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Vol. 41. TORONTO, DECEMBER 21, 1900. No. 12.

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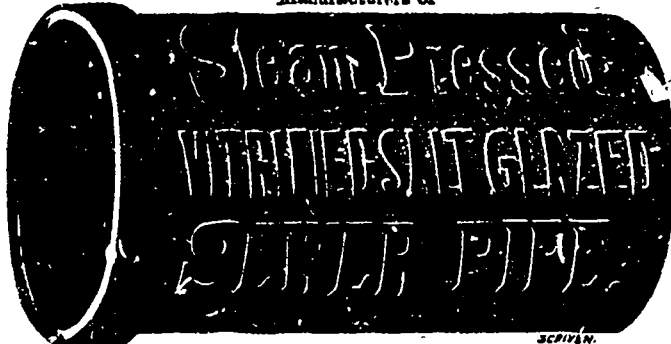
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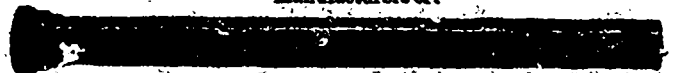
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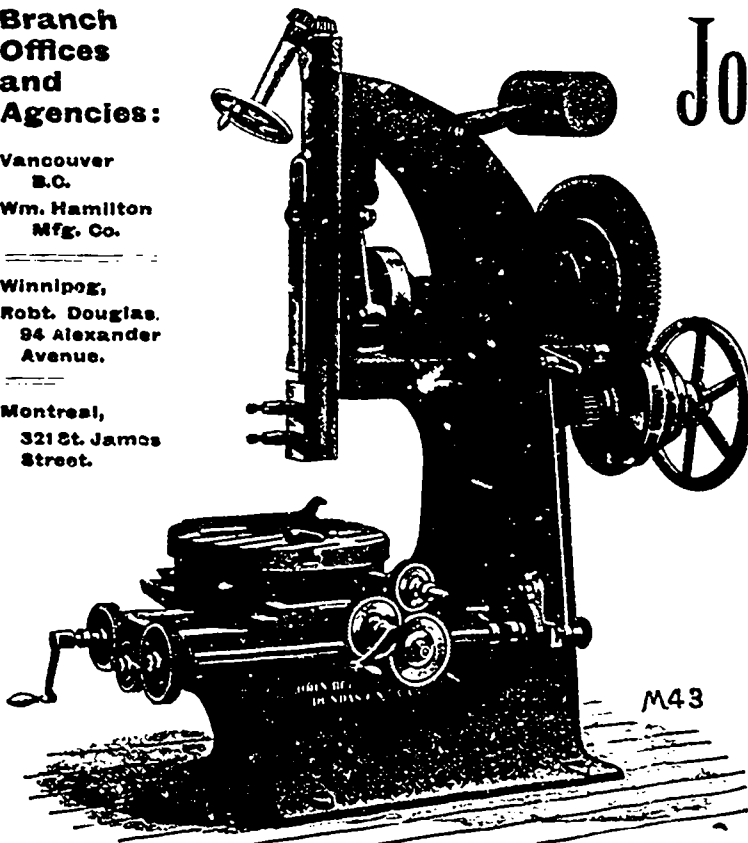
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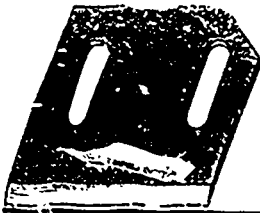
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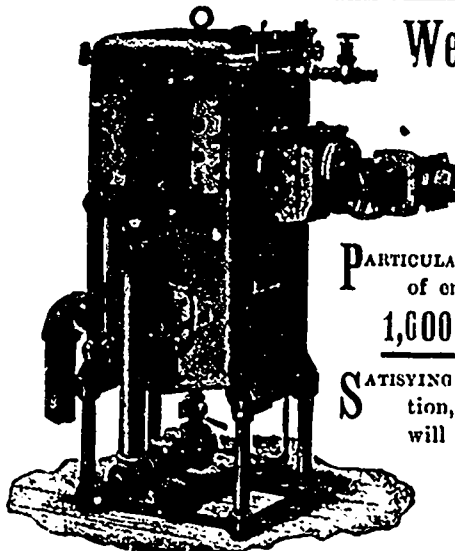
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The cost of steam depends upon the cost of
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You have no control over the price of coal
per ton, so if you want cheaper steam you must
use less coal.

The MUMFORD STANDARD BOILER will burn
10 to 25 per cent. less coal to the horse-power
than a return tubular boiler.

At the present high price of coal the saving
will soon pay for a new boiler.

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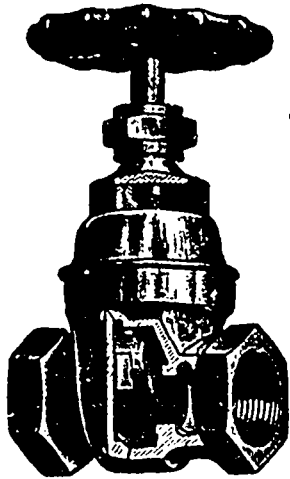
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TO
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ASK YOUR
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FOR THEM.

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THE KERR ENGINE CO., Limited,
WALKERVILLE, ONT.

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ABSOLUTELY ACCURATE

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METERS

Current
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We invite enquiries from engineers in need of any description of Pumping Machinery. We manufacture over five hundred varieties and sizes of Steam and Power Pumps for stationary and marine purposes. We will be pleased to furnish plans and specifications for any special types. Our Catalogue, giving a good idea of our standard patterns, sent free to all enquirers.

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To anyone requiring a compact, thoroughly reliable engine, especially suited for users of intermittent power, we recommend our Gas and Gasoline Engine. We shall be glad to furnish estimates for Gas or Gasoline operated pumps, electric light plants, etc., etc. Explanatory Booklet free on request.

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We Stock a Large Variety of SHADES
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FOR FACTORY AND OFFICE.

Imperial Lamps and Helios Upton Enclosed Arcs Give BEST LIGHT with LEAST CURRENT
ELBRIDGE Sparking Dynamos, SAMSON Batteries and IMPERIAL Salts, for Gas or Oil Engines.

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

INASMUCH.

In another page will be found an article having reference to one of the noblest and most useful institutions that ever existed—the Sick Children's Hospital in Toronto. In it is shown that kind hearts and willing hands have erected a most appropriate building, have equipped it with every appliance essential to its most satisfactory working, and have put it in operation, by which suffering children can be treated by the best physicians in the community, and tended by skilled nurses whose kind hearts and gentle hands do all that can be done for the relief of pain and the alleviation of suffering. No more deserving eleemosynary institution ever reflected more credit upon a community than the Sick Children's Hospital has, upon Toronto, but to put it in its present condition of usefulness, was a severe tax upon the finances of those who undertook its establishment. There is yet a large outstanding debt against it which its managers are endeavoring to pay off, and they appeal to the kind-hearted everywhere to assist them in doing it. This appeal should not be in vain.

During the year now fast drawing to its close, the patrons and friends of THE CANADIAN MANUFACTURER have received much of the good things of life. They have prospered in their business, and are in a condition, most of them, to respond to a call that appeals to the gentler impulses of their souls. While we are all rejoicing at the Great Event of nineteen hundred years ago, let us not forget the suffering little ones who occupy the cots in the hospital. We appeal to our readers to go down into their pockets and draw forth of their wealth according to their ability, even if it be but a dollar, and without delay send it to Mr. John Ross Robertson, Toronto, specifying that it is intended for the liquidation of the debt of the Sick Children's Hospital.

Then shall the King say unto them on His right hand : "Come, ye blessed of My father, inherit the Kingdom prepared for you from the foundation of the world : for I was an hungered, and ye gave Me meat ; I was thirsty, and ye gave Me drink ; I was a stranger, and ye took Me in ; naked, and ye clothed Me ; I was in prison, and ye came unto Me."

Then shall the righteous answer him, saying : "Lord, when saw we Thee an hungered, and fed Thee? or thirsty, and gave Thee drink? When saw we Thee a stranger, and took Thee in? or naked, and clothed Thee? or when saw we Thee sick, or in prison, and came unto Thee?"

And the King shall answer and say unto them : "Verily I say unto you, inasmuch as ye have done it unto one of the least of these, ye have done it unto Me."

And now abideth faith, hope, charity—these three, but the greatest of these is charity.

THE COMMERCIAL DEVELOPMENT OF THE AUSTRALIAN COLONIES.

In view of the Federal Union of the Australian Colonies, about to be consummated, some consideration of the trade figures of these colonies for the last few years (taken from their statistical registers, and compiled by the Board of Trade Journal), may be of interest.

Taking, first, the total value of the trade of each colony, the following tables show (1) the value of the imports into the various Australian Colonies, and (2) the value of the exports from those Colonies, distinguishing in each case the trade with the United Kingdom and British possessions (including inter-colonial trade), and the trade with all foreign countries :

Imports into Australia, inclusive of inter-colonial trade and bullion and specie :

	1895.	1897.	1899.
Into.	£	£	£
NEW SOUTH WALES—			
From United Kingdom and British possessions	14,353,000	18,016,000	21,255,000
From foreign countries .	1,639,000	3,728,000	4,340,000
Total, New South Wales..	15,992,000	21,744,000	25,595,000
VICTORIA—			
From United Kingdom and British possessions	11,161,000	13,590,000	15,167,000
From foreign countries .	1,311,000	1,864,000	2,786,000
Total, Victoria.....	12,472,000	15,454,000	17,953,000
SOUTH AUSTRALIA—			
From United Kingdom and British possessions	4,915,000	6,144,000	6,096,000
From foreign countries .	671,000	982,000	788,000
Total, South Australia	5,586,000	7,126,000	6,884,000
WEST AUSTRALIA—			
From United Kingdom and British possessions	3,738,000	6,111,000	4,026,000
From foreign countries .	37,000	307,000	448,000
Total, West Australia.....	3,775,000	6,418,000	4,474,000
QUEENSLAND—			
From United Kingdom and British possessions	5,094,000	4,982,000	*
From foreign countries .	255,000	447,000	*
Total, Queensland.....	5,349,000	5,429,000	6,764,000
TASMANIA—			
From United Kingdom and British possessions	1,086,000	1,334,000	1,734,000
From foreign countries .	8,000	34,000	35,000
Total, Tasmania.....	1,094,000	1,368,000	1,769,000
Total from United Kingdom and British possessions	40,347,000	50,177,000	*
Total from foreign countries	3,921,000	7,362,000	*
Total, imports.....	44,268,000	57,539,000	63,439,000

* The particulars of the trade of Queensland for 1899 are not yet available.

Exports from Australia, inclusive of inter-colonial trade and bullion and specie :

From.	1895. £	1897. £	1899. £
NEW SOUTH WALES—			
To United Kingdom and British possessions ...	17,323,000	17,506,000	19,968,000
To foreign countries	4,812,000	6,245,000	8,477,000
Total, New South Wales..	21,935,000	23,751,000	28,445,000
VICTORIA—			
To United Kingdom and British possessions ...	12,894,000	15,077,000	14,858,000
To foreign countries. ...	1,854,000	1,663,000	3,710,000
Total, Victoria	14,548,000	16,740,000	18,568,000
SOUTH AUSTRALIA—			
To United Kingdom and British possessions ..	6,617,000	6,053,000	6,963,000
To foreign countries	560,000	875,000	1,427,000
Total, South Australia....	7,177,000	6,928,000	8,390,000
WESTERN AUSTRALIA—			
To United Kingdom and British possessions ...	1,311,000	3,875,000	6,903,000
To foreign countries	22,000	65,000	82,000
Total, Western Australia..	1,333,000	3,940,000	6,985,000
QUEENSLAND—			
To United Kingdom and British possessions...	8,948,000	9,048,000	*
To foreign countries ...	35,000	44,000	*
Total, Queensland.....	8,983,000	9,092,000	11,943,000
TASMANIA—			
To United Kingdom and British possessions ...	1,371,000	1,733,000	2,250,000
To foreign countries	2,000	11,000	327,000
Total, Tasmania.....	1,373,000	1,744,000	2,577,000
Total to United Kingdom and British possessions	48,464,000	53,292,000	*
Total to foreign countries .	6,885,000	8,903,000	*
Total, exports	55,349,000	62,195,000	76,908,000

* The particulars of the trade of Queensland for 1899 are not yet available.

Comparing the figures for 1895 with those for 1899, in the cases of the five colonies, the statistical registers of which are available for the latter year, the following table shows the percentage of imports and exports from and to the British Empire in those years :

Colonies.	Imports.		Exports.	
	1895. Per Cent.	1899. Per Cent.	1895. Per Cent.	1899. Per Cent.
NEW SOUTH WALES—				
From and to British Empire	89.7	83.0	78.7	70.2
“ foreign countries	10.3	17.0	21.3	29.8
VICTORIA—				
From and to British Empire	89.5	84.5	88.6	80.0
“ foreign countries	10.5	15.5	11.4	20.0
SOUTH AUSTRALIA—				
From and to British Empire	88.0	88.5	92.2	83.0
“ foreign countries	12.0	11.5	7.8	17.0
WEST AUSTRALIA—				
From and to British Empire	99.0	90.0	93.3	93.3
“ foreign countries	1.0	10.0	1.7	1.2
TASMANIA—				
From and to British Empire	99.3	98.0	99.8	87.3
“ foreign countries	0.7	2.0	0.2	12.7

It should be observed that the figures for the British Empire in the tables already given, and the percentages in the above table, include inter-colonial trade. The values of the imports into each colony from the other Australian colonies are greater than those of the imports from the United Kingdom. As regards the export trade of the various colonies, it will be seen from the above table that in the case of New South Wales and Victoria, the exports to the British Empire have declined, in the former case about 8 per cent., and in the latter case 8½ per cent., while South Australia shows a falling off of about 9 per cent. in 1899, as compared with 1895, and Tasmania about 12½ per cent. It is interesting to see which countries have been the most successful competitors with British trade. The following table shows the values of the imports from the United States, Germany, France, Belgium, and other foreign countries into the various Australian colonies, and the exports from the colonies to these countries, in the years 1895-99.

Imports into Australian colonies from foreign countries :			
From.	1895. £	1897. £	1899. £
NEW SOUTH WALES—			
United States	624,000	1,888,000	2,219,000
Germany.....	426,000	900,000	856,000
France	77,000	211,000	259,000
Other foreign countries .	513,000	929,000	1,006,000
Total, New South Wales..	1,640,000	3,728,000	4,340,000
VICTORIA—			
United States.....	360,000	591,000	1,324,000
Germany.....	343,000	547,000	631,000
France.....	133,000	143,000	160,000
Other foreign countries .	475,000	583,000	671,000
Total, Victoria	1,311,000	1,864,000	2,786,000
SOUTH AUSTRALIA—			
United States.....	242,000	305,000	365,000
Germany.....	172,000	214,000	241,000
France.....	20,000	24,000	24,000
Other foreign countries.	237,000	439,000*	158,000
Total, South Australia. . .	671,000	982,000	788,000
WEST AUSTRALIA—			
United States.....	23,000	160,000	204,000
Germany.....	7,000	77,000	156,000
Other foreign countries.	7,000	70,000	88,000
Total, West Australia.....	37,000	307,000	448,000
QUEENSLAND—			
United States	131,000	266,000	*
Germany	77,000	90,000	*
Other foreign countries .	47,000	91,000	*
Total, Queensland.....	255,000	447,000	*
TASMANIA—			
America	} 8,000 {	19,000	20,000
Other foreign countries .		15,000	15,000
Total, Tasmania.....	8,000	34,000	35,000

* Figures not yet available.

Exports from Australia to foreign countries :

	1895.	1897.	1899.
NEW SOUTH WALES—			
United States.....	684,000	2,462,000	2,392,000
France	1,436,000	1,543,000	2,127,000
Belgium	781,000	669,000	1,566,000
Germany.....	1,142,000	880,000	1,286,000
Other foreign countries .	559,000	691,000	1,106,000
Total, New South Wales..	4,612,000	6,245,000	8,477,000

	1895.	1897.	1899.
VICTORIA—			
France	224,000	741,000	1,483,000
Germany	560,000	481,000	768,000
United States	281,000	185,000	235,000
Other foreign countries.	589,000	256,000	1,224,000
Total, Victoria.....	1,654,000	1,663,000	3,710,000
SOUTH AUSTRALIA—			
Germany	136,000	319,000	582,000
Belgium.....	96,000	192,000	327,000
China.....	4,000	5,000	304,000
France	270,000	238,000	69,000
United States.....	14,000	2,000	—
Other foreign countries .	41,000	119,000	145,000
Total, South Australia....	561,000	875,000	1,427,000
WEST AUSTRALIA—			
Germany	—	3,000	5,000
Guam*.....	—	—	58,000
Other foreign countries .	22,000	62,000	19,000
Total, West Australia.....	22,000	65,000	82,000
QUEENSLAND—			
All foreign countries....	35,000	44,000	**
TASMANIA—			
America†	2,000	11,000	236,000
Other foreign countries .			91,000
Total, Tasmania.....	2,000	11,000	327,000

* An island of the Ladrone Archipelago (Pacific Ocean), now belonging to the United States.

† So distinguished in the Annual Report of the Secretary for Customs on the Tasmanian Trade Returns.

‡ Almost entirely to Germany.

** Figures not yet available.

From the above tables it will be seen that both in the import and export trade of the Australian colonies, it is the United States which is becoming the most serious competitor of British trade. The imports into New South Wales from the United States in 1895 formed less than 4 per cent. of the total import trade of the colony; in 1899 this proportion had risen to over 8½ per cent. The exports from New South Wales to the United States were only about 3 per cent. of the whole exports; but in 1898 they had reached 21½ per cent. This, however, appears to have been a phenomenal year, as in 1899 the proportion was but about 8 per cent. As regards Victoria, the imports from the United States rose from 2.9 per cent. in 1895, to 7.3 per cent. of the total import trade in 1899. The exports from Victoria also show a slight increase in 1899. The trade of the United States is increasing steadily every year with the other colonies, exception being made of the exports from South and West Australia.

THE INDUSTRIAL EXHIBITION.

The views of the editor have been requested in the matter of the Toronto Industrial Exhibition, its management, and what might be done to reinstate it in the good graces of the tax-payers of the City of Toronto.

We regard it as exceedingly unfortunate, both for the Exhibition as well as for the tax-payers, that the conditions which now exist should have occurred; and we deem it of the utmost importance that the obstacles to the success of the Exhibition should be removed as speedily as possible. If radical changes are necessary to this end, there should be no hesitation or delay in making them.

Whatever may be said regarding the management of the Exhibition heretofore, it is evident that a strong prejudice now exists in the minds of the tax-payers against the administration of it by the Toronto Industrial Exhibition Association. The Association, realizing the situation, have accepted advice and assistance from certain quarters, and have proposed certain changes within its own body, which do not seem to be what is required in the direction of effective reform.

Is the City of Toronto to suffer by any injury that may result to the Exhibition because of its mismanagement?

Such an event must be avoided. If the Industrial Association cannot prevent the inevitable injury, it is clearly the duty of the City Council to take the matter out of its hands and place it in the hands of those who will manage it aright.

The Exhibition Park, together with all the buildings and appurtenances thereon used for Exhibition purposes, is the property of the City; and the City Council, as trustees for the tax-payers, have a right to demand that the management of the Exhibition shall be such as to effect the best results obtainable. In fact, it is their duty to do so.

Our suggestion, therefore, is that the City Council appoint a committee, whose duty it shall be to invite the co-operation of a sufficient number of gentlemen drawn, as far as possible, from habitual exhibitors at the Fair, and representing all the more important industries, who shall act as directors of the Exhibition, subject, of course, to the approval of the City Council.

This joint committee should assist the manager in the discharge of his duties, and relieve him of many of the petty annoyances which have heretofore inevitably beset him. It should be made a requirement that these gentlemen become superintendents of such buildings and branches of the Exhibition as may be allotted to them, with power to regulate the disposition and location of exhibits, a part of their duties being to hold sessions in the Administration Building on the grounds every day during the continuance of the Exhibition, to compare notes, advise the manager if required, and to hear appeals from dissatisfied exhibitors. The manager should not be compelled to give his attention to the petty details of administration, his abilities being reserved for more important matters.

If this suggestion were adopted, it would place the affairs of the Exhibition in the entire control and direction of the City Council, who are the representatives of the tax-payers. The committee of the Council, who would have charge of the Exhibition, and other gentlemen associated with them, would be responsible to the Council, who could review their administration at any time.

Considering the present temper of the tax-payers, there can be no hope that they would vote \$200,000 for the improvements which have been suggested; and it is equally vain to hope for any reorganization of the Industrial Association, which would bring it into the good graces of the tax-payers. If the people of Toronto were indifferent as to whether the life of the Exhibition be prolonged, its affairs might be allowed to drift along regardless of results. But this is not the case. Toronto has heretofore profited largely by this annually recurring Exhibition, and ever since its inception the City has appropriated whatever money may have been necessary to keep it going, and it is through the grace of the City that the Industrial Exhibition Association now control

its management. We find the Association up against a formidable and impassable barrier. The City Council, as the trustees of the people, cannot afford to allow the Exhibition to lapse, and perhaps the only thing which would prevent that catastrophe, would be for it to relieve the Association of all care and responsibility in the matter, and, through the committee of the Council, as suggested, with the assistance of competent men to advise and co-operate in the management, would be in touch with the tax-payers through their responsibility to the City Council, and such things as family compacts, such as pointed out by Mr. Thorn in his analysis of the Toronto Electoral District Society, would be impossible.

THE CANADIAN TARIFF, AND AN IMPERIAL ZOLLVEREIN.

The Manchester, England, Textile Mercury has the following to say regarding the Canadian tariff and an Imperial Zollverein :

Although the Cobden Club may belittle the effects of Canada's preferential tariff in favor of the Mother country, other observers, perhaps more far-sighted, are inclined to regard it as a serious first step towards Imperial preferential trade. Thus Mr. James Boyle, the very able Consular representative of the United States in Liverpool, has written to his government that the new tariff of the Dominion is one of a number of facts bearing upon what promises to be, in the not distant future, a burning question throughout the British Empire—a trade zollverein, or preferential tariff, between and among the Colonies of Great Britain and the Mother country. Liverpool, he says, is vastly interested in this question. Liverpool receives more imports from the United States than does any other single port in the world; and it is also the headquarters of the Canadian trade, both for import and export. Beyond question, continues the Consul, during recent years there has been a great development of sentiment in favor of an Imperial preferential tariff; and I do not hesitate to say that this sentiment has a far stronger hold, not only among the mass of the people of Great Britain, but even among the politicians, than the party newspapers and party leaders concede. It is a very significant fact that for the last two years this question has been discussed more than any other at meetings of Chambers of Commerce and trade organizations of Great Britain and her Colonies. Canada, it is pointed out, is leading the way in the movement. Lord Strathcona, the High Commissioner for Canada, with headquarters at London, recently published a communication in the leading newspapers of Great Britain, in which he made the offer of the free gift to schools in this country of books devoted to the history, geography, and resources of Canada; and he announced that medals would be awarded as prizes to children passing the best examination in the study of those subjects. The High Commissioner stated in his newspaper communication that this study ought to be beneficial, in a commercial sense, in making the products of Canada better known than at present. Speaking from his local knowledge, Mr. Boyle, says the Liverpool Chamber of Commerce, seems to view the proposition of an Imperial preferential tariff with favor, as the other day it adopted a resolution, memorializing the British Government to appoint a Commission to investigate the subject. The Consul is alive to the enormous possibilities—commercial as well as political—attaching to this question, which he declares are emphasized by the recent federation of Australia and the proposed federation of South Africa, with the inclusion of the Transvaal and the Orange Free State. Another phase of the new Imperialistic and preferential movement is the agitation, which is getting very strong, for a countervailing duty on imported sugar which receives a bounty. Still another phase of the movement is the demand which has recently sprung up, and which has assumed serious

proportions, that the British Government should impose an export duty on coal, or even prohibit the exportation of coal altogether, as it is feared that the coal supply of Great Britain is running short, and as the coal exported goes to benefit Continental countries which are commercially and political rivals of Great Britain. These views, being the conclusions of an onlooker unbiased by the currents of our home politics, are not improbably more correct than those of the Cobden Club and party politicians.

AUSTRALASIAN MANUFACTURERS AND THEIR COMING TARIFF.

The Australasian Ironmonger, of November 1, speaking of the to be tariff under the forthcoming confederation says:—

The Final Intercolonial Conference of the Chambers of Manufactures to settle the tariff they would propose for the Commonwealth has met in Sydney during the month, and has prepared its report, which is entrusted to Mr. F. T. Derham, who has presided at each of the three meetings, to be presented at his discretion to the Commonwealth Treasurer as representing the views of the manufacturers. All that the manufacturers will disclose to outsiders is that they believe that when the report is presented, it will be found as satisfactory to everybody as any such document can be. Moderate protection is its basis, with consideration for the working men, to the extent that duties are asked for that will enable local manufacturers to pay the current rate of wages, and still compete with the products of countries where wages are much lower. The eight hours' day is made a plank in the platform. The revenue from the proposed tariff has been carefully calculated to give the Treasurer just the sum that he will need, for which, no doubt, the Treasurer will be thankful. One of the Sydney papers published certain statements that the duties on agricultural implements and machinery would be practically those now in force in Victoria, but the statement was not considered outrageous enough to draw anything more than expressions of interest from the members of the conference. Doubtless any complete publication at present would lead to a good deal of heckling of the proposals, and it is canny to defer publication until the psychological moment. We are informed, however, that any manufacturer, on applying to his Chamber of Manufactures, can learn what has been done by the conference in his own department.

Most incongruous industries with interests quite diverse, were necessarily represented at the conference, and it needs but little knowledge of human nature to form some estimate of the kind of argument that has made it possible to come to a harmonious agreement. Of one thing we are quite certain—whatever tariff may be adopted, the manufacturers of Australia will make a good show against any others in any part of the world.

So closely had the conference calculated the revenue they think would be obtainable from their proposed tariff, that a suggestion to give preferential duties to British imports to the extent of ten per cent. on the amount of any duty chargeable, was rejected, largely on the ground that this would necessitate imposing higher duties to give the Treasurer his necessary revenue. The conference would only go so far as to resolve that, while it approved generally of the reference to assistance to British merchants and shippers, it felt it would be no part of its duty to recommend any amount of rebate on British imports, but would respectfully request the Federal Parliament to give the matter favorable consideration at the earliest possible opportunity.

Captain B. B. Inman, of Duluth, Minn., was in Montreal a few days ago to explain before the Chamber of Commerce of that city his proposed ice-crushing boat. Captain Inman claims that with this new craft it will be possible to keep navigation open on the great lakes the year round.

EDITORIAL NOTES.

At a meeting of the Executive Committee of the Canadian Manufacturers' Association held last week, discussing the International Exhibition to be held in Glasgow, Scotland, in 1901, the following resolution was passed:—"That it is a matter of the highest importance that Canada should have an adequate exhibit of her products at this exhibition, and that the Government of the Dominion of Canada be urged to appropriate the necessary moneys to provide for a representative exhibit of Canadian products and manufactured goods at this exhibition."

An official proclamation has been issued calling the Dominion Parliament to assemble on February 6 for the dispatch of business.

The new advertisement of the Heine Safety Boiler Co., Toronto, appeared in the December 7 issue of this journal. On December 11, four days later, we were in receipt of a letter from the company saying that they were at that time already in receipt of enquiries from two different concerns asking information re the Heine boiler, saying they were in the market to purchase. Both the enquirers do business elsewhere than in Toronto, and both stated that they had observed the advertisement in THE CANADIAN MANUFACTURER.

The secretary of the Canadian Manufacturers' Association is in receipt of a letter from the Department of Railways and Canals at Ottawa, which reads, in part, as follows:—

Referring to your communication of the 9th ult., by which, on behalf of the Canadian Manufacturers' Association, you intimate their desire that before ratification by the Governor-in-Council of any changes in railway rates, regulations or classifications, the Railway and Transportation Committee of the said Association might be afforded an opportunity of considering the proposed changes, I am, by direction, to inform you that before any changes are submitted for ratification the views of the Committee will be obtained regarding them.

This is an important step in connection with railway matters. The difficulty with the present arrangement relating to railway rates, classifications and regulations has been that when a change is considered desirable by the railway companies, before it can be enforced it must be endorsed by the Governor-in-Council; but it is impossible for the Governor-in-Council to be accurately advised as to the probable effect of any proposed changes, and so the endorsement of changes proposed by the railway companies was practically taken for granted. Shippers and others whom the proposed changes might affect, had not an opportunity of expressing any opinion on the subject until after the change was enforced, and it was practically impossible to obtain redress. The new arrangement means that the Governor-in-Council in considering any proposed changes relating to rates and classifications will first hear the expressed opinions of practical shippers as to the influence that the proposed change may have on shipping.

Delegates representing the Chambers of Commerce of all six of the Australasian colonies were in session at Sydney during the early part of November, discussing the provisions of the proposed federal tariff. It was agreed that the recommendations adopted as to tariff changes deemed desirable in the interest of colonial manufacturers should not be disclosed until the measure was formally presented to the Federal

Parliament. It is understood that a proposal to give preferential duties to British imports to the amount of ten per cent. was rejected, the Conference deciding that, while it approved generally of the principle of assisting the merchants and shippers of the mother country, such a rebate as was proposed would result in giving the Treasury of the Confederation insufficient revenues.

Mail advices from Dawson report that customs returns for the summer season, May 16 to October 31, 1900, show imports of machinery and merchandise to have exceeded thirty thousand tons, over sixty-five per cent. of which entered from Canadian ports. The gold export records show that \$14,255,500 was entered as having been taken out of the country during that period. Officials allow a margin of three millions taken out, which was not entered, and place the Yukon's gold output for 1900 at \$18,000,000.

John G. Carter, the inventor of the process of making substitute for rubber from cotton-seed oil, died recently at Savannah, Ga. The process was known only to Mr. Carter, and unless it is found that he left instructions and directions for the continuance of the work, it is probable that the secret died with him. This is a valuable illustration of the wisdom of patenting all inventions of any commercial value, and not leaving the matter a secret. Very valuable inventions have been lost to the world, owing to a mistaken belief that our patent laws do not give adequate protection.

Some months ago (says the Mechanical World, of Manchester, Eng.), the government addressed a circular letter to our representatives in Europe asking for information relating to the metric system in the various countries. It appears from the replies which have just been published that the change to the metric system in Austria was made in 1876, and met with many difficulties, as the new scale bore no resemblance to that which it superseded. The alteration was facilitated, however, by wise concessions, the transition period was over in four years, and the method now gives complete satisfaction in Austria and Hungary. The metric system is firmly established in Belgium, where it came into general use in 1845, and the question of introducing it in Denmark is under consideration, the majority of the commercial and professional classes being in favor of the reform. In France, where the law was brought into force in 1837, all authorities are agreed that the metric system has been commercially beneficial, and the principle has also been firmly established in Germany, where it was brought forward in 1868, and has been of advantage to the trade of the country. Too much prejudice against the system exists in Greece, and the government has therefore refrained from making it compulsory; but in Italy its use was made uniform by legislation in 1890. The obstacles encountered in enforcing the principle in the Netherlands have gradually been removed, and it is now in operation throughout the country. In Portugal, where the method was introduced in 1852, little opposition was manifested, as about twelve years were occupied in carrying it into effect. Spain adopted the system in 1869, Norway and Sweden in 1879, and Switzerland in 1877. Taken altogether, the metric system appears to have proved beneficial, and no desire exists, in the countries that have adopted it, to revert to former methods.—American Machinist.

THE CANADIAN MANUFACTURER

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We especially request Canadian manufacturers to send us lists of the different lines of goods produced by them so that we may address to them special letters of inquiry as soon as information is received by us.

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Patent Medicines. | Gauze and Cambric for Bandages.
Machinery for making Lozenges. | Chrome Kid Leather.

AUSTRALIA.

Paints, Varnishes and Oils. | Wall Papers.
Window Glass. | Water Paints.
Painters' Brushes.

AUSTRIA.

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BRAZIL.

Lithographic and Photographic | Bristol Board.
Papers.

COLOMBIA.

Metal Goods in general. | Clothing and Linen.
Machinery. | Jewelry.
Electrical Supplies. | Paper and Stationers' Supplies.
Vehicles. | Sporting Goods.
Architectural Materials, | Food Products.
House Furnishings. | Drugs and Chemical Products.
Furniture.

CUBA.

Cameras and Kodaks. | Disinfectants.
Photographic Supplies. | Wire Netting.
Barbers' Chairs and Supplies. | Seats for Bath Tubs.

DENMARK.

Blacksmiths' } Tools.
Machinists' }
Factory Supplies in general. | Metal-Working } Machinery.
 | Wood-Working }
 | Cycle Varnishes.

GERMANY.

Hardwood (all kinds). | Threshers.
Oak Logs and Timber. | Carriage Material.
Bicycles. | Carpets and Rugs.
Engines and Boilers. | Hardware and Mattan Furniture.
Pumping | Brass and Iron Bedsteads.
Shoe and Leather } Machinery. | Boots and Shoes.
Electrical | Groceries.
Electrical Instruments. | Flour.
Mowers and Reapers. | Ham, Bacon, Pork and Lard.
Planters and Seeders. | Canned or Bottled Goods.
Plows and Cultivators.

GREAT BRITAIN.

Shingling Hatchets. | Hardware Specialties.
Tools. | Printing Papers.

GREECE.

Machinists' } Tools.
Blacksmiths' }
Contractors' }
Bar Iron and Steel.
Pig Iron.
Engines and Boilers.
Pumping |
Wood-Working } Machinery.
Metal-Working }
Mining and Hoisting }
Factory Supplies in general.
Corrugated Iron. | Ornamental Sheet Metal Work.
Shafting, Hangers and Pulleys.
Belting.
Wrought Iron Pipe.
Valves, Pipe Fittings, etc.
Portable Forges.
Wire Rope.
Blasting Powder, etc.
Electrical Railway Equipment.
Telegraph and Telephone Material.
Wire for Electrical Purposes.
Electric Supplies in general.

HUNGARY.

Carriage, Buggies and parts thereof. | Counting Machines for office use.

INDIA.

Carpets and Rugs.
Oilcloth and Linoleum.
Window Shades and Fixtures.
Mattresses and Pillows.
Draperies and Upholsteries.
Clothing.
Hats and Caps.
Hosiery and Underwear.
Rubber Clothing. | Prints, Gingham, etc.
Sheetings, Shirtings, etc.
Blankets and Counterpanes.
Table Linen and Towels.
Handkerchiefs.
Hams, Bacon, Pork and Lard.
Confectionery.
Bottles and Medicine Vials.

ITALY.

Pipes and Fittings.
Radiators.
Valves.
Automatic Air Valves. | Expansion Joints.
Water Gauges.
Damper Regulators.

MEXICO.

Groceries.
Men's Furnishings.
Machinery for making Matches.
Small Wooden Boxes, Wax or
Stearic Candles.
Motors and Steam Rollers.
Machinery for carding, twisting
and making Cotton Wick.
Cotton Wick.
Stearine.
Small Pasteboard Boxes.
Strong White Glue.
Packing Boxes. | Wrapping Paper.
Paints, Oils and Varnishes.
Wire Fence.
Stoves.
Refrigerators.
Printing Paper.
Writing Paper and Envelopes.
Powder and Dynamite.
Architectural Metal Work.
Windmills.
Textile Machinery.
Mining Machinery.

PERU.

Silver Plated Tableware.
Fancy Articles. | Perfumery.

RUSSIA.

Builders' Hardware.
Contractors' } Tool.
Carpenters' }
Machinists' }
Paints, Varnishes and Oil.
Window Glass.
Rope and Twine.
Wagon and Carriage parts.
Bar Iron and Steel.
Engines and Boilers.
Pumping |
Metal-Working } Machinery.
Wood-Working }
Mining and Hoisting }
Milling |
Mowers and Reapers.
Planters and Seeders.
Plows and Cultivators.
Threshers.
Windmills and Tanks.
Heavy Wagons and Carts. | Harness and Saddlery.
Shafting, Hangers and Pulleys.
Belting.
Wrought Iron Pipe.
Valves, Pipe Fittings, etc.
Portable Forges.
Wire Rope.
Blasting Powder, etc.
Electrical Machinery.
Electric Railway Equipment.
Telegraph and Telephone Material.
Wire for Electrical Purposes.
Electric Light Fixtures.
Electric Supplies in general.
Electrical Instruments.
Lumber.
Sash, Doors and Blinds.
Building Paper.
Corrugated Iron.
Ornamental Sheet Metal Work.
Office Furnaces and Safes.

SWITZERLAND.

Bicycles.

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CAPTAINS OF INDUSTRY.

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

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

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, bolts, 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, alkalis, 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 Soo Lumber Co., Sault Ste. Marie, Mich., has purchased a site at Sault Ste. Marie, Ont., where they will erect a building for the carrying on of their business.

The Duncan Lithographing Co., Hamilton, Ont., have recently installed one of the Smart-Eby Machine Co's duplex steam pumps in their factory.

The new power-house of Messrs. Robert & William Conroy for the development of electrical energy by means of the hydraulic power available at Deschenes Rapids, was opened December 3. The electrical plant when installed will consist of eleven turbines and two generators. Each of the latter is of 800 k.w. capacity, and generates 10,000 volts. The amount of electrical power developed by this plant will be 2,500 h.p. Practically the whole of this has been leased by Mr. E. B. Eddy for his sulphite and paper mills at Hull, Que., five miles distant. In addition there are two turbines driving a plant which has been leased to the Hull Electric Co., totalling 332 h.p., and two turbines driving a plant for the Deschenes Milling Co., giving 175 h.p. This gives a grand total of 3,017 h.p. At a reasonable cost it will be possible to develop 2,500 h.p. more. The electrical plant has been furnished and installed by the Canadian General Electric Co., Peterborough, Ont., and the building operations have been carried on under the supervision of Mr. Louis Simpson, formerly manager of the Valleyfield Cotton Mills. In order to carry out the development Messrs. Conroy arranged for the incorporation of the Capital Power Co., with a capital of \$300,000,

Mr. F. H. Clergue, Sault Ste. Marie,

Ont., speaking of the Algoma Central Railway said the construction was being rapidly pushed. Over a thousand men were at work, and the line was running to a point about twenty miles from the Sault. Large storehouses had been erected on the eastern shore of Lake Superior, in which supplies had been stored for transmission to the construction gangs at work many miles inland. It is expected before many months to complete the 100 miles which will connect the main line with Michipicoten Junction, from there a railway will be run to James Bay, which is expected to be completed in three years time.

The Bruce Copper Mines Co., Bruce Mines, Ont., have placed their order with the Smart-Eby Machine Co., Hamilton, Ont., for one 150 h.p. Brown engine; one 40 h.p. slide valve engine with Meyer's adjustable cut off, and one 50 h.p. high speed electric light engine; one two million gallon tandem compound pumping engine, together with all, shafting, pulleys, screens, etc., for their concentrating plant.

The Toronto Street Railway receipts increase rapidly. The statement received at the City Hall covering the month of November shows an increase of nearly 25 per cent. over November of last year. The receipts for November since 1895 are given.

Following are the figures:—

	Gross receipts.	Percentage.
Nov., 1900	\$128,132.13	\$10,250.57
Nov., 1899	102,535.38	8,202.83
Nov., 1898	100,204.95	8,016.40
Nov., 1897	89,447.45	7,155.79
Nov., 1896	76,145.73	6,091.65
Nov., 1895	78,592.60	6,287.41
Oct., 1900	124,866.00	9,989.28

Messrs. Cowan & Co., Galt, Ont., have received orders through E. A. Wallberg, Toronto, for the Imperial Starch Co., at Prescott, Ont., for 180 h.p. Corliass engine and two 150 h.p. boilers.

The Manitoba Milling Co., Franklin, Man., are improving their elevator and erecting a large flour and feed store.

The American Cereal Co., which has large mills at Akron, Ohio and Cedar Rapids, Iowa, has decided to erect a branch factory at Peterborough, Ont. The company has an option on the Dickson water power, including the lands on the side of the river, and asks that the assessment on the property be not increased for forty-two years. The council of Peterborough have passed by-laws granting the exemptions asked, and the company will expend \$100,000 in acquiring and improving the property, and \$250,000 on building equipment within six months. The district general freight agent said the district could supply the coarse grains required for the new industry and that the railway company would co-operate in the undertaking.

The United States War department reports on a number of important river and harbor projects, including extensive improvements of the Sault Ste. Marie river, connecting Lakes Superior and Huron. The estimate for improving the channel between Lakes Superior and Huron through St. Mary's river, including Hay Lake Channel is \$9,000,000. The distance is sixty-four miles, part of which has been improved.

The B. F. Sturtevant Co., Boston, Mass., reports its business of the past year to have been the largest in its history. In the line of standard types of blowers, exhausters and hot blast heating apparatus, its products have kept pace with the recent industrial movement. But in the installation of fans for the production of mechanical draft for steam boilers the desirability of this method in preference to the chimney, has been shown by a great increase. The volume of domestic and foreign orders for forges has been noticeable while the output of the rapidly growing electrical department has been far in excess of the previous year. This electrical output has been principally in the specialties of this company, namely, electric fans of all types and small high grade generating sets. New applications of fans are constantly presenting themselves and the careful study which this company gives to the solution of such problems is one of the main factors in its growth. All departments have been taxed to the utmost and the outlook is favorable for the continuation of this condition.

INGERSOLL-SERGEANT Rock Drills

FOR MINES, TUNNELS AND QUARRIES

PISTON INLET Air Compressors

STRAIGHT LINE
DUPLIX and
COMPOUND.

FOR ALL DUTIES.

... COMPLETE MINE EQUIPMENT ...

JAMES COOPER MANUF'G CO., Limited, - 299 St. James St., Montreal.

Other Offices - - - ROSSLAND, B.O.

RAT PORTAGE, ONT.

HALIFAX, N.S.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The Muskoka Leather Co., Bracebridge, Ont., have recently installed one of the Smart-Eby Machine Co's duplex steam pumps.

A contract has been let for an addition of fifty rooms to the Grand Union Hotel, Toronto, at a cost of \$25,000.

The works of the Collingwood Ship Building Co., at Collingwood, Ont., when finished will be one of the best equipped on the Great Lakes. The drydock in connection with the shipyard is being lengthened and everything prepared for a spirited campaign this winter. The keel of a large 350 foot steel passenger steamer for the Beatty Line is being laid, and it is said the keel of three other steel vessels will be laid early in the year. The yard now contains a vast amount of machinery of the most modern type for carrying on this work and will employ a great many workmen during the winter.

Farmers' elevator, Alexander, Man., was destroyed by fire Dec. 11. Loss about \$5,000.

James McCready & Co., Montreal, has been incorporated with a capital stock of \$400,000, to manufacture boots and shoes. The charter members include C. F. Smith and Edouard Laliberte, both of Montreal, and M. J. Burns, London, Ont.

The London Printing & Lithographing Co., London, Ont., have recently placed

their order with the Smart-Eby Machine Co., Hamilton, Ont., for one set of Rogers Patent Shaking and Dumping Grate Bars.

The Montmagny Printing Co., Montmagny, Que., has been incorporated with a capital stock of \$30,000. The charter members include A. Bendor and M. Russeau, both of Montmagny, and H. Dionne, L'Islet, Que.

The Brome Lake Electric Power Co., Waterloo, Ont., has applied for incorporation with a capital stock of \$50,000, to furnish electricity for lighting and other purposes. The applicants include C. Cotton, Cowansville, Que., H. E. Williams, Knowlton, Que., and C. A. Nutting, Waterloo, Ont.

The Smart-Eby Machine Co., Hamilton, Ont., have recently installed a set of Rogers Patent Shaking and Dumping Grate Bars in the Aged Women's Home in that city.

The Royal Paper Box Co., Quebec, has applied for incorporation with a capital stock of \$25,000, to manufacture paper boxes, etc. The applicants include J. A. Cote and E. E. Ross, both of Quebec, and F. A. Borden, Shediac, N.B.

It is reported that Mr. F. H. Clergue, Sault Ste. Marie, Ont., contemplates a line of railway eastward from Sault Ste. Marie, which will give him an outlet to the sea. A branch of the Algoma Central Railway will be built from Batchawana, about forty

miles north of the Sault, eastwards for a distance of 400 miles until it strikes the Ottawa, Arnprior & Parry Sound Railway at about Whitney. From this point he could probably get running powers over that line to Montreal. The route taken would be straight eastward through that part of Algoma bounded on the north by the main line of the C. P. R. and on the south by the Sault branch of the same railway, afterwards through the districts of Nipissing and Haliburton to a point where connection could be made with either Mr. Booth's line or the Northern Pacific branch of the Grand Trunk. In the event of desiring to have a through system of his own, he would pass eastward, follow the valley of the Madawaska, and ultimately reach Ottawa. For a great part of the proposed route a charter is in existence, which was granted in 1888. There is no doubt that Mr. Clergue has great plans in contemplation, which will develop as time goes on. It is beginning to be evident by his line northward to James Bay that he proposes to tap an undeveloped country, and draw from it an abundance of the raw material which he requires for his factories. These will be worked up into manufactured products at the Sault and then sent to Montreal for shipment to Europe. By having his own factories and railways he will be in a position to produce and transport so cheaply that the manufac-

Transfer Ornaments, AMERICAN MADE.

Guaranteed Quality.

TRADE MARKS, DECORATIONS, NAME PLATES, ETC.

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

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

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

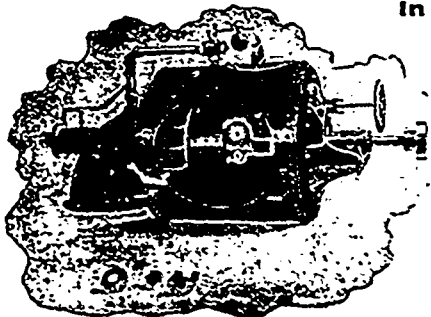
Canadian Travelling Representative,
CHAS. H. JAGGAR, Buffalo, N.Y.

Largest Makers in the World Guaranteed Decalcomania Transfers.

THE

Crocker Patent Turbine

In Horizontal Setting, with Quarter Turn Elbow.



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

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

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

The JENCKES MACHINE CO.,

42 Lansdowne St., Sherbrooke, Que.

turers of Europe will be unable to compete with him. In addition to having his own manufacturing and his own system of railways, Mr. Clergue is said to contemplate running a fleet of steamers from Montreal. He already has four steamers suitable alike for ocean and lake navigation. He now proposes to order other large vessels in Europe.

Ahearn & Soper, Limited, Ottawa, has been incorporated with a capital stock of \$500,000, to manufacture electrical apparatus, etc. The provisional directors include Thos. Ahearn, W. Y. Soper and J. D. Fraser, all of Ottawa.

The Beaver Rubber Clothing Co., Montreal, has applied for incorporation with a capital stock of \$60,000, to manufacture rubber clothing. The applicants include A. V. Roy, E. L. Rosenthal and A. Masson, all of Montreal.

The Smart-Eby Machine Co., Hamilton, Ont., have recently installed one of their duplex pumps of 300,000 gallons capacity in Asylum for Insane, Hamilton, Ont.

The warehouses of D. W. Karn & Co's piano warehouse, Woodstock, Ont., were destroyed by fire Dec. 5.

The Canadian Bridge Co., Walkerville, Ont., has been incorporated with a capital stock of \$250,000, to manufacture railway bridges, etc. The provisional directors include B. S. Colburn, F. C. McMath and G. F. Porter, all of Detroit, Mich.

The Cataract Power Co., Hamilton, Ont., have found the 25-ton Smart-Eby Machine Co's crane which they installed in their power house at Decew Falls to have been an indispensable tool in handling heavy machinery.

The Sun Oil Refining Co., Hamilton, Ont., have recently installed one of the Smart Eby Machine Co's duplex steam pumps for lifting heavy oil.

A comparison of traffic, which passed through the Canadian and the United States canals at Sault Ste. Marie during November, shows the larger portion of trade passed through the American canal. In all, 1,433 ships, with a total net tonnage of 1,629,716 tons, passed through the southern channel, as against 279 vessels, with a tonnage of 152,299 tons, which patronized the Canadian canal. The freight which passed through was divided as follows:—

	U.S. Canadian. Total.		
Eastbound, net tons	1,543,282	131,621	1,674,903
Westbound, net tons	461,917	42,952	504,869
Total.....	2,005,199	174,573	2,179,772

The following are some of the leading items which went to make up the freight:—

Freight.	U.S. Canadian.		
	canal.	canal.	Total.
Grain, bushels	4,173,688	172,924	4,346,612
Flour, barrels.....	917,370	56,775	974,145
Iron ore, net tons.....	981,161	74,301	1,055,462
Wheat, bushels.....	3,748,025	1,032,780	4,780,805

Mr. F. H. Clergue, of Sault Ste. Marie, Ont., has sailed for England to open up an immigration agency in London, and arrange for sending 500 immigrants a month to settle in Algona. Many of these would be skilled workmen, whose services will be utilized in the industrial works in process of development at the Sault. Mr. Clergue in speaking of the matter says:—Our agreement with the Ontario Government for the construction of the Algona Central Railway calls for the location of 10,000 settlers in Algona. We have already placed that number of persons in new Ontario, and, as I have already said, I am about to institute

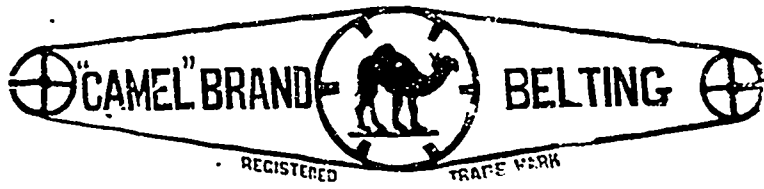
plans to settle 500 more a month for a period of five years. People here have no idea of the rate at which settlement will go on in that part of Ontario. I venture the prediction that within ten years five millions of people will have found homes there. The works and plant for Bessemer steel and rolling mills at the Sault are already under construction, and 100 cars of the materials are on their way to the site, which is about a mile from our pulp mills at the Sault. We expect to begin manufacturing next summer, and to turn out 600 tons of steel rails and about 400 tons of steel plates structural materials a day.

Messrs. Cowan & Co., Galt, Ont., have recently filled orders for a large Ideal band re-saw for Piggot & Sons, Chatham, Ont.; 75 h.p. slide valve engine for George McAllister, Guelph, Ont.; engine and boiler for Victor Langevin, McMillan's Corners, Ont.; power feed rip saw for E. A. Hookes, Quebec City; a large Imperial sand papering machine for Uxbridge Piano Co., Uxbridge, Ont.; and a number of wood-working tools for Whitman & Son, Canso, N.S.

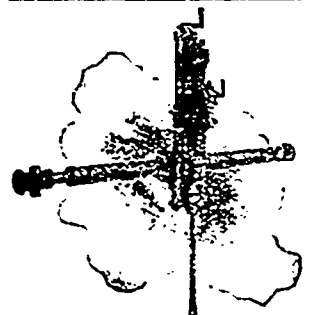
The Intercolonial Railway has ordered from the Canadian Locomotive Works, Kingston, Ont., twenty large freight engines of the consolidated type, having cylinders twenty-one inches in diameter, with twenty-eight inch stroke and four pairs of driving wheels, fifty-six inches in diameter. The engines, without tenders, will weigh eighty-two tons in working order. These are the heaviest engines ever built at Kingston and will be equal in power to the largest engines in the service in Canada. They will haul from 2,000 to 2,500 tons on the level. This is the largest order ever given in Canada for engines, the value being between \$300,000 and \$400,000.

W. A. FLEMING & CO.

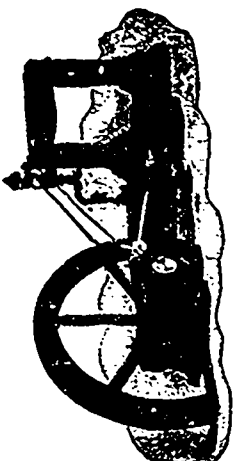
MILL SUPPLIES **CAMEL BRAND BELTING**
HOSE of all kinds
DRIVING ROPE
BELTING of all kinds



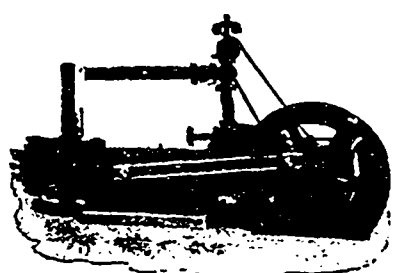
771 CRAIG STREET, MONTREAL.



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MINING
MACHINERY

The Canadian
Rand Drill Co.

MONTREAL.
SHERBROOKE,
HALIFAX, N.S.
TORONTO, ONT.
RAT PORTAGE, ONT.
ROSSLAND, B.C.
GREENWOOD, B.C.
NELSON, B.C.

CRUSHERS-ROLLS

Roll Jaw Fine Crushers Reduce Large Rocks at once to Gravel and Sand. Centrifugal Rolls. Cost half and do three times as much as Common Rolls of equal dimensions, and do finer work.

SEND FOR CIRCULAR.

STURTEVANT MILL CO., 104 Clayton St., BOSTON, MASS.

No Trouble to Save Money.

Generally Money is easier spent than saved. The

Gross Oil Filter

Is a money-saver.

It positively saves half your Oil bills. Can't we end one on approval at our expense? It will convince you. Catalogue 2c.

The BURT MFG. CO.

Akron, Ohio, U.S.A.

Largest Mfrs. of Oil Filters in the World.



TO EXPORTERS AND IMPORTERS

The Publishers beg to draw attention to the preparation of the 15th edition of the "MERCHANTS' MANUFACTURERS' & SHIPPERS' DIRECTORY OF THE WORLD," containing classified lists of Trades and Tariffs for all countries. Highest award—Gold Medal—Paris, 1900. For further particulars, charges for advertisements, etc., apply

Dominion Branch, Kelly's Directorias Ltd.

71 Victoria St., Toronto, Ont.

Lists of Addresses furnished for all trades—all countries.

W. P. Dent, Manager. Head Office, London, W.C. Eng.

MATTRESS, BOOK WIRE

...and BROOM

High Grade, Double Tinned, Uniform Size and Temper Guaranteed

Fine Annealed Brush and Market Wire
TINNED WIRE OF ALL KINDS.

SAMPLES AND QUOTATIONS
SENT ON APPLICATION.

THE PEERLESS WIRE CO.
HAMILTON, ONT.

The Ontario Copper Co., Hamilton, Ont., is now refining nickel and copper, and it is expected that shortly the plant will be in full operation.

The Canadian Pacific Railway is building in its Montreal shops, two standard wing snow plows and two double-track snow plows.

The Mattawan Iron Works, Fort William, Ont., will erect a copper smelter in the spring.

The Intercolonial Railway has placed the following orders for freight cars of the newest type: Rhodes, Curry & Co., Amherst, N.S., 1,000 box; Crossen Car Mfg. Co., Coburg, Ont., 200 box and 150 flat; Rathbun Co., Deseronto, Ont., seventy-five box.

The John S. Hogg Co., Galt, Ont., has recently installed one of the Smart-Eby Machine Co's, (Hamilton) patent peat dryers which is doing excellent work.

The Peerless Wire Co., Hamilton, Ont., is a new concern who are asking fair consideration of the trade. They are manufacturers of high grade double tinned mattress and broom wire, which they guarantee of uniform size and temper. They make a specialty of fine market and annealed wires. Mr. Henry Culver, the manager, was ten years with the Garden Wire Co. of Chicago, and Mr. J. T.

Burns the secretary-treasurer, was twenty years with the Cleveland, Ohio, wire mills.

Some forgo shop plants have of late been provided with only a single fan blower, designed to produce the blast for the fires and at the same time, by means of a special piping arrangement, to exhaust the resulting smoke from the hoods. In a recent paper read before the American Society of Mechanical Engineers, Mr. William Sangster shows that "such an arrangement is not economical, since a much larger volume of air must be raised to a high pressure, than if a separate fan had been used for the exhaust system. In the case given above we should have to handle five times 140 cubic feet of air at 4 ounces pressure, requiring 1.25 h.p., instead of .44 h.p. for each forge. Even in a small system, the power saved by the extra fan will pay for its cost in less than a year's time.

The aggregate value of building permits issued by the Toronto Commissioner in November was \$200,494, an increase of \$27,780 over the same month last year. The total for the eleven months of 1900 is \$1,834,251, against \$1,950,925 for the same period in 1899.

The Cornwall Milling Co's flour mill at Cornwall, Ont., was destroyed by fire Dec. 2. Loss about \$30,000.

BLACK IS BLACK

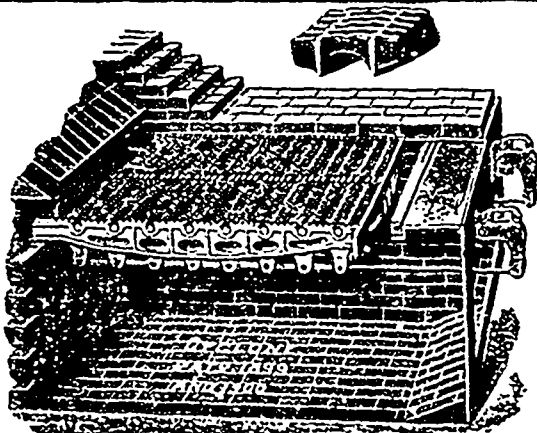
Extra C is our best grade. We cannot make anything better than the best. You cannot buy anything better, try where you will. When you buy, see that our Trade Mark and grade are stamped on it and quality will be there.

D. K. McLAREN

Mfr. "GENUINE OAK" BELTING

88 Bay St., TORONTO

Factory, MONTREAL



USE CYCLONE GRATE BARS AND PRODUCE

CHEAPER STEAM

No individual consumer can regulate the price of coal, but you can regulate the amount of coal burned for a given power by installing Grate Bars that will produce perfect combustion. Write us for particulars.

E. J. PHILIP, Manager,

404 TEMPLE BUILDING, - - TORONTO, ONT.

PHONE 8682

In order to provide facilities for conducting its rapidly increasing local business, the B. F. Sturtevant Co. has just removed its Chicago office to much larger quarters at 281-289 South Clinton St.

The Lakofield Portland Cement Co., Lakofield, Ont., has been incorporated with a capital stock of \$500,000. The provisional directors include J. M. Kilbourn, R. P. Butchart and F. H. Kilbourn, all of Owen Sound, Ont., and W. E. Brovender, Warners, N.Y. The village of Lakefield granted them a bonus of \$10,000 and exemption from taxation for ten years.

The Electric Co., Renfrew, Ont., will enlarge its power house and plant.

Mr. G. Harbley will erect a broom factory at Fort William, Ont.

The Kinloch Paper Co., St. Catharines, Ont., have recently placed an order with the Smart-Eby Machine Co., Hamilton, Ont., for a special steel tank.

In his paper at the last meeting of the American Society of Mechanical Engineers, Mr. William Sangster presents some interesting facts regarding fan blower practice, in connection with cupola furnaces and forges. He points out that "in hardly any other class of machinery, is the method of application of so great importance, as it is in the case of centrifugal fans. The conditions of one installation are usually so different from those of any other, that hard and fast rules are out of the question." Briefly summarized, he shows that the horse-power required to produce blast for a cupola is equal to 3/10 of the tons melted per hour, multiplied by the pressure of blast in ounces per square inch. For forge blast an allowance of 1/4 horse-power may be made per forge, and for exhausting smoke therefrom, the power required be .44 h.p. per forge.

The Cossitt Bros. Co., Brockville, Ont., whose agricultural implement works were destroyed by fire July 1, will rebuild their factory, which will be completed in the spring.

The St. George Distillery Co., Montreal, has applied for incorporation with a capital stock of \$50,000. The applicants include Hon. A. A. Thibaudau, A. E. Rinfret and G. des Etangs, all of Montreal.

The Civic Light Committee of Kingston, Ont., has recommended the council to establish a municipal electric plant at a cost of \$50,000.

The Farmers' Elevator and Mill at Yorkton, N.W.T., was built by the Stratford Mill Building Co., Stratford, Ont. The mill is of stone 37x33 feet, three storeys high, and is equipped with most modern machinery, with a capacity of 75 barrels daily. Power is furnished by a 75 h.p. boiler and engine, and lighted by a 50-light dynamo.

The firm and employees of the James Warnock Co., the Galt Edge Tool & Carriage Spring Works, Galt, Ont., hold their second annual banquet on November 9, in the Imperial Hotel at Galt. There were about seventy-five men present. The chair was occupied by Mr. John St. Clair, foreman of the tool-shop, and the vice-chair by Mr. George Fairgrieve, superintendent of the works. Mr. St. Clair made a short opening address. Mr. F. W. Hayhurst, manager, responded to the toast, "Ourselves." A most enjoyable time was had.

The Barnhill saw mill, Pleasant Point near St. John, N.B., has been destroyed by fire. Loss about \$20,000.

C. J. Allen of Portland, Que., will establish a rice mill at Vancouver, B.C., the raw material of which to supply the mill, will be imported from China and Japan, and all finished articles and by-products, such as rice, flour, granulated rice, etc., will be manufactured.

The Delaware & Hudson Canal Co., are now using twenty-one Cross Oil Filters made by the Burt Mfg. Co., Akron, Ohio.

The McKinnon Dash & Metal Works Co., St. Catharines, Ont., has been incorporated with a capital stock of \$300,000, to acquire the business now carried on by the Niagara Falls Metal Works Co., and the McKinnon Dash & Hardware Co.

The Smith Woolstock Co's factory, Toronto, was damaged by fire Nov. 30. Loss about \$500.

A large portion of the buildings, of the Whitby Evaporating Co., Whitby, Ont., were destroyed by fire Dec. 9.

EXHIBITION REFORM

All those who desire to see the much needed improvements and reforms brought about in connection with the

INDUSTRIAL EXHIBITION

will confer a favor by communicating their views to

J. O. THORN, *Manager*,
THE METALLIC ROOFING CO., Limited,
TORONTO.

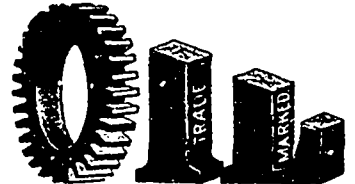
"Capitol" Cylinder

"RENOWN" ENGINE

"ATLANTIC" RED

RELIABLE WELL-KNOWN BRAND

ALL ORDERS PROMPTLY FILLED



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

DO YOU KNOW WHY?

You can't get any heat through your house or factory. You will probably find your boiler furnace tubes or stove front choked up with scale. A few gallons of our

CELEBRATED SCALE SOLVENT

will remove all this and restore to you the entire heating capacity of your plant. A postcard will bring you full information. WRITE AT ONCE.

THE WILLIAM SUTTON COMPOUND CO. Limited

186 Queen Street East, Toronto, Ont. TELEPHONE 2239.

WM. R. PERRIN & CO., 122 CHURCH ST., TORONTO.

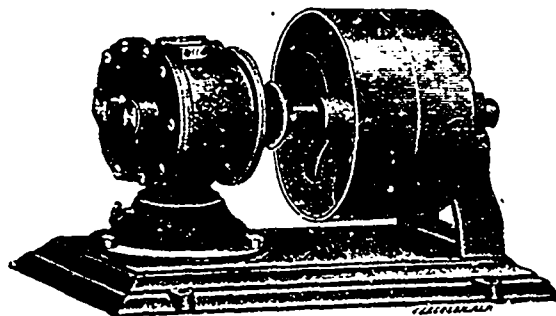
WE BUILD

Rotary Pumps

POWER
OR
HAND.

MANUFACTURERS

PACKING HOUSE MACHINERY
AND PRESSES.

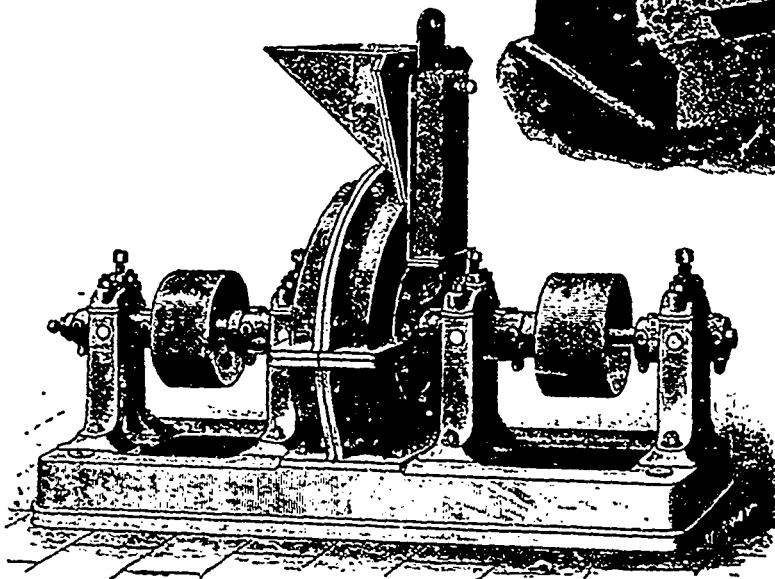
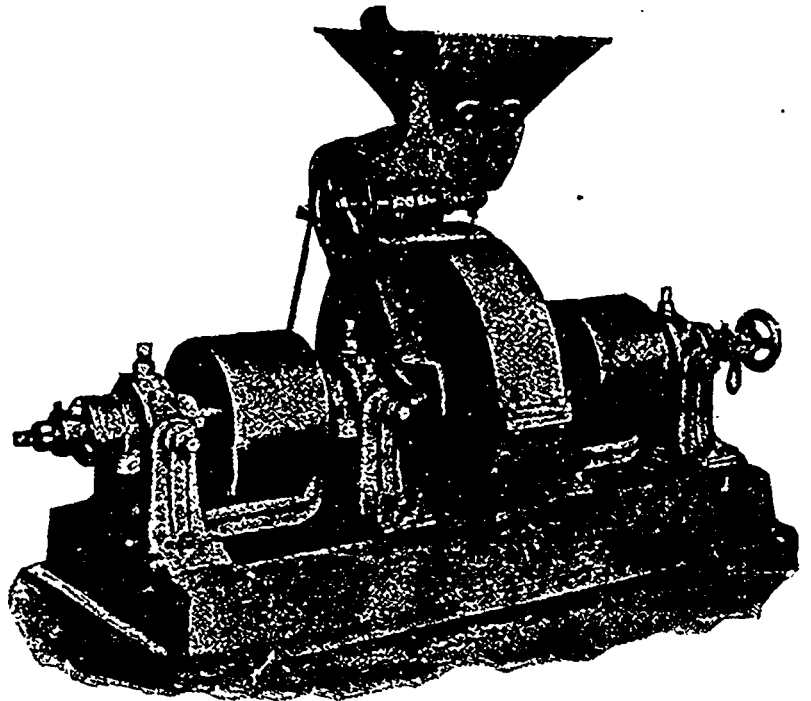


THE STRATFORD MILL BUILDING CO.

STRATFORD, ONT.

Manufacturers of all kinds of.....

FLOUR MILL
MACHINERY,



**PLATE
CHOPPERS,**

**ROLL
CHOPPERS,**

Brown Automatic Engines

ETC., ETC.

The Rock Lake Mining Co. have placed their order with the Smart-Eby Machine Co., Hamilton, Ont., for two centrifugal sizers, and three smoke stacks.

A strong syndicate is engaged in drilling for natural gas and oil about ten miles out from Collingwood, Ont. This syndicate has over 40,000 acres of land under lease for the purpose of drilling for natural gas and oil. The first well was drilled to a depth of 1,800 feet, when the drill broke. There was a showing of natural gas and a small showing of petroleum. The petroleum was of a very fine quality. It is expected that the second well, which is now down about 400 feet, will be more successful and will strike either natural gas or oil in paying quantities. The syndicate has secured the

exclusive franchise for piping natural gas in the town for heat and light, besides the exclusive franchise for piping the various municipalities in the neighborhood.

The Royal Electric Co., Montreal, has transferred all its manufacturing plant and interests to the Canadian General Electric Co., Toronto. An inventory is now being made of the Royal Electric plant, and it is understood that the consideration the Royal Electric Co. will receive will be between \$750,000 and \$1,000,000. The manufacturing business will not be removed from Montreal, but the plant there will be extended by the General Electric Co., which acquires from the Royal Co. a half million dollar contract for the supply of machinery, turbines, plant, etc., for the Chambly Power

Works. The Royal Co. will confine its operations hereafter to power and light, and the General Electric Co. will operate the electrical manufacturing business of the Dominion.

Mr. C. A. Matheson, Perth, Ont., has placed his order with the Smart-Eby Machine Co., Hamilton, Ont., for one of their patent peat drying machines.

The Flint & Walling Mfg. Co., Kendallville, Ind., manufacture the Star wind mills, which come in all sizes, four to twenty-six feet in diameter, galvanized steel or wood, with ball bearings and adapted for all purposes. The Hoosier and Fast Mail iron pumps and cylinders, tubular well tools, machinery and supplies are also manufactured by this company.

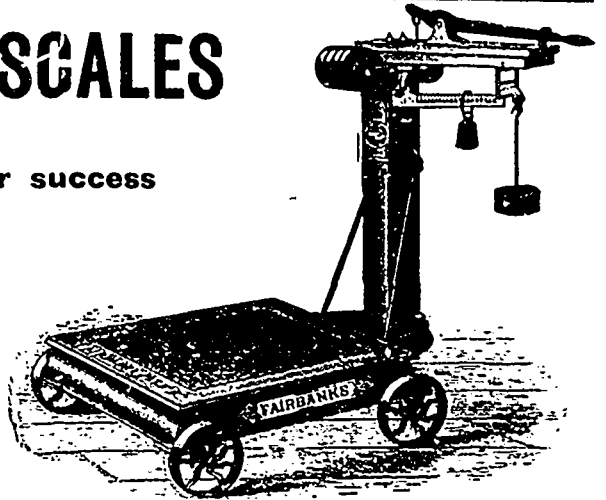
FAIRBANKS STANDARD SCALES

Good Scales are as essential to your success as accurate Bookkeeping.

Our Montreal Stock is Complete.

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MONTREAL.



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CABLE ADDRESS—"OBBAPER," EAST ANGUS—A.B.C. and Lieber's Code.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The Richelieu & Ontario Navigation Co., Montreal, have contracted with the Bertram Engine Works Co., Toronto, for the construction of a new steel steamer to replace the steamer Montreal on the company's Montreal-Quebec line. It is to be delivered by the builders in Sorel, Que., complete in May, 1902. The preliminary plans and dimensions have been agreed upon, but are to be subject to such revision as fuller consideration may require. The length is to be not less than 340

feet; width of hull, 42 feet; width overguards, 73 feet; depth of hull (moulded), 15 feet. The engine to be inclined triple expansion, with three cylinders and three cranks of three thousand horse-power, with feathering paddles and curved steel buckets. The steam to be from 175 to 200 pounds' pressure, and the consumption of coal to not exceed 1.68 pounds of coal per indicated h.p. per hour. The regular service speed is to be 17 miles per hour, with ability to make

19 miles when required. In addition to the usual freight spaces, there will be cabins for second class passengers on the main deck forward, with sleeping berths below. The smoking-room, barber-shop, bar-room, etc., will also be on the main deck, immediately forward of the main passenger entrance, and the pantries and dining room, with seating capacity for 120 persons, will occupy the after portion of the main deck. The upper saloon will be extremely spacious and lofty. The state-rooms will be in two tiers, and the number at first will be not less than 266, including 22 parlor rooms and 8 bath-rooms. This is more than the present combined accommodation of the steamers Montreal and Quebec now on that route.

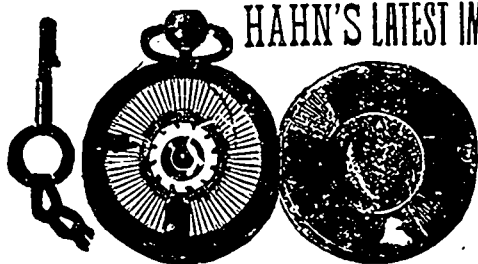
The Diamond Machine Screw Co. Limited, Toronto

MANUFACTURERS OF
MACHINE SCREWS and MILLED WORK

OF EVERY DESCRIPTION

COLD PRESSED NUTS

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HAIN'S LATEST IMPROVED WATCHMAN'S TIME DETECTOR

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

For circulars, prices and further information, address

A. NANZ & CO., Room No. 45, Graham Building, 127 Duane St. NEW YORK

This Clock received the First Prize at World's Fair

Zanzibar Anti-Rust Paint

FOR  **ROOFS OF ALL KINDS
STRUCTURAL IRON WORK
BRIDGES, ELEVATORS, Etc.**

A Paint that will not Blister, Crack, or Peel off

A Paint that is Rust, Water, and Spark Proof.

A Paint that is GUARANTEED.

A PAINT THAT YOU WANT

Agencies in all parts of Canada; if none in your vicinity write us direct for prices and samples.

WE ARE SOLE MANUFACTURERS

GARFIELD OIL COMPANY

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GENERAL OFFICES:

WINDSOR, ONT.

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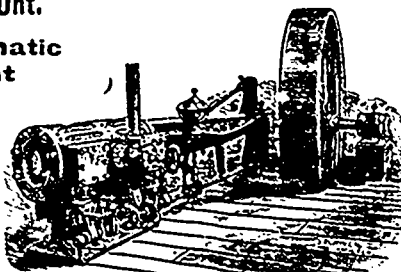
THE SMART-EBY MACHINE CO.

LIMITED,

191 Barton Street East, Hamilton, Ont.

High Speed Engines, Brown Automatic Engines, Boilers, Rogers' Patent Shaking and Dumping Grate Bars, Pumping Machinery, Electric and Hand Power Travelling Cranes, Shafting, Pulleys, General Machinery, Etc.

Western Office—419 Hasting St., Vancouver, B.C.
Winnipeg Office—435 Ross Av., Winnipeg, Man.



Messrs. W. J. McGuire & Co., 86 King street west, Toronto, are agents for the International Sprinkler Co., of Philadelphia, manufacturers of the Universal Automatic Fire Extinguisher. This apparatus while exceeding simple in construction is entirely efficacious in its action, and meets the approval of the fire insurance companies.

It is understood that in the near future the possibilities of the new maritime port of North Sydney, C.B., will be brought even more prominently than now before the attention of the Minister of Railways and the Intercolonial Railway authorities. The prominence given on the map attached to the new Intercolonial Railway folder is held to indicate pretty clearly where the future activity of the Government railway will find its fullest manifestation. North Sydney possesses an excellent deep-water harbor, capable of accommodating 100 ships, or more if required, and there is already talk of a new fast line of steamers. North Sydney holds the key to by far the shortest route from this continent to Liverpool. It offers the advantage to many people of being 1,000 miles nearer to Europe than New York. A thousand miles less of sea voyage would cut down the ocean trip of the fastest steamships to four days, even if the speed of the ocean greyhounds remains as at present.

Of the 400 coke ovens which the Dominion Iron & Steel Co., Sydney C.B., expects to have started by April, fully 100 have been completed, and the making of coke has been already begun. Two of the four blast furnaces are also ready, and as soon as the coke ovens are able to turn out a safe daily product the blast furnaces will be started. They will be making pig iron very soon, and each of the four furnaces has a daily capacity of 300 tons. The steel plant will be ready by next August, and the output will be from 800 to 1,000 tons a day.

The Karn Organ & Piano Co., Woodstock, Ont., is considering the opening of a branch factory at Pittsburg, Pa., to cost about \$300,000, and employ about 500 hands.

S. Salmon has erected an addition to his flour mill at Avonmore, Ont.

Messrs. Wm. & J. G. Greay, Toronto, are supplying the machinery for a 50-barrel water-power mill at Kinmount, Ont., for Puley & Joy.

The salon, Ont., will issue debentures for \$5,000 for the installation of an electric light plant, and erect a waterworks system to cost \$9,000.

Messrs. Mackenzie & Mann will erect immense pulp mills at Fort Francis, Ont., next summer.

THE CUMMER DRYERS.

FOR **Mechanically Drying Everything**

THE F. D. CUMMER & SON CO.,

HUNDREDS IN OPERATION.

CLEVELAND, OHIO.

THE JONES UNDERFEED STOKER.

In another page of this issue will be found an advertisement of the Jones Underfeed Stoker, a device of special interest to the manufacturers of Canada, in view of the high price of coal at the present time.

The patents covering this system of stoking coal, are owned by a very strong Canadian company including several of our leading capitalists and manufacturers, who have been involved in litigation with The American Stoker Co. of New York for the past two years, and who have just succeeded in the Supreme Court of Canada, in upholding the Jones patents, thus giving them the exclusive right to install Jones Underfeed Stokers in Canada.

The underfeed system of introducing coal into the fire, would appear to possess many advantages over the old fashioned method, judging from the wonderful results accomplished as recorded in the handsome catalogue issued by the General Engineering Company.

The decision of the Supreme Court of Canada, as to the validity of these patents possesses a special interest to the owners of patents generally, the question involved being the effect on the Canadian patent of the lapse of a foreign patent.

If the company are able to save the large

percentage of coal claimed (from 10% to 40%) and to come more nearly to the complete prevention of the smoke nuisance than can be done by any other system, and at the same time increase the boiler capacity, in some cases nearly 100%, the patents would appear to be well worth fighting for and we are glad to see Canada on top.

AN IMPROVEMENT IN ELECTRICAL CONSTRUCTION.

When interior conduit was first placed upon the market, its reception was by no means enthusiastic. There seemed to be a strong prejudice against that mode of wiring, and it was thought unnecessary and objectionable by many electrical engineers. The desirability of such a system has, however, been proved beyond all doubt.

The latest improvement in this line is flexible metallic conduits, which possesses many features of excellence. This conduit is composed of convex and concave metal strips. These strips are wound spirally upon each other in such manner as to interlock their concave surfaces, and present their convex surfaces both exterior and interior, thereby securing a smooth and comparatively frictionless surface inside and out. This forms a solid, yet flexible raceway, and the wire being inserted, is effectually protected against injury.

The first of this conduit system to be used in Toronto, was, we are informed, imported by R. A. L. Gray & Co., electrical contractors, who are installing a quantity of the conduit in the new Norlich building on Front St., west. In the isolated plant which Messrs. Gray & Co. are installing in this building, a separate set of feeders are run from the switchboard in the basement, to a polished black slate tablet board on each floor, from which points, distribution is made to the various arc and incandescent lights and motors. All the feeders in this plant are run in the flexible conduit, the balance of the wiring being almost all of open construction on porcelain knobs.

OPALSCENT WINDOW SIGNS.

The Meyercord Co., Chicago, Ill., who as our readers probably know, are very large manufacturers of decalcomania transfer ornaments, have brought out recently a new and valuable invention in the shape of decalcomania window signs, which can be produced of any desired shape and coloring, including gold and aluminum leaf. This new invention, consists of the manufacture of a sign of such a combination of material, that it can be dipped into water, and any travelling man can transfer it immediately to the window, where, after having hard-

COWAN & CO., - GALT, ONT.

Manufacturers of

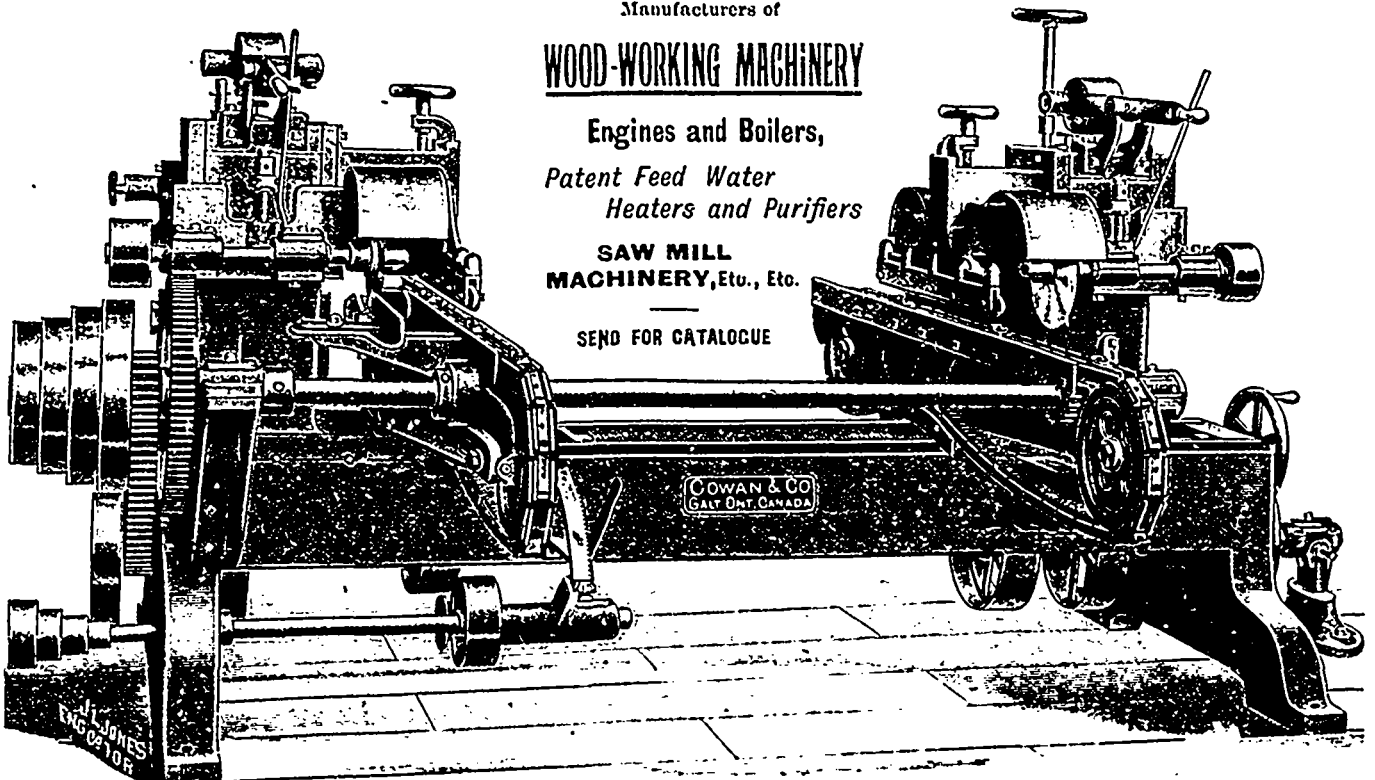
WOOD-WORKING MACHINERY

Engines and Boilers,

Patent Feed Water Heaters and Purifiers

SAW MILL MACHINERY, Etc., Etc.

SEND FOR CATALOGUE



IMPROVED DOUBLE TENONING MACHINE.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

oned for twenty-four hours, it becomes impervious to all ordinary wear. During the past ten years, a large business has been transacted by a transparent label sign company in Ireland, and quantities of their product imported into both Canada and the United States. These labels proved very defective in wear, and were also crude in coloring. The opalescent signs now being manufactured by The Meyercoord Co., are so rich and beautiful in appearance, that the trade is simply delighted with them. These signs are suitable for all advertisers who can buy one hundred or more signs at a time, or even less than a hundred. They are said to be superior even to the very finest hand painting, and the matter is simplified by the fact that the Meyercoord Co. will gladly submit sketches free to any inquiring manufacturer.

THE SMOKE NUISANCE.

A subscriber, who operates a chemical manufacturing plant in Toronto, has written us a letter re the smoke nuisance, in which he says:

In regard to smoke consumption, or, more properly, the complete combustion of fuel, I would say that I have had in use a system which is simple and more effective than any of the patent contrivances of which such numbers are being used upon the notice of steam users.

In my case it is applied to horizontal boilers with return tubes about twelve feet long, bricked in in the usual manner.

The most important feature of the system is an active fireman, the kind who keeps the furnace doors open for the shortest possible time. The next thing is a broad dead plate

about 15 to 18 inches wide, upon which fresh coal is heaped after the fire is first started. When the fire requires replenishing, fresh fuel is put in a convenient place by the furnace doors, which are quickly opened, the dried and partially coked coal on the dead plate spread evenly over the fire, fresh coal put on the dead plate and the doors shut. The alacrity with which these movements are made determines whether the fireman can save his wages in fuel, whether he can prevent soot from collecting in the tubes, and smoke from escaping from the top of the stack.

On the contrary, a slow man can waste 25 per cent. of the fuel, subject the boiler to strain from prolonged chill, causing contraction, condense the gases of combustion, forming soot in the tubes, and throw away unconsumed carbon in the shape of that nuisance, smoke.

This plan is not applicable to upright boilers, and there are situations, conditions of weather and directions of wind which make it almost impossible to maintain and regulate combustion.

In such cases, or where it is not desirable to have a tall smoke-stack, a Sturtevant exhaust fan seems to offer the most feasible remedy.

BUFFALO FORGE CO.

Among the orders recently received by the Buffalo Forge Co., through its Chicago Branch, is a contract with the Quay-Daykin Co. of Chicago, for heating and ventilating the Sloan Building, the plant to consist of a 120 inch fan, driven by a direct connected vertical engine, together with six sections of Buffalo Fan System Heater and other

accessories, such as cleaning screens, piping, dampers and the like.

The Buffalo Forge Co. has likewise received through its Chicago office a contract with the Centerville Iron Works, Centerville, Iowa, for placing a heating and ventilating plant in the Centerville High School.

Recent orders from Eastern Pennsylvania, number among others, the following large heating and ventilating contracts:

One of these is from the Franklin Air Compressor Co., of Franklin, Pa., for a 160 inch $\frac{3}{4}$ housing steel-plate fan, direct connected to a 10 x 10 horizontal center crank engine, to be applied to heating and ventilating the large offices of said company.

The contract for heating and ventilating the large building of the General Manifold Co., likewise situated at Franklin, Pa., has been received by the Buffalo Forge Co., and calls essentially for two 120 inch $\frac{3}{4}$ housing steel-plate pulley fans, together with Buffalo Fan System Heater, boiler, steam connections and the like.

The same company is likewise in receipt of a large contract from the Buffalo, Rochester & Pittsburg Railroad, for apparatus to be placed in their shops at Du Bois, Pa., for heating and ventilating the machine shops, two 170 inch $\frac{3}{4}$ housing fans, with 9 x 10 horizontal center crank direct connected engines, and 14,272 feet of Buffalo Fan System Heater, for heating their round house, one 140 inch $\frac{3}{4}$ housing fan, with direct connected 8 x 8 horizontal engine, and heater, will be installed. There is also included the installation of Buffalo down draft forges together with a No. 7 B volume blower, and a 70 inch planing mill exhaustor, for use in their forge shop.

STAR WIND MILLS

FOR PUMPING OR POWER PURPOSES

Galvanized Steel or Wood, all Sizes, 4 to 26 feet in Diameter.

PUMPING MILLS

FURNISHED WITH OR WITHOUT TANK ELEVATED IN TOWER.

GALVANIZED Steel Towers

Any height, either Three or four post, with substantial ladder.

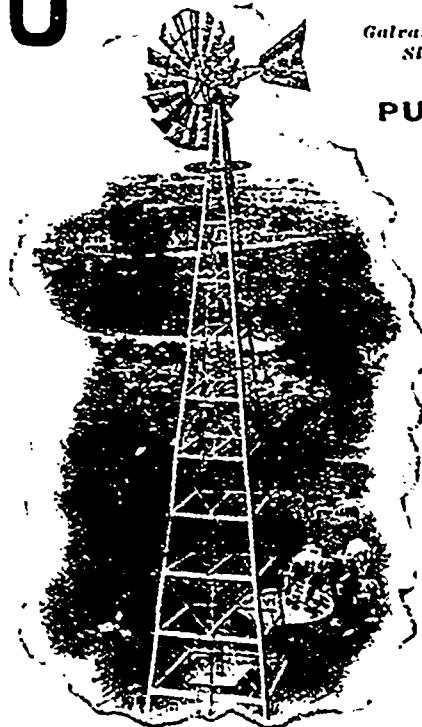
TANKS

Any Capacity, Any Purpose Made in Pine, Cypress, Fir or Galvanized Steel.

Our windmills are self-regulating and self-governing, and with our Hoosier Automatic Anti-Freezing Force Pump the windmill outfit takes care of itself, night or day, in calm or storm.

"Hoosier" IRON
—AND—
"Fast Mail" PUMPS

Designs and Prices Furnished.
Write for Catalogue.



Address **FLINT & WALLING MFG. CO.**

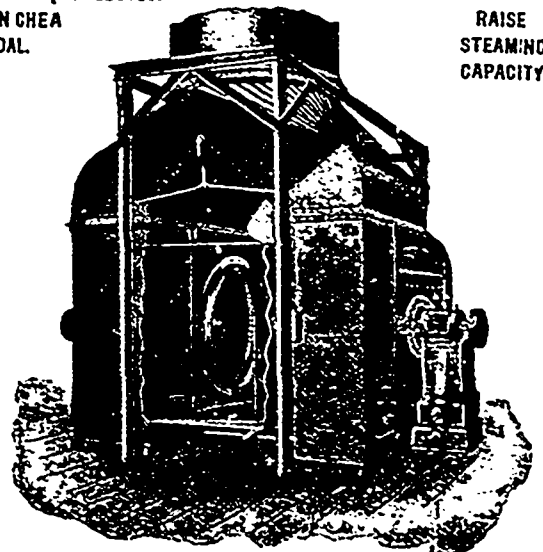
"STATION A"

KENDALLVILLE, IND.

BUFFALO FANS FOR MECHANICAL DRAFT

REDUCE HEAT LOSSES.
SURN CHEA
COAL.

INCREASE EFFICIENCY.
RAISE
STEAMING
CAPACITY.



Buffalo Duplex Induced Draft Apparatus.

BUFFALO FORGE CO., - Buffalo, N.Y.

E. A. WALLBERG, Canadian Representative,
410 Temple Bldg., TORONTO

press, however, it arrived in a strongly made box, standing almost eighteen inches high. From the Bank of Montreal it was taken over to the assay office, and will soon be transferred into twenty-dollar gold pieces.

Mr. Hebden of the Bank of Montreal said yesterday that this was the biggest lump of gold ever smelted at any time in the New World. It was to have been much bigger, for the mining corporation originally intended to put \$210,000 of value into it, but it had to stop work for twenty-four days, because of a delay in getting explosives, and, as a result, the lump did not reach the lordly proportions designed for it. It is a giant among gold lumps, nevertheless. To produce it required sixty-eight days' washings and 2,750 miners' inches of water.

Last August, it will be remembered, a nugget valued at \$137,000 was shipped by the same company to New York, and was then called by The Evening Post the "King Nugget," being up to that time the largest lump of gold ever received at the United States assay office. It was on exhibition in Toronto.

CANADIAN MINES.

Nature seems to be no less kind in providing fresh supplies of valuable products of the mine when new demands arise for them than in raising up new men to meet great national emergencies. There have been those who foresaw the exhaustion of coal and iron and gold by the increasing demands of commerce, but the concern has passed, for many generations at least, even while the

alarmists have been doing their calculating. Amazing deposits of the useful and precious minerals have been found in untouched regions of North America, waiting communication and development to make them of immediate industrial service.

It is particularly interesting to notice the advance in mining discoveries and enterprises in the northern half of the continent. From Cape Nome to Newfoundland the prospectors have been at work winning the usual proportion of rewards and opening new mineral fields to the world. The Alaskan gold deposits are more spectacular but no more valuable than the iron and coal of Newfoundland, which are now in a fair way to be developed in all their magnitude by the colonial magnate, Reid, who makes and mars governments, in what threatened to become virtually his pocket borough. The whole of the Labrador peninsula between Hudson's Bay and the ocean promises great mineral wealth when it shall be explored thoroughly. On the other side of Hudson's Bay, between its shores and the Canadian Rocky Mountains, lie the great cattle ranges and the alluvial plains of the North-West Territories fertile everywhere and habitable far north of the region now settled. In the more northerly portion of the region, in the "great lone land" of Canada, lie lakes and river systems draining into the Arctic Ocean, which are known to few travellers except the men of the Hudson's Bay Company. From their shores begin to come accounts of the discovery of copper, iron and even gold in ample quantities to repay exploration. Around Great Slave Lake, for instance, a body of water as large as Lake Erie, the copper deposits are said to be of immense wealth. Close to our own boundaries, the

gold of British Columbia and the many Lake fields, the coal of Alberta, the iron of Algoma and the nickel of Sudbury are all increasing in importance.

Stimulated by the northern discoveries and the prospect of industrial development, Canadians are working toward the improvement of communication with the remoter regions. Already a railway is under construction from the north shore of Lake Huron north to Moose Factory, on James Bay, the southern extension of Hudson's Bay—which will tap valuable iron and timber lands and find an ocean port for the product, with return cargoes from Europe to interior Canada. The long-discussed plan of subsidizing a railway from Winnipeg to Hudson's Bay is developing into the idea of improving the direct water communication by way of Lake Winnipeg and the Nelson River to York Factory, which would permit cheap and convenient transport for several months each year. Steamers on the Saskatchewan and the Mackenzie rivers and Lake Athabasca and Great Slave Lake are multiplying rapidly. It is evident that the industrial development of Canada is to show remarkable results before many years.—Albany, N.Y., Times-Union.

USE OF MACHINE TOOLS.

A recent report to the Foreign Office from the British Commercial Agent in Chicago gives some interesting statements as to the use of machine tools. In order to so rapidly turn out such large quantities of goods, only machine tools of the very latest pattern are used, every labor and time-saving improvement being at once availed of so as to reduce

THE BEST PIPE THREADING and CUTTING-OFF MACHINES

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

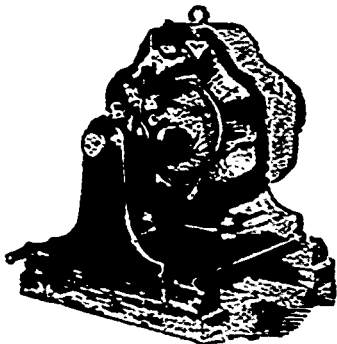
Also Manufacturers of a FULL LINE of **ADJUSTABLE STOCKS and DIES** and Water, Gas and Steam Fitters' Tools.

Send for Catalogue 27.

Factory: BRIDGEPORT, CONN.

New York Office: 139 CENTRE STREET.

THE Electrical Construction Co. of London, Limited.



MULTIPOLAR MOTORS & DYNAMOS

And Direct Connected Plants for Isolated Lighting.

Repair Work a Specialty

HEAD OFFICE AND FACTORY:

90 YORK STREET, London, Canada.

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RICE LEWIS & SON, LIMITED

HARDWARE and METAL

Bar Iron, Steel, Boiler Plate Tubes.

MACHINIST TOOLS, PIPE FITTINGS.

A COMPLETE STOCK OF

STOCKS and DIES. PIPE VICES.

STILLSON & TRIMO **WRENCHES.**

STEAM PIPE.

Cor. King and Victoria, TORONTO

TORONTO and HAMILTON ELECTRIC CO.



MOTORS and DYNAMOS

COMMUTATORS REFILLED

99-103 McNAB ST. N., HAMILTON

'Phone 958

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Toronto Woolen Machinery Co.

We now offer as a going concern the property known as

The Vienna Woolen Mills

Consisting of the following machinery:—

- One set 48 in. Platt Cards, all clothed.
 - One 261 Spindle Hancock Mute.
 - One 21 in. G. & Mc. Picker. One Cone Duster.
 - One Fraser's Card Grinder. One Yarn Spooler.
 - One 60 Spindle Fly Twister.
 - One 108 in. Crompton Cone Loom, 1x4 box, 1 harness.
 - Two 92 in. Faisey " " 1x4 " 21 "
 - One 48 in. Gilbert " " 3x1 " 1 "
 - One 48 in. " " 1x1 " 1 "
 - One Broad Warper and Beamer.
 - One Bobbin Winder.
 - Two Broad Up and Down Gigs.
 - One Rotary Fulling Mill. One Cloth Washer.
 - One Yarn Washer.
- With Spools, Bobbins, Tools, etc., etc.

BUILDING No. 1.

Two and a-half Storey Frame, with stone foundation, 30x60 feet.

BUILDING No. 2.

Boiler and Picker House—One Storey Brick, 24x61.

A never-failing Water Power, all heat by steam and in first-class order. Good local trade has always been done.

The above can be bought cheap and on easy terms. Apply

TORONTO WOOLEN MACHINERY CO.
118 DUKE ST., TORONTO.

The Wm. Hamilton Mfg. Co.

Peterboro, Ont., Can.

Acting as the Patentee's Licensee,
Are prepared to manufacture and supply

SAVERY'S PATENT SHAKE FRAMES

FOR
FOURDRINIER PAPER MACHINES.
As Described in
CANADIAN PATENT No. 57,819.

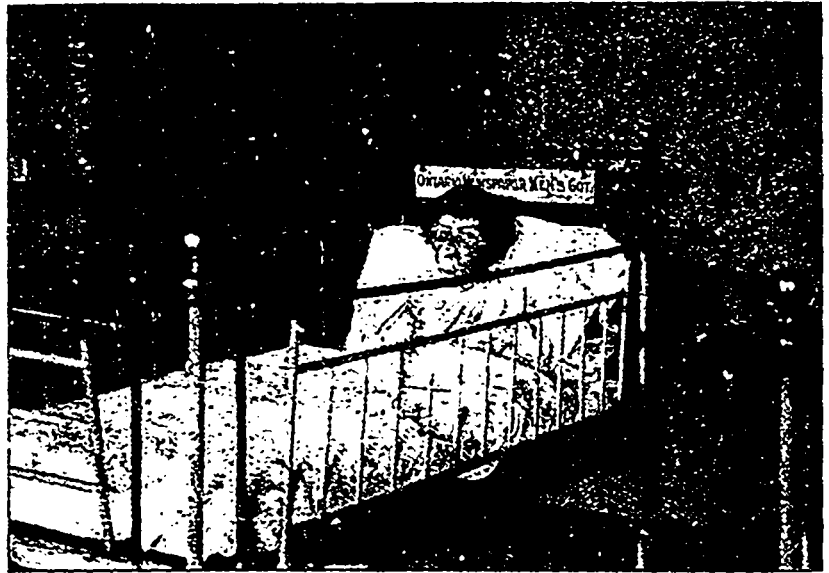


Manufacturers of
Cotton, Jute, Hemp and Flax,
Twines and Cordage,
Mill Banding and Driving Ropes,
Chalk and Fishing Lines
Sole Twine, Hammocks, Tonnies,
Cricket and Fly Nets,
Cotton Rope and Clothes Lines,
Plough Lines, etc.

HUTCHISON, SHURLY & BERRETT,
1078 Bloor St. West, TORONTO.

the province. Every town and township has been represented during the past quarter century. The fame of its great healing power has been told in many a humble home—for during twenty-five years 40,000 sick children have been taken care of. Some of the little ones treated in those early days are strong, healthy men and women to-day. Last year the Hospital roll numbered 5,776 patients. Some spent days and weeks in the cots at the Hospital. Others came

They want to end the century free of debt—That on the morning of the first day of the Twentieth Century there shall stand from a monument to man's generosity to countless sick children—an imperishable gift of love from the men and women of the Nineteenth Century to little ones confided to our care. More than 10,000 donors contributed to the maintenance and reduction of the Hospital debt last year. Nearly half of these donations were single



THE ONTARIO NEWSPAPER MEN'S COT.

This Cot was endowed by the generous help of the Editors and Publishers of the Province in bringing before their readers the work of the Hospital for Sick Children.

for a few days, while many were brought to the doors of the Hospital in the arms of their mothers, and received such medicine and advice as to speedily effect a cure in their own homes.

More than one-third of the little children admitted to the Hospital wards came from places outside the city. The people in the province have helped the Hospital in a generous manner. Many splendid gifts are received from friends outside Toronto.

It costs over \$30,000 each year to maintain the Hospital. About \$100 a day is needed to buy food, medicine, surgical appliances and nursing for this army of little ones—146 patients being in the cots at the end of this fiscal year.

An appeal is being made by the Hospital Trustees this year for \$19,000—the sum required to entirely free the Hospital of its debt. They issue the appeal to their friends throughout the province. In a letter to the editor of this paper, Mr. J. Ross Robertson says that the Hospital has many well-wishers among our readers who have given practical voice to their sympathy in past years. He believes that they will respond cheerily and generously this year to the call for help.

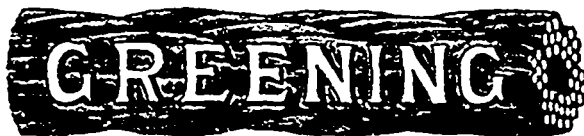
dollars. Mr. Robertson says the trustees like to have the greater number of individual friends—that they would prefer ten five-dollar bills to one fifty-dollar gift.



THREE GIRL PATIENTS—(From a Photo.)

Mr. J. Ross Robertson, chairman of the Hospital Trust, Toronto, publishes a list of the donations received during the Christmas month in his paper, The Evening Telegram, and copies of the paper are sent to all donors. Donations may be sent to Mr. Robertson, or to Douglas Davidson, Sec.-Treas., Hospital for Sick Children, Toronto.

The B. GREENING WIRE CO., Limited



MANUFACTURERS OF



Lang's Patent Wire Ropes
For Colliery and Mining Use.

WIRE ROPE of every Description and for all purposes.

HAMILTON, ONT.
and MONTREAL, QUE.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

OPPORTUNITIES FOR TRADE.

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

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

376. Application has been received for the addresses of some of the most important wood pulp mills in Canada.

377. A well-known firm are desirous of obtaining agencies from Canadian houses, for the sale of articles required and used by dyers, soap makers, druggists, explosive and rubber manufacturers. Being already in touch with these lines they are ready either to take up an agency, or to act as buying agents in England.

378. The same firm asks for names of importers or explosive manufacturers in Canada, who are buyers of glycerine for making dynamite.

379. A further request has been made by

a firm with business connections on the continent, for the names of actual producers in Canada of crude asbestos.

380. A firm in the Midlands who are likely to be considerable buyers of casks made of beech-wood desire to be placed in communication with Canadian makers able to meet their requirements.

381. A firm of commission agents in the city of Winnipeg desire to get in touch with some English houses desiring to be represented there.

382. Enquiry is made for names of large firms who might require an agent to purchase cheese and butter on commission from the eastern townships of Quebec.

GERMANY — EAST AFRICA. — Some new geological explorations in German East Africa, in the Uluguru Mountains situate to the west of Dar-es-Salaam, have resulted, says The Handel's Museum, in the discovery of mica, which is a most valuable material for electro-technical purposes. The mica plates which have been found are very useful for the said purposes on account of their solidity and capability of isolation. Their even surfaced splitting capacity, as well as the capability of enduring high electric tensions, render the East African mica equal to the most employed kinds of mica used in electro-technics of the United States, Canada, India, etc. In spite of the difficulties of transport which have to be encountered in connection with the exploitation of the East African mica, until the projected central railroad approaches the Uluguru mountains, the mining for the same might now already prove remunerative, as there is a strong demand for this material, the price of which varies according to color, size, etc., from three to fifteen marks per kilo.

TRINIDAD AND TOBAGO.—The report on Trinidad and Tobago, recently issued by the Colonial Office, states that an item which is likely to be of great importance in the future is rubber. The only rubber which has hitherto been exported is the gum of the indigenous balata tree. This has been done on a very small scale, and could not be extended without rapidly exterminating the finest timber tree in the Colony. Many cocoa planters, however, are now experimentally planting on selected parts of their estates the more profitable sorts of rubber trees, and two large estates are now devoted almost entirely to castilloa. On one of these, in Tobago, 70,000 trees have been planted. Some years must elapse before the produce is put on the market, but in view of the growing demand for rubber, of the increasing difficulty of obtaining it from the present sources of its supply, and of the purer condition in which the cultivated product will be shipped, the prospects of this industry are very hopeful.

The report on the islands of Trinidad and Tobago, recently issued by the Colonial Office, states that of the mineral products of the Colony, asphalt is by far the most

important. The asphalt trade was more prosperous in 1899 than in any previous year of its history, 140,000 tons were exported — 99,000 to the United States—representing a value of £150,000, and a revenue to the Crown of £45,000. Reliance, however, cannot be placed on the continuation of the business on this scale. Seven-eighths of the asphalt exported is dug from the Pitch Lake, which is leased to a company for a term, of which twenty-nine years have still to run, and the company are not bound to ship as much as one-third of last year's output.

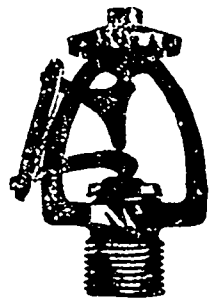
In view of the fact that a similar lake at Bermudez, in Venezuela, ten times its size, and containing asphalt purer in the proportion of ninety-seven to fifty-six, is already being worked, Trinidad can no longer claim to command the asphalt market. The demand for asphalt is, however, growing, and there are greater difficulties in shipping it from Bermudez than from Trinidad. Pitch in a liquid form mixed with a bituminous oil is also to be found in the south of Trinidad; and coal exists in various parts of the island. The commercial value of these deposits has, however, not yet been satisfactorily tested.

TURKEY.—Consul Lane, of Smyrna, thinks there is a large field for American leather goods in Turkey. Ninety per cent. of the boots and shoes used in Turkey are made in the country by hand. The people can afford only the cheapest quality of footwear, but Consul Lane believes American machine-made goods can be put on the market at better prices than the hand-made articles now sold. The sale of fine shoes is very limited. Strong, durable, coarse boots and shoes, with thick soles are popular. Leather and rubber overshoes are extensively used. A factory undertaking to properly introduce American shoes should have a full line of samples of Turkish shoes with prices. The variety of lasts which are permanently used is very large. Slippers are extensively used, and the ladies of the harems confine their footwear almost entirely to slippers. The laboring classes wear heavy cowhide shoes a kind of overshoe, with light slippers inside. Army officers wear high-top patent-leather boots. Import duty on all articles is eight per cent. Certificates of origin must accompany each shipment.

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MEXICO.—A company has been formed at Sombrerete, in the State of Zacatecas, with a capital of \$50,000 to establish a woolen mill in the neighboring town of Chalchihuites. The mill is to be called "La Primavera," and machinery for it will be purchased shortly. At present most of the textile machinery running in Mexico is of English origin.

The Cuauhtemoc Brewing Co., of Monterrey, is to erect a new seven-storey building, costing, with equipment, \$1,000,000. The machinery will be purchased in the United States.

The San Pablo Co., recently organized in the United States to develop 288,000 acres at San Pablo, in the State of Campeche, will soon be in the market for lumbering and agricultural machinery.

The trade in hardware and ironmongery is but little developed in Tampico and the surrounding district. The sale of barbed wire, however, is acquiring great

importance. The farmers of the Vera Cruz, Huasteca, and of the State of Tamaulipas have adopted this wire for fencing in their immense pasturages. I do not know exactly the annual trade figures, but they must be considerable. The case has been mentioned to me of one single landed proprietor who has fenced in 12,000 acres with barbed wire. The wire sold in Tampico comes exclusively from the United States. In January last its purchase price in New York was 2.80 piastres gold, and its sale price at Tampico 7½ piastres silver per roll of 46 kilos. Since then prices have gone up. The roll of 46 kilos contains about 500 yards of wire, and as the fences usually consist of five wires, one such roll is required for every 100 yards of fencing.—Belgian Minister of Mexico.

Metal girders still have only a small sale in Tampico, but the use of corrugated iron for roofing purposes spreads, even in the country districts, where it is replacing the palm-leaf roofs which are such a fruitful

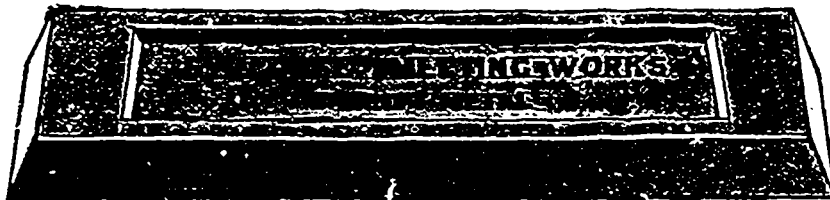
source of trees. English corrugated iron is preferred to that of American origin, which becomes much more easily oxidized. The price last January was 24 centavos (60 centimes) per kilo.—Belgian Minister at Mexico. In spite of the rapid progress made by home-industry, about fifty per cent. of the cotton piece-goods still comes from abroad. It is the same with wooler goods, those for ladies coming from France, whilst articles for men's use are supplied by England. Italian factories have now succeeded in placing their goods—hitherto unknown—upon the market. About seventy-five per cent. of the flannels sold at Tampico comes from Italy. Ticking and fancy stuffs from Genoa are also to be met with.—Belgian Minister at Mexico.

The New York Journal of Commerce reports that a new company has just been formed in the town of Linares, in the State of Nuevo Leon, under the title of La Compania Alumbrado Electrico y Fuerza de

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Linares. The company has a paid up capital of over £20,000, and it is proposed to instal a modern electric plant, which will consist of 2,000 16 c.p. incandescents, 35 arcs, 100 h.p. in small motors, and 150 fans. The electric equipment, according to the Electrical World, will consist of two 75 k.w. three phase, 60 cycle, 2,300 volt machines, and 6 k.w. transformers. Some of the orders for the steam plant as well as the hydraulic plant have been placed in the New York market.

The use of enamelled ironware for table and toilet purposes is becoming general. It is imported from Elberfeld, but a finer quality is imported from Austria through the firm of Penn, Gerhardt & Co., of Berlin. These articles being heavily taxed, not ad valorem but according to weight, the makers endeavor to produce them as light as possible, and the quality often suffers from this.—Belgian Minister at Mexico.

MADAGASCAR.—The United States Consul at Tamatave, in a report dated September 3, says that Mr. Christian Bang, a merchant of that city, requests names of manufacturers of small hydraulic presses for baling raffia and other fibres. The Consul adds that, in his opinion, there is an opening at Tamatave for these presses, if they are of the proper size. Correspondence with Mr. Bang may be conducted in the English language.

In 1899 Madagascar imported goods to the value of £1,116,665, of which £970,432 is returned as French, and £65,081 as British. In 1896, with a total of £559,517, British imports were valued at £255,176, and French at £245,680. These figures are a striking commentary upon the injury to British trade caused by the French occupation of the island. While, as a whole, British trade is too heavily hampered by the application of the general tariff to afford any hope that it will regain its former comparative magnitude in Madagascar, yet, says British Consul Porter, there appears to be a remunerative sale for certain classes of goods, notably :—galvanized iron, tin-plates,

hardware and hollow ware generally, paints and oils, boots and shoes, straw hats, cheap umbrellas, and cheap cutlery.

The construction of excellent roads in the neighborhood of the capital has led to a demand for bicycles, which are likely, in the near future, to become very popular with the Hovas. Hitherto the demand has been supplied by French machines which are sold in Antananarivo at £15. The import duty on bicycles is 220 frs. per 100 kilos. Carriages, dog-carts, and light conveyances are also beginning to come into use, and there is no doubt that, after the completion of the wagon road to the east this year, numbers of vehicles of all kinds will be ordered.

A recently created want, which as yet importers have made no attempt to supply, is that of sandals suitable for the native

porters travelling between the coast and the interior. Formerly, when the route to the coast followed native tracks and footpaths, no covering for the feet was necessary, but carriers now find that the new roads along which they travel necessitate more protection in this respect. Being unable to purchase sandals, the porters utilize the soles of cast-off boots, strips of leather, or canvas, which in most cases are quite unsuited for the purpose. A suitable sandal, adapted to the requirements of these carriers, would very probably meet with an extensive sale.

Care should be taken that packages which cannot be opened and re arranged at the port of discharge be made up in weights to which the native carriers are accustomed. One man will carry two packages of from 40 to 45 pounds each, but if the package is sufficiently heavy to require two porters,

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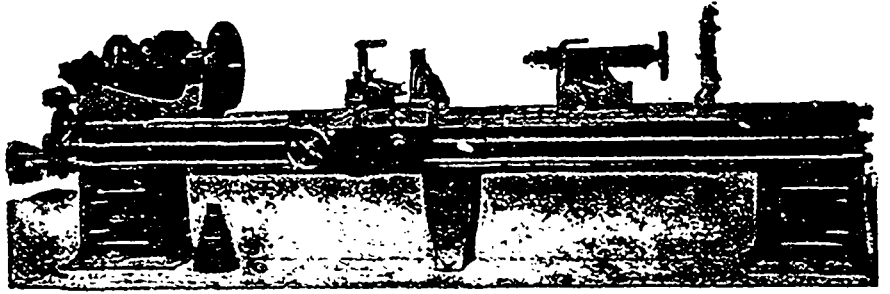
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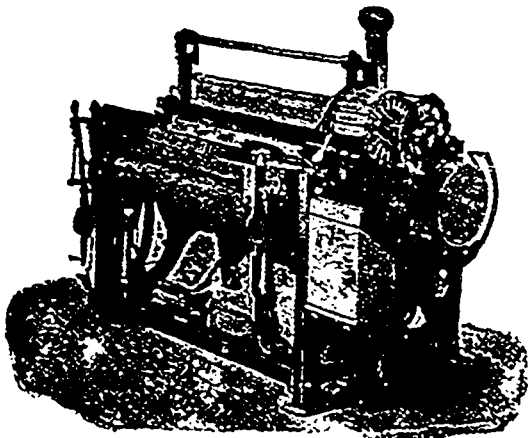
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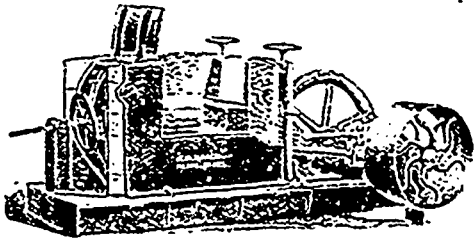
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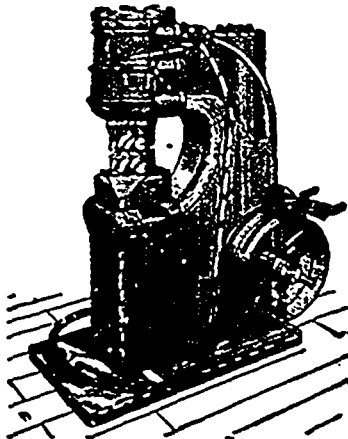
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the weight should not exceed 140 to 150 lbs. For packages exceeding 300 lbs. it is exceedingly difficult to obtain inland transport.

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The customs duties levied upon imports into Madagascar are those applicable under the French general tariff, with certain exceptions. A "consumption" tax is also imposed on certain kinds of merchandise, to which list salt, refined sugar, olive oil, vegetable oils and tinned vegetables were added by a decree of February 22, 1900.

BRAZIL.—All merchandise imported into Brazil must be accompanied by consular invoices, except postal packages and samples or other packages of a value less than 50 gold milreis. (The gold milreis equals 54.6 cents.) The declaration in the invoice must contain: (1) Name of ship on which goods were transported; (2) port of shipment; (3) port of destination; (4) value of goods; (5) amount of freight and other charges; (6) premium on money current at port of shipment, if any. On the back of the invoice must be a detailed description of the goods, giving marks and numbers of packages, species of merchandise, net and gross weight, value (including freight and expenses) of each different kind of article, and country of origin. These data are obligatory, and their omission will render the consignee liable to fines.

TASMANIA.—The Blythe River Iron Co., of Tasmania, which is to erect smelting works at Newcastle, New South Wales, has secured a contract to supply the Government of that Colony with 100,000 tons of steel rails within four years, and have deposited the sum of £10,000 with the Treasurer of the Colony as a guarantee of good faith. This contract will prevent the importation of foreign rails to a certain extent for Government undertakings in that colony.

ZANZIBAR.—Shoes, as worn here, are of white canvas, black or yellow leather, and patent leather. A large English firm supplies the whole place with ready-made shoes. An attempt has been made to place cheap Vienna goods, but no satisfactory results were obtained. Prices: white canvas shoes, k. 5.60—7.20 per pair; black leather lace boots, k. 6.40, 6.90 and 8 per pair; leather half shoes, k. 4.80—8 per pair; patent leather shoes, k. 4.80—8 per pair.—Austro-Hungarian Consulate at Zanzibar.

PARAGUAY.—Hats for men are imported into Paraguay from England, France, Buenos Ayres and Montevideo. The selling prices are exorbitant, twice as high as in the United States for the same class of goods. A derby, which costs about \$2 in the United States, sells here for \$4 and sometimes \$5. Soft hats are very much in demand, and sell at even a greater profit. The hats which have the largest sale are of good, but not of best quality.—United States Vice-Consul at Asuncion.

AUSTRALASIA. — British manufacturers would do well to study the general character of American tool exports to Australia. In building construction, as in the pastoral and agricultural industries, there are many features shared in common by California and its adjoining states and New South Wales, if not Australia generally. Hence tools made for the California market are also, in the majority of instances, suitable for that of Australia, and here the Americans have a natural advantage. American tools are not preferred because they happen to be made in the United States, but because they so largely meet colonial requirements. Our Sydney correspondent tells us that some two or three years ago, a Sydney importing house sent a case of specimen American tools to a British maker, mentioning the market rates of same, and asking quotations for similar goods. The answer was to the effect that the firm could supply goods equal to samples at much lower rates, but did not care to add fresh lines to their business. This, doubtless, is an extreme case, and we are glad to learn, per contra, that with regard to hammers, two or three kinds of British make have lately risen in popular favor in Australia. — Commercial Intelligence.

The New Zealand Government Marine Department are calling for tenders for an oil engine launch, thirty feet long and seven feet beam, to act as tender for their steamer while engaged in lighthouse and harbor work, and in cable laying. There would appear to be an excellent prospect of a market for a number of launches among the various seaports in Australasia.

The Chief Engineer of the New Zealand Railways in his annual report states that it will be necessary to import both freight and passenger cars during the coming year. An important order was placed in America some time ago.

The Tasmanian Government is to expend £20,000 for automatic brakes on its railways.

The municipal authorities of Rockhampton, Queensland, are planning to install an electric tramway system and lighting plant. Messrs. Trackson Bros., of Brisbane, are the consulting engineers.

The United States practically controls the organ trade in Australasia, while Germany has by far the largest share of that in pianos. Of 452 organs imported into New South Wales last year, this country sent 276; of 156 imported by Victoria, nearly all were of American origin; of 633 imported into New Zealand, American makers supplied 615, while much the largest portion of the organs imported into Queensland, South Australia, Western Australia and Tasmania, came from here. Of the pianos imported into these colonies, however, Germany at present supplies from one-half to three-fourths, and as far more pianos are imported than organs, this is a branch of the trade that American manufacturers should seek to secure more of. — Dun's Review.

NEW SOUTH WALES. — It seems definitely settled that there is to be no change in the free trade policy of this colony until the federal tariff comes into force, which will probably not be much before the middle of 1902. Sir William Lyne, the Premier, has positively declared that no additional taxes of any kind are to be levied, as under the existing free trade policy it has been found that the revenues of the colony are increasing at a rate that will prove amply sufficient to cover all the extraordinary expenses of the Government, as well as those previously

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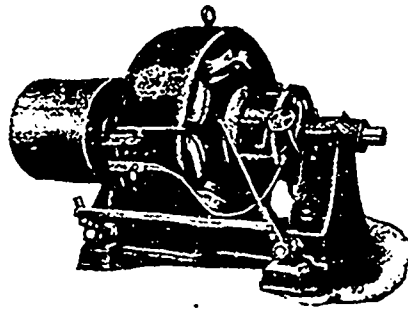
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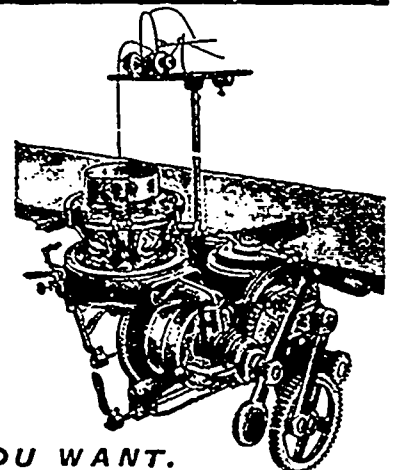
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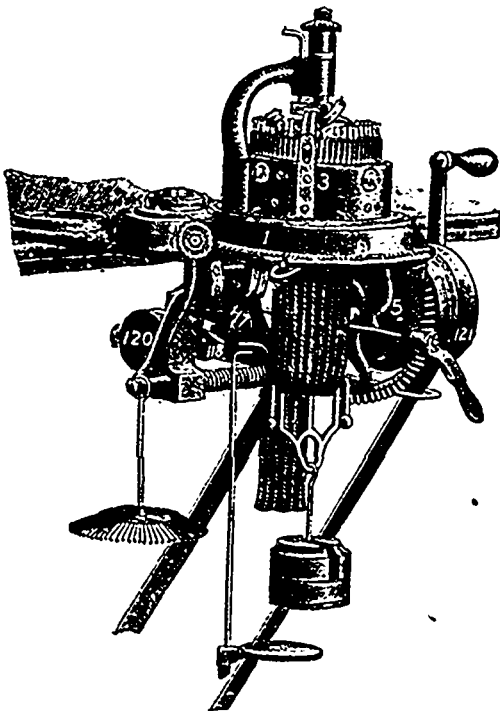
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provided for. The effect of this has been to put an end to whatever movement there has been to import merchandise, with a view to storing it, until a provisional New South Wales tariff might come into force.

CAPE COLONY.—The Cape of Good Hope Government Gazette, publishes statistics showing the value of the trade of Cape Colony for the nine months ended September 30, 1900, as compared with the corresponding period of 1899. The following table shows the value of the imports of the principal and other articles into the Colony during the periods above mentioned :-

Principal and other Articles.	Nine Months ended Sept. 30, 1899.	Nine Months ended Sept. 30, 1900.
Provisions of all kinds (includes butter, cheese, coffee, confectionery, meats, rice, sugar, tea, alcoholic beverages, etc.)....	£ 1,606,000	£ 2,085,000
Corn, etc., (flour, maize, oats, wheat).....	508,000	900,000
Cotton man'ft....	800,000	720,000
Linen " ..	37,000	63,000
Woolen " ..	244,000	227,000
Haberdashery & Millinery.....	933,000	891,000
Wearing' apparel (includes hats).	613,000	550,000
Leather and leather manufactures (includes saddlery and harness).....	476,000	513,000
Metals and metal manufactures (includes machinery)....	1,727,000	1,070,000
All other articles of merchandise	4,226,000	4,119,000
Total merchandise	11,170,000	11,138,000
Articles imported for the Colonial Government Specie.....	673,000	710,000
	1,988,000	2,266,000
Grand total, Imports	13,831,000	14,114,000

QUEENSLAND.—Speaking of the frozen and canned meat industries of Queensland, the Mercantile Gazeteer, of Brisbane, says :

The importance of this trade to the colony of Queensland has been recognized for some years past, and the erecting of meat works in various parts of our territory has been the means not only of relieving the squatter of his surplus stock, by finding markets in other parts of the world for the consumption of our beef, but many thousands of pounds have been circulated among all classes of the community.

For some years past we have regularly supplied London with frozen beef from our shores, which gives every satisfaction, though we have to be content with a lower price than that obtained for the American chilled beef, which apparently is much more in favor with the British consumer. It is, however, satisfactory to learn that many of the wholesale butchers at home, having tried the frozen article, are inclined to deal far more extensively in our product in the future than in the past, and it behooves those in charge of the business at

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this end to cater for it to the utmost. We are rather surprised that our cattle growers look so much to London for their market, instead of shipping more direct to that great distributing centre of the industrial population, Manchester, and we trust it will not be long before regular shipments leave these shores for the cottonopolis of Great Britain.

In addition to shipping regularly to London, considerable quantities of frozen beef have found their way from our ports to China and South Africa, while it is well-known that for a long time past the American soldiers on service in the Philippine islands have been supplied with beef from Australia, their transports making regular trips for the purpose, while regular shipments have also gone to Honolulu. The last American transport to leave Queensland was the *Culgoa*, which took about 400 tons of beef—a comparatively small cargo—from the Eagle Farm Works during October, to be shortly followed by the *Glacier*, due at the same works this month.

At the present time most of the meat works throughout our colony are shut down, this being the off-season, and advantage is being taken to carry out very extensive alterations and additions to some of the establishments, but more particularly at the Queensland Meat Export and Agency Company's Eagle Farm Works, the Government surveyor's report certifying that during the past twelve months a sum of £25,000 has been expended in additions, etc. It is very evident this company intends to keep abreast of the times, not only in Brisbane, but at their Ross River Works at Townsville, where very extensive additions have recently been completed.

We also learn that the refrigerating machinery at the Gladstone Meat Works is being duplicated, and the slaughter yards are being fitted up with labor-saving appliances, so as to more satisfactorily cope with next season's operations.

Although the frozen meat industry has assumed large proportions during the past few years, the canned meat trade has not been allowed to lag. Already Queensland canned meats are to be found in all parts of

the world. London is a great market, South African merchants have been supplied with thousands of cases of meat of various assortments, and the British army authorities have contracted with Queensland firms for canned meats to nourish and sustain the Empire's soldiers who have been fighting in South Africa. China and Japan and the Philippines have also had fair shipments of our tinned beef, and in addition, they consume a quantity of salt barrelled beef, edible fat and beef extract, which can be produced in Queensland equal to anything in any part of the world.

What is now causing great anxiety is the continued dry weather we are experiencing, and the drought that has been raging so long in the back country, making it impossible to secure a sufficient supply of fat cattle suitable for freezing at reasonable prices. It is to be hoped rain will soon come, and so assist us to produce stock which are absolutely necessary if this great Queensland industry is to be kept going, and to do this profitably, prices for good cattle, fit for export, will have to recede, otherwise the markets made cannot be maintained, and the loss of them would prove a national calamity.

VENEZUELA.—The recent earthquake at Caracas emphasized the adaptability of American style of buildings to withstand even an unusually severe earthquake. At Macuto, the Newport of Venezuela, the Venezuelan Herald reports that almost every building was destroyed except the three American frame houses built last year for General Andrade, Dr. Alberto Smith, and General Bello Rodriguez. At Caracas most of the public buildings belonging to the Government were severely injured and four churches were ruined. Altogether 73 houses were totally destroyed, the roofs of 380 collapsed, and 430 others were seriously damaged. The style of building in vogue in Venezuela is not adapted to a country where earthquakes are as frequent as in the valley of Caracas. The walls are thick and strong, but the roofs are far too heavy, weighing from 100 to 250 lbs. per square yard. These

are lodged on heavy rafters and fall instantly when such sharp shocks as those of October 29 occur. There should be a good sale to the Government, and the wealthier and more intelligent classes for light roofing materials, such as shingles, metallic roofing, roofing paper, etc., and for frame buildings of the type introduced by ex-President Andrade.

INDIA.—United States Consul Patterson, of Calcutta, suggests that for information respecting the sale of agricultural implements in that part of India contiguous to Calcutta, correspondence should be had with the following firms, all located at Calcutta: Messrs. T. E. Thomson & Co., Limited; Jessop & Co., Limited; W. Leslie & Co.

It is but a short time since that electricity, as a motive power, was unknown in India. However, electricity is now beginning to be extensively used in Calcutta for various purposes, such as lighting, for fans, to take the place of punkhas that were pulled by coolies, for driving machinery, etc. Consul Patterson advises correspondence with Messrs. Kilburn & Co., of Calcutta, who have an electrical plant, and are furnishing electricity and electrical machinery and goods; also, with the following-named firms in Calcutta, who are dealers in such machinery and goods, viz., Osler & Co., Octavius Steel & Co., and the Calcutta General Electric Co. All machinery is now entered duty free in India, but there is a duty of five per cent. ad valorem on goods. There is a direct line of steamships between New York and Calcutta, but a cheaper freight on machinery and goods not required for immediate use would be by sailing vessels via the Cape.

GUATEMALA.—Guatemala offers a market for hosiery, haberdashery, etc. At present it is well nigh impossible to find a shirt, collar or cuff of American make on sale in Guatemala. England, France and Germany now have the upper hand in that market, simply because salesmen from those countries are on the ground with a full line of samples, which are exhibited in permanently

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located storerooms. Moreover, they enjoy an added advantage in having well-stocked warehouses, from which they can readily draw supplies. When business is quiet in Guatemala, they make trips to Salvador, Honduras and Costa Rica for business. Consul McNally, who has studied the markets of Central America, thinks our manufacturers could control matters commercial were they to cater to the people, whose wants run chiefly to cheap gaudy fabrics. Aside from the chances for textiles, there seems to be an opening for American shoes. Ready-made shoes are imported principally from France and Germany, and are of a style and quality much inferior to products made in the United States. Shoes made to order have in them a poor quality of leather. The leather is imported from Germany and England. The sole leather is home-made, though some shoemakers prefer the Nicaragua sole leather, and much is imported from that republic.

The United States Consul at Guatemala writes as follows on the openings for trade in that country:—After a careful investigation among the importers of Guatemala, I find that cheap and flashy articles attract the buyer rather than those more expensive but of quiet coloring. The articles of hose and underwear imported for local use are of the cheapest grade. For the past few months I have endeavored to ascertain the reason for the monopoly of the import trade by England, France and Germany. I find that all these countries have resident salesmen here, with display rooms in which to show their goods. This affords the dealers an opportunity to select from numberless

varieties of fabric and qualities, and by this means telegraphic orders can be sent, and the goods arrive in a reasonably short time. The representatives of the foreign houses usually make their headquarters in this city, having their warehouses stocked to supply the immediate wants of the trade. When business is quiet here, they make trips into Salvador, Honduras and Costa Rica, carrying with them all necessary samples and supplying from their headquarters at Guatemala City. This resident system is also a protection to their houses, for, if a firm has financial difficulties, they are on the spot to protect their principals and usually get their accounts in money or goods.

GERMANY.—United States Vice-Consul-General Hanauer, of Frankfort, says: Artificially produced indigo is now better in quality, cheaper in price and consequently much more popular than the natural article. During the first half of this year Germany imported but 437 metric tons, against 804 tons of natural indigo imported during the same period of 1899, equivalent to a decrease of over forty-five per cent. Sixty-eight per cent. of this imported indigo came from the East Indies. Germany's exports of indigo (almost entirely composed of the artificial article) during the first six months of 1900 reached 947½ metric tons, 74½ per cent. in excess of those of the same period in the preceding year. Of this artificial indigo the United States took 29.9 per cent.; Austria-Hungary, 14.7 per cent.; England 10.4 per cent., etc.

Germany still continues to be a good

buyer of American machinery, in spite of the indications that the competition of domestic manufacturers is more serious and successful than ever before. The importation of many classes of tools, implements and machines from the United States has increased during the last few years to such an extent that it now surpasses the imports of these articles from any other country of the world, even those of Great Britain. Thus, during the first six months of the present year there were imported into the German Empire 509,042 pounds of machine knives, of which 354,720 came from the United States; 245,592 pounds of scissors, shears and cutting tools, of which 104,279 were of American origin; 501,547 pounds of other iron tools, of which 168,662 came from this country; 765,218 pounds of fine cast iron goods, of which 398,812 came from the United States; 1,997,588 pounds of hand sewing machines, of which no less than 1,734,018 pounds came from this country; 65,917 pounds of typewriters, of which 49,383 came from the United States; 26,705,201 pounds of wrought iron pipes and tubes, of which 13,390,508 were of American origin; 47,853,809 pounds of agricultural machinery, of which no less than 36,429,031 pounds came from the United States; 8,634,536 pounds of machine tools, of which 6,476,675 came from this country; 2,325,632 pounds of lifting machines and elevators, of which one-half came from the United States; and 19,580,155 pounds of other industrial machinery, of which 3,446,010 came from this country. In bicycles, electrical machinery, milling machinery, machinery for the manufacture of wood pulp

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and paper, sewing machines with stands and locomotives, portable engines the United States also contributed from one-tenth to one-third of the total importations.

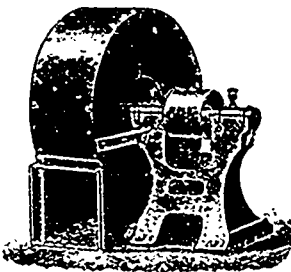
Among other necessary equipment for the Commander-in-Chief of the Allied Forces in China is a portable asbestos house, which has been ordered by the German Government, and supplied by the Calmon Asbestos Rubber Works. The house is in sections which are packed in a number of cases. Everything is so arranged that the building can with the greatest ease and speed be fixed up and taken down for erection elsewhere as required. The building contains seven large and comfortably furnished rooms for the use of the Count, his adjutant and servants. The material used is an invention of the Calmon Asbestos Rubber Works, to which the name of asbestos slate has been given. It is absolutely fire and waterproof, as hard as slate, and yet capable of being nailed and planed like wood shingles. It also possesses the advantage of extraordinary lightness, and being an equally good insulating material against heat as against cold, constitutes an also ideal material for light buildings. The order was accepted for completion and shipment in a fortnight and has been duly executed.—Kuhlow's.

A plant to work the Hoepfner wet process for the extraction of copper has been erected at Papenburg, Germany. It has a capacity of a metric ton of refined copper daily. The ore is first crushed in Grusonwerke ball mills and leached with cupric chloride solutions. The solution dissolves copper, lead, nickel and silver, the cupric salt being reduced to the cuprous state. After purification and being freed from silver, the solution is allowed to flow to a compartment with carbon anodes and copper cathodes. Chlorine is liberated at the anodes regenerating the cupric solution, which is returned to a fresh charge of ore. It is claimed that ninety-one per cent. of the contained copper was obtained after four hours' treatment of Rio Tinto ore containing 3.37 per cent. copper and only three per cent. of the iron content dissolved. By longer contact 98.5 per cent. of the copper was extracted with only four per cent. of the iron taken up. It is claimed

moreover, that one horse-power in twenty-four hours will produce fifty-four kilogrammes of copper as against fifteen kilogrammes by the sulphate process.—Kuhlow's.

The British Consul at Stuttgart states that the increase in the price of petroleum and the decrease in the price of calcium carbide are gradually enabling the latter to supplant petroleum as an illuminant. At the end of 1899 about 170,000 jets of acetylene were installed in Germany, which—estimating the illuminating capacity of the acetylene flame at forty normal candle-power—gives a total of 6,800,800 candles. This means that acetylene has been substituted for 180,000 petroleum flames, 21,000 oil-gas jets, and about 3,500 jets of other illuminants, without taking into consideration the large number of acetylene oil-gas jets used so extensively at present by the Prussian railways, and to which, in connection with the development of the acetylene industry, reference will be made further down. The importance of the further substitution of acetylene for petroleum may be gauged from the fact that Germany, for many years has paid annually about £5,000,000 to America for petroleum, which sum has latterly risen considerably owing to the advance in the price of petroleum. The acetylene industry is a purely German industry, carbide being manufactured in the country, and although a large amount is imported from Switzerland, Norway and Sweden, these works have been built with German capital and are directed by German engineers.

The United States Vice-Consul at Chemnitz reports that a member of the board of general directors of the Royal Saxon Railways has invented a new device for the consumption of smoke given off by locomotives. He claims that it is almost perfect, whether the locomotive is moving or standing still. Certain technical papers say that this device has been added to four locomotives in Chemnitz, and the engineers state that they are much pleased therewith. A locomotive using this new invention and being worked to its utmost capacity saves in one month 28,600 pounds of coal. To equip a locomotive with this device costs



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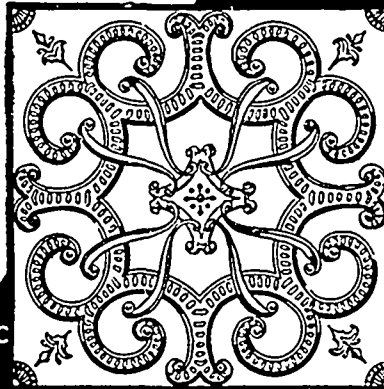
about £5. It can also be applied to stationary engines.

A recent Foreign Office report contains some interesting facts concerning the artificial indigo and artificial dyes made in Germany. The present artificial indigo of commerce represents almost pure indigotin. It is sold in the form of a 95 per cent. powder, whereas the indigotin contained in vegetable indigo fluctuates between 70 and 80 per cent. It contains no indigo red, no indigo brown, and no indigo blue. The lack of indigo red and indigo blue, which both seem to be of some importance in the relation of the dye-stuff to the fibre, are its special disadvantages. The indigo red seems to be of importance in the production of darker shades of color. There is no doubt that at some time not too far off, it will be possible to produce this ingredient also. Artificial indigo is used by dyers in the same way as vegetable indigo. If it is possible to render the process of manufacture materially cheaper, and thereby to considerably reduce the price of artificial indigo, the danger to natural indigo will be greatly increased. If natural indigo is to retain its position, every effort must be directed in a rational manner to organizing its culture, towards the manner in which it is collected, and the way the dye is shipped. To-day the fate of East Indian indigo culture lies, unfortunately, in the retorts of the chemical factories. Theoretically the question may well be raised whether, from the coal tar products obtainable, the raw material for manufacturing indigo synthetically can be obtained in such great quantities as is required to replace the vegetable indigo. There would probably soon arise a scarcity as to toluol. The Baden Aniline Works, however, use principally naphthaline, which is to be had in greater quantities.—Kuhlows's.

An important branch of the German chemical production is concerned in the manufacture of artificial dye-stuffs in general. The endeavors of this branch are directed, generally speaking, to producing the organic natural products such as those of color plants, dye woods, insects, molluscs, etc., by artificial means, and even cheaper,

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purser, and in a more serviceable form for dyeing; also to gaining new colors, which not only approach in brilliancy and effectiveness the natural kinds, but even surpass them. Since the discovery was made in 1868 that the important dye-stuff, madder-alizarine, could be produced in an easy and cheaper manner from the carburetted hydrogen of coal-tar, the use of dye-stuffs obtained by coal-tar distilling has gradually grown to such a degree that in Germany about five times as many artificial colors are made as in all other countries combined. According to the last census on June 14, 1895, there existed twenty-five factories for the manufacture of aniline and aniline colors, and forty-eight factories (with seven branches) for the production of other coal tar products (i.e., not only for colors, but also for other commodities, such as picric acid, etc.). The aniline works employ 7,266 hands, the latter factories 4,194; in all, 11,460 men.—Kuhlow's.

German manufacturers, says an American Consul, are suffering from the effects of over-production. Their foreign markets have not increased proportionately with the increase of home production. During the past year, German exports to China and South Africa, have practically ceased. The Empire's exports to the United States, England, the Orient, South America, and the Balkan States, have been on the increase; but these markets have fallen far short of consuming all that German manufacturers have produced. Then, the most powerful factor with which German industries have had to contend, has been the development of independent industries in those countries where Germany has always had her best markets. Especially has this been the case in the United States with all textile products. British merchants and manufacturers, may therefore expect to see a decline in prices in German goods, and to find them consigned to England on the dumping ground principle.

CUBA.—The Engineering News says that about \$30,000 will be spent next year in harbor works at Cardenas. Other harbor works will also be carried out next year. Secretary Villalon, of the Board of Public Works, Havana, is to be in charge of this new work. It is proposed to build a macadam road from Sagun to Santa Clara.

DUTCH EAST INDIES.—The Engineering and Mining Journal states that the production of tin in the Biliton District in Java for the year ending June 30, 1900, was 10,767,261 lbs., against 12,224,296 lbs. in 1899, and 11,680,592 lbs. in 1898. The largest output ever reported from the district was 14,130,595 lbs. in 1891-92, since that time the production has been gradually decreasing.

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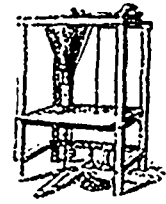
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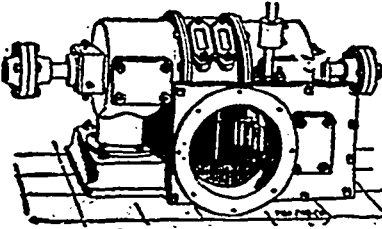
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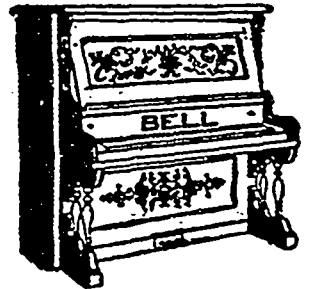
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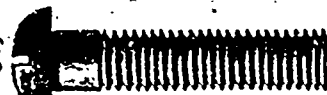
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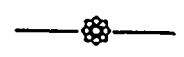
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