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Vol 45.

TORONTO, AUGUST 1, 1902.

No. 3

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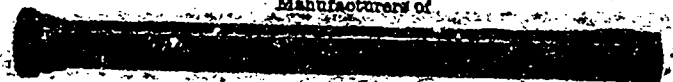
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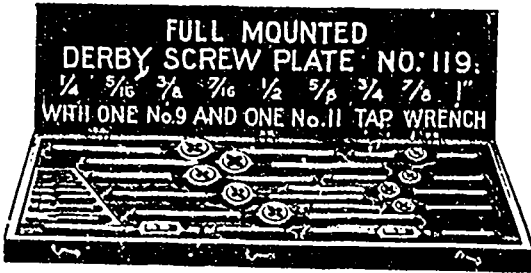
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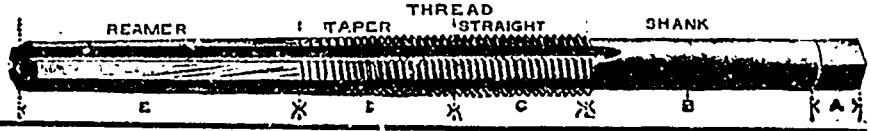


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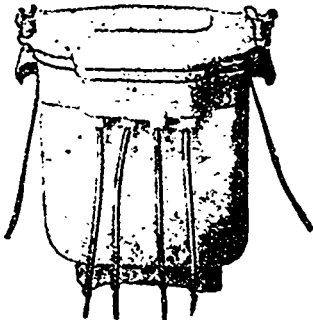
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Yarns of all kinds for Manufacturers' use.

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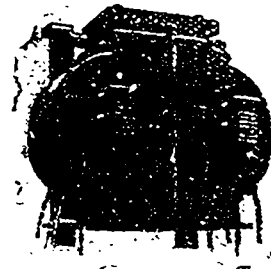
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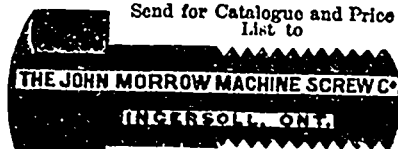
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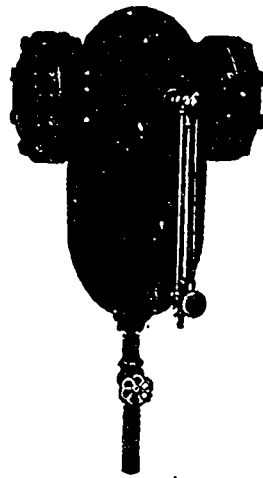
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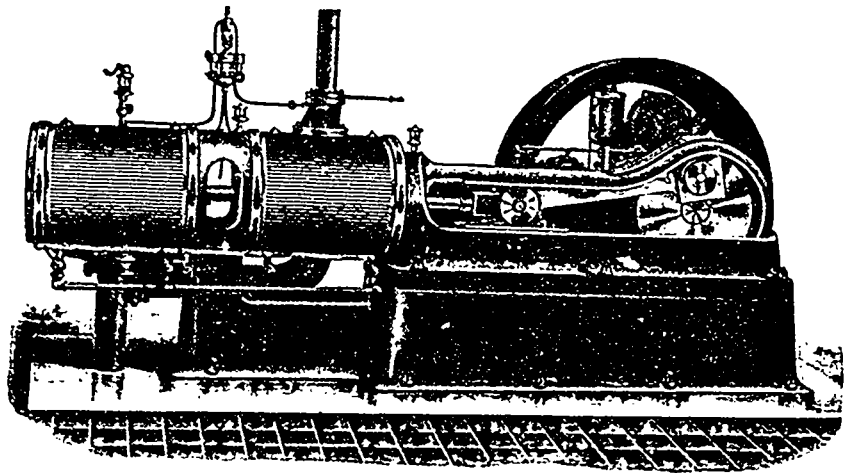
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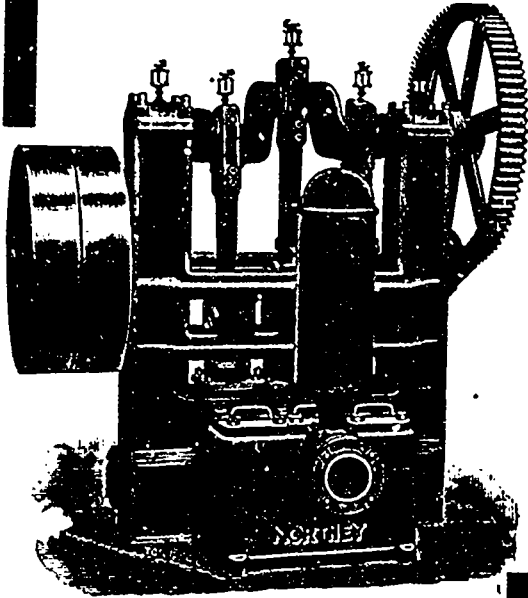
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Pumping Machinery

"For all Duties"

Many manufacturers who are users of Pumping Machinery pay coal bills that are from 10% to 50% higher than they should be, because their pumps are old and leaky, do not give the service they should, and waste steam. Would it not pay you to look into this matter? We can advise you what you can do most profitably with your present plant—discard it or repair it. Our business is the making of Pumps for all services—we do it on a large scale, and we are experts in our line. Write for Specifications and Catalogues.

We manufacture also the
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a handy and economical motor.

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THE OTIS
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ESTABLISHED IN 1880.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

The Canadian Manufacturer Publishing Co., Limited.McKinnon Building, Cor. Melinda and Jordan Sts., Toronto.
Cable address: "CANAMAN." Western Union Telegraphic Code used.**MESSRS. DAVIDSON & CO.,**164 Federal Street, - Boston, Mass.
AGENTS FOR UNITED STATES.

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J. J. CASSIDEX, - - - *Editor and Manager.***THE TORONTO EXHIBITION.**

It is gratifying to know that the entries of manufactured articles at the Toronto Exhibition to be held from September 1 to 13, will be as imposing and numerous as ever. Toronto concerns will be especially well represented, while outside firms are showing that they regard the exhibition rather as a national than a local undertaking. There is no room for fear that the buildings will not be crowded to their utmost capacity; in fact Superintendent Unitt, of the manufactures and industries departments of the fair, has been put to it quite a bit to give all applicants the accommodations they desire, and entries do not close until August 9.

This year's fair promises to be better attended than in any former year. United States railways having connection with Toronto are granting specially favorable rates, while our own lines of travel are doing about everything they can to support the exhibition executive in the vigorous, energetic efforts it is making to score a record all round.

There is one particular fact to which attention should be directed, namely, that all classes of manufactures, implements, machinery, stoves, etc., as well as the fine arts and ladies' work, must be delivered on the ground and placed in position by not later than Saturday, August 30, as the ceremonial opening takes place this year on Monday instead of Tuesday as in former years.

EDUCATING THE PEOPLE.

The Canadian Manufacturers Association are discussing the question of inaugurating an educational campaign to induce Canadian consumers to use Canadian-made goods to a larger extent than what they now do, the scheme being to raise a fund of \$50,000 or \$60,000 to be expended over a period of three or four years for this purpose. The idea is a good one, and it is to be hoped that a favorable result may be attained. The important question is, however, to know just how the campaign is to be carried on. At a recent meeting one of the speakers suggested that there were two ways for the manufacturers to work. He said that they might get one of the political parties to adopt the educational campaign idea as a plank of its platform, or the endeavor might be in the direction of educating the people by means of newspaper articles and public addresses. Of these two ways the speaker preferred the latter.

It would be worth much more than \$50,000 a year for many years to come if the manufacturers could in any way effect

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.

the object they have in view, but the money they propose raising will be expended in vain if they depend upon the good will of any political party to espouse their cause, or to expect that paid-for newspaper articles or verbose oratory will work the trick. The manufacturers can and should do for themselves that which all the money they can raise could not do. They have a well organized association that could, were it to exert its influence in the proper direction, accomplish a great deal. But the ideas and methods adopted under the recent reorganization do not lead that way. At the time of the inception of the Association a condition prevailed very similar to that which now calls so loudly for something to be done to lift the manufacturing industries of the country to the plane which it ought to occupy. The tariff that then prevailed was for revenue only. There were then two political parties in the country, neither of which cared any more for the manufacturers as a class or element in the community than the now existing parties care. The high and disinterested motives that actuated both of them were, on the part of one to hold on to the offices, and of the other to win the offices from the other fellows.

It was then that the Old Guard—the captains of Canadian industry, who were bearing the heat and burdens of the day—took counsel together and did just what the manufacturers of to-day should do. They knew that as a class they possessed sufficient power and influence to control elections should they make up their mind so to do. They knew that some men were born to success and that others had success forced upon them, but they determined that they would hold a stronger position by achieving success by their own efforts. The opportunity usually produces the man. The demand for recognition was acknowledged, and John A. Macdonald was the man who led the host out of bondage. But neither the Tory nor Grit party could have been induced to advocate the cause of the manufacturers had they not, forgetting past party affiliations, banded themselves together and into an Association, the weight of which turned the scales in their favor. The Association did not endeavor to educate the electorate by means of newspaper articles and public addresses alone, as now proposed. It did not rely upon a \$50,000 fund to pay hired newspaper writers and orators to advocate their cause; but these earnest men rolled up their sleeves and did their own electioneering. They did not beg the Tory party to help them, but they commanded and obtained its services. Their Association, as such, did not hesitate to announce its unwavering support to the policy of tariff protection to the Canadian manu-

facturing industries; and that policy being emblazoned upon its banner it marched to victory.

Why not do the same thing now? The Canadian Manufacturers' Association of to-day includes a larger number of members than it did when it commanded the services of John A. Macdonald and his party, and yet we observe that the leaders of it decline to pledge their organization to the support of a party which would do as Macdonald and his party did. It is true the Conservative party, after the death of Sir John, betrayed those who put it in power, and it richly deserved the defeat that followed the betrayal; and it is now up against the Association and manufacturers generally to pursue the same tactics that on a previous occasion worked so successfully. It would be well, should the \$50,000 fund be raised, to use it in educating manufacturers to the fact that a protective tariff is essential to their best interests.

EDUCATE THE MANUFACTURERS.

The \$50,000 fund which the Canadian Manufacturers' Association are endeavoring to raise for the purpose of paying for newspaper opinions and hiring orators to induce the people of Canada to buy Canadian-made goods in preference to those made elsewhere, might, we think, be expended to better advantage in educating Canadian manufacturers, some of them, to the necessity of doing something in that direction themselves. There are millions of dollars worth of foreign made goods imported into Canada every year that could to good advantage have been made at home. Like for like, goods can be made in Canada the equal of goods made anywhere else; but unfortunately the persistent teachings of interested parties have brought the great mass of consumers to believe otherwise, and there are many who decline to buy goods of home production when goods of foreign make can be had; and it is but too often the case that sellers induce purchasers to believe that articles being offered them are of foreign origin, when in fact they are not. It is not honorable on the part of the intelligent seller to thus deceive the ignorant buyer, but the Canadian manufacturer should enquire of his own head and heart if he is not willingly involved in the deception, or at least a consenting party to it. Many of them know that it is a requirement, when accepting orders from jobbers and wholesale houses, that no signs or marks shall appear upon either the goods or the packages containing them indicating their origin, and they know that if they themselves are not actually required to place false and misleading signs and labels upon their products, it will be done elsewhere and before they are offered for sale to the public. Is it to be wondered at that, under such circumstances, buyers decline to accept home made goods if what they believe to be foreign made goods can be had? Under the circumstances is it at all surprising that millions of dollars worth of goods, made by the labor of other countries—in foreign workshops and factories—are imported into Canada every year? Will paid for newspaper articles and the efforts of hired orators remedy the matter? What are the manufacturers themselves doing to mend it? What effective work is their Association doing to correct the evil? Manufacturers who are now so severely suffering from this evil have themselves to thank for the situation, and we submit that they are the ones who need educating, more than the consuming public. They should be educated to decline to lend themselves to the fraud that so seriously injures their business, and their Association should, in behalf of its members, make every endeavor possible to procure the enactment of laws that would make it a penal of-

fence for anyone to place any mark or label upon any article calculated and intended to deceive. It is more abominable for a manufacturer to lend himself in any manner to a deception to be practised upon the public than for a dealer to do so. If goods made in Canada are falsely marked, with intention to deceive, they should be confiscated by the strong hand of the law, and the offender should be severely punished, and this should apply to the manufacturer as well as the merchant who sells or offers the goods for sale.

It does not require any \$50,000 fund, nor paid-for newspaper articles, nor hired orators to rectify the evil. The manufacturers who suffer, and their Association, whose duty it is to do all in its power to alleviate the suffering, are the ones to put their own shoulders to the wheel.

WESTERN CANADA AND THE TARIFF.

Mr. Thomas Greenway, a free trade Manitoba statesman now out of business, has been telling The Toronto Globe what the people in his section will and will not do in the near future regarding the tariff. According to The Globe Mr. Greenway, says:

The Western farmers will not stand an increase in the tariff; they are very much in earnest, and must be counted with, inasmuch as the political power of the West is fast increasing. A good many people do not realize that the time is coming when the West will have a great deal to say about the making of the tariff. They have been in the habit of regarding the West as a sort of colony of the East, and of expecting from it a certain docility in accepting any legislation that might be framed for its benefit. It is not difficult to discover the origin of this feeling. Until the elections of 1887 the whole country from Winnipeg to the Rocky Mountains was represented by five Manitoba members. Manitoba had a Legislature of its own, by which it was able to speak. At present Manitoba has a representation of seven, and the territories of four. The census of 1901 will increase these members to ten and six. But so fast do events march in the West that this representation will soon be inadequate. The estimated immigration for the present year would give the West three new members. It would not be surprising if, as a result of the census of 1911, the representation of Manitoba and the Territories should be between 40 and 50, while British Columbia will probably have at least a score of members.

The Western farmers will require houses, clothing, agricultural implements, such foods as are not produced on the farm, and many other articles. There are four sources from which these may be obtained: (1) From Great Britain, (2) from the United States, (3) from the present industrial centres of Canada, such as Montreal and Toronto, and other points in the eastern Provinces, and (4) from new industrial centres which may grow up in new Ontario and the western Provinces. The competition will be keen, and manufacturers and merchants will have great scope for enterprise and energy. Canadian manufacturers especially will do well to ponder over Mr. Greenway's remarks. They may not agree with him about the tariff, but they must recognize that as a farmer and a veteran politician he can speak with authority about Western feeling; and the Western man will have more to say about the tariff. The manufacturers of old Ontario and Quebec will have to encounter in the West not only American competition, but the competition of industrial concerns which will start into life in New Ontario, where they will enjoy tariff protection, and the additional advantages of abundant water-power and proximity to the Western market. A similar development may be witnessed in British Columbia. Mr. Greenway will be entitled to the gratitude of our manufacturers if his words serve as a warning against placing undue dependence on tariff restrictions. Nobody can tell what a Parliament, sitting ten or fifteen years hence, strongly influenced by Western feeling, may do with tariff. And, besides, the tariff, while it gives an advantage as against the American manufacturers, gives none as against the manufacturers of New Ontario, the Territories and British Columbia.

It is quite probable that Canadian manufacturers generally quite as fully understand the conditions and probabilities of Manitoba and the Territories as Mr. Greenway does, and are quite as jubilant over the prosperity of that part of Canada. But it might be imagined from what Mr. Greenway says that the manufacturers are a greedy and selfish lot of fellows whose sole ambition is to make money out of the necessities of the people, and would sacrifice all other interests to theirs, else why should they be so lectured by unsympathetic Mr. Greenway? If it were for the manufacturers to say, the country would not have to wait ten years for the representation in the Dominion Parliament of Manitoba, the Territories and British Columbia to be as largely increased as Mr. Greenway suggests. They would be most glad to see that condition existing right now, having good reason to believe that the tariff would be as highly appreciated and quite as important to the new population as it is now to them.

Mr. Greenway correctly enumerates the sources from which the requirements of the Western farmers will then be supplied; but there is no reason to believe that Great Britain will furnish a larger proportionate share than she does now. It is not probable that the Old Country would do more towards supplying Canada with agricultural implements, etc., than she does now. She never has supplied Canada with that kind of goods, and never will, not even if they were admitted duty free. Our manufacturers do not look for competition in that quarter. The Western people would not encourage the importation of such articles from the United States by putting them on the free list; the industrial centres of Ontario and Quebec would thrive wonderfully in the enlarged market, and the manufacturers would most gladly welcome the appearance of new establishments in Manitoba and British Columbia, well knowing that the more numerous they became the stronger the policy of tariff protection would become throughout the whole country. Increasing the rural population of the country means enlarged markets at home, and a wise observance of the principles of protection would mean, not an increase of imports of agricultural implements and the thousand other things required on the farm, but the manufacture of them at home.

CANADA'S EXPANDING MARKET.

Canadian manufacturers are taking a lively interest in the market that is being created by the flow of settlers into the West, observes *The Globe*, and it enquires. What is the nature of that market? The new-comer requires a dwelling. There is a "market" for the carpenter, the bricklayer, the painter, the laborer. This is necessarily local, and is not affected by tariffs. Building material will be, for some time, chiefly lumber. The settler's desire will be to obtain it as cheaply and quickly as possible from any source, and he will not favor any tariff which tends to restrict his choice. Western Ontario and British Columbia will naturally expect a large share of this trade, and their success will depend largely on the goodness and cheapness of railway communication. It will be better for them to devote their attention to railway communication than to tariff legislation, which, as Parliament comes more and more under Western influence, may be a precarious support. In agricultural implements the Americans have succeeded in doing a large share of the trade, partly because the orders have come in so rapidly that the demand could not be supplied. An increase in the tariff might result in the establishment of new Canadian concerns, perhaps in Manitoba, or in the adjacent parts of Ontario. Large quantities of furniture will be required, especially as

we are told that the new-comers are well-to-do and accustomed to a high standard of living. Canada certainly ought to fear no competition in this industry, having an abundance of both the material and the power for manufacturing. But in all these matters the Eastern manufacturer must expect to meet not only American competition, but the competition of local establishments in Western Canada. The tariff may protect him against the one; only facility of communication can place him on an equality with competitors in his own country, enjoying the same tariff protection, and having the additional advantage of proximity to the market.

In old Ontario there is a growing tendency for the farmers to buy food rather than to use the products of their own farms. The baker's wagon now carries bread from city to country. The growth of the canning industry in fruit, vegetables and meats has had the same tendency. The Western people have always been large consumers of canned goods. For all that variety of articles which are lumped under the head of "groceries" there will be a large market in the West. In clothing the tariff gives a very substantial advantage to the Canadian as against the American manufacturer. The advantage as against the British manufacturer is reduced by the preference, but the competition of British fabrics is probably felt more in large centres of population than in farming communities. Here we come pretty well to the end of necessities, as commonly regarded. But the settlers will have money to spare for many other things—for books, for musical instruments, for jewellery, toys, and other articles of refinement, luxury and amusement. Industrially and commercially, the growth of the West is the most important movement in Canada to-day. There are other aspects of it—the religious, the social, the political, the national, the educational. "What can we do for the West?" is a question which naturally interests all public-spirited people. There is another question, "What will the West do for us? It will not only enlarge our markets. It will enlarge our minds, and broaden our outlook. It will get us out of a lot of old political and social ruts. It will give new meanings to the words "Canada" and "Canadians." The problem of assimilating the new population will not be as formidable as some people imagine. The material to be assimilated will be increased, but so also will the power of assimilation. Our American settlers will soon learn to become interested in Canadian elections, and to desire to have a share in them, and some influence in the making of Canadian laws. They will not care to sit in the house reading about the election of the Governor of Iowa or Nebraska while their neighbors are choosing a Canadian Parliament or a Local Legislature or a municipal council. As to those people who come from Europe, speaking strange tongues and following strange customs, we need not be afraid of their influence. They will add a little variety to life, and occasionally teach us that all virtue and wisdom are not monopolized by the Anglo-Saxon race. At the same time the influence of settlers from Great Britain, from other parts of Canada, and from the United States will be a safeguard against the adoption of the low and squalid habits of life which are the fruits of oppression.

THE CAPE TO CAIRO RAILWAY.

When the Duke and Duchess of Cornwall and York visited South Africa they found a "train de luxe" in use on the Cape government line. According to the last annual report of the directors of the British South Africa Co., this train de luxe will soon be running between Cape Town and Bulawayo (1,500 miles).

In Rhodesia, railroad building is progressing rapidly, although the Boer war interfered with the transportation of construction and equipment material from the south. Meanwhile, the Beira-Salisbury line has been extended southward and a junction formed with the main line at Bulawayo. It was originally intended that the line from Bulawayo via Gwelo to Salisbury should constitute the first section of the main line northward, toward Lake Tanganyika, and that the Zambesi should be crossed in the vicinity of Kariba Gorge. Later explorations, and particularly the discovery of the Wankie coal beds, have led to the adoption of a route farther to the west, including the crossing of the Zambesi at Victoria Falls. The railway is due to reach the coal fields during the coming autumn and Victoria Falls before the end of 1903.

On April 14, 1902, an agreement was signed in Brussels which would seem to constitute an important step toward the realization of the late Cecil Rhodes' "dream." Under the Belgian contract, the German route is abandoned, and the Cape to Cairo Railway will be carried through the Kougo Free State to the upper waters of the Nile. Instead of heading for Lake Tanganyika and German East Africa, the line will continue due north of Victoria Falls to the Kongo border, and thence via Katanga to Lake Kasali, which is the most southerly navigable point on the Lualaba, (one of the principal reaches of the Kongo). Approximately, the distances to be covered are: Bulawayo to Victoria Falls, 300 miles; Victoria Falls to Lake Kasali, 700 miles. From Stanley Falls on the Upper Kougo, a railroad will be built to Mahagi on Lake Albert Nyanza (480 miles), thus supplying the missing link between the Cape and the Egyptian railway nets. Such is the scope of the concession which Mr. Robert Williams recently obtained from the King of the Belgians. This project does not, however, necessarily replace the original central line through German territory, as planned by Mr. Rhodes and the German Government. In fact, it is quite likely, if the proposed railroad be built from the coast of Dar-es-Salaam, the capital of German East Africa (either through subsidy granted by the Reichstag or by private capital under State guaranty), that the original Cape to Cairo scheme via Tabora will be realized. Both lines may astonish the world before many years as full-fledged realities. All maps of Africa more than six months old are now obsolete, because history is being made so rapidly in those regions.

By joining at Lake Kasali the Kougo Free State River and railroad system, the Cape to Cairo Railway would secure a western feeder, via Leopoldville and Mitadi, of the highest importance. On the eastern side, there are already two feeders in waiting, viz., the Beira-Mashonaland Railway (350 miles) and the Mombasa-Uganda Railway (660 miles). For the latter, rails had been laid last Christmas as far as Lake Victoria Nyanza. Another prospective eastern feeder is the proposed Suakin-Khartoum line, the construction of which via Berber (350 miles) during the next two years seems to have been recently decided upon by the Sudan Government. This will make Suakin on the Red Sea, instead of Alexandria, the chief port of the Sudan. To these eventual feeders may also be added the French line from Djibouti through Abyssinia via Harrar to Addis Abeba, the capital of King Menelik's dominions (430 miles), and perhaps to Fashoda, an enterprise which, by act of the Chambers, was recently granted financial support from the Government of France.

In the development of the Dark Continent, as Africa is yet called, according to the United States consul at Beirut, that country is not at present playing a conspicuous part. Stanley's momentous work in the seventies has not been followed

up by his quondam countrymen; nor is United States trade with Africa, except Cape Colony, of relative consequence.

Cape Colony, with its imports of \$84,000,000, and Egypt, with its imports of \$70,000,000, bought, in 1900, \$8,600,000 and \$1,400,000 worth, respectively, from the United States. Even at that rate, there is ample room for improvement; but the American showing, says the consul, is much less satisfactory when the markets of Abyssinia, the Sudan, the Kongo Free State, Rhodesia, and other growing nations and protectorates in the interior are considered. Rhodesia alone imported during the year ended March 31, 1901, goods to the amount of \$10,267,518. These figures indicate only faintly what may be expected in five or ten years. Rhodesia is eight and one-half times the size of Great Britain, and its natural resources include rich deposits of gold and of coal, besides fertile lands and forests. The closing of hostilities in South Africa gives a tremendous impetus to agricultural, industrial, and commercial activity throughout the country.

EDITORIAL NOTES.

The all-British Pacific cable, which many have regarded as a dream of Imperialists, is within three months of completion. Beyond doubt Canada and Australia will be able to exchange Christmas greetings over their own private wire. Mr. James Kent, General Manager of the Canadian Pacific Railway Co's telegraph, was in Toronto this week, and made the statement that a month ago he met Mr. Reynolds, General Manager of the Pacific Cable Board, in Victoria, B.C., and accompanied him to the Pacific cable station at Bamfield Creek, on the west shore of Vancouver Island, to which point the Canadian Pacific is constructing a telegraph line 109 miles long, so as to give an all-British land connection between the Pacific cable and the transcontinental line of the railway. The cable has been completed, and is now in operation between Australia and the Fiji Islands, a distance of 2,500 miles. The balance of the cable has been sent from London and is expected to reach Victoria about the end of August. From thence the cable ship will proceed immediately to lay the cable to Fanning Island, thus completing the last link in the all-British chain.

Mr. George Anderson, of Toronto, who a few years ago visited Japan in the interests of trade between Canada and that country, has been appointed by the Dominion Government as commissioner to the Yukon to make special inquiry into the trade of that district, with a view if possible of diverting the business now so largely in the hands of the Americans into Canadian channels. Mr. Anderson will be absent two months. This matter should be well looked after, seeing that Dr. Wickett has recently been appointed a commissioner to the Yukon by the Canadian Manufacturers' Association for investigating the possibilities of Canadian trade there. They are both good men, and the results of their investigations should be of much service to our manufacturers.

The Marine Review, of Cleveland, Ohio, has sent us a copy of the introduction which it will use in the 1902 edition of the Blue Book of American Shipping, the seventh annual edition of which is now about going to press. The Blue Book is a marine directory of the United States, but deals also with statistics of shipping, naval affairs, etc. The introduction is a resume of merchant ship construction during the past year, and also of the progress of the shipbuilding industry throughout that country.

A recent special cablegram from London to the Toronto Evening Telegram says :

Sir Wilfrid Laurier is evidently considering the preferential trade question seriously and tactfully. I hear an authentic report that in his interviews with the British Government, Premier Laurier said that he did not want Britain to tax its people for the benefit of Canada but suggested that as Britain taxes all grain it should exempt Canadian wheat. Perhaps Canada might be able to reciprocate by the admission of some articles of British manufacture.

This is very, very funny. Canada has for several years "reciprocated" with Great Britain by allowing a discount of one third off of all duties imposed upon British goods. When Great Britain reciprocates this favor by admitting Canadian grain and flour free of duty, Canada will consider the propriety of putting more British products on the free list.

At the recent meeting of the Executive Council of the Canadian Manufacturers' Association, Mr. Robert Munro, the retiring president of the Association, stated that that would be the last time he would preside over the meetings of the Association, as a new presiding officer would be elected at the forthcoming general meeting of the Association to be held in Halifax. Mr. Munro was the first member of the Association residing beyond the limits of Ontario to be chosen as president, and all will agree that he has fulfilled the duties of his office with the greatest intelligence and zeal; and to his interest in the work of the Association is to be, in large part, attributed the considerable increase of membership during his term of office.

Immigration to Canada is at present showing signs of revival. It has not been rolling up heavy totals of population of late years, but has been slowly drained of many of its people by the currents running United States ward. Conditions, however, seem to be reversing this craw fish movement. American farmers are finding their way across the border to the agricultural districts. Mining operations are more aggressive and persistent, iron and steel industries are multiplying, capital is opening its coffers, and the world generally is better informed as to Canadian resources. In the year 1901, 17,000 immigrants arrived from the British isles, Europe supplied 23,535 and the United States 24,099. These are significant figures that may eventually have a political as well as an industrial complexion.—The Age of Steel.

Bearing in mind that the next annual meeting of the Canadian Manufacturers' Association is to be held in Halifax on August 13 and 14, Mr. Younge, the secretary, has announced that the convention arrangements as to travelling, etc., are as follows: Single fare to Halifax for the round trip, good to stop over; tickets good going from the 8th to the 14th inst., returning, good to reach destination seven days after the date of the close of the convention. This makes tickets good from August 8 to August 21 inclusive. Special rate from Montreal, \$13.50.

The Prize List for Toronto's Grand Annual Agricultural Exposition and Industrial Fair, which this year will be held from Sept. 1 to Sept. 13, both dates inclusive, is being distributed. It is compiled on a more than usually liberal scale, several material alterations and additions having been made to the live stock and other classes. In fact, there is abundant evidence in the prize list that the executive are resolved that the Exhibition shall maintain its reputation as the best annual fair in the whole world. The premiums, with a large number

of special prizes, aggregate between thirty-five and forty thousand dollars, arranged with an eye to the encouragement of the interests of the country. In industrial exhibits as well as in live stock, and especially in the dairy department, the fair this year will be ahead of all its predecessors, while as regards entertainment, the announcement that the great Kiralfy has been engaged to produce his wonderful spectacle, "The Orient," that for years attracted multitudes to the Olympia, in London, is sufficient to stamp it as of the highest class that money can procure. There will also be many other features, star attractions in themselves, that in Toronto will be found on the one programme. Prize lists and other particulars can be had by addressing H. J. Hill, secretary and manager, Toronto.

The topics to be discussed at the forthcoming annual meeting of the Canadian Manufacturers' Association at Halifax have been arranged as follows: Transportation—Steamship communication between Canada and Great Britain, British West Indies, South Africa, Australia, Japan and New Zealand; railway commission; improvement of Canadian harbors, and shipbuilding in Canada. Also legislation affecting the act respecting trade marks, designs and patents; importation of skilled alien labor; postal legislation re catalogues; postal insurance; Yukon rates, etc. Also the tariff policy of the association during the coming year; the sending of a special trade representative to South Africa; the appointment of representatives abroad by the Government. Also recommendations re West Indies trade; Canadian building in London, etc. Other matters to be discussed will be regarding an educational campaign fund, technical education, an all-Canadian exhibition, a new Canadian trade index, revision of the constitution of the association, and election of officers and committees for the coming year.

Organized English trades, according to a London special, as they have become rich, have been exposed to attacks by employers in the courts. The Taffdale and other recent decisions have established the principle that the trades unions can be held responsible for breaches of the law, and compelled to pay damages, collectively, for the acts of individual members. A fresh application of this principle is sought in an important action recently brought by the colliery firms against the Miners' Federation, which has a membership of over 125,000. This case, in which Mr. Rufus Isaacs, for the workmen, is pitted against Sir Edward Clark, is a suit for damages arising from cessation of work at the collieries for four successive days under the orders of the federation. It is attracting much attention, since a decision in favor of the employers in the courts, if it be rendered, will complete the record of the full financial responsibility of federated labor unions for the acts of officers, even when no aggressive action, such as picketing or blacklisting, is taken, and nothing more serious than stopping work for a few extra holidays has been ordered. These litigations are of critical importance to the labor unions, since they involve the risk that every strike will be followed by demands for damages, and the exhaustion of the savings of the workers in reimbursing the employers for their losses.

It is one thing to be a "Captain of Industry" and another to be a "Bachelor of Commerce." The University of Birmingham, England, has established a Faculty of Commerce with powers to confer the degree of "Bachelor of Commerce." This progressive move marks an era in commercial education

and gives a standing to students of subjects necessary for their advancement in business pursuits not hitherto held. The curriculum prescribed is essentially modern. Students must first pass the matriculation examinations in (1) English language, literature, and history, (2) any two of the following languages: French, German, Italian, Spanish, and Latin; (3) mathematics; (4) one science subject. The degree will be conferred on those students who satisfy their examiners at the end of each of the three years they will be required to study.

Hay, as well as cotton, is now being compressed into cylindrical bales for shipment, a standard round hay bale being eighteen inches in diameter and thirty-six inches in length. Such a bale, packed at the pressure under which it is shipped for domestic use, weighs about 200 pounds; as packed for export, such a bale would contain about 275 pounds. There is put up for army use a bale of the same diameter, but only eighteen inches in length, which contains approximately 140 pounds of hay. In the cylindrical bale a given quantity of hay is got into less than half the space that it would occupy in a square bale; while there are, it is asserted, other advantages, including freedom from mould, preservation of the sweetness of the hay, and greatly reduced combustibility. Thousands of tons of hay in cylindrical bales have been shipped to the American army in the Philippines, and large quantities of it was used by the British army in South Africa.

At a meeting of the Ontario Cabinet held this week an order-in-council was passed placing hemlock logs in the same category as pine logs after April 30 next, the end of the license year; that is, they must not be exported. Of late years a considerable trade in hemlock logs has sprung up, owing to the increasing value of this class of timber. The prohibition is in line with the policy of the Government of confining the manufacture of the products of the forests of Ontario within the confines of the Province.

The Dominion Government has issued a proclamation proclaiming Saturday, August 9, a public holiday, in honor of the coronation of King Edward VII.

The following unique business card originally appeared in a newspaper at Muttra, India. Its author was weak in his command of English, but had advertising ideas all his own and knew how to tell a heap in a very small space. He says: "Haji Noor Bux the ironmunger man of Muttra has all first class goods for sale he has also perambilater for infant and guns for Sahib. His prices is not so as those of English shop and he is the most cheap of all so come and buy some things he sells corigate iron and bark wire at more less than Calcutta fellow can sell."

The proposed improved militia law did not pass the United States Congress, but its discussion gave Representative Dick an opportunity to have printed for public information a section of the old law, which is still on the statute books, though it can hardly be said to be in force. It is section 1628 of the revised statutes and runs as follows: "Every citizen shall . . . be constantly provided with a good musket or firelock of a bore sufficient for balls of the one-eighteenth part of a pound, a sufficient bayonet and belt, two spare flints and a knapsack . . . or with a good rifle, knapsack, shot pouch, and powder horn, twenty balls suited to the bore of his rifle, and a quarter

of a pound of powder . . . each commissioned officer shall be armed with a sword or hanger and a spoutoon." Is there a militia officer now in service who knows what a spoutoon is?

Lord Dundonald, the new commanding officer of the Canadian Militia, will open the Toronto Industrial Fair on Labor Day, September 1.

The increasing recognition of the value of aluminium, which is, of course, obtained principally from bauxite, a mineral consisting chiefly of alumina, or oxide of aluminium and oxide of iron, lends interest to the existence of bauxite in New South Wales. In 1899 it was recognized by Mr. Jaquet, State Geological Surveyor, at Wingollo, about a hundred miles south of Sydney. Almost simultaneously it was detected in extensive deposits in the Inverell and Emmaville districts, in the northern part of the State. At Emmaville, Professor David found that twelve square miles of country were covered by deposits of laterite or volcanic ash, from a few feet up to forty feet in thickness, and this material now proves to be bauxite and wocheinite, for it occurs both in the pisolitic and massive forms. In the Inverell district, also, it is now known to occupy very considerable areas. In color the New South Wales bauxite varies from pale yellow to deep red. Near Inverell it has been extensively used for making roads, with very satisfactory results, its value in the production of aluminium being unknown at the time. Only the bauxite deposits near Emmaville have been officially mapped out as yet; nor has there been anything in the shape of a systematic examination of those whose existence in the state has so far been ascertained. In view of the many directions in which the use of aluminium is steadily increasing, it is certain that should its manufacture be started in New South Wales, where bauxite is apparently more abundant than generally supposed, a new and profitable industry would become established. The ore could be conveyed by rail to places where coal is cheap and plentiful; also the materials for constructing smelters. Or the coal could be taken to the neighborhood of the bauxite deposits. Either way there appears to be a good opening for those possessed of the necessary capital, experience and energy.

Even salvation has been unionized. Nearly 200 members of the United Mineworkers left St. Patrick's Church at Olyphant, Pa., during mass Sunday morning because the priest would not ask a non-union man to leave the church. It is apparent, of course, that it would never do for the trades unions to permit the saving of "scab" souls. Heaven is supposed to be a state of perfect bliss, and there can be no perfect bliss where all the souls do not have union cards and an eight-hour day for the glorification of their Maker.—Detroit Free Press.

Not only political but commercial and industrial power is moving westward. Ontario is still the first agricultural Province, but in the production of grain it has been obliged to yield up the palm. Twenty years ago Manitoba had a wheat area of 160,842 acres, yielding 5,686,440 bushels. Last year the acreage was 2,011,835, and the yield 50,502,085. But there is room in the west for several Manitobas, and this fact has begun to appear in the returns. The agricultural year book of the North-West Territories shows that in four years the production of wheat has increased from 5,542,478 bushels to 12,808,447 bushels, and of oats from 3,040,307 bushels to 9,716,132 bushels. The yield as well as the acreage has largely increased, and except in the year 1900 the increase was steady. The yield of wheat was 25.37 in 1901, as against 18.01 in 1898, and the yield of oats 42.88, as against 18.93. We have seen that the yield in Manitoba increased tenfold in twenty years, and a still greater rate of increase may be looked for in the Territories.—The Globe.

CAPTAINS OF INDUSTRY.

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

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

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

The Toronto Contracting & Paving Co., Toronto, has been incorporated with a capital stock of \$40,000, to manufacture contractors' supplies and building materials, etc. The provisional directors include A. M. Orpen, James Williams, and W. J. West, all of Toronto.

The Ault & Wiborg Co., Toronto, has been incorporated with a capital stock of \$50,000, to manufacture lithographers' and stationers' supplies, etc. The provisional directors include J. S. Lovell, William Bain, and E. W. McNeill, all of Toronto.

The Raven Lake Portland Cement Co., Toronto, has been incorporated with a capital stock of \$500,000, to manufacture Portland cement, brick, lime, plaster, etc. The provisional directors include Thomas Christie, Thomas McLaughlin, both of Toronto, and John McDonald, Lindsay, Ont.

The Canadian Northern Railway Elevator Co., Toronto, has been incorporated with a capital stock of \$500,000, to construct elevators, etc. The provisional directors include William McKenzie, and D. D. Mann, both of Toronto, and R. J. Mackenzie, Winnipeg, Man.

The Chicago Pneumatic Tool Co., manufacturers of pneumatic tools, implements, etc., has received a license to manufacture its goods in Canada, and has appointed J. B. Wilson, Toronto, to be its attorney.

The Commercial Acetylene Co., manufacturers of apparatus for storing acetylene for lighting, etc., has received a license to manufacture its goods in Canada, and has appointed J. R. Arnoldi, Toronto, to be its attorney.

The Peck Rolling Mills Co., Montreal, has been incorporated with a capital stock of \$600,000, to manufacture nails, spikes, tacks, horse-shoes, etc. The provisional directors include Thomas Peck, J. H. Peck and T. E. Peck, all of Montreal.

The Grocers' Mfg & Trading Co., Montreal, has been incorporated with a capital stock of \$25,000, to manufacture syrups, confectionery, etc. The provisional directors include G. A. Walker, T. W. Wilson and Albert Dettmers, all of Montreal.

The Lake of Bays Wood Mfg. Co., Birkendale, Ont., has been incorporated with a capital stock of \$25,000. The provisional directors include J. A. Dale, T. H. Hungerford and H. W. Crump.

The Guelph Biscuit & Confectionery Co., Guelph, Ont., has been incorporated with a capital stock of \$10,000. The provisional directors include Richard Tanner, Christian Reinhart and Henry Hortop.

The sawmill of Leblanc Bros., Mattawa, Ont., was destroyed by fire July 23.

The Hess Furniture Co., Bracebridge, Ont., has been incorporated with a capital

stock of \$65,000. The provisional directors include William Hess, Valentine Schinbein and Angus McLeod.

The Beaver Paper Co., Toronto, has been incorporated with a capital stock of \$40,000. The provisional directors include M. A. Benjamin, George Powley and Charles Burls.

The Poulin Lumber Co., Ottawa, has been incorporated with a capital stock of \$50,000, to carry on a sawmill and lumbering business. The charter members include S. R. Poulin, J. P. Prudhomme and A. W. E. Hellyer, all of Ottawa.

La Compagnie des Moulin du Nord, St. Adele, Que., has been incorporated with a capital stock of \$100,000, to manufacture pulp, paper, etc. The charter members include Hon. J. D. Rolland, Montreal, Henri Rolland and Jean Rolland, both of St. Jerome, Que.

The Nova Scotia Steel & Coal Co., New Glasgow, N.S., will erect a large ore pier at North Sydney, at a cost of about \$10,000.

John Walker, hub manufacturer, Tweed, Ont., is being joined by a syndicate with a capital stock of \$25,000, for the purpose of manufacturing hubs, shafts, wheels and belt goods for the carriage trade. A large factory building will be added to the present one, and about \$5,000 worth of wheel machinery installed.

The International Paper Co., New York City, will, it is stated, build paper and pulp mills in Canada. The company's principal holdings are at Three Rivers, Que., where it has a large sawmill and cutting-up boat for preparing and shipping wood, capacity 3,000 logs daily. A cutting-up plant has recently been added to the sawmill at Three Rivers, that has a capacity of 2,500 logs daily. The company now control in Canada over 1,900,000 acres of spruce timber.

Canada's exports of wood pulp and pulp wood during the year ended June 30, 1901, amounted to \$3,335,265, of which \$966,920 was sent to Great Britain and \$2,302,215 to the United States, \$66,194 going to other countries. The total is an increase of \$616,477 over the exports

Pneumatic Tools and Appliances ARE GREAT MONEY SAVERS.

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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.

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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

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

of 1900, those to Great Britain showing an increase of \$366,372, and those to the United States a gain of \$244,321. An increase of \$494,247 is apparent in the exports of pulp wood, the United States taxing \$500,744 more in 1901 than in 1900, and Great Britain \$6,172 less, the difference (\$325) being sold to other countries. Of wood pulp, the increased value disposed of is \$122,230, the details being: Increase in Great Britain, \$372,544; to other countries, \$6,109; decrease to the United States, \$256,423. It is worthy of note in this connection that two or three years ago little interest was felt in England in Canada's pulp wood, but in that interval the change has been so rapid that Great Britain is now receiving from Canada one-sixth of its total consumption, and Canadian competition with Norway and Sweden has been most successful, the latter having been placed on the defensive by the excellent quality of the Canadian product.

A fly-wheel in the works of the Sun Cement Co., Owen Sound, Ont., burst on July 23, wrecking the building and killing Dr. E. H. Horsey, M.P. for North Grey, Ont.

The Trappist Monastery of Oka, near Montreal, was destroyed by fire July 24. Loss about \$200,000.

Messrs. F. C. Hirsch & Co., Montreal, of which concern Mr. A. Wilkes is manager, are Canadian agents for Messrs. Hartley & Sugden, Halifax, England, for the sale of their wrought iron welded boilers for heating churches, school houses, pub-

lic buildings, factories, etc. The special claim for these boilers is that they are all wrought iron and have no joints. They are welded, not riveted, and are therefore not liable to leak.

The Paris Plow Co., Paris, Ont., has been incorporated with a capital stock of \$250,000, to manufacture plows and other agricultural implements and machinery. The provisional directors include John Penman, R. L. Murray and P. G. Wickson, all of Paris.

The H. Krug Furniture Co., Berlin, Ont., has been incorporated with a capital stock of \$100,000, to manufacture furniture and acquire business now carried on under name of H. Krug. The provisional directors include Hartman Krug and A. E. Ruby, both of Berlin.

Messrs. J. A. Nones & Co., 6 City Road, London E.C., England, announce in our advertising columns their desire to open correspondence with Canadian manufacturers who desire to sell their products in the British and European markets. They have a six-story warehouse containing some 7,000 square feet of floor surface within five minutes walk of the Bank of England, and most favorably located for business; and they also have a commodious warehouse at Wapping, near London. They give special attention to handling manufactures of wood, such as roll-top and other desks, office and household furniture, chairs and chair stock, etc.; and they are themselves large buyers of goods in the white, and have facilities for setting up and finishing knock down

goods. They are a new trade house supplying such goods to the wholesale trade only. Besides their furniture business, they have other departments where they are prepared to handle any lines suitable for the British and Continental markets.

The Sovereign Mfg. Co., Toronto, has been incorporated with a capital stock of \$100,000, to manufacture perfumery, cologne, etc. The provisional directors include G. C. Arnott, W. W. Sloan and Edward Newton, all of Toronto.

The Chaney Burglar Proof Sash Lock Co., Toronto, has been incorporated with a capital stock of \$10,000 to manufacture burglar proof sash and other locks, metal specialties, etc. The provisional directors include N. P. Chaney, Buffalo, N.Y., and E. S. Arnold, Toronto.

The Allen & Hanburys Co., Toronto, has been incorporated with a capital stock of \$250,000, to manufacture drugs, medicinal preparations, druggists' sundries, etc. The provisional directors include F. J. Hanbury, London, England, A. R. Deacon, St. Louis, Mo., and W. L. J. Wood, Toronto.

Tenders are being asked for the rebuilding of the Brantford Starch Works, which were destroyed by fire a couple of months ago. The new buildings will be considerably larger than the factory destroyed.

The W. & D. Dineen Co., Toronto, has received a permit for the erection of a four story brick and stone factory, to cost about \$10,000.

One Hundred and 'Leven English Exhaust Pipes

Will soon be capped by

BURT EXHAUST HEADS.



This was the exact number recently sent in one shipment to our London agency. This shipment made a solid carload, with the addition of 28 Cross Oil Filters.

One solid carload of satisfaction. Burt Exhaust Heads stop the dripping from exhaust pipes—nothing but dry steam gets by them. Repair bills on rotten roofs and spattered walls are avoided. They are bought as a matter of economy. They pay for themselves.

We'll send a booklet if you say.

THE BURT MFG. CO.,

LARGEST MFRS. OF OIL FILTERS IN THE WORLD.

AKRON, OHIO, U.S.A.

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

BUFFALO VENTILATORS

IMPROVED

FOR

SCHOOLS, CHURCHES, FACTORIES, FOUNDRIES
AND ALL INDUSTRIAL BUILDINGS



Impure Air, Smoke, Steam and Gases rapidly
and constantly withdrawn.

BUFFALO FORGE COMPANY, BUFFALO, N.Y.

The Macdonald Mfg. Co., Toronto, will build another story to their factory, at a cost of about \$4,300.

McLean's hardware store, London, Ont., was destroyed by fire July 22. Loss about \$11,000.

The shoddy mills of R. E. Sabiston, Toronto, were destroyed by fire July 22. Loss about \$1,500.

E. W. Tobin, M.P., who is connected with the Brompton Falls Co., has with F. N. McCrea, purchased from King Bros., Quebec City, the seigniory of St. Jean Deschailions. Other pulp wood lands are included in the purchase, making the whole area 60,000 acres, for which a quarter of a million dollars is said to have been paid.

The Tacoma Steel Co., is reported to have acquired 150 square miles of timber lands at Quatsino Sound, B.C., where it proposes to build a large pulp mill. The company has secured the falls on Marble Creek, where, it is estimated, 2,000 h.p. can be developed. The capacity of the

mill is to be 75 tons per day at the outset and 150 tons ultimately.

The second annual meeting of the shareholders of the Kinleith Paper Co. was held at the head office of the company at St. Catharines, Ont., on July 8. A satisfactory statement of the business for the past year was submitted and approved. The following were elected directors: F. A. Ritchie, president; Edward Finlay, vice-president and managing director; L. P. Snyder, C. Howard Smith and J. J. Warren. At a subsequent meeting of the board, Allan Ramsay was appointed secretary and treasurer.

The Modern Telephone Co., Hamilton, Ont., has been incorporated with a capital stock of \$300,000, to construct a telephone system, etc. The provisional directors include O. W. Rogers, New York City, J. S. King and W. A. Johnson, both of Toronto.

The Hudson Bay Co.'s new steam barge Inenew was launched at Polson's ship-building yards, Toronto, a few days ago.

She will be employed as a supply boat for the Hudson B y Co. She contains fore and aft compound surface condensing engines with eight and eighteen inch cylinders of 12-inch stroke. There will be a Fitz Gibbon boiler, 54 inches in diameter, with a working pressure of 150 pounds. The boat will go by the St. Lawrence River, and around the Labrador Peninsula to Hudson Bay. Special attention has been given during her building to make her sufficiently strong to resist the great pressure when forcing her way through the ice.

The Preston Brush Works, Preston, Ont., were destroyed by fire recently. Loss about \$3,000.

Mr. W. H. Meldrum, Peterborough, Ont., and a couple of American capitalists contemplate erecting works in Canada for the manufacture of spades, shovels and garden tools. A factory to cost about \$10,000, would be erected and from 50 to 60 men engaged. It is proposed to form a company with a capital stock of \$100,000.

CAMEL BRAND
BALATA
RUBBER

BELTING

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.

"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.

SALES
AGENTS

TORONTO, ONT.

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

MONTREAL, QUE.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The Burt Mfg. Co., Akron, Ohio, have just shipped 28 Cross oil filters and 111 Burt exhaust heads to London, England. The shipment made one solid carload and constituted orders placed by their London agency.

In our last issue it was mentioned that the Canada Switch & Spring Co., Montreal, would erect additional buildings at their factory at a cost of about \$4,000. The amount should have read \$40,000, that being the cost of the improvements being made this year to the works of the company.

The Collingwood Steel Shipbuilding Co., Collingwood, Ont., recently launched from their yards the new steel vessel built by them to the order of the Algoma Central Steamship Co. The vessel is 390 feet in length.

The sash and door factory of John Hillock & Co., Toronto, was damaged by fire July 30. Loss about \$3,000.

The machinery of the iron rolling mills at Guelph, Ont., has been removed to London, Ont., to the works of the London Rolling Mills Co. The main building of the company will be 176 x 150 feet. About 65 people will be employed at the start.

Work on the rail mill of the Dominion Iron & Steel Co., Sydney, N.S., is progressing rapidly and the general manager expects to have it completed and producing steel rails by the end of the present year. It is expected that these rails will be of superior toughness and good wear-

ing quality on account of the low percentage of sulphur and phosphorous in the Sydney metal. There are now 6 open-hearth furnaces in operation producing steel, and before long four others will be lighted. During the month of May one furnace produced 8,023 gross tons of pig iron and for the month of June its daily average was 263 gross tons. There are now two furnaces producing pig iron. Two steamers are regularly engaged carrying steel from Sydney to the United States and shipments are constantly made by rail to all parts of Canada. Over 20,000 tons of steel have already been shipped to the United States where it has won a reputation for quality—Maritime Merchant.

An unique colliery is now being opened up at Big Pond, Sydney Mines, N.S., by the Nova Scotia Steel & Coal Co., in which will be introduced the most modern devices known in coal mining. Electricity will be used entirely for hoisting coal, pumping water, and hauling coal along the levels. The new mine will be a smokeless colliery, all the motive power being supplied by electricity. The electricity necessary will be generated at the blast furnaces a mile from the pit head, the steam for the generators being made from the gas of the furnaces and coke ovens. It is expected that all will be in operation next year.

The Canada Paper Co. have placed an order with the Pusey & Jones Co., of Wilmington, Del., for a new paper ma-

chine, which will be 156 inches wide and will make a sheet of paper over 14 feet wide. It will be 30 per cent. larger than any other now in use in Canada and make the very finest grade of newspaper. The machine will weigh nearly 400 tons and will require a train of 25 cars to transport it to the works on the St. Francis River, at Windsor Mills, Que., where it will be in operation about the end of the year. It will make 35 tons of finished newspaper a day. As soon as the company's new pulp mill is completed they will be turning out 50 tons of ground wood pulp a day. The new building will be 435 feet long and will vary in width from 50 to 150 feet.

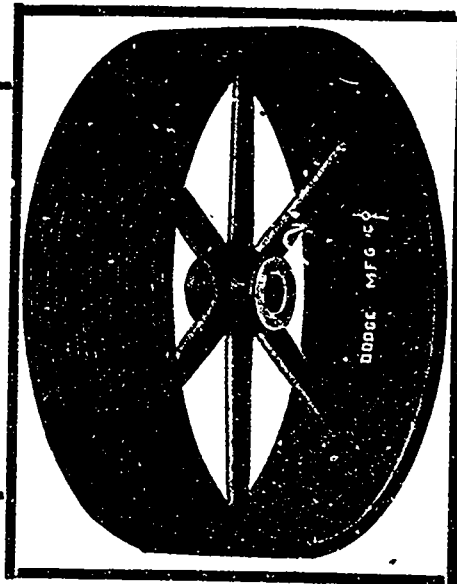
THE SCHEEFFER RECORDING WATT METER.

The Packard Electric Co., St. Catharines, Ont., have sent us a very beautiful brochure having reference to the type G Scheeffler Recording Watt Meter manufactured by them, which, they inform us, marks the greatest development that has yet been made in measuring instrument for electric currents.

Speaking of the general points of excellence of this instrument we are told that it is a motor of the simplest type, a light aluminum disc rotating in a magnetic field and driven by induction. The revolving element is so adjusted that during any period its number of revolutions is exactly proportional to the energy passing to the circuit in that time. This

IRON GROOVED PULLEYS

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



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

..Improved Ball and Socket Adjustable Hangers..

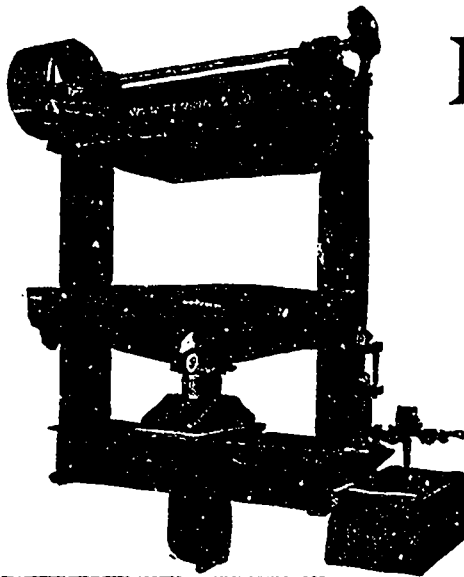
DROP AND POST, SAFETY COLLARS, ETC.

Power Transmission Machinery. GRAIN HANDLING MACHINERY.

SEND FOR CATALOGUE.

DODGE MANUFACTURING CO., - TORONTO, ONT.

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Hydraulic **PRESSES**

We Build Presses
for...

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

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CATALOGUE
AND PRICES

William R. Perrin & Company

TORONTO, - CANADA

energy is measured in Watt hours. It records in Watt hours the true energy delivered to the circuit in any period of time and for all power factors. This feature is absolutely essential when the load consists wholly or in part of arc lamps, motors, or other forms of inductive load. Scheeffler meters are made of any capacity, for any voltage, of any frequency, or for two or three-wire systems. In calling attention to this meter there are several important features which should be noted:

1. The Scheeffler Meter is an induction meter, and commutators and brushes with their constant varying friction are not incorporated, so there is no electrical connection to the moving parts.

2. It registers accurately throughout its entire range and will record from a fraction of one-half of one per cent. of its full load to an overload of 50 per cent. This sensitiveness to record a very light load is due to the infinitesimal friction of the moving parts, the bearing being a small ball of hardened steel on a jewel. This infinitesimal friction has a direct application to the sensitiveness of the meter in responding to any sudden variation of load. The correct proportionment and location of the coils aids in giving an accuracy to this meter under all conditions that is phenomenal.

3. It is absolutely correct on pressure

balance, so there is not the slightest movement of the rotating parts unless current is being consumed.

4. Its light weight of ten pounds allows it to be fastened or suspended from a comparatively light structure. The case is finished in black enamel with raised lettering of polished bronze. The case is very pleasing in design, and consists of two parts with a rubber gasket between, which makes it not only moisture proof, but bug and dust proof as well. It can be quickly installed and connections are made outside the case, avoiding all possibility of injury to the sensitive parts.

5. It is simple, yet accurate in its operation. Its permanency of calibration is one of its strongest features, as nothing short of the mechanical displacements of its parts will impair its accuracy. The calibration curve is a straight line so that the meter will read correctly on all loads.

6. Tampering with it is impossible without breaking the seals, as connections are protected by sealing blocks. Each meter is provided with sealing disc to conform with government regulations.

GRAIN ELEVATORS.

The Canadian Pacific Railway Co. is erecting a new three million bushel elevator at Fort William, Ont. On the piles, of which there will be 5,000, will

be laid the concrete, upon which the steel structure will rest. The contract calls for its completion in time for this year's crop.

Elevator D, which was damaged by fire last spring is being overhauled, and the capacity will be increased to two and a half million bushels. This is a steel tank elevator. Thirty-two new steel tanks will be built, the foundations of which are being laid.

McEACHREN HEATING AND VENTILATING CO.

We are in receipt of a circular from Messrs. J. M. Adam & Co., proprietors of the Ibrox Iron Works, Glasgow, Scotland, in which they speak of the pneumatic apparatus manufactured by the McEachren Heating & Ventilating Co., Galt, Ont., as follows:

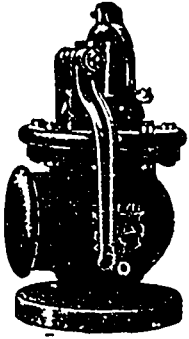
"We have the pleasure to announce that by arrangement with the manufacturers in Canada, we shall from this date hold an extensive stock of all sizes and varied patterns of fans for prompt delivery, and we can order by cable and bring forward special fans as soon as any maker.

"We have tested these fans on our own contracts in many ways, including the conveying of granular materials—the most exacting duty to which fans can be put—and we find them in all respects

**ROCK
DRILLS**

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

**AIR
COMPRESSORS
GAS**



A VALVE YOU CAN RELY ON — SEND FOR PRICES

CROSBY STEAM APPLIANCES EXCEL

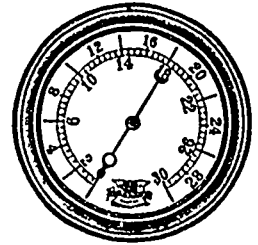
Steam Engine Indicators.
Recording Gages.
Revolution Counters.
Pressure and Vacuum Gages.
Lubricators, etc.



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

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

A TRUTHFUL GAGE IS THE ONLY GOOD GAGE



equal to the best American fans now in use, the merits of which are well known. "We therefore accepted the sole agency on this side, and without asking a preference for a manufacture produced in one of the British Dominions, we introduce, with confidence, the McEachren fans on their merits."

REESE-HAMMOND FIRE BRICK CO.

The Reese-Hammond Fire Brick Co., of Bolivar, Pa., with works at Bolivar, Fairmont and Curwensville, have secured the contract for the new blast furnace and four hot blast stoves being erected by Julian Kennedy for the Rochester & Pittsburg Coal & Iron Co. at DuBois, Pa. The Reese-Hammond Co. recently furnished the brick for a blast furnace for one of the United States Steel Corporation's plants, and within four months have secured orders for six blast furnaces and eight Kennedy hot blast stoves.

They were also awarded the contract recently by the Union Steel Co., for brick for their new open-hearth plant and other furnace work being erected at Donora, Pa., amounting to about 7,000,000 high grade fire brick from their Curwensville works in Clearfield County. This company owns a large acreage of the purest and most refractory clays in Clearfield County and have under lease some of the most desirable territory in that country. They are increasing the capacity of their Curwensville works to 75,000 high grade fire brick per day, building several miles of mine railway, and making other extensive improvements that will, when completed, in a couple of months, make the Curwensville works, not only one of the finest plants in the Clearfield region, but perhaps in the whole country.

The Reese-Hammond Co. have almost completed their new No. 1 works at Bolivar, which replaces the old one destroyed by fire in March last. The new plant is

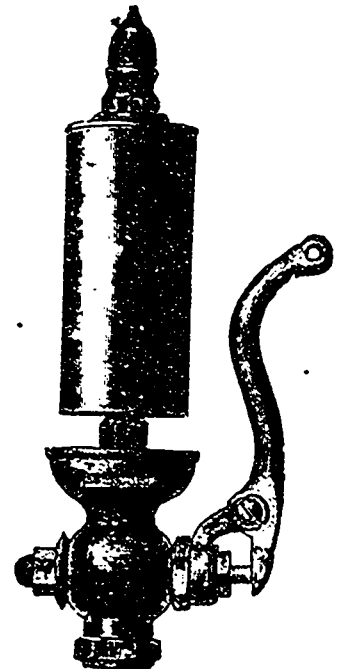
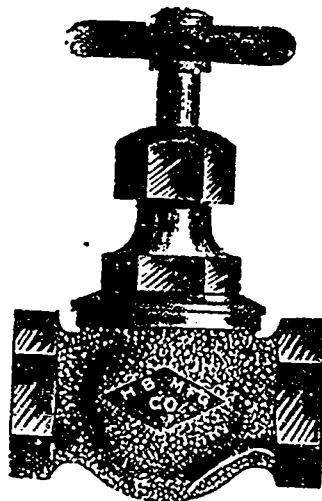
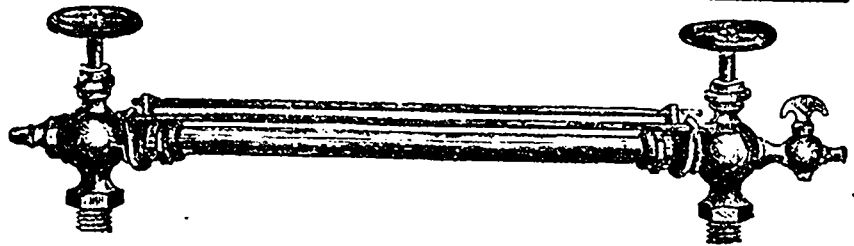
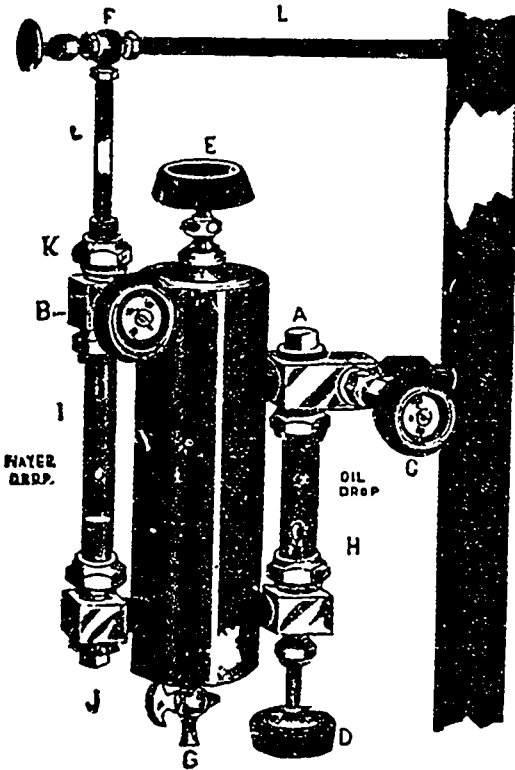
a brick structure 312 x 60 feet, two stories high, and will have a capacity of 300,000 brick per day. It is to be used for the manufacture of high grade refractories exclusively.

The total capacity of the seven plants of this company, including all classes of high-grade refractories and other fire clay products, reaches the enormous output of 285,000 brick per day.

MADE IN CANADA.

The Metallic Roofing Co., Toronto, are issuing a series of desk blotting pads, the reading matter upon which has reference to the various lines of metal goods manufactured by them, and upon which the legend, "Made in Canada," appears very prominently. One legend says:

"Wouldn't it freeze you when the cold weather comes along, to find the rain and snow getting under your old wooden roof and spoiling your walls, ceilings, etc.




WRITE FOR PRICES TO

The **HAMILTON BRASS MFG. CO. Limited**
HAMILTON, - ONTARIO

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



ARMSTRONG'S PIPE THREADING AND CUTTING OFF MACHINES,
 For Hand or Power.
 Save Time and Labor. Capacity from 1/4 to 6 inches.
Armstrong's Genuine Stocks and Dies, THE BEST WATER, GAS, AND STEAM
 ARE MANUFACTURED BY FITTERS' TOOLS
THE ARMSTRONG MFG. CO., - BRIDGEPORT, CONN.
 New York Office—139 Centre St. Catalogue on Request.



Use 'Empire Steel Shingles' and such a state of things is impossible."

Another says: "Time comes when you will want to cover your building (old or new). There is nothing looks more natural, or lends itself more readily to any architectural design, than our rock faced steel siding, sheet steel pressed brick, etc."

And another: "Don't get stuck by large insurance rates when you can cut them down by using our fire-proof glass, windows, doors, etc., with hollow sash and frames complete."

"Some people think," says another, "they are saving money by using common lath when plastering the inside or outside of a building. They are mistaken. You will save more time, labor and money,

besides having a thoroughly fire-proof wall, by using 'Hayes' Patent Steel Lathing."

And another: "The greatest thing on earth that has been devised for the covering of a roof is Eastlake Steel Shingles."

All these goods are made by The Metallic Roofing Co., cor. King and Dufferin Streets, Toronto, Canada.

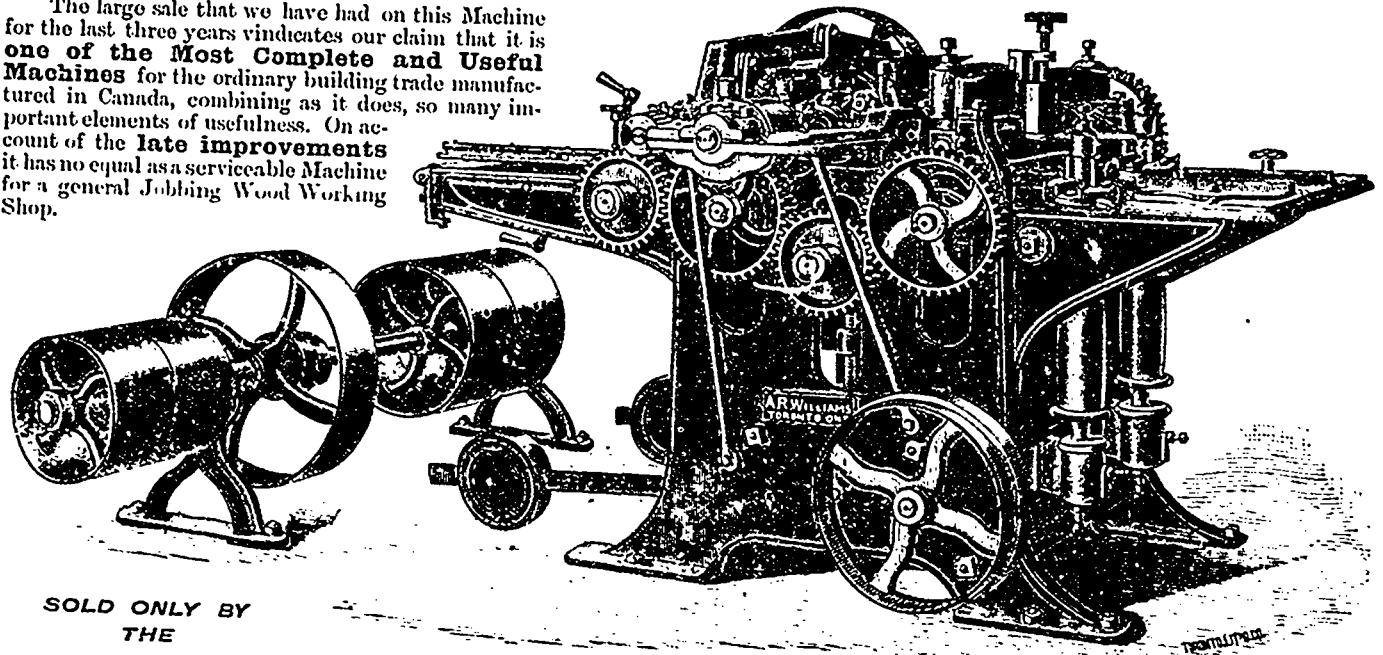
FOR VENTILATING A COAL MINE.

Among the recent contracts awarded to the Buffalo Forge Co., Buffalo, N.Y., is one of particular interest, that of the Continental Coal Co., Glouster, Ohio. They have ordered three 250-inch fans installed in their mines for the purpose

of ventilating and exhausting fumes, smoke and all dangerous gases constantly met with in coal mining. The fans are 250 inches, housing of the 3-type and of the special width of 72 inches. The sides are built of extra heavy steel plate and are thoroughly braced with angle irons of ample size, effectually preventing all vibration. The blast wheels of these fans are of the usual centrifugal type. The radial blade or veins with backwardly curved tips are supported by two spiders of wrought iron tees springing from cast iron hubs, and are further stiffened by the conical side plates. The fan shaft is supported, independent of the housing, by two standard Buffalo self-aligning, chain-oiling outboard bearings mounted on

IMPROVED "ECLIPSE" PLANER, MATCHER and MOULDER

The large sale that we have had on this Machine for the last three years vindicates our claim that it is **one of the Most Complete and Useful Machines** for the ordinary building trade manufactured in Canada, combining as it does, so many important elements of usefulness. On account of the late improvements it has no equal as a serviceable Machine for a general Jobbing Wood Working Shop.



SOLD ONLY BY THE

A. R. WILLIAMS MACHINERY CO., Limited, Toronto

Manufacturers, Importers and Dealers in
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For further information apply to the company as above.

BRITISH DEMAND FOR TIMBER.

Mr. Harrison Watson, curator of the Canadian section of the Imperial Institute, London, England, in making his annual report for 1901, refers as follows to the demand for timber and manufactures of wood:

"There continue to reach this office numerous enquiries for the names of Canadian mills which can supply such lines as doors, mouldings, flooring, blocks, handles, seats, chair-stocks, etc., and on the other side application from Canadian manufacturers and shippers for informa-

tion as to the demand for above and similar goods over here. These industries appear to be gradually developing, but apparently the supply of goods is not increasing in the same ratio as the demand, for the usual report of visitors to the Dominion in search of supplies is that practically all the concerns which are really in a position to deal with export trade have already contracted for all they can possibly produce. There are some lines, such as box shooks, for example, where competition keeps prices down to levels which would be unprofitable to Canadian shippers, but on the whole there would seem to exist a profitable field for further investment in the wood-working and turnery industry which deserves the attention of Canadian capitalists. Attention has previously been called to the advantages which the Maritime Provinces offer for the erection of such establishments where export trade is the main consideration, owing to their proximity to European markets and the possession of open harbors throughout the year. Merchants on this side often express their surprise that more has not been accomplished in this part of the Dominion. Among other enquiries one worthy of note has been as to the suitability of Canadian sleepers or ties for railways in South Africa and other semi-tropical countries.

From time to time letters are received from Canadian firms for information as to the demand for wood skewers, and expressing the opinion that they are well equipped for supplying same. From

enquiries made it would, however, appear that only one Canadian maker does any trade of any account in this market, and it is therefore probable that my Canadian correspondents find, after due investigation, that they cannot compete in price with the skewers produced by the special machinery of the American corporation. Another point is that most Canadian skewers are of maple, whereas until recently hickory skewers were practically the only variety used, and even now a large section of the trade maintains its conservative preference and will not use maple."

AN EXTENSIVE DEMAND FOR BUFFALO GOODS.

The products of the Buffalo Forge Co., Buffalo, N.Y., are in steady demand throughout, not only United States and Canada, but European countries.

The following list gives a few of the orders recently received through their different branch houses:

Two 70-inch steel plate steam fans, for heating and ventilating, direct connected to two Buffalo Forge Co., engines, and one 130-inch housing standard steel plate pulley fan for mechanical draft are to be shipped to Copenhagen, Denmark.

One induced draft plant and one 23 h.p. engine for electric plant in Dutch Guiana, South America.

Five Buffalo engines of 45 h.p. each for driving generators, and one 38 h.p. engine for a pumping equipment, to be installed in a sugar factory now being

built near Manzanillo on the south side of Cuba.

One 20 h.p. Buffalo vertical class "A" engine to be shipped to Gustenunde, Germany.

One 15 h.p. double vertical single acting Buffalo engine to Gothenburg, Sweden.

One 60-inch standard steel plate fan for ventilation, to be shipped to near Glasgow, Scotland.

One 140-inch steel plate fan with heaters complete for heating and ventilation to Barrow-in-Furness, England.

One standard 80-inch fan and heater complete and one 90-inch pulley fan for ventilation and one 30 h.p. horizontal Buffalo engine to London, England.

One 120-inch fan and six 60-inch fans to Manchester, England.

One 80-inch standard steel plate fan for mechanical draft to Victoria, British Columbia.

One 110-inch steel plate pulley fan, direct connected to a cylinder above shaft Buffalo engine for mechanical draft to Halifax, N.S.

One 70-inch fan and one 100-inch fan for heating and ventilating purposes, to Portland, Oregon.

One standard 40-inch steel plate fan to College Station, Texas.

One 100-inch steel plate fan direct connected to a Buffalo single vertical engine to San Francisco, Cal.

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One 25 h.p. horizontal Buffalo engine to Gretna, La.

CANADA'S AGRICULTURAL EXPOSITION AND INDUSTRIAL FAIR

TORONTO, ONT.

MONDAY, SEPT. 1, to SATURDAY, SEPT. 13, 1902

Entries Close Saturday, August 9th.

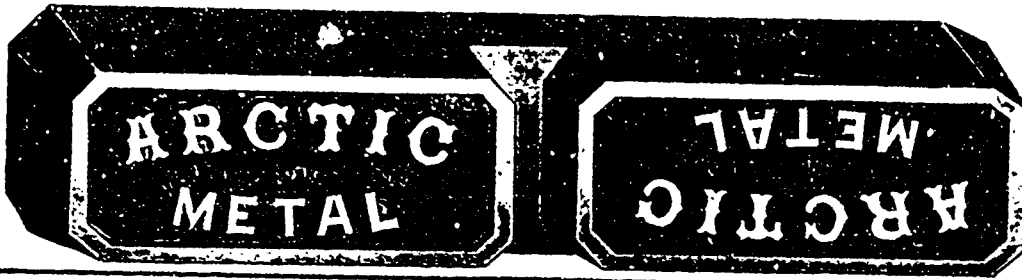
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FORESTRY IN CANADA.—The annual report of the Superintendent of Forestry for Canada has just appeared. It is only three years since the Forestry Branch was established by the Interior Department, and it appears to be doing excellent work. A good system of forest protection has been devised and put in operation. Rangers, selected from the residents of the locality, serve under the direction of the Crown Timber Agent or Homestead Inspector for the district. These local forest rangers are not constantly on duty, but only during such times as the district official thinks necessary. During the drought last year they were kept quite steadily employed. Good service of the same kind is also rendered by the Northwest Mounted Police.

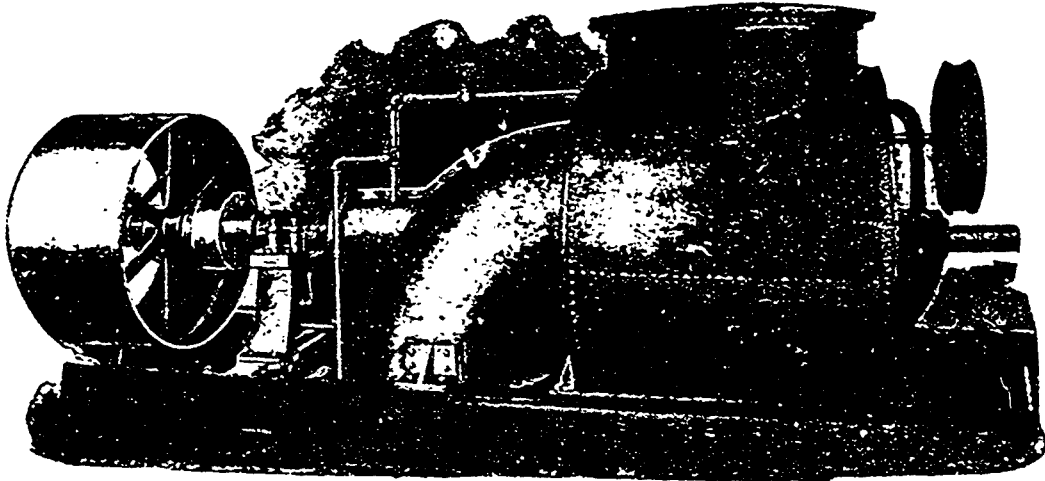
Mr. Stewart, the Superintendent of Forestry, considers the matter of setting apart certain areas as forest reserve to be of the utmost importance. This is desirable both for the insuring of a constant supply of timber and for the maintaining of a cover for the moisture of the lands.

In the older settled regions of Canada the natural reservoirs tend to dry up in hot seasons because the sources of the rivers are being stripped. Upon this subject Mr. Stewart says:

“A very general opinion seems to prevail that in setting apart these lands and reserving them from sale or homestead entry the country is deprived of all benefit from such territory. This is very far from the facts of the case. The true policy for any country like Canada, having still in its possession large areas of ungranted lands, would certainly be to explore the country in advance of settlement and then divide it according to its character into agricultural, timber and mineral lands. The agricultural lands can then be dealt with as seems wisest for agricultural purposes, but when we come to the timber areas we find that the utility of the forest is at least two-fold—first, for the merchantable value of its products, and secondly, on account of the functions it performs in modifying the climate, in the distribution of moisture, and, lastly,

in its great office where, growing on mountain and hillsides, as previously stated, in holding back the water and causing a more even flow to the rivers and streams that always have their sources in those elevations.

“Captain Eads made a most pertinent remark when engaged on the improvements on the lower Mississippi, that he was working at the wrong end of the stream. A sound forestry policy is one that recognizes the elements of growth and decay, and takes means to harvest the crop at maturity, and even in those reserves whose chief value is in forming a natural water reservoir there is no reason why the mature timber should not be cut, and it will be a matter for consideration as to the best policy to adopt in this respect. There are also in our Dominion territory large areas of timber growing on comparatively level land, but which is not well adapted for agriculture, and within the past year certain of these have been set apart for timber purposes for the benefit of the prairie settlers.”



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

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The Riding Mountain Reserve covers an elevated area in Manitoba from which flow most of the streams of that Province west of the Red River. The Spruce Woods Reserve is in the same Province. It consists of 190,000 acres on the Sand Hills along the Assiniboine River, east of Brandon. Spruce is the chief timber. Turtle Mountain Reserve is in the south-western part of Manitoba, lying along the international boundary. Moose Mountain Reserve and the Foothills Reserve are in the North-West Territories. The latter embraces the eastern slope of the Rocky Mountains between Bow River and the international boundary. The spruce in some cases is large enough for lumber. Rocky Mountain Park is becoming more and more a favorable place of resort.

What Mr. Stewart calls the Railway Belt in British Columbia is the strip forty

miles wide and five hundred miles long through which the track of the Canadian Pacific Railway runs in that province. It contains much timber of great value. The Douglas fir, the western white pine, the western white cedar, the Menzies spruce, the white fir, the western hemlock and the yellow pine are the chief varieties.

Tree planting on the plains has received great encouragement from the Forestry Branch and the practice of setting out forest trees on prairie farms for shelter and ornament is growing.

PULP WOOD IN NEW ONTARIO.—Among all the resources of New Ontario that are available for the investment of capital, few present so great attractiveness as the pulp wood lands. Requiring

a large investment in plant and machinery, investment in pulp industries have several advantages over others, one of the principal of these being the recuperative power of the lands, spruce forests renewing themselves under careful handling in a period variously estimated at from fifteen to thirty years. Even taking the longest period as that of renewal, it has been estimated that if the present consumption of wood for pulp in Ontario were multiplied by ten, the visible supply in Ontario would not be exhausted till the end of 860 years, which would allow the areas first cut over to renew themselves twenty-nine times. This means that, given extensive limits and careful handling, the pulp supply of Ontario is practically inexhaustible.

Under the Ontario laws the land in the pulp limits is not given away, but any settler is allowed to select his homestead and take up his land without let or hindrance from the company holding pulp concessions. This is, however, not a matter of concern to any company, as it is usually regarded as preferable to have wood delivered at a mill by the settler than for the company to cut its own pulp timber with its own men. The only objection that could be taken would be that the settler, by bringing land under cultivation, to that extent, renders renewal of the forest impossible, but this is after all an economic question, and the relative value of the farm produce raised as compared with the value of the same land in timber, will determine whether the lands will be maintained in timber or devoted to agricultural purposes. Mr. J. C. Langlier shows conclusively that, on the poorer lands, the yield of industrial products from the forest will give annually a return of 69 per cent. greater than the same lands would produce if cleared and used as farms.

Although the plant required is costly, the power to be obtained in Ontario is cheap, where so many water powers are running to waste, some of them in the most convenient situations for the bringing in of the pulp wood to the mills. It would be possible to point out numerous undeveloped waterfalls capable of furnishing all the energy necessary for the largest plant required in localities where the raw material could be brought to the mill by the cheapest possible means.

When the ore body of a mine is worked out, nothing remains but to sell off the idle machinery. Pine forests will require two generations or more to elapse before the timber is renewed, but on a big pulp limit by the time the last acre is cut the first will be ready to commence on again. —Fort William, Ont., Industrial Review.

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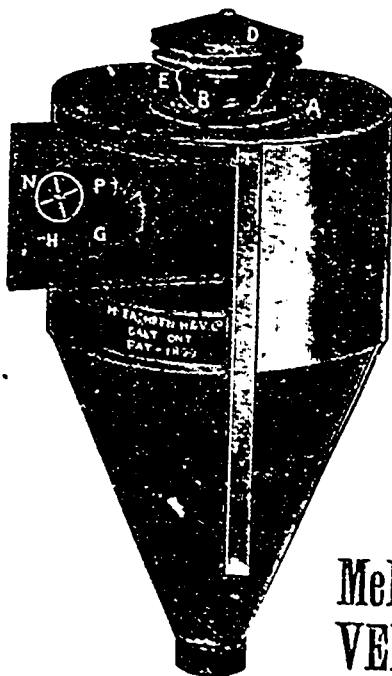
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MINES AND TRANSPORTATION ROUTES IN BRITISH COLUMBIA.—United States Consul Smith, at Victoria, B.C., writes to his Government as follows:

There has recently been considerable activity in prospecting and exploiting the different mining properties on Vancouver Island. Copper has been found in the Sooke Mountains, less than 30 miles from Victoria, and during the past two months 400 tons of high-grade ore has been mined. A cut of 1,000 feet or more leaves no doubt that a large vein exists there. The ore assays over 16 per cent. copper, apart from the gold and silver.

The iron mines on Barclay Sound controlled by the Pacific Coast Steel Co. (composed almost entirely of Americans) contain immense bodies of ore. The Sareta mine is especially valuable, and only needs to be developed to yield large results. The Copper Island and Secroft mines also show great value, and active steps are being taken to push work in them. A small steamer has been purchased, and short railroad lines to convey the ore to the shore have been surveyed. As soon as the necessary financial arrangements have been made, active operations will be commenced.

Work has been suspended on the copper mines of the Nahmint Mining Co., on Alberni Canal; also on the Monitor mine in the same locality. It is understood that the copper veins in each of these mines have become nearly exhausted.

The Yreka Copper Co. (composed mostly of residents of Tacoma, Wash.,

where the head office is) controls valuable mines on the northwest coast of Vancouver Island, including what is known as the Comstock group, situated on Comstock Mountain, Quatsino Sound, which, with the Superior and Quatsino King groups, comprise about 900 acres of copper-gold mineral lands. These groups are contiguous and form practically one property. The average of eight assays recently made was, for all minerals, \$21 a ton, while one sample ran 12.5 per cent. copper and \$350 gold. Free gold is of frequent occurrence in the main lead of the Comstock, and the average percentage of copper is expected to be over 10. A temporary wooden tramway, erected to transport the ore to the water's edge, is soon to be replaced with an aerial conveyor. The first shipment from these mines, consisting of 400 tons of ore, was taken to the Tacoma smelter on June 17. It is expected that hereafter similar shipments will be made monthly or oftener.

The Wreck Bay placer mines, on the west coast, which were discovered in May, 1900, and since operated with indifferent success, have passed into the hands of Seattle capitalists, who propose to spend \$50,000 in developing the property with the latest improved machinery. The new owners believe that the fine gold in the black sands of Wreck Bay will, with modern methods, yield a handsome return on their investment.

American citizens are also in control of the Helga Mining Co. at Clayoquot, west coast of Vancouver Island, where a ledge of apparently rich copper

ore has been struck. A tunnel has been dug into the hill and other development work accomplished, involving the expenditure of \$25,000, but so far no ore has been shipped.

Heretofore, there has been no smelter on Vancouver Island; now two are in process of construction, both on the east coast, about 40 miles from each other. The larger is at Crofton, the smaller at Ladysmith. The first is under the control of two Americans. Its daily capacity will be 350 tons of ore. The 500-h.p. engines to be used were built at Milwaukee. It is expected that the smelter will be running before August.

The new town of Crofton owes its birth to the building of this smelter. Although it is only four months old, the town now has a permanent population of over 500 persons. Water for the smelter is provided by two reservoirs up the mountain slope. The ore to be used is brought from the famous Mount Sicker mines, 12 miles to the west and 1,600 feet above sea level. These mines are connected with Crofton by a narrow-gauge railway, on which three mountain-climbing locomotives, manufactured at Lima, Ohio, carry the ore and laborers. Heretofore, monthly shipments of ore from the Lenora mine have been made to the Tacoma smelter, but during the past six months the ore has been permitted to accumulate. There is now \$300,000 worth of ore awaiting the completion of the Crofton smelter. In this mine three tunnels at different levels have been opened.

In addition to the Lenora vein, another

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rich deposit of ore, known as the Tyce mine, has been found on Mount Sicker. The management of this mine is building a 3-mile aerial tramway to Ladysmith, for the purpose of conveying ore to the smelter in process of construction at that place. This smelter is to be completed during the present year.

Still another mine—known as the Copper Canyon Mine—is being developed at the foot of Mount Sicker. Two tunnels have been dug, and in the main excavation a vein 4 to 4½ feet in width has been uncovered. The ore is of a high grade, but as yet none has been shipped.

One of the results of the erection of the large smelter at Crofton and the developing of the Mount Sicker mines has been the establishment of a daily steamer service between Crofton and Sidney, connecting at the latter place with the Victoria, Sidney and Terminal railway, thus enabling passengers to leave Victoria for Crofton and return the same evening. A large barge is also making daily trips from Sidney to Crofton and the mainland, and a daily steamer service has been inaugurated between Sidney and Nanaimo, calling at Chemainus and Crofton.

The Canadian Pacific Railroad Co., also, has in process of construction in England a new steamer for service on the Victoria-Vancouver route. This boat will have accommodation for 350 passengers, run 20 knots an hour, and make the trip in less than four hours. It is expected to be completed and in operation by December of the present year.

AN ILL WIND BLOWS GOOD TO CANADA.—A curious turn brought about by the coal strike in the United States is the way in which the American newspapers are discussing the possibilities of drawing coal from Canada. The New York Times says: Who can it be that told the managers of the strike that Canada has no coal upon which this country can draw in case they succeed in putting an end to all mine operations here? Their informant was certainly wrong, and, if the "facts" upon which they base their hopes of bringing about an industrial cataclysm are all of the same kind, their threats need inspire no great amount of fear. Canada has no end of coal, scattered all the way from the Pacific to the Atlantic, and the only obstacle to our drawing upon it in a time of emergency is a paper wall—the tariff law. Indeed, that wall has not been quite impervious to Canadian coal, even in the past, and a few words, spoken with due formality in Congress, prove conclusively to both the miners and their employers that our northern neighbors do count for something among our ultimate defences against the recklessness of all sorts of coal barons. Not only has Canada coal, and coal to spare, but much of it is most conveniently placed for shipment to the United States. The Cape Breton mines, for example, can load almost directly from shaft to deep-water ships, and there are others at the head of the Bay of Fundy which are only a few miles from the sea. In either case the journey to Boston or New York is only a matter of three or four days for tramp steamers, and, with good luck, not much more for sailing vessels. To be

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sure, the Nova Scotian coal is not of superfine quality, but it is good enough for many purposes and would serve almost all at a pinch, especially with the experience in burning bad or low-grade coal of our own which the strike has forced many consumers to acquire—to the vast delight and profit of the speculators who had enormous quantities of it in store, waiting for just such an opportunity for unloading on the dear public as the strike has given them.

GASOLINE BOATS IN CENTRAL AMERICA.

—The adaptability of the gasoline marine engine to special environments can be no better illustrated than by citing the conditions in Bocas del Toro, United States of Columbia, says the Engineering Magazine. This town is surrounded by a number of bays and lagoons which are lined with banana plantations. No fresh water is available except that which is caught on the roofs of the houses, and salt water being ruinous to steam boilers a steam launch may be operated for only a short time without being laid up for repairs. About eight years ago two gasoline engines were introduced, and they proved themselves to be so well adapted

to the conditions, that at present there are over 40 gasoline launches employed as tugboats for towing banana lighters to central points, where the fruit is transferred to ocean steamships. An enterprising planter secured an expert from one of the American factories and installed a complete repair shop especially adapted to gasoline engines. These tugboats are employed going from plantation to plantation gathering up the fruit, which, on account of its perishable nature, must be transferred in the shortest possible time to the ships. There are at present 35 of one make of gasoline engine in use in this district. The gasoline is shipped to the tug owners in 210-gallon drums, and the small spaces occupied in transport is especially in its favor as a fuel since there is no coal obtainable in the market and all of it must be shipped from the United States.

GRAPHITE AS A CYLINDER LUBRICANT.

—Cylinder lubrication, always important, is becoming serious. The tendency of the use of increased steam pressures and superheated steam, as well as the development of the gas engine, has caused

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consideration of two questions: What lubricant shall be used, and how shall it be used or "fed"? The many patent lubricators show that the latter question has received much study, but very little has been added to the choice of lubricants for many years. The effect of the use of graphite between rubbing surfaces is generally known. It coats metal surfaces with a smooth, protecting veneer of very low coefficient of friction. The fact that it does this within a very wide range of temperature makes it especially adapted to cylinder lubrication, for which its merits are well recognized, although it is but little used, because of its being troublesome to feed. In its dry form it can only be fed intermittently by hand, and when mixed with oil it soon settles, the results of the two methods being about equally unsatisfactory, and its use has hence been confined to emergencies or to special purposes.

A steam user, who has been identified with graphite industries for many years, has recently applied an entirely new principle to the mixing of graphite with oil, which seems to solve the long-sought problem of making it remain in suspension. Two oils are used which, in the language of the chemist, are not miscible with each other—that is, they act toward one another as do oil and water. The graphite is thoroughly mixed with a small quantity of one of these oils—called the enveloping oil—the grinding being continued until each particle of graphite is coated with this oil, but with little or no surplus. The second oil is then added and the grinding is repeated until the graphite is thoroughly distributed through the mass. The effect is to make the graphite remain in practically perfect suspension.

The explanation of the action is obscure, but it probably has some relation to the action by which fog remains suspended in the air. So far as the force of gravity is concerned, the small globules of water of which fog is composed have the same preponderance over globules of air of the same size that larger masses have, and it is not at all clear why the fog remains suspended while larger masses do not, although the fact is patent to all. The same action is observed between water and finely divided solids. Solid powders remain suspended in water for periods depending on the size of their particles, and if very fine the period of suspension becomes almost indefinite. Gold in excessively fine powder, known as float gold, although nineteen times heavier than water, is the despair of miners, because it is impracticable to recover it by allowing it to settle, and, for the same reason, there is a well known and large loss of copper in the form of slimes which are nothing but extremely fine copper distributed through water. Whatever the explanation may be we have seen samples of this mixture of oil and graphite, in which the suspension seemed perfect after weeks of rest. The mixture has been found to feed successfully and without clogging in sight feed lubricators, and it is altogether possible that the near future will see important changes in cylinder lubrication.—American Machinist.

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, August 1, 1902.

In all lines there has been a heavy movement of goods, and the general prosperity of the country has strengthened the confidence of importers whose purchases will be unusually heavy. The returns at the local customs house for the month of July show up satisfactorily as compared with the corresponding month last year, and there is every indication that the year 1902 will be a record one in the commercial history of the city.

In financial circles there is unusual activity for this season of the year. Brokers report good orders for speculative account, and the investment demand is away above the average. The bank rate is still unchanged at 5 per cent. for call loans, but the approach of the crop movement, is an unsettling factor. Those who are in a position to know state that the banks will have plenty of money for agricultural requirements and that rates will not harden.

The iron trade in the Old Country is anxious to know what the United States manufacturers are planning. The London Economist says that the United States is now the predominant factor in the iron and steel trade of the world, and is likely to play a more important part than ever in the regulation of prices. Considering this fact, it is satisfactory to find that, for the present at least, they

are able to absorb all their enormous production at prices very much higher than those at present ruling in the Old Country. Pig iron is selling at 80s. to 90s., as against 50s. to 60s. in London, and steel billets at £6 10s. to £6 15s., against £5 to £5 5s. in England.

It will therefore be some time before they are likely to accept such prices as will enable them to enter into competition with English manufacturers, and it may be that the control of prices in America being so much under the thumb of the great Steel Trust, it may not suit them to accept prices which were formerly taken with a view of opening up the export trade. These great combines being so heavily weighted with capital, large profits are necessary to pay the debture and preference interest, even if the ordinary are passed over. The future of prices in America will now be watched with more than usual interest by many on both sides of the Atlantic.

During the first half of 1902 England's export of copper increased in quantity 22½ per cent.; of iron and steel, 8 per cent.; of sugar, 10 per cent.; of wool, 40 per cent., and of cotton piece goods, 4½ per cent. On the basis of values, however, copper exports decreased 1½ per cent., and cotton goods 1-10 of 1 per cent., while iron exports increased 6 per cent., sugar 2½ and wool 28 per cent.

Rev. Dr. Langtry has had published in the Toronto papers a letter concerning the action of some of the banks in placing

the "marriage salary" of clerks at a figure which few obtain. The reverend gentleman's letter has created a great deal of comment in financial and commercial circles, and there is much to be said for and against his contention. The Bank of Montreal has made a rule that none of their officials shall marry unless in receipt of a salary of \$1,500. This rule will prevent about 20 young men from joining the army of benedicts. Some who were engaged at the time the rule was put in force have signified their intention of resigning, while others have postponed the marriage, pending a suspension of the rule. Other banks have a \$1,000 limit, and this it appears is satisfactory to all, as there are but few clerks anxious to take unto themselves wives with a salary of less than that amount.

It is seldom the men in receipt of a small salary embezzle the bank's funds, and this has been pointed out in the press by letters from interested parties, but it must be remembered that the cost of living in Toronto has greatly increased during the past few years and the Bank of Montreal directors naturally considered it advisable to raise the "marriageable salary" limit.

Local speculators are again interesting themselves in New York stocks, and brokers' offices are thronged with speculators. Outside the regular followers the trade consists largely of orders from the young men of the city, many of whom can ill-afford to play at this fascinating game.

Time and again the press of the city has called attention to the evil influences of this form of gambling, and notwithstanding the publicity given to bucket shops and their methods of doing business, the game still flourishes, and to-day Toronto has more irregular commission houses than it ever had.

The temptation for gambling is strong with the young men of the city, and many clerks holding responsible positions are dabbling in the market. It would be well for the heads of our important institutions to look carefully into the manner of living of some of their employees. It would probably result in a cessation of practices which must result disastrously, not only to the employer but to the employee.

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BUFFALO PIG IRON MARKET.—Office of Rogers, Brown & Co., Buffalo, N. Y., July 29, 1902.

The local situation is characterized by a well defined buying movement for next year's delivery, notwithstanding the fact that this season of the year is generally a stagnant period in the pig iron market. Some buyers, however, still feel that there is no hurry in covering so early for their 1903 supply and have a presentiment that prices will remain about stationary at least until the early fall; others plainly show their anxiety to get under cover as quickly as possible.

For what little iron is still available for delivery during the balance of this year the premium prices asked and paid continue to advance.

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

UNITED STATES PRODUCTION OF PIG IRON.—The total production of pig iron in the United States for the first six months of 1902 was 8,808,574 gross tons, which was 1,133,961 tons in excess of the product for the first six months of 1901, and 604,833 tons in excess of the product for the last six months of 1901.

The total output in 1901 was 15,873,354 tons. At the same ratio of production for the last six months of 1902 as for the first six months the total output of 1902 will be 17,617,148 tons.

Many idle furnaces are going into blast and new ones about being started, so that unless the coal strike is prolonged the output of 1902 bids fair to exceed the 18,000,000 ton mark.

ENGLISH MANUFACTURED IRON IN 1901.—The total output of puddled bar in the United Kingdom in 1901 was 974,476 tons, against 1,162,765 tons in the previous year. The decreased output in 1901 was 183,289 tons, or 16.2 per cent. This is the largest decrease that has taken place for a considerable period, although—excepting only one year, when there was a slight advance—the make of puddled iron in Great Britain has been declining for a number of years past. The decline may even be greater than is indicated by the above figures, inasmuch as some works which continue to make puddled iron, roll both iron and steel in the same mills, and do not find it easy to keep complete records of the quantities of each over the whole twelve months.—From the Annual Statistical Report of the British Iron Trade Association.

OLD STEEL RAILS AVAILABLE.—It is estimated by United States manufacturers of steel rails that the requirements of the railroads for rails for the year ending June 30, 1903, will be at least 2,000,000 tons, 1,000,000 tons of which already have been placed with the four rail producing interests. Of this amount about 1,250,000 tons, it is thought, will be required for renewals, the balance for extensions. Of the 1,250,000 tons probably

one-fifth will be utilized for relaying. This means that only about 1,000,000 tons of scrap rails will be available for remelting from this source next year, and, aside from the railroad material, there will be a relatively small quantity of scrap iron available for the open market.—The Iron Age.

COPPER.—The tone of the New York copper market remains pretty much the same as at the close last week. Prices continue to quote 12 and 12½ for Lake, but bids of even 12 cents are not so plentiful, and buyers appear extremely apathetic on copper. The other grades are barely steady at 11.90 and 12 for Electrolytic, and some shading of prices reported in casting. For primo casting it is doubtful if less than 11½ and 12 would be accepted, although there are rumors of business under these figures.

The entire business in all grades lately has been very limited, and the market is plainly without snap.

The greatest activity prevails at the copper mines of Lake Superior, and several new mills are nearing completion which will decidedly raise the production from the Lake district. The Calumet and Hecla mine produced 79,964,000 pounds of copper for the fiscal year ending April 30, 1902, against 72,652,000 pounds for the previous fiscal year. The Quincy mine is reported as turning out more copper rock than ever before, and the same is true of Osceola, while the Quincy management will soon have another big

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Large as is the consumption of these bars for power transmission shafting, its use in machine manufacture is much greater. Machine Shafts and Rods, Valve Stems, Pump and Piston Rods, Engine and Elevator Guides, Screw Rods and Bicycle Hub Stock, are a few of its many uses.

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mine in Adventure when the stamp mill for the latter goes into operation shortly with its three heads of stamps. Other coming big lake mines are the Mohawk, Baltic, Trimonutain and Champion, and these will each produce largely.

CONSUMPTION OF COPPER.—The increase in consumption of copper in the United States is forcibly shown by figures of per capita consumption. Mr. Chas. R. Fletcher, of Boston, gives the following figures:

Year.	Consumption per capita.
1850.....	0.55 pounds.
1860.....	0.41 "
1870.....	0.60 "
1880.....	1.006 "
1890.....	3.01 "
1893.....	5.07 "

A note by the Editor of The American Metal Market says:

Since 1893 statistical tables have been irregular, but present consumption is believed to be at the rate of over 8 pounds per capita.

SHEET ZINC.—Ex store New York, in cask lots, 9 x 36, quoted at 6.75.

SPELTER.—The New York spelter market is quiet. Prices are nominally 5½ for spot.

TINPLATES.—The American Tinplate Co., sent out notices under dates of July 25 that the present price of tinplates would prevail during the months of August, September, October and November. The cut in price that some in the trade expected would be made October 1st will therefore not take place and present prices are assured for the next four months.

Market continues quiet and unchanged.

NICKEL.—The market cannot be quoted accurately but for large lots it is believed to be from 48 to 50 cents per pound, 1,000 pound lots 51 cents per pound and smaller lots according to quantity as high as 60 cents per pound.

QUICKSILVER.—The quotation in New York is \$48 per flask for large orders. San Francisco quotations are \$45.50 to \$46.50 per flask for domestic trade, and \$42.00 for export.

PLATINUM.—Market is \$18.50 per oz. in New York. London prices are on a parity.

Chemical ware (crucibles and dishes) best hammered metal from store in large quantities, is worth 74 cents per gram.

OLD METALS.—Below are prices which the largest New York dealers will pay for old metal.

Heavy cut copper.....	10.50c.
Copper wire.....	10.25c.
Light copper.....	9.00c.
Heavy mach. comp.....	10.25c.
Heavy brass.....	7.75c.
Light brass.....	6.50c.
No. 1 yellow brass turnings....	7.35c.
No. 1 comp. turnings.....	9.25c.
Heavy lead.....	3.85c.
Tea lead.....	3.65c.
Zinc scrap.....	3.55c.
No 1. pewter.....	20.00c.
Block tin pipe.....	26.50c.
Aluminum scrap.....	20.00 to 24.00c.
Zinc dross.....	3.15c.

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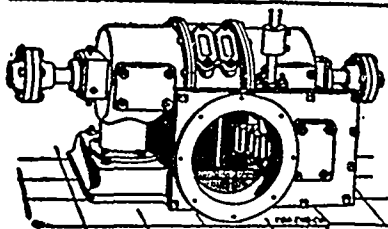
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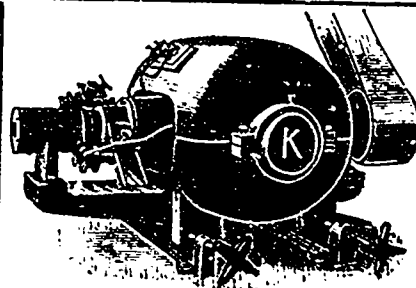
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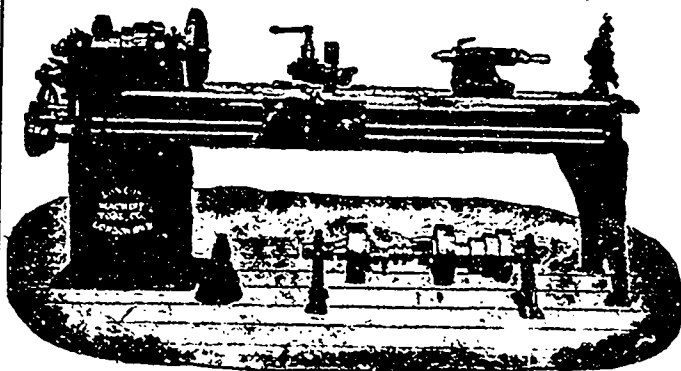
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A Few Extracts from Letters from British Consuls, etc.

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

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

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

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

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

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

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

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

"I have duly received your valuable and useful Directory of Merchants, Manufacturers and Shippers for 1898, and beg to express my best thanks for same."—*British Vice-Consul, Spezia (Italy)*

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

"The only book consulted 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.*

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

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

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

STEEL TRUST FIGURES.—Figures that fairly dazzle the ordinary man are contained in the answer made by the United States Steel Corporation to the suit which has been brought in New Jersey to prevent the trust from carrying out its bond-conversion plan. These figures are contained in an affidavit made by President Schwab, and relate to the value of the assets of the corporation. From these, it appears that its assets include 400 producing mills of the value of \$300,000,000; 75 blast furnaces, valued at \$48,000,000; ore properties of the value of \$700,000,000; coal and coke properties valued at \$100,000,000; natural gas fields valued at \$20,000,000; \$80,000,000 of material in process of manufacture; and \$66,000,000 in cash-in-bank. The total value of the company's properties including cash and cash assets is placed at \$1,400,000,000.

A mere reading of these figures compels admiration for the genius of the man or men who brought about this gigantic combination of capitalized interests. The whole world has never known anything like it before. And genius of the highest order is demanded to run such a wonderful business, for big things, when too big, are apt to fall of their own weight.

Of course, the earnings of such a great corporation are quite as much beyond the grasp of the ordinary man as is the value of the assets. Mr. Schwab places them at more than 10 per cent. of the value of the assets. It has from the first been contended that the object of this trust was to effect savings in the operation of the various properties. It is, therefore, interesting to note that Mr. Schwab claims that a saving of \$30,000,000 a year is to be credited to the ore properties and \$10,000,000 because of the ownership of transportation facilities.

The publication of these figures ought to do much to further anti-trust legislation, for it makes clearer the necessity of government control of such vast combinations.

NEW PROCESS FOR TREATING OLD PAPER.—London advices to the Paper Mill are that waste papers will find a ready market at a higher price if the claims made on behalf of the Knopf process are made good. Old papers, after being subjected to a treatment according to patents granted to Herr Carl Knopf, give a product that is said to be strong in fibre, of an excellent clean quality, and

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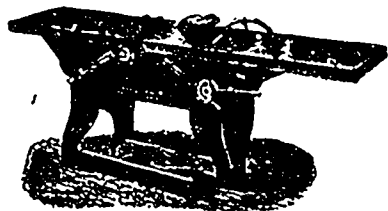
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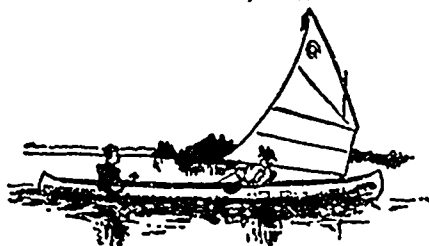
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ing a series of experiments, and Mr. Beadle, in reporting upon his investigations, says: "I think it may fairly be concluded that the newspapers—taking the Daily Mail as a specimen—could be treated with from 2 to 3 per cent. of soap if the operation was conducted continuously, the cost of soap amounting to from 2s. 6d. to 3s. per ton of paper treated." The essential feature of the process is a special soap. After the waste paper has been sorted and prepared it is treated by soap emulsions, and the value of the process is in the recovery of the soap in order that it may be used over again. Six separate lots of paper were treated by Mr. Beadle continuously, and he reported that the soap used was equal to 3 1/2 per cent. of the weight of the paper treated.

FREIGHT TRANSPORTATION TO SOUTH AFRICA.—In February last Hon. Mr. Fisher, Dominion Minister of Agriculture, obtained permission from the British War Office to forward Canadian products to South Africa on ships chartered by his department for cargo for the War Office, and a monthly freight service between St. John and Cape Town was inaugurated in March. No further shipments of supplies being required by the War Office, this freight service has been terminated. Under the arrangement made with the Imperial authorities the miscellaneous goods had to be discharged at Cape Town. This limitation prevented the shipments from assuming large proportions, because the import trade of Cape Town is chiefly for local consumption, Port Elizabeth and Durban being the great distributing points for the interior, and transshipment of goods at Cape Town is impracticable because of the expense. The class of goods forwarded by these Government transports embraced the following articles: Axes, baths, billiard tables and frames, canned apples, canned corn, canned tomatoes, canned lobster, fish, furniture, iron roofing, metal sheeting, paper fillers, peas (split), saddlery, shoes, wood mantles, axles (for road carts), bicycles and parts, canned goods, codfish, chair stuff, cheese (Imperial), flour, harness, lumber, match blocks, pianos, radiators and castings, sash lumber, tomato catsup, barley, boots, calcined plaster, chairs, chair stocks, cushions (road cart), cook stoves, desks, doors, furniture stock, harness rack, metal ceilings, mats, paint, peas (green), road carts, sash, doors and frames, stoves, boilers, pipes, castings and pots.

INFERIOR QUALITIES OF GRANITWARE.—At the forthcoming meeting of the Hardware Section of the Retail Merchants' Association in September, one of the questions that will come up for discussion will be "The Unsatisfactory Condition of the Graniteware Business." This subject is one of considerable interest, quite as much to the consumer as to the hardware man. The unsatisfactory condition has reference to the fact that there are two grades of graniteware, a first and a second class, and the second class is being continually passed off for first-class ware. None but experts can tell the difference at first, but all householders can tell soon afterwards by the

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Mention whether you burn coal, coke, gas or oil.

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

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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.

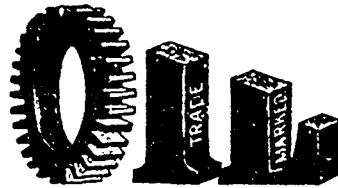
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"RENOWN" ENGINE

"ATLANTIC" RED

RELIABLE WELL-KNOWN BRAND

ALL ORDERS PROMPTLY FILLED



THE **QUEEN CITY OIL CO.** LIMITED
SAMUEL ROGERS, Pres. TORONTO, Canada.

speedy manner in which the ware becomes useless. An effort will probably be made to cause all first-class ware to be stamped as such, to prevent deception.

GENERAL DIRECTORY OF SOUTH AFRICA.—The publishers announce that a new edition of the General Directory of South Africa is about to be issued, containing, as in previous editions, an alphabetical arrangement of the names of the different towns and cities in that country, with a short, statistical account of each, and a classification of the trades and professions throughout the whole of South Africa.—Kelly's Directories, Limited, (London, England); Dominion branch, 71 Victoria St., Toronto.

NEW MEXICAN RAILWAY.—The Coahuila and Pacific Railroad Co. has completed its line from Saltillo to Torreon, thus giving Saltillo—the capital of the State of Coahuila—a second connection by rail with the United States, and of course with Canada also.

FEES FOR ELECTRICAL INSPECTION.—The Dominion Government has just passed an order-in-council for the purpose of grading the registration fees paid by electric light companies from \$25 down to \$5, according to the business done by the company.

Some years ago the Government passed an electric light inspection act, which provided for the verification by the Government of all meters used. In order to keep track of companies in Canada it was provided that all should obtain a license every year, for which they were to pay \$25. This was considered too small for large concerns and a considerable tax upon smaller ones. It is not generally known that the act contains a provision for electric light consumers who are doubtful regarding the accuracy of meters to have them tested by the government. If such test proves that the meter is correct within 3 per cent., the consumer pays inspection fee, which is \$2. If otherwise, the company settles.

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

The new regulation came into force on July 1.

TRADE BONUS ON GERMAN IRON EXPORTS.—A curious example of what may be called a trade bounty, as apart from a Government one, is the arrangement lately come to between the Westphalian Coal and Coke Syndicates and the various pig and heavy iron syndicates of Western Germany, by which these bodies combined

THE EUGENE F. PHILLIPS ELECTRICAL WORKS

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BARE and INSULATED ELECTRIC WIRE

ELECTRIC LIGHT LINE WIRE,
INCANDESCENT AND FLEXIBLE CORDS,

RAILWAY FEEDER and TROLLEY WIRE

RUBBER-COVERED, MAGNET, OFFICE AND
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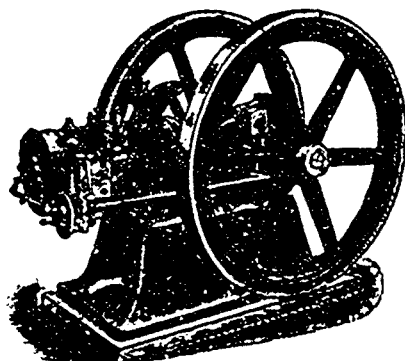
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Write for prices and descriptive matter.

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TORONTO.



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allow to the buyers of iron for export an amount supposed to compensate for the difference between prices for export and for the home market. As this difference runs at something like 6s. to 10s. per ton on bars and girders, this is a very heavy premium; and there are very stringent regulations, and a special office and establishment for fixing the exact amount in each case. The possibility of such a purely trade premium being paid, and mostly paid by coalowners only indirectly interested, is a curious proof of the determination of the Germans to have shipping trade at any cost. The contributions of the coal trade are proportioned to a regular tariff established, giving the supposed quantity of fuel required for the production of every description of iron. This is the sort of thing our iron manufacturers have to contend with. The arrangement has just been completed, but is to have effect as from January 1, 1902.—Kuhlow's German Trade Review.

TRADE WITH AUSTRALIA.—The Department of Trade and Commerce has received the regular monthly report from Mr. J. S. Larke, Canadian agent in Australia. He says that the Commonwealth Senate has suggested a number of tariff reductions on products which Canada, among other countries, can supply, such as bacon, hams, butter and cheese, fruits and vegetables, meats, fish and poultry, etc. These changes do not become operative until accepted by the House of Representatives. Some excite-

ment was caused by the publication of a legal opinion that the Government had no power to collect duties under the Commonwealth tariff. If this view were taken advantage of, it was proposed to push through Parliament a validating measure. Mr. Larke says some good orders had gone to Canada in general lines and he thinks many buyers who have gone to England for the coronation period will on their return personally investigate the Canadian market.

CANADIAN GOODS IN DEMAND.—The Department of Trade and Commerce has received from Mr. C. E. Sontum, commercial agent in Norway and Sweden, a report dated Christiania, in which he says Canadian manufactures seem to more and more find their way to these countries. Canadian radiators for hot water and steam are, he says, now the ones most in use. He gives a list of twenty-one public buildings where these radiators are installed. Canadian plows are coming in demand. There is a small demand for Canadian whiskey, especially amongst tourists.

In order to stimulate trade Mr. Sontum suggests the establishment there of an information office, such as has recently been opened by the Swedish Government, where full information concerning exports can be obtained.

THE ISLAND OF CYPRUS.—The exports of the Island of Cyprus for the year ended December 31, 1901, amounted (less specie) to \$1,555,600 and the imports during the

same period (less specie) to \$1,820,400 showing a small decline in both exports and imports, but more particularly in the export trade, due to last year's drought.

During the year, a Larnaca firm made efforts to establish connections with American exporters, and the correspondence will probably lead to some business in agricultural implements, irrigation machinery, windmills, iron and steel, hardware, wire nails, cotton drills, leather, wheat and wheat flour, and canned provisions.

Cyprus has a direct weekly steamship service to Egypt via Port Said. Exporters dispatching goods to Cyprus may forward them via the new American-Levant steamers to Alexandria, to be transhipped at the latter point for Larnaca, Limassol, Famagusta, or other Cypriot points.

SOUTH AFRICAN TRADE.—The Department of Trade and Commerce has received a report from Mr. J. G. Jardine, at Durban, who some weeks ago was sent to South Africa to report on trade conditions. Mr. Jardine says business in Cape Town is mostly in the hands of English producers, who have branches in nearly every important centre. There are only 4 or 5 Canadian resident agents, taking orders for some 15 or 20 Canadian concerns. These confine their labors almost entirely to coast stations. Resident agents are badly needed, as well as visits from experienced travelers who carry their samples with them.

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MANUFACTURERS' AGENTS,

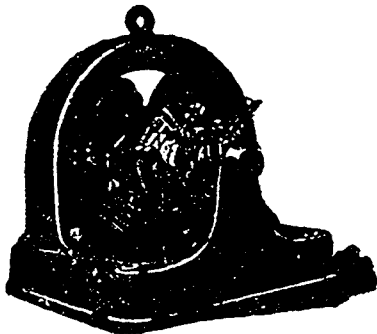
34 Yonge Street. - Toronto, Canada

Have First-Class facilities for handling any business entrusted to them.

Experienced travellers reach all the principal Cities and Towns in Canada.

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CORRESPONDENCE SOLICITED.

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MOTORS and DYNAMOS

MODERATE and SLOW SPEED OF HIGH EFFICIENCY.
EITHER BELTED OR FOR DIRECT CONNECTION.
REPAIRS PROMPTLY EXECUTED ON ALL
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THE STOWE-FULLER CO.

FIRE BRICK MANUFACTURERS

ALL FURNACE MATERIAL

Superior Building SEND FOR
CLEVELAND, O. CATALOGUE

R. SPENCE & CO.

HAMILTON, ONT.

FILE and RASP MANUFACTURERS
AND RE-CUTTERS.

A trial order solicited. Write for terms.
C. P. MOURE, PROPRIETOR.

This course is adopted by English, German and American firms. Only the other day says Mr. Jardine, an American traveler, after visiting a score of towns, left for Australia. He represented stationary engines and boilers, carts, plows, wheelbarrows, Portland cement, automobiles, white lead, mixed paints and stains, varnishes, pumps, machine tools, artesian well machinery, etc.

Boots and shoes are mostly received from England, and only a small quantity from Canada. Styles are mostly the same as those worn in Canada, and Canadian manufacturers ought to have a good share of the trade.

There is great room for Canadian made furniture. Canned goods and agricultural implements are enormously high. For the first there is a great demand, and the second, now that peace has been re-established, will be much wanted. They are entered free of duty and a quick supply should be on hand.

Mr. Jardine expresses the hope that Canadian manufacturers will be able to send out the best and most experienced salesmen. Elaborate catalogues and price-lists are not needed. What is wanted is men to study the market and bring complete assortments of patterns and samples. Price-lists should be in English, and, to suit the Boer element, in Taal. He concludes by urging all to take note that the chief point is to supply customers punctually with the exact articles desired and in the exact way prescribed. Salesmen should not make changes in samples or bind themselves to lay down goods in South Africa on a certain day. South Africa is and for a long time must of necessity be an importing country.

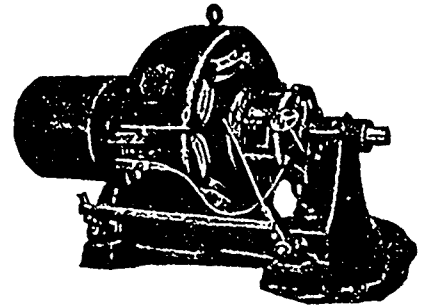
THE CROP PROSPECTS.—At this season of the year there is nothing of more importance to the business interests of Canada than the condition of the crops throughout the country. This changes very rapidly sometimes, according to the weather, so that if it were practicable, a report every day would not be too frequent to keep business men posted upon the chances for the coming year.

The Molsons Bank, says the Montreal Star, has been in the habit of collecting annual crop reports from their various agencies throughout the country, and those for this year have just been received. They number about three dozen, principally from Ontario, and cover conditions up to about the end of the first week of this month. As they have been specially prepared for the use of the bank, they furnish valuable testimony of the business possibilities for the coming year.

From all points practically the same weather conditions are reported. Spring opened early and farmers looked for an early season. For the most part they got their seed into the ground early, but shortly afterwards the weather turned cool, and almost continuous rains fell in the eastern sections until well into June, turning the early season into a late one. Even those sections, which more frequently suffer from drought, this year suffered from too much moisture. Frosts were also experienced, and in some parts

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SPEED MOTORS, MOTORS, SUPPLIES,
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all sizes and for any purpose.

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STEAM
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THE KERR ENGINE CO.

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WALKERVILLE, . ONTARIO

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President.

JARED CHITTENDEN,
Treasurer.

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Capital and Surplus, \$1,500,000

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Vancouver, B.C.

Winnipeg, Man

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

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considerable damage resulted to fruits and even to vegetables.

Under these conditions it might be expected that the crops would be away below the average, but this is not the case. On the low lands it is true the conditions are not promising, and in some cases partial and even total failures are reported. But on the high land the conditions are excellent. Hay in particular is good, and some exceptionally heavy crops are already being harvested.

Corn is probably the single notable exception. Very few sections report anything like an average crop, and, as a rule, half crops, and even less, is the very best that can be expected under the most favorable conditions from this out.

In the vicinity of Waterloo, Ont., sugar beets, a new crop, are doing well, and the sugar manufacturing industry looks as if it would be a success. Apples are also reported to be a large crop in this section, and from the County of Huron comes the estimate of 200,000 barrels. Wentworth County also reports a heavy crop of apples and an extra good one of small fruits. In fact all through Ontario similar fruit conditions exist.

Peas are generally reported below the average, and in some places they are poor. Oats appear to be very promising, and wheat is in a fair condition, though farmers seem to be sowing less than formerly.

Getting further east, along by the Brockville district, the meadows are still in a good condition, but roots are in some cases poor.

One report covers the Province of Quebec as follows: "The average for the whole is only 63, much below the three previous years, but it is claimed that warm weather would improve matters very much and even raise the averages as high as last year's. However, green fodder, clover and pastures show as high as ever, and as they are the most important crops in the Province of Quebec, the situation is looked upon as satisfactory.

In Western Ontario much is said of the high prices being paid for live stock, and as the hay crops are fine this will be of great advantage to farmers. In fact, the Provinces of Ontario and Quebec are becoming more and more dairy countries, so that good fodder crops are constantly of more importance. The general outlook for potatoes is very promising, and large

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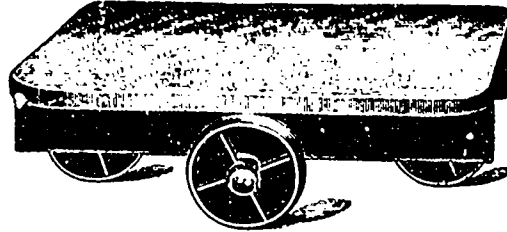
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SPINS LIKE
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WITH or
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EASIEST
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End Wheels Slide
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Established 1834.

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LOOM REEDS FOR SILK, COTTON, WOOL AND LINEN WEAVING,

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40 CLIFFORD STREET, PROVIDENCE, R.I.

DIXON'S
DOES
TWO THINGS



AND DOES THEM
THOROUGHLY

STOPS THE BELT
FROM SLIPPING.

PLEASES THE MAN
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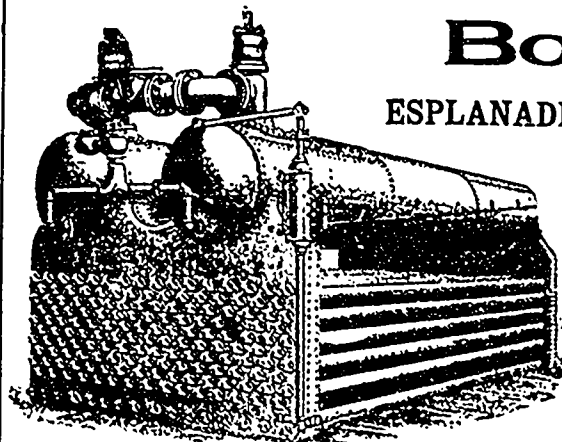
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EQUALS
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SAMPLE SENT FREE.
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JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N.J.
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The Canadian
Heine Safety
Boiler Co.

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Water Tube
Steam Boilers..

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DUTIES AND FUEL

From 75 to 600 H.P. Each

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Electrical and Mechanical

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Electric Supplies, Nitrous Oxide Gas

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Dynamos and Motors

Built and Repaired. We have a well-equipped
Machine Shop. Model and Experimental Work
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crops are looked for. Roots are generally promising also.

The reports from British Columbia speak in hopeful terms of the crops there. Oats, the principal crop of the Fraser River delta, are in excellent condition. Fruits are also reported to be looking well.

Taking the country as a whole, the outlook is good, and the result is still largely subject to weather conditions.

IMPORTS OF SHEET IRON AND STEEL.

—THE CANADIAN MANUFACTURER is informed that a party of Canton, Ohio, capitalists connected with the iron industry have in contemplation the erection of a plant in Canada for the manufacture of black and galvanized sheet iron. The imports of such goods into Canada during 1901 were valued at \$758,389, which included Canada plate, Russia iron, flat galvanized iron or steel sheets, tern plates, and rolled sheets of iron or steel coated with zinc, spelter or other metal, of all widths and thicknesses u.o.p. Of these imports \$569,752 worth was from Great Britain and \$185,541 from United States, the balance from other countries.

COAL IN TRINIDAD.—The Government are in receipt of particulars from Sir Alfred Moloney of the discovery of coal in Trinidad. The deposit is in the Cunapo district, about seven miles from the Sangre Grand River. A test of its economic value was made on board a British warship on a run from Trinidad to Granada, with very successful results. Experts have also analyzed the coal, and say that if abundant and accessible it may be of

much commercial value. A ten-foot seam has been bored into for a depth of from 9 to 29 feet from the surface, and Sir Alfred states that if this seam extends for any considerable area he anticipates the Government will be able to work its own railways and steamers at half the cost of imported fuel now supplied by contract.

In a letter to the Department of Trade and Commerce Mr. Edgar Tripp, commercial agent for Canada, communicates the fact that deposits of petroleum and coal in good quantity have been found there. The existence of manjack, which is extensively shipped from the Barbadoes, has also been found. Trinidad's immense beds of pitch have long been known in connection with the production of asphalt, but here are prospects of two new industries, and, as everybody knows, there is any amount of cheap labor in the West Indies. It will certainly be a novelty if Trinidad drops sugar planting and goes in for oil refining and coal mining.

BUSINESS CHANGES.

FROM HEADSTREETS.

ONTARIO.

BERLIN—H. Krug Furniture Co., obtained charter.
BIRKENDALE—Lake of Bays Wood Mfg. Co., obtained charter.
BRACEBRIDGE—Hess Furniture Co., obtained charter.
DOUGLAS—Read Lumber Co., obtained charter.
GUELPH—Guelph Biscuit & Confectionery Co., obtained charter.
HAMILTON—Modern Telephone Co., obtained charter.
LONDON—Gillelan McLean, hardware, partially burnt out.
 Wray Corset Mfg. Co., partially burnt out.
MIDLAND—Modern Transit Co., obtained charter.
PORT COLBOURNE—Augustine & Son, planing mill, adv. business for sale.

PRASSTON—E. B. Salyerle, mfrs. brushes, burned out.
TORONTO—Allen & Hanburys Co., obtained charter.
 Ault & Wiborg Co., obtained charter.
 Beaver Paper Co., obtained charter.
 Canadian Northern Railway Elevator Co., obtained charter.
 Chaney Burglar Proof Sash Lock Co., obtained charter.
 Enterprise Specialty Co., assets adv. for sale.
 Geo. T. Pendrith & Co., machinists, assigned to E. R. C. Clarkson, meeting of creditors.
 Raven Lake Portland Cement Co., obtained charter.
 Robert A. Sabiston, mfrs. horse blankets, loss by fire.
 Sovereign Mfg. Co., obtained charter.
 Toronto Contracting & Paving Co., obtained charter.

QUEBEC.

COATICOOK—H. Lovell & Sons, lumber & sawmill, dissolved, new partnership registered.
LORETTE—P. B. Savard & Co., gloves and moccasins mfr., registered.
MALBAIE—La Ferriere Lumber Co., registered.
MONTREAL—Couturo Patent Lock & Latch Co., dissolved.
 Kinetic Heat Co., registered.
ST. GABRIEL (Portneuf)—Battiscan River Lumber Co., Louis T. Champlain registered manager and agent of the company in the Province of Quebec.
ST. JOSEPH DE ST. HYACINTHE—A. Desmarais & Fils, tanners, registered.
ST. NICHOLAS—Mercier & Mercier, lumber and grain, registered.
ST. REMI—Lanarro & Co., sash factory and mfrs. threshing machines, burnt out.
SHAWINGAN FALLS—Goulet & Co., sawmill, etc., assigned.

MANITOBA.

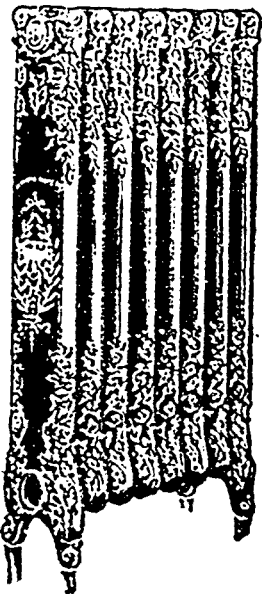
ELVA—Elva Farmers Elevator Co., applying for charter.
PILOT MOUND—Pilot Mound Grain Co., applying for incorporation.

BRITISH COLUMBIA.

ELKO—J. A. McFarcher, sawmill, succeeded by Hayes Lumber Co.
VICTORIA—Taylor & Haggart, mfrs. iron bedsteads, contemplating removing to Vancouver.

NORTH-WEST TERRITORIES.

PRINCE ALBERT—Prince Albert Electric Light & Power Co., incorporated.



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WARM UP YOUR

Buildings

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“Safford Radiators”

They are the triumph of the century.
 In demand the world over.

Made in countless sizes and every possible shape, and in a variety of styles, plain and ornamental, sufficient to suit the most exacting.

THE DOMINION RADIATOR CO., Limited,

TORONTO

HEAD OFFICE, - - DUFFERIN STREET

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HARDWARE, METALS, PAINTS and OILS

Current Prices, Revised to August 1, 1902.

The following quotations represent the prices current in the market, as obtainable by the trade, whether from the manufacturers or the jobbers. Small orders and broken packages usually command higher prices, while lower prices are usually given to larger buyers.

The Canadian Customs Duties imposed upon all imported articles enumerated in these lists are published in full in the 1900 Tariff Edition of THE CANADIAN MANUFACTURER. Price 50 cents per copy.

The publishers request the trade to suggest any changes and improvements which might be made in these lists, with a view to rendering quotations as correct and useful as possible.

<p>ADZES.—Duty 30%. \$13 to \$20 per doz.</p>	<p>AXLES.—Duty 35%. Half patent, short and long beds, 60% discount per set.</p>	<p>BOOT HEELS (Rubber)—Duty 35%. Sizes 6 to 11 (Men's), \$3.50 doz. pairs. Sizes 4 to 5 (Boys'), \$3.35 doz. pairs. Sizes 0 to 3 (Women's), \$3.25 doz. pair.</p>
<p>AMMUNITION.—Duty 30%. Caps, Gun. Cartridges, B.B. Cap, Dom., 50 & 5; discount, Can. list.</p>	<p>BAGS.—Duty 20%. Cotton, seamless, \$14 to \$21.50 per 100. Jute, \$7.75 to \$9 per 100.</p>	<p>BOOT SOLES (Leather)—Duty 25%. Heavy, \$3.60 doz. pairs. Medium, \$2.90.</p>
<p>Cartridges, B.B. Cap, Amer., 40% discount, Amer. list. Cartridges, Central Fire, Military and Sporting, Amer., add 5% to list. Cartridges, Central Fire, Military and Sporting, Dom., 15 & 5% discount. Powder, sporting, Can., \$1.50 per keg 25 lbs. " " Eng., " Amer., \$5.50 per keg 25 lbs. " " blasting, \$2.50 per keg. Primers, Dom., 30% discount. Shells, Brass, Shot, 55% discount. " Trap, loaded or empty, 25% discount. Shot, duty 35%. Buck, \$6.62 per 100 lb. net. " Chilled, \$6 per 100 lb. net. " Common, \$5.50 per 100 lb. net.</p>	<p>BELLS.—Duty 30%. Church, 35 cents per lb. Cow, 6% discount. Door, \$3.50 to \$12 per doz. Farm, \$1.75 to \$1.50 each.</p>	<p>BRACES AND BITS (Carpenters)—Duty 30%. Barber's best, 70 and 10" discount. Spofford's, 50 and 5" discount. Improved, 50 and 5" discount.</p>
<p>ANCHORS. Small, 30 to 50 lbs., \$7.00 per 100 lbs. 100 lbs. and larger, \$5.60 per 100 lbs.</p>	<p>BELLOWS.—Duty 25%. Blacksmiths', Canadian, 10" discount; Amer., 50% discount. Moulders', \$9.50 to \$15 per doz.</p>	<p>BROCK (Fire)—Duty 20%. Circular, \$35 per M. Square, \$30 per M.</p>
<p>ANVILS.—Duty 30%. Baker & Co., 12 to 15 cents per lb. Brook's, 10 to 13 cents per lb. Peter Wright's, 12 to 15 cents per lb.</p>	<p>BELTING (Leather)—Duty 20%. Amer., Hoyt's regular, 35% discount. Canadian, 35% discount.</p>	<p>BUCKLES.—Duty 30%. Double Grip Trace, three loop, tinned and japanned, put up a dozen in a box, 1 1/2" 35 cents per doz.; 1 3/4" 65 cents per doz. Harness, japanned or tinned, 12 cents per lb. Shoe, japanned or tinned, 12 cents per lb.</p>
<p>AUGERS.—Duty 30%. Eye and Nut Augers, 60% discount.</p>	<p>BELTING (Rubber)—Duty 20%. 50 to 60% discount.</p>	<p>BUTTS.—Duty 30%. Cast Butte, 60" discount. Loose Pin, Bronze, 60 cents to \$2 per pair. Loose Pin, B. Bronze, 30 cents to \$1 per pair. Loose Pin, wrought, 50% discount. Wrought Brass, 50" " Wrought Iron, 60" "</p>
<p>AXES.—Duty 25%. Bench, \$6.50 to \$14 per doz. Broad, \$6.25 to \$10 per doz. Double-blited, \$11 to \$13 per doz. Handled, \$8.50 to \$12 per doz. Regular, \$6 to \$10 per doz. Ship Carpenters, \$22 to 25 per doz.</p>	<p>BITS.—Duty 30%. Countersink, \$1.50 per doz. Gimlet, U.S., \$1 per doz. Reamer, \$1.50 per doz.</p>	<p>CANT DOGS.—Duty 30%. \$10 per doz.</p>
	<p>BOLTS.—Duty 1 cents lb., & 25%. Bolt Ends, 6 1/2", Carringe, 50 to 55, Coach Screws, 6023, Elevator Bolts, 50" Machine, 50 and 5" Plow, 60. Shaft, 45. Sink, 50. Sleigh Shoe, 7 1/2. Stove, 60. Tire, 35" discount.</p>	<p>CASTINGS (Iron)—Duty 30%. Carringe, in 5 ton lots, 5 cents per lb. "</p>
	<p>BOOT CAULKS.—Duty 20%. Small or Medium, ball, \$1.25 per M. Heel, \$1.50 per M.</p>	
	<p>BOOT HEELS or Lifts (Leather)—Duty 25%. Large Size, \$1.15 doz. pairs. Medium Size, \$1.60 doz. pairs.</p>	

Zanzibar Paints

Rust Proof.

Decay Proof.

Fire Proof.

FOR

Bridges, Roofs,
Factory Buildings,
Structural Iron Work,
Warehouses, Etc.

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Zanzibar Crucible Black

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Furnace Cupolas, Etc.

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of every Description
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When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

CASTINGS (Brass)—Duty 20%
21 to 25 cents per lb.

CASTINGS (Phosphor Bronze)—Duty 20%
22 cents per lb.

CASTORS—Duty 30%
Bed, 5% discount.
Plate, 5%
Truck, Payson's, 60% discount.

CEMENT—Duty 12% cents per 100 lbs.
Belgian, Portland, \$2.50 to \$2.75.
Canadian, hydraulic, \$1.35 to \$1.60.
Canadian, Portland:
Bathbun's, "Star," \$2.25 to \$2.75.
"Heaven," \$2.10 to \$2.50.
"Ensign," \$1.90 to \$2.30.
The smaller figures represent car load lots, and the larger less than car loads, i.e.b., Toronto.
English, Portland, \$3.

CHALK
Carpenters', colored, 15 to 75 cents per gross.
Crayon, 14 to 18 cents per gross.
Red, 4 to 6 cents per lb.
White Lump, 60 to 65 cents per 100 lbs.

CHAIN—Duty 5%
Brass Jack, 30% discount.
Iron, Jack, 25% discount.
Safety, 55

CHISELS—Duty 30%
Calking, Socket, Framing and Firmer.
P.S. & W. Extra, 60, 10 & 5% discount.
Warnock's, 70% discount.

CLEAVES—Duty 30%
Screw, \$2.50 per doz.

CORD—Duty 25%
Sash, Silver Lake (A), 50 cents per lb. (B),
cents per lb.
Haltic, 25 cents per lb.
Hercules, 30 cents per lb.

COTTON RUCK—Duty 25%
36 in. wide, 28 cents per yd.
48 in. wide, 45 cents per yd.
60 in. wide, 57 cents per yd.

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.

DYNAMITE
30 to 50 cents per lb.

EMERY
Coarse, 5 cents per lb. Fine, 7 cents per lb.
Emery Cloth.—Duty 25%
Beader & Adamson, 40% discount.
Emery Stones.—Duty 25%
\$3 to \$5 per doz.
Emery Steels.—Duty 25%
\$2 per doz.
Emery Wheels.—Duty 25%
65% discount.

FAUCETS—Duty 30%
Iron, \$2.50 to \$5 per doz.
Wood, 6c. to \$1.00 per doz.

FENCING
Barb Wire, \$3.00 per 100 lbs.

FENCING (Wire)—Duty 15%
Galvanized, barb, f.o.b. Toronto, \$3.05.
Galvanized, plain twist, f.o.b. Toronto, \$3.05.
Mesh, 5 1/2 x 4, 20 rod rolls 55% discount.
Can. list.
" 4 x 3, 20 " 50 & 5% " " "
" 3 x 3, 20 " 35 & 5% " " "

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

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

FITTINGS (Pipe)—Duty 30%
Rushings, 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 SCRAPPERS—Duty 30%
Engineers Favorite, 40% discount.

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

GASKETS—Duty 30%
Rubber Insertion, 60 cents per lb.

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

GAUGES—Duty 30%
Steam, 50% discount.

GLASS—Duty 20% (Window).

GLASS LAMP CHIMNEYS—Duty 30%
Common Crimp, per doz. 0, 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, 8 1/2 to 9 cents per lb.
Gelatine, 22 to 30 cents per lb.
Strip, 13 to 20 cents per lb.
White, extra, 18 to 20 cents per lb.

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

GRANITEWARE—Duty 35%
Firsts, 50% discount.

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

HALTERS—Duty 30%
Leather, 1 in. strap, \$3.87 1/2 to \$4 per doz.
Leather, 1 1/2 in. strap, \$5.15 to \$5.20 per doz.
Rope, 4, \$9 per gross.
Rope, 1 to 3, \$11 per gross.
Web, \$1.87 to \$2.45 per doz.

HAMMERS—Duty 30%
Blacksmiths', 10 cents per lb.
Carpenters', Madoles', \$6.10 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.
Parlor door, \$3 to \$6 per set.

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

HATCHETS—Duty 30%
Canadian, 40 to 42 1/2% discount.

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

HINGES—Duty 3 cents per lb. & 25%
Heavy T and strap, 1 in., 6 1/2 cents per lb.
" " " " " 5 in., 6 " " "
" " " " " 6 in., 6 " " "
" " " " " 8 in., 5 1/2 " " "
" " " " " 10 in., 5 1/2 " " "
Light T and strap, 65 & 5 off.
Screw hook and hinge, 6 to 12 in., \$1.50 per 100
lbs.; 14 in. up, \$3.50.
Spring, \$12 per gross pairs.

HOOCS—Duty 30%
Brush, \$7.50 to \$9.
Reaping, 50, 10 and 5% discount.
Malleable, wardrobe, \$1.50 to \$2.50 per gross.
Wire, \$1.25 to \$2

HORSE NAILS—Duty 30%—See Nails

HORSE SHOES—Duty 30%
L.L. Med. & H., \$3.40 per keg.
Snow, \$3.95 per keg.
Steel, \$3.90 to \$4.25 per keg.
Toe weight steel, \$4.15 per keg.

HOSE—Duty 25%
City Standard, 70% discount.
Phoenix, 60% discount.

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

IRON—See Metals.

JACKS—Duty 30%
Lifting, 40% discount.

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

KNOBBS—Duty 30%
Door, Bronze, \$7 to \$12 per doz.
" " White Porcelain, 50 cents per doz.
" " Wood, \$1.50 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.
Ting, 10 cents per foot.

LANTERNS—Duty 30%
Cold Blast, \$7 per doz.
Dashboard, cold blast, \$9 per doz.

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

LEAD (Bar and Strip)—Duty 25%—See Metals.

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

LINES (Cotton)—Duty 25%
Chalk, \$2 to \$3.50 per gross.
Wire, clothes, \$2.50 to \$1.50 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.

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.
Tinmiths', \$1.25 to \$1.50 per doz.

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

METALS
Ingots.—Aluminum, 35 to 50 cents per lb.
Antimony, \$19.50 per 100 lbs.
" 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 6 1/2 cents per lb.; sheets, 7
cents per lb.
Rabbit Metal (duty 10%),
Lowia, 7 to 10 cents per lb.
Magnolia, 25 cents per lb.
Spooners' Coppering, No. 2, 1 1/2 cents per lb.,
finest, 25 cents per lb.
Syracuse Smelting Works, dynamo, 29 cents
per lb.; special, 25 cents per lb.
Sheets, Black, Duty 37 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—7 1/2 cents per lb., base price.
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
" " " " " 25—\$4.25 per 100 lb.
" " " " " 28—\$4.50
" " " " " 16—(Queen Head), \$3.90 per 100 lb.
" " " " " 18 2/2—(Queen's Head), \$4.15 per 100 lb.
" " " " " 25—\$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, \$1.50 per sq.
" " " " " Medium, \$3.45 " "
" " " " " Best, \$3.50 " "
" " " " " Painted Steel, Ordinary, \$3.15 per sq.
" " " " " Medium, \$3.35 " "
" " " " " Be-1, \$3.50 " "

Iron (duty 57 per ton).
" " Bar (Common).—\$1.95 to \$2.65
" " Bar, " Sweden.—\$4.50 per 100 lb.
" " Refined Bar.—\$2.60 per 100 lb.
Iron, Plain Sheet (duty 5%)
" " " " " " " A—\$6.00 per 100.
" " " " " " " B—\$4.00
" " Russia.—\$10.00 per 100 lbs.
Pig Lead (duty 15%).—Domestic, \$1.75 per 100
lb.; pigs, imported, \$1.25 per 100 lb.; bars, 55
per 100 lb.; sheets, \$3.50 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). No. 1 foundry
track, Toronto, \$21, No. 2, \$20.50.
Iron, English Horse Shoe.—\$2.55 per 100 lb.
Iron, Hand.—\$2.65 per 100 lb.
Iron, Hoop.—\$2.90 per 100 lb.
Beam, Steel.—\$2.75 per 100 lb.
Rods.—Brass, 21 cents per lb., base price.
Itala, 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.
" " " " " " Crockett.—9 cents per lb.
" " " " " " Cant Hook.—7 1/2 cents per lb.
" " Machinery (in the rough).—\$2.25 per 100 lb.
" " Machinery.—\$2.75 per 100 lb.
" " Mild.—\$1.50 per 100 lb.
" " Sleigh Shoe.—\$1.50 per 100 lb.
" " Spring.—\$3.00 per 100.
" " Tire.—\$2.00 per lb.
" " Toe Caulk.—\$2.20 per 100 lb.
Steel, Blister.—12 cents per lb.
Steel, Hammer.—7 cents per lb.
Steel, Heat Treated Sheet.—7 cents per lb., base.
Tank Steel Plate (duty 57 per ton).—3/16 \$2.00 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, 32 sheets, \$3;
half polished, \$3.10.

NAIL PULLERS—Duty 30%
German and American, \$1.35 to \$3.50 each.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

NAILS.—Duty, cut, 1 cent per lb.; wire, 3-5 cent per lb.
 Clout nails, blue, 65 and 5% discount.
 Coopers', 35% discount.
 Copper nails, 52% discount.
 Cut, (base), car lots, \$2.47.
 Flour barrel nails, 30% discount.
 Galvanizing, 2 cents per lb. net, extra.
 Steel cut nails, 10 cents extra.
 Trunk nails, black, 65 and 5% discount.
 Trunk nails, tinned, 65 and 10% discount.
 Wire, (base), \$2.85.
 Wire nails in car lots, \$2.50; less than car lots, \$2.55.
 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, \$1.37 per 100 sq. ft.
 Poultry, 2x2 mesh, 150 ft. roll, 35 off Canadian List.

NOZZLES.—Duty 20%.
 Hose (brass), \$3.25 to \$5 per doz.

NUTS.—Duty 1 cent per lb. & 25%.
 Finished, tapped, 25% discount.
 Rough, square head, 4 cents per lb. from list.
 Rough, hexagon head, 4 cents lb. from list.
 Semi-finished, tapped, 25% discount.

OIL.—Duty 25%.
 Bofled Linseed Oil bbls., 85 cents per gal.
 Cylinder Oil, from 40 cents up.
 Lard Oil, bbls., 90 cents per gal.
 Prime White (Can.), 11 cents per gal.
 Prime White (U.S.), 15 cents per gal.
 Sperm Oil, bbls., \$1.75 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 27%.
 Asbestos, 35 cents per lb.
 Flax, 35 cents per lb.
 Hemp, 12 cents per lb.
 Jute, 8 cents per lb.

PAIS.—Duty 25%.
 Galvanized Iron, \$2.50 to \$3.50 per doz.

PAINTS.—Duty 25%.
 Pure White Zinc, 8 to 9 cents per lb.
 No. 1, 6 to 7 cents per lb.
 No. 2, 5 to 6 cents per lb.
 Prepared, in 1, 4 and 1-gallon tins, \$1.25 per gal.
 Barn, in barrels, 75 to 85 cents 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, ex-Toronto, \$5.87.
 No. 1, in casks, \$5.12 per cwt.
 No. 1, in kegs, \$5 per cwt.

LEAD, RED.—Duty 5%.
 Genuine, 560 lb casks, \$5 to \$5.12 per cwt.
 Genuine, 100 lb kegs, \$5.50 per cwt.
 No. 1, 560 lb. casks, \$4 per cwt.
 No. 1, 100 lb. kegs, \$4.50 per cwt.

COLORS (Dry).—Duty 25%.
 Burnt Sienna, pure, 10 cents per lb.
 Umber, pure, 10 cents per lb.
 Canadian Oxides, \$1.75 to \$2 per 100 lb.
 Chromo Greens, pure, 12 cents per lb.
 Chromo 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, 31 cents per 100 lb.
 Mortar Color, \$1.25 per 100 lb.
 Pure Indian Red, No. 45, 90 cents per lb.
 Super Magnetic Oxide, \$2 to \$2.25 per 100 lb.
 Ultramarine Blue, in 25-lb. boxes, 8 to 21 cents per lb.
 Venetian Red (best), \$1.30 to \$1.90 per 100 lb.
 Whiting, 65 cents per 100 lbs.

COLORS (In Oil).—Duty 25%.
 25 lb. tins, Standard Quality.
 Chromo Green, 8 cents per lb.
 Chromo Yellow, 8 cents per lb.
 French Imperial Green, 10 cents per lb.
 French Ochre, 5 cents per lb.
 Golden Ochre, 6 cents per lb.
 Marino Black, 9 cents per lb.
 Marino 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.
 Tanned lining, 45 cents per roll.
 Tanned roofing, \$1.65 per 100 lbs.

PEAVEYS.—Duty 30%.
 Pound and Duck bill, \$2.50 and \$13 per doz.

PICKS.—Duty 30%.
 \$1.50 to \$7 per doz.

PIPE.—Duty, \$3 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.—Galvanized Iron. Duty 30%.

PIPE, BLACK IRON.—Duty 30%.

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%.
 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), \$2.25 per 100 lbs.
 In kegs, boxes or loose, \$2.40 per 100 lbs.
 Milk, in bbls., \$1.90 per 100 lbs.

RASPS.—Duty 30%. See F 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.
 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 in., 22 cents per lb.
 Jute, 8 cents per lb.
 Lath Yarn, 11 and 11 1/2 cents per lb.
 Manila, 7-16 in. and larger, 13 cents per lb.
 Sisal, 7-16 in. and larger, 12 1/2 cents per lb.

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, nickel-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, 13 1/2% discount.
 S. & D., 40% discount.
 S. & D., 35 off on Nos. 2 and 3.

SCALES.—Duty 30%.
 Gurney's, 40 discount. Canadian list.

SCREENS.—Duty 30%.
 Door, \$6.50 to \$8.35 doz.
 Window, \$1.00 to \$2.50 doz.

SCREWS.—Duty 25%.
 Bench, iron, \$1.25 to \$5.75 per doz.
 " wood, \$3.25 to \$4 per doz.
 Drive Screws, 57 1/2 & 10% discount.
 Hexagon Cap, 45 " "
 Set, case hardened, 60 " "
 Square Cap, 50 & 5 " "
 Wood, F.H., bright and steel, 57 1/2 & 10% discount.

SCREWS (Machine, Iron and Brass).—Duty 35%.
 Flat head, 25% discount.
 Round head, 30 " "

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

SHOVELS AND SPADES.—Duty 35%.
 Jones', 40 and 5% discount.
 Steel, Snow, \$2.45 to \$2.60 per doz.

SKATES.—Duty 25%.
 Canadian Hockey, 40 cents to \$2.50 pair.

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

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

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

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

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

STOCKS AND DIES.—Duty 30%.
 Blacksmiths', Lighting, 25% discount.
 " Reece, 30% discount.
 " Jarline, 35 " "
 Pipe, Solid, 70 & 10% discount.
 " Duplex, 23 1/2% discount.
 " Jarcock, 33 1/2 " "
 " Oster, 31 1/2 " "
 " Armstrong, 35% " "

STONES.—Duty 30%.
 Sythe, \$3.25 to \$5 per gross.

TACKS, BRADS, etc.—Duty 35%.
 Carpet tacks, blue, 80 & 15% discount.
 " " " tinned, 80 & 20 " "
 " " " in kegs, 40% " "
 Copper tacks, 50% discount.
 Fine finishing, 40% discount.
 Leather carpet tacks, 55% discount.
 Patent brads, 40% discount.
 Swedes, cut tacks, blue and tinned, in bulk, 80 & 10% discount; in dozens, 75% discount.
 Trunk tack, black and tinned, 85% discount.
 Zinc tacks, 35% discount.

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

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

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

TURNBUCKLES.—Duty, 1 cent per lb., 25%; 33 1/2% discount.

TWINES.—Duty 25% .
 Bag twine, 3-ply, 30 cents per lb.
 4-ply, 30 cents per lb.
 Binding, 12 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.
 Tanned Lath, 11 cts.
 Wrapping, 22 to 27 cts.

VARNISHES.—Duty 20 cents per gal.
 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.
 Furniture 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, \$2.25 to \$2.35 per gal.
 white, \$2.35 to \$2.45 per gal.

VISES.—Duty 30%.
 Amer., 13 cents per lb.
 Brooks', 13 cents per lb.
 Peter Wright's, 15 cents per lb.

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

WIRE.
 Brass Wire, (duty 16%), 50 to 50 & 2 1/2% discount.
 Copper Wire, (duty 15%), 45 & 15% discount.
 Clothes Line Wire, solid 7 strand, No. 17, \$4.25;
 No. 18, \$2.65; No. 19, \$2.35.

WASTE (Cotton).
 Colored, \$3.50 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 " "
 Trimo, pipe, 25 " "

WRINGERS (Clothes).—Duty 35%.
 Canadian, \$30 to \$30 per doz.
 Popular Brands, \$16.50 to \$22 per doz.

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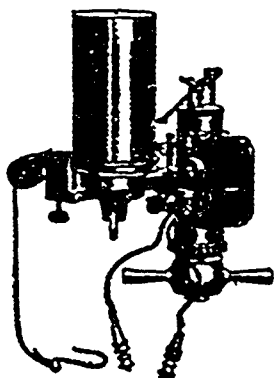
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American Thompson Improved Indicator with Electrical Attachment.

AMERICAN STEAM GAUGE AND VALVE MFG. COMPANY

BOSTON, MASS., U.S.A.

MANUFACTURERS OF

Standard Appliances for Measuring, Indicating, Recording and Governing Water, Steam, Gas, Ammonia, and all pressures.

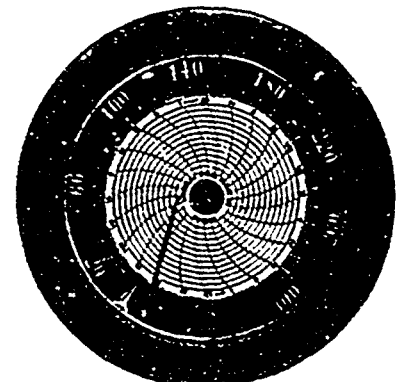
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