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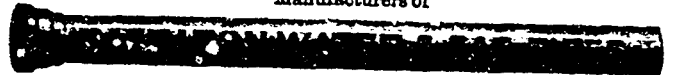
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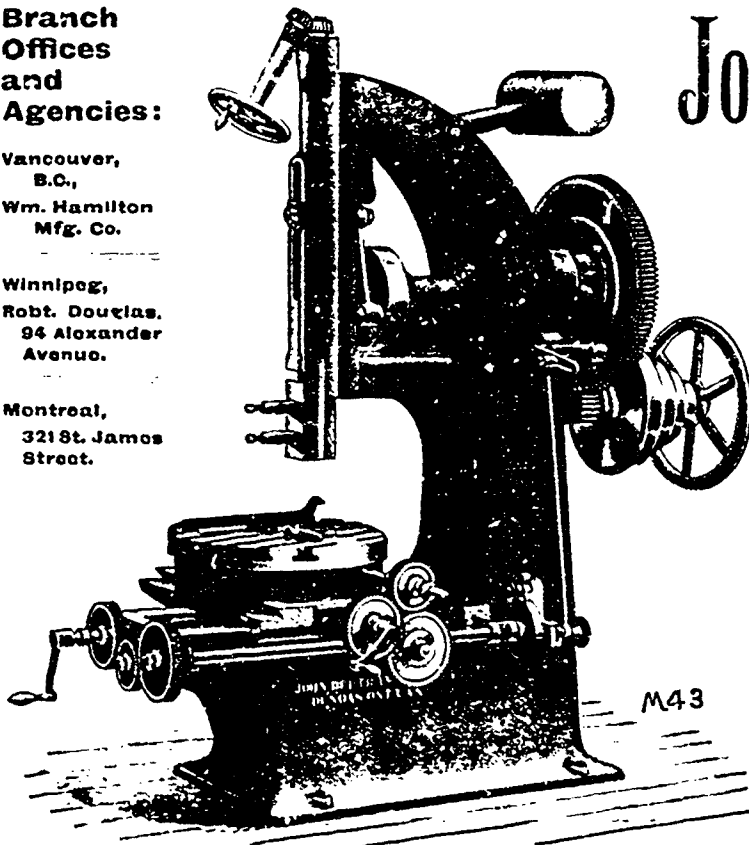
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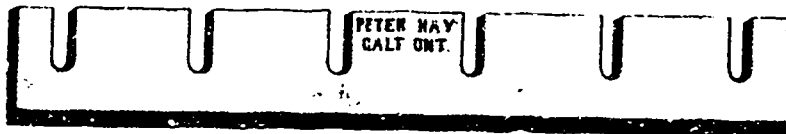
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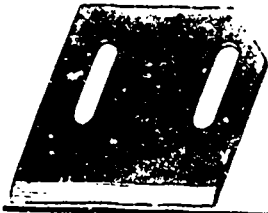
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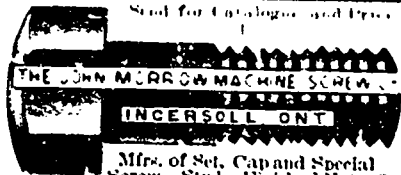
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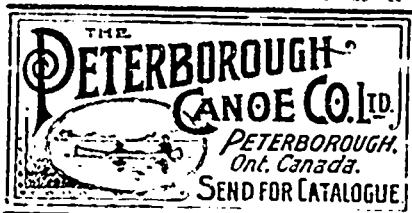
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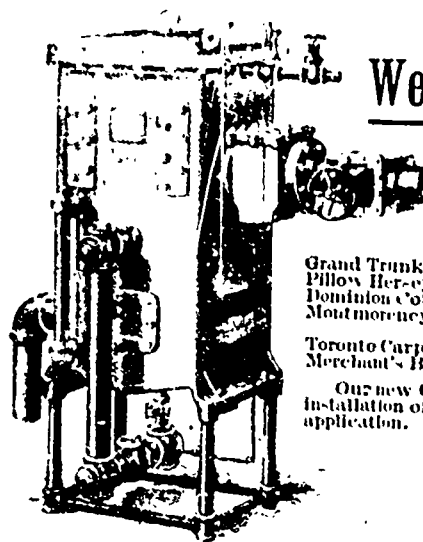
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Toronto Carpet Co., Toronto, Ont.	(1)	100 "
Merchant's Bank of Canada, Montreal	(1)	150 "

Our new Catalogue explains the saving to be effected by the
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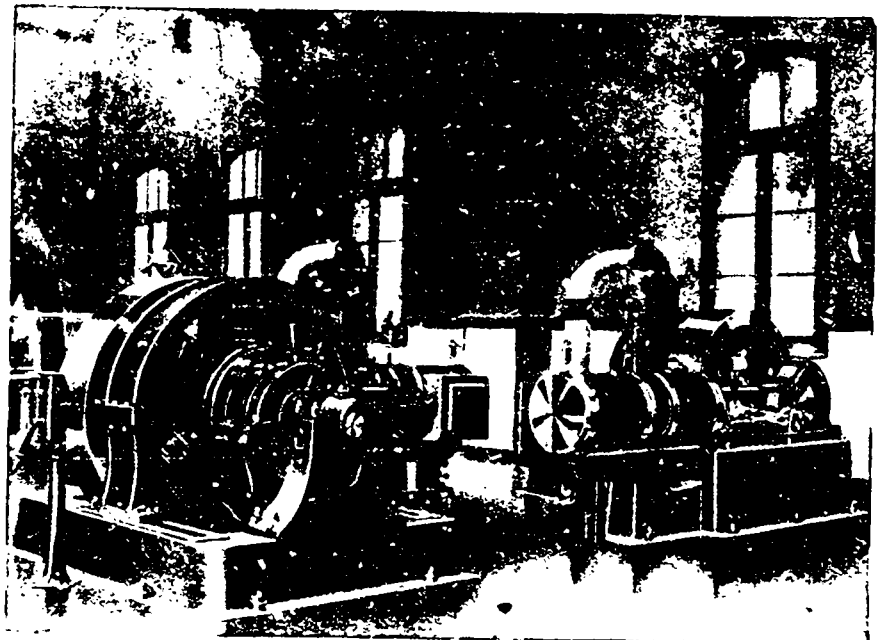
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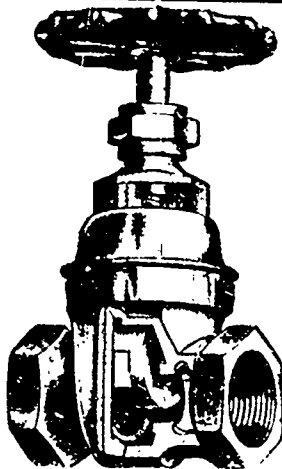
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Oakey's Flexible Twilled Emery Cloth.
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"FOR ALL DUTIES"

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MANUFACTURERS
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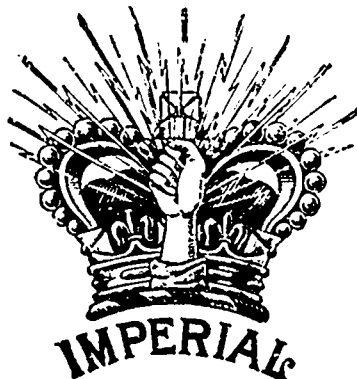
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PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

SUBSCRIPTIONS :

CANADA AND UNITED STATES, - - - \$1.00 PER YEAR.
ALL OTHER COUNTRIES IN POSTAL UNION, EIGHT SHILLINGS
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The Canadian Manufacturer Publishing Co., Limited.

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

J. J. CASSIDY, - - - *Editor and Manager.*

**THE CANADIAN MANUFACTURERS'
ASSOCIATION.**

The regular annual meeting of the Canadian Manufacturers' Association was held in Toronto on Tuesday, February 6th, among the results of which were the adoption of new by-laws and the re-election of the old officers.

There were fifty-six members present including three from Hamilton, one from Oshawa, one from St. Catharines, one from Guelph, one from Kingston, one from Woodstock and one from Niagara Falls. Besides these nine there were forty-seven from Toronto.

The officers elected were:—

President, J. F. Ellis, Toronto; First Vice-President, P. W. Ellis, Toronto; Vice-President for Ontario, R. E. Menzie, Toronto; Treasurer, George Booth, Toronto.

There is also to be a vice-president from each province represented in the Association.

The new by-laws call for seven committees, which, with their chairman, are as follows:—

Executive Committee.—Chairman, J. F. Ellis, of Toronto.

Tariff Committee.—Chairman, R. W. Elliot, of Toronto.

Railway and Transportation Committee.—Chairman, J. M. Taylor, of Toronto.

Parliamentary Committee.—Chairman, C. H. Riches, of Toronto.

Trade and Industry Committee.—Chairman, J. P. Murray, of Toronto.

Reception and Entertainment Committee.—Chairman, Thomas Roden, of Toronto.

The Executive Committee for 1900 are as follows:

J. F. Ellis, P. W. Ellis, R. E. Menzie, Geo. Booth, R. W. Elliot, A. E. Kemp, W. K. McNaught, P. H. Burton, J. P. Murray, Thomas Roden, R. Donald, C. H. Riches, J. M. Taylor, J. O. Thorn, A. W. Thomas, W. J. McMurtry, W. B. Rogers, W. K. George, F. Kent, Wm. Stone, J. Wright, John Taylor, M. Wickett, E. G. Gooderham, Emil Boeckh, R. Simpson, E. R. Thomas, Gerhard Henitzman, Geo. E. Evans, G. H. Hees, all of Toronto; F. Stanley, Peterborough, Ont.; Jas. Kendrey, Peterborough, Ont.; J. R. Barber, Georgetown, Ont.; James Cowan, Oshawa, Ont.; D. W. Karn, Woodstock, Ont.; Lt.-Col. Gartshore, London, Ont.; Isaac Waterman, London, Ont.; G. H. Lees, Hamilton, Ont.; C. A. Birge, Hamilton, Ont.; C. R. H. Warnock, Galt, Ont.; J. Rowley,

Ottawa, Ont.; Geo. Lang, Berlin, Ont.; James Goldie, Guelph, Ont.; John Bertram, Dundas, Ont.; John Foxman, Paris, Ont.; W. W. Cox, St. Catharines, Ont.; H. Yeigh, Brantford, Ont.; John Hewton, Kingston, Ont.; J. Bailey, Montreal; J. B. Rowland, Montreal; E. Jougas, Montreal; D. Morrice, Jr., Montreal.

The Committee as now constituted includes, besides the president, first vice-president, vice-president for Ontario, and treasurer, 26 other members residing in Toronto, and 22 residing elsewhere in Canada.

There is no executive officer, and the secretary is to be appointed by the Executive Committee.

Every application for membership must be endorsed by an active member as proposer, and by another active member as seconder, to be acted upon at a next meeting of Executive Committee.

The fiscal year is to begin on the first day of August, and the general annual meeting to be held on some day to be named by the president, during the month of August or September.

At regular annual meetings, fifteen members present will form a quorum, and at other meetings of the Association, ten members, and of committees, five members.

No member shall be entitled to the privileges of the Association until his fees shall be paid, as provided by the by-laws, and any member whose annual fee remains unpaid on the date fixed by the by-law, shall cease to have the privileges of membership until all dues are paid.

The fee for active membership is \$10 per annum, the first payment becoming due on election, and subsequent payments on the first day of each succeeding August thereafter.

All resignations of office or membership shall be in writing, to be submitted to next meeting of Executive Committee. All dues must be paid in full before a resignation can be considered. Proposed resignations must be in the hands of the Executive before August 1st, to relieve the payment of dues for the following year.

The by-law having reference to "Expulsion," declares that any member may be adjudicated upon by the Executive if charged with conduct unbecoming a member of the Association, but it is not stated what is to constitute such unbecoming conduct. If, in the opinions of a quorum of five members of the Executive, action should be taken thereon, the president or a vice-president shall appoint a sub-committee to investigate. The sub-committee having reported, and the report having been considered by the Executive, the member so charged with unbecoming conduct, shall have ten days' notice to appear at next meeting of the Executive to defend himself; and the Executive may, by a majority vote suspend, or by a two-third vote expel the offender.

THE PHILADELPHIA COMMERCIAL CONGRESS.

Mr. P. G. VanVleet, of THE CANADIAN MANUFACTURER staff, was a delegate to the recent Commercial Congress in Philadelphia, where he obtained a great deal of information that cannot but be very valuable to the clientele of this journal. He was, we understand, probably the only delegate from any commercial body in Canada who attended every session of the Congress. Mr. Van Vleet report contains the following:—

The First International Commercial Congress ever held in the world, assembled in the city of Philadelphia, in October last. It was composed of 292 regularly appointed delegates representing Governments, Boards of Trade, Chambers of Commerce and Trade Associations existing outside of the United States, and 143 delegates from similar Associations within that country.

The foreign delegates represented 39 different countries, Australia leading with 25, Canada and Germany with 15 each, Austria-Hungary, 17; West Indies, 15; Japan, 14; Costa Rica, Honduras and Nicaragua, 9; Colombia, 9; Mexico, 9; Great Britain, 9; Peru, 6; Spain, China, South Africa and Brazil, 4 each; Argentina, Belgium, Chili, France, Hawaiian Islands, India and Italy, 3 each; 2 each from Maderia, Norway, Portugal, Russia, Sweden and Venezuela, and 1 each from Arabia, Bolivia, Ceylon, Denmark, Ecuador, Guiana, Paraguay, Roumania, Siam, Switzerland and Turkey. Great Britain and her Colonies were represented by over seventy delegates.

The delegates assembled on October 12th, at the City Hall, and, led by the Mayor of the city, were taken in carriages to the Exposition grounds. The platform of the auditorium was occupied by the representatives of the United States Government and the Diplomatic Corps. Hon. Geo. G. Edmunds, of Vermont, was the presiding officer, and an address of welcome was delivered by Hon. David J. Hill, Assistant Secretary of State.

In the evening a reception was tendered to the delegates by the Mayor, which was attended by nearly 2,000 representative business men.

There were thirty-six sessions of the Congress held, presided over at different times by such men as Hon. Thomas B. Reed, Hon. Boies Penrose, Dr. W. P. Wilson, Hon. Cornelius N. Bliss, Hon. Everett Frasier, Consul-General of Corea, Sir Horace Tozer, of Queensland, Sir Andrew Clarke, Lieut. Governor of Victoria, Dr. Seth Low, of Columbia University, Dr. Elliott, of Harvard, and others equally eminent in national, educational and commercial circles.

At the opening of the second day's Congress, the presiding officer, Hon. Thomas B. Reed, said:

"Whatever doubts may have arisen by reason of scientific discovery or political dispute, I am one of those who cling to the belief of my childhood, that God made of one blood all the nations of the earth. In His wisdom he did not see fit to make these blood relations acquainted. That task, so intimately connected with the progress of mankind, He has left to us. He placed between us broad rivers, weary deserts, mutual fear and mountains. We have spanned the rivers, we have crossed the deserts, we have scaled the mountains, mutual fear alone still lingers. Much has been done, but much remains to do. Only five hundred years ago this continent was hidden from the Old World by a trackless sea, but the three thousand miles of distance have been bridged by the genius of man, so that to-day the European coast is not farther off than Philadelphia used to be from New York within the lifetime of this republic. All the Americas and the Old World lie before our view. We desire to become acquainted with you; we desire that you should become acquainted with us. To this generation and the next are open broader possibilities than were ever open in the history of the world. All the inventions which devour time and space are the harbingers of trade; and trade, when it has its senses, is always a harbinger of peace."

Canadian representatives presented several papers, among them being those offered by Hon. R. H. Dabell and Messrs. Henry Miles, of Montreal, D. W. Bole, of Winnipeg, and W. F. Cockshutt, of Toronto. The latter named gentleman, early in the Congress, presented the following resolution:—

"Resolved—That in the opinion of this Congress the transportation problem is of the greatest importance to the western agriculturist, miner and lumberman, and with the completion of the canal system of Canada to a uniform depth of fourteen feet, which can be used on equal terms by the ships of the United States and Canada, the large consumption of

American products by Canada and the community of interest existing between the two countries, justifies the request that the use of the inland waters and canal systems of both countries be extended to the shipping of each on equal terms, including unrestricted trade between all ports."

During the discussion concerning trade relations between the United States and Canada, allusion to the navigation laws of the two countries created much interest and led to the production of much valuable information and to the conclusion that Canada was suffering an injustice at the hands of her neighbors which should be speedily righted.

Mr. Cockshutt's resolution was seconded by Mr. F. F. Smith, an American delegate, and was carried by a large majority.

The papers presented and discussed at the Congress may be classed in a general way as follows:—

First—Those showing the character of the raw materials most abundant in each country; where they could be best marketed, and under what conditions markets could be enlarged.

Second—Showing the chief manufactured products of each country and the countries consuming them; the aids to or restrictions placed on trade by the various nations, and suggestions as to the bettering of facilities and easier exchange of trade between them.

Third—Those showing the great need for and the saving that would result to commerce through the universal adoption of uniform bills of exchange, standards of money values, freights, and weights and measures, extension of shipping and banking privileges, etc.

Fifth—Regarding the parcels post question.

Sixth—Regarding technical education and its advantages.

Seventh—The necessity for the technical education of Consuls and Consular and Commercial agents.

Eighth—The compiling of all countries of Consular and Commercial reports following certain uniform styles, to be exchanged freely with all other countries and supplied without cost to commercial bodies.

Hon. H. Llewellyn Smith, special representative of Her Majesty's Government of London, during the second day's Congress said:—

"I may tell this Congress that at this moment there is being organized in connection with the Board of Trade which I represent a special branch or department for the diffusion of commercial intelligence, not so wide in its scope, not on such a large scale, not precisely with the same objects as the great Philadelphia Museum, from which we have so much to learn, but akin to it in object for promoting by every means within the power limits of public action the spirit of accurate and full commercial information."

The same gentleman, during the Congress, read a paper on the "Uniformity of Trade Statistics," and a resolution was adopted favoring such a proposal. During the discussion of these matters, Mr. William Angus, a member of the London Chamber of Commerce, voiced sentiments to which the Congress gave a hearty response. He said:—"They were told that the jealousy of commerce will prevent governments from working together; but surely the uniformity of trade statistics must be a convenience to all. All useful information stimulates trade, and anything that promotes trade benefits civilization. This jealousy of commercial nations is only a survival of the early instincts of savagery, when every man fought for his own existence. I cannot understand why one nation should fear the commercial progress of another, surely every country benefits by the industry of other countries. It is the sluggish nation which we ought to fear, for they produce nothing, and thus clog the wheels of advancing civilization. Let us adopt every means of assisting trade throughout the world; drop the old prejudices against rival nations, and, following up the generous and enlightened policy now begun by the Philadelphia Commercial Museum, all work together to encourage commerce and raise the standard of human life."

From a social standpoint the sojourn of the delegates in Philadelphia was exceedingly agreeable, and the excursion to Washington a most delightful event.

All credit is due to Dr. W. P. Wilson, director of the Museums, whose brain conceived this Congress and brought it to a successful issue, ably assisted by Mr. W. H. Schoff, foreign secretary, and the other officers.

PROBITY IN BUSINESS.

Toronto has recently been, and is yet much interested in the question as to whether the foundations of the new city market are sufficiently strong and substantial for the purpose for which they were intended, and whether the piers upon which the roof is to be erected, have the strength and stability to withstand the wind pressure which, at times, is very great. The matter was brought to the attention of the city authorities, and of the community by the Dominion Bridge Company, who have a contract with the city for building the metal roof of the new market. With a large portion of the materials on the ground ready for erection as soon as the piers are finished, and the balance at the company's works at Lachine equally ready, the engineers of the company discovered that the foundations of the piers themselves would be insufficient to withstand the wind pressure to which the roof would at times be subjected, and in the interests of the city and to avoid the possibility of a great calamity by which human lives would be sacrificed, beside the destruction of costly property, the company hesitated to proceed with the work until the circumstances had been thoroughly understood. It is to the credit of the Dominion Bridge Company for having brought the evident defects in the plans to the attention of the city. During the consideration of the matter by the Board of Control, it was suggested that delay caused by altering plans, etc., might give rise to claims for damages, but Walter Burwick, Esq., Q.C., on behalf of the company, at once stated that his clients did not approach the question with any desire to have any dispute involving damages, and was ready to meet the city in the most friendly manner if time were required, to make proper examinations with a view of deciding what course should be adopted.

Fuller particulars are as follows:—

The Dominion Bridge Company are the contractors to construct the roof of the new market building at a contract price of \$58,590. In October, 1899, the company's engineer called the attention of the city's architect to the fact that the piers which were to be built to support the roof were not of sufficient strength. A good deal of correspondence passed between the engineer and the architect, and, finally, as the company was unable to get the architect to correct his plans, the matter was brought to the attention of the Mayor, by letter, dated January 16th, requesting the consideration of the city to the report of the company's engineers that the brick piers then in course of erection were not of sufficient strength to carry the wind loads. The matter was brought before the Board of Control on January 19th, when it was referred to the City Engineer and Mr. J. Wilson Gray, architect, for a report upon the communication of the Bridge Company.

The Bridge Company took the opinion of Prof. Galbraith Principal of the School of Practical Science, in Toronto, and

of Mr. J. A. Duff, Lecturer in Applied Mechanics at the same school. These reports confirmed the report of the company's engineer. The following are extracts from a letter from the Director of the Meteorological office at Toronto:

"A year scarcely ever passes without a velocity of over 40 miles being recorded as the average for one hour, and it may be said that an average velocity of 40 miles probably in most instances means squalls of over 50. Within the past thirty years an hourly velocity of 50 miles per hour has been exceeded on some six or seven occasions, and there are a few instances when during thunder squalls in summer, velocities of over 70 miles have been recorded during short intervals. A velocity of 20 miles per hour means a pressure of 2.00 lbs. per sq. ft.; 30 miles, 4.50 lbs.; 40 miles=8.00 lbs.; 50 miles =12.50 lbs.; and 60 miles=18 lbs.; 70 miles=24.5 lbs. Upon the 13th day of October, 1893, for two consecutive hours, the wind gauge at Toronto recorded a velocity of 57 miles per hour."

On January 31st Messrs. Gray and Rust made a joint report to the Board of Control, which is as follows:—

GENTLEMEN,—In compliance with instructions contained in a letter from your Board of the 19th inst., that we should report as to whether the brick piers now in course of construction at St. Lawrence Market are of sufficient strength to carry the wind loads, we beg to report as follows: To aid us in arriving at our conclusions we were assisted by Mr. C. H. C. Wright, assistant professor of the School of Practical Science, and Mr. C. B. Smith, of the City Engineer's department, who was formerly an assistant professor of engineering at McGill University, Montreal.

We have gone into this matter from different standpoints, and have also had the opportunity of seeing the report of Prof. Galbraith and Mr. J. A. Duff, his assistant, who make separate reports to the Dominion Bridge Company, and for the information of the Board we attach copies of these.

The conclusions we have arrived at are practically the same, and we find that the piers, as designed, are not of sufficient strength to withstand the force and effect of the wind which they would be called upon to bear. Taking the most liberal view of the matter, we find that the piers are not capable of standing a wind pressure of more than four pounds per square foot. In these calculations we have presumed that the piers are of sufficient strength to carry the dead load, but as we have had no opportunity of making a proper examination of the foundations, we are not prepared to assume any responsibility as to this.

The Bridge Company have also called the attention of the Mayor to the fact that enquiry ought to be made into the foundations for the pedestals on which the columns carrying the ground floor are to rest, as the company are informed these foundations are insufficient. The enquiry into this question did not come within the province of the report to be made by Messrs. Gray & Rust.

In connection with the question of wind pressure we have consulted different authorities, and find that the British Commission for Bridges recommended 56 lbs. per square foot.

Actual records in Liverpool.....	42 lbs.
Used in recent design for large building in Kansas City.....	50 lbs.
Used by Smeaton.....	40 lbs.
Used by Prof. Bovey, in his text book, "Theory of Structure and Strength of Materials".....	30 lbs.
Used by Johnson, in his text book.....	30 lbs.
Report from the Toronto Observatory gives frequent velocity of 60 miles an hour..	18 lbs.

The Observatory also gives one blow of 70 miles an hour, which equals 24½ lbs.

It will be seen from the above that a pressure of 25 lbs. per square foot is the least that should be provided for.

For the purpose of proceeding with these calculations, we considered it necessary to have one of the piers recently erected taken down to ascertain the condition of the masonry, and found that the piers as constructed are not built in as strong a manner as should be for a work of such magnitude, inasmuch as the core is built of the bricks taken from the old building, and of a different size to the pressed brick facing, which prevents satisfactory bonding between the outer and inner portions of the work, and the mortar used is common lime mortar.

AMERICAN PIG IRON PRODUCTION.

Mr. Swank, general manager of the American Iron and Steel Association, publishes in The Bulletin complete statistics of the production of all kinds of pig iron in the United States in 1899; also complete statistics of the stocks of pig iron which were on hand and for sale on December 31, 1899. Twenty-one states made pig iron in 1899 against nineteen in 1897 and 1898. The total production in 1899 was 13,620,703 gross tons, against 11,773,934 tons in 1898, an increase of 1,846,769 tons, or nearly sixteen per cent.

The following table gives the total production of pig iron in the United States in the last twenty-one years.

Years.	Gross tons.	Years	Gross tons.
1879	2,741,853	1890	9,202,703
1880	3,835,191	1891	8,279,870
1881	4,144,254	1892	9,157,000
1882	4,023,323	1893	7,124,502
1883	4,595,510	1894	6,657,338
1884	4,097,868	1895	9,446,308
1885	4,044,526	1896	8,623,127
1886	5,683,329	1897	9,652,680
1887	6,417,148	1898	11,773,934
1888	6,489,738	1899	13,620,703
1889	7,603,642		

The production in the second half of 1899 was more than a million tons greater than in the first half.

EDITORIAL NOTES.

In his series of contributions to London Engineering on "American Competition" Captain Robert W. Hunt, of Chicago, sums up some of the changes of the last twenty-five years very succinctly as follows: "When Sir Lowthian Bell, in 1874, contributed to the Iron and Steel Institute his paper in which he gave strong reasons why it would ever be impossible for iron to be made more cheaply in the United States than in England his arguments were based on geographical and physical obstacles which then appeared to be insurmountable. The geographical obstacles remain unchanged, but some of the physical have been greatly altered. The ore beds are no nearer the sea; the coal is as far away from the furnaces; and American labor still demands, and receives, higher pay; but the cost of mining and transporting the ore has been reduced; coal and coke prices have been made less to the consumer, and labor produces more per day per man."

Australian federation is clearly bound to bring Australia a system of protection against foreign products in its train. Hitherto, some of the Australian colonies have maintained

rather high tariffs, but New South Wales, the most populous colony, has been committed to free trade. Now it appears certain that there will be a general system of protection to home industries. The manufacturers are already organizing for a vigorous campaign in the interest of the protective system, and they will doubtless overcome the comparatively indifferent and unorganized opposition. The establishment of a protective tariff, covering the whole island continent of Australia, will mean a good deal to the United States. It will interfere, more or less, with the export trade which we have been building up rapidly with the British colonies in the antipodes, and it will alter the character of that business which will be enjoyed by American exporters in spite of the Australian tariff. We shall sell less finished merchandise after a while, and more machinery to make things that Australia can well produce at home. There will be a better market in Australia for products of the United States which will serve as the raw material of Australian manufactures. All parts of the trade between the two countries taken together, it is likely that the total will not fall off, no matter what scheme of protective duties the Australians may adopt. The rate of increase in American exports to the Australian colonies of Great Britain may not continue so high as it has been lately, but there will doubtless be steady expansion for many years to come.—Cleveland, Ohio, Leader.

Now some enterprising American proposes to take advantage of the good-feeling existing between Britain and Canada and the gratitude of the Mother Country for the help, physical and moral, which Canada has given to her in the late war. These Americans—among them a pickle maker—propose to come to Canada and establish factories here, not only for the supply of the Canadian market, but for the supply of the British market, the American makers here to pose as Canadians and to fill the gratified Britishers with Canadian cucumbers, onions and cauliflowers, who will swallow them because of the fact that they are to be put up in Canada.—Hamilton Spectator.

If an American establishes a pickle factory in Canada it will be a Canadian industry and the capital required will be a Canadian investment. It will give employment to Canadian labor, and the necessary cucumbers, onions and cauliflowers will be the products of Canadian soil, cultivated by Canadian farmers. What is the Spectator kicking about?

The Province of Ontario has now taken definite action on the pulp wood problem that has occupied the attention of her statesmen and manufacturers for many months. An Order-in-Council prohibits the exportation of pulp wood cut on crown lands after May 1st next. Such wood must be manufactured into pulp at least before it is exported. New regulations have been framed to govern the cutting of timber, and everything is ready to put the machinery of the law into effect on the date named. That the Province of Quebec will take some action to restrict the exportation of pulp wood is also a certainty, but its policy will probably be to raise the stumpage dues to a high figure, and allow a rebate on all wood manufactured in the province. At all events, it is practically a certainty that Americans will not have the privilege of getting supplies of pulp wood from Canadian crown lands. The new order of things will not affect the exportation of pulp wood cut on private lands, however, and much of such wood is available if we want it. As for the rest, we can now convince Canada that we do not need her pulp wood, and that it is entirely beyond her power to injure or influence our paper and pulp industry.—The Paper Mill.

What was it the fox said about the grapes?

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| <ol style="list-style-type: none"> 1. The enactment of uniform laws relating to bankruptcy throughout the whole Dominion ; 2. The improvement and simplification of our patent laws and laws relating to trade marks and copy right ; 3. The uniform customs appraisement of merchandise ; 4. The uniform classification of freights on all routes of transportation ; | <ol style="list-style-type: none"> 5. The establishment and maintainence of cold storage systems in our important commercial centres, and on railroads and steamships ; 6. The improvement of the facilities for transportation by the extension of railroads and canals according to the requirements of the country ; 7. The taking of such measures as may tend to extend our trade relations with the Mother Country, Sister Colonies and Foreign Lands. |
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ASK FOR INFORMATION.

Any enquiry addressed to THE CANADIAN MANUFACTURER will result in placing the writer, if he so desires, in communication with Manufacturers, Buyers or Sellers of any sort of merchandise in Canada or any other country.

Merchants, Importers, Exporters, Boards of Trade, Chambers of Commerce and Commercial Organizations in any part of the world are invited to make full use of the facilities afforded by THE CANADIAN MANUFACTURER whenever they may desire information about any article produced in Canada, Tariff Law, Customs Regulations, Routes of Transportation, etc.

If You want Anything, Ask for It.

If You want Information, Ask for It.

Address,

**THE CANADIAN MANUFACTURER,
TORONTO, CANADA.**

The lumbermen and manufacturers and business men of Tonawanda are thoroughly aroused over the proposition to dam the Niagara river. They say that such a step would destroy the great lumber trade and the manufacturing and commerce at one sweep. Organized and determined efforts will be made to defeat the bill if it passes Congress. The fight will be carried into the Canadian Parliament. A ship canal from Buffalo to Tonawanda will not do, say those who have millions invested in lumber yards and iron manufacturing industries. They will oppose to the end the Corliss bill, believing that it menaces millions of invested capital. In fact, the idea of stopping the flow above Tonawanda is pronounced as visionary, not impracticable, but ruinous to many interests. It is thought that if levels must be maintained the starting point should be at the Straits of Mackinac or at several different places in the rivers, commencing, perhaps, at Port Huron and continuing the lock gates wherever desirable from there down. I find quite a difference of opinion, however, on the subject, as what one says is right, the other maintains is wrong, but the general opinion is that damming Niagara is not quite the principle to pursue.—Buffalo correspondent of the Cleveland Marine Record.

A press despatch from Toledo says that the first important practical test of wireless telegraphy in this country will be made by the Ann Arbor Railroad, which will endeavor to operate by it from Frankfort, Mich., to Menominee, Wis., across Lake Michigan. The road operates a car-ferry service between those places, and at present is compelled to depend upon a line through Chicago for telegraphic communication. During stormy weather it has experienced no end of delays with this line which has hindered the operation of its boats.

It is too early to attempt any forecast of the future trade prospects in South Africa. The people of this country are determined at whatever cost to "see the thing through," and the commercial status of South Africa will at no distant date be settled upon a permanent basis. When that settlement comes about there can be little question that it will bring with it a largely increased trade between Great Britain and her South African possessions. An impetus will undoubtedly be given to trade and commerce in every class of merchandise. Not only are stocks reduced in Cape Colony and Natal, but whatever the form the future Government of the Orange Free State and the Transvaal may take, it is clear that stores in those countries will also be reduced either by ordinary measures of exhaustion or by commandeering, and the merchants who carry on the commerce of those districts will require to give "shipping orders." Although German and American merchants will be ready with samples and quotations, we have an idea that under the circumstances likely to exist, British merchandise will lead, and that British hardware will follow in the wake of the British flag.—Ironmonger's Chronicle.

A plan, so far as developed, is to have every useful article manufactured from Indian corn on exhibition at Paris; corn meal, corn flour, hominy, starch, sugar, syrups, caramels, candies of all kinds, oil, soap, the substitute for gutta-percha, and corn-pith cellulose. In fact, everything produced from this American cereal by mill, manufactory and glucose works. In addition to these displays, it is proposed to establish in connection therewith an Indian Corn Kitchen and Restaurant, where the people coming from all lands can be served with well prepared and well cooked corn bread, corn puddings, corn fritters, corn dodgers, Johnny cake, hoe cake, corn gridle cakes, popcorn, hominy mush, succotash, and the innumerable dishes that Americans relish. It is hoped by this means to get people of other nations to appreciate the value of Indian corn as a food-stuff for human beings, whereas it is now almost altogether regarded by them as suitable only for cattle feed. A feature of the exhibition, as planned, will be the free distribution of samples of corn meal, corn flour, and hominy, with which will also be given pamphlets, printed in various languages, setting forth the best way to cook the various dishes, so that they will be appreciated and win favor among those who have never known the joys of American cooking. The American visitors to the Exposition will doubtless contribute much to the success of the restaurant of the corn palace, as they will be able nowhere else to obtain this peculiarly American delicacy.—Implement Age.

OPPORTUNITIES FOR CANADIAN TRADE.

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

NOTE—Those who may wish to correspond with any of these enquiries 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.

134. Enquiry has been made on behalf of an importing firm for the names of reliable shippers of Canadian fruit pulps.

135. A party desiring to import wood powder in quantities of 5,000 to 10,000 tons per annum, wishes to get into communication with Canadian producers.

136. A wholesale brush manufacturer has been asked to be referred to a London agent who could submit prices.

137. A firm of bullion melters, refiners, and assayers, who have a completely equipped plant for experimental work, are desirous of communicating with Canadian firms wishing to have small trials carried out on parcels of gold and other ores.

138. Enquiry is made for Canadian importers of glass tubes for water gauges by a firm desirous of establishing an agency for these goods in the Dominion.

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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 on these pages, and to every concern in Canada interested in any manufacturing industry whatever, this interest extending to supply houses also.

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

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

The efficiency of the Sturtevant Exhaust Head is emphatically shown by the following letter, received by the B. F. Sturtevant Co., of Boston, from the Frost & Wood Co., of Smith's Falls, Ont. It reads: "Allow us to add that we have never paid with greater satisfaction an account for an article of this description, than we paid for your steam exhaust head. It has given us every satisfaction, and we would not be without it for several times what it cost. It should prove invaluable to steam users in a cold climate. Previous to using this we were greatly bothered with an accumulation of ice from the exhaust spray. This has now been entirely overcome."

The National Cycle & Automobile Co., who have recently commenced the manufacture of bicycles, automobiles, etc., in the city of Hamilton, Ont., intend operating their works by electricity, and have placed their order with the Royal Electric Co., of Montreal, for two 30 h.p. S.K.C., induction motors.

The cheese box factory of S. Bickel, Peterborough, Ont., was destroyed by fire recently. Loss about \$3,000.

The B. F. Sturtevant Co., of Boston, Mass., have received the following, unsolicited letter from James McKinney & Son, of Albany, N.Y., which, because of its character seems worthy of publication. "It may be of interest to you to know that when our firm was established in 1857, we put in the first Sturtevant blower for cupola purposes that was used in Albany. When we built our present works in 1872, we put in the second blower of your make, of much

larger capacity than the first one, and which has given us continuous good service ever since. We have always taken a good deal of interest in the question of melting iron, and in comparing notes with other foundrymen, we have not yet found anyone doing any better melting, with the same amount of fuel, than ourselves. It is for this reason that when we took up the question of induced draft for our boiler, we turned to the Sturtevant blower for the third time, and did not consider any other make. We are expecting that our experience with this third blower will be just as satisfactory as with the other two. We also run all of our blacksmith fires with one of your blowers, and begin to think that we are becoming old customers after having used them for forty-two years."

The capital stock of the Maritime Milling Co., New Glasgow, N.S., has, by supplementary letters patent, been increased to \$2,000,000.

The Canada Asphalt Paving Co., Montreal, has applied for incorporation with a capital stock of \$50,000, with provisional directors as follows:—R. L. Dillon, G. A. Dillon, both of Montreal, A. W. Godson, Toronto.

T. E. Braime & Co., Toronto, has been incorporated with a capital stock of \$40,000, to manufacture clothing, umbrellas and neckwear. The provisional directors are:—T. E. Braime, W. M. Douglas, and A. G. Malcolm, all of Toronto.

We are in receipt of a circular from the Rockwell Engineering Co., 26 Cortlandt Street, New York, in which they advise us that they have succeeded to the business

formerly conducted by W. S. Rockwell & Co., this being deemed advisable for the better execution of the rapidly growing business of the old firm, and as a proper means of associating in the new Company a corps of skilled engineers who have by their energy and good judgment done much to increase the business. Mr. Rockwell, who, we understand, remains with the new company, is well and most favorably known in Canada, having established his system for burning fuel oil in some of the largest factories in this country.

The Cling-Surface Manufacturing Co., Buffalo, N.Y., have sent us their new catalogue, which shows what Cling-Surface is doing. When applied to belts it is very different from money, for money will slip away and Cling-Surface will not allow the belt to slip. About every reader of this journal uses belts in his works, and as the slipping of a belt means loss of power, he should use every effort to prevent the loss.

The Packard Electric Co., St. Catharines, Ont., have sent us a circular having reference to the "Improved Perfection" incandescent lamp guard, and of it they say:—In the "Improved Perfection" the only objectionable feature of wire lamp guards, that of having to detach guard from socket in order to handle the lamp, is entirely removed. The "Improved Perfection" guards are made to open and close in the middle, so that the lamps can be cleaned and handled with the greatest possible ease. For convenience, simplicity, firmness and neatness the "Improved Perfection" cannot be equalled.

The Pratt & Litchworth Co., of Buffalo, who are about to open a Canadian factory for the manufacture of steel castings, etc., at Brantford, Ont., have placed their order for their electrical equipment with the Royal Electric Co. This order includes one 40 h.p. and two 15 h.p., S.K.C. induction motors, with transformers and condensers.

The transport Milwaukee, which has been chartered to carry the Canadian cavalry to South Africa, is being fitted with electric lights. The installation includes a 10 K. W. multi-polar dynamo and switchboard, which is being supplied by the Royal Electric Co. This is the second transport for which this company supplied the electrical apparatus.

Messrs. Lawry & Son, pork packers, Hamilton, Ont., have added to their electrical equipment a seven h.p. S.K.C. induction motor purchased from the Royal Electric Co.

INGERSOLL-SERGEANT Rock Drills

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The Nickel Copper Company of Ontario has applied to the Ontario Legislature for power "to increase the capital stock of the said company to the sum of ten million dollars; and granting to the company power to amalgamate or enter into special agreements with and to purchase or acquire the shares and securities of any other company or companies having objects altogether or in part similar to those of this company, and granting authority to such other company or companies for such purposes; and for the purpose of constructing and establishing railway switches, sidings and spurs for connecting the works of the company with any railway or railways, with all necessary yard room for the operations of the company in connection therewith, granting to the company powers of expropriation with respect thereto under the provisions of the railway act of Ontario; and for changing and fixing the number of directors of the company and for other purposes." John Patterson is provisional secretary of the company.—Hamilton Spectator.

The Canadian Rubber Co., of Montreal, and the Gutta Percha and Rubber Co., of Toronto, are sending a joint circular to the trade as follows:—"As crude rubber, cotton fabrics, and other ingredients have persistently advanced, and, in our opinion, show no prospects of decline, we are obliged to advance all prices on rubber belting, packing hose, and mechanical rubber goods about five per cent., the same to take effect on February 1st, 1900. In making this advance, we are only partially following what has been found imperative by rubber manufacturers generally.

The South African Mutual Life Insurance Co., of Port Elizabeth, Cape Colony, has awarded its contract for a complete electric light plant to the Royal Electric Co., of Montreal, Can. This plant consists of two 50 h.p. locomotive boilers, two 10x8 high speed engines, direct connected to two 22½ k.w. direct current generators; a marble switchboard and a set of storage batteries, the whole to be installed in the South African Mutual Life Insurance Co's. new premises at Port Elizabeth.

The Austrian post-office is to try a "telegram card," on which a person writes a message and posts it in the usual way, but the post-office telegraphs the contents, which are delivered to the address by the postman. The plan is a combination of post and telegraph, and seems useful as having a

cost and speed intermediate between post and telegraph.

At 11 o'clock on Tuesday night, January 9th, fire occurred in the power house of the St. Jerome Light and Power Co., St. Jerome, Que., which totally destroyed their electric plant. On Wednesday afternoon at 3 o'clock the Royal Electric Co., was instructed by the St. Jerome Co., to forward them, as quickly as possible, a 75 k.w. S.K.C. generator complete with exciter and switchboard. The entire outfit went forward that evening, was received in St. Jerome Thursday morning at 10 o'clock, the destroyed plant was removed and the new one put in its place, and the lights turned on as usual at 6 p.m. on Friday, or forty-eight hours after the receipt of order by the Royal Electric Co., in Montreal, lights were again burning in St. Jerome. This is quick work and shows what can be accomplished by thoroughly wide awake people.

The Goderich Organ Co's. factory at Goderich, Ont., was partially destroyed by fire, February 4th. Loss about \$25,000.

The Headingly Milling Co., Headingly, Man., has been incorporated with a capital stock of \$20,000.

The shingle mills, sash and door factory of W. L. Tait & Son, Vancouver, B. C., was recently destroyed by fire.

The Canadian Canoe Co., Peterborough, Ont., have sent in their new illustrated catalogue and price list, having reference to the canoes and boats built by them. Without doubt the catalogue will prove interesting and furnish all the information in the canoe line which one might desire; and who is the person, old or young, man or woman, youth or maiden, boy or girl, who does not envy a friend who possesses a canoe and uses it in suitable weather—as all owners do—if he or she happens not to have one. The catalogue describes canoes of several sizes, built of different kinds of wood, finished in different ways, and at prices to suit all circumstances. The present is the time to investigate the canoe question, that is if it is wanted at the opening of the season. Send for the catalogue.

The town council of Neepawa, Manitoba, in accepting the electric power plant recently installed by the Robb Engineering Co., passed the following resolution: "That this council have much pleasure in bearing testimony to the efficient manner in which J. F. Porter has installed the engine and boilers in connection with our

electric plant; and that a copy of this resolution be sent to the Robb Engineering Co."—Carried.

As suggestive of the fact that just as hot and fluid iron can be produced in a cupola operated by a fan blower, as is necessary even for stove foundry conditions, the following statement from James McKinney & Son, of Albany, N.Y., is of interest. We cannot use a dull iron, therefore the above melting (9½ lbs. of iron per lb. of coal) means that the iron comes out of the cupola just as hot as would be used in the ordinary stove foundry. We can melt on an average in our cupola five tons in not to exceed one hour. In many cases we do much better than this, depending upon how much we let the blast in. In a heat of ten tons we can melt the iron in from 1½ to 1¾ hours."

The John Morrow Machine Screw Co., of Ingersoll, Ont., have sent us their new illustrated catalogue and price list, having reference to the machine screws, special milled work, etc., manufactured by them. This concern has been long in the business in which they are now engaged, and no better goods are made in Canada.

The Cling-Surface Manufacturing Company, Buffalo, N.Y., are in receipt of a letter from E. C. Frost, chief engineer of the New Jersey State Reform School at Jamesburg, that State, which reads as follows:—"Under separate cover I send you negative of my belts. You will see there are three belts from two engines to three dynamos. The rear one, a 12-foot belt, 18-inch centres, has 17-foot slack; the middle one is an 8-foot belt, 16-inch centres, with 15-foot slack; the front one is a 4-foot belt, 13-inch centres, with 12-foot slack. These were not fixed up for the occasion, but are just as they run in every-day use. Before using Cling-Surface these belts were drawn as tight as fiddle-strings. I will say Cling-Surface does all you claim for it.

The St. Jerome Electric Light and Power Company of St. Jerome, Que., whose electrical plant was destroyed by fire on January 9th, have placed their order with the Royal Electric Company for one of their 75 k.w. S.K.C. generators complete, with exciter and switchboard.

The Sturtevant Mill Company, Boston, Mass., have just issued their 1900 circular, No. 12, fully describing their full line of crushing and grinding machinery; also catalogue No. 8, descriptive of their Roll Jaw fine crushers and centrifugal rollers. Those interested should send for these catalogues.

JOHN HANCOCK BLDG., BOSTON, November 6, 1899.

N. ENG. BRANCH CLING-SURFACE MFG. CO.

We have been using Cling-Surface for seven months and are now running our dynamo and other belts much. We take pleasure in saying that Cling-Surface is giving the best satisfaction.

JAMES STACKHOUSE, Supt.

Cling-Surface Does These Four Things :

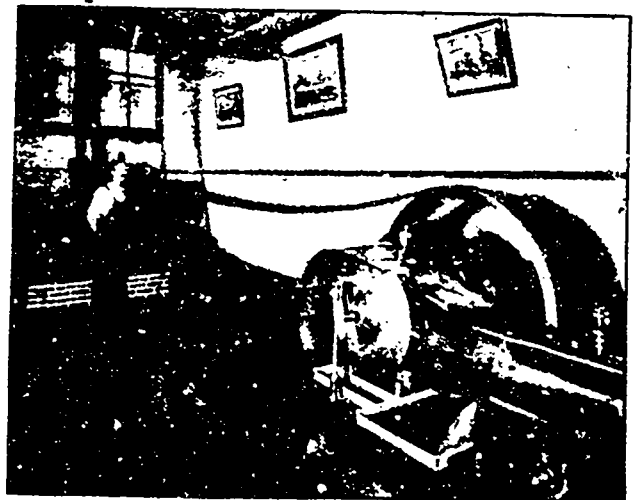
- 1.—STOPS SLIPPING.
- 2.—INCREASES POWER.
- 3.—RELIEVES INITIAL TENSION.
- 4.—PRESERVES THE BELT.

If it fails to do these you Pay Us Nothing.

CLING-SURFACE MFG. CO.

N. Eng. and E. Can. Branch: 120-126 Virginia Street,
170 Summer St., Boston. BUFFALO, N.Y.

New York Branch: Chicago Branch:
253 Broadway. 225 Dearborn St.



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ADVANCES IN PRICES.

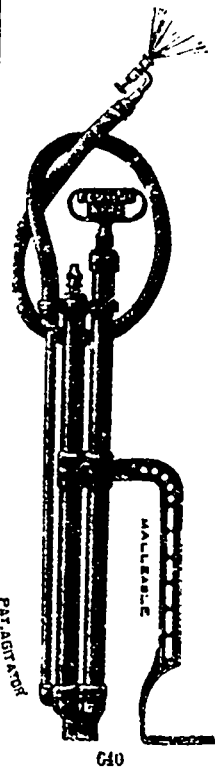
The Empire Drill Co., Shortsville, N.Y., manufacturers of grain drills, etc., have sent us a circular, in which they give a partial list of items of iron and steel materials used in making their goods, and the percentage of increase of cost for same in 1900 over that of 1899. The reference is to prices in the United States, but it is equally true in Canada:

	PER CENT.
Bolts	180
Chains	75
Hinges	35
Iron (Wrought)	163
" (Cast)	103
" (Malleable)	40
Lumber	40
Leather	100
Pipe	125
Rivets	89
Steel (Common)	180
" (Angle)	114
" (Discs)	72
" (Points)	75
" (Sheet)	64
" (Galvanized)	54
" (Spring)	100
Screws	108
Springs (Coiled)	140
Wire (Annealed)	40
Wire Nails	153
Wheels (Steel)	87

SPRAYING AND SPRAYING APPLIANCES.

The utility, and in fact the necessity of spraying as a preventive against the ravages of insect life in its numerous and destructive forms, and as a means of securing perfect fruit, becomes more apparent each year.

Perfect fruit always commands good prices even in years of the greatest plenty.

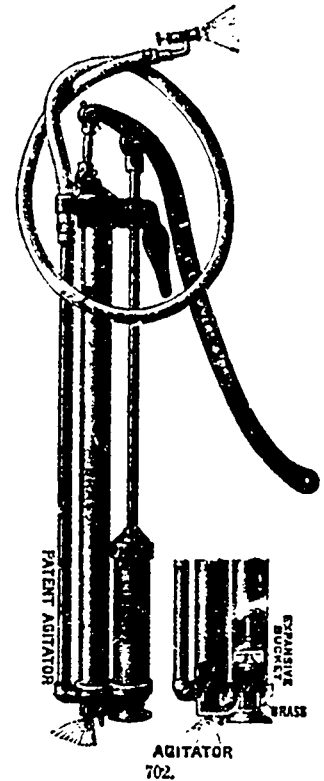


The appliances on the market for spraying are numerous and varied. We present in this issue the advertisement of one of the best known firms in the United States, viz., F. E. Myers & Bro., Ashland, O. This firm has long been known as manufacturers of up-to-date and reliable force pumps for wells. Their extended experience in this direction has enabled them to produce a line of spray pumps of equal merit.

In order that spraying may be done properly and effectively, the spray pump used must have a large air chamber to cushion the stream and give it force. It is no less important to have an agitator to keep the mixture properly stirred.

This latter feature is secured by their patent agitator, which discharges a small jet of water in the bottom of the pail or barrel, thus keeping the fluid always in a constant state of agitation. It will be apparent to any one that a spray

pump without an agitator is practically worthless, as the fluid otherwise will settle in the bottom of the vessel, part being too weak for benefit and the remainder so strong



that the foliage will be destroyed and the tree perhaps ruined.

Fig. 702 illustrates one of the numerous styles of barrel spray pumps manufactured

W. A. FLEMING & CO.

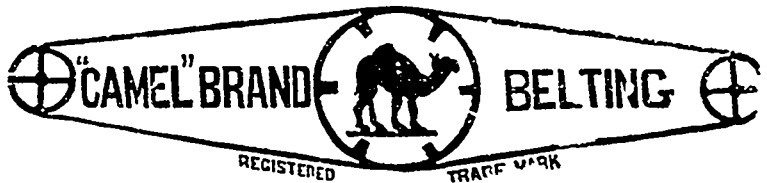
MILL SUPPLIES

CAMEL BRAND BELTING

HOSE of all kinds

DRIVING ROPE

BELTING of all kinds



57 St. Francois-Xavier St., Montreal.

The Stratford Mill Building Co.,
STRATFORD, - - - - - ONTARIO.

STEEL BOILERS—all Sizes,
THE BROWN AUTOMATIC ENGINE,
FLOUR MILL MACHINERY, CORN MILL MACHINERY
GRAIN CHOPPERS OF ALL KINDS.

We keep a Full Stock of Chain, Leather and Cotton Belting, Sprockets, Pulleys and Iron Work of all kinds.

Write for Prices.

We have one of the Most Complete Boiler Plants in Canada.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

by this firm. This is a powerful pump, having a large air chamber, and will, they say, always give satisfaction.

Fig. 640 illustrates their Imperial spray pump, to be fastened to a pail. This style of pump is very popular in the United States, and the sales of this particular pump have been very large.

Any one interested in securing the best spraying appliances will find it to his interest to write the manufacturers for their catalogue, descriptive of brass bucket, barrel, hydraulic, knapsack and fountain spray pumps; also atomizers, which this firm manufacture in great quantities.

The Cling-Surface Manufacturing Co., of Buffalo, N.Y., has just been incorporated under the laws of the State of New York, retaining the same name as heretofore, with Albert B. Young as President and General Manager, and Wm. D. Young, Vice-President and Secretary. The past year has been the most prosperous in the history of the company, and the demand for Cling-Surface they report to be increasing steadily. They have now three branches, one each in Boston, New York and Chicago, with others just opening in St. Louis and New Orleans, while the well-known importing house of W. J. Moxham & Co. of Sydney, Australia, has ordered a large shipment of Cling-Surface, with the exclusive right to handle it in Australia.

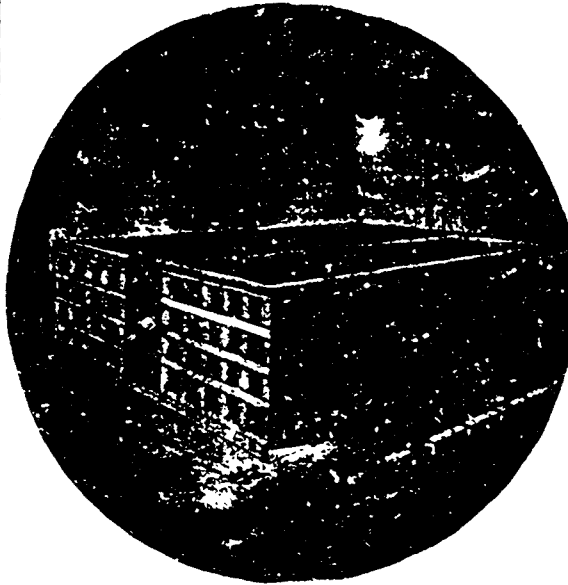
AN INDEPENDENT OIL COMPANY.

The Atlantic Refining Company, who commenced business in a small warehouse in Toronto about two years ago, have found it necessary to go into larger premises to enable

them to take care of their rapidly increasing business, and have recently located at the corner of Jarvis and Esplanade streets, in the large warehouse, as here shown, lately occupied by The Toronto Carpet Company, where they now have facilities for the rapid handling of their various lines of illuminating and lubricating oils.

The company inform us that they are independent of any monopoly or trust, and handle only high grade American products. Both the managers of the company are Canadians who have had twelve or thirteen years' experience as salesmen previous to commencing business on their own account, and are thoroughly familiar with all the branches of the trade, and are in a position to supply a satisfactory lubricant to manufacturers for all the different classes of machinery. We wish them success in their new home.

They report having shipped a car of lubricating oils to Winnipeg this week; also a car of elastic carbon paint to Halifax, and several carloads of high grade American burning oils to different points in Ontario.



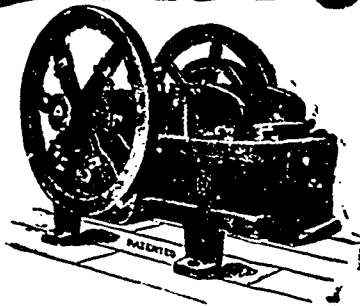
New home of The Atlantic Refining Company, Cor. Jarvis and Esplanade Streets, Toronto.

THE ONLY

FINE CRUSHER

DOES THE WORK OF

CRUSHER AND
ROLLS
COMBINED.



FOR

QUARTZ AND
ORES.

ROLL JAW CRUSHER.

Send for Circular. STURTEVANT MILL COMPANY, Boston, Mass.

Shafting—Hangers—Pulleys

FRICITION CLUTCH PULLEYS AND COUPLINGS

Rope Transmission of Power.

HANDSOME ILLUSTRATED CATALOGUE ON APPLICATION.

DODGE MANUFACTURING CO. OF TORONTO, Limited, - - TORONTO.

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F. E. MYERS & BRO.



A
Line
without an
equal on
the Globe.

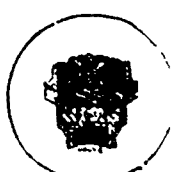
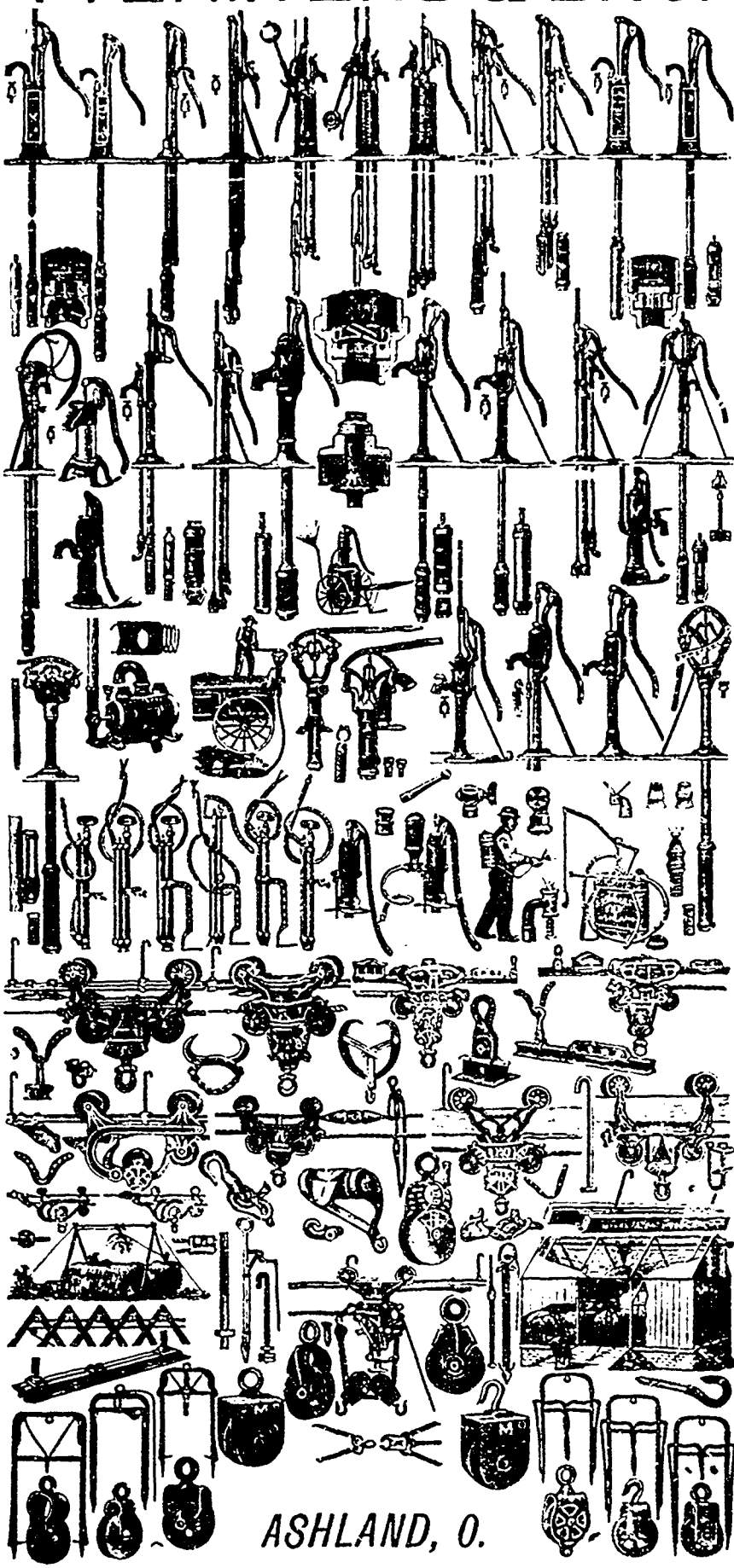
Write
for 1900
Large
Poster
and
Catalogue.

A
Complete
Line of
Force,
Lift,
Windmill,
Tank,
Power,
and
Spray
PUMPS.

A
Complete
Line of
Carriers,
Forks,
Pulleys,
Hooks,
Store Ladders,
Cycle Stands,
Gate Hangers,
and
Lawn Swings

CANADIAN
AGENTS
WANTED.

CANADIAN
AGENTS
WANTED.



ASHLAND, O.

PUMPS AND HAY TOOLS

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WHY SILK AND WOOL ARE EQUALIZERS OF TEMPERATURE.

It appears that the electrical properties of certain animal tissues were given to them for a purpose, for these properties are closely connected with the suitability of such tissues for use as a protective covering. Says the Literary Digest: It has long been noted that silk and wool (both animal products), become electrified by friction; while linen, hemp and cotton (of vegetable origin), are totally without electrical properties. The well-known French physicist, Charles Henry, has been experimenting to see whether this property may not be connected in some way with the ability of silk and wool to maintain a constant temperature, which makes them so useful as clothing, either natural or artificial. His results are thus communicated to La Nature by M. Henri Coupin:

"M. Henry tried in the first place to increase the electric properties of silk to a considerable degree and at the same time, if possible, to amplify its thermic qualities. He succeeded by incorporating with silk a

neutral preparation that had no effect upon its appearance. The electrical properties of this silk were much more marked than those of ordinary silk. . . . It was found that when this highly electric silk is heated it cools more rapidly than ordinary silk, and when it is cooled it cools less quickly than the ordinary kind. The electric properties of silk thus tend to assure constancy of temperature, producing cold upon elevation of temperature and heat upon cooling.

"M. Henry explains the mechanism of this autothermic regulation by means of electric discharges. When the tissue is heated, the air included in the interstices expands; it thus is forced out of the tissue, rubs against it, and is electrified; being electrified it discharges upon the tissues; but this movement determines a current of air at the surface of the tissue and consequently a cooling. When the tissue is cooled, the air in the interstices contracts, and thus again rubs and is electrified. It then discharges toward its point of departure. The air thus sets up a vibration and prevents the access of cold air from the exterior, producing a relative heating. To sum up, in elec-

trifiable tissue there is during heating a tendency to cooling, and during cooling a tendency to heating."

ELECTRICAL DEVELOPMENT IN CANADA.

The Niagara Falls Park Commissioners have practically agreed, after some modifications, to the plans for developing power on the Canadian side proposed by a syndicate of capitalists, including gentlemen from New York, Buffalo, and Canada, represented by General Field of Buffalo. The financial terms have also been definitely determined upon, and it only now remains for the engineers of the syndicate to prepare an agreement and specifications in order that the whole matter may be submitted to the Ontario Government for their ratification. Unless some unforeseen hitch occurs, there is every likelihood of an industrial development nearly equal to that which has been effected at Niagara Falls, N. Y., making of it a populous and progressive town, taking place on the Canadian side of the river.

BELTING
ENGINE
LEATHER BELTING,
Lancashire Hair,
English
Card Clothing,
D. K. McLAREN
 Head Office and Factory—
MONTREAL
W. O. A. K.
WESTERN TRADE—TORONTO STOCK DEPOT,
 'Phone 374 **88 BAY STREET.**

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THE CANADIAN MANUFACTURER.

SEND FOR RATES.



HORIZONTAL. **VERTICAL.**

IF YOUR COAL MAN SHOULD QUOTE YOU

A Confidential Price

of ten per cent. below the market value, he would be pretty sure to get your order because

YOU ARE IN BUSINESS FOR PROFIT

and that discount means profit.

Yet there are thousands of manufacturers who are running power plants without a steam or oil separator when we can easily convince them they would be equally as profitable as the initial discount on coal bills.

But leaving out altogether the question of fuel economy, the use of an Austin Separator for oil or live steam means a saving through the increased efficiency of the engine and the cleansing of your exhaust for boiler or other uses. We have recently brought out several new patterns covering the whole field of steam usage.

AUSTIN SEPARATOR CO.
 38-40 Woodbridge St. **DETROIT, MICH., U.S.A.**

The B. GREENING WIRE CO., Limited

GREENING MANUFACTURERS OF **GREENING**

Lang's Patent Wire Ropes for Colliery and Mining Use. **WIRE ROPE** of every description and for all purposes. **HAMILTON, ONT. and MONTREAL, QUE**

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The Field syndicate are at present negotiating with certain large works, with a view to the latter locating on the Canadian side, and there is a fair prospect that the negotiations will prove successful. In anticipation of a brisk demand for factory sites the syndicate have purchased a number of large blocks of land between Niagara Falls and Chippewa, and they expect soon to have their works for the development of power well under way.

The Field syndicate propose to divert water from the Welland river, and by a double use of the flow thus obtained they will be able to develop nearly 200,000 horse-power. The water will be brought from the river to a point on the bluffs overlooking Niagara Falls Park. The fall here obtained will permit a development of from 30,000 to 60,000 horse-power. By means of an open canal the stream will then be carried to a point on the precipice overlooking the Niagara, and immediately north of the falls. The second discharge will permit of a further development of 125 horse-power.

The exact terms of the rental to be paid by the Field syndicate will not be divulged for the present, but it is stated that they will virtually be the same as those arranged

with the Canadian Niagara Falls Power Company. The latter company has to pay a fixed rental of \$15,000 for development up to 10,000 horse-power. For the second 10,000 horse-power development the rental is \$1 per horse-power; for the third 10,000 horse-power 75 cents per horse-power, and for all further development 50 cents per horse-power.

The agreement between the Park Commissioners and the syndicate was reached at a meeting at the former's office at Niagara on Saturday. Before separating the Commissioners were shown over the scene of operations, and the points where canals or buildings will be constructed were carefully marked.

SOME PRODUCTS OF COAL TAR.

"Coal tar, a by-product in the manufacture of ordinary coal gas, is a wonderfully complex substance," writes Dr. David Paterson in Good Words. "No less than sixty different substances have been discovered in it, and more are being discovered every year.

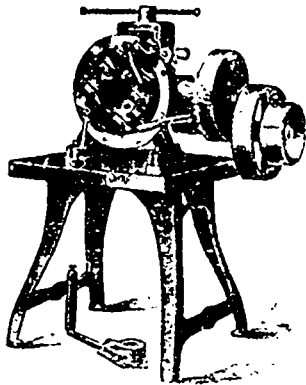
"One of the most interesting of these is benzine—a clear mobile liquid discovered in gas oils by Michael Faraday in 1825. It is

used in enormous quantities for the production of aniline, and also of a powerful perfume known as 'artificial oil of bitter almonds,' or 'essence of mirbane.' No less than 160 tons of this perfume are used in scenting soaps and other toilet requisites. Benzine has the useful property of dissolving fats, resins and India rubber, and is therefore of much value in the cleansing of goods by the 'dry-cleaning' method, and also in the forming of 'India-rubber solution,' so well known to lovers of the cycle and the football.

"In 1820 naphthalene was discovered in tar by Garden. This is a substance from which we derive some of our most beautiful colors, ranging from a buttercup yellow on the one hand to reds, pinks, greens and scarlets. To entomologists this naphthalene is of interest, as it is now considered the best preservative for cases of moths, butterflies, insects and other natural-history specimens.

"In 1832 anthracene was discovered by Dumas. It is now of immense importance, as it forms the base from which that beautiful and well known color Turkey red is now obtained. From time immemorial this valuable dye has been derived from the roots of the

THE BEST PIPE THREADING and CUTTING-OFF MACHINES



No. 00 Machine, Power Attachment.

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

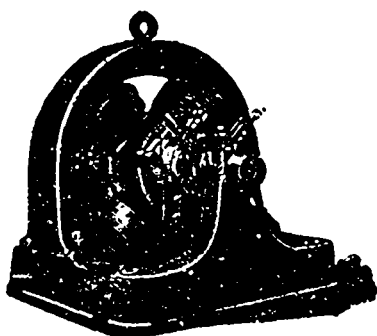
Also Manufacturers of a FULL LINE of **ADJUSTABLE STOCKS and DIES** And **WATER, GAS and STEAM FITTERS' TOOLS.**

SEND FOR CATALOGUE 27.

Factory: BRIDGEPORT, CONN.

New York Office: 139 CENTRE STREET.

Toronto and Hamilton ELECTRIC CO.



Motors and Dynamos

COMMUTATORS REFILLED.

99-103 McNab St. N., Hamilton

Phone 958.

RICE LEWIS & SON, LIMITED

HARDWARE and METAL

Bar Iron, Steel, Boiler Plate Tubes.

MACHINIST TOOLS, PIPE FITTINGS.

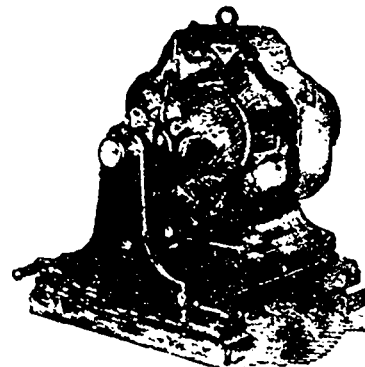
A COMPLETE STOCK OF **STOCKS and DIES. PIPE VICES.**

STILLSON & TRIMO WRENCHES.

STEAM PIPE.

Cor. King and Victoria, TORONT

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:

No. 90 YORK STREET, London, Canada.

760 Main St., Winnipeg.

42 York St., Toronto. 131 Granville St., Halifax

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madder plant, the coloring principle of which is called 'alizarin'. But in 1868 two German chemists, Graebe and Libermann, discovered a method of making artificial alizarin from the tar-coal product anthracene—a discovery which has completely revolutionized the dyeing and calico-printing industries. The excitement in the dyeing and coal-tar industries was immense. Anthracene, which formerly was considered a useless by-product, and sold at a few shillings a ton and utilized as a cart grease, immediately rose in price, and shortly after this discovery commanded something like \$500 a ton

"This artificial alizarin has now entirely

superseded the natural product from the madder plant; and the cultivation of madder, which was once a great and flourishing industry, has now dwindled away, and in the course of a few years will probably be altogether extinct.

"Phenol, or carbolic acid, discovered by Mitscherlich in 1834, being one of the most powerful antiseptics and disinfectants, purifies the atmosphere from noxious gases and destroys the infectious germs of disease. Its valuable antiseptic properties have been introduced into surgery with great success by the present Lord Lister, president of the Royal Society. From carbonic acid is ob-

tained a valuable series of coloring matters, ranging from a beautiful yellow, i.e., picric acid, to reds, oranges, browns and many other colors.

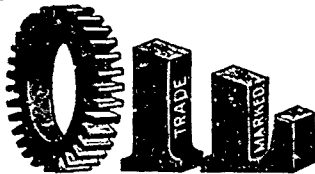
"The wonderful substance 'aniline' is found only in small quantities in coal tar, and its production on a sufficiently large scale for industrial purposes only became possible when Zinin, in 1842, showed it could be made from nitro-benzene or the 'artificial oil of bitter almonds,' already mentioned. All the aniline for the production of the innumerable beautiful colors is obtained from this derivative of benzene. In 1853, Dr. William H. Perkin, then a young man of eighteen, was engaged experimenting on aniline with a view to making an artificial quinine. Though his experiments in that direction were a failure, they were the means of his making the great discovery of the first aniline color, namely, mauve, and from these experiments has arisen a world-wide industry.

"In 1858, Prof. A.W. Hofmann, discovered the magnificent color magenta, or aniline red, one of the most brilliant colors known

"Capitol" Cylinder

"RENOWN"
ENGINE

"ATLANTIC" RED



RELIABLE WELL-KNOWN BRANDS.

ALL ORDERS PROMPTLY FILLED

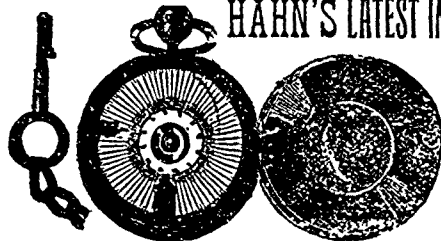
THE...

QUEEN CITY OIL CO.

LIMITED

SAMUEL ROGERS, President.

TORONTO, CANADA.



HAHN'S LATEST IMPROVED WATCHMAN'S TIME DETECTOR

This Clock is adapted for six or twelve stations, and the keys are all different, ranging from 1 to 6, and 1 to 12, instead of as in the old style Time 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. NANTZ & CO., Room No. 45, Graham Building, 127 Duane St. NEW YORK

This Clock received the First Prize at World's Fair.



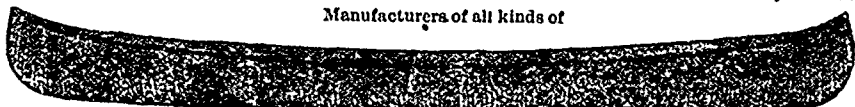
SEND FOR CATALOGUE AND PRICE LIST

The Diamond Machine & Screw Co. Limited. Manufacturers of TORONTO.

MACHINE SCREWS and BICYCLE PARTS OF EVERY DESCRIPTION

The Canadian Canoe Co., Limited, P.O. BOX 107, PETERBOROUGH, ONT.

Manufacturers of all kinds of



CANOE AND SKIFFS Canoes for Paddling, Sailing, Rowing and Prospecting. Skiffs for Rowing and Sailing.

A FULL STOCK OF PADDLES, OARS, FITTINGS, ETC.

Write for Catalogue J.

Correspondence Solicited.

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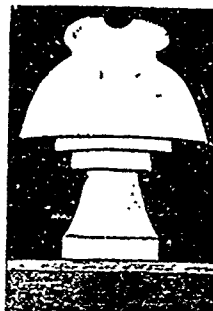
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KELLY'S DIRECTORIES, Limited 28 VICTORIA St., Toronto, ONT.

..HIGH.. INSULATORS CURRENT



WILL STAND ANY TEST.

Patent sustained by United States Patent Offices.

AGENTS WANTED IN CANADA.

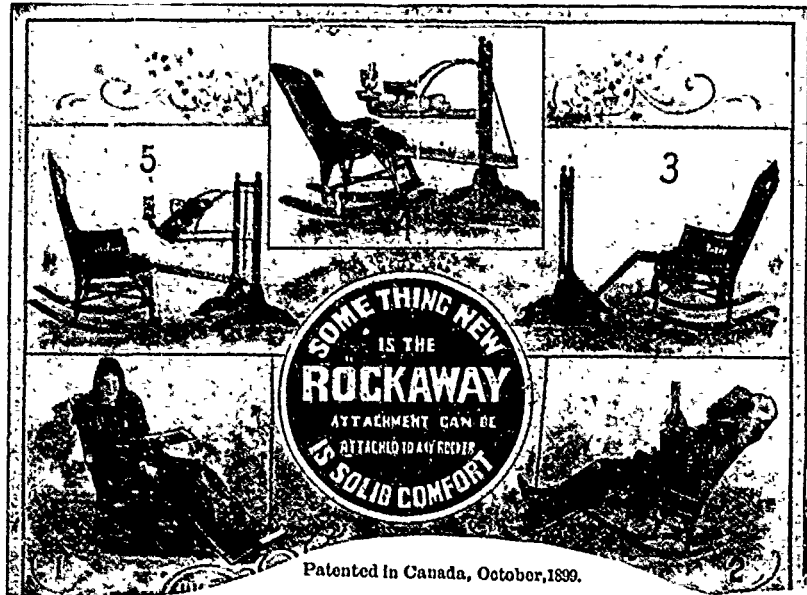
Write for Samples and Particulars.

F. M. LOCKE, VICTOR, N.Y.

to the dyer. Then came in quick succession greens, violets, blues and yellow coloring matters, all the hues of the rainbow, and at the present day the number and varieties of colors are bewildering.

"We are indebted to coal tar not only for beautiful colors, but also for some of our most valuable drugs. The valuable drug, antipyrine, discovered in 1883 by Dr. Knorr, of Erlangen, is considered even better than quinine as an assuager of fevers, and is much cheaper in price. Another is thanamin, discovered by Skraup, which has the special power of mitigating yellow fever, or the yellow jack, the dread of every colonist. Phenacetine is still another, possessing valuable antipyretic properties. Sulphonal, discovered by Professor Baeyer, is a hypnotic. But perhaps the most remarkable substance obtained from tar is saccharine, 220 times sweeter than cane sugar, useful for sweetening fruit preserves, jams, jellies, etc., where ordinary cane sugar would mold and ferment in course of time. A most interesting and important property is that it does not nourish and fatten the body as cane sugar does. Hence it is of value in certain troubles like diabetes, where it is often recommended by the physician for sweetening tea or coffee in place of cane sugar.

"Vanillin, now obtained from this tar, is a delicate flavoring essence resembling the true vanilla from the vanilla bean, and the cultivation of the plant in the Cordilleras and Mauritius has been greatly restricted, from the introduction of this artificial vanilla. By mixing essence of mirbane with a certain proportion of this coal-tar vanilla Lord Roscoe has prepared a delightful perfume known as "white heliotrope," and



Want reliable party to manufacture on royalty or will sell patent. Figures 1 and 2 represent and show lady and gentleman seated in their rocking chairs, to which the "Rockaway" attachment is fastened by means of screw eyes, two fastened in rocker and two in foot rest, a rod passing through them.

Figure 3 shows the attachment as in figures 1 and 2, fastened to rocking chair, but here the spring that holds the foot-rest up is fastened to the crosspiece of a stand instead of ceiling as in figure 1 and 2.

Full particulars upon receipt of inquiry.

OTTO CLAUSEN, Davenport, Ia., U.S.

John R. Barber, President.

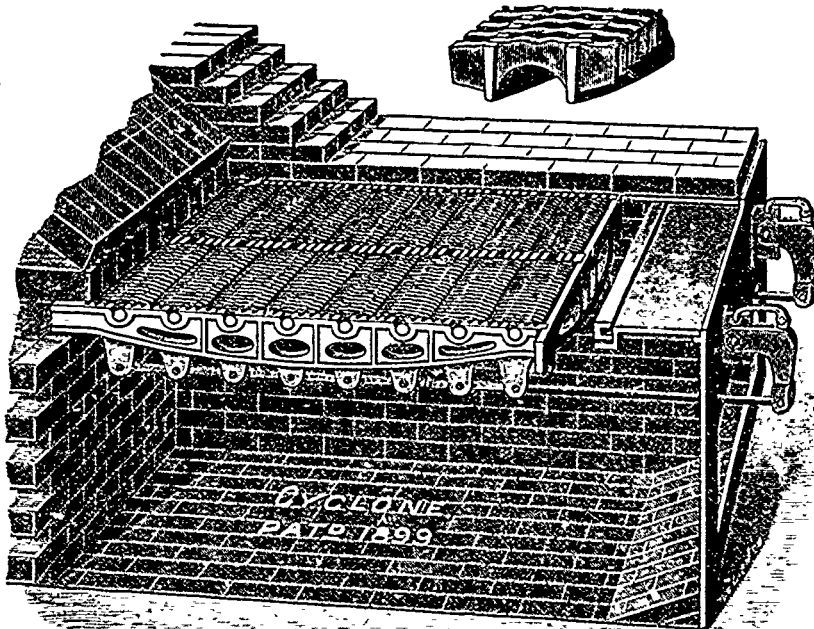
Geo. E. Challos, Sec.-Treas.

Henry Trussdell, Bus. Man.

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Economy of Fuel and Increased Boiler Efficiency Guaranteed.

Cut shows construction of the Grate. No alteration of Plant necessary.



Simplicity, Durability, Economy.

Burns the Cheapest Fuel with the Best Results.

A BOY CAN OPERATE IT.

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COPY OF TESTIMONIALS.

TORONTO, Jan. 22, 1900.

THE CYCLONE GRATE BAR Co., (Limited)

10 King St. West, Toronto, Can. DEAR SIR.— We have much pleasure in bearing testimony to the good results we have obtained from the Cyclone Grate which you installed in our boiler furnace.

In the first place we figure it saves about 25 per cent. in fuel; (2) it increases the draught; (3) it increases the steaming capacity of our Boiler; (4) it shakes easily without strain on the boiler pipes; (5) frees the ashes from the fire, and the ash shows good combustion; (6) the revision of our combustion chamber and bridge wall to the inventor's idea, we believe, has been of good service to our boiler.

Wishing you every success, which we think your invention well deserves.

We remain, yours truly,

"D. GUNN, BROTHERS & Co."

Manufactured by... **Cyclone Grate Bar Co. Limited,**

Office: 10 KING STREET WEST, TORONTO, CAN.

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many of the pleasant perfumes which play an important part in the toilet of every pretty maiden and courtly dame are extracted, by the magic of chemistry, from that black and ill-smelling substance, tar."

THE SOULANGES CANAL.

The opening of the Soulanges Canal on the 9th inst. was an event of some interest from an engineering point of view, and of great importance from the point of view of Canadian trade. The event marks the completion of a fourteen-foot waterway between Montreal and the Great Lakes, renders possible the conveyance of grain from Chicago and the West to the Canadian seaboard by large steamers at approximately one-half the rate to New York by way of the Erie Canal, and puts the coping stone on the great improved system of Canadian

canals, which has cost the equivalent of £8,000,000 sterling. The outlay on this canal alone has been about £1,000,000, and, having regard to the advantages that are bound to accrue, it will not be contended that the sum is excessive. The Soulanges Canal, it may be well to state, is the connecting link between Lakes St. Francis and St. Louis, between which the St. Lawrence River falls eighty-two feet, there being four great rapids—the Cou-du-au, Cedars, Split Rock and Cascades—within the space of sixteen miles. When the question of deepening the St. Lawrence Canals from nine feet to fourteen feet was brought up about ten years ago the engineers reported that to deepen and enlarge the Beauharnois Canal would prove a more costly undertaking than to cut a new canal on the other side of the river.

The Soulanges Canal is the outcome of

that recommendation. It leaves Lake St. Francis near the village of Couteau Landing, and runs in an almost direct line to the Ottawa river, which it enters two miles from its confluence with the St. Lawrence at the Cascades. There are four locks to overcome the fall, of which one of 70½ feet is at the Cascades end, where the bluff forming the right bank of the Ottawa gives an opportunity of locating three of the locks in the first mile, each having a rise of 23½ feet. The fourth lock is just over four miles from the entrance. A thousand feet further up is a pair of heavy guard gates placed in solid abutments of concrete and masonry. At the upper end is a guard-lock which will be used as a lift-lock only when the level of the lake rises above the mean stages. Lockages, we are told, will be made in from twelve to fifteen minutes, so that it will be possible to move through something like 20,000,000

**THE
CUMMER
DRYERS**

FOR
Mechanically Drying Everything

THE F. D. CUMMER & SON CO.,

HUNDREDS IN OPERATION.

CLEVELAND, OHIO.

THE BEST IS NONE TOO GOOD

The largest machinery builders in Canada and United States use our Babbitt Metal.

Is this not sufficient proof of its superiority over other anti-friction metals?

If the largest users are satisfied with our Babbitt Metals, why should it not suit you?

We can furnish you with numbers of testimonials.

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BABBITT**

**BEATS
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TYPE METALS

COLUMBIA
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AND ALL OTHER
WHITE METALS

SYRACUSE SMELTING WORKS,

WILLIAM and ST. THOMAS STREETS,

MONTREAL

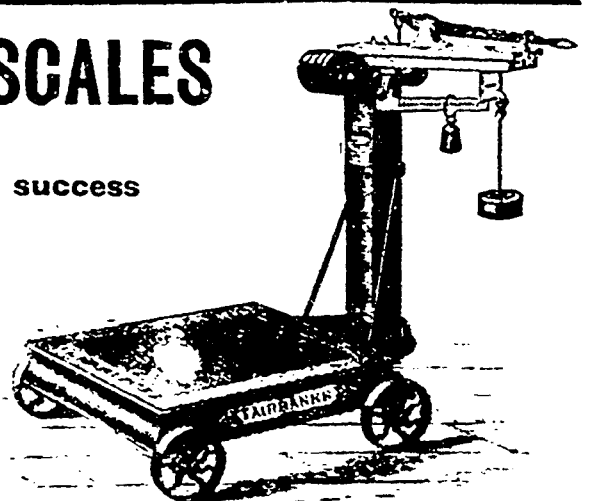
FAIRBANKS STANDARD SCALES

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

Our Montreal Stock is Complete.

SEND FOR NEW CATALOGUE

THE FAIRBANKS COMPANY,
MONTREAL.



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tons of freight in an ordinary season. The canal, which overcomes forty-five per cent. of the total rise in the St. Lawrence from Montreal to Lake Ontario, is operated and lighted throughout its length by electricity, which is distributed from a central powerhouse. One of the more serious problems to be faced by the engineers was the passing of the drainage water of the country lying to the north. The river Delisle, with a maximum flow of more than 200,000 cubic feet a minute, had to be carried under the canal through four lines of cast-iron tubes ten feet in diameter, laid in a trench fifty feet wide. Two other rivers of less volume are also carried under the canal.

The shipping season is now near its close, and therefore not much use will be found for the Soulanges Canal until next spring.

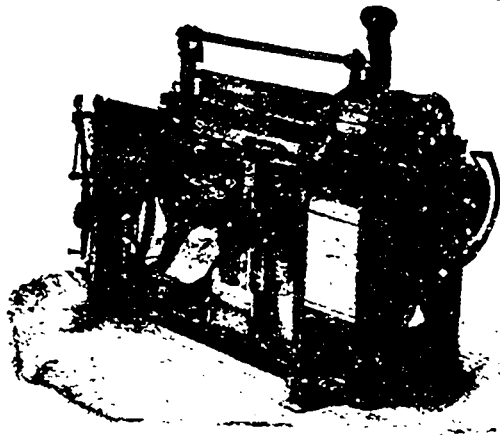
Then it will be possible for steamers of fourteen feet draught to convey wheat from Fort William on Lake Superior right to the sea without breaking cargo.—London Engineering.

A COMBINED GAS AND STEAM ENGINE.

In the steam-engine, the heat of moderately slow combustion is applied to vaporize water in bulk, and the vapor is used to drive a piston. In the gas-engine the piston is moved by a minute explosion, or, in other words, by the sudden expansion due to the very rapid combustion of gas mixed with air. According to The Western Electrician, an engine combining both these principles has been devised by Prof. V. H. Emerson,

of Ottawa, Ont., who has established a reputation in Canada through his recent discovery of a process for the conversion of sawdust and saw-mill refuse into calcium carbide for the production of acetylene gas. In his new engine, water-spray is suddenly converted into steam by the explosive combustion of air charged with carbonaceous matter. The mixture is exploded by electric spark, and hence Professor Emerson has given to the device the somewhat misleading name of "hydro-electric motor." In an interview quoted by the correspondent of The Electrician, the inventor said:

"The principal upon which my motor operates is equivalent to building a fire directly in a vessel of water; the water, taking up the entire heat, becomes expanded into steam, and thus produces mechanical



THE NORTHROP LOOM.

There is only one Profitable Plan—BUY NORTHROP LOOMS

**With them the Future is Assured.
They are no Experiment.**

Thousands have been running in the United States, and a large number are now in Canada. Sales steadily on the increase.

"The Mills that refuse their opportunities will find their future utility serving as picturesque ruins in the landscape."

**We also Manufacture the Best Warper at present
Known—also Spoolers.**

Write for particulars and quotations. Address

The NORTHROP LOOM CO. OF CANADA, Ltd.
VALLEYFIELD, P.Q.

POTATO MACHINERY

OUR POTATO PLANTER

ALSO PLANTS CORN, BEANS, ENSILAGE, DISTRIBUTER, FERTILIZER.

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WE MAKE CUTTERS, WEEDERS, SPRAYERS, DIGGERS, BORTERS, BARREL CHURNS, POST-HOLE AUGERS, LAWN SWINGS.

energy by so doing. The hot gases escaping from the smokestack of a steam-boiler or the high temperature of the exhaust of a gas-engine is entirely obviated by my system of motor, and it will exceed, in point of economy, more than fifty per cent. of the best steam-engine practice.

"In order that the operation may be thoroughly understood, I may state that atmospheric air is charged with carbonaceous matter. This mixture is ignited by an electric current, producing expansion and a high temperature. At this instant it is brought into contact with water, broken into minute proportions, the water being converted into vapor instantaneously, which reduces the temperature and increases the pressure, which acts upon a piston and is converted into mechanical power. The whole operation is automatic and continuous, and we have practically a steam-engine without a boiler or exhaust steam."

The following additional details are quoted from another part of the interview:

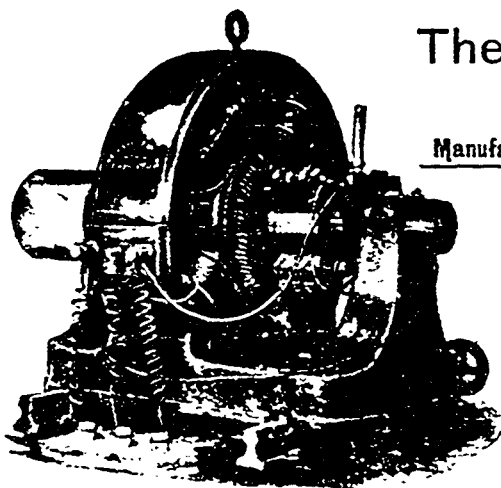
"I cannot go into the structural details concerning the motor, as I have not yet secured patents. I have designed the machine for operating my carbonizing machinery, of which I expect to install plants throughout the country. The motor may be used for many other purposes, such as operating street-cars, boats, supplying electric light, or pumping water for private residences, and as a motive power for vehicles; in fact, in any place where a powerful motor of light weight is required. A ten horse-power motor, as constructed for a carriage or boat, would not exceed 125 pounds in weight, and the two horse power machine I now have in operation weighs forty-six pounds, but in this I have not attempted to reduce the weight. The motor operates at a moment's notice by connecting a lever with a key, which puts an electric battery in circuit, and

it is as easily controlled as a steam engine; in fact, when once started, it requires no further attention."

The future of the Canadian iron industry is very promising. The Liberal Government has wisely decided to accept the Conservative policy of encouraging the iron industry. At the last session of Parliament Mr. Fielding, Minister of Finance, with the hearty approval of Sir Charles Tupper, announced that the period for which bounties would be granted would be extended until the end of the year 1907. By that time we believe that Canada will have a number of great iron and steel making establishments of which the Canadian people will have reason to be proud. The greatest of them is likely to be that of the Dominion Iron and Steel Company, at Sydney, Nova Scotia.—Montreal Star.

It is stated in a recent bulletin of the French Chamber of Commerce in Montreal that the caviar made by the Americans from the roe of sturgeon caught at the mouth of the River Delaware is inferior to the article made by Canadians from sturgeon roe taken on the great lakes Huron, Erie, Ontario, and on Lake Winnipeg. There is a caviar factory on the Lake of the Woods, which turns out about 20,000 pounds per year, valued at \$20,000. There is an establishment of the kind at Norman, on the Lake of the Woods.

Port Colborne, Ont., will grant a bonus of \$25,000 towards a blast furnace if it is proposed to erect at that place, to cost \$300,000.



The Jones & Moore Electric Co.,

Manufacturers and Contractors

All Work Fully Guaranteed

ELECTRIC LIGHT and
POWER PLANTS a Specialty

A Few Second-Hand A 1 Machines
For Sale Cheap

20 and 22 ADELAIDE STREET WEST
TORONTO

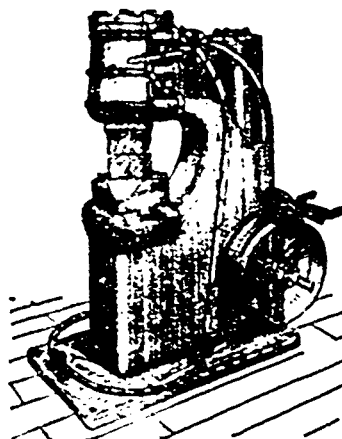
The Yeakley Vacuum Hammer.

Canadian Patent November 9, 1897.

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

George Brush

EAGLE FOUNDRY,
MONTREAL.



"IDEAL" ACETYLENE GAS BURNERS

\$2.40 per dozen, \$20.00 per gross.

FOUR LIGHT CLUSTER—\$2.00 each. Larger sizes on application.

"IDEAL" Carbide Sub-Merging Acetylene Gas Machines,

15 to 2,000 Lights. WRITE FOR PRICES.

"IDEAL" BURNERS and MACHINES are the BEST
in AMERICA.

Manufactured by **J. WALLACE & SON,**
GET THE "IDEAL,"
HAMILTON, ONT.

T. H. & A. H. DRYDEN

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FLOUR, SPICE AND

OATMEAL MACHINERY

Grain Elevators	Portable Mills
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Pulleys, Sprockets and Chains	Gears Cogged

MACHINES MADE TO ORDER

All kinds of Repairing Promptly Attended to

Warehouse Elevator Works Electric or
Steam.
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Manufacturers of....

OIL-CLOTHS of Every
Description

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

Enamelled Oil-Cloth,
Stair Oil-Cloth, etc.

Office and Works
Cor. St. Catharine and Parthenale Sts.,
MONTREAL, Que.

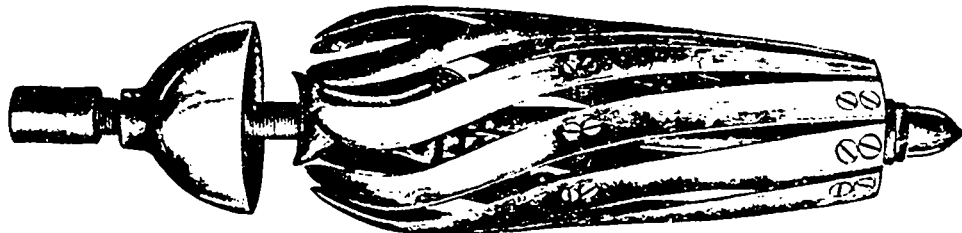
NOVA SCOTIA'S GROWING TIME.

The Halifax Chronicle sent a circular to the Mayors of the various towns in Nova Scotia the other day asking information as to (a) the state of trade, business and manufactures in your town during 1899, (b) any special industrial development that may have taken place in your community, (c) the prospects for continued and increased

prosperity in 1900." The replies received were of the most satisfactory description. Mayor Rockwell, of Kentville, for example, says: "The state of trade for 1899 has been prosperous. Never in the history of the town has it been equalled." He goes on to say that their manufactures show special industrial development, two new factories having been established. Mayor Crowe of

Sydney says that the future of his town is very bright, and that trade was decidedly better in 1899 than in the previous year. Mayor Day of Parrsboro, reports his town as enjoying a year of business prosperity. Parrsboro, he says, is fast becoming one of the most enterprising towns of Nova Scotia, and the people are beginning to see their natural position for a large trade develop-

FOR SALE. PATENT RIGHT FOR CANADA.



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MOST PERFECT CLEANER

OF BOILER FLUES KNOWN.
Manufactured and sold with

Great Success
IN THE UNITED STATES.

For Particulars Write to
FRANKLIN A. BECHER
224 GRAND AVE.,
MILWAUKEE, WIS., U.S.A.

ROLLED THREAD MACHINE SCREWS

Equal to CUT THREAD



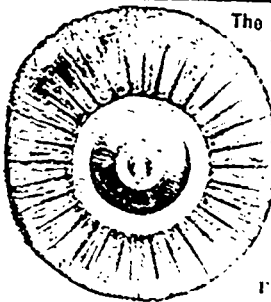
COST LESS.

HARVEY HUBBELL, BRIDGEPORT, CONN.

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

The Dominion Leather Board Co., MONTREAL, QUE.

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The PRESTON BRUSH FACTORY

Makers of ALL KINDS OF BRUSHES.

ORDERED MACHINE BRUSHES

Mail Orders Promptly Filled

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CHARLES F. CLARK, President,

JARED CHITTENDEN, Treasurer.

ESTABLISHED 1849.

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Capital and Surplus, \$1,500,000.

Offices Throughout the Civilized World.

EXECUTIVE OFFICES. - - 346 and 348 BROADWAY, New York City, U.S.A.

THE BRADSTREET COMPANY gathers information that reflects the financial condition and the controlling circumstances of every seeker of mercantile credit. Its business may be defined as of the merchants, by the merchants, for the merchants. In procuring, verifying, and promulgating information no effort is spared, and no reasonable expense considered too great that the results may justify its claims as an authority on all matters affecting commercial affairs and mercantile credit. Its offices and connections have been steadily extended, and it furnishes information concerning mercantile persons throughout the civilized world. Subscriptions are based on the service furnished, and are available only by reputable wholesale, jobbing and manufacturing concerns and by respectable and worthy financial, fiduciary and business corporations. Specific terms may be obtained by addressing the Company at any of its offices.

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Winnipeg Office, - 398 Main Street.

Hamilton " - 39 James Street South.

Vancouver " - Cor. Hastings and Hamilton Sts.

London " - 365 Richmond Street.

Victoria " - Board of Trade Building.

THOMAS C. IRVING, - - General Manager Western Canada, - - - - - TORONTO.

THE SMART-EBY MACHINE CO., LIMITED

Steam and Gas Engines,
Pumping Machinery,
General Machinery.

193 BARTON STREET EAST
HAMILTON, ONT.

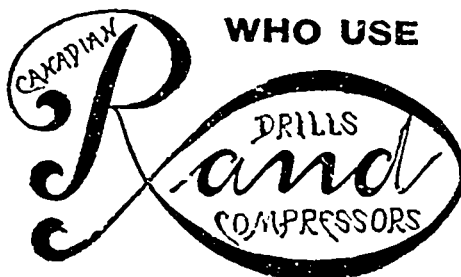
CITY AGENTS WANTED.

WRITE US BEFORE PLACING YOUR ORDER.

ONTARIO GOLD MINING DISTRICT:

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

A Few Mines



WHO USE

DRILLS

COMPRESSORS

BRITISH COLUMBIA:

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

CANADIAN RAND DRILL COMPANY, Montreal

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ment and are losing no time in taking advantage of their position.

Mayor Hall, of Springhill, says industrial conditions are very good. Fresh areas of coal have been located, the relations between masters and men are good and the outlook in every sense hopeful. The manufacturers in New Glasgow, Mayor Graham, says, without exception, report 1899 as a record year. They have all worked up to their full

capacity, have never before employed so many workmen and never paid more wages. Most of them have extended their works, and all have large orders yet to be filled. Mayor Thomson of Wolfville says—"During the last ten years the buildings of this town have been doubled in number. The recent erections besides are of much greater value than those in town a decade ago." The prospects for continued and increasing pros-

perity of the town are good." Windsor has not yet wholly recovered from the effects of the great fire which almost destroyed the town in 1897, but even from there the replies are satisfactory. Mayor Duskey of Amherst, reports that its manufacturers have had a satisfactory year and that the outlook is remarkably good. Mayor Brown of Sydney Mines, replies that the demand for coal at the colliery has been as satisfactory during 1899 as could be desired, and the prospect for a brisk coal trade the coming year is very good. From Westville comes a most cheering message. Mayor Macdonald says.—"Trade is brisk; no idle men here. Coal mines working night and day to their utmost capacity. Population over 4,000. No vacant houses, town progressing good.

Mayor Mulhall, of Liverpool, is equally optimistic. His statement is so much in harmony with the general tenor of all the reports that it deserves to be given in full.—"Trade in 1899 was the best for a number of years; plenty of work and good market for natural exports. Shipbuilding increased very materially. A new steam mill, foundry and machine shop were started, with abundance of work. The town installed a most

They come in/out of the Wet

**EVERY TIME IT RAINS
THE SPRAGUE UMBRELLAS
COVER AND PROTECT OVER
A MILLION PEOPLE.
IF IT'S A SPRAGUE-IT WON'T BREAK.**

THE FINEST

Wagon Umbrellas
Beach, Hearse and Implement Umbrellas
Lawn and Buggy Canopies
Umbrella Stands

THE BEST

3-Bow Tops
Closed Tobs
Lawn Illuminators
Giant Illuminators
Porch Lanterns
Advertising Parasols

**IF IT'S A SPRAGUE
IT WON'T BREAK**

**THE SPRAGUE UMBRELLA CO.
Norwalk, Ohio.**

PLANING MILL TO RENT—IN THE finest growing manufacturing town in western Ontario; railway centre; population 10,000; splendid chances for a live man to make money on small capital; some new machinery just added; mill in good shape; reason for renting to devote entire time to wholesale and retail lumber, coal and wood. For particulars address Box 34, Woodstock, Ont.

THE O. K. ROTARY WASHER



Has revolving steel ball gearing, making it almost noiseless; thus superior to others. Wheel continues one direction, the stirrer in both directions. Lid closes tight. No escape of steam.

WORKED BY HAND OR BELT.
(Patented in Canada June 13, 1899.)

Want reliable party to manufacture on royalty, or will sell patent. Factory in U.S. sells nearly 1,000 per month.

Full particulars upon receipt of inquiry.

OTTO CLAUSEN, - - Davenport, Ia.

**Reduce Your Fuel Bills
Increase Your Output...**

BY USING

The IMPROVED JONES UNDERFEED STOKER

Guaranteed Increased Economy, from 15 to 50. | Guaranteed Increased Boiler Capacity from 40 to 100%.

NO ASHES. NO SMOKE. NO TROUBLE. NO MONEY REQUIRED IF GUARANTEES ARE NOT FULFILLED
The First and Only Successful Underfeed Stoker.

No Underfeed Stoker is successful without infringing our Patents, and the public are warned against importing or using infringing devices.

N.B.—Have you seen our Underfeed Stoker? It is the only one that will burn any kind of fuel.

For Estimates and other Information write

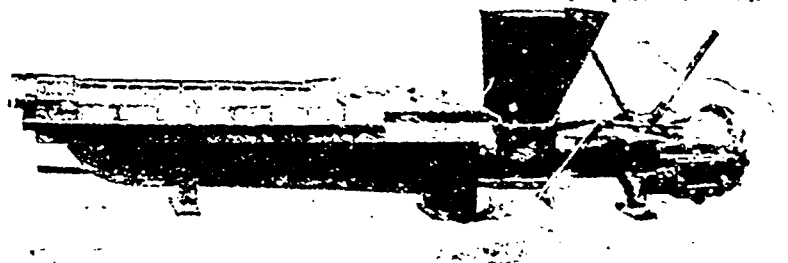
The General Engineering Co. Limited

SOLE MANUFACTURERS FOR CANADA.

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

Montreal—A. TREVETHICK, • Box 1123.

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splendid waterworks and electric light system. The Dominion Government erected a most handsome public building. Good prospect for increased business, a number of large vessels being built and lumbering operations being carried on very extensively, and strong expectations of railway communication." From Lunenburg, Annapolis and Truro similar testimony comes. Nor is this mere statistical prosperity or the vaunting of local pride. Travelers recently returned from the Maritime Provinces report the appearance of business, comfort and prosperity everywhere. Cape Breton which in one sense is the newer part of Nova Scotia, although historically it is evidently at the threshold of remarkable industrial development

Messrs I. Matheson & Co., manufacturers of iron and wood working machinery, yacht and ship builders, etc., one of the most important concerns of New Glasgow, say :-

"The year just closing has been the most active we have ever known, the volume of our business having been greater than in any previous year in our experience. The latter half year, moreover, has shown greater activity than the first half, and the number of inquiries during the past few weeks has been actually embarrassing. It is needless to say that every department of our works has been for months employed to its full capacity, and we have inquiries and orders sufficient to employ shops twice our size. The increase in the demand for machinery arises not only from the new works being erected in various parts of the country, but it is also due to the pressing needs of every line of mining and manufacturing industry throughout the provinces. Looking over our order books we cannot make much distinction between the urgency of the demands of the rolling mills and smelting furnaces, coal and gold mines, pulp and saw mills or electric light works and railways. Indeed, every industry which uses machinery seems to want additions made to its plant this year, and to want them without delay. The outlook for the coming year seems exceptionally promising."

**THE CANADIAN
COLORED COTTON
MILLS COMPANY.**

Cottonades, Tickings, Denims,
Awnings, Shirtings,
Flannelettes, Gingham,
Zephyrs, Skirtings,
Dress Goods, Lawns,
Cotton Blankets,
Angolas, Yarns, etc.

Only Wholesale Trade Supplied.

D. MORRICE, SONS & CO.

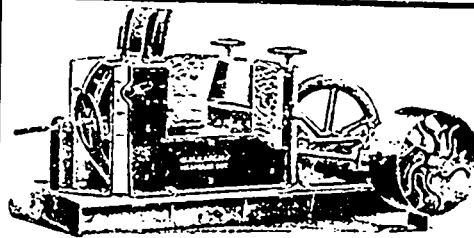
AGENTS

MONTREAL and TORONTO.

THE PAN-AMERICAN.

The Court of the Machinery and Transportation Building of the Pan-American Exposition which will be held at Buffalo, N. Y., on the Niagara Frontier, during the summer months of the year 1901, presents an interesting treatment of cloister work. The

Machinery and Transportation Building itself forms a hollow square, with this court in its centre. It is 200 feet long and 100 feet wide, the east and west ends opening respectively to the great entrances from the Grand Canal and the Court of the Fountains, while the great exhibiting rooms of the hall side of



H. W. KARCH

HESPELER, ONT.

IRON FOUNDER and MACHINIST

Manufacturer of

WOOLEN MACHINERY,

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

DAYLIGHT DISCOUNTED.

ACETYLENE GAS

Does it when made by the

"SAFETY"

220 MACHINES IN OPERATION AND NO ACCIDENTS
SPEAKS VOLUMES.

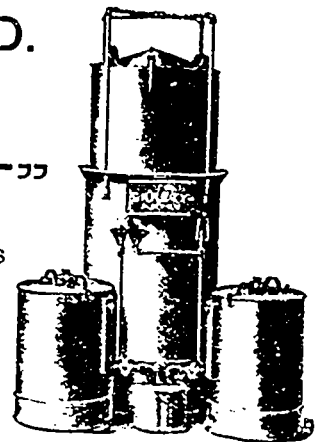
SIMPLICITY - SAFETY - ECONOMY the Leading Features.

Manufactured by

THE SAFETY LIGHT AND HEAT CO.,

Send for Booklet.

DUNDAS, ONT.



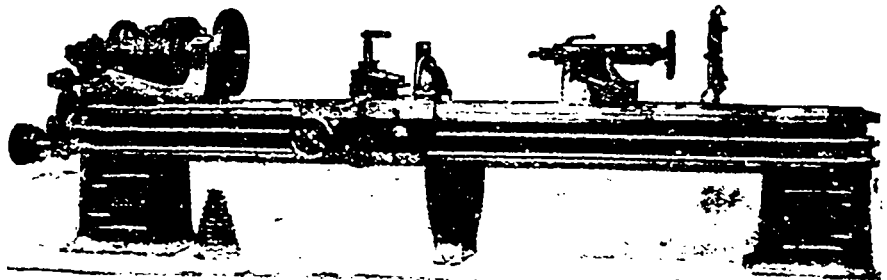
The London Machine Tool Co., LONDON, ONT.

LATHES,
PLANERS,
DRILLS,
SHAPERS,

MANUFACTURERS OF

General Machinery

HAMMERS,
BULL DOZERS
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PRESSES.



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

THE GARTSHORE-THOMSON PIPE & FOUNDRY CO.

Limited



3 in. to 60 in. diameter.

For Water, Gas, Culverts and Sewers

Special Castings and all kinds of

FLEXIBLE AND FLANGE PIPE

WATER WORKS SUPPLIES

HAMILTON, ONT.,

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the building, and the two exhibiting rooms and great entrance court from the Court of the Fountains side of the building, lie on either side. Along each side of this court, and extending the entire length, are roof-covered arcades under which the visitor may find rest on the comfortable benches.

The pool itself is 175 feet long and twenty-seven feet wide. It is placed in the centre of the court. The bank is sodded and planted on all sides, forming a pleasing frame or border effect; the water is low so as to receive the reflection of the growth around the pool.

The fountain is an important feature, placed in the centre of the pool, and giving life to the scene and freshness to the atmosphere. Throughout the court are pleasant walks and paths, bordered with low-growing shrubbery and plants, and at

intervals at axis-points with the arcades, rare plants are placed in great vases, making a truly architectural landscape effect. The entire scheme gives the effect of an admirable enclosure of a mission cloister, and is planned as one of the many little oases for the refreshment of the weary sightseer.

WOOLEN MILLS CONSOLIDATION.

After negotiations extending over six months, an amalgamation of a number of the principal woolen mills in Ontario has been effected, the mills that have consolidated their interests being those at Hespeler, Waterloo, Lambton, Markham and Carleton Place. The negotiations were conducted by Mr. Reuben Millichamp, who announces that a charter would be issued at once to the new company.

The amalgamation will have an important effect upon the woolen industry of the country, as it will result in a large saving in operating expenses.

The new company is capitalized at \$2,000,000, of which \$800,000 is paid up. The mills and machinery were valued on a cash basis, the owners taking paid-up stock for the full price of their mills. Mr. W. R. Brock is president of the company, and the provisional directors are: Messrs. T. Eaton, Toronto; A. W. Brodie, Hespeler; John F. Morley, Waterloo; George F. Benson, Montreal, and R. Millichamp, Toronto. Instead of a manager for each mill, as is now the case, there will be only one manager, who will be appointed at the first meeting of the board. The different selling agencies are also to be adopted, and a central selling agency established in Toronto, with Mr. R.

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135 Pearl St., Boston.

18 Pryor St., Atlanta, Ga.

**Aniline Colors,
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One Dip Cotton Colors, Novelties
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By Daylight

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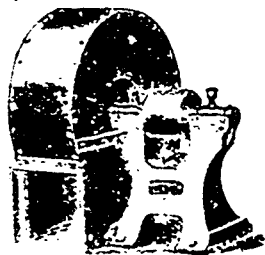
of putting in New Shafting,
Pulleys, Hangers, Tube Cut-
ters, Pipe Fitting Machines,
Swing Saws, Wood Lathes,
Dough Mixers, or Paper Box
Machinery.

We

Make all these lines, and can
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STEAM TRAPS, OIL SEPARATORS, ETC.

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For Wool

Dyed over a Chrome and Tartar
Mordant produces a black on
wool equal to Alizarine
Black for fastness,
but at a much
lower cost.

Sole Manufacturers

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53 Colborne St. 13 Lomolino St.
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Main Office and Works

BOSTON, MASS., U.S.A.

Millichamp in charge There were about seventy persons interested in the properties as owners and stockholders.

Speaking of the matter Mr. Millichamp says:

"The principal reasons for the federation are the capacity of a large federated company to purchase wools and supplies in large quantities for the better advantage of all the mills; to distribute the production of

the different classes of goods among the different mills according to the capacity of the machinery; to improve the quality of the goods and produce a more uniform finish; to regulate the credits of the sale of goods, and to reduce the expenses of management and operation of the mills."

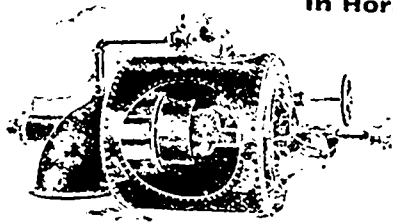
"The fiscal policy of the country having been established by the common consent of both political parties on a permanent basis,

these federated mills will be able to compete successfully and hold their own on the merits of their productions against importations from other countries in which labor and raw materials are cheaper; and they expect to command a very large share of the Canadian trade on the value of their goods."

The Elgin Elevator Co., Elgin, Man., has been incorporated, with a capital stock of of \$10,000.

THE Crocker Patent Turbine

In Horizontal Setting, with Quarter Turn Elbow.



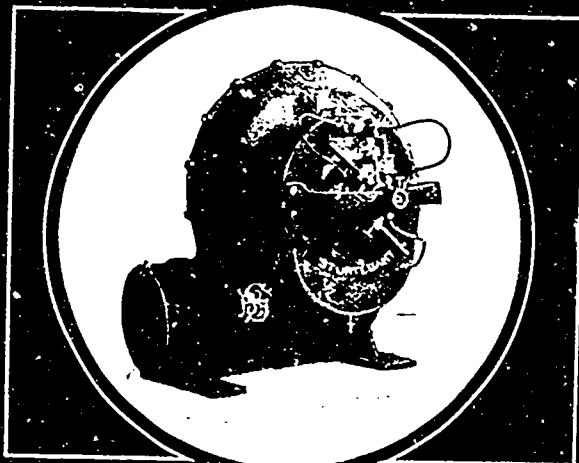
Where the nature of the location will permit its use this type has many advantages. It is very suitable for direct connection to dynamos, and many are in operation in this class of service.

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 Equipments.

The JENCKES MACHINE CO.,
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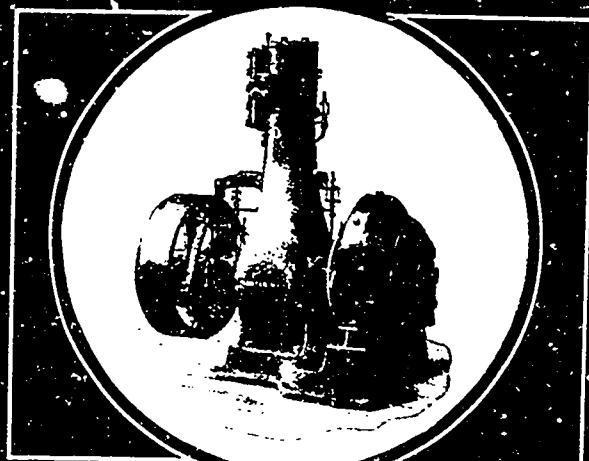
STURTEVANT ELECTRIC FANS



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Special designs for requirements.
We build both fan and motor.
Send for Bulletin H.*

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High speed, and high grade.
We build both engine & generator.
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THE ELECTRICAL DEPARTMENT OF THE B. F. STURTEVANT CO.

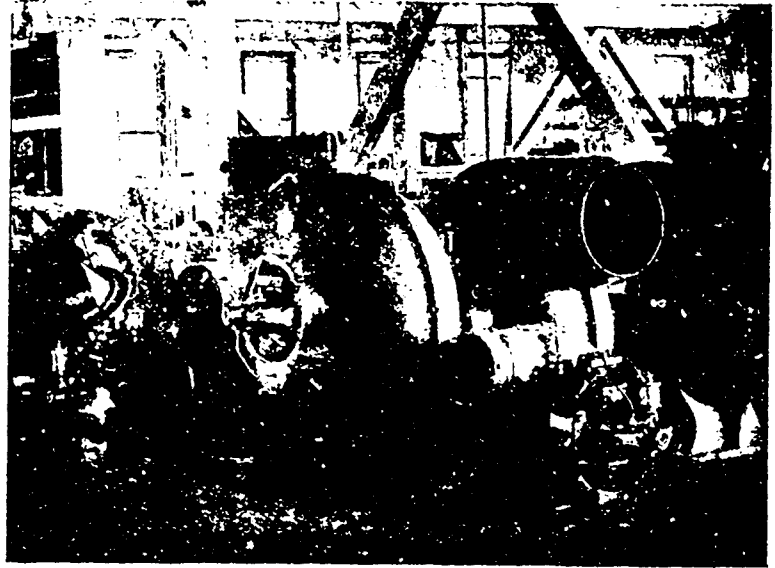
It has been previously noted in these columns that the B. F. Sturtevant Co., of Boston, Mass., was building a large addition to its works for the special accommodation of its electrical department.

This company has made its reputation in the manufacture of blowers, so that the Sturtevant blower now has a world wide distribution. When in the late seventies the demand for engine driven fans increased to such an extent as to warrant the design and manufacture of special engines for direct attachment, Mr. Sturtevant, who was then living, took hold of the problem with energy, and developed what was in a sense a new machine.

During the past ten years the constantly increasing use of electrical power has grad-

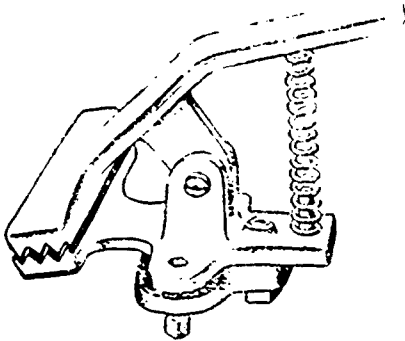
ually led the Sturtevant Co. into the design of electric motors for fan driving. For such a purpose the motor must of course be of such design as to be readily attached to, and

ively large line of motors of special type, which differed materially from any to be found in the market. During the period mentioned rapid progress has been made by



Hardware Manufacturers and Capitalists

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The Canadian patent, No. 62,417, Bed Clothes Clamp, for sale, or will place on Royalty.

I MEAN BUSINESS

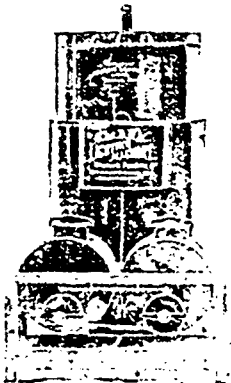
Awarded first prize at National Export Exposition, Philadelphia, 1899.

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Sun Lighting Machine.

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The Acme of Perfection in Lighting.

At the Minimum of Cost.

Suitable for any place where Artificial Light is required. Dwellings, Stores, Churches, Factories, Hotels, Street Lighting, etc.

Write for Catalogue.

THE
Acetylene Lighting Co.
(LIMITED).
LONDON, ONTARIO.

in a sense form a part of the fan which it drives. What is more, the great variety in the sizes of fans, as well as in the speeds and the powers required, has demanded an excess-

the Sturtevant Co., in the electrical line, and particularly during the past two or three years. It now has a large electrical department, covering 20,000 square feet of area,

HOW LONG WILL IT LAST?

We don't know. The first was put up 18 years ago and is in perfect condition yet. We use special wire—none other like it. Page No. 11 Wire is as strong as common No. 9. Over 500,000 farmers using Page fencing. They find it to be the best and cheapest. Send for our new pricelist.

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MAKE Gas or Gasoline Engines from 1 h.p. to 6 h.p.
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Motor Carriages for Pleasure or Business. One cent spent for a postal will bring you any information you wish.

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MAKERS OF

Lamps and Transformers

Sole Agents for SCHEEFFER RECORDING WATT METERS
ST. CATHARINES, ONT.

equipped for the manufacture of motors and generators in sizes from 1-6 up to 125 h. p., and capable of driving fans up to twelve or fifteen feet in diameter.

Having already established a complete line of moderate sized engines ranging through about the same powers, the combination of generator and engine has been simple, and the result has been a remarkable compact and durable generating set.

The illustration which we present herewith is taken from a corner of the erecting floor in the Sturtevant Co's erecting department, and shows the variety of electric fan and motor work which is being done.

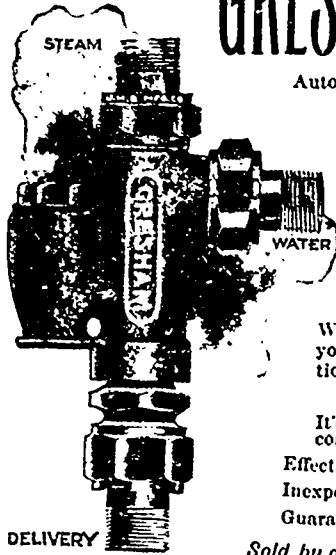
Prominent among the late developments is an electric fan of the propeller type, the motor being entirely enclosed. By this means the trouble usually incident to the effect of dust being drawn across the motor, is entirely obviated, and the fan may be continuously operated in an out of the way place, and started or stopped at any desired point.

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Automatic Re-startin

INJECTOR.

Would give you satisfaction.

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We manufacture and handle everything for

ENGINEERS and PLUMBERS

THE JAMES MORRISON BRASS MANUFACTURING CO., Limited,

39 to 97 Adelaide St. West, Toronto.

The utility of the electric fan is only beginning to be realized. Its first uses have naturally only been for the general purposes of ventilation, but these are rapidly extending so as to include the blowing of cupola, forge and boiler fires, the handling of smoke, and the general distribution of air for all purposes.

THE AUSTIN STEAM SEPARATOR.

The Austin Separator Co., Detroit, Mich., have sent us their new illustrated descriptive catalogue and price list, having reference to separators manufactured by them. Regarding their device we are informed as follows:

Conforming to the scientific principle for perfect separation, the steam is given a circular course. As a result all condensation and impurities that may escape the corrugations are removed by the joint operation of centrifugal force and gravity while passing over the separating plate. All steam passing through our machine has an unbroken contact with separating surfaces. Our system of drainage for the carrying off of all foreign substances thus removed, is perfect, as shown.

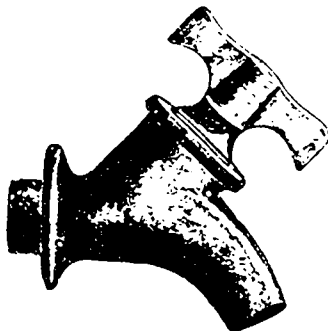
All having practical knowledge of the subject realize the almost vital importance of removing condensation from live steam. Saturated with water it is liable to become an agency of destruction, cutting the edges of valves and ports, not only impairing the engine but causing leaks and inequitable distribution of steam, adding unnecessarily to the cost of operation, and where condensation passes the danger line, causing wreckage of engine by forcing out cylinder-head and damaging the working parts.

Wet steam makes proper lubrication of the cylinder impossible, hot water destroying the efficacy of the oil and permitting the cylinder to cut as though no lubricant were used. Where live steam is carried through

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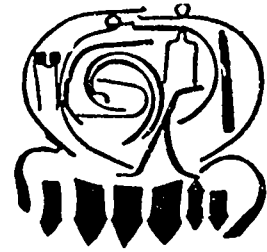
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LACHUTE SHUTTLE and BOBBIN WORKS,

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8 feet long, 4 feet 8 inches wide; 88 2 1/2 inch tubes 6 feet long, allowed 115 lbs. steam; been used four years; condition good; price \$850.

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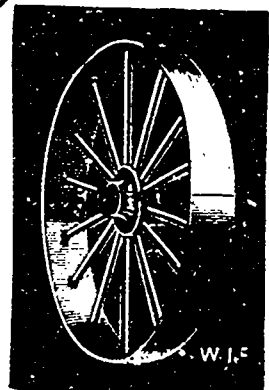
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considerable distances, a percentage of condensation is inevitable. Our machine averts all possibility of accidents that would otherwise result from water in cylinder, insuring smoother working and greater power in the engine.

All engineers know that when exhausting into a tank or open heater, or where exhaust steam is used for heating purposes and condensation returned and used as feed water, the oil in exhaust is ruinous to the boiler, and causes foaming. All possibility of such consequences is obviated by one of our separators in exhaust steam pipe, for the cause is removed by the complete extraction of all grease, oil and every other impurity.

Oil extracted from exhaust steam is easily removed from condensation discharged into a receptacle by syphoning water from the bottom, and with a small addition of fresh oil can be used again in the cylinders. It is excellent for lubrication and represents an important item of economy.

Owing to a large area of separating surfaces there is no possibility of back pressure when used with exhaust steam, or reduction of pressure when used with live steam.

For further information write the company, at 59 Woodbridge street, Detroit, Michigan.

THE CANADIAN RAND DRILL CO.

The Canadian Rand Drill Co. of Sherbrooke, Que., celebrated the new year in its splendidly equipped new shops. Mr. James F. Lewis, who has long been identified with the Rand company's interests in this country, is the president of the new company, and his numerous friends especially in Chicago and the West will be pleased to learn of his success in his new undertaking.

It is said that the new plant at Sherbrooke is one of the most complete establishments in Canada. The main shop is a brick structure 95 feet wide by 200 feet long, well lighted from the sides and top and filled with the latest and best patterns of wood and iron working machinery. There are also three wings, each 35 by 40 feet, the first being the office, two stories high, finished partly in wood with oak furniture, the lower story being used for the office proper - with telegraph and telephone offices - and the upper flat for the draughting room. A large fireproof vault seven feet square extends up through both stories. A second wing embraces the power house, fitted with a ninety horse power engine and the foundation for a large air compressor.

The third wing embraces the blacksmith shop, which will have four forges, the smoke of which will be taken by a 40-inch exhaust fan and make its exit out of one pipe. There is also a large storehouse 40 by 85 feet west of the main shop. The Canadian Pacific Railway has a siding beside the storehouse and a track laid into the main shops for the purpose of handling the machinery with greater convenience. Stone foundations are laid for the heavy lathes, engines, etc. The pneumatic crane will likely be in position in about two weeks. One side of the shops will be used for the compressor work and the other for pattern, drill and tool. The heating will be done by the Evans-Almoral system of New York, the latest and best hot-water system.

The Calgary Water Power Co., of Calgary, N. W. T., has been compelled to increase its plant, and is installing a 150 K.W. "S.K.C." two phase Inductor Alternator supplied by the Royal Electric Company of Montreal.

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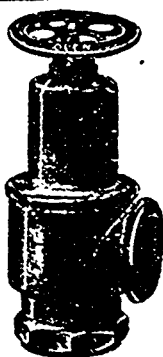
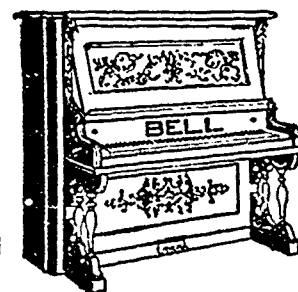
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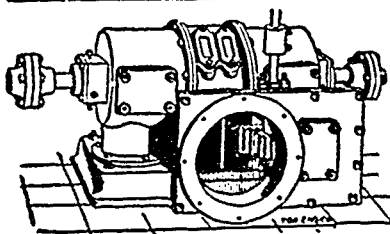
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Branch Offices at New York, Chicago, and London, Eng.

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Horizontal Type.

"LITTLE GIANT"
TURBINE
....FOR ALL PURPOSES....

HORIZONTAL AND VERTICAL
BUILT IN 44 SIZES.

We guarantee a higher percentage of power from
water used than any other wheel on the market.

Water Wheel Governors, Machine Dressed Gearing, Pulleys, Shafting and Bearings.
Catalogue and Gear List mailed on application. *Correspondence Solicited.*

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- J. H. Heald & Co., Extracts Oak, etc.



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(Limited)

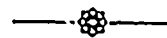
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**Miscellaneous
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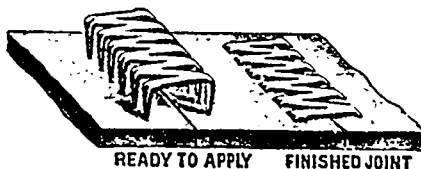
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