bowell on that occasion; nor will they forget the earnestness of Mr. Huddart in explaining how much Canada would be benefitted by the establishment of a line of steamers which has since contributed so much to the building up of Canadian-Australian trade. The enthusiasm which pervaded the meeting, and the great interest taken by the Association at that time were certainly not indicative of any lack of vigor and aggressiveness.

Mr. Bowell had always in his political life taken deep interest in the welfare of our manufacturing industries; and he never lost any opportunities to express his appreciation of the encouragement rendered him by the Manufacturers

**The Canadian Manufacturer**

**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.**

Association. It was in behalf of the industrial interests of Canada that he made his visit to Australia; and, as stated in his address at the banquet, the life that strengthened him in his enquires and investigations was derived largely from the encouragement that he had always received from the Association. This encouragement was not always directed towards tariff matters, as the historian intimates, although the proper adjustment of the tariff was then, as now, a vital element in all our industrial enterprises, but it also looked in the direction of expansion of foreign trade; but the tariff was, on the whole, no more satisfactory than now.

In this connection we might say that no more important mission with which any Canadian was ever entrusted was that which fell to the lot of Mr. Bowell in 1893, when, as Minister of Trade and Commerce, he made his memorable visit to Australia for the purpose of developing trade between that country and this, for which service, on January 1, 1895—less than a year after his being banqueted by the Association—he was, by Her Most Gracious Majesty Queen Victoria, created a Knight Commander of the Order of St. Michael and St. George, an honor which he had so richly earned and merited. When in Australia he held conferences with the members of the Governments of New South Wales, Queensland, Victoria and South Australia, at which the question of closer trade relations between these countries and this was thoroughly discussed. In all these colonies a constitutional difficulty presented itself. The colonies could not, under the constitutions given them by the Imperial Government, make any tariff concessions to any of their sister colonies which should not be granted to all other countries; and thus was prevented any reciprocal tariff legislation between them and Canada. Mr. Bowell urged the different Colonial Governments to petition the Imperial Government to have their constitutions amended so as to give them power to enter into reciprocal trade relations with other colonies; and it was upon this suggestion the premiers of the Australian colonies acted, and obtained what they asked for.

It was in this emergency that Mr. Bowell, finding that nothing else in connection with his mission could be accomplished, suggested to the Australian premiers the advisability of holding a colonial conference in Ottawa at which the relations of the different British colonies towards each other, and towards Great Britain, the Mother Country, could be considered, with a result with which we are now familiar. Lord Hopetoun, Governor of Victoria, in his speech prorogu-

ing the Parliament, which was then in session, asked favorable action upon Mr. Bowell's proposition, stating that if such a conference were held his Government would send delegates to it.

The historian in recording in five lines the transactions of the Association during the ten years following 1891, deprives it of its due credit in overlooking such a history-making epoch as that here alluded to, and in which the Association had such large part. Vigor and aggressiveness characterized every year of the decade; and no one can write a correct history of Canada covering the ten years without giving full credit to the transactions of the Association during that time.

The historian could not find it convenient to record in the five lines in which he condenses the ten years' history of the Association and of Canada, the part the Association took in bringing about the Colonial Conference through the instrumentality of Mackenzie Bowell. That Conference was held in Ottawa in the summer of 1893, of which Mr. Bowell was the presiding officer, for which he received the hearty thanks and high commendation of the delegates for the manner in which he conducted the business; and it is worthy of note in connection with that conference, that it was the first ever called by a British Colony at which, upon the invitation of a colony, an Imperial delegate was sent to take part in the deliberations. Speaking of the results which flowed from that conference, the Hon. Mr. Kingston, Premier of South Australia, when in Canada en route home from London where he had been attending the late Queen's Jubilee as the representative of his province, said that sufficient importance had not been laid upon the visit of Mr. Bowell to Australia, and upon the Colonial Conference which followed, as it was to those events he attributed the calling together the premiers of all the self-governing colonies at London at the Queen's Jubilee.

The fact that in these historic events the Manufacturers' Association was so intimately connected, is a source of pride to those members who have not, like the historian, forgotten them.

#### THE TORONTO INDUSTRIAL EXHIBITION.

At the Toronto municipal elections held last week the by-law granting aid to the extent of \$133,500 to the Toronto Industrial Exhibition Association for the erection of new buildings and the rejuvenation of some of the old ones was carried by a good majority. A similar by-law was submitted last year and badly snowed under because of lack of confidence in the management. Since then the general demand for reform within the Association is being complied with with considerable diligence, and no doubt at the next general meeting, all that has been required in that direction will be accomplished. The Electoral District Society, which has heretofore been the controlling element, will sink into deserved oblivion, and the manufacturers, who have always been among the best friends and supporters of the institution, will be at the front and have some voice in its management.

It is to meet the necessities of the manufacturers, agricultural as well as industrial, that the ratepayers have sanctioned the expenditure of \$133,500. The money is required to provide a new Main or Manufacturers' Building, an Art Gallery and a new Dairy Building, as well as to remodel the present Main Building and adapt it as a place in which to exhibit vehicles of various kinds and miscellaneous manufactures. The years that have intervened since the Main Building and other structures of a similar nature were erected have been

years of marvelous development in Ontario and in the other provinces of the Dominion. Invention has been busy in every branch of industry, and manufactures that were unknown when the Exhibition was established are now common. But there has not been the same advance in the provisions for their accommodation and exhibition. While manufactures have progressed and developed, the facilities afforded the manufacturers to display their wares have remained unimproved.

Of the value which the Industrial Exhibition has been to Toronto, both as an advertisement and as a means of building up the city as a great commercial and manufacturing centre, and general distributing point, there can be no difference of opinion. The fame of the Exhibition has been heralded abroad and has made the city's name familiar all over the world. Toronto has many institutions of which she is justly proud, but there is none which has been more far-reaching in the benefit it brings to the city than the Exhibition. It puts into circulation hundreds of thousands of dollars, the transfer of which from hand to hand imparts an impetus to business, the influence of which is felt in all branches of trade.

Toronto having provided the money for the erection of all the new buildings at present necessary, it is to be hoped that the idea of holding an interprovincial Fair on the Fair Grounds in the near future will be carried to completion. At the opening of the Exhibition last year Dr. Smith, the president of the Association, introduced the subject to Sir Wilfrid Laurier who was present, in response to which the Premier said he would like to see such an Exhibition, and gave it as his opinion that no place in Canada was more suited for it than Toronto. There was no city, he said, which had done as much in that line, and he predicted that at some time there might be exhibited on these grounds not only the products of Ontario, but of Quebec, Nova Scotia, and all the other province of the Dominion. We trust that such an occasion will soon eventuate; and we trust that the management of the Toronto Industrial Exhibition will steadily work with that end in view.

#### CANADA, AUSTRALIA AND THE GERMAN TARIFF.

The British Trade Journal has been publishing some very pointed articles dealing with the proposed German tariff from the British manufacturers' point of view. In a recent issue it enumerates some of the many classes of manufactures especially in the iron and steel trades, and also in many descriptions of textiles, where the proposed duties are raised, some of them, 500 per cent. British Chambers of Commerce have been unanimous in protesting against the proposed tariff, and evidence is being collected by the Commercial Department of the Board of Trade which, it is hoped, will induce Lord Lansdowne to bring pressure to bear on the German Government to modify the more objectionable items. There is, our contemporary observes, another view to be taken of the German tariff no less important, and refers to the blow which it would strike at the interests of British colonies. It says:—

The people of Australia and New Zealand may well ask themselves what they have done that they should be thus mulcted. They admit German goods as freely as those from England, and they have not even held out in their new tariff bill any hope that English manufacturers may before long be placed upon a preferential tariff basis, as they have been in Canada. German competition is felt with increasing force throughout Australia, New Zealand and India. German manufacturers have, therefore, everything to lose and nothing to gain by keeping Australian products out of their markets, where foodstuffs are growing more and more expensive as the

industrial side of German enterprise is developed. Canada is on a different footing. She has granted a preferential tariff for all British products. How has this action of Canada been met? By the withdrawal on the part of Germany of the most-favored-nation treatment. Thus Canadian products are placed at a disadvantage in competing with those of the United States, France, Russia and other countries, and although Canadian exports to Germany have not decreased, there can be no question that the unfair treatment to which they are subjected is a source of serious loss to Canadian producers.

Downing Street will make a grievous mistake if it believes that the position is one with which it need not trouble itself. The people of Australia and New Zealand are asking themselves what the Home Government is doing to check the action of the German Government in its opposition to importations of their products, and they will not be put off with the answer that nothing can be done because the United Kingdom is wedded irrevocably to a policy of free imports. They argue very cogently that if the United Kingdom chooses to adopt such a policy, that is no reason why Australia should suffer. They would be far better off if their international tariff relations could be adjusted from Sydney instead of from London. Downing Street has no weapons with which to negotiate. Sydney has a potential factor, in its tariff, and if Australasia and Canada are to obtain better terms from continental governments than they now obtain via Downing Street they must negotiate directly with foreign governments, and bring their tariff weapons to bear. Their first step would probably be the imposition of very much higher rates on German manufactures than on those from this country, and such a policy would before long attain the desired end. It cannot be expected that our colonies will tamely submit to be impotent sufferers from the parochial policy and the want of initiative which characterizes the British Foreign Office in its dealings with tariff questions.

When the Dominion Government was giving a tariff preference to British goods it was not known that in so doing Germany would exclude us from the most-favored-nation tariff treatment accorded to Great Britain; but that exclusion, now in force, compels Canadian products to pay higher duties than are imposed upon products from the United States, and that is one of the penalties Canada is suffering because of our preferential tariff.

According to the Trade and Navigation Returns the value of Canada's trade with Germany in the last five years was as under:—

	Exports.	Imports.	Duty collected.
1897 .....	\$1,045,432	\$6,493,368	\$1,489,755
1898 .....	1,837,448	5,584,014	1,364,159
1899 .....	2,219,569	7,393,456	1,903,223
1900 .....	1,715,903	8,383,498	2,189,798
1901 .....	2,141,552	7,021,405	1,811,974

The average value of our exports for the years indicated was \$1,791,981, and of our imports, \$6,975,148, upon which \$1,751,782, or about 25 per cent. duty was paid; and it is noticeable that the average value of exports was almost identical with the average duty collected on imports—or in other words the average value of our imports was four times the value of our exports.

#### ABUNDANT SCOPE FOR ALL SYSTEMS.

While taking a very hopeful view of the successful outcome of Marconi's latest and greatest attempt at long distance wireless telegraphy, Mr. H. P. Dwight, general manager of the Great North-Western Telegraph Company, believes that even when available for commercial purposes there will be plenty of business left for the regular cable and telegraph companies.

Asked what he thought of the possibility of a practical, valuable outcome of Marconi's effort, Mr. Dwight said:—

"I learned a long time ago to believe that there was no limit to electrical development. I used to think there might be, but the older I get the more I am inclined to believe that this business of ours is in its infancy. The first Atlantic cable that was laid, 45 or more years ago, gave a little, feeble sign of life and expired. It was hardly more successful than this experiment of Marconi's in bringing a signal 1,700 miles across the Atlantic. It is well-known, however, that the successful laying of that cable and the fact that it showed even a feeble sign of life gave confidence to enthusiastic promoters of cable telegraphy, and that in due time the capital was forthcoming for other cables, until there are to-day 14 Atlantic cables working regularly and successfully between America and the Old World.

"It can hardly be considered impossible or even unlikely that a similar development may take place in wireless telegraphy. It will take time, however, to do this. There are many difficulties to be overcome, but the best electrical experts in the world are alive to the situation, and it will not be their fault if wireless telegraphy does not become successful. When the telephone was first invented it was looked upon as simply a curious toy, and nobody ever dreamed of such a wonderful development of its use as we see to-day. I look upon the telephone as the most marvellous invention of the age. The wonder of it is overlooked in its familiar, everyday use. If it had been said twenty-five or thirty years ago that a time was coming, in the near future, when a man seated in his office in Toronto could, by means of a slender wire and an electrical current, hear his friend in New York and recognize his voice as clearly as if he were on the other side of the table; or could, by like means, see him as plainly as if he sat before his eyes, such statements would have been looked upon as equally absurd and impossible. Yet one of these is to-day a familiar thing, and the other is known to be theoretically possible, and not at all unlikely may become a common occurrence.

"Wireless telegraphy cannot be said to be a new discovery. Electricians long ago discovered the sympathy between wires, say, on opposite sides of the street; and they have been experimenting to see how this could be increased. Sir William H. Preece, the electrician of the British Post-office Department, has been experimenting for many years, and has greatly increased the distance over which messages could be sent without wires. Marconi and others have simply expanded this idea, increasing distances, until now it would seem that a signal, at least, has been successfully sent over the Atlantic, a distance of about 1,700 miles. These experiments are not going to cease, and it is incredible to suppose that there will not be great advances in this direction.

"Meantime it is but right to say that cable companies and telegraph interests are not greatly alarmed as to any immediate injury to business from wireless telegraphy. Whatever may be the success of the latter, there will always be abundant scope and use for all existing systems."

#### THE CANADIAN NORTHERN RAILWAY.

In his speech at the banquet at Port Arthur on December 30, in celebration of the completion of the Canadian Northern Railway, Mr. D. D. Mann paid a high tribute to the engineers for securing a stretch of road eight hundred miles long which from west to east did not present a grade of over twenty-six feet to the mile or one-half of one per cent., and from east to west had no grades greater than fifty-two feet per mile, or one per cent. The significance of this is seen when it is

stated that ninety per cent. of freight between Manitoba and Lake Superior is eastbound. Low grades mean large trains and cheaper cost of moving freight.

Mr. Mann made the statement that while they expected to get their share of the great crops Manitoba and the Territories would raise in the future, they believed the earnings from the hauling of iron ore would be still greater. Forty miles west of Port Arthur the road enters the Mattawin iron range, south of which are the Green-water iron properties. South of Kashaboiwe are the Round Lake copper mines, while at Shebandowin Lake a number of gold properties are already being developed. Probably the largest metal deposit is the Atikokan iron range, along which the road runs for ten miles, and at no point more than 900 feet from the base of the hills. This is stated to be the largest iron range in Canada. It has been known for twenty years, but has been undeveloped because of lack of transportation. Diamond drills are at work, and have already disclosed a large and rich body of ore. At Sapawa, the McKellar property has a tunnel 350 feet into the mountain, showing the ore to be high grade. North of the Atikokan are the Saw Bill and Hauk Lake gold properties. At Seine River the pine limits begin, and by this line the limits at Hunter's Island to the south. The lower Seine valley contains a number of gold properties which have not been worked, owing to the lack of transportation.

Then in the Rainy River basin the road passes through some of the richest farming land in Canada, two stretches forty miles long each will, it is estimated, produce two million bushels of wheat each per year.

There are long steel and masonry bridges on the line over the Rainy River and over the Red River. The bridge over the former is 1,080 feet long, of four fixed spans of 180 feet each, and one swing span of 360 feet, giving two clear openings of 160 feet for navigation. This is designed to carry the heaviest rolling load of the Dominion Government standard. The bridge over the Red River is of 932 feet length, with a swing span of 168 feet. All told, between Port Arthur and Rainy River there are 204 bridges, with a total length of 10.37 miles. At one place, near Rainy Lake, there is in 15 miles, a total of 13,900 feet of bridging. East of Winnipeg the line runs from 50 to 100 miles south of the Canadian Pacific Railway, while west of Winnipeg, the line will run roughly about 200 miles north of the Canadian Pacific Railway, so that the two roads draw from different territory.

The shipping and terminal facilities of the Canadian Northern include ninety elevators in Manitoba, and an elevator of a million and a quarter bushels capacity at Port Arthur, making a total elevator capacity of three and a half millions.

#### EDITORIAL NOTES.

Mr. Paul Jarvis, recently of Buffalo, N.Y., has been made Secretary of the Toronto Board of Trade.

Farm Machinery, St. Louis, Mo., of which C. K. Reifsnider, otherwise "Eli," so well-known to the trade, is editor, in its special holiday edition displays some new features which indicate a degree of prosperity which, no doubt is as well deserved as it is gratifying. Among the new features are views of the residences of many of the prominent manufacturers of farm machinery in the United States, half-tone portraits of them being also shown. There is also an enlargement of the size of the pages made necessary by the growth of advertising patronage.

Mr. E. A. Wills, who for many years and in the most acceptable manner filled the position of Secretary of the Toronto Board of Trade, has severed his connection therewith to better his fortunes in connection with one of the many enterprises of Messrs. Hiram Walker & Sons, at Walkerville, Ont. The very best wishes of all who know Mr. Wills will follow him; and none will miss him more than those who knew him best, particularly in connection with his duties as Secretary of the Board of Trade.

The tendency of manufacturers to use circular letters in place of space in trade papers is the result of a wrong idea of the value of a good name. The right kind of a trade paper is the adviser of its readers—it helps them over the hard places in business; it gives notice of new things, and makes a relentless fight on fakes and fakers. It is, first of all, the friend of its readers. This gives an implied good name to every advertiser. The business relations between persons introduced by a mutual friend are more cordial than those who meet because of the forwardness of the one who has something to sell. The trade paper will introduce any manufacturer or jobber to the class of business men he wants to reach. The introduction coming in the nature of an advertisement does not materially lessen the value of the introduction.—Canadian Druggist.

The revenues of the Dominion for the month of December were \$2,569,015, as against \$2,310,410 for the corresponding month of the previous year, an increase of \$258,604. For the six months ending with December 31, the revenue from customs was \$15,846,692, compared with \$14,613,051 for the corresponding six months of the previous year, an increase of \$1,251,640. The custom collections at the port of Montreal for the calendar year, 1901, amounted to \$9,465,643, against \$9,054,586 for 1900, an increase of \$411,057. The customs collection at the port of Toronto for 1901 amounted to \$5,507,254, as against \$5,406,000 in 1900, an increase of \$100,959.

In our December 20 issue allusion was made to the bounties being paid by the Dominion Government to the manufacturers of iron and steel, which matter has recently come into the control of the Department of Trade and Commerce, of which Sir Richard Cartwright is minister. We are in receipt of a letter from Mr. W. G. Parmelee, Deputy-Minister, who informs us that while our item is substantially correct, a wrong impression might obtain in our statement (referring to the Dominion Iron & Steel Works, at Sydney, N.S.), that that company would be entitled to a bounty for steel, 50 per cent. of which is scrap. The law reads, says Mr. Parmelee, that bounty shall be payable on all steel ingots manufactured in Canada, etc., "from ingredients of which not less than 50 per cent. thereof consists of pig iron made in Canada." In fact, he says, there is always very much in excess of 50 per cent. of Canadian pig iron in the steel manufactured in this country. Mr. Parmelee has recently visited Hamilton, where he had been on the same errand in connection with the Hamilton Steel & Iron Co.

The Farmer's Advocate, published at London, Ont., is not the official organ of the Canadian Manufacturers' Association, nor is Editor Weld a member, but it does us proud to learn that the most effective, unique and characteristic cover of its Christmas edition was the work of a Canadian artist. It does us proud because the Advocate, while not specially devoted to the development and encouragement of Canadian artistic talent, does not go to a foreign country and pay a foreign

artist for a design for its cover. But there is no pleasure in knowing that the committee of the Canadian Manufacturers' Association having in charge the management of Industrial Canada, its official organ, should pass by all Canadian talent and choose for front page adornment of the organ the design of an American artist.

In reply to an enquiry for the names of past and present officers of the Canadian Manufacturers' Association, we would state that, as shown by the records of the Association, Mr. James Watson, of Hamilton, was the first president, succeeded in rotation as follows: W. H. Howland, Toronto; Robert McKecknie, Dundas; Thomas Cowan, Galt; Edward Gurney, Toronto; R. W. Elliott, Toronto; W. H. Storey, Acton; Bennett Rosamond, Almonte; W. K. McNaught, Toronto; John Bertram, Dundas; W. H. Law, Peterborough; A. E. Kemp, Toronto; D. W. Karn, Woodstock; J. F. Ellis, Toronto; P. W. Ellis, Toronto, and Robert Munro, Montreal, the present incumbent. The first secretary was John Maclean, succeeded in rotation by A. W. Wright, W. H. Fraser, Frederic Nicholls and J. J. Cassidey. These were executive officers, but the present incumbent, T. A. Russell, is not such. The first treasurer was Edward Gurney, who was succeeded by John Cosgrave, and he, in 1885, by George Booth, who is now in the seventeenth year of his incumbency.

The Executive Committee of the Canadian Electrical Association, while in session in Montreal last week, entertained Mr. Marconi, of wireless telegraphy fame, at a luncheon, as a token of appreciation for what he had done in advancing electrical research work. Referring to his plans, Mr. Marconi said: "I shall begin work upon my Cape Breton station immediately. Canadian material will be used in constructing the power station, which will be more powerful than the one already erected at Cornwall, but not quite as powerful as the Cape Cod station. Canadian labor will be utilized, but experts will be sent out from England to superintend the work shortly after my arrival there. The station will be definitely located in Cape Breton. The plans, when ready, will be submitted to the Dominion Government, and will be passed upon by that body."

The next convention of the Canadian Electrical Association will be held in the city of Quebec in June.

Upon the application of the Dominion Government, the British War Office has intimated its willingness to allow the shipment of Canadian merchandise on steamers chartered to carry supplies to the British Army in South Africa. Steamers carrying such supplies leave Halifax or St. John about once a month, and as there is usually more or less freight room to spare, the Government have very considerably allowed it to be utilized in the manner indicated. The rates of freight have not yet been announced, but will be at an early day. If this arrangement should be of long continuance it will give Canadian export trade to South Africa a boom that will be of the greatest advantage to our manufacturers.

A number of Canadian manufacturers are taking steps to make a bid for a share of the West India trade. On January 27, Mr. Robert Munro, Montreal, and several other gentlemen representing Canadian manufacturing concerns, will sail by the steamer Orinoco from Halifax for the West Indies, where they will investigate the conditions relating to their

own particular lines of business. On the same steamer will go Mr. E. M. Wilcox, representing the Canadian Manufacturers' Association, who will make a six weeks tour of the islands, investigating the conditions existing in each, with a view to obtaining full information as to the articles imported into them which can be produced in Canada. His visit will include Bermuda, St. Kitts, Antigua, Montserrat, Dominica, St. Lucia, Barbadoes, St. Vincent, Granada, Tobago, Trinidad, British Guiana and Jamaica. Mr. Wilcox is a recent honor graduate of Toronto University and the historian of the Association. He has acquired considerable information as to the requirements of manufacturers since his recent connection with the Association, particularly as supervisor of the distribution to the members of the trade enquiries received at its office; and it is in this way, as Industrial Canada tells us, that he is well acquainted with the views of the members in the development of our export trade.

It is announced that Mr. Frederic Nicholls, manager of the Canadian General Electric Co., has offered a prize of \$500 to be devoted to some competition which shall tend to advance and encourage original research work in electrical science.

An important move in the extension of the import and export trade of Canada will be the establishment of a regular line of steamers between Rotterdam and Montreal next season. The Canadian Forwarding & Export Co., already known in connection with their inland fleet of barges and propellers, have made arrangements for a fortnightly line of large freight carriers to run between these ports, and the first steamer is expected at the opening of navigation. The grain, lumber and wood pulp trades have long felt the need of direct communication with Rotterdam, which, owing to the Rhine navigation and network of railways terminating there, is the most convenient port for Western Germany, as also, of course, for Holland; and there is every reason to expect that this line will have to greatly increase and facilitate Canada's growing exports to these countries. For return freights the line will depend to a great extent on imports of German iron and steel, which is also more conveniently shipped from Rotterdam than from other ports.

President Roosevelt, in the opinion of the old Bourbon element in the United States, is an iconoclast who takes counsel with any whose opinion is worth having. A few weeks ago he absolutely invited Mr. Booker Washington, a representative of the colored race, to dine with him, and only last week he extended the same courtesy to representatives of organized labor including Messrs. F. P. Sargent, Chief of the Brotherhood of Locomotive Firemen; E. E. Clark, Grand Chief Conductor of the Order of Railway Conductors; P. H. Morrissey, Grand Master of the Brotherhood of Railway Trainmen; H. B. Perham, President of the Order of Railway Telegraphers; and A. B. Youngson, First Assistant to P. M. Arthur, Chief of the Order of Locomotive Engineers.

It is said that when Postmaster-General Mulock was in Australia attending the opening of the Commonwealth Parliament, he had a preliminary talk with Premier Barton with reference of preferential trade between that country and Canada. A few weeks ago Sir Wilfrid Laurier intimated that that proposition was under consideration, and it is to be most devoutly wished that it may eventuate. Trade between the United States and Australia is already large and is rapidly increasing, and should Canada be accorded a preferential tariff

treatment, not enjoyed by the United States, we would soon have scores of American manufacturers establishing works in this country to enable them to obtain a concession that they could not possibly hope for at home.

The King's head now appears upon the Dominion postal notes, which are issued by the Canadian postal authorities. These notes are made by the American Bank Note Co., Ottawa, and are the first official documents made in Canada which bear the King's head, replacing that of the late Queen Victoria.

Were British newspapers carried in the British mails at the same price as Canadian newspapers are carried in the Canadian mails, the result would be that a much more extensive circulation of British periodicals and journals would be witnessed in this country, says The Shareholder. It is to be regretted that the interchange of this literature between the United Kingdom and the Dominion is not of larger volume, for we believe that the circulation of Canadian literature in the form referred to would be greatly increased in the Mother Land were the rates of postage reduced. Here United States publications from the office of publication pass through the Canadian mails on the same terms as Canadian publications, and in the United States a corresponding privilege is accorded to publications from this country. In this way the people of the two countries are kept in constant communication one with the other, and are, as a result, led to take an interest in what is going on on both sides of the border.

Canada's tariff should be framed wholly with a view to what is best for Canada. When the preferential tariff was adopted it was found to be possible to favor the goods of our best customer, the Mother Country, while advantaging our own consumers. What was best for Canada was not lost sight of in that transaction. What is best for Canada will not be lost sight of in our tariff relations with the United States. We will not hurt ourselves in trying to impress on the Americans the value of our trade to them. In fact, we will have no eye on any other people in any fiscal arrangements we may make, but solely on what is best in the general interests of the Canadian people. The larger part of our trade now has got into channels that possess the inestimable commercial quality of permanence. The whole of our English trade has this characteristic, and any trade we may promote between ourselves and our sister colonies would partake largely of that character. Our policy, therefore, would seem to be to make it easy to carry on this commerce, to afford it good transportation, postal and telegraph facilities, and remove such obstacles as would tend to destroy the confidence that ought to exist between the seller and the buyer. If we find it profitable to buy from the United States we will unquestionably do so, but the tendency of trade will be to exchange with the countries with which it is easiest to exchange, and that will most likely be with the countries to whom we sell most.—The Globe.

Mr. Marconi expects to have his system for the regular transmission, by wireless telegraphy, of messages across the Atlantic in operation by May or June next. At first the rate of transmission will not exceed sixteen words a minute, as against about forty by the cables, but the speed will probably be quickened as the system develops. The Canadian station is to be at Table Head, Glace Bay, N.S., and not Port Morien, as previously announced. Mr. Marconi expects to have no

difficulty in arranging for land connections. If the Government does not bear the cost of erecting the station, it will be built as a private enterprise.

Mr. Henry Souther, consulting metallurgical engineer and State chemist, of Hartford, Conn., delivered a lecture in the rotunda of the Board of Trade building, Toronto, January 18 on "Power and its Economical Transmission," under the auspices of the Canadian Manufacturers' Association. Mr. Souther's lecture dealt with the generation of power as applied to shaftings, hangers, pulleys, etc., where improvements and economy may often be secured.

The monthly dinner and debate under the auspices of the Canadian Manufacturers' Association will occur in Hamilton on the evening of January 23, upon which occasion Hon. Dr. Montague, ex-Minister of Agriculture of Canada, will speak on "Trade Opportunities for Canada in Australia." Dr. Montague has recently returned from Australia, where he spent over a year in the interest of the Independent Order of Foresters, by which he was given a grand reception in Toronto a few days ago.

Long-distance wireless telephony now seems to be within hearing and realization. It is said that a man named Nathan Stubblefield, living at Murray, a small town in Kentucky, who has for several years been making experiments in electricity, has invented a method by which he is able to carry on conversation at a distance of about 2,000 yards. He claims that it is quite as easy to telephone without wires for as many miles as yards.

For years Germany has supplied the millions of wooden shoe soles so extensively used in the large iron and mining districts of England. Recent expression in Germany of hostility to England, coupled with Canada's patriotic stand for the empire, has evidently brought about a determination among the importers of these soles to buy them in Canada, if possible, rather than Germany. A letter to the Department of Trade and Commerce gives the price at which the clogs would have to be laid down in Liverpool, and samples are furnished. These are of birchwood and of such simple shape that they could probably be turned out in large quantities by machinery at a cost that would leave a good margin of profit.

One of the leading Canadian trade journals very properly calls attention to the great extent to which German manufactures are imported into the Dominion as British goods, thereby obtaining the benefit of the 33½ per cent. preferential tariff reduction. There is, says the British Trade Journal, no doubt that considerable quantities of foreign manufactures are exported from this country as British, and it is unfair to manufacturers, both in this country and in such countries as Canada, which grant a tariff reduction on goods of British origin only. The source of the mischief will be found in the regulations made by the British Customs, and these in their turn were due to the influential firms in this country who are interested in the transshipment trade. It was at their suggestion that the Merchandise Marks Act regulations were modified, and a similar policy was adopted with reference to foreign manufactured goods shipped via England to Canada. If Canada wishes to have her preferential treatment applied to goods of British origin only, she must give very implicit and peremptory instructions to her High Commissioner in London, and she must be prepared, unless he finds a remedy, to withdraw her tariff preference as a whole to all classes of goods shipped from England. Canada is also entitled to know what Lord Landsdowne is doing to bring about a better treatment of Canadian goods in Germany.

## CAPTAINS OF INDUSTRY.

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

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

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

Port Hope, Ont., has passed a by-law to grant exemption from taxation for ten years to the Nicholson File Co.

By-laws for the exemption of taxation for ten years were passed at Sandwich, Ont., for the Saginaw Lumber & Salt Co., and J. H. Bishop Co. The following were defeated:—Beet Sugar Co., Hardwood Finishing Co., South Essex Electric Railway.

Warton, Ont., will grant a bonus of \$25,000 to the Beet Sugar Co., who are now erecting a large factory there.

A by-law has been defeated by Woodstock, Ont., granting a loan of \$12,000 to Woodstock Wagon Co.

A by-law granting a free site to proposed sugar factory at Galt, Ont., has been passed.

Kincardine, Ont., has passed by-laws granting bonuses and exemption from taxes to Andrew Malcolm for an extension of his furniture factory and to J. B. Watson for a new chair factory.

Meaford, Ont., will grant a bonus of \$16,000 for a cabinet factory.

Milton, Ont., has decided by vote that the town shall have control of its electric lighting plant.

The rate-payers of Peterborough, Ont., have voted in favor of municipal ownership of the works of the Peterborough Water Co., the purchase price of which is \$230,000.

By-laws were carried in Petrolea, Ont., for exemption of taxes, etc., for a pork factory, and a wagon works.

The by-law voted on at Port Hope, Ont., to grant a bonus of \$5,000 and exemption from taxation to the Canada Radiator Co., was defeated.

The shoddy mill of the Canadian Woolen Co., Hespeler, Ont., was damaged by fire January 7.

The maker of LePage's liquid glue has sold out all his rights for the manufacture of that article in the United States, it is stated he will erect two glue factories in British Columbia, one of which will be near Vancouver.

The Northern Portland Cement Co., Warton, Ont., will establish a factory at that place to cost about \$250,000.

The Ontario Portland Cement Co., Brantford, Ont., will erect a building 166x165 feet. The Grand Trunk Railway Co. will erect a siding through the cement works, and the Von Echa Co., who are building an electric line between Galt and Brantford, are anxious to connect with the property of the cement company at Blue Lake.

Messrs. Page, Hersey & Co., Montreal, announce that they will discontinue the manufacture of iron pipe on June 1, 1902. They will erect a new factory, which will include a complete galvanizing plant.

Hamilton, Ont., has voted to raise \$30,000 to be expended on sewers.

The council of Hamilton, Ont., will take \$25,000 stock in the Hamilton & Caledonia Electric Railway.

Wm. Chaplin, pork packer, Chatham, Ont., will receive a loan from that place of \$25,000 to start a new industry.

Collingwood, Ont., will loan J. J. Zock Mfg. Co. \$20,000 to establish a jewelry factory, and Stewart & Cameron, Strathroy, Ont., \$8,000 for a grist mill.

The building trade in Toronto during the year 1901, was larger than in any year since 1891. The permits totaled \$3,518,883 as compared with \$1,903,136 in 1900. There were 513 brick houses erected valued at \$1,421,000. The Palace Hotel is valued at \$1,000,000. Twenty-one warehouses were erected at a cost of \$135,000 and twenty-six factories at a cost of \$207,000.

A company will be incorporated to construct a pulp mill and other mills and manufactories on the St. Croix River near Sprague's Falls, N.B., with authority to erect one or more dams for the purpose of furnishing power for the operation of such mills and manufactories, etc.

A syndicate of which Capt. Wolvin, Buffalo, N.Y., is a member, will build a modern steel elevator at a cost of \$1,000,000, at Quebec City. They will also build a fleet of ten steel steam vessels of 2,000 tons capacity each, to carry grain from the West. The Quebec Harbor Commissioners will supply a suitable site.

The saw mill of John Radford, Ingersoll, Ont., was destroyed by fire January 4.

The premises of the Excelsior Wrapper Co., Montreal, were destroyed by fire January 4. Loss about \$60,000.

The North-West Transportation Co's new steamer Huron, which was launched at Collingwood, Ont., a short time ago, will, it is said, be the fastest steel boat on the great lakes. She will steam 18 miles an hour. Her freight capacity is 3,000 tons. There will be accommodations for 250 first-class passengers. The three new sister boats of the Huron to be built in 1902, will be Canadian products in every sense.

Newcastle, N.B., will provide funds for waterworks, sewerage and electric light systems.

## Pneumatic Tools and Appliances ARE GREAT MONEY SAVERS.

Air Hoists,  
Baggage Hand-  
lers, Agitation  
of Liquids or  
Syrups in Re-  
fineries.  
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 INLET **AIR COMPRESSORS** FOR ALL DUTIES  
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,  
Flue Cutters,  
Rollers and  
Welders,  
Air Lift Pumps,  
Jacks,  
Paint Spreaders,  
Bolt Nippers.

The Canadian Pacific Railway Co., will build a cleaning elevator with a capacity of 500,000 bushels at Fort William, Ont.

The earnings of the Toronto Street Railway for the past year were given out a few days ago. They total \$1,636,861, an increase of \$152,263 over the earnings of 1900. The greatest earnings in any month were \$160,431 in September, but the greatest increase in any month was \$25,973 in October as a result of the Royal visit. It is estimated that the company will have a surplus of about \$150,000 after paying all fixed charges and its five per cent. dividend.

The Knapp Tubular Steamship Co., Montreal, has applied for incorporation with a capital of \$3,000,000, to build what is known as Knapp Tubular Steamships. The applicants include F. A. Knapp, Prescott, Ont., F. R. F. Brown, and Matthew Hutchinson, both of Montreal.

It is reported that Herr Sieblen Giebler, proprietor of a German steel factory, who invented a new method of making hard steel a short time ago, states that he has no intention of selling his secret to a foreign country, but will develop it for the benefit of his Fatherland. He proposes to use his steel for tools, which will be on sale shortly, and for guns and armor plates for ships. According to the experiments made with it by the Royal Mechanics' Technical Institution the new steel is about 140 per

cent. stronger and 50 per cent. lighter than Krupp, Harvey or Bohler steel, and costs one-third less.

The H. C. Frick Coke Co., Pittsburg, Pa., have sent us their 1902 office calendar. A view of their works is shown with the announcement that they have 12,500 ovens with a daily capacity of 25,000 tons or 1,300 carloads. There is also a pad with a memo for every day in the year.

The factory of the Morden Mfg. Co., Gananoque, Ont., was destroyed by fire January 4. Loss about \$30,000.

The Chipman-Holton Knitting Co., Hamilton, Ont., has been incorporated with a capital of \$150,000, to manufacture yarn and knitted goods. The provisional directors include F. L. Chipman, and P. S. Dyer, both of Easton, Pa., and W. A. Holton, Hamilton, Ont.

The Cargill Sugar Co., Cargill, Ont., has been incorporated with a capital of \$500,000, to manufacture sugar, syrups, etc. The provisional directors include Henry Cargill, W. D. Cargill, both of Cargill, and W. M. Southam, Ottawa.

Mr. Angus McLeod, member of the firm of the Spanish River Pulp & Paper Co., operating on the Spanish River in Muskoka, Ont., passed through Winnipeg last week en route to British Columbia. Mr. McLeod states that a plant for the manufacture of pulp and paper is being erected by his firm in opposition to the Clergue syndicate, who are endeavoring to locate in that district. The plant

will cost in the neighborhood of three and a half millions of dollars and when completed will prove to be one of the greatest plants of its kind on the continent. Over three hundred men are at present engaged in the surrounding vicinity getting out material for the manufacturing of pulp, as it is expected the plant will be finished by spring.—Winnipeg Commercial.

The Dominion Dyewood & Chemical Co., Toronto, has sent us a desk calendar pad for 1902, accompanied by an engraved card of the company conveying the compliments of the season. This pad, which consists of a leaf for every day in the year, is made to fit in an aluminum frame, which was sent out by this company several years ago, the pads being sent each successive year.

Attention is directed to the card of Robert Carruthers, Lowell, Mass., who is a well-known manufacturer of reeds and loom harness for weaving silk, cotton, woolens and carpets; also wire and hair-cloth reeds and slasher combs. Mr. Carruthers, who is the proprietor of the Lowell Cylinder Works, is manufacturer of all kinds of burr and licker-in wire for woolen and cotton cards; burr and licker-in cylinders; feed rolls, metallic and plain, etc.

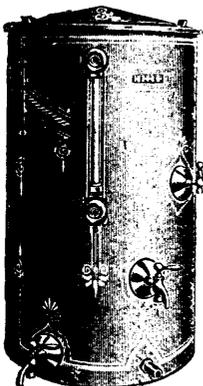
The "Zanzibar" paint, heretofore advertised in these pages by the Garfield Paint Co., Cleveland, Ohio, is now being manufactured in Toronto by the Zanzibar Paint Co., of which Mr. P. D. Richardson

## Repeat Orders

FOR

## Cross Oil Filters

Are the strongest possible endorsement of their merits. Here are a few recent ones :



The American Tin Plate Co. have lately sent us their 22nd order for Oil Filters.

The National Cash Register Co. have sent us a fourth order.

The National Steel Co. their 19th order—but space does not permit further enumeration—What we want is YOUR FIRST order for the best Oil Filter in the world, the one that saves 50% on your oil bills.

Let us send one on 30 days' trial? Keep it if satisfactory, return it at our expense if not.

### THE BURT MFG. CO.,

AKRON, OHIO, U.S.A.

We also make the Burt Exhaust Head.

# Buffalo Forge Company

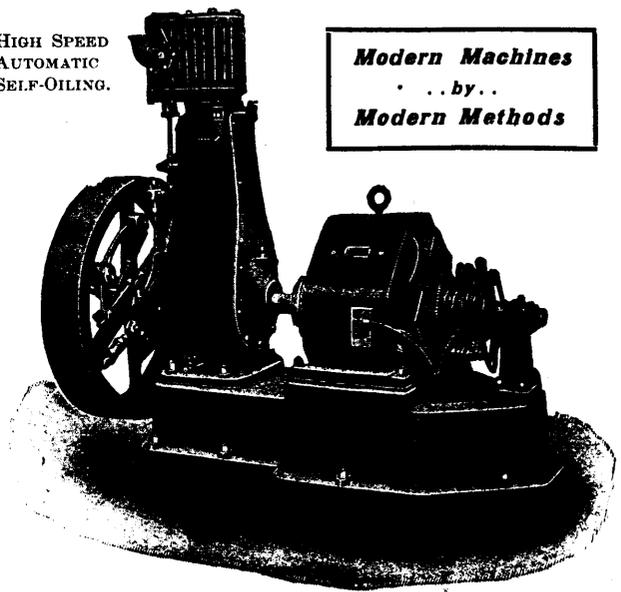
## ENGINES

HIGH SPEED  
AUTOMATIC  
SELF-OILING.

Modern Machines

... by ...

Modern Methods



Buffalo Single Vertical Direct Connected Engine.

### BUFFALO FORGE CO., BUFFALO, N.Y.

E. A. WALLBERG, - CANADIAN REPRESENTATIVE

410 Temple Bldg, TORONTO. Merchants Bank Bldg., MONTREAL.

is manager, whose attractive advertisement appears elsewhere. Zanzibar paint is made in all colors, and is especially adapted for bridges, roofs, factories, structural iron work, warehouses, etc. The Zanzibar Crucible Black manufactured by this concern is recommended for smoke stacks, boilers, steam pipes, copulas, etc., because of its high fire test quality.

Information comes from Boston that the Dominion Iron & Steel Co. are considering plans for the erection of a large rail mill, at Sydney, N.S., and the money is in the treasury to pay for it. Reports regarding the products of the company are very favorable, and it is claimed that it has been demonstrated that it can make iron and steel cheaper than anywhere else in the country even without the Government bounty. The company has three furnaces running on steel, with the fourth furnace just starting up and the remaining six all ready to start. There is a strong belief that the company will be a material factor in the foreign

and Canadian steel trade in the near future.

The Dominion Coal Co., are making heavy shipments of coal for export and for consumption both in Canada and the United States. On Friday last the coal season at Portland was inaugurated, when the Cape Breton tied up at the old elevator wharf, and commenced discharging her cargo. The steamer arrived in the harbor on Thursday evening, about five o'clock, when she proceeded to her berth. She brought 2,000 tons of coal from Sydney, Cape Breton, and had a very good trip to port. It is understood that there will be 25,000 tons brought to the Grand Trunk. This amount will arrive in weekly shipments, and will consist of 2,000 tons to the cargo. This means that there will be at least 12 ships, for a period of three months, between Portland and Louisburg. Of this amount 15,000 tons are for the Grand Trunk Railway, to be used by them at Montreal and Richmond, and the remaining 10,000 tons will be delivered to private parties

in the province of Quebec. Although this load is being discharged at the old elevator wharf, it is thought probable that the coal pockets may be started to take care of the remaining cargoes.—Montreal Star.

The Furness-line will construct several large, new steamers, to be used on the Halifax, St. John's, Nfld., and Liverpool route. The steamers will be much larger and faster than those now in use.

The new corn meal mill at Owen Sound, Ont., is turning out about 400 barrels a day and the output will shortly be increased to 1,000 barrels.

The Richard Co., Montreal, has applied for incorporation with a capital of \$99,000, to manufacture boots, shoes, clothing, hats, caps, etc. The applicants include J. A. Richard and Alfred Prendergast, both of Montreal, and Eugene Richard, Winnipeg, Man.

The Lachine Rapids Hydraulic & Land Co., Montreal, will issue bonds for \$1,500,000, to erect a new steam plant.

**CAMEL BRAND** ..... **BELTING**  
**BALATA** . . . . .  
**RUBBER** . . . . .  
 Linen Fire Hose,  
 Water and Steam Hose,  
 Packings, Etc., Etc.

**THE STANDARD**



**GOLD WATER PAINT**

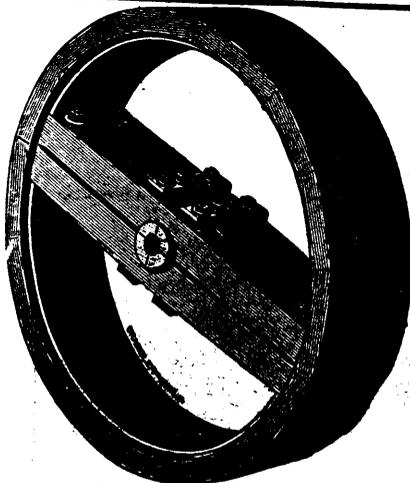
**WEATHER PROOF, FIRE PROOF  
 WHITE AND COLORS.**

**MILL SUPPLIES**

**Lubricating Oils and Greases  
 PAINT, PAINT OILS, ETC.**

**W. A. FLEMING & CO.**

**Montreal and St. John, N.B.**



**“The Reeves”**

**A HIGH GRADE**

*Wood-Split*

**PULLEY**

**BUILT HONESTLY**

**BUILT RIGHT**

**It Does the Work.**

**No Trouble.**

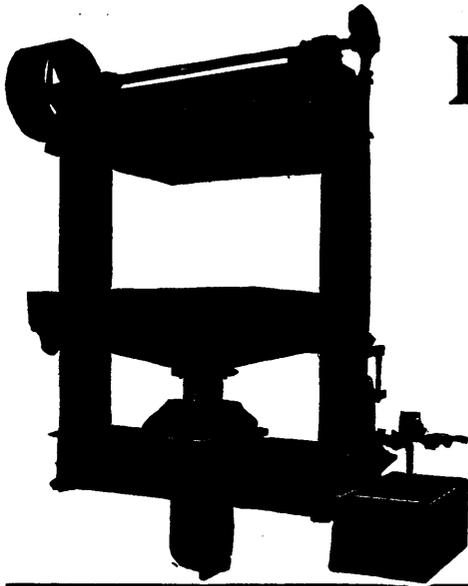
**No Worry.**

**SEND FOR CATALOGUE**

**REEVES PULLEY MANUFACTURING CO., Limited**

**14 Pearl Street, - Toronto, Ont.**

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



# Hydraulic **PRESSES**

We Build Presses  
for...

**PRESSING VENEERS  
TANNERS' USES  
BALING, Etc.**

SEND FOR  
CATALOGUE  
AND PRICES

## William R. Perrin & Company

TORONTO, - CANADA

The capacity of the Canadian Pacific Railway Co's elevators at Port Arthur, Ont., will be increased from 1,250,000 bushels to 5,500,000.

The Scioto Fire Brick Co., Sciotoville, Ohio, one of the oldest manufacturers of fire brick in the United States, inform us that they are very large shippers of their goods into Canada—that they are now filling orders for 1,000,000 brick, spring delivery, for use in Ontario alone. The demand in Canada for fire clay goods, including brick, stove lining, chimney lining, etc., amounted last year to more than \$100,000, showing that the domestic production is insufficient to meet the requirement; and this is why the Scioto Co. enjoy such a good share of the Canadian trade.

The superintendent of the assay office at Vancouver, B.C., has reported to the press that among the specimens of gold brought to him to be refined, he has found considerable quantities of platinum, and he is under the impression that the miners do not know platinum when they see it. In all the placer-mining districts of British Columbia and the Yukon Territory, large amounts of platinum and kindred metals have been thrown away by miners who did not know the value of the product. With the present price of platinum, it will pay prospectors to be on the lookout for this metal, which doubt-

less exists in considerable quantities in this province. Platinum is not found in ledges, so far as is known, excepting in one place in the world. It is found in black sand containing a large percentage of magnetic-iron ore and a varying quantity of gold.

The Toronto Manufacturers' Arch was one of the features of Toronto's reception to the Duke and Duchess of Cornwall and York in October last. This beautiful structure cost in all nearly \$10,000, and was pronounced by the English press men by far the grandest thing of its kind the Royal pair had seen during their tour around the world. The arch was colored in different shades, artistically and harmoniously blended, and when lit up at night as it was with over 2,000 electric lights the effect was simply magnificent. The idea of this splendid arch originated, we believe, with Mr. W. K. George of the Standard Silver Co., and to his energy and courage much of the success of carrying out the scheme was due.—The Trader.

Messrs. H. C. Baird & Son, proprietors of the Eagle Foundry, Parkhill, Ont., have sent us their office calendar for 1902, which shows a view of their works and some of the goods they manufacture, some of which are, kiln doors and frames, brick moulds, and Kell's combined brick and tile machine with clay crusher

attached. Catalogue with full description of machines will be sent on application.

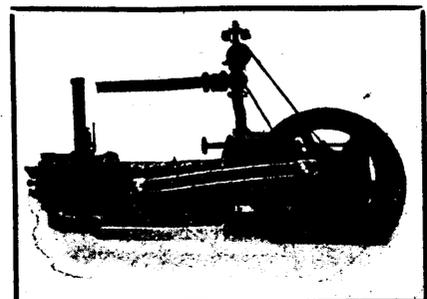
The Syracuse Smelting Works, Montreal, have sent us a very beautiful office calendar which will, no doubt, attract much attention, particularly of any of the younger people who may happen to see it. The central attraction consists of two beautiful girls riding down-hill on a tandem bicycle, with a bar of Syracuse babbitt metal under the wheels, which imparts an idea of what that article may be used for. At this particular season of the year it would seem that a tandem sled, or perhaps snow-shoes, mounted on a babbitt base, would be more appropriate, but it will not be ever thus. Parenthetically we may remark that the Syracuse people are manufacturers of babbitt metal, solders of all kinds, type metal, phosphor tin, faucet metal, needle metal, phosphor bronze, ingot brass, and all white metal mixtures; and they are also importers and dealers in pig tin, ingot copper, spelter, antimony, aluminum, bismuth, phosphorus nickel, etc.

The Smith-Patterson Co., Montreal, has been incorporated with a capital of \$60,000, to manufacture watches, clocks, etc. The charter members include M. N. Smith, Brookline, Mass.; H. W. Patterson and C. D. Smith, both of Boston, Mass.; and F. A. Mansfield, Montreal.

## BOILER, RAILWAY and MACHINE SHOPS CONTEMPLATING THE USE OF **PNEUMATIC TOOLS**

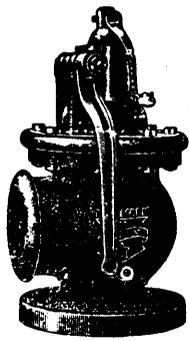
WILL DO WELL TO COMMUNICATE WITH US BEFORE  
INSTALLING PLANT

SEND FOR OUR CATALOGUE OF **AIR COMPRESSORS** ALL STYLES AND SIZES



**CANADIAN RAND DRILL CO.** Montreal and Sherbrooke

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



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.

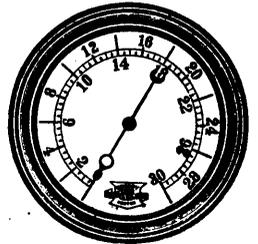


Stationary and Marine Valves.  
Water Relief Valves.  
Blow-off Valves.  
Globe and Angle Valves  
Single Bell Chime Whistles.  
SEND FOR CATALOGUE

### CROSBY STEAM GAGE and VALVE CO.

BOSTON, NEW YORK, CHICAGO, LONDON

A TRUTHFUL GAGE  
IS THE  
ONLY GOOD GAGE



The village of Shawinigan Falls, Que., will apply for incorporation as a town, and to obtain power to exempt from municipal taxation all joint stock companies established, or about to be established in the town.

The Dominion Government has awarded to T. D. Conway, the contract for building 75 miles of telegraph line near Alberni, B.C., at the price of \$6,400.

The Gress Falls Co., Three Rivers, Que., has applied for incorporation with a capital of \$500,000. The provisional directors include Warren Curtis, New York City; F. P. Farmer, Three Rivers, Que.; and L. H. Davidson, Montreal.

The T. W. Haud Firework Co., Hamilton, Ont., has been incorporated with a capital of \$85,000, to manufacture fireworks, etc. The provisional directors include T. W. Hand and T. W. Lissaman, both of Hamilton.

The Canadian Manufacturers' Association has applied for incorporation.

The water power and saw mills of the Canada Lumber Co., Carleton Place, Ont., have been purchased by Messrs, H. Brown & Sons, who will develop the water power.

The Cape Breton Electric Railway, Sydney, N.S., will erect a new power house 100x61 feet, and a car barn 160x80. One thousand h.p. in engines will be installed.

The Robb Engineering Co., Amherst, N.S., has received an order from the Intercolonial Railway for four 100 h.p. Mumford boilers for the new round houses at Stellarton and Sydney N.S.

Annapolis, N.S., will raise \$12,000 for the purpose of extending the local electric light plant, and operating it by water power.

Messrs. F. G. Rumball, T. H. Purdon and T. C. Knott are applying for incorporation as the London Railway Co., London, Ont., to build an electric road from Ingersoll to London.

The Zanzibar Paint Co., Toronto, has been incorporated with a capital of \$100,000, to manufacture paints, oils, varnishes, etc. The provisional directors include P. D. Richardson and R. S. Flint, both of Toronto; and W. A. Fleming, Montreal.

P. W. Ellis & Co, have been incorporated with a capital of \$750,000 to manufacture watches, clocks, etc. The provisional directors include P. W. Ellis, M. C. Ellis and R. Y. Ellis, all of Toronto.

The Toronto & Hamilton Electric Railway Co., will apply for incorporation to build a railway from Toronto to Hamilton, Ont.

**SOME HAVE LEARNED THAT IT IS DANGEROUS TO SIMPLY ORDER**



**"A Wood Split Pulley"**

And are particular to specify

**"DODGE"**

when ordering, so as to get the best at same cost as other makes.

**It's as well to have THE BEST** when you are buying.

Remember **"Dodge"** THE

80% of the Buyers do. Do You?

260-PAGE CATALOGUE MAILED FREE.

**DODGE MANUFACTURING CO., Toronto, Ont.**

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

C. Sanders has erected a shingle mill at Christina Lake, B.C.

Smith & Lekon have started a sawmill at Ferguson, B.C.

Mayor J. G. Scott, New Westminster, B.C., has commenced the erection of a large sawmill in Vancouver, B.C., for export business.

The constant drop of water wears away the hardest stone; the constant gnaw of Towser masticates the toughest bone; the constant wooing lover wins the winsome blushing maid; and the constant advertiser is the man who gets the trade.

A gigantic scheme is on foot to consolidate the present power company on the Canadian side of the Niagara River with the Niagara Falls Power Co. for the utilization of the Canadian power on American side for propelling purposes, electric lighting, etc. The company will be known as the International Propelling & Power Co.

The British Columbia Electric Railway Co., will erect a new boiler house in connection with their plant at Vancouver, B.C.

The Big Four Cap Co., Toronto, has been incorporated with a capital of \$20,000, to manufacture caps, and acquire business now carried on by Hughes & Jones. The provisional directors include Richard Hughes and John Jones, both of Toronto.

The Colonial Portland Cement Co., Wiarton, Ont., has been incorporated with a capital of \$300,000, to manufacture Portland cement, lime, etc. The provisional directors include D. A. Wright, Detroit, Mich.; J. T. Wright and J. S. Wright, both of Wiarton.

Messrs. Rhodes, Curry & Co., Amherst, N.S., manufacturers of railway and street cars, car wheels, castings, etc., have sent us a very beautiful calendar for 1902, which would be an ornament to any office.

The Kay Electric Dynamo & Motor Co., Toronto, have sent us an illustrated circular having reference to the dynamos, motors, etc., manufactured by them. They say that they are prepared to manufacture all classes of motors and generators with continuous or alternating current; and their personal attention being given to all work, they are able to guarantee to customers a product of the highest grade at the lowest possible prices consistent with the best material and workmanship. The circular gives a partial list of Toronto concerns who have their improved motors in use, and to whom they are permitted to refer as follows:—Victoria Shoe Co., Ideal Plating Co., Gurney Foundry Co., Francis-Frost Paint Co., Flett, Lowndes & Co., Geo. Keith & Son, T. Eaton & Co., R. Dack & Son, Julian Sale Leather Goods Co., Reid & Brown, W. R. Phillips, Gold Medal Furniture Mfg. Co., Kemp & Keith, Bell Piano & Organ Co.

## PROVINCIAL SECRETARY'S REPORT.

The report of the Provincial Secretary and Registrar of the province of Ontario for 1901, just published, states that there was a large increase in the applications for the incorporation of industrial and commercial companies, of which a considerable part consisted of going concerns, which were converted into joint stock companies, a practice which appears to be growing more and more popular. During 1900, 467 letters patent and supplementary letters patent and licenses were issued, and in 1901 the number was 547. The year 1901 stands considerably in advance, both in the number of companies chartered or licensed and in the fees derived from these services.

The fees derived from these services rendered by the department during the year amounted to \$88,643.84, a sum nearly \$12,000 in excess of the amount received for similar services rendered in 1900. January and February were the heavy months, the fees collected during them being respectively \$10,013.55 and \$10,787.94.

The net fees deposited in the department totalled \$87,534.84, \$1,109 having been refunded, chiefly in respect of application for charities.

The following table shows the services done by the department and the fees received for them during 1901:—Letters patent, supplementary letters patent and

# YOUR COMFORT



We're in the comfort business. We've been dealing in winter comfort for some years now, and there's been nothing but thanks and more demands.

We manufacture the comfort-giving radiator, the

## "SAFFORD"

You get your money's worth out of the coal you buy. The "SAFFORD" can't leak—it's indestructible—it stands for comfort—it's the only radiator in the world for hot water and steam heating.

GET POSTED ON HEATING

WRITE FOR A CATCHY BOOKLET

**THE DOMINION RADIATOR CO.**  
LIMITED

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# THE BEST PIPE THREADING and CUTTING-OFF MACHINES

Are Made by the **ARMSTRONG MFG. CO., BRIDGEPORT, CONN.**

Also Manufacturers of a FULL LINE of **ADJUSTABLE STOCKS and DIES** and Water, Gas and Steam Fitters' Tools.

Send for Catalogue 27. Factory: BRIDGEPORT, CONN. New York Office: 139 CENTRE STREET.

licenses, \$75,782.09; returns from companies, \$6,571.25; by-law re companies, \$175; Orders-in-Council, \$185; 32,174 Marriage Act forms, \$3,217.04; 79 commissions for notaries, \$624.30; 46 commissions under great seal, \$598; four commissions to police magistrates, \$20; notarial and other certificates, \$196.50; searches, \$165.30. Total, \$87,534.84.

An evidence of the rapid increase in the number of applications for letters patent of incorporation, etc., is contained in the fact that in 1891 the amount derived from these was \$5,030, whereas in 1901 the amount for the same class of services reached \$75,982.09.

## TYPE CR FEEDER REGULATORS.

The Canadian General Electric Co. have sent us an illustrated circular, having reference to the Type CR Feeder Regulator manufactured by them.

Modern central stations, the circular says, employ alternating generators of large capacity, each generator usually supplying two or more districts through independent feeders. One feeder may serve a business district, while another from the same generator will possibly feed a residential district. Since the amount of compounding required on any one of these feeders depends on the amount of load carried by that feeder at the time, and since the peak of the load occurs at different times in different feeders, some device for independently regulating the voltages of these feeders becomes necessary.

The Canadian General Electric Co's

Type CR Feeder Regulator is designed specially for this purpose and has important advantages not possessed by other form of regulators. Many CR regulators are installed in central stations all over the country, and have given eminently satisfactory service during the past few years. The essential features of these regulators may be described as follows:—

The CR regulator is of the transformer type, having its primary connected across the bus-bar and its secondary wound in several sections controlled by a dial switch. The amount by which the generator voltage is raised or depressed on the feeder is determined by the amount of secondary winding included in the feeder circuit. The windings of the regulator, being arranged similarly to those of the Type H transformer, are free from all appreciable reactance, and this regulator does not, therefore, introduce a lagging current into the system, as is the case with many types of apparatus which contain a large amount of reactance, either as an essential feature of the regulating principle employed, or due to the design of the apparatus itself.

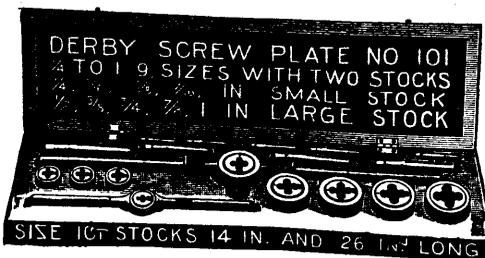
The control of the feeder by means of this regulator is simplicity itself. Starting with the regulator in position of maximum boost, that is, with the dial switch turned to the extreme left as far as it will go, a continuous right-handed movement of the dial switch for two complete revolutions is obtained. During the first revolution the switch cuts out, step by step, the ten sections of secondary winding. When the first revolution has been completed, the voltage on the feeder

is the same as that of the generator, no secondary winding being included. A further movement of the switch in the same direction automatically throws a reversing switch on the back of the panel, and continuing the movement of the dial switch, still in the same direction, the secondary windings are again switched in, step by step, this time with reversed polarity; so that when the second revolution is complete the whole secondary winding is again included in the feeder, but now opposing the voltage of the generator.

Thus by one continuous movement of the switch, covering two revolutions in one direction, the complete range between maximum boost and maximum depression of the feeder voltage is covered. At either end of this range the switch is automatically arrested, so that it is impossible to turn it too far.

Much attention has been given to the development of a thoroughly satisfactory switch mechanism. The travelling contact is operated by the controlling lever through compression springs and is held in position opposite any one of the dial contacts by a steel bolt stepping into a hardened steel bolt plate on the switch panel. A movement of the controlling handle in either direction first compresses the spring, tending to move the travelling contact, and when this spring has been compressed a predetermined amount, the locking bolt is released by a cam, and the travelling contact flies over to the next position, where it is again locked by the bolt until the controlling handle is moved another step. The width of the travelling contact blade is less than the distance be-

The universal satisfaction given by our **DERBY and REECE SCREW PLATES**, cutting from 1/16 to 1/2 inch, including all the machine screw sizes, has created a demand for a plate made on the same principle, to cut bolts to 1 inch in diameter. To meet this demand we have brought out these sizes.



**BICYCLE SCREW PLATES, REECE SCREW PLATES, DERBY SCREW PLATES, BLACKSMITH'S STOCKS AND DIES, BLACKSMITH'S IMPROVED SCREW PLATES, HAND TAPS, MACHINE TAPS, PIPE TAPS, EVERY KIND OF TAPS AND DIES.**



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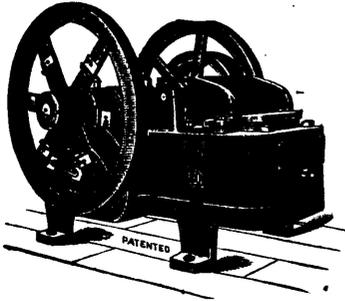
**STILLSON AND TRIMO WRENCHES.**

**STEAM PIPE.**

**CORNER KING AND VICTORIA STREETS, - - - TORONTO.**

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ROLL JAW CRUSHER.



# Crushes

Large Rock

# to 4 inch.

Send for Circular.

**STURTEVANT MILL CO.,**

104 Clayton St.  
Boston, - Mass.

tween two adjacent contacts on the dial. Extreme rapidity of movement permits the transfer from one contact to another without any visible interruption to the lighting circuit, or blinking of the lights. It has the important advantage that no shunt, magnetic or otherwise, is required to prevent short circuiting during movement from one contact to the other.

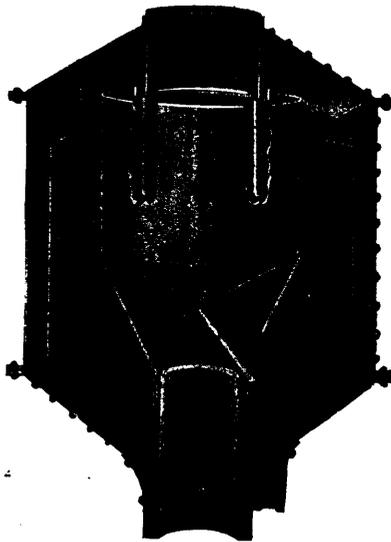
### THE JOHN MORROW MACHINE SCREW CO.

The John Morrow Machine Screw Co., Ingersoll, Ont., have sent us their office calendar for the current year, which resembles very closely those that they have been issuing for several years past. The publication is a large one, the sheets being 24x18 inches in which are shown not only the calendars for the different months, but abundant representations of the different articles manufactured by the company, different articles being shown on each sheet. Among those mentioned and illustrated are cold punched hexagon nuts; flat head, button head, fillister head and milled head collar screws milled from the solid bar; boiler patch bolts; malleable iron thumb screws and nuts; standard or special steel taper pins; milled coupling bolts and iron studs; planer bolts and nuts; stool screws; knurled thumb screws; ball bearings for wringers and churns; screws for electrical work, binder posts, etc., bicycle and automobile parts, etc. This company say they are the oldest and largest manufacturers of milled machine screws in Canada, being well equipped for producing special milled and pressed work. The calendar, which is intended for office use, is printed in such bold

figures and letters that it can be easily read across a large room, and is apparently so complete as to be in itself a catalogue descriptive of the products of the establishment, but the company will have pleasure in sending their regular catalogue to any who may desire it, which of course contains price lists, etc., which the calendar does not have.

### THE BURT EXHAUST HEAD.

The exhaust head is a prime necessity in the modern steam plant. Its use prevents the disfigurement of the buildings



and rotting of the adjacent roof near the exhaust pipe; there is an additional advantage in many cases from the use of the entrained water a second time in the boilers. For these and similar reasons

that may be enumerated, the real question for the purchasing department of the steam plant to consider is the best choice among the exhaust heads on the market rather than any discussion about the wisdom of obtaining such a device. The exhaust head made by the Burt Mfg. Co., Akron, O., is coming more and more into use. It is made to fit all sizes of pipe from one to 60 inches in diameter. The material is extra heavy iron, lapped, riveted and soldered, equipped with malleable iron bases and drips. The illustration shows the general construction of the device. The exhaust steam delivered through the opening at the base, strikes the drum immediately over the inlet; this breaks up the steam into the smallest particles and condenses some of the vapor. The greater volume of steam rises to the small projector, is thrown over to the flange, then forced down to the inner wall and coming out of the opening again rises where it is caught on trough-shaped lugs and drips along the tubes to the outlet pipe. It will be noticed that the water clings to the walls of the outlet pipe free from contact from the constant current of steam coming up through the head.

### CANADIAN PULP MILLS.

The Dominion Statistical Department recently sent out circulars to all the pulp mills in Canada, asking for a statement of the business done in the nine months ending September 30. The different mills readily complied with the request. The returns have been tabulated, and they show that during the period named the pulp mills of Canada manufactured 143,085 tons of ground or mechanical pulp; 51,924 tons of sulphide,

# THE GEE ELECTRICAL ENGINEERING CO.

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LIMITED

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# Dynamos, Motors,

AND ALL..... ELECTRICAL APPLIANCES

We have every facility for repairing. We guarantee all our work. We keep a large staff of competent electricians and wiremen, and are in a position to do Electrical Work of every description. We wire Residences, Business Houses, Factories, etc. We have on hand a large stock of

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Electrical Fittings, Arc Lamps, Telephone Bells, Etc.

and 8,485 tons of soda. These had an aggregate value of \$6,100,000. Great Britain took about 58,000 tons of the value of \$750,000. The United States took about 58,000 tons valued at \$684,000, and other countries 1,500 tons valued at \$32,500. The home market either absorbed 124,000 tons or some of that amount was held in stock.

The total capacity of Canadian mills is equal to the production of 315,509 tons in nine months. They were therefore employed to the extent of two thirds of their capacity. The outside market took up about 41½ per cent. of the entire output of the Canadian mills, the United States taking about one-eighth of the quantity manufactured, and great Britain considerably over one-quarter of the output.

Great Britain imported in the nine months from all countries 338,986 tons of wood pulp valued at \$8,698,966. From Sweden she took 22 per cent. in quantity and 33½ per cent. in value; from Norway, 55.7 per cent. in quantity and 43.4 per cent. in value; from Canada, 17.06 per cent. in quantity and 14.50 per cent. in value. In the English market the Swedish wood pulp had a value of £8 per ton; the Norwegian £5 3s. 4d.; and the Canadian, £4 9s. 8d.

**PERUVIAN ASH.**

The Vulite Syndicate, 40 Wilson street, Finbury, London, E.C., England, state that their Peruvian ash is what printers have required for a long time for cleaning their type and composition rollers. They state that the article entirely supersedes pot or pearl ash, turpentine, paraffin, etc.; that it removes all ink instantly, leaving the roller perfectly clean and free from all greasiness, no matter of how long standing. It dissolves easily, is colorless, has no sediment, and is absolutely harmless. The concern also manufacture the well-known boiler composition, vulite.

**RECORDING THERMOMETERS.**

The Bristol Co., Waterbury, Conn., have sent us their illustrated circular No. 6T, having reference to the Bristol standard recording thermometer manufactured by them. They are intended for use in connection with dry kilns, ovens, heaters, closed spaces, mash tubs, hot blasts,



**Page Metal Ornamental Fence.** We now make ornamental, very showy and surprisingly cheap. It is just what is wanted for door yards, division fences in town lots, grave yards, orchards, etc. It is 20 cts. PER RUNNING FOOT. Painted and retails at only Just think of it. Let us send you full particulars. We also make farm fence, poultry netting, nails and staples.

The Page Wire Fence Co., Limited, Walkerville, Ont. 8

**WARE'S PATENT**

**Steel Yoke Vises.**



The weakness of all vises, made entirely of cast iron, is their tendency to break at the point where the strain is greatest, viz.: the junction of the front jaw with the slide or yoke.

This difficulty is completely overcome in WARE'S VISE, in which the yoke or slide is made of one piece of cold rolled wrought steel shafting cast into the front jaw.

This method of construction produces a vise that is practically unbreakable, of great strength and solidity; easy running, by virtue of the highly polished surface of the steel yoke; efficient and convenient in every particular.

The slide being narrow affords plenty of space on either side for the handling of long work perpendicularly, which cannot be done with other vises. Prices and all particulars on application. **SOLE MAKERS:—**

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BROOKVILLE, ONTARIO, CANADA.

**MICA BOILER COVERING CO.**

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The demand for **MICA COVERING** is largely increasing. It has been proved and tested in all kinds of service, and leads the market absolutely on its merits. Awarded the **Gold Medal** at the Pan-American; Prize Winner at the Paris Exposition, etc. Its use in Great Britain and the United States extending. Some recent Canadian **repeat** orders. Write for full particulars from

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**JOHN LUMSDEN & CO., 375 St. James St. MONTREAL**

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Capacity 3-32 to 1¼ inches.

Style "K"

chimney gases, liquids, air and gases in pipes, feed water for steam boilers, etc., and are for work when the temperature ranges between 100 and 500 degrees Fahrenheit. The bulb of this instrument, we are told, will pass through a hole one-half inch in diameter, and its operation is entirely independent of pressure at the point where it is located. It will make a continuous record of temperature day and night; need not be exposed to high temperatures of kiln or oven, and may be placed 25 feet from point where the temperature is to be measured. In its operation, the bulb in the oven, kiln or pipe, is partly filled with alcohol, which produces variations of pressure according to temperature, and absolutely independent of changes of thermometer at the recorder.

#### THE JOHN ABELL MFG. CO.

The necessary papers have been filed for the formation of a new company with a capital of \$1,000,000, to take over the business of the John Abell Mfg. Co., Toronto. The works of the company adjoin the Parkdale stations of the Canadian Pacific and Grand Trunk Railways, and are among the largest and finest constructed and best factory premises in this city.

At the present time the demand for portable engines and threshing machinery in Manitoba and the North-west Territories is much greater than the supply from Canadian manufacturers. American

manufacturers ship these goods into Canada against a duty of 25 per cent., and are supplying probably three-quarters of the entire demand for machinery of this class in Canada. The grain-growing area of this country is increasing so rapidly that no such opportunity has ever existed for the development in the older provinces of Canada of manufacturing industries for supplying the West with machinery.

Among the applicants for incorporation are the following:—Hon. S. C. Wood, Vice-President the Toronto General Trust Co.; Robert Kilgour, President Carter-Crume Co.; Clarkson Jones, President Wilkinson Plough Co.; W. R. Brock, President Canadian General Electric; H. P. Dwight, Vice-President Canadian General Electric; W. D. Matthews, Director Canadian Pacific Railway; Samuel Barker, M.P., Hamilton; E. L. Goold, manufacturer, Brantford.

#### "ROSSENDALE," M.A.Y. WOVEN BELTING.

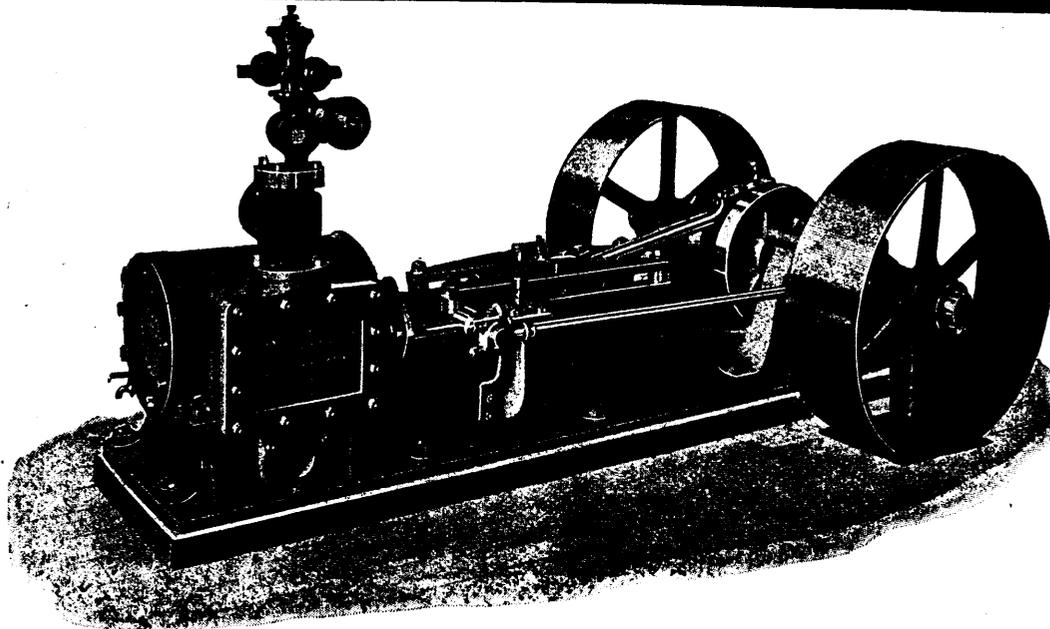
We learn from Messrs. R. H. Buchanan & Co., Craig street, Montreal, agents for above belting that they are unable to import these goods fast enough to keep pace with their orders. They have already this year had a tremendous run on their stock, and as they carry perhaps the largest stock of woven belts in Canada they must be doing a large business in Rossendale belting. Messrs. Buchanan

& Co., were forced, they tell us, to cable three times last week to the Belting Co. in England to rush their orders along. Their motto is "we advertise only in the best papers." Among other orders in hand they are fitting up Messrs. Morgan's Crescent Cement Works, Longe Pointe, Que., with Rossendale belts from 30-inch wide. The 30-inch belt is nearly  $\frac{3}{4}$ -inch thick and will transmit more than 400 h.p.

#### ELECTRIC RAILWAYS IN ONTARIO.

Should the electric railway charters be granted which the Legislature has been asked to pass this year, and, further, should the companies interested carry out the construction of all the lines projected, no less than 1,046 miles will be added to the rural electric railway mileage of the province. Twelve companies figure in the applications, the territory in which they are interested extending from Cornwall to Windsor, and if all the lines were built there would be a continuous line between those two points, except a short hiatus from Glencoe to Tecumseh, while to the north another system will reach from London to Owen Sound, skirting the shore of Lake Huron.

The interest evinced in rural electric railways shows a movement to be in progress which will revolutionize transportation in the country districts, and give remote sections market facilities which will greatly enhance the value of farm



This is a plain heavy engine, made to run every day and all day, requires no skilled attendance, has no hidden away glands, etc., all parts being easily accessible for examination or adjustment, and is just the engine for a Saw Mill, Stamp Mill, or other purpose where reliability is required. Some recent orders are Toronto Paper Co., Metis Lumber Co., Eastern Townships Brick Co., East Broughton Asbestos Co., Granby Consolidated M. & S. Co., B.C. Copper Co., Sullivan Group Mines, etc., etc. Fitted with Meyer Adjustable cut off when desired.

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Rossland and Greenwood, B.C.

# COAL JAS. H. MILNES & CO. COKE

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products. A notable feature revealed by a study on the map of the various routes is that many of the lines tap territory now not conveniently served by railways. Of course, it may be years before some of the railways projected will be built, and it is not uncharitable to say that some of the companies aim only at the possession of the charter for future sale. There are, however, a number of important rural lines already in operation in Ontario, and it is stated that American capital is behind at least the lines projected to radiate from Hamilton to Toronto, Guelph and Waterloo.

A number of electric railway charters passed in recent years have contained special clauses restricting the passenger rates. The subject will now be of more general interest, and it is said is receiving the consideration of the Government.

The following table shows the companies applying for incorporation, and the routes and approximate mileage which they propose to construct:—

	Miles.
<b>Ontario Electric Company—</b>	
Cornwall to Toronto .....	266
Ottawa to Brockville .....	55
<b>Total .....</b>	<b>321</b>
<b>Hamilton Suburban Railway—</b>	
Hamilton to Waterloo .....	35
Galt to Guelph .....	15
Hamilton to Guelph .....	26
<b>Total .....</b>	<b>76</b>

<b>St. Thomas Street Railway Co.—</b>	
St. Thomas to Port Stanley .....	8
St. Thomas to Aylmer .....	11
St. Thomas to London .....	14
<b>Total .....</b>	<b>33</b>

<b>Aylmer, St. Thomas &amp; London Electric Railway—</b>	
Aylmer to London, via St. Thomas ..	25
St. Thomas to Port Stanley .....	8
<b>Total .....</b>	<b>33</b>

<b>London Railway Co.—</b>	
London to Glencoe .....	30
Delaware to Strathroy .....	8
London to Ingersoll .....	16
Thamesford to Brantford .....	40
Brantford to Hamilton .....	20
<b>Total .....</b>	<b>114</b>

<b>Sandwich, Windsor &amp; Amherstburg Railway—</b>	
Amherstburg to Harrow .....	11
Pelette Road to Tecumseh .....	5
<b>Total .....</b>	<b>16</b>

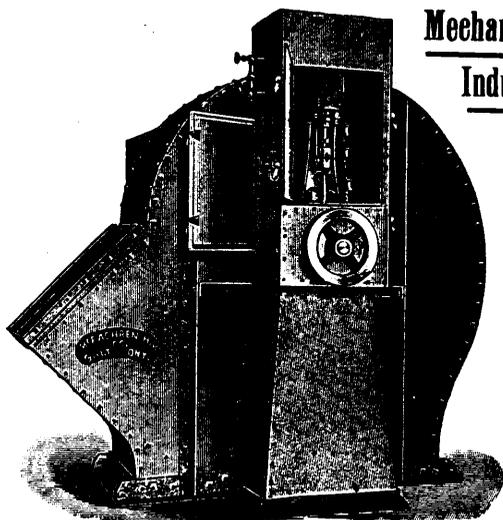
<b>Morrisburg Electric Railway—</b>	
Morrisburg to Winchester .....	16
Branch to Chesterville and Morewood	13
<b>Total .....</b>	<b>29</b>

<b>Petrolea Rapid Railway Co.—</b>	
Sarnia to Courtright .....	12
Corunna to Petrolea .....	15
Petrolea to Dresden .....	16
Dawn Centre to Florence .....	8

Florence to Thamesville .....	6
Branch to Brigden .....	6
Petrolea, through Enniskillen Tp. ....	5
<b>Total .....</b>	<b>68</b>

<b>Goderich radial lines—</b>	
Goderich to Dungannon .....	10
Carlow to Auburn .....	5
Auburn to Blyth .....	6
Blyth to Walton .....	7
Walton to Seaforth .....	12
Seaforth to Clinton .....	8
Clinton to Goderich .....	12
Blyth to Wingham .....	13
Walton to Brussels .....	7
Brussels to Wroxeter .....	10
Bayfield Road to Bayfield .....	9
Bayfield to Parkhill .....	28
Parkhill to London .....	24
Dunlop to Kincardine .....	30
Kincardine to Tiverton .....	8
Tiverton to Port Elgin .....	16
Port Elgin to Southampton .....	5
Southampton to Wiarton .....	20
Warton to Owen Sound .....	16
Kincardine to Walkerton .....	24
<b>Total .....</b>	<b>270</b>

<b>Hamilton Radial Electric Railway Co.—</b>	
Mimico to Toronto .....	6
<b>Rapid Electric Railway Co.—</b>	
Hamilton to Port Dover .....	40
<b>Toronto and Hamilton Electric Railway—</b>	
Toronto to Hamilton .....	40



Bottom Angular Up Discharge Right Hand Fan.

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Mechanical Draft may be applied to old boilers to increase draft at a minimum initial outlay.

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**GALT, ONT., CANADA**

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THE . . .  
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**W. P. DENT, - Manager.**

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**THE CANADIAN  
COLORED COTTON  
MILLS COMPANY.**

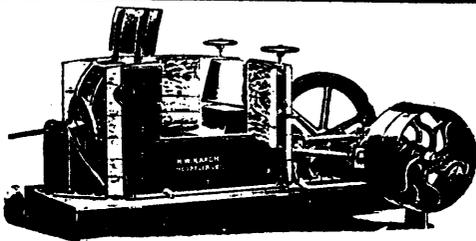
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Dress Goods, Lawns,  
Cotton Blankets,  
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AGENTS

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HESPELER, ONT.

**IRON FOUNDER and MACHINIST**

Manufacturer of

**WOOLEN MACHINERY,**

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

**ONTARIO DEVELOPMENT.**—In the debate on the address in the Ontario Legislature last week, Mr. Gross, Welland, Ont., spoke of the development of new Ontario, and later of the progress being made in the older parts of the province. In the latter connection he referred to the wonderful possibilities of the great water power of Niagara Falls. He sketched the growth of industry and manufacture on the American side of the river, owing to the partial development of that power. Many new factories and industries had been established and power was being furnished to cities and towns miles away. It had, he said, been explained to him by one of the officials of the Niagara Falls Power Co. that work on the Canadian side had been delayed because that of the American side was purely experimental, and its result had to be awaited before further expenditure was incurred on this side. Now, however, the works on this side of the river were nearing completion. They would be most complete and modern, and owing to the advance in electrical science the water wheels in the Canadian power house would be made capable of generating 10,000 h.p. each, which was more than the generating power of those on the United States side. For its car and lighting systems the city of Buffalo used only 9,500 h.p., and the statement of such a fact would show what might be expected of development on the Canadian side. He predicted that before long the cars of Toronto and other Ontario cities would be operated and their lighting and heating supplied by Niagara Falls power.

**CANADIAN ASSAY OFFICES.**—It is apparent in Vancouver and Victoria, B.C., that the establishment of assay offices there will divert a large amount of mining trade from Seattle and San Francisco to the Canadian coast cities. It will certainly bring a number of returning miners to the Canadian assay offices who would otherwise go directly to the cities to the south. There is a feeling of confidence in an official assay which is seldom reposed in financial corporations purchasing the output of placer mines, and although the private purchasers make absolutely fair assays of the gold submitted to them, the preference for a disinterested analysis exists and must be taken into consideration. The Canadian Government, in handling that part of the Yukon output submitted, must issue drafts and ship the gold to where it is commercially in demand, and there is no reason why it should not be done as cheaply under Governmental supervision, as by private enterprise.

The growth of business at the Seattle assay office has been commensurate with the remarkable development of the Yukon and Alaskan placers. In the year 1898-99 there were 414,508 ounces of gold brought to the assay office, valued at \$6,504,952. In the following year the gold deposited reached \$13,630,326, and in 1900-01 it increased to \$21,707,169. This record may be exceeded during the current fiscal year, as the returns for five months from June 30 to November 30

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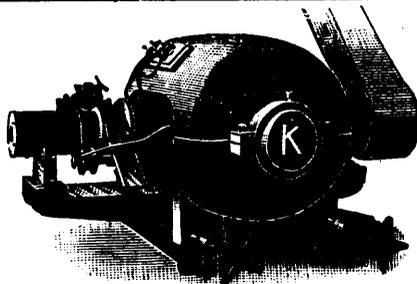
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show a total of \$14,022,746. This makes an aggregate of \$54,873,235, of which only \$8,620,121 came from Alaska. British Columbia supplied \$2,224,538, and Washington and Oregon, whose supply included foreign gold coin, \$300,991. The bulk of the gold assayed at Seattle, \$43,707,584, came from the Canadian Yukon, and it is expected that a large part of this output will in future be diverted to Canadian coast cities. The gold assayed at Seattle represented 20,342 deposits, averaging more than \$2,700 each.

Although the retail outfitting business is virtually at an end, a large amount of trade will be diverted to Canada, as the miners are induced to bring their gold to our coast cities. The miner now purchases his supplies locally, and the outside trade, almost exclusively wholesale, is tending to shift from the American to the Canadian cities. It would be largely Canadian if a practical route could be found without crossing American territory. But the miner returning with his gold is always a generous spender, and the men of the Yukon should be induced by all reasonable means to patronize Canadian merchants. Although business with Dawson is closed for the season, the western assay offices are receiving frequent shipments of gold from Ontario, British Columbia, and other parts of the Dominion. The trade of the Coast has been a very rapid development, and now that the assay offices have been established, a larger portion of it will come to our own cities.—The Globe.



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- ELECTRIC CONTROLLERS for Elevators.
- ELECTRIC ORGAN BLOWERS.

SHIPBUILDING IN CANADA.—Mr. John Bertram, president of the Bertram Engine Works Co., Toronto, who have already built some of the finest steamers on our inland waters, under date of January 7, addressed the following open letter to the Minister of Customs at Ottawa:—

Dear Sir,—I have the honor to acknowledge the receipt of your favor of the 21 ult., in which you say that no permission was given by your department during the season of 1901 for American tugs to tow rafts in Canadian waters, contrary to the provisions of the coasting regulations.

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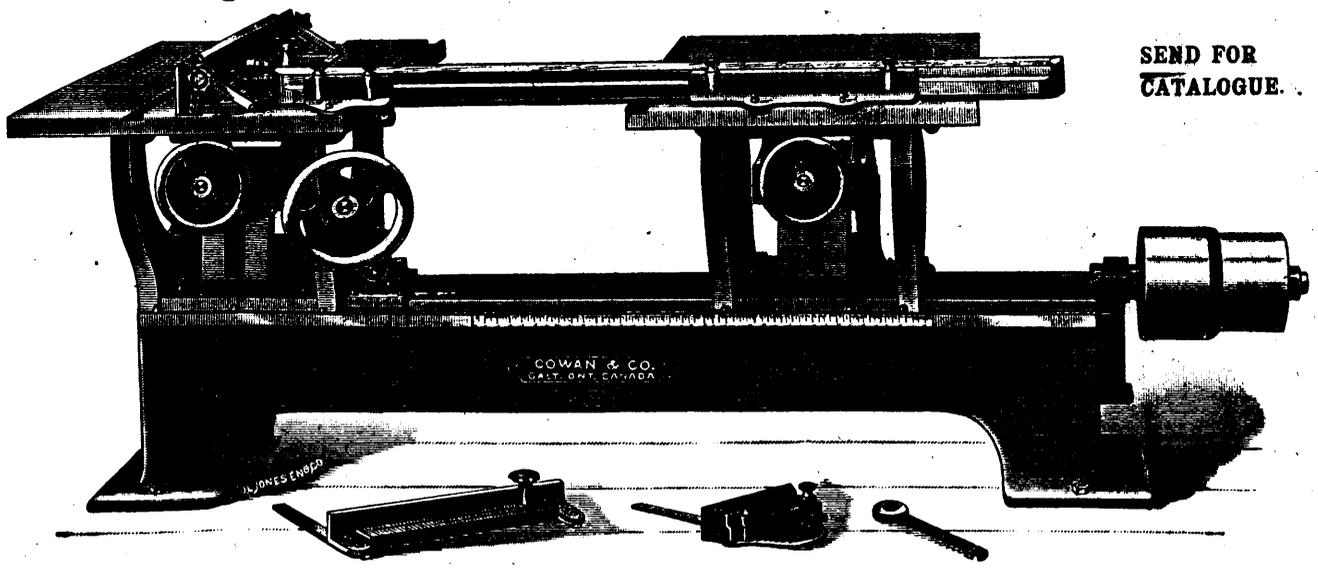
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I understand that permission was granted to certain American tugs to tow Canadian logs in Canadian waters in 1900, and am glad to learn that this permission was not continued in 1901. Notwithstanding this, however, United States tugs, some openly and some covertly, did, against the law, participate in the towing of Canadian sawlogs from one Canadian point to another. Particulars need not be given, as the facts can easily be verified on enquiry by your own officers. The methods by which tugs under United States registry took part in this Canadian work are known to many people having interests on the Georgian Bay and Lake Huron. It is also well-known that for years American tugs have been allowed to do work on the Canadian side of the river at Sarnia, and, further, at least one tug, while under United States registry, obtained quite recently from a British Consul resident at an American port a certificate of some kind, allowing it to tow logs in Canadian waters, contrary to the provisions of the coasting regulations.

You are no doubt aware that on account of the action taken by the Ontario

Government in compelling all sawlogs cut on Crown lands in the province to be sawn or otherwise manufactured in Canada, the business of towing sawlogs from one Canadian port to another has greatly increased within recent years, and whether this work is to be reserved for Canadian tugs alone is a matter of some importance. No Canadian tug or other vessel is allowed, under any pretext whatever, to participate in the coasting trade of the United States, and if they attempted such a thing, or gave the officers there the slightest excuse, would be promptly seized. Now, if American tugs have exclusively reserved to themselves all coasting privileges in United States waters, and at the same time are allowed, either by permit from Canadian authorities, British Consul, or by reason of our customs officers not watching for infractions of the law, to share in our work, it would be so manifestly unfair and one-sided that the building up of a Canadian marine could hardly be expected. Instances could be given to show how this state of things affects vessel-owners and shipbuilders. In 1900 a party was negotiating for the building of

one of the most powerful tugs on the lakes, but by reason of the foreign tugs being allowed to tow Canadian logs the negotiations fell through. At the present time, if assured that no interference by American tugs will be tolerated, the construction of powerful Canadian tugs, fully equipped for towing logs, would at once commence, but until this assurance is given there is little inducement for anyone to invest in that class of property.

Steel shipbuilding in Canada is carried on at present under some disabilities. For instance, British-built vessels, fully equipped, can come in here free of duty. This cannot be complained of, as it is part of the Imperial policy of the empire, but in the building of vessels in Canada every item entering into the construction, whether of the hull or the machinery, that is manufactured in any part of the Dominion is dutiable at the ordinary rate. It is true a small amount is allowed per registered ton by the Dominion Government in the way of draw-back on duties, but the amount is quite inadequate to equalize conditions as existing between the British and Canadian

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shipbuilder. Were it not that a design and type of vessel better suited for inland waters has been evolved here with a larger and more economical carrying capacity per ton of displacement than anything built on the Clyde, then Canadian shipyards would not be in the competition.

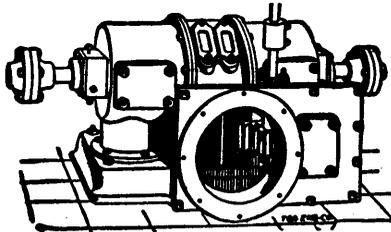
Turning to the United States side of the question, it is well-known that they will not admit any foreign-built vessels to registration in their ports, while in Canada foreign-built boats are allowed to enter in, paying merely the nominal duty of 10 per cent. on hulls and 25 per cent. on machinery. If the entry were confined to new vessels only, and the valuation that of the American selling price, there would be no complaint, as Canadian shipyards are quite able to compete both in quality and price with any yards in the United States; but, as a matter of fact, entries have been confined to old boats, difficult to value, and so the duty collected has been only nominal in amount. So with British boats free, American boats at only a nominal valuation, their freighters occasionally granted a permit to share in our coasting trade, and their tugs, within or without the terms of our regulations, coming here to share in our coasting work, it is a wonder that any new vessels are built in Ontario to ply in international waters. A great impetus has been given lately to Canadian inland transportation by the general improvement of business, the increasing quantity of grain seeking the seaboard, and the carrying of iron ore, coal and lumber. Apart from the question of ocean-going vessels or the need of a fast Canadian service to Great Britain, if it is considered desirable that a well-equipped and creditable Canadian marine should exist on the great lakes, then two conditions seem necessary. First, Canadian shipbuilders should be placed on a footing of equality with British shipbuilders. How this should be done is within the purview of the policy of the present Government. A beginning has been made already by granting a small drawback on new tonnage, and it only requires to go a step further and make it such an amount as would equalize conditions between shipbuilders here and in Great Britain. Second, there seems no other way of stopping our sharp and ingenious friends on the other side of the lakes from having us at a disadvantage except by strictly carrying out our own law with regard to coasting regulations; and, further, by taking a leaf out of their own book and forbidding the registration of any American-built vessel in a Canadian port. This may, to some people seem drastic, but it cannot be considered unfriendly, as it simply follows their own example.

I beg to submit these matters for your consideration, believing that they are of some importance not only to the vessel owners and shipbuilders of Canada, but as a means of continued progress and the advancement of our best interests.

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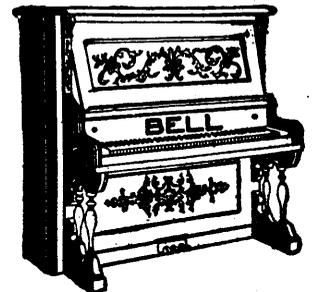
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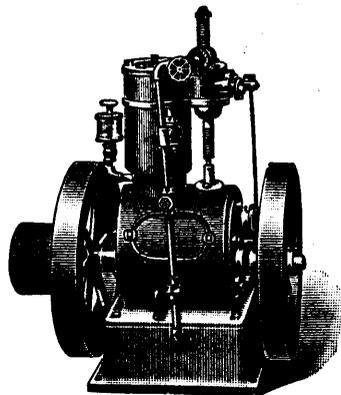
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They are built in sizes from 1 to 20 h.p., upright and horizontal, for pleasure yachts, boats, shops, farm work and any purpose where light power is required. Tell us to what use you want to put the engine, and what power you require, and we will name you prices.



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electrically driven machine tools is very complete. The power station consists of five generating sets, the total horsepower being 1,250, and the electrical capacity 750 kilowatts, but in the engineering and gun-mounting department the power plant is of 2,500 h.p. and 1,500 kilowatts capacity, and electrical connection is established between the two departments. These stations are utilized both for power and lighting purposes, the voltage of the direct current being 210, with 3,570 amperes, in the shipyard department and 7,150 amperes in the engineering works. As to the economy of the electrical system, the coal consumption over a given period of average working conditions is only one-third what it was for steam driving, but the interest and depreciation of the electrical equipment must be taken into consideration. This, however, is not likely to equal the coal economy, while there is the advantage of direct control over the motors.

Where the tools are conveniently situated for driving from shafting—as a rule where belt drive was formerly adopted—the shaft has been retained and a large electric motor conveniently placed for running it. This secures any advantage from stored-up power in the pulleys to assist in starting drills and cutting tools generally, while at the same time a less power of motor is possible, since all the machines are not likely to be simultaneously doing their maximum duty. In the machine shed, however, the majority of the tools have independent motors, the largest being 45 h.p., operating plate-bending rolls 30 feet long to

take in armor deck-plates, while there are several cases of from 30 to 20 h.p. motors.

Many of the motors drive their machine tools by belting, with belt-striking gear for reversing. Some of the punching and shearing machines, however, are driven by spur gearing, the pinion on the motor spindle being of soft material, to deaden the shock and reduce the vibration. In such cases the motor is itself reversible. In a few instances, for large mangle rolls, angle shears and angle beveling machine, a chain belt covered by a gear case is used.

As to the speed of the motors, all above five h.p. run at 600 revolutions per minute, the interposition of belt pulleys enabling the speed of the various machine tools to be reduced to the required rate of rotation. Motors of three h.p., which are used for drilling, countersinking, joiner's saws, etc., are run at 850 revolutions. The two h.p. motors, of which there are three or four, run at 1,200 revolutions per minute, 2 one and ½ h.p. motors make 1,100 revolutions per minute, while several one h.p. motors, used for grinding, for saws and for several portable tools, make 1,300 revolutions per minute.—Electrical Review.

**ELECTRIC PUMPING.**—A striking comparison between electric and steam pumping is to hand from a Scotch colliery. The plant is run eight hours a day, only three attendants, consumes 2½ tons of coal a day, and the total working costs came out at £565 per annum, in-

stead of £4,000 by the old method—a striking difference.

**IRON MAKING AT SYDNEY, N.S.**—The steamer Northwestern, which made the experimental trip from Chicago through the lakes and St. Lawrence to Hamburg, is now engaged in the Newfoundland iron ore trade. She is carrying cargoes of ore from Wabana to Sydney, N.S., to be smelted. Wabana is the name of the mine on Bell Island, eighteen miles from St. John's, N.F., which has the most remarkable deposit of its kind in the world. It is an open quarry of the mineral, containing 34,000,000 tons, laid in almost horizontal strata, the material being in the form of small cubes, which only require a charge of dynamite to shatter into millions of fragments. These are shoveled up into wagons, carried over an endless cable to the piers and dumped into the steamers' hold. Vessels are loaded at the rate of 1,000 tons an hour, and the largest freighters that ply there, which have a capacity of 7,000 tons, secure their cargoes within a day. It is a thirty-six hour run to Sydney, and discharge is effected within a day also. Two round trips can almost be made within a week. The mine is accessible from April to December, during the remainder of the year access to it is prevented by ice. But during the open period enough ore is got out to last the whole year through, and to accomplish this extra steamers are now being put on and the mine is being worked to its utmost capacity.

This deposit of ore enabled the Sydney

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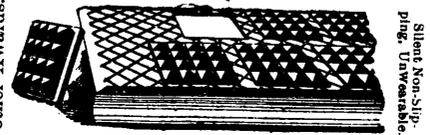
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Perforated Metal of Steel, Copper, Brass, Zinc for all purposes.  
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smelting enterprise to be established. The ore can be mined at Wabana for 25 cents a ton, and brought to Sydney for another 25 cents. The total cost of assembling there the iron, coal and lime required to make pig iron is but 79 cents a ton. At Sault Ste. Marie it is \$1.97 and at Pittsburg \$3.58. It is easily seen, therefore, what a future there is before

the enterprise. It is destined to fix the price of iron and steel for the world ere long, so its promoters say. This may be boastful, but the demand for the crude ore and smelted product is substantial evidence that the scheme has all the elements that insure success.

The Northwestern will probably be employed during the winter when the ore carrying ceases, conveying pig iron to British or American ports, where a market for this product is being opened up. The manufacture of steel is next to be undertaken and this will increase the industrial possibilities of the concern and enlarge the fleet of freighters employed about the transport. At present twenty steamers are engaged carrying coal to Montreal, bringing ore from Wabana or conveying pig iron to Glasgow—the leading market for it so far.

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

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

**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.

644. A manufacturing company would like to hear from Canadian manufacturers of wood flooring who are adequately equipped for export trade and can quote on specification.

645. A manufacturer of high class perfumes and toilet soaps asks to be placed in touch with responsible Canadian firms whose travellers cover the Dominion and who are prepared to take up the sale of above lines.

646. A correspondent in the South of Ireland has asked to be furnished with a list of the packers and exporters of dried cod, haddock and pollock, in the maritime provinces.

647. Enquiry has been made for exporters of cider from Canada. What is required is sound new stock to be shipped from February to end of March each season. Casks to contain about forty gallons each.

648. The address of a Canadian engineer or engineering firm having representatives calling upon owners of engine shops is required by a firm wishing to introduce to the Canadian market a patent metallic packing for stuffing boxes.

649. A firm in Naples have asked to be placed in touch with Canadian exporters of produce, etc., desiring representation in Italy.

650. A Scotch firm wishing to push the sale of coal tar in Canada, request to be supplied with names of importers and users of the product.

651. A correspondent in the Midlands requests to be furnished with names of Canadian breeders of heavy horses.

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In addition to the Classified Trade Lists of the Importers and Exporters, Merchants and Manufacturers of the United Kingdom and all principal trading centres of the World, it gives the Customs Tariffs for every country and all classes of goods. The work contains nearly 4,000 pages, and gives more information than any other work published the world over.

A few Extracts from Letters received from British Consuls, Etc.

"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 is Kelly's Directory."—From British Consular Return, Riga.

"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.

Highest Award, Gold Medal, Paris, 1900.

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## NOTICE.

**Printers.** USE PERUVIAN ASH,  
a marvellous CLEANSER  
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WRITE FOR PARTICULARS.

**Steam Users.** VULITE  
is unrivalled as a  
disincrustant.  
ON H. M. GOVERNMENT'S LISTS.

**Vulite Syndicate, Limited**  
40 Wilson Street, Finsbury,  
London, E.C., England.

**Wanted**—An Active Representative for Canada

**THE PATENT CLOTHBOARD CO. OF PARRY SOUND**  
Limited  
Clothboards, Lapping, Rolling  
and Bailing Boards  
Veneers of Ash, Birch, Bass  
and Elm, all thicknesses  
Cheese Box Bands and Rims  
Box Shooks (Small and Light)  
also Crotting Material



**NOTICE**—The following are the Factory Inspectors for the Province of Ontario:

JAS. T. BURKE, Parliament Buildings, Toronto.  
JAS. R. BROWN, Parliament Buildings, Toronto.  
MARGARET CARLYLE, Parliament Buildings, Toronto.

O. A. ROCQUE, Orleans, Ont.

Persons having business with any of the Inspectors will find them at the above address.

JOHN DRYDEN, Minister of Agriculture.

## 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, January 17, 1902.

There is no new feature of importance in the commercial situation. After the holidays, as was expected, there is a period of dullness, but underlying is a foundation that cannot be swept away. Business in Canada was never in a more prosperous condition, and one of the best evidences of this from a manufacturers' standpoint is the promptness in which paper is met. From all parts of the Dominion come reports of good business, and these have inspired a confidence that it will be hard to shake.

One of the most important events of interest to manufacturers, and especially to firms in Toronto, was the result of the vote on the money by-law for the extension of the Exhibition buildings and the holding of a Dominion Exposition in the Queen City. This was the second time the by-law was submitted to the people and the vote in favor of the grant at the second ballot showed a majority in favor as great as the majority against on the first ballot. The result is an outlay for the manufacturers and all interested in the progress of the city. It will aid materially in restoring the confidence of exhibitors which had been lost during the past few years owing to the inability of the association to provide suitable buildings for the display of goods.

During the past three months there have been published in the Toronto papers vague reports regarding the defalcations of well-known citizens. These reports, it is understood, have good foundation, but it is pleasing to announce that the public interested were not connected with any of our manufacturing firms.

The settlement of the disagreement between the piano woodworkers and the employers has cleared the atmosphere of strike talk, and in every line of business the relations between the employers and employees is harmonious.

In the speculation markets there is a marked dullness in business with declines recorded on the leading speculation issues. There is nothing of an encouraging nature in the situation and bull leaders show no disposition to lift their favorite stocks, consequently a sagging market is not unlikely.

Call money in Toronto is quoted at from 5 to 5½ per cent., and in New York

at from 4 to 4½ per cent. The Bank of England rate is quoted at 4 per cent.

The metal markets are quiet. In New York pig iron northern is quoted at \$14.50 to \$16, southern at \$14 to \$16. Copper is weak, brokers \$11.25, exchange \$11.25. Lead is dull, brokers \$3.50, exchange \$4. Tin is firmer, straights \$22.95 to \$23.25. Plates steady.

**BUFFALO PIG IRON MARKET.**—Office of Rogers, Brown & Co., Buffalo, N.Y., January 14, 1902.

There is a fair degree of activity in pig iron buying. The large majority of consumers in this section have now covered for the first half of the year, and to a certain extent, for the last half, so that the volume of business in this locality cannot be expected to be as large in the near future as it has been in the past.

The many circumstances which have contributed to a reduction in the production of pig iron are still in existence to effect this field as well as others in the supply of pig iron for prompt shipment. Such deliveries still command a premium over future deliveries and every effort is being made by the furnaces to put out the largest possible product. The melting of iron in the foundries and mills is at a rate unusual if not unprecedented at this season of the year.

The railroad situation appears to be easing up somewhat, but coke is extremely difficult to obtain and many foundries have been on the ragged edge while a few have been shut down for a time to await the arrival of fuel to melt their iron.

Prices are strong at the figures given below, which are on the cash basis, f.o.b. cars, Toronto, in bond:

Lake Superior Charcoal .....	\$20 00
Standard Southern Charcoal ....	20 25
No. 1, X, Tonawanda Scotch ....	18 25
“ 2, “ “ “ “ “ “ “ “ “ “	17 75
“ 1, “ “ “ “ “ “ “ “ “ “	18 25
“ 2, “ “ “ “ “ “ “ “ “ “	17 75
5% Silicon Mannie softener....	17 25
3% Silicon Mannie softener....	16 75
Connellsville 72 hour Foundry coke .....	5 20

**BRITISH PIG IRON MARKETS.**—Messrs. Wm. Jacks & Co., 49 Leadenhall street, London, E.C., England, under date of January 2, 1902, quote as follows: Since

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writing you last the pig iron warrant market has been adversely influenced by the failure of a firm on the London Metal Exchange who were largely interested in Scotch warrants but the prospects for the new year are bright taking into account the fact that the Dominion Iron Co's production of pig iron will be diverted to the United States and the exceptionally well filled order books of the pipe foundries.

Prices are as undernoted:—No. 1 Gartsherrie pig iron, 66/6 per ton f.o.b., Glasgow; No. 3 Gartsherrie 56/6 per ton f.o.b., Glasgow; Nos. 1, 2 and 3 Cumberland Hematite 65/-f.o.b., Liverpool, to special analysis 69/-per ton; refined D.T.N. iron small pigs, 82/6 per ton f.o.b. Liverpool.

**NICKEL CURRENCY IN URUGUAY.**—The Government of the Republic of Uruguay have changed all of its copper 1, 2, and 4 cent coins, substituting therefor nickel coins, which were "made in Germany." The face value of these coins is \$500,000 exceeding by about \$200,000 the recent copper coinage. There is a minor paper currency—redeemable in silver—of \$2,369,000, consisting of 50-cent, \$1, and \$5 notes, and also a subsidiary issue of 10-cent, 20-cent, 50-cent, and \$1 silver pieces, much of which is held as a redemption fund for the paper currency. The \$10 notes and those above are gold notes and are always at par.

**FARM HARDWARE.**—Beneath the spreading chestnut tree the village blacksmith stood, a-shoeing Higgin's old brown mule the best way that he could.

Beneath the spreading chestnut tree the mule, with smile divine, still stood, the while the blacksmith soared beyond the county line.

**DOMINION BANKING STATISTICS.**—At the close of the fiscal year, ending with June 30, 1901, the balance at the credit of the depositors in the Dominion Post-office and Government Savings Banks amounted to \$56,048,957.06, an increase of \$2,899,234.66 over the balance held on June 30, 1900. Part of this increase,

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ONTARIO WIND ENGINE and PUMP CO.  
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**BALE'S Fire Cement**

FOR LINING AND REPAIRING STOVES, FURNACES, RETORTS

And all work where great heat is required.

BALE & CO., Newgate St., LONDON, ENG.  
GAS PURIFICATION and GENERAL IRON MERCHANTS



**ELECTRIC LIGHTING**

Before deciding on your system, give us a chance to figure—it may save you anxiety and many dollars.

SEND A POST CARD

And we will furnish you with full information and prices.

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Book, Writing Envelope and Cover PAPERS



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St. Catharines, Ont.

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MANAGING DIRECTOR.

**"GENUINE OAK" BELTING**

More SOLID LEATHER to the Foot than any Belt made.

**"LANCASHIRE" HAIR BELTING**

FOR EXPOSED SITUATIONS

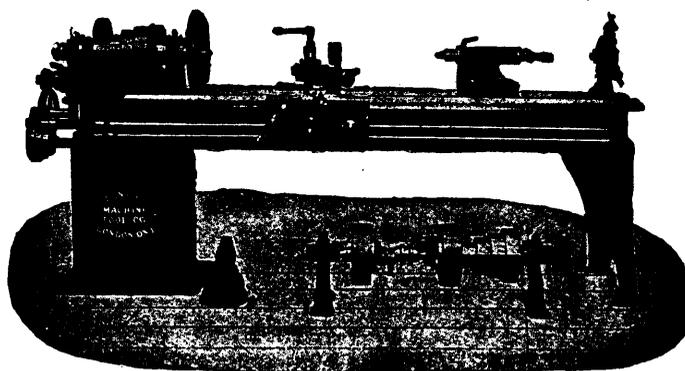
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Western Trade, - TORONTO STOCK DEPOT, 88 Bay Street.

**The London Machine Tool Co., LONDON, ONT.**



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**General Machinery**

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THEY WILL SAVE YOU 10 ON YOUR INSURANCE

Established 1842

**The E. HOWARD CLOCK CO.** 395 to 403 Washington St., BOSTON 41 and 43 Maiden Lane, NEW YORK

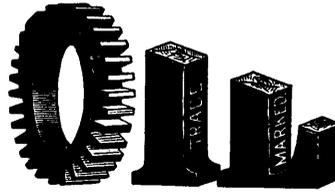
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"RENOWN" ENGINE

"ATLANTIC" RED

RELIABLE WELL-KNOWN BRAND

ALL ORDERS PROMPTLY FILLED



THE **QUEEN CITY OIL CO.** LIMITED  
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MONTREAL, CANADA (LIMITED)

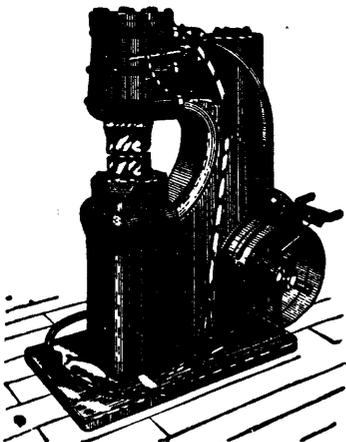
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ELECTRIC LIGHT LINE WIRE,  
INCANDESCENT AND FLEXIBLE CORDS,

### RAILWAY FEEDER and TROLLEY WIRE

RUBBER-COVERED, MAGNET, OFFICE AND  
ANNUNCIATOR WIRES.

CABLES FOR AERIAL and UNDERGROUND USE.



### The "YEAKLEY" Vacuum HAMMER, Patented

Is unique and unequalled by any other  
Power Hammer for its Simplicity, Power,  
Ease in Operating and Fewness of Parts;  
Nothing to Break, no Steam to Leak, no  
Pipes to Freeze, no Delays, no Expense  
for Repairs.

SEND FOR CATALOGUE.

### GEORGE BRUSH

SOLE CANADIAN MANUFACTURER,  
MONTREAL

## PACKARD

ELECTRIC  
COMPANY  
LIMITED

MAKERS OF

# LAMPS AND TRANSFORMERS

SOLE AGENTS FOR CANADA

SCHIEFFER RECORDING WATT METERS

ST. CATHARINES, - CANADA

\$1,589,761.05, represents interest added to the various accounts, and the remainder, \$1,309,473.61, the excess of receipts over withdrawals. Dominion notes to the amount of \$27,671,452.05 were outstanding on June 30, 1901, as against \$26,094,923.52 on June 30 of the previous year, or an increase of \$1,576,528.53. The increasing volume of the business of the Dominion, the Deputy Minister of Finance says, is doubtless the principal cause of this expansion of the circulation, but a part of it is apparently attributable to the fact that the chartered banks are approaching the limit of the circulation allowed by the terms of the bank act, and are using Dominion issues where ordinarily their own notes would be employed.

EVOLUTION OF THE HARDWARE BUSINESS.—Present time management of the hardware business is the result of successful evolution. A stock of goods such as is now carried by a representative dealer would produce, by its extent and variety, a sensational effect on the hardwareman of fifteen or twenty years ago; he would not be acquainted with one-half of them and might require an introduction to many of the others.

The world is enlarging and its wants are increasing in proportion to its growth. Profits may not be so large as a decade or so ago, but sales are more active and results more certain, a condition brought about by a variety of circumstances uniting for the one purpose but in which the forcible factor has been the conservative buying policy followed by the dealers.

Simply because of the greater conveniences in procuring goods, it is now possible to transact a much heavier business on a certain amount of capital than was the case when goods were bought in large quantities and the money for their purchase was tied up until they were sold.—Ironmonger's Chronicle.

ZANZIBAR PAINT.—The manufacturers of Zanzibar paint advise us that they now quote Zanzibar black at 75 cents to \$1.00 per gallon, and Zanzibar in colors at \$1.25 per gallon.

AUSTRALIAN FREIGHT RATES.—Mr. J. S. Larke, the ever watchful Canadian Commercial Agent at Sydney, Australia, remembering that the new customs act of the Australian Commonwealth discriminated against Canadian exports by adding the inland freight charges from shipping point to Vancouver, to the value of the goods for duty, while refraining from imposing such regulation upon goods shipped via New York, took action, with the result set forth in a letter addressed by him to Mr. D. McNicoll, general manager of the Canadian Pacific Railway Co., as follows:—

DEAR MR. MCNICOLL,—Under the new Customs Act of the Commonwealth Government, it was decided to add inland freight charges to the value of the goods for duty. This was a serious differentiation of Canadian goods shipped over your road via Vancouver. As much as 20 per cent. of the value of the goods was thus added on some shipments that came to

hand after the act came into force. I took the matter up with the Government, and am glad to say that it accepted my view of the wrong done to Vancouver and the Canadian Pacific, and I am advised that this provision has been rescinded, and that the value of goods for duty will be the marketable value of the goods in the country where they originated, and 10 per cent. added for freight. As this applies to all goods from whence shipped or by what route they come, it places your route upon fair lines.

As some agents may have written to their principals informing them of the original clause and recommending them not to ship by Vancouver, I write by first mail that you may be able to make the change publicly known.

I presume I may hope to see your representative here shortly. There is work for him to do. Yours very truly,  
J. S. LARKE.

**BRITISH-CANADIAN TRADE.**—The trade returns for the year ending December 30 shows the following increase in British imports from Canada:—Sheep and lambs, £43,000; wheat, £9,000; wheat flour, £58,000; butter, £367,000; wood pulp £65,000.

The decreases in imports are:—Cattle, £314,000; oats, £90,000; peas, £41,000; maize, £593,000; bacon, £154,000; hams, £142,000; cheese, £101,000; eggs, £33,-

**NUMBER OF BUSINESS EMBARRASMENTS IN CANADA.**—As reported to Bradstreet's, for two years, with assets and liabilities.

PROVINCES.	No. of Failures.		Assets.		Liabilities.	
	1901	1900	1901	1900	1901	1900
Ontario.....	495	522	\$1,669,823	\$1,170,719	\$3,784,451	\$2,867,355
Quebec.....	478	508	1,467,930	2,078,688	3,938,804	5,858,239
New Brunswick.....	76	35	720,360	78,800	1,530,250	200,700
Nova Scotia.....	112	58	245,918	188,700	449,564	331,107
Prince Edward Island.....	10	3	49,900	30,700	81,000	47,800
Manitoba.....	71	77	129,320	331,294	354,045	715,967
Northwest Territories.....	26	18	103,250	66,826	187,773	133,387
British Columbia.....	102	112	810,450	299,205	1,351,050	631,721
Totals Canada.....	1,370	1,333	\$5,196,951	\$4,244,932	\$11,686,937	\$10,786,276

000; fish, £238,000; hewn wood, £106,000; sawn wood, £608,000; animals, £39,000.

The chief increases in British exports to Canada are:—Spirits, £6,000; cotton, piece goods, £70,000; jute, piece goods, £19,000; silk manufactures, £10,000; woollen tissues, £25,000; worsted tissues, £103,000; carpets, £8,000; railway iron and steel, £218,000; galvanized sheets, £50,000; cast and wrought iron, £17,000; old iron, £27,000; lead, £8,000; apparel and slops, £35,000; earthenware, £11,000; stationery, £9,000.

The chief decreases in exports are:—Salt, £11,000; wool, £8,000; linen, piece

goods, £10,000; lace, £11,000; cutlery, £8,000; hardware, £6,000; tin plates, £93,000; unwrought steel, £25,000; unwrought tin, £14,000; haberdashery, £27,000; cement, £24,000; seed oil, £6,000.

The total value of the imports of Great Britain for 1901 amounted to £522,238,986, a decrease of £836,177, and the exports at £280,498,839, a decrease of £10,693,107, for the year. The falling off in exports is mainly accounted for by the lower value of coal. In 1900 46,000,000 tons of coal, valued at £38,500,000, were exported; last year 43,750,000 tons, valued at £30,250,000.

# The Whitman & Barnes Manufacturing Co.

MANUFACTURERS OF

Mower Knives,  
Reaper Knives,  
Binder Knives,  
Paper Knives,  
Veneer Knives,  
Wood-working  
Knives,  
Straw Cutter  
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Twist Drills,  
Spring Keys and  
Cotters,  
Hammers,  
Hatchets,  
Sledges,  
Masons'  
Hammers,  
Wrenches,  
Thresher Teeth.

SPECIAL WOOD-WORKING KNIVES

WE MAKE THE BEST AND GUARANTEE OUR GOODS

St. Catharines, Ont.

*The centrifugal motion of wet steam in the*

## STURTEVANT EXHAUST HEAD

*causes the water to be thrown outward with*

# 1600 TIMES

*the force acting on the steam*

### SEPARATION IS ABSOLUTE

NO BAFFLE PLATES TO WORK LOOSE  
NO BACK PRESSURE  
NO SPRAY  
NO ROTTING ROOFS



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One 25-light Reliance Arc Dynamo, in first-class condition.

One 60-light Royal type Transformer, 1040 Volts to 110.  
*Newly Re-wound.*

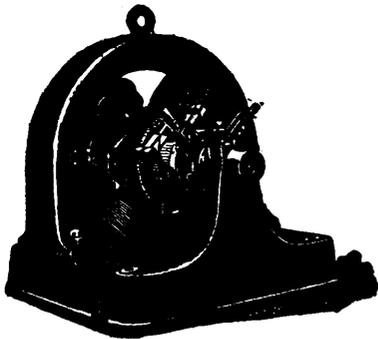
Three 10-light Shellenberger Watt Meters.

Two 20-light Duncan Watt Meters.

THE ABOVE WILL BE SOLD CHEAP

Address CORPORATION OF MITCHELL,  
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### MOTORS and DYNAMOS

MODERATE and SLOW SPEED OF HIGH EFFICIENCY.  
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GASOLINE ENGINES

For Launches, Horseless Carriages, etc

CORRESPONDENCE SOLICITED.

**THE TANNING INDUSTRY.**—A healthy condition of trade has existed in the tanning industry during the past year, according to the report of Mr. W. J. Bickell, chairman of the tanners' section of the Board of Trade, presented at the annual meeting of the section held last week.

Not many fluctuations, Mr. Bickell states, had been experienced in the tanning industry the past year. The prices of harness leather were somewhat demoralized until after the meeting of the section held in July last, since which time prices advanced to a higher level, but the close of the year leaves the tanner with little or no margin of profit at the prevailing prices.

The principal feature of the trade in sole leather had been a change in the demand from light to heavy leather. The export trade in sole as well as black leather, particularly splits, had been very good, although on a small margin of profit.

The part which the tanners took in connection with the war in South Africa was commented upon by Mr. Bickell, who remarked that thousands of sides of our leather were made into saddles and other military accoutrements, as well as considerable quantities of boots, leggings, etc., and as far as we can learn proved entirely satisfactory. We should feel proud that we can manufacture leather, and that we have connected with our trade men who can build military accoutrements that will pass the strict examination of the military authorities at Southampton. Instances have been cited in which shoes made in Canada have seen a full year's service in South Africa, and returned in fair condition. Similar reports have been made by different officers regarding the saddles and other military equipment of Canadian manufacture, which gave universal satisfaction to the troops.

The election of officers for the current year resulted as follows:—Mr. C. G. Marlatt, Oakville, Ont., Chairman; Mr. F. T. Daville, Mayor of Aurora, Ont., Vice-Chairman; Mrs. Agnes C. Gray, Secretary-Treasurer.

Executive Committee—Messrs. A. G. Beardmore, Toronto; George C. H. Lang, Berlin, Ont.; A. R. Clarke, Toronto; John Welsh, Hastings, Ont.; Jas. Newton, Newtonville, Ont.

Inspection and Arbitration Committee—Messrs. C. J. Miller, Orillia, Ont.; L. J. Breithaupt, Berlin, Ont.; Geo. McQuay, Owen Sound, Ont.; S. R. Wickett, and W. D. Beardmore, Toronto.

**CANADIAN BANKS.**—Note circulation of Canadian banks at end of November:—

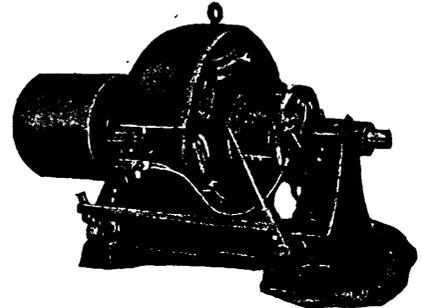
1896	\$35,262,599
1897	40,143,878
1898	42,350,948
1899	47,839,506
1900	51,947,269
1901	57,741,566
Legal limit of note circulation.	66,176,941
Available amount of notes held by banks at end of November, 1901	8,435,375

Increased business activity has taxed the capacity of the Canadian banks to the

utmost, and in the case of many their note circulation has practically reached the legal limit. Last month with a capitalization permitting the issuing of notes to the total of \$66,176,941, the Canadian banks had at one time notes in circulation amounting to \$60,397,097, and at the end of the month the note circulation amounted to \$57,741,566, or within \$8,435,375 of the legal limit. Of this surplus amount \$3,605,185 was held by the Bank of Montreal. Many of the banks have put practically all their available notes into circulation, and have at times paid cheques in any bank notes they chanced to have on hand. In some cases, knowing their notes were practically all out and earning interest, no attempt was made at the banks to separate the notes,

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We manufacture Direct Current Machinery in all sizes and for any purpose.

20 and 22 ADELAIDE W., TORONTO.

## KERR'S

### "WEBER" VALVES

ARE THE GENUINE VALVES OF THAT NAME.

ALL OTHERS ARE IMITATIONS.

BE SURE AND GET THOSE MADE BY

## THE KERR ENGINE CO.

LIMITED

WALKERVILLE, - ONTARIO

calls for money being met by any notes in the cashier's charge.

Should a merchant be forced by growth of business to supply customers by borrowing goods from rivals, he would enlarge the capacity of his store. If the demand for manufactured articles exceeded the steady supply, factories would be enlarged or additional ones built. Canada's commercial needs seem to demand increased supplies of money, either by increasing the capitalization and so the note circulation power of the present, or by the establishment of additional banks.

That more money could be profitably employed is shown by the recent additions to the capital of several banks, resulting in correspondingly enlarged earning power. The suggestion put forward at a recent bank meeting that application be made to parliament for permission to issue notes equal in face value to the amount of reserve fund might, in case of opposition, be carried out by splitting up the reserve and distributing it as bonuses to shareholders in the form of paid-up stock. At present notes may only be issued to like amount as the paid-up capital stock of the several banks, with the exception of the Bank of British North America and the People's Bank, which are restricted to a circulation of 75 per cent. of the capital, as an offset to the absence of double liability of shareholders. Under present regulations a bank may have a reserve fund in the millions, and yet have no correspondingly greater note issuing powers than a bank with a reserve

in the thousands. The Canadian banks have reserve funds totalling \$37,074,774.

**NEW BRITISH POSTAGE STAMPS.**—We are in receipt of letters from Great Britain bearing the new red penny stamps. They show a profile of King Edward VII. It was executed by Emil Fuchs, the sculptor who went to Osborne after the death of Queen Victoria, to make a cast of Her Majesty's face. The features of the King are thrown into strong relief by being incased in a deeply shaded oval. The profile faces, the left, like that of the late Queen on the old stamps. On the left side of the oval is a curved branch of bay leaves, with berries; and on the right is a branch of oak. The change from lavender, the previous color of the British penny stamp, to red, which is the color of the new one, is to bring Great Britain into line with the other countries of the postal union. At a distance the new King Edward stamp might be mistaken for the United States red two cent stamp.

**BUSINESS CHANGES.**

FROM BRADSTREETS.

**ONTARIO.**

BRAMPTON—Brampton Gas Co., assigned.  
 CARGILL—Cargill Sugar Co., obtained charter.  
 DURHAM—Durham Natural Gas & Oil Co., obtained charter.  
 GANANOQUE—Morden Mfg. Co., office files, etc., burned out.  
 HAMILTON—John Calder & Co., winding-up order granted.  
 Canadian Steel & Wire Co., obtained charter.  
 Chipman-Holton Knitting Co., obtained charter.

OTTAWA—Ottawa Show Case Co., mfrs., assigned.  
 OWEN SOUND—T. A. Kennedy, sash and door factory, advertised business for sale.  
 TORONTO—Adamson Moulding Co., bailiff in possession.  
 Canada Woolen Mills, slight damage by fire and water at Hespeler mill.  
 Bickell & Wickell, tanners and leather, dissolved Bickell, retired, charter being applied for under style Wickell & Craig, to continue business.  
 Dominion Mill Stock Co., meeting of creditors.  
 Ontario Sugar Co., obtained charter.  
 Diamond Machine & Screw Co., assets advertised to be sold.  
 UNIONVILLE—D. & G. Herrington, planing mill, etc., dissolved, D. Herrington continues.

**QUEBEC.**

FULFORD—Fulford Lace Leather Co., assets to be sold.  
 HULL—George Daglish, sr., mfr. matches, assets to be sold.  
 MAISONNEUVE—E. V. Demers & Co., foundry, registered.  
 MONTREAL—Centaur Co., registered as incorporated.  
 Dominion Subway Co., obtained charter.  
 Excelsior Wrapper Mfg. Co., stock damaged by fire.  
 Smith, Paterson Co., obtained charter.  
 Tetrault Sewing Machine Co., assets to be sold.  
 Newbold Bros., mfrs. hosiery, etc., dissolved.  
 Knapp Tubular Steamship, applied for charter.  
 Richard Co., mfrs. clothing, etc., applied for charter.  
 NEW RICHMOND—New Richmond Lumber Co., applied for charter.  
 ST. JOHNS—Corticelli Silk Co., registered as incorporated.  
 TERREBONNE—Matthew, Moody & Sons Co., mfrs. agricultural implements, applied for charter.  
 VALCOURT—Beaudry, Racicot & Peltier, saw mill, etc., dissolved.  
 Peltier & Cousineault, saw mill, etc., registered.

**NOVA SCOTIA.**

AMHERST—Christie Bros. & Co., mfrs. coffins, etc., company organized.  
 Rhodes, Curry & Co., builders, etc., damaged by fire.

**BRITISH COLUMBIA.**

GREENWOOD—Chicago Copper and Smelting Co., incorporated.

“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.

**Northrop Iron Works**

**IRON and BRASS FOUNDERS**

Heating and Ventilating Engineers,

OFFICE and SHOWROOMS :  
 296  
 ST. JAMES STREET,  
 MONTREAL  
 Phone Main 4180



WORKS and HEAD OFFICE :  
 Valleyfield, P.Q.  
 Canada  
 Phone No. 2

MANUFACTURERS OF

“HANDY” ELEVATORS  
 STEAM, HOT WATER and GAS RADIATORS  
 “HANDY” DUMB WAITERS  
 SECTIONAL HEATING BOILERS  
 PLAIN AND AUTOMATIC LOOMS  
 SPOOLERS, WARPERS  
 FIRE DOOR FIXTURES

SANITARY OUTFITS FOR MILLS AND FACTORIES  
 VENTILATING and EXHAUST FANS  
 TOOL GRINDING MACHINERY  
 NICKEL AND BRONZE PLATING  
 PATENT HANGERS AND COUPLINGS  
 MODEL AND PATENT MACHINERY

WRITE FOR QUOTATIONS

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



**CROW BARS.**—Duty 30%.  
5 cents per lb.

**CRUCIBLES.**  
Dixon's, 7 cents per number.

**DRILLS.**—Duty 25%.  
Blacksmiths' \$6 to \$15 each.  
Jardine's, \$7.50 to \$20 each.

**DYES (Aniline).**

**DYNAMITE.**  
30 to 50 cents per lb.

**EMERY.**  
Coarse, 7 cents per lb.  
Fine, 5 cents per lb.

**EMERY CLOTH.**—Duty 25%.  
Beader & Adamson, 40% discount.

**EMERY HONES.**—Duty 25%.  
\$3 to \$5 per doz.

**EMERY STEELS.**—Duty 25%.  
\$2 per doz.

**EMERY WHEELS.**—Duty 25%.  
65% discount.

**EXPANDERS.**—Duty 30%.  
Tube, Dudgeon, 33½ discount.

**FAUCETS.**—Duty 30%.  
Brass, \$2.50 to \$5 per doz.  
Wood, 60c. to \$1.00 per doz.

**FENCING.**  
Barb Wire, \$3.05 per 100 lbs.

**FENCING (Wire).**—Duty 15%.  
Galvanized, barb, f. o. b. Toronto, \$3.05.  
Galvanized, plain twist, f. o. b. Toronto, \$3.05.  
Galvanized, barb, f. o. b. Cleveland, \$2.82½ in less than car lots, and \$2.70 in car lots.  
Mesh, 5½x1½, 20 rod rolls 55% discount, Can. list.  
" 4 x 8, 20 " 50 & 5% "  
" 3 x 6, 20 " 55 & 5% "

**FERRULES.**—Duty 30%.  
Tool handle, 5c. & 6c. per lb.

**FILES.**—Duty 30%.  
Black Diamond, 50 and 10% discount.  
Globe, 70% discount.  
Grobet, net.  
Jowitt's, 25% discount.  
Nicholson, 50 & 10% discount.  
Stubbs', 15% discount.

**FITTINGS (Pipe).**—Duty 30%.  
Bushings, 55% discount.  
Cast Iron, 55% discount.  
Cocks, 60  
Elbows, tees, crosses, couplings, lock nuts, re-  
turn bends, 50% discount.  
Flanges, 55% discount.  
Nipples, 55 "  
Plugs, 55 "  
Unions, 55 "  
Wrought Iron, 50% discount.

**FLUE SCRAPERS.**—Duty 30%.  
Engineers' Favorite, 40% discount.  
Inglis, 20% discount.  
Wire, 50 "

**FORKS, HOES AND RAKES.**—Duty 25%.  
50, 10 and 5% discount.

**FUSE.**  
Blasting, Single tape, \$3.75 per M ft.  
Double tape, \$5 per M ft.

**GASKETS.**—Duty 35%.  
Rubber Insertion, 60 cents lb.

**GAUGE GLASSES.**—Duty 30%.  
Water, 25% discount.

**GAUGES.**—Duty 30%.  
Steam, 50% discount.

**GLASS**—Duty 20%. (Window—Box Price).  
Star, under 26 in., \$2.15 per 50 ft., \$4.15 per 100 ft.; 26 to 40 in., \$2.30 per 50 ft., \$4.45 per 100 ft.; 41 to 50 in., \$4.85 per 100 ft.; 51 to 60 in., \$5.15 per 100 ft.; 61 to 70 in., \$5.50 per 100 ft.; 71 to 80 in., \$6 per 100 ft.; 81 to 85 in., \$6.50 per 100 ft.  
D. Diamond, under 26 in., \$6 per 100 ft.; 26 to 40 in., \$6.65 per 100 ft.; 41 to 50 in., \$7.50 per 100 ft.; 51 to 60 in., \$8.50 per 100 ft.; 61 to 70 in., \$9.50 per 100 ft.; 71 to 80 in., \$10.50 per 100 ft.; 81 to 85 in., \$11.70 per 100 ft.; 86 to 90 in., \$14 per 100 ft.; 91 to 95 in., \$15.50 per 100 ft.; 96 to 100 in., \$18 per 100 ft.  
Glass Demijohns or carboys, empty or filled, bottles, decanters, flasks, phials, glass jars, lamp chimneys, glass shades or globes, cut, pressed or moulded crystal or glass tableware, decorated or not, and blown glass tableware—Duty 30%.

**GLASS LAMP CHIMNEYS**—Duty 30%.  
Common Crimp, per doz. O, 43 cents.  
" " " " A, 45 "  
" " " " B, 65 "  
" " " " C, 75 "  
Lead Glass, " " " " A, 50 "  
" " " " B, 75 "

**FRUIT JARS**—Duty 30%.  
Standard pints, \$7.25 per gross.  
" quarts, \$7.75 per gross.  
" half gal., \$10.00 per gross.  
Imperial pints, \$7.75 per gross.  
" quarts, \$8.75 per gross.  
" half gal., \$12.00 per gross.

**GLUE.**—Duty 25%.  
Cabinet, sheet, 12 to 13 cents per lb.  
Common, 8½ to 9 cents per lb.  
Coopers', 19 to 20 cents per lb.  
French Medal, 14 to 14½ cents per lb.  
Gelatine, 22 to 30 cents per lb.  
Huttner, 18 cents per lb.  
Strip, 18 to 20 cents per lb.  
White, extra, 18 to 20 cents per lb.  
LaPage's, 25% discount.  
Progressive, 25 "

**GOVERNORS.**—Duty 25%.  
Gardners', 25% discount.

**GRANITWARE.**—Duty 35%.  
Firsts, 50% discount.

**GRAIN CRADLES.**—Duty 25%.  
With Scythes complete \$33 per doz.  
Without scythes, \$18.50.

**GRINDSTONES.**—Duty 25%.  
Large, \$1.75 per 100 lbs.  
Mounted, \$3 to \$3.50 each.  
Small, \$1.50 per 100 lbs.

**HALTER MOUNTINGS.**—Duty 30%.  
1x1½ inch, 10c. per lb.  
(Evans), 1x1½ in., doz. set packages, \$8.00 per gross.

**HALTERS.**—Duty 30%.  
Leather, 1 in. strap, \$3.87½ to \$4 per doz.  
Leather, 1½ in. strap, \$5.15 to \$5.20 per doz.  
Rope, ½, \$9 per gross.  
Rope, ¾ to 1, \$14 per gross.  
Web, \$1.87 to \$2.45 per doz.

**HAMMERS.**—Duty 30%.  
Blacksmiths', 10 cents per lb.  
Carpenters', Madoles', \$6.40 to \$8.75 per doz.  
Carpenters', Warnock's, \$4 to \$7.50 per doz.  
Machinists', 22 cents per lb.  
Sledge, 10 cents per lb.  
Tack, 60 cents to \$1.20 per doz.  
Tinners', \$4 to \$6.50 per doz.

**HANDLES.**—Duty 25%.  
Axe, \$1.50 to \$2.50 per doz.  
Chisel, \$3.50 to \$5 per gross.  
Cross-cut saw, \$2 to \$3 per doz.  
File, \$2 to \$2.50 per gross.  
Hammer, 50 cents to \$2 per doz.  
Pick, \$1.50 to \$2.50 per doz.  
Plane, \$3.50 per gross.

**HANGERS.**—Duty 30%.  
Barn Door, round groove, \$4.50 to \$6.50 per doz.  
Lanes, \$6.75 to \$12 per doz.  
Parlor door, \$3 to \$6 per set.  
Stearns, \$5.50 to \$6.50 per doz.

**HARVEST TOOLS.**—Duty 25%.  
Forks, 50 & 10% discount.  
Rakes, 50 & 10 "  
Hoes, etc., 50 & 10 "

**HATCHETS.**—Duty 30%.  
Canadian, 40 to 42½ discount.

**HAY KNIVES.**—Duty 25%.  
50, 10 and 5% discount.

**HINGES.**—Duty ½ cents per lb., & 25%.  
Blind, Parker's, 50 & 10 to 60% discount.  
Heavy T and strap, 4 in., 6½ cents per lb.  
" " " 5 in., 6½ " "  
" " " 6 in., 6 " "  
" " " 8 in., 5½ " "  
" " " 10 in., 5½ " "  
Light T and strap, 65 & 5 off.  
Screw hook and hinge, 6 to 12 in., \$4.50 per 100 lbs.; 14 in. up, \$5.50.  
Spring, \$12 per gross pairs.

**HOES.**—Duty 25%.  
Grub, \$5 to \$6 per doz.

**HOOKS.**—Duty 30%.  
Brush, \$7.50 to \$9.  
Reaping, 50, 10 and 5% discount.  
Chain, wrought, round or grab, \$3 & \$4.50 per doz.  
Lumber Piling, \$7 to \$19 per doz.  
Malleable, wardrobe, \$1.50 to \$2.50 per gross.  
Wire, " " \$1.25 to \$2

**HORSE NAILS.**—Duty 30%.—See Nails.

**HORSE SHOES.**—Duty 30%.  
Lt. Med. & H., \$3.40 per keg.  
Snow, \$3.95 per keg.  
Steel, \$3.80 to \$5.25 per keg.  
Toe weight steel, \$6.15 per keg.

**HOSE.**—Duty 35%.  
City Standard, 70% discount.  
Phoenix, 60% discount.

**INJECTORS.**—Duty 30%.  
Pemberthy, 65% discount.  
I. J. C., 65% discount.

**IRON.**—See Metals.

**JACKS.**—Duty 30%.  
Lifting, 40% discount.

**KEYS.**—Duty 30%.  
Carpenter, 50 cents to \$1.25 per doz.  
Desk, 25 to 35 cents per doz.  
Mortise Lock, 25 cents to \$1 per doz.  
Padlock, 25 to 35 cents per doz.  
Rim Lock, 25 cents to \$1 per doz.

**KNIVES.**—Duty 30%.  
Butcher, \$2 to \$5 per doz.  
Pocket, \$1 to \$5 per doz.

**KNOBS.**—Duty 30%.  
Door, Bronze, \$7 to \$12 per doz.  
" White Porcelain, 90 cents per doz.  
" Wood, \$4.50 per doz.

**LACING.**—Duty 15%.  
Belt (Raw Hide Cuts), \$1 per lb.  
" (Leather Side Cuts), 75 cents per lb.

**LADDERS.**—Duty 25%.  
Step, 10 cents per foot.  
Rung, 10 cents per foot.

**LAND ROLLERS.**—Duty 20%.  
\$12 to \$15 each.

**LANTERNS.**—Duty 30%.  
Cold Blast, \$7 per doz.  
Dashboard, cold blast, \$9 per doz.  
Japanned, 50 cents per doz. extra.  
No. 0, \$5.75 per doz.  
No. 3 "Wright's", \$8.50 per doz.  
Ordinary, with O burner, \$4 per doz.

**LAWN MOWERS.**—Duty 35%.  
Pennsylvania, 50% discount.  
Stearns, 50 "  
Woodyatt, 40 "

**LEAD (Bar and Strip).**—Duty 25%.—See Metals.  
Lead, pig.—See Metals.

**LEAD.**—Duty 5%.  
Red and White, dry.—See Paints.

**LINES (Cotton).**—Duty 25%.  
Chalk, \$2 to \$3.50 per gross.  
Wire, clothes, \$2.50 to \$4.50 per M ft.

**LOCKS.**—Duty 30%.  
Cupboard, \$1.50 per doz. up.  
Desk, \$1.50 per doz. up.  
Drawer, \$1 per doz. up.  
Padlocks, 75 cents per doz. up.  
Rim and Mortise, Peterboro, \$1.50 per doz. up.  
Amer., \$1.50 per doz. up.

**MALLEABLES.**—Duty 30%. See Castings.

**MALLETS.**—Duty 30%.  
Carpenters', hickory, \$1.25 to \$3.75 per doz.  
Caulking, 60 cents to \$2 each.  
Lignum Vitae, \$3.85 to \$5 per doz.  
Tinsmiths', \$1.25 to \$1.50 per doz.

**MATTOCKS.**—Duty 30%.  
Canadian, \$5.50 to \$6.50 per doz.

**MEAT CUTTERS.**—Duty 30%.  
Amer., 25 to 30% discount.  
German, 15% discount.

**METALS.**  
Ingots.—Aluminium, 35 to 50 cents per lb.  
Antimony (Cookson's), 10½ to 11 cents per lb.  
" Copper, "English", 18 cents per lb.  
" " Bar, 25 cents per lb.  
" Tin, "Lamb & Flag", 32 cents per lb.  
" " Straits, 32 cents per lb.  
" " Bar, 33 cents per lb.  
" Zinc, 6 to 6½ cents per lb.; sheets, 7 cents per lb.  
Babbit Metal (duty 10%).  
Lewis, 7 to 10 cents per lb.  
Magnolia, 25 cents per lb.  
Post's Zero, 25 cents per lb.  
Spooners' Copperine, No. 2, 12½ cents per lb., finest, 25 cents per lb.  
Syracuse Smelting Works, dynamo, 29 cents per lb.; special, 25 cents per lb.  
Sheets, Black, Duty \$7 per ton.  
" 10—\$2.65, 100 lbs.  
" 12—\$2.75, "  
" 14—\$3.10, "  
Sheets, Black, Duty 5%.  
" 17—\$3.10, 100 lbs.  
" 18—\$3.20, "  
" 20—\$3.25, "  
" 22—\$3.30, "  
" 24—\$3.50, "  
" 26—\$3.75, "  
" 28—\$4.00, "  
Sheets, Tinned—7½ cents per lb., Base price.

## METALS—Continued.

Sheets, Galvanized Iron.  
 17—\$3.80 per 100 lbs.  
 18—\$3.90  
 20—\$3.90  
 22 to 24—\$4.10 per 100 lb.  
 18 to 24—\$4.50  
 26—\$4.25 per 100 lb.  
 28—\$4.50  
 16—(Queen Head), \$3.90 per 100 lb.  
 18-22-24—(Queen's Head), \$4.15 per 100 lb.  
 26—\$4.40 per 100 lb.  
 28—\$4.65  
 Sheets, Corrugated—Galv., \$4.50 per 100 sq. ft.  
 Shafting, Bright Steel.—\$3.50 per 100 lb.  
 Shingles, Galv. Iron, Ordinary, \$4.90 per sq. Medium, \$5.45  
 " " Best, \$5.80  
 " Painted Steel, Ordinary, \$3.15 per sq. Medium, \$3.35  
 " " Best, \$5.80  
 Iron (duty \$7 per ton).  
 " Angle.—\$2.75 per 100 lb.  
 " Bar (Common).—\$1.95 @ \$2.05.  
 " Bar, "Swedes."—\$4.50 per 100 lb.  
 " " Lowmoor.—\$6.50 per 100 lb.  
 " Refined Bar.—\$2.60 per 100 lb.  
 Iron, Plinished Sheet (duty 5%)  
 " "A"—\$6.00 per 100.  
 " "B"—\$5.00  
 " Russia—\$10.00 per 100 lb.  
 Iron, Galv. Sheet, see Sheets.  
 " " and Corrugated, see Sheets.  
 Pig Lead (duty 15%).—Domestic, \$3.75 per 100 lb.; pigs, imported, \$4.25 per 100 lb.; bars, \$5 per 100 lb.; sheets, \$5.50 per 100 lb.  
 Solder bar (duty 25%).—1st, refined, 18 cents per lb.; half-and-half, 18 cents per lb.  
 Iron, Pig (duty \$2.50 per net ton). \$16.50 @ \$17 per ton.  
 Iron, English Horse Shoe.—\$2.85 per 100 lb.  
 Iron, Band.—\$2.05 per 100 lb.  
 Iron, Hoop.—\$2.90 per 100 lb.  
 Beams, Steel.—\$3 per 100 lb.  
 Rods.—Brass, 24 cents per lb., base price; hard sheets, 20 to 30 cents per lb.; soft sheets, 20 to 30 cents per lb.  
 Rails, Small Steel.—\$3 per 100 lb.  
 Steel, Cultivator.—\$4.50 per 100 lb.  
 " Channel.—\$3 to \$4 per 100 lb.  
 " "Firths."—12 cents per lb.  
 " "Crescent."—9 cents per lb.  
 " Cant Hook.—74 cents per lb.  
 " Machinery (in the rough).—\$2.25 per 100 lb.  
 " Machinery.—\$2.75 per 100 lb.  
 " Mild.—\$1.90 per 100 lb.  
 " Sleigh Shoe.—\$1.90 per 100 lb.  
 " Spring.—\$3.00 per 100.  
 " Tire.—\$2.05 per lb.  
 " Toe Caulk.—\$2.20 per 100 lb.  
 Steel, Cast.—Firth's, 12 cents per lb.  
 Jessop's, 14 cents per lb.  
 Black Diamond, 12 cents per lb.  
 Silver, 15 cents per lb.  
 Mushets.—55 cents per lb.  
 Steel, Blister.—124 cents per lb.  
 Steel, Hammer.—7 cents per lb.  
 Steel, Decarbonized Sheet.—7 cents per lb., base.  
 Steel, Black Sheet, Duty \$7 per ton.  
 " 10—\$2.65, 100 lbs.  
 " 12—\$2.75, " "  
 " 14—\$3.10, " "  
 Sheets, Black, Duty 5%.  
 17—\$3.10, 100 lbs.  
 18—\$3.20, " "  
 20—\$3.25, " "  
 22—\$3.30, " "  
 24—\$3.50, " "  
 26—\$3.75, " "  
 28—\$4.00, " "  
 Tank Steel Plate (duty \$7 per ton). -3-16, \$2.60 per 100 lb.  
 Plates, Steel Boiler (duty 10%).—1 and larger, \$2.50 per 100 lb.  
 Steel Boiler Heads (duty 10%).—\$2.60 per 100 lb.  
 Canadian Plates.—All dull, 52 sheets, \$2.90; half polished, \$3.  
 MOPS.—\$1 per doz.  
 NAIL PULLERS.—Duty 30%.  
 German and American, \$1.85 to \$3.50 each.  
 NAILS.—Duty, cut, 1/2 cent per lb.; wire, 3-5 cent per lb.  
 Chair nails, 35% discount.  
 Clout nails, blued, 65 and 5% discount.  
 Coopers', 35% discount.  
 Copper nails, 52 1/2% discount.  
 Cut, 2d \$3.65; 3d, \$3.30; 4 & 5d, \$3.65; 6 & 7d, \$2.95; 8 & 9d, \$2.80; 10 & 12d, \$2.75; 16 & 20d, \$2.70; 30, 40, 50 & 60d (base), \$2.65.  
 Flour barrel nails, 30% discount.  
 Galvanizing, 2 cents per lb. net, extra.  
 Horse (C brand), 50 & 74% discount.  
 M brand, 50 & 10% discount.  
 Steel cut nails, 10 cents extra.  
 Trunk nails, black, 65 and 5% discount.  
 Trunk nails, tinned, 65 and 10% discount.  
 Wire, 2d \$3.85; 3d, \$3.50; 4 & 5d, \$3.25; 6 & 7d, \$3.15; 8 & 9d, \$3; 10 & 12d, \$2.95; 16 & 20d, \$2.90; 30, 40, 50 & 60d (base), \$2.85; fine, 3d, \$3.85.  
 Wire nails in car lots, \$2.77 1/2.  
 Miscellaneous wire nails, 70 & 10% discount.  
 NAIL SETS.—Duty 30%.  
 Assorted sizes, \$1.20 per doz.

## NETTING—Wire.—Duty 30%.

Galvanized, 50% discount.  
 Green wire, \$1.50 per 100 sq. ft.  
 Poultry, 2x2 mesh, 150 ft. roll, 55 off Canadian List.

## NOZZLES.—Duty 30%.

Hose (Brass), \$3.50 to \$5 per doz.

## NUTS.—Duty 1/2 cent per lb. &amp; 25%.

Finished, tapped, 25% discount.  
 Rough, square head, 4 cents per lb. from list.  
 Rough, hexagon head, 4 1/2 cents lb. from list.  
 Semi-finished, tapped, 25% discount.

## OAKUM.

Navy, \$7.80 per 100 lb.  
 Spun, \$9.30 per 100 lb.

## OIL.—Duty 25%.

Boiled Linseed Oil bbls., 86 cents per gal.  
 Cylinder Oil, from 40 cents up.  
 Lard Oil, bbls., 90 cents per gal.  
 Machine.  
 Prime White (Can.), 14 cents per gal.  
 Prime White (U.S.), 15 1/2 cents per gal.  
 Raw Linseed Oil, bbls., 83 cents per gal.  
 Sperm Oil, bbls., \$1.75 per gal.  
 Water White (Can.), 15 cents per gal.  
 Water White (U.S.), 16 1/2 cents per gal.

## OILERS.—Duty 30%.

\$1 per doz. up.

## PACKING.—Duty 35%.

Rubber Insertion, 60 cents per lb.  
 Rubber Sheet, 22 cents per lb.

## PACKING.—Duty 25%.

Asbestos, 35 cents per lb.  
 Flax, 35 cents per lb.  
 Hemp, 12 1/2 cents per lb.  
 Jute, 8 cents per lb.

## PAILS.—Duty 25%.

Galvanized Iron, \$2.50 to \$3.50 per doz.

## PAINTS.—Duty 25%.

Elephant Snow White, 8 to 9 cents per lb.  
 Pure White Zinc, 8 to 9 cents per lb.  
 No. 1, 6 to 7 1/2 cents per lb.  
 No. 2, 5 to 6 1/2 cents per lb.  
 Prepared in 1, 1/2 and 1-gallon tins, \$1.25 per gal.  
 Barn, in barrels, 75 to 85 cents per gal.  
 Canada Paint Co's Pure, \$1.25 per gal.  
 Second qualities, \$1.10 per gal.  
 Sherwin-Williams Paints, \$1.45 per gal.  
 Toronto Lead & Color Co's Pure, \$1.25 per gal.  
 Zanzibar, black, 75 cents to \$1 per gal.  
 colors, \$1.25 per gal.

## PAINTS.—Duty 30%.

Copper, \$3.50 per gal.

## LEAD, DRY WHITE.—Duty 5%.

Pure, in casks, \$5.75 per cwt.  
 Pure, in kegs, \$6.25 per cwt.  
 No. 1, in casks, \$5.50 per cwt.  
 No. 1, in kegs, \$5 per cwt.

## LEAD, WHITE.

Pure, \$6.37 per 100 lb.  
 No. 1, pure, \$6 per 100 lb.  
 No. 2, pure, \$5.62 per 100 lb.  
 No. 3, pure, \$5.25 per 100 lb.  
 No. 4, pure, \$4.87 per 100 lb.  
 Elephant and Decorators' Pure, \$7.12 1/2 per 100 lb.  
 Brandram's B.B. Genuine, \$9 per 100 lb.  
 " " Decorative, \$7.55 per 100 lb.  
 " " No. 1, \$6.85 per 100 lb.  
 " " No. 2, \$6 per 100 lb.

## LEAD, RED.—Duty 5%.

Genuine, 560 lb. casks, \$5.50 per cwt.  
 Genuine, 100 lb. kegs, \$5.75 per cwt.  
 No. 1, 560 lb. casks, \$5.25 per cwt.  
 No. 1, 100 lb. kegs, \$5 per cwt.

## COLORS (Dry).—Duty 25%.

American Oxides, \$1.75 to \$2 per 100 lb.  
 Brussels Ochre, \$2 per 100 lb.  
 Burnt Sienna, pure, 10 cents per lb.  
 " " Umber, pure, 10 cents per lb.  
 Raw, 9 cents per lb.  
 Canadian Oxides, \$1.75 to \$2 per 100 lb.  
 Chrome Greens, pure, 12 cents per lb.  
 Chrome Yellows, pure, 18 cents per lb.  
 Drop Black, pure, 9 cents per lb.  
 English Oxides, \$3 to \$3.25 per 100 lb.  
 English Vermillion, 80 cents.  
 Fire Proof Mineral, \$1 per 100 lb.  
 Genuine English Litharge, 7 cents per lb.  
 Golden Ochre, 34 cents per lb.  
 Mortar Color, \$1.25 per 100 lb.  
 Pure Indian Red, No. 45, 90 cents per lb.  
 Super Magnetic Oxides, \$2 to \$2.25 per 100 lb.  
 Ultramarine Blue, in 28-lb. boxes, 8 to 24 cents per lb.  
 Venetian Red (best), \$1.80 to \$1.90 per 100 lb.  
 Whiting, 12 cents.  
 Yellow Ochre (J. C.), bbls., \$1.35 to \$1.40 per 100 lb.  
 Yellow Ochre (J. F. L. S.), bbls., \$2.75 per 100 lb.  
 Yellow Ochre (Royal), \$1.10 to \$1.15 per 100 lb.

## COLORS (In Oil).—Duty 25%.

25 lb. tins, Standard Quality.  
 Chrome Green, 8 cents per lb.  
 Chrome Yellow, 11 cents per lb.  
 French Imperial Green, 10 1/2 cents per lb.  
 French Ochre, 5 cents per lb.  
 Golden Ochre, 6 cents per lb.  
 Marine Black, 9 cents per lb.  
 Marine Green, 9 cents per lb.  
 Venetian Red, 5 cents per lb.

## PAPER.—Duty 25%.

Brown Wrapping, 2 1/2 to 4 cents per lb.  
 Manila Wrapping, No. 1, 4 cents per lb.  
 " " No. 2, 5 1/2 " "

Carpet Felt, \$45 per ton.  
 Plain building, 35 cents per roll.  
 Tarred lining, 45 cents per roll.  
 Tarred roofing, \$1.65 per 100 lbs.

## PEAVEYS.—Duty 30%.

Round and Duck bill, \$2.50 and \$13 per doz.

## PIKE POLES.—Duty 30%

\$10.50 per doz.

## PICKS.—Duty 30%.

\$4.50 to \$7 per doz.

## PITCH.

85 cents 100 lbs.

## PIPE.—Duty, \$8 per ton.

Cast Iron Soil, Medium and Heavy, 65% discount  
 " " Light, 60% discount.

## PIPE.

Brass, 25 to 35 cents per lb., base price.  
 Copper, 25 cents per lb., base price.

## PIPE.—Duty 30%.

Galvanized Iron.  
 1/2, \$5.15 per 100 ft.; 3/4, \$5.50 per 100 ft.; 1, \$7.95 per 100 ft.; 1 1/4, \$10.80 per 100 ft.; 1 1/2, \$12.95 per 100 ft.; 2, \$17.35 per 100 ft.

## PIPE, BLACK IRON.—Duty 30%.

1/2, \$4.65 per 100 ft.; 3/4, \$3.40 per 100 ft.; 1, \$3.45 per 100 ft.; 1 1/4, \$3.30 per 100 ft.; 1 1/2, \$3.75 per 100 ft.; 2, \$5.25 per 100 ft.; 2 1/2, \$9.30 per 100 ft.; 3, \$12.75 per 100 ft.; 3 1/2, \$22.75 per 100 ft.; 4, \$30.00 per 100 ft.; 4 1/2, \$37.50 per 100 ft.; 5, \$42.75 per 100 ft.; 6, \$51.50 per 100 ft.; 7, \$57.50 per 100 ft.

## PIPE.—Duty 30%.

Wrought Iron, 1 inch, per ft. 16 1/2 cents.

## PIPES.—Duty 30%.

Stove, 5 and 6 in., \$7 per 100 lengths.  
 " 7 in., \$7.50 per 100 lengths.

## PLANES.—Duty 30%.

Bailey's, 40% discount.  
 Canadian wood, 25% discount.  
 Mathieson wood, 20 " "

## PLUMBERS' BRASS GOODS.—Duty 30%.

Check Valves, 60% discount.  
 Compression Cocks, 50% discount.  
 Gate Valves, 55% discount.  
 Genuine Jenkins' Valves, 45 " "  
 Imitation Jenkins' Valves, 55 " "  
 Radiator Valves, 55% discount.  
 Standard Angle Valves, 65% discount.  
 Standard Globe Valves, 65 " "  
 Stop Cocks, 65% discount.

## POLISH.—Duty 25%.

Liquid Stove, \$5 per gross.  
 Paste, \$5 per gross.

## PULLEYS.—Duty 25%.

Awning, 25 to 60 cents per doz.  
 Clothes Line, 50 cents per doz.  
 Dodge wood split, 50% discount.  
 Sash, 25 to 27 cents per doz.

## PUMP CYLINDERS.—Duty 25%.

Regular patterns, 65% discount.

## PUMPS.—Duty 25%.

Cistern, 50% discount.  
 Force, 50 " "

## PUNCHES (centre)—Duty 30%.

Assorted sizes, \$1.80 per doz.

## PUTTY.—Duty 20%.

In bbls. (Bladders), \$2.10 per 100 lbs.  
 In kegs, boxes or loose, \$2.25 per 100 lbs.  
 In 25-lb. tins, \$2.35 per 100 lbs.  
 In 12 1/2-lb. tins, \$2.65 per 100 lbs.  
 In bulk or tins less than 100 lb., \$2.90 per 100 lbs.  
 Bulk, in bbls., \$1.90 per 100 lbs.  
 " in less quantity, \$2.05 per 100 lbs.

## RASPS.—Duty 30%.

Blacksmiths, Woodworkers, etc., see Files.

## REGISTERS.—Duty 30%.

Floor and Wall, 50% discount.

## RIVET SETS.—Duty 30%.

Canadian; 35 to 37 1/2% discount.

**RIVETS AND BURRS.**—Duty 30%.  
Copper Rivets and Burrs, 35 & 5 off; cartoons, 1 cent per lb. extra.  
Extras on Iron Rivets in 1-lb. cartoons, 1/2 cent per lb.  
Extras on Iron Rivets in 1/2-lb. cartoons, 1 cent per lb.  
Extras on Tinned or Coppered Rivets, 1/2-lb. cartoons, 1 cent per lb.  
Iron Rivets, black and tinned, 60 & 10% discount.  
Iron Burrs, 55% discount.

**ROPE, ETC.**—Duty 25%.  
Cotton, 3-16 in. and larger, 16 cents per lb.  
" 5-32 in., 21 cents per lb.  
" 1/2 in., 22 1/2 cents per lb.  
Crucible Steel Rope, 25% discount.  
Galvanized Wire Rope, 25% discount.  
Jute, 8 cents per lb.  
Lath Yarn, 9 1/2 cents per lb.  
Manila, 7-16 in. and larger, 13 1/2 cents per lb.  
" 1/2 in., 14 1/2 cents per lb.  
" 1/4 and 5-16 in., 15 1/2 cents per lb.  
New Zealand Rope, 10 cents per lb.  
Russia Deep Sea, lines 15 1/2 cents per lb.  
Sisal, 7-16 in. and larger, 10 cents per lb.  
" 1/2 in., 11 cents per lb.

**RUBBER.**  
Reclaimed.

**RULES.**—Duty 30%.  
Boxwood, 75 and 10% discount.  
Ivory, 37 1/2 to 40% discount.  
Lumbermans'.

**SAD IRONS.**—Duty 30%.  
Mrs. Potts', No. 55, polished, 62 1/2 cents per set.  
" No. 50, nickle-plated, 67 1/2 cents set.  
" "Sensible," 55 and 60 cents set.  
" "Toy," \$13.00 gross.

**SAND AND EMERY PAPER.**—Duty 25%.  
B. & A. Sand, 40 & 5% discount.  
Garnet, 5 to 10% advance of list.

**SAP SPOUTS.**—Duty 30%.  
Bronzed iron, with hooks, \$9.50 per 1,000.

**SASH WEIGHTS.**—Duty 25%.  
Sectional, \$2.75 to \$3 per 100 lb.  
Solid, \$1.25 to \$2.25 per 100 lb.

**SAWS.**—Duty 30%.  
Crosscut, Disston's, 35 to 55 cents per foot.  
Hack, complete, 75 cents to \$2.75 each.  
Hack, frame only, 75 cents each.  
Hand, Disston's, 12 1/2% discount.  
S. & D., 40% discount.  
S. & D., 35 off on Nos. 2 and 3.

**SCALES.**—Duty 30%.  
Champion, 60% discount.  
Gurney's, 40  
Troenmer's, 30 " Canadian list.

**SCREENS.**—Duty 30%.  
Door, \$7.50 to \$12 doz.  
Window, \$1.75 to \$2.75 doz.

**SCREWS.**—Duty 35%.  
Bench, iron, \$4.25 to \$5.75 per doz.  
" wood, \$3.25 to \$4 per doz.  
Drive Screws, 87 1/2 & 10% discount.  
Hexagon Cap, 45  
Set, case-hardened, 60  
Square Cap, 50 & 5  
Wood, F. H., bright and steel, 87 1/2 & 10% discount.  
" R. H., bright, 82 1/2 & 10% discount.  
" F. H., brass, 80 & 10  
" R. H., brass, 75 & 10  
" F. H., bronze, 75  
" R. H., bronze, 70

**SCREWS, (Machine, Iron and Brass)**—Duty 35%.  
Flat head, 25% discount.  
Round head, 20

**SCYTHES.**—Duty 25%.  
Grass, \$8 to \$10.  
Grain, \$12 to \$14.

**SHEARS.**—Duty 30%.  
Tailors, 30 % discount Amer. list.

**SHELLS (Cartridge).**—See Ammunition.

**SHOT,** See Amunition.

**SHOVELS AND SPADES.**—Duty 35%.  
Burns', 40 and 5% discount.  
Ely's, " "  
Gray's, " "  
Jones', " "  
Steel, Snow, \$2.45 @ \$2.60 per doz.  
Wood, "

**SKATES.**—Duty 35%.  
American Hockey.  
Canadian " 40 cents to \$2.50 pair.

**SNAPS.**—Duty 30%.  
Harness, 40% discount.

**SNATHS.**—Duty 25%.  
Sythe, \$5.25 to \$8 per doz.

**SOLDER (Plumbers').**—See Metals.

**SOLDERING IRONS.**—Duty 30%.  
20 to 90 cents each.

**SPIKES.**—Duty 1/2 cent per lb.  
Rail, 20% discount.  
Ship, \$5 per 100 lb.

**SPRINGS.**—Duty 35%.  
Bright Carriage, 6 1/2 per lb. net.

**STAPLES.**—Duty 30%.  
Barb wire, \$3.75 per 100 lb.  
Bed, 50% discount.  
Blind, 25  
Wrought iron, 75% discount.

**STEEL**—see Metals.

**STOCKS AND DIES.**—Duty 30%.  
Blacksmiths', Lightning, 25% discount.  
" Green River, 25  
" Reece, 30% discount.  
" Jardine, 35%  
Pipe, Solid, 70 & 10% discount.  
" Duplex, 33 1/2% discount.  
" Jarecki, 33 1/2%  
" Oster, 30%  
" Armstrong, 35%  
Wiley & Russell's, 25% discount, Canadian list.

**STONES.**—Duty 30%.  
Arkansas, \$1.50 per lb.  
Hindustan, 6 to 7 cents per lb.  
" slip, 9 cents per lb.  
Labrador, 13 cents per lb.  
" axe, 15 cents per lb.  
Seythe, \$3.50 to \$5 per gross.  
Turkey, 50 cents per lb.  
Washita, 28 to 60 cents per lb.  
Water-of-Ayr, 10 cents per lb.

**TACKS, BRADS, etc.**—Duty 35%.  
Carpet tacks, blued, 80 & 15% discount.  
" " tinned, 80 & 20  
" " in kegs, 40% discount.  
Cheese-box tacks, blued, 85 & 12 1/2% discount.  
Copper tacks, 50% discount.  
Cut tacks, blued, in dozens only, 80% discount.  
" 1/2 weights, 60% discount.  
Fine finishing, 40% discount.  
Leather carpet tacks, 55% discount.  
Lining tacks, in papers, 10% discount.  
Patent brads, 40% discount.  
Picture frame points, 10% discount.  
Strawberry box tacks, bulk, 75 & 10% discount.  
Swedes, cut tacks, blued and tinned, in bulk, 80 & 10% discount; in dozens, 75% discount.  
Swedes, upholsterers', bulk, 85, 12 1/2 & 12 1/2% dis.  
" brush, blued and tinned, bulk, 70% dis.  
" gim, blued, tinned and japanned, 75 & 12 1/2% discount.  
Trunk tack, black and tinned, 85% discount.  
Zinc tacks, 35% discount.

**TAGS.**—Duty 25%.  
Shipping, 50 @ 70 cents per M.

**TAR.**  
Coal \$2.75 bbl.  
Refined, \$4 per bbl.

**TENTS.**—Duty 30%.  
Canadian list, 20% discount.

**TONGS.**—Duty 30%.  
Ice, \$9 per doz.  
Pipe, " Brown's," net.  
" " Brock's," 25% discount.  
" " Trimco," 25

**TRAPS.**—Duty 30%.  
" Hawley & Norton's," 65% discount.  
" Newhouse," 45% discount.  
" Victor," 75% discount.

**TRUCKS.**—Duty 30%.  
1, \$3.75; 2, \$5; 3, \$6.75 each.  
" Handy" Canadian, \$16 to \$18.

**TUBES FOR BOILERS.**  
1 1/2, 1 1/4, 1 1/8, 2, 2 1/2, 3, 3 1/2, 4  
15, 12, 12, 10 1/2, 13, 14, 14 1/2, 13 1/2, 2 1/2 ft.

**TURNBUCKLES.**—Duty, 1 cent per lb., 25%; 3 1/2% discount.

**TURPENTINE.**—Duty 5%.  
55 cents per gal.

**TWINES.**—Duty 25%.  
Bag twine, 3-ply, 20 cents per lb.  
" 4-ply, 20 cents per lb.  
Binding, 12 1/2 cents per lb.  
Colored, 27 cents per lb.  
Cotton bag, 30 cents per lb.  
Cotton, White, 20 to 30 cents per lb.  
" Colored, 30 to 40  
Hemp, 20 cents per lb.  
Jute, 20 cents per lb.  
Mattress, 45 cents per lb.  
Sewing, 45 cents per lb.

**TWINE**—Continued.  
Tarred Lath, 11 cts.  
Wrapping, 22 to 27 cts.

**VARNISHES.**—Duty 20 cents per gal.  
20% off 5-gal. lots.  
Black Japan, \$2 per gal.  
" No. 1, 75 cents to \$1.50 per gal.  
Brown Japan, \$1.50 to \$2.50 per gal.  
Carriage, No. 1, \$2 to \$3 per gal.  
" body, \$4 to \$6 per gal.  
" rubbing, \$2.50 to \$4 per gal.  
Demar, \$2 to \$2.50 per gal.  
Elastic Oak, \$1.50 to \$2.50 per gal.  
Kurniture Brown Japan, \$1.25 to \$2 per gal.  
Furniture, extra, \$2 to \$2.50 per gal.  
" No. 1, 75 cents to \$1.50 per gal.  
Gold Size, Japan, \$1.50 to \$2.50 per gal.  
Hard Oil Finish, \$1.50 to \$2.50 per gal.  
Light Oil Finish, \$1.50 to \$2.50 per gal.  
Shellac, orange, \$2 to \$2.50 per gal.  
" white, \$2 to \$2.50 per gal.

**VICES.**—Duty 30%.  
Amer., 13 1/2 cents per lb.  
Brooks', 13 1/2 cents per lb.  
Peter Wright's, 15 cents per lb.

**WASHERS.**—Duty 1/2 cent per lb., 25%.  
Buggy, 75% discount.  
Wrought iron, 40% discount.

**WASHING MACHINES.**—Duty 35%.  
Re-acting square, \$51.00 per doz.  
" Round, \$48.00  
Rocker, \$48.00 per doz.  
Popular Brands, \$30.00 to \$42.00 per doz.  
Dowsell, \$3.75 each.  
Re-acting (Dowsell), \$5 each.

**WIRE.**  
Barbed Wire, see Fencing.  
Brass Wire, (duty 10%), 50 to 50 & 2 1/2% discount.  
Copper Wire, (duty 15%), 45 & 10% discount net cash 30 days, f.o.b. factory.  
Smooth Steel Wire, (duty 20%), is quoted at the following net selling prices:  
No. 6 to 8 guage, \$2.90 per 100 lbs.  
" 9 " 2.80  
" 10 " 2.87  
" 11 " 2.90  
" 12 " 2.95  
" 13 " 3.15  
" 14 " 3.37  
" 15 " 3.50  
" 16 " 3.65

Other sizes of plain wire outside of Nos. 9, 10, 11, 12 and 13, and other varieties of plain wire remain at \$2.80, base, with extras as before. The prices for Nos. 9 to 13 include the charge of 10 cents for oiling. Extras net per 100 lb.: coppered wire, 60 cents; tinned wire, \$2; oiling, 10 cents; special hay-baling wire, 30 cents; spring wire, \$1; best steel wire, 75 cents; bright soft drawn, 15 cents; in 50 and 100-lb. bundles net, 10 cents; in 25-lb. bundles net, 15 cents; packed in casks or cases, 15 cents; bagging or papering, 10 cents.

Fine Steel Wire, 17 1/2 off. List of extras, in 100 lb. lots, No. 17, \$5; No. 18, \$5.50; No. 19, \$6; No. 20, \$6.65; No. 21, \$7; No. 22, \$7.30; No. 23, \$7.65; No. 24, \$8; No. 25, \$9; No. 26, \$9.50; No. 27, \$10; No. 28, \$11; No. 29, \$12; No. 30, \$13; No. 31, \$14; No. 32, \$15; No. 33, \$16; No. 34, \$17. Extras net: tinned wire, Nos. 17-25, \$2; Nos. 26-31, \$4; Nos. 32-34, \$6; coppered, 5 cents; oiling, 10 cents; in 25-lb. bundles, 15 cents; in 5 and 10-lb. bundles, 25 cents; in 1-lb. hanks, 50 cents; in 1/2-lb. hanks, 75 cents; in 1/4-lb. hanks, \$1; packed in casks or cases, 15 cents; bagging or papering, 10 cents.

Galvanized Wire, per 100 lb.: Nos. 6, 7, 8, \$3.50 to \$3.85; No. 9, \$2.85 to \$3.15; No. 10, \$3.60 to \$3.95; No. 11, \$3.70 to \$4.10; No. 12, \$3 to \$3.30; No. 13, \$3.10 to \$3.40; No. 14, \$4.10 to \$4.50; No. 15, \$4.60 to \$5.05; No. 16, \$4.85 to \$5.35. Base sizes, Nos. 6 to 9, \$2.57 1/2 f.o.b. Cleveland.

Clothes Line Wire, solid 7 strand, No. 17, \$4.25; No. 18, \$2.65; No. 19, \$2.35; f.o.b. Toronto, Hamilton and Montreal.

**WASTE (Cotton).**  
Colored, \$5.50 to \$6 per 100 lb.  
White, \$7.75 per 100 lbs.  
" extra, \$8 per 100 lb.

**WHEELBARROWS.**—Duty 30%.  
Garden, \$2 to \$4.50 each.  
Navy, \$19 per doz.  
" Iron wheel, \$22.50 per doz.  
Steel tubular, \$7.50 to \$10.50 each.

**WRENCHES.**—Duty 30%.  
Agricultural, 60% discount.  
Alligator, 50  
Coes, 30  
P. S. & W., 30  
Stillson's, 25  
Trimco, pipe, 25

**WRINGERS (Clothes).**—Duty 35%.  
Ajax, \$66 per doz.  
Canadian, \$26 to \$30 per doz.  
Crescent, \$17.50 to \$20 per doz.  
Leader, \$30 per doz.  
Novelty, \$23 to \$27 per doz.  
Popular Brands, \$16.50 to \$22 per doz.  
Royal American, \$26 to \$30 per doz.  
Royal Canadian, \$26 to \$30 per doz.

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ifc ..... inside front cover.

ibc..... inside back cover.

ofc.....outside back cover.

## AMERICAN STEAM GAUGE AND VALVE MFG. COMPANY

BOSTON, MASS., U. S. A.

MANUFACTURERS OF

Standard Appliances for Measuring, Indicating, Record-  
ing and Governing Water, Steam, Gas, Ammonia,  
and all pressures.

Sole Manufacturers of The Thompson Improved Indicator

HIGHEST AWARD AT PARIS EXPOSITION, 1901—The only American Indicator to  
receive a Medal. The Gold Medal awarded at Pan-American Exposition  
on Gauges, Pop Valves, Indicators and Engineering Specialties.

THE INDICATOR THAT MADE INDICATORS FAMOUS

Also Gauges, Clocks, Revolution Counters, Pop Safety, Cylinder and Un-  
derwriters' Water Relief Valves, Recording Gauges, Pyrometers, Salino-  
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Safety Valves.



Underwriters' Pattern Iron  
Water Relief Valve.

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