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No. 7

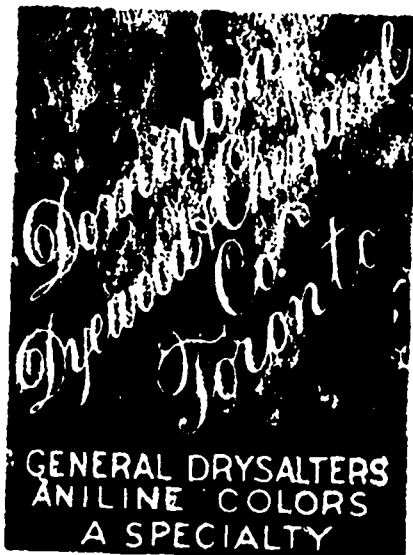
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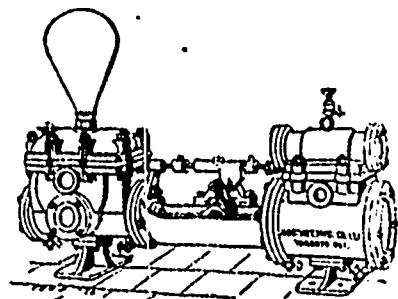
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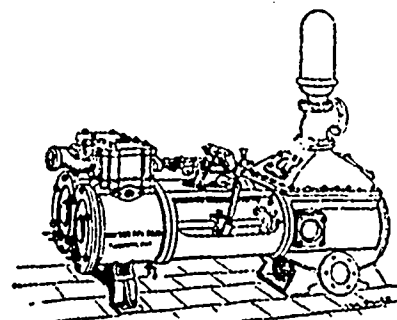
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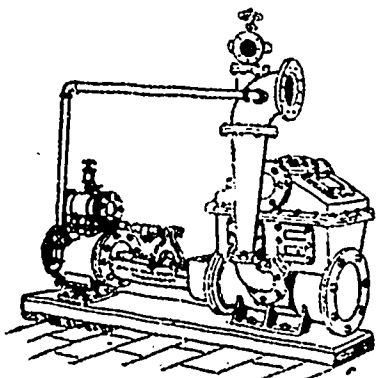


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AS TO ROLLED IRON.

WHENEVER the question of the manufacture of rolled iron in Canada has been discussed in this journal, the argument has been advanced that the reason home-made iron was not of as good quality as it should be to meet all the demands of consumers, was because the arrangement of the tariff duties did not encourage it. We have always contended that a comprehensive iron industry was of the utmost necessity to the country, and that as it seemed impossible to establish such an industry under the existing schedule of the tariff, whatever changes in it that were obviously necessary should be promptly made. We do not advocate beginning at the coping stone to build up the industry, but at the foundation; and this foundation and starting point of a comprehensive Canadian iron industry is the blast furnace, where Canadian ore is converted into pig iron. We can never reasonably hope to achieve any degree of commercial independence in an iron industry until we are in position to produce at least a very large proportion of the requirement for pig iron.

Those who do not see eye to eye with us in this matter have pointed out that even before Confederation a blast furnace industry existed in this country, and that since then, even

under the stimulus of protective duties and bounties upon production, the growth of that industry has been slow and unsatisfactory, and it has also been said that if the industry could not be forced into profitable activity under the stimulus of a tariff duty plus a bounty, it could not be hoped that a higher tariff and a larger bounty would effect it; that the country would not countenance the offering of such increased inducements.

We have never greatly favored the bestowment of bounties; and we have expressed the opinion that if the duty upon pig iron had been greater than what it is, say six or seven dollars per ton, it would have had a beneficial effect upon the blast furnace interest; but we have also contended, and do now contend, that with the duties upon some of the other forms of iron standing where they now do, we could never reasonably hope for Canada to become celebrated for her large production of pig iron. The reason for this is obvious. If we are to produce large quantities of pig iron, we must find use for the article here at home. If a thousand tons, or a hundred thousand ton of iron is produced, we must have industries which will consume all of it. No furnace has ever yet been built that will, day after day, month after month, year after year, produce any one unvarying variety of pig iron. The experience is that all furnaces produce different grades and qualities of iron, and this, notwithstanding the greatest care that may be taken to obtain some particular grade. With the same ore, the same fuel, the same fluxes, and the same careful attendance, it is impossible but that these varieties of iron are produced. These varieties of iron find their destination where they are most required. Thus a very soft iron is required for the manufacture of stove plates, radiators, etc., but in the construction of steam engines and heavy machinery a different quality of iron is required, and so the foundryman selects his iron according to the use to which it is to be put. Last year our imports of pig iron for foundry purposes amounted to nearly 70,000 tons, and this in addition to the output of Canadian furnaces. All furnaces have an output of pig that is not specially desirable for foundry use, and is not thus used except in small quantities where a special mixture is desired. This is known as mill iron: that is, the best and general use to which it can be put is the manufacture of wrought iron. Now no mill iron is imported into Canada simply because we have no use for it as such; and the small demand which may exist for such iron, to be used in foundry work, is supplied by domestic furnaces.

If then, with a domestic production of about 40,000 tons of pig iron per annum, as we now have, the domestic demand for such mill iron as is inevitably made by our furnaces is fully met by it, what disposition could be made of the larger inevitable production from a much larger number of furnaces? A demand will always exist for foundry iron, but what would be done with the mill iron? Clearly then, if we are to have an enlarged production of pig iron, we must also have an industry which would consume all the mill iron the furnaces would produce.

Is it asked why we do not have such an industry? Is it asked who or what is to blame? Sententiously we answer: "The tariff." Last year there was a demand for three times as much pig iron as we produced. To produce the nearly

70,000 tons of pig iron we imported, involved the production of a large quantity of mill iron which was not imported because we did not require it; but the equivalent of which, and more, too, was manufactured into rolled iron, and in that shape imported into Canada; our imports of rolled iron last year having amounted to 7,500 tons. But our requirement for rolled iron was far in excess of that quantity, for our imports of wrought scrap amounted to over 36,500 tons, nearly all of which was made into rolled iron in domestic mills. It is impossible to make a close estimate of the domestic production of scrap iron, but it is undoubtedly large. The railroads are large producers of the article, and every boiler shop, machine shop, blacksmith shop, and other sources contribute to the supply. There are some twelve rolling mills in Canada, but knowing that the capacity of production of the principal concern in Montreal, and of the only Ontario concern, to aggregate some 65,000 tons per year; and supposing that the actual production of the entire twelve did not exceed the capacity of the two concerns alluded to; and remembering that we imported some 35,000 tons of scrap which was consumed by them, we estimate the domestic supply of scrap at about 30,000 tons. The value of the imported scrap averaged \$14 per ton—actually \$433,695—but in Ontario there being but the one concern to whom scrap can be sold—there being but the one purchaser—the price paid is very small.

The requirement of Canada last year, then, was for pig iron for foundry purposes in excess of the production of domestic furnaces, some 70,000 tons. For rolled iron we imported 7,500 tons of finished, and 3,000 tons unfinished, or muck iron; and including 65,000 tons of domestic production, a total of 76,000 tons. Every ton of this last-named quantity should have been made in Canada of Canadian-made iron exclusively, and would have been so made if the tariff had been properly framed; and in addition to that, we might also have produced the 70,000 tons of pig iron which was imported. This would have implied the production of much more than 150,000 tons of pig which we did not produce. If we had had furnace capacity to produce even this quantity of pig, it will be seen that no embarrassment would have occurred to the furnacemen in disposing of all their various brands of iron—foundry as well as mill.

In addition to this, during last year our imports of mild steel, including tramway bars, fishplates, angles, shapes, girders, etc., aggregated some 15,000 tons. If we had had an efficient iron industry these articles would have been produced in Canada; and to have produced them would have required the previous production of perhaps 20,000 tons of pig iron. All things considered, then, it is evident that in the specialities indicated, if they were all made in Canada, as they should be, it would require more than 200,000 tons of pig iron to meet the demand.

It is worth the time of optimists and pessimists alike, to study what these facts imply. Consider the occupation that would be given to an army of men in mining ore and limestone; the army of men who would find employment at the blast furnaces; the army who would be engaged in the converting works where pig iron is made into steel; the army in the rolling mills where pig iron is made into puddled bar, and

where steel ingots are made into merchant shapes. A very large part of this work is now done for us by foreigners in foreign countries; but a judicious alteration of the tariff would cause it all to be done in Canada by Canadians. The alteration would not be a formidable or disorganizing affair, as some might suppose. A change in only one item would effect it. Make the duty upon all scrap iron practically prohibitory. That would do it. To do so would not necessarily stop the machinery in any rolling mill now in operation—it would only force a change of method. Scrap iron is only a by-product of certain industrial establishments, and the importation of it should be discountenanced. It is not fair to domestic works where scrap iron inevitably accumulates, and for which high prices were originally paid, and upon which duties have been levied, to find only one purchaser in the market; and to also encounter the competition of foreign scrap upon which only \$2 per ton duty is paid. Let the tariff upon pig, muck, bar, mild steel, etc., remain unchanged, but make it prohibitory on scrap.

AS TO SEWER PIPE.

SEWER pipes are an absolute necessity in every civilized community. They are required to drain the ground on which every city, town and village stands. If they can be bought at a moderate price, cleanliness will be encouraged, and a city or town will be less liable to have outbreaks of filth diseases. It is not generally known that the duty on sewer pipes is over 100 per cent. A London merchant asserts that on the twelve-inch pipe which costs 16 6-10 cents per foot, the duty collected is 23 56-100 cents! There are only two sewer pipe establishments in Canada—one in Ontario and one in Quebec—and it is to enable the rich men who own these factories to collect more than market value for their products that every one who has to use sewer pipes is made to pay this enormous duty, or buy the products of the Hamilton and St. Johns factories at a price beyond that which is reasonable.

This remarkable and mendacious article is an editorial which appeared in the *London Advertiser* of March 20th. That journal had abundant opportunities of knowing beforehand that there could be no truth in its statement; and since its publication its attention has been directed to the errors of it; yet for the sake of having a low, mean fling at the worthy and enterprising men to whom it alludes, and to mislead its readers regarding the tariff, it refuses to retract its falsehood. The tariff levies a duty of 35 per cent. on sewer pipe, and during the last fiscal year the imports of that article into Canada, valued at \$59,000, paid duty at precisely that rate. If any merchant in London has paid duty on sewer pipe at the rate of 23.56 cents per foot, when the import value was only 16.6 cents per foot—nearly 142 per cent.—he certainly did not know his business or what his rights were.

It may be well here and now to exhibit a table which will disabuse the minds of those who are not posted as to the real facts to which it relates, or who may have received erroneous impressions from such malignant attacks upon a valuable Canadian industry as this of the *London Advertiser*. And in explanation of it we will state that about all the sewer pipe manufacturers in the United States have a combine by which they are bound not to sell their products below a certain price. There is a price list for all the different sizes

and styles of goods they make, and to American purchasers a discount of 65 per cent. from it is allowed. This rule does not apply to foreign trade; and the discount allowed to Canadian purchasers is, we are told, 85 per cent. In other words, Canada is used as a slaughter market for the surplus products of American sewer pipe manufacturers. In the slaughtering of these goods in Canada, if we were supplied with a perfect and desirable article, and if the net results were equal to similar transactions in which Canadian pipe is a factor, less disappointment would be experienced. But usually our American friends do not send their best products to Canada; and the clearing up of their factories—the culls and imperfect pieces—are thought good enough for this market; and unfortunately there are men in Canada whose duty it is to inspect and pass upon these goods who but too frequently accept them, not for their excellence, but because they are “from the other side,” and not the products of Canadian enterprise. And then the delivery of these American pipes is *f.o.b.* cars, and no allowances or rebates are allowed for imperfect or broken pieces; and these generally amount to what makes a material advance in the cost. On the other hand, in the purchase of Canadian-made pipe, especially when large quantities are required, the goods are delivered alongside the excavations into which they are to be placed, and are there inspected, and in this difference in the delivery is to be observed a great advantage in using Canadian goods. Until a recent date, and in the absence of Customs decisions covering the matter, the sewer pipe imported into Canada was rated for duty at any valuation that might be placed upon it; and in this way the Customs was defrauded of revenue while the Canadian consumer was defrauded in the quality of the goods. But thanks to Mr. Bowell, the Minister of Customs, a ruling was promulgated which fixed the value for duty at the market price in the United States; and now all such imports are valued at 65 per cent. discount from list prices, upon which net amount 35 per cent. duty is imposed.

The table enumerates a few of the sizes of sewer pipe in general use; the American list prices per lineal foot for the same, the net value at 65 per cent. discount from list, as the standard price in the American market, and upon which the Canadian duty of 35 per cent. *ad valorem* is levied; the amount of duty per foot on the respective sizes; the usual average freight charges per foot on these different sizes from American factories to Toronto and equal points; the net cost of American pipe when sold at 85 per cent. discount, plus the duty, plus the freight; the net cost of same if sold at same price to American consumers at 65 per cent. discount, plus duty and freight; and the prices at which Canadian manufacturers tendered to four different cities for these sizes of pipe.

Following is the table:—

	4 in.	6 in.	9 in.	11 in.	15 in.
American list prices per ft., cents	20.00	30.00	55.00	85.00	170.00
65 per cent. discount	7.00	10.50	18.25	29.75	59.50
85 per cent. discount	3.00	4.50	8.25	12.75	25.50
35 per cent. duty on 65 per cent. off list	2.45	3.67	6.73	10.41	20.82
Freight, U.S. to Toronto	1.60	2.56	4.00	7.20	13.44
85 per cent. discount + duty + freight	7.05	10.73	18.98	30.36	59.76
65 per cent. discount + duty + freight	8.60	13.36	23.25	36.95	72.91

Tenders for Canadian pipe in 1892.	4 in.	6 in.	9 in.	12 in.	15 in.
Toronto Junction cents	6.00	9.00	14.00	22.00	55.00
Toronto "	8.50	11.00	22.00	48.00	
London "	5.00	9.00	21.00	50.00	
Kingston "	8.00	15.00	20.50	51.00	

The credacity of the *Advertiser* will be all the more apparent in a comparison of the figures it gives regarding a twelve-inch pipe and the facts as contained in our table. It mentions an imported twelve inch pipe which cost 16.6 cents per foot, upon which 23.56 cents duty was paid. If this was American pipe sold at the Canadian discount of 85 per cent. off list, the cost would be 12.75 cents; if it was bought at the American discount of 65 per cent., the price would be 29.75 cents, but in no event 16.6 cents. The duty on such pipe is arbitrarily fixed at 10.41 cents per foot, and no more, no matter what price was paid for it, and not 23.56 cents, as the *Advertiser* asserts.

It is worth while for consumers to study the difference in price of American pipe at factory and Canadian pipe at point of consumption. The average price of Canadian 4-inch pipe is 5.5 cents—of American, 7 cents; of Canadian 6 inch pipe, 8.5 cents—of American, 10.5 cents; of Canadian 9-inch pipe, 11 cents—of American, 19.25 cents; of Canadian 12-inch pipe, 21.5 cents—of American, 29.75 cents; of Canadian 15-inch pipe, 51 cents—of American, 59.5 cents. Our Canadian manufacturers would be glad to get as much for their goods as American consumers are forced to pay; but they object to Canada being made a slaughter market and a dumping ground for the culls and refuse of American factories.

AS TO CEMENT.

RECENT articles in this journal re the boycotting, by the Department of Railways and Canals, of Canadian-made cements in the construction of the Soulanges Canal, have awakened much interest in the matter, and disclosed the fact that there are quite a large number of works in operation which are turning out quite as good, perhaps a better article, than any imported from Great Britain or Germany. It is no wild or unfounded assertion to say this; for native Portland cements have frequently been tested in comparison with imported cements by some of the best engineering experts in the country, both on Government account and also in behalf of many of our large cities and railroads, where the desire was to obtain the very best materials to be had, regardless of the source of origin; and the certificates of these experts, and the details of their experiments, are on record and quite accessible to any who may be interested; and they all show that Canadian Portland cement is as good as any made anywhere else in the world.

A million of dollars or more is invested in works in Canada manufacturing cement, giving employment to some five hundred men; and as the business of the country expands the demand for this article increases, and the industry is one of the most important we have. New uses are constantly being found for it, many thousands of barrels of it having been used in Toronto last year in the construction of new roadways on streets where electric cars are operated. The railroads, too, are large consumers, for in the construction of culverts, abutments for bridges, piers, etc., the article is essential, and none but the

very best is used. This demand is supplied from Canadian factories; and all of the masonry in the recently constructed tunnel under the St. Clair River was laid in Canadian cement. In the construction of the Ontario Parliament buildings, in Toronto, the formal opening of which occurred this week, only Canadian cement was used. A great public work that Canadians take much interest in, and the completion of which will mark an epoch in the history of Canadian inland navigation, by which Canadian shipping can pass from Port Arthur, on Lake Superior to the Atlantic Ocean, without being under any sort of obligation to the United States—we allude to the Sault Ste Marie Canal—is being constructed of Canadian cement, a large portion of it being supplied from the works at Shallow Lake, near Owen Sound, Ont. This canal will be by far the largest and most important in Canada, of many times the capacity of the Soulanges Canal; and in this great work the use of Canadian cement is authorized by the Department of Railways and Canals.

We have alluded to the fact that Canadian Portland cement was consumed in large quantities in the construction of the new Ontario Parliament buildings, and also in the public works of the City of Toronto; and it gives us much gratification to observe that both the Provincial and the city authorities have displayed a proper patriotic spirit in deciding to give the preference to the home-made article as against that imported from abroad. This was not done, however, until it was satisfactorily demonstrated that home-made Portland cement was intrinsically of more value than any which was offered in competition with it. An evidence of the use of Canadian cement in the works alluded to, patent to all passers by, consists in the labels upon the packages, which show that either the Star brand of the Napanee Cement Company, or the Samson brand of the Owen Sound Company, is upon thousands of them.

We think the Government were very inconsistent in absolutely refusing to authorize the use of Canadian cement in the Soulanges Canal, when by reference to its own records it could have learned that there is none better. Our manufacturers pay duty on their machinery; they invest great wealth in their business, they give employment to large numbers of men, and they produce a most excellent article; and therefore they are entitled to due consideration in the construction of public works.

EDITORIAL NOTES.

CHIEF JUSTICE GALT has, on the application of Inspector of Customs, S. W. McMichael, of Toronto, made an order under Sec. 141 of the Customs Act, for the issue of a writ of assistance. The writ remains in force as long as the applicant remains in office, and enables him to enter on and search premises for smuggled goods.

In Lowe township, near Ottawa, according to the *Globe*, the objection to the payment of taxes is so strong that on a recent occasion a collector was secured in a collar and kept in solitary confinement for several hours. The *Globe* should ponder upon this fact, also the London *Advertiser*, who seem to think that the collection of revenue by direct taxation is preferable to the present National Policy system.

It is amusing to read the efforts of protection organs to convince themselves and their readers that Mr. Cleveland does not intend to abolish the protection features of the American tariff.—*Toronto Globe*.

Mr. Cleveland has no more power or authority to abolish any feature of the American tariff, or any American law, than the *Globe* has. He may favor the abolition but he is powerless to do any abolishing. Such stuff is silly twaddle.

A CORRESPONDENT calls our attention to the fact that the Dairy Association were asking the Government to allow butter tins made in France to be imported into Canada free of duty, on the ground that such tins are not made in this country. Of course the Government are well aware of the fact that there are quite a number of large establishments in Canada well prepared to manufacture in desired quantities any sort of tinware for which there is a demand. No duty is imposed upon tin-plates, and if tinware can be bought abroad any cheaper than it can be at home, which we doubt, it is because our home manufacturers pay more for their labor than their foreign competitors do.

THE Minister of Finance recently announced from his place in the House of Commons that during the vacation of the House the Government would go into a close and exhaustive personal investigation of the working of the tariff; and it is understood that special attention will be devoted to the iron question. It is the desire of this journal to assist the Government in this matter, and not to throw hinderances across their path. We greatly desire the establishment of a comprehensive iron industry, and believe that this can be accomplished without much disturbance of the duties on the more important or fundamental lines. It does not lie with a few monopolists to thwart the Government—it should be their pleasure to assist—and their selfishness should not be allowed to jeopardize the entire industry, and to bring the National Policy into a disrepute that would inevitably lead to its destruction.

MESSRS. JAMES MURRAY & Co., one of the oldest, largest, and best-known firms of printers, bookbinders and publishers in Toronto, or in Canada, have determined to wind up their business, and to this end have appointed Mr. T. G. Wilson, one of the partners, as trustee, who will dispose of the estate by tender or otherwise. Having been long in the business, and having achieved a most enviable reputation in this line, the entire community will join with us in regrets that this important factor in the industrial progress of Toronto is to be eliminated from the hum and whirl of our busy life. It is to be hoped that some wide-awake parties, who know a good thing when they see it, and who know how to throw themselves into the swim of a tide that flows rapidly on to fortune, will avail themselves of the opportunity of acquiring this comprehensive and valuable plant, a description of which appears elsewhere in these pages. It is understood that Mr. Wilson, who has for so long a time had charge of the finances of the concern here alluded to, and also of several other important business ventures, in the management of all of which he has met with most gratifying success, will at a not distant day look after other financial concerns.

A WORK of considerable importance to the carpet, upholstery, furniture and kindred industries is "Kendrick's Directory of the Carpet and Upholstery Trades for 1893," just out. This book has been carefully compiled in the office of the *American Carpet and Upholstery Trade*, and contains convenient classified lists of the carpet and upholstery jobbers and retailers of the United States and Canada, about 8,000 names in all. The tables of carpet and upholstery manufacturers are also of special value, disclosing at a glance the strength of the two industries in the several states and towns. The number of looms engaged on tapestry, brussels, wilton, velvet and Ingrain carpets is given in details and in totals, and supplies information much in demand and difficult to obtain. This directory is the recognized authority on the subjects treated of; the typography, binding and paper is in every way creditable, and the price (\$1 per copy, almost nominal, the labor expended, considered. The Trades Publishing Company, 1001 Chestnut Street, Philadelphia.

The April *Wide Awake* has a gossipy, descriptive sketch of quaint old Williamsburg, a reminder of the Colonial days of Virginia, written by Ed. in A. Start, and illustrated by Louis A. Holman. The number opens with a story sketch of an oldtime English Easter happening, by M. Carrie Hyde, "The Tansy Cake," and there is also an American Easter-tide story of Creole life, "How the Lilies Work," by Kate Chopin. Frederick A. Ober contributes his fourth "Cordova to Cathay" sketch, telling of Isabella, "the first cr.; in the New World," Sarah Winter Kellogg gives a glimpse of life in New Mexico "In the Delegate's Placota; Belle Spaulding has a sketch of an Eastertide happening in Florence called "The Feast of the Little Dove," Mary Catherine Crowley contributes a capital Indian story, "Jeff's Strange Adventure; and the two contributions to *Wide Awake* Athletics comprise an article on "Cricket in America," by Ralph Cracknel, and "Seven good Base-ball Rules," by W. S. Martin, jr., Captain of the Tufts College Team. Price 20 cents a number, \$2.40 a year. D. Lothrop Company, Publishers, Boston.

THE April *Popular Science Monthly* is a notable number. It opens with an essay on "Science and the Colleges," by President Jordan, of the Leland Stanford Junior University. The President of the University of Rochester, Dr. David J. Hill, follows with a suggestive paper on "The Pastal Development of Art." Dr. T. Lauder Brunton discusses "The Correlation of Structure, Action, and Thought," showing from diagrams and two of Raphael's pictures what parts of the body move as an accompaniment of certain thoughts and actions. The *Monthly* takes a decided stand in this number in defence of Prof. G. F. Wright, whose recent book on "Man and the Glacial Period" has been severely handled. It has an article on "Prof. Wright and His Critics," by Prof. E. W. Chyple, and an editorial dealing with the same matter. Herbert Spencer contributes a paper of much scientific value on "The Inadequacy of Natural Selection." There is an entertaining illustrated article on "The Maoris of New Zealand," by Edward Tregear. Mechanical gymnastics gets sharp criticism from M. Fernand Lagrange, under the title "Free Play in Physical Education." Robert F. Walsh has a practical and timely article on "Conservation of the Mackerel Supply." In "Traces of a Vanished Industry," John Gifford tells the story of smelting bog iron ore in South Jersey. The frontispiece is a Portrait of Ernest Renan, and there is a "Sketch of His Life and Work," by Gabriel Monod. New York: D. Appleton & Company. Fifty cents a number, \$5 a year.

The *Illustrated World's Fair* has again shown its enterprise by interesting Mr. Louis Pasteur in the Exposition at Chicago, and his portrait and autograph letter adorn a leading page of the beautiful magazine for March. Boyles "Stone Age" is another remarkable reproduction. A mother of prehistoric times holds her babe to her breast, guards another little one at her feet, and, with stone axe in right hand, bids terrible defiance to some enemy that approaches her. The picture of Machinery Hall, the latest surprise and splendor of the Fair, are profuse and without equal in clearness and truth. A fine bird's-eye view of the north part of the park is shown. There is a full view of La Rabida Convent. The whaler Progress that went seventeen times around Cape Horn, now in the park, is shown in a large picture. There are four pictures of the Esquimaux, showing that the women dress very nearly like the men. Chief Willard Smith, Austyn Granville, E. J. Spencer and Superintendent Freitag contribute leading articles, and progress to March 15th is fully described. The number is especially notable for its original poetry by Eugene F. Ware, of Kansas, Stanley Waterlow, John J. Plinn, Charles J. Beattie, Franklin Quimby, and other eminent writers. The great list of four pages of names of officials continues as a permanent official feature. *The Illustrated*

World's Fair has taken the front place in all matters of print pertaining to the Columbian Festival. The publisher announces the bound volumes in every style. J. N. Halligan, McVicker's Theatre Building, Chicago. 25 cents.

MR. ROBERTSON OF KOVENS' first independent set of waltzes "The Magnolia Blossoms" written expressly for *The Ladies' Home Journal*, appear in the April issue of that popular magazine. Notable articles are "The Sister of Charity" by Cardinal Gibbons, and "The American Woman" as seen after an absence of ten years, by F. Marion Crawford. Mr. Howell's charming study of girl life, "The Coast of Bohemia," gains in interest as it proceeds, and is followed by Miss DeKons' pathetic story of her father's last public appearances, and his death and burial. A charming quartette of women, admirably portrayed by illustration and description, are Mrs. F. Marion Crawford, The Countess Tolstoy, Sir Morell Mackenzie's daughter, Mrs. McKenna, and the author of the "Elsie" books, Miss Finley. Professor Galbaudet writes about "The Happy Children of Silence." Junius Henri Browne discusses the problem "Are Women Tamed?" and Mrs. Burton Kingsland contributes "A Trio of Pretty Luncheons." Palmer Cox takes his "Brownies" through the land of John Bull, and Margaret Seymour Hall contributes a delightful short story "The Rector of St. Peter's." The Floral Supplement contains a beautifully illustrated article by F. Schuyler Mathews on "The Laying out of an Artistic Garden," a paper by George H. Ellwanger on "Which is the Sweetest Flower?" and Mrs. Henry Ward Beecher tells how she made her famous fence garden. Altogether this April number, with its beautiful cover and its admirable table of contents, is worth many times its price. Published by The Curtis Publishing Company, Philadelphia, for Ten Cents per number and One Dollar a year.

"THIS Canada of Ours, and Other Poems," by J. D. Edgar, M.P. Toronto: William Briggs. This little book is a most acceptable contribution to Canadian poetic literature, and shows that the author, although a busy, bustling business man, and withal one who devotes a large portion of his time to politics and the duties of legislation, could find opportunities to pay court to the muses and to become nourished with the divine afflatus. "The White Stone Canoe," the most pretentious of these poems, gives expression to some very beautiful sentiments. Thus, in narrating the voyage of Abeka to the mysterious island in his white stone canoe, accompanied by the spirit of his beloved Wabose, surrounded as they were by waves and tempests which had wrecked others whose lives had not been pure, and who were not accompanied by good spirits, speaking of these ghostly attendants the poet says:

Guardian Spirits, these, who follow
Each of us from days of childhood,
Ready always with assistance,
Anxious always to befriend us,
But their power to help is measured
By the love we bear our fellows,
By the kindness of our actions,
And our sympathy for sorrow.

If Mr. Edgar continues to thus ride well his Pegasus we predict for him a speedy flight to Parnassus.

Scribner's Magazine for April opens with a group of illustrations by Robert Blum, who has recently returned from a two years' residence in Japan. This paper is called "An Artist in Japan," and is taken up with the vivid first impressions which that country makes on an artistic temperament. In another article in this number, "A New England Farm," writer and illustrator are united in Frank French. Mr. French gives a delightful picture of what a city man has accomplished on an abandoned New England farm. The selection of Carlyle's Letters is different in tone from any that have been published. Two of them are to the friend of his youth, the Rev. Edward Irving. They are a remarkable expression of Carlyle's personality, giving his own view of his peculiar temperament with a simplicity and directness that does not occur anywhere else perhaps in Carlyle's literature. The Historic Moment Series gains a notable contribution from Archibald Forbes, the great War Correspondent, who describes "The Crisis of the Schipka Pass" in the Russo-Turkish war. Charles F. Lummis concludes his group of papers on the Southwest with "The Cities that were Forgotten," which tells of the ruins in New Mexico, south-east of Albuquerque, which are known as the Quivira. The Fiction of the number includes another instalment of Mrs. Francis Hodgson Burnett's serial, "The One I Knew the Best of All," which tells how she came to write her first story when she was seven years old, and of the encouraging reception which her mother gave to it. Viola Roseboro' contributes a striking short story entitled "The Glimpse of an Artist," and George I. Putnam has a pathetic little sketch entitled "In Rented Rooms."

Inventions.

CANADIAN PATENTS.

THE following patents have been issued from the Canadian Patent Office from February 28 to March 22, 1893, inclusive.

Information in regard to any of these patents may be had free on application to THE CANADIAN MANUFACTURER, or copies of American patents corresponding to these, where the American patent has been previously granted, can be procured through us for the sum of twenty-five cents.

MECHANICAL.

- 42,113 Hot water heating apparatus, G. T. Brewer, February 28th.
 42,114 Automatic car coupler, W. J. Brush and H. C. Fayette, February 28th.
 42,115 Sliding partition, J. Hayes, February 28th.
 42,116 Numbering, printing, cutting and collecting tickets, etc., from a continuous web of paper, cardboard, or the like, J. M. Black, February 28th.
 42,117 Car wheel, F. D. Taylor, March 1st.
 42,120 Paper pipe digester, C. Curtis and N. M. Jones, March 1st.
 42,121 Advertising device, C. Eiasner, March 1st.
 42,122 Boiler furnace, J. S. Harkins, March 1st.
 42,124 Toilet paper, E. Jerome, March 1st.
 42,127 Bell, E. R. Rockwell, March 1st.
 42,128 Nail parer or cutter, J. T. Lewis, March 1st.
 42,129 Ticket register or recorder, J. Sharpe, March 1st.
 42,130 Gear and gear cutter, C. H. Trask, March 1st.
 42,134 Match box, J. J. Harrison, March 1st.
 42,137 Brick machine, T. T. Wood, March 1st.
 42,138 Oil can, A. J. Tschantz and F. M. Strong, March 1st.
 42,139 Oil stove, W. I. Dillon, March 1st.
 42,140 Coupling for railway carriage, J. Zeloneck and T. Stranch, March 1st.

- 42,141 Vehicle motor, W. H. Thompson and G. Morris, March 1st.
 42,142 Cash register and recorder, F. E. Richardson, March 1st.
 42,144 Tool for setting and gauging saw, M. Meagher, March 1st.
 42,145 Shelf bracket, H. L. Bradley, March 1st.
 42,146 Steam boiler or generator, C. D. Mosher, March 1st.
 42,147 Door for cars and the like, G. M. Brill, March 1st.
 42,148 Locking and operating jail doors, C. H. Sparks, March 1st.
 42,149 Wrecking frog, W. C. Bourdette, March 1st.
 42,150 Air motor for propelling wheeled vehicles, J. Kanees, March 1st.
 42,151 Clamping the heads of barrels, A. B. Vaag, March 1st.
 42,152 Veterinary shield, J. G. Lee and W. H. Rupert, March 4th.
 42,153 Diving suit, J. L. Boucher, et al, March 4th.
 42,154 Mixing sugar, Hon. G. A. Drummond, March 4th.
 42,155 Oil vapor heating, E. Strauss, March 4th.
 42,157 Converting wrought iron into steel, The Miles Steel Co., March 4th.
 42,158 Suspender, C. C. Krouse, March 4th.
 42,159 Button, G. B. Keplinger, March 4th.
 42,160 Cash carrier, E. C. Gipe, March 4th.
 42,161 Garment supporter, J. M. Brewer and B. N. Smith, March 4th.
 42,162 Grave box cover, J. Scott, March 4th.
 42,163 Pocket lamp for cigar lighter, H. A. Sherman, March 4th.
 42,164 Lamp extinguisher, E. W. Cleverley and W. Death, March 4th.
 42,165 Axes, etc., C. W. Hubbard, March 4th.
 42,166 Reciprocating motion, H. S. McKay, March 4th.
 42,167 Propelling mechanism for cash and parcel carrier, J. Starr, March 4th.
 42,168 Soldering composition, H. L. Gronimus, March 4th.
 42,169 Carriage axle, J. D. O. Duboule and F. Lebel, March 4th.
 42,172 Farmer's hay and grain elevator and carrier, G. M. Jones, March 7th.
 42,173 Coin operated machine, F. E. Housh, March 7th.
 42,174 Combined vehicle axle wheel and spring, J. Findlay, March 7th.

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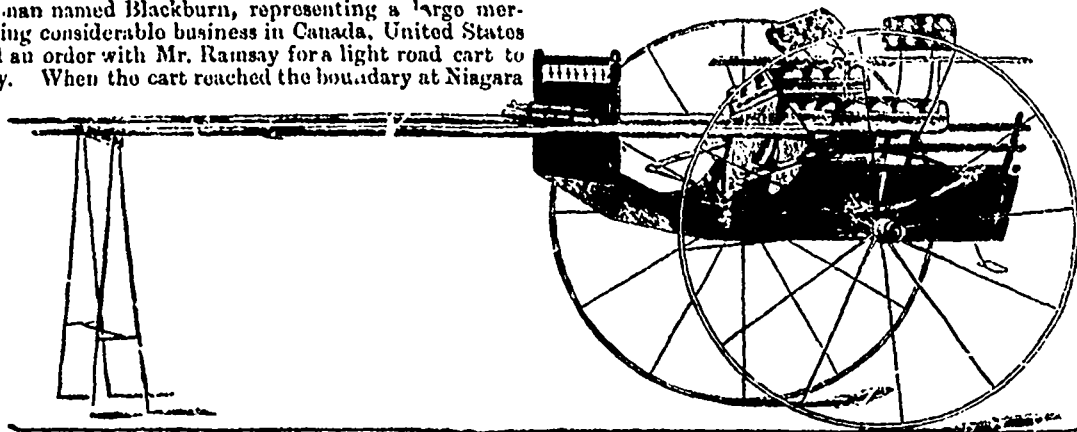
OFFICES AT 131 DEVONSHIRE STREET, BOSTON, MASS.

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| <p>42,175 Twine holder, J. E. Tracy and A. N. Graham, March 7th.
 42,176 Dress stay, I. Bray, March 7th.
 42,177 Road organ, M. Clark, March 7th.
 42,178 Cooking stove, J. Lonioux, March 7th.
 42,179 Sand papering machine, C. L. Ruebs, March 7th.
 42,180 Music rack for musical instrument case, J. A. Weser, March 7th.
 42,181 Shaded lamp chimney, D. M. Messford, March 7th.
 42,182 Support for books, pamphlets, etc., W. E. Richards, March 7th.
 42,183 Carrying out the desulphurisation of pig iron, C. Hilgenstock, March 7th.
 42,184 Weeder, J. P. Roo, March 7th.
 42,185 Reed organ, J. B. Hamilton, March 7th.
 42,186 Harvester, T. J. Hamlet, March 7th.
 42,187 Sensitive plates and films, or other media for photographic purposes, J. T. Sandell, March 7th.
 42,189 Boots and shoes, F. Matthews, March 7th.
 42,190 Paper making machine, A. S. Grosset, March 7th.
 42,191 Brake apparatus for railway, C. Luyers, March 7th.</p> | <p>42,192 Friction clutch, J. P. McLaughlin, March 7th.
 42,193 Wire nail, J. Pender & Co. (Ltd.), March 8th.
 42,194 Cancelling and dating stamp, W. G. Mosely and E. R. Bullock, March 8th.
 42,195 Garment supporting loop or chain, L. G. Abbott, March 8th.
 42,196 Haves-trough hanger, M. Bingham and E. Rand, March 8th.
 42,197 Railway signal, F. A. Humpidge, et al, March 8th.
 42,198 Scalping and bolting flour, J. Meherell, et al, March 8th.
 42,199 Middlings purifier, E. B. Whitmore and L. Emery, jr., March 8th.
 42,200 Lock nut, J. Barlow and R. A. Hall, March 9th.
 42,201 Regulating the feed of grain mechanism, C. Swayne, March 9th.
 42,204 Vaginal syringe, J. M. Wardell, March 9th.
 42,205 Trimming machine, W. R. Fox, March 9th.
 42,206 Corset, T. L. L. Lewis, March 9th.
 42,207 Bank or check book, S. R. Hopkins, March 9th.
 42,208 Type setter, J. L. McMillan, March 9th.
 42,209 Hat case, A. Grouloff, March 9th.</p> |
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THE "MINEOLA" ROAD CART.

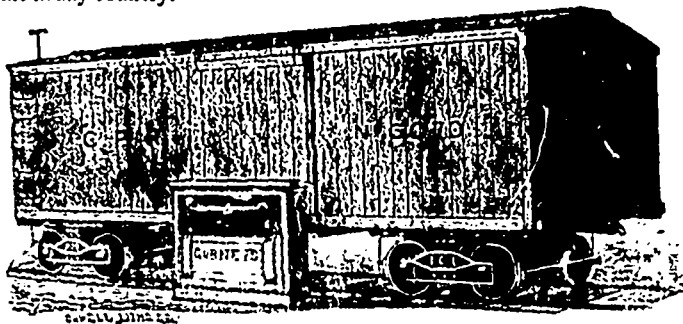
The accompanying illustration is of the "Mineola" road cart, manufactured by William Ramsay, Orillia, Ont. There is a bit of interesting history connected with the manufacture of this cart, and with the export trade of the country in such vehicles.

Some months ago a gentleman named Blackburn, representing a large mercantile house in England doing considerable business in Canada, United States and the West Indies, placed an order with Mr. Ramsay for a light road cart to go to the last named country. When the cart reached the boundary at Niagara Falls, where Mr. Blackburn then was, he was so well pleased with it that instead of forwarding it to the West Indies he sent it to his house in England as a sample of what could be made in Canada, and what would probably "catch on" to public taste in the old country. The distinguishing feature of this cart is the peculiar manner in which the body is attached to the running gear, affording an easy, pleasant motion, different from what obtains in other vehicles. When this cart was put on trial in England it excited much favorable comment. It was exhibited at several fairs with the result that an order was placed with Mr. Ramsay for fifty carts. But the conservatism of our British cousins did not take readily to the light, airy, ornamental style of the cart, although the motion of it was more pleasant than that of any other vehicle they had ever seen. They wanted a more substantial and heavier body; and Mr. Ramsay, discovering just what they wanted, has gone extensively into the manufacture of the "Mineola," which seems to be just what is wanted; and he is now manufacturing largely for the British market, the probability being that the shipments of them this year will amount to 2,000 carts.



FIFTY TON TRACK SCALE.

The Gurney Scale Company, Hamilton, Ont., have recently placed a fifty ton railroad track scale at the works of the Canadian General Electric Company, at Peterborough, which deserves notice in that it demonstrates that the Gurney Company have the facilities for manufacturing such heavy scales, and that they are equal in point of accuracy, convenience and durability to any made anywhere else in any country.



The platform of this scale is 34 feet long, erected on a stone foundation laid in cement. The specifications called for the very best materials and workmanship; and from the substantial character of the machine as it now stands it should render perfect service for a lifetime. The scale beam has the full capacity to indicate fifty tons without the use of any loose weights; and when it was tested any weight placed upon the platform, from ten pounds up to fifty tons was accurately indicated, showing the perfection at which the manufacturers has arrived in building large scales.

This scale is very strongly built, resting upon chairs framed together with heavy angle iron. There are large cast iron levers with steel pivots to correspond, the massive wrought links and loops lined with steel showing that an expert attended at the forging of them. The beam, very highly finished, is a

model of mechanical skill; and the work throughout indicates that it was performed by artisans high up in their respective lines. Other concerns who require the use of such apparatus would no doubt be acting in their best interest to adopt scales of this char-

acter and capacity, a great advantage being that even car loads of merchandise can be accurately weighed without the necessity of breaking bulk, effecting a great saving in time and expense, and guaranteeing exact weight.

The Gurney Scale Company may challenge comparison of their weighing machines with the best made in the United States or elsewhere.

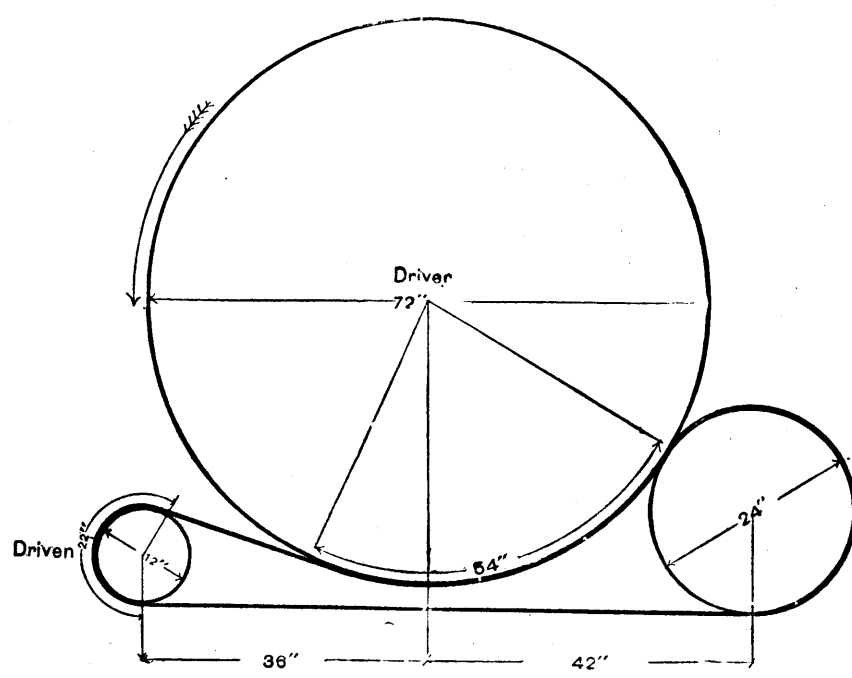
THE L. P. D. SYSTEM OF POWER TRANSMISSION.

The accompanying illustrations explain the mechanism and what is known as the L. P. D. system of driving electric dynamos.

Power transmitted to dynamos by belting is claimed to be superior to other methods, as it relieves the bearings from jarring and pounding. This system employs a belt in transmitting power; and its engagement with a part of the periphery of the driving pulley only—not encircling it—gives ample contact to carry any load at the dynamo. The tension of this belt can be instantly applied, regulated or released in the operation of this system. The belt is run at a less tension, therefore less friction and strain on the dynamo and engine bearings. The belt carries the weight of the driving pulley and shaft, while in operation, as in a cradle, and relieves the main bearings of all dead weight and friction as caused by direct belting or frictional drives.

The outline illustration shows the position of the driver, the driven and the transmitter pulleys; and the positions may be changed to meet the requirements of any particular station, care being observed to maintain the relative positions of the pulleys. That is to say, the dynamo may be placed on the floor above the driving pulley, as in stations where the power is on the lower floor and dynamo above, or the opposite; or it can be used, as shown in illustration, to drive a dynamo on same floor as the driving pulley. This system may be applied to any part of the periphery of the driving pulley, it being necessary only that the slack side of the belt in passing from the transmitter pulley to the dynamo or driven pulley, shall run clear of the driving pulley; and the belt may be of suitable length to allow of the driven pulley being placed in its desired position.

With the belt contact as shown, or with any similar arrangement of belt and pulleys giving safe to calculate on carrying a larger load than can be driven with the same width of belt and size of pulleys in direct belting. It is away, as at this point the belt begins to vibrate, and the same difficulties are met that are found in direct belting. With a dynamo covering a floor space of 47x65 inches, the transmitter, driving pulley, shafting and dynamo require 5 feet 4 inches, by 9 feet 4 inches; two dynamos, 6 feet 3 inches, by 14 feet 9 inches; three dynamos, 8 feet, by 20 feet 6 inches. This places the machines farther apart than most stations are running them with the old way of belting, and the dynamos are all on one side of shafting.

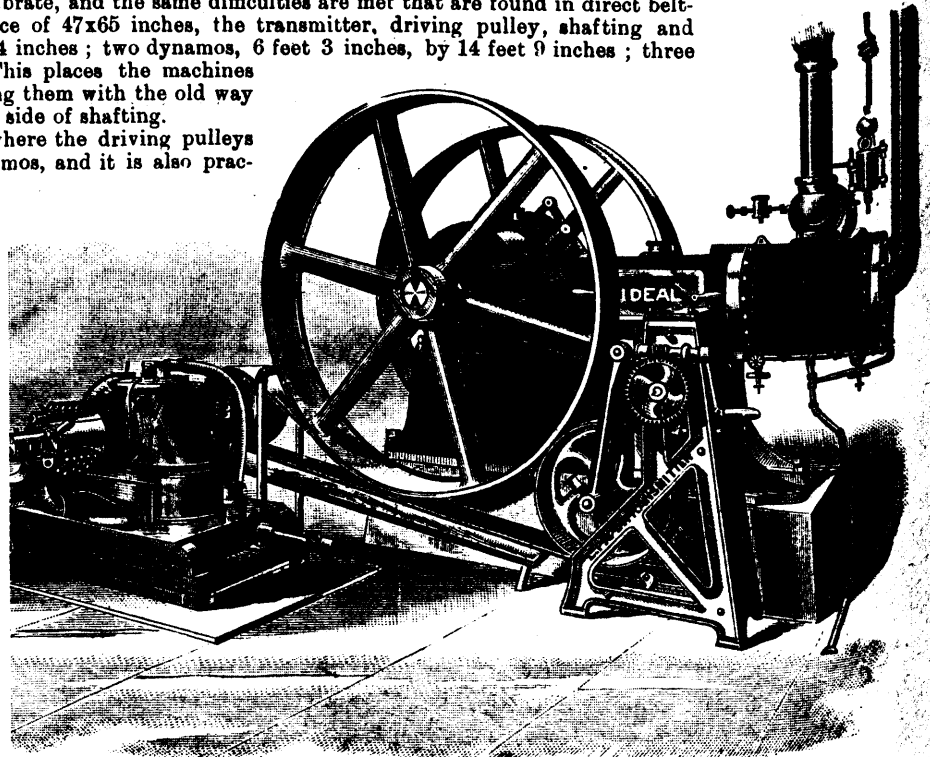


PRINCIPLE OF THE L. P. AND D. SYSTEM.

The arrangement works equally well where the driving pulleys are below the floor that supports the dynamos, and it is also practical to run eight dynamos from an engine with two drivers, 24 inch face. Four of the machines are on floor above engine, belted direct, with 8 inch belts, running side by side on engine pulleys, two on each. The other four dynamos are on same floor with engine, with transmitters set in the ordinary way, the direct belts to machines on floor above not interfering with the successful working of the transmitter belts.

It is claimed that there is no other way of belting with the dynamos that compares with this system in economy of space. This novel device is being manufactured and applied by Messrs. Darling Bros., of the Reliance Works, Montreal, to whom all communications regarding it should be addressed; and they will take pleasure in sending descriptive circulars in which are recommendatory letters from a large number of electricians and others who have the system in use.

Messrs. Darling Bros. are now placing two of these transmitters in the Balmoral Hotel, Montreal, to be operated in connection with two Robb-Armstrong engines belted direct from fly wheel.



THE L. P. AND D. POWER TRANSMITTER.

Wants =

ADVERTISING IN THIS COLUMN FREE.

Any subscriber to or advertiser in THE CANADIAN MANUFACTURER who may desire to purchase any sort of machine or machinery; or any sort of mill, factory, workshop, foundry or other supplies; or any materials for manufacturing purposes, and will notify us of his wants, the same will be published in a prominent department of this paper, and his name and address will be furnished to any subscriber or advertiser who may desire to supply the want, for which services no charge whatever will be made.

Stationary and marine engineers with proper certificates, and engineers competent to take charge of electric plants, and first-class machinists and expert electrical workmen desiring situations, are invited to make their wants known in this column. No charge will be made for putting applicants in communication with employers who may desire their services. Our friends are cordially invited to avail themselves of this invitation.

In answering refer to number of want. Address all communications to CANADIAN MANUFACTURER, Toronto.

WANTED—Boss finisher on any kind of men's goods want, situation in woolen mill. References. Address No. 5 CANADIAN MANUFACTURER.

WANTED—Stationary engineer, with second-class certificate, wants situation. References. Address No. 6, CANADIAN MANUFACTURER.

WANTED—Punching Machine—second-hand 16-inch throat, to punch hole $\frac{3}{4}$ -inch diameter, in $\frac{3}{8}$ -inch steel plate. Must be in good working order. Address No. 8, CANADIAN MANUFACTURER.

WANTED—An accomplished Analytical chemist and engineer, familiar with blast furnace work and the manufacture of steel, wants situation. Address No. 9 CANADIAN MANUFACTURER.

WANTED—A Boston manufacturer wants a good machinery house in Canada to represent him in the Dominion. Address No. 10 CANADIAN MANUFACTURER.

WANTED—Situation by stationary engineer with a first-class certificate. Best references. Competent to take charge of electric plant if necessary. Address No. 11, care of CANADIAN MANUFACTURER.

WANTED—Several first-class machinery moulders. Address No. 12, CANADIAN MANUFACTURER.

WANTED—To exchange boiler, 11 feet long, 44 inches diameter, with 45 3-inch tubes, for boiler about twice that capacity, marine type preferred. Cash difference. Address, No. 13, CANADIAN MANUFACTURER.

WANTED—A new or second hand 2 h.p. Gas Engine. Must be in good running order. State what make. Address, No. 14, CANADIAN MANUFACTURER.

WANTED—A first-class open die bolt cutter, to cut bridge bolts from $\frac{1}{2}$ inch up to $1\frac{1}{2}$ inches. Address No. 15, CANADIAN MANUFACTURER.

WANTED—Address of manufacturer making machinery for manufacturing dies, etc., for suspender buckles. Address No. 16, CANADIAN MANUFACTURER.

The April number of *Outing* is as bright, cheery and seasonable as a Spring day. Eighty pages of pleasant fiction, tales of sport with gun and rod, and of travel and adventure, embellished with many beautiful illustrations form a delightful number. The contents are as follows: "In the Shadow of Nineveh," by Wm. Hinckley; "Sport with Canada Geese," by Ed. W. Sandys; "Canoeing on Concord and Merrimac," by J. N. Drake; "Hunting a Tapir," by Allen Chamberlain; "A Wheel to San Gabriel at Easter," by "Joss"; "Through Erin A-Wheel," by Grace E. Denison; "Feathered Dancers," by J. M. Murphy; "Long-distance Riding," by Capt. H. Romeyn, and the usual editorials, poems, records, etc.

Captains of Industry.

This department of the "Canadian Manufacturer" is considered of special value to our readers because of the information contained therein. With a view to sustaining its interesting features, friends are invited to contribute any items of information coming to their knowledge regarding any Canadian manufacturing enterprises. Be concise and explicit. State facts clearly, giving correct name and address of person or firm alluded to, and nature of business.

MR. PETER POWELL will build a 100 barrel flour mill at Melita, Man.

MR. JAMES CUMMINGS is adding more machinery to his flour mill at Lyn, Ont.

MESSRS. GILMOUR & HOUGHSON'S new saw mill at Hull, Que., is nearly completed.

THE Buchanan Manufacturing Company, Kelso, B.C., are building a new saw mill.

MESSRS. MICKEL, DYMENT & SON will enlarge their saw mill at Severn, Ont., this spring.

MESSRS. JOHN INGLIS & SON, Toronto, are building three boilers for the Pelee Island drainage works.

THE Brockville Wringer Company, Brockville, Ont., have started a branch factory at Morristown, N.Y.

WILLIAM TYLER'S carpet factory, at Paris, Ont., was destroyed by fire March 15th; loss about \$4,000.

THE Lake of the Woods Milling Company will, it is said, build a large flouring mill this season at Montreal.

MR. J. R. BOOTH, Ottawa, is rebuilding the saw mill recently purchased by him from Messrs. Perlee & Pattee.

MESSRS. G. CARTER, SON & COMPANY, St. Mary's, Ont., have put in a 54 inch "Boss" turbine water wheel.

MR. ALEX. FLECK, JR., Ottawa, has added to his plant what he claims to be the largest chuck lathe in Canada.

THE Napanee Paper Company, Napanee, Ont., are getting a marine boiler from John Inglis & Son, Toronto.

THE large grist mill of Mr. W. H. Hill, at Sarnia, Ont., was badly damaged by fire, March 22nd; loss about \$8,000.

MR. JOHN SELLECK, Kemptville, Ont., is putting a boiler and more machinery in his sash factory and shingle mill.

THE Slingsby blanket mill, at Brantford, Ont., is to be considerably enlarged and supplied with additional machinery.

MR. ROBERT CANNON, Norwood, Ont., has given John Abell, Toronto, a contract for machinery for his new saw mill.

MR. J. H. GOOLD, Smith's Falls, Ont., has put in a 54 inch "Boss" turbine water wheel to run his electric light plant.

THE Toronto Fringe & Tassel Company, Toronto, will add necessary machinery to their plant and manufacture suspenders.

MR. WM. BLEADOW is building a new saw mill at Kellaloe, Ont. John Abell, Toronto, has the contract for the machinery complete.

MESSRS. CHRISTIE, BROWN & Co., Toronto, are having two new boilers built at John Inglis & Son's works for their biscuit factory.

THE Wm. Davis Company, Toronto, have given an order to John Inglis & Son for a new boiler and a large tank for their pork packing works.

MR. S. R. STUART, Mitchell, Ont., has given the Goldie & McCulloch Company, of Galt, an order for one of their Wheelock engines of 75 h.p.

THE Port Stanley Milling Company is being incorporated at Port Stanley, Ont., with a capital stock of \$50,000, to erect a flour mill plant at that place.

THE Williams, Greene & Rome Company, of Berlin, Ont., have recently put in a new 75 h.p. Wheelock engine from the Goldie & McCulloch Company, of Galt.

THE Sorel Cotton Company is being organized at Sorel, Que., with a capital stock of \$20,000 to manufacture wadding, batting and cotton and wool products.

THE Dominion Leather Covered Pulley Company is being organized at Chatham, Ont., with a capital stock of \$12,000, to manufacture a patent leather covered pulley.

MESSRS. SYER & MAYHEW, of Thamesville, Ont., have given the Goldie & McCulloch Company, of Galt, an order for a 75 h.p. Wheelock engine for their flour mill.

CAPT. C. NOBLE, Collingwood, Ont., has had his tugboat *Bob Foot* overhauled and the engines compounded. The latter work was done by John Inglis & Son, Toronto.

MR. THOMAS McCLAY, of Woodstock, Ont., has placed his order with the Goldie & McCulloch Company for a Wheelock engine of 80 h.p. for his new flour mill at Woodstock.

MESSRS. DAWSON & SYMMES, contractors, St. Catharines, Ont., have purchased one of the Wm. Hamilton Manufacturing Company's 62 inch "Boss" turbine water wheels.

AT Lakefield, Ont., on March 4th, fire destroyed the power house of the Lakefield Electric Light Company, loss about \$3,000; and Strickland & Co.'s canoe factory, loss about \$2,500.

THE Hodd & Cullen Milling Co. is being organized at Stratford, Ont., with a capital stock of \$50,000, to take over the flour milling business of Messrs. Hodd & Cullen, that place.

MESSRS. REIMER, BACKMAN & Co., Steinbach, Man., have received the engine and boiler for their new flour mill. The outfit was manufactured by Messrs. John Inglis & Son, Toronto.

THE Waterloo Manufacturing Company, of Waterloo, Que., have ordered a 75 h.p. Wheelock engine, boiler and a lot of wood-working tools from the Goldie & McCulloch Company, of Galt.

THE C.P.R. have given an order to John Inglis & Son, Toronto, for two large salt evaporators for their salt wells at Windsor, Ont. They are patent evaporators invented by Thomas Craney.

THE Wm. English Canoe Company, Peterborough, Ont., will send seven of their canoes to the World's Fair—three cedar rib canoes, one half-deck and one sailing full-decked butternut canoe.

MESSRS. J. Y. SHANTZ & SON, Berlin, Ont., have ordered from the Goldie & McCulloch Company a new 80 h.p. Wheelock engine, and two steel boilers of 150 h.p., for their new factory in Berlin.

THE E. B. Eddy Co., of Hull, Que., have placed their order for a cross compound Wheelock engine of 250 h.p., with condenser and connections, with the Goldie & McCulloch Company, of Galt.

THE Windsor Furniture Company, Windsor, N.S., have recently added some new machinery to their plant, including a fine lathe for the manufacture of hubs, ornaments, etc., for children's carriages.

THE Toronto Vitrified Paving Brick & Stone Company, is being organized at Toronto with a capital stock of \$500,000, to carry on a business indicated by the name. Mr. R. W. Prittie is a provisional director.

THE Belleville Canning Company, Belleville, Ont., will add to their plant this spring another 100 h.p. boiler and a quantity of new machinery. They expect to increase to twice their present capacity.

MESSRS. C. B. WRIGHT & SONS, Hull, Que., manufacturers of cements, lime, brick, tiles, drain pipes, etc., are merging their business into that of a joint stock company, with a capital stock of \$250,000.

THE Victoria Woodenware Manufacturing Company is being organized at Victoria, B.C., to manufacture jam, pickle, candy and other kinds of tubs and pails, washboards, clothes pins, brooms, brushes, etc.

THE corporation of Niagara-on-the-Lake, Ont., have placed their order with the Goldie & McCulloch Company for a Wheelock engine of 90 h.p., steel boiler and all connections, for their electric light station.

THE British Columbia Wood Works Company have just been incorporated at Vancouver, B.C., with a capital stock of \$25,000, to manufacture sash, doors, etc. Mr. J. H. Brinstead is one of the incorporators.

THE Woodstock Wind Motor Company is being authorized at Woodstock, Ont., with a capital stock of \$75,000 to manufacture wind mills, towers, etc. Mr. John H. Downing is one of the incorporators.

THE Standard Ice Machine and Refrigerator Company is being incorporated at Toronto with a capital stock of \$50,000, to manufacture a patent machine for the manufacture of ice and refrigerating machinery.

MR. A. CAMPBELL, of Toronto Junction, has placed his order with the Goldie & McCulloch Company, Galt, for a new 200 h.p. cross compound Wheelock engine, two steel boilers and condenser, for his new flour mill.

MR. F. H. DOTY, of the Doty Engine Works Company, Toronto, was recently in Nanaimo, B.C., negotiating with parties who propose building a powerful steam tug for towing coal barges from that place to San Francisco.

THE Granby Rubber Company, of Granby, Que., have placed their order with the Goldie & McCulloch Company, of Galt, for a Wheelock condensing engine of 300 h.p., with steel boilers, etc., for their rubber factory.

MESSRS. JAMES HALL & Co., glove manufacturers, Brockville, Ont., have made considerable additions to their works and are introducing more machinery. They will also put in a new boiler and increase their power.

THE Bain Wagon Company is being incorporated at Woodstock, Ont., with a capital stock of \$100,000 to operate a saw mill and manufacture lumber, wagons, carriages, sleighs, agricultural implements, woodenware, etc.

THE Peerless Manufacturing Company is being incorporated at Hamilton, Ont., with a capital stock of \$30,000, to manufacture wringers, washers, churns, mangles, etc. Mr. W. F. McGiverin is one of the incorporators.

THE Moffatt Stove Company is being incorporated at Weston, Ont., with a capital stock of \$50,000, to manufacture stoves, ranges, furnaces, heating and cooking apparatus, etc. Mr. Thomas L. Moffatt is one of the incorporators.

MR. JAMES GOLDIE, Guelph, Ont., has placed his order to remodel his flour mill to increase the capacity to 800 barrels, and to put in a new cross compound Wheelock engine of 400 h.p. with the Goldie & McCulloch Company, of Galt.

THE Niagara Falls Electric Light Company, Niagara Falls, Ont., have replaced their 100 h.p. Wheelock engine with one of 150 h.p. of same make, and added another 100 h.p. boiler from the works of the Goldie & McCulloch Company, Galt.

MESSRS. C. B. WRIGHT & SON, cement manufacturers, Hull, Que., are increasing their capacity from 90 to 200 barrels per day. They are putting in another 100 h.p. boiler built by W. J. Campbell & Co., Ottawa, and are building another kiln.

THE Pembroke Electric Light Company, Pembroke, Ont., have placed their order for Tandem compound Wheelock engine, boiler, shafting, friction pulleys, etc., with the Goldie & McCulloch Company, of Galt, for their new power and light station.

THE Hamilton Street Railway Company are about to increase their power by the addition of a 250 h.p. Tandem compound condensing engine and two boilers suitable; the contract for which has been given to Messrs. John Inglis & Son, Toronto.

THE Novelty Manufacturing Company, Newmarket, Ont., have now got thoroughly started in their new factory. The building is 110 x 50 feet, three stories high. They are very busy, and expect to have to put up another building for storage purposes.

THE Niagara Falls Park & Electric Railway Company have placed their order with the Goldie & McCulloch Company for two Wheelock engines of 150 h.p. each, and steel boilers and condensers to operate their generators at the Queenston end of the road.

WILLIAM SCLATER & Co., Limited, Montreal, are being incorporated as a joint stock company with a capital stock of \$50,000, to take over the business of the partnership of Wm. Sclater & Co., and to carry on the manufacture of asbestos materials, etc.

MR. WM. LOTT, Belleville, Ont., is building a new woollen mill adjoining his old one, which he has sold to the Mac Machine Company. The new mill will be one-third larger than the old. He is adding a quantity of new machinery which will be running by May 1st.

THE C.P.R. have ordered a 100 h.p. Wheelock engine from the Goldie & McCulloch Company for their new elevator at St. John's, N.B. This firm has just shipped to the C.P.R. an engine of 150 h.p. and two steel boilers to Vancouver, B.C., for their cement works.

MESSRS. G. J. HAMILTON & SONS, of Pictou, N.S., are adding a new oven to their already well equipped biscuit factory, for the further manufacture of biscuits. It will cost about \$3,000, and is being built under the superintendence of an expert in this line from Toronto.

MESSRS. RALLING & WILLIAMS, of Exeter, Ont., have placed their order with the Goldie & McCulloch Company, of Galt, for the machinery for a new 100 barrel roller flour mill, including a h.p. Wheelock engine, and an improved feed water heater and lime and oil extractor.

THE G. & J. Brown Manufacturing Company, Belleville, Ont., have seven contracts in hand for steel bridges; are manufacturing trucks for the Montreal electric railway; are making a large steel

boiler for the contractors for the Morrisburg canal, and are turning out a lot of other contractors' plants.

Messrs. W. McNally & Co., Montreal, have an attractive card in another page in which they request attention to some of the building materials handled by them, and in demand by manufacturers for the construction of factory buildings, etc. They make special mention of Portland cements, calcined plaster, drain pipes, etc.

The Ohio Woodenware Works, near Yarmouth, N.S., owned by Mr. George Crosby, is a comparatively new industry, which is now giving employment to some fifteen hands in the manufacture of hay racks, clothes pins, washboards, broom handles, children's sleds and wagons, etc. The factory building is 75 x 48 feet, two stories.

The McKinnon Dash & Hardware Company, St. Catharines, Ont., inform us that they are now putting in special machinery and dies for manufacturing a variety of suspender buckles, trimmings, ornaments, pants buttons, hooks and eyes, etc. They are now working on samples which they will present to the trade in a short time.

The Peterborough Milling Company, Peterborough, Ont., are remodelling the Blythe flour mills at that place, taking out all the old machinery and putting in new, which will increase the capacity to 500 barrels per day. They are using two 62 inch "Boss" turbine water wheels made by The Wm. Hamilton Manufacturing Company, Peterborough.

Messrs. M. Beatty & Sons, Welland, Ont., inform us that they have just shipped to Messrs. Papore & Fraser, at Morrisburg, Ont., a steam engine and necessary machinery for a steam derrick to be used in the work they are now doing on the Morrisburg canal. It is to be used in taking away the earth which is excavated by the steam shovel in use there.

The Oil Well Supply Company, Petrolia, Ont., are at present busy completing a large order, including two car loads of deep well sinking tools and machinery for parties in London, England. The experience of this firm, covering a period of twenty-five years, has given them a continental reputation in this line, their products having been shipped to all parts of the globe.

Messrs. John Inglis & Sons, Toronto, are building a stern-wheel iron hull steamer to ply on the Saskatchewan river, N.W.T., to be delivered at Edmonton early in May. It is being built in Toronto, and will be sent to destination via rail in sections, to be put together at Edmonton. It will be fifty-three feet long, and will draw not more than twenty-six inches of water.

The Robb Engineering Company, Amherst, N.S., have just built a 100 horse power "Monarch" steam boiler for the Windsor Furniture Company, Windsor, N.S. This boiler is the invention of Mr. J. A. Mumford, of Hantsport, N.S. One of these boilers was recently placed in the power house of the Windsor, N.S., Electric Light and Power Company, where it is rendering excellent service.

Messrs. P. J. Power & Co., Ottawa, are building two large marine boilers for Government dredges, also one for Messrs. MacRae & Co.'s silver mine in the Rocky Mountains. This latter boiler is somewhat different from the ordinary boiler, being made in sections, so it can be taken apart to be shipped; as it has to go a long distance by mules through the mountains after leaving the railway.

In another page the B. F. Sturtevant Company's advertisement directs attention to the improved portable forges manufactured by them. These forges are made in twenty-five sizes and styles, and are adapted for both hand and belt power. The steam fans are intended for forced draught for boiler fires. Their blower, driven by a direct acting motor, excites much attention, both for its novelty and economy.

The agreement between the municipality of Peterborough, Ont., and the Canadian General Electric Company for the street railway franchise has been signed by both parties. The rails for the railway have been ordered from Europe, and the electrical appliances will be made in the company's own shops at Peterborough. Work will be begun as soon as the ground is ready, and several miles will be constructed this year.

Mr. W. H. Law, of the Central Bridge and Engineering Company, Peterborough, Ont., informs us they are having a number of enquiries for the "Optimates" power hammer, of which he is the patentee, and which is advertised in this journal. Specimens of this hammer will be shown at the World's Fair. With this hammer one man has hammered out a piece of 3 1/4 inch round steel to 7 inches square 3 feet long in one heat.

Messrs. James Hay, James Hay, jr., and others, of Woodstock,

Ont., and Thomas A. Hay, of New York, are being incorporated under the name of James Hay & Co., Limited, with a capital stock of \$200,000 to acquire the saw mill, furniture factory, etc., of the firm of James Hay & Co., Woodstock, and to continue that business. They will manufacture furniture, baby carriages, wagons, varnish, house furnishings, building supplies, etc.

The Mac Machine Company is a new concern recently established in Belleville, Ont., for the manufacture of rock drills, mining machinery, etc. The personnel of the company are: Messrs. W. McMillan, John S. Tower and H. L. Burrell. Their works are equipped with a full outfit of the best machines and machinery, and the experience of the proprietors in this line of work is a guarantee that whatever they do will be done right.

The Ball Electric Light Company, whose works are at 70 Pearl Street, Toronto, in announcing their business in our pages, show that they are manufacturers, engineers and contractors for complete electric light and power installations; are manufacturers of arc and incandescent dynamos and motors, and make a specialty of equipping electric elevators. They ask that any who may be interested write as above for printed matter and estimates.

The Central Bridge & Engineering Works, Peterborough, Ont., are putting in a new 200 h.p. boiler, and will extend their works this spring by the addition of a new blacksmith's shop and foundry, to enable them to go more fully into general engineering work. They have been very busy all winter, working to their full capacity on bridges and railway work. They have turned out sixteen bridges this winter varying from 250 to 40 feet span.

The Haworth Belting Company, who ever since they began the manufacture of leather belts in Toronto, have occupied the premises No. 11 Jordan Street, have taken over the large four storey building adjoining, which they have fitted up with every modern appliance for carrying on their industry. The machinery will be driven by electric power. This concern made all the dynamo belts used in the power house of the Toronto Incandescent Electric Light Company, Toronto, and are supplying the Toronto Railway Company with similar belts for their new electric power house.

A COMPANY of capitalists represented by Mr. W. Van Allen, of Toronto, have purchased some ninety acres of land at Peterborough,

IMPORTANT TO

Printers, Bookbinders AND PUBLISHERS

JAMES MURRAY & CO.

Printers and Bookbinders • 28 Front St. West • TORONTO •

Have decided to dispose of their well-known established business. The plant and machinery is of the latest modern description and in first-class condition, made by the best English and American manufacturers. The various departments have been lately remodelled, making this printing and bookbinding business a most desirable one to acquire.

The bookbinders' stock of leathers, cloths, marble papers, etc., have been carefully bought in the English market.

The premises contain three large flats, well lighted, heated by steam; the machinery is run by electric power, and is in every way well adapted for the carrying on of a large business.

Inspection invited. Tenders will be received for the entire running business, or for any portion of the stock, plant, or machinery. All tenders must be received by the undersigned not later than the 1st day of May, 1893. For condition of sale and further particulars apply to

T. G. WILSON, Trustee

28 Front Street West - - TORONTO

Ont., on the line of the Canadian Pacific Railway. The land will be occupied by a piano factory, a furniture factory and an another industry where material will be turned out to supply the first two factories. Mr. Van Allen says about sixty hands will be employed at commencement, and that these will be increased to a hundred very soon. They propose to commence building operations as soon as the spring weather will permit, and no time will be lost in getting everything in operation.

THE American Watch Case Company are erecting a new factory building on King Street, Toronto, west of Spadina Avenue. It is of brick, with stone basement. It will be five stories high on the front, 34 feet wide, and extend back 200 feet. It is being constructed with special reference to the business for which it is to be used, and there will be about 200 windows in it. It is being rapidly pushed to completion; and will be equipped with the machinery now in use in the company's factory in Adelaide Street, to be driven by electric power. The improvements will cost about \$70,000, and the works will give employment to about 175 hands.

MR. H. W. PETRIE, Toronto, machinist and general machine dealer, has sent us a copy of his list "No. 17," having reference to the new and second hand machinery which he is offering for sale. This list, comprising 96 pages, appears to be more complete than any before issued by him. Illustrations are shown of a large number of the articles, and all of the goods are clearly described, showing their capacity, use, etc. There is also an index by which ready reference may be had to any machine alluded to in this book. A large number of letters are given from customers from all parts of Canada, alluding to the satisfaction they enjoy in their dealings with Mr. Petrie.

THE Montreal Transportation Company have contracted with a shipbuilding concern in England for the construction of a steel freight steamer for use on the upper lakes. She will be 253 feet long, 40 feet beam and 22 feet deep. She will be equipped with triple expansion engines.

THE works of the St. Johns Stone Chinaware Company, at St. Johns, Que., was destroyed by fire March 4th; loss about \$100,000. Extensive improvements had recently been made in these works, including \$25,000 worth of new machinery. About 225 hands were thrown out of employment.

MESSRS MUNRO BROS., New Glasgow, U.S., have sent us a circular having reference to their business. They make a speciality of manufacturing wire goods, especially woven wire mattresses, door mats, fencing, etc. About one mile in length of wire is required to make a mattress. They make a woven wire seat for carriages and railway cars that possesses many merits, and they are supplying many of these to both the C.P.R. and Intercolonial Railway. The beautiful new offices of the Union Bank at New Glasgow, are equipped with railing, screens, etc., supplied by them. Their factory is large, well arranged, well equipped with all necessary machinery, and well managed.

THE Dodge Wood Split Pulley Co., report several large contracts for heavy rope drives, such as they are now installing in most of the leading saw mills. They say, "If there is one place more than another where safe and steady power is required it is on our big saw mills on the Chaudiere, and they are all using the rope drive." The Dodge Co. give full information and complete estimates on rope drives for any power, erected in running order, and invite correspondence from those contemplating improving their power plants. They are also running full time on orders from all quarters of the Dominion and Europe, for their celebrated "Dodge Wood Split Pulley," the demand for which is growing continually.

It was recently stated in these pages that the Dominion Suspender Company, Niagara Falls, Ont., were preparing to erect large works on the New York side, from which to supply their American demand. We are informed that this scheme is now being put into operation, the company being now engaged in establishing their American plant. The push and energy displayed by these young

FOR SALE

- 1 Stiles & Parker 400 lbs. Friction Drop Press.
- 1 " " " No. 2 Power Press, new.
- 1 " " " 0 " " " "
- 1 Turbine 14 inch Base Water Wheel.
- 1 Steel Shaft 10 feet long 10½ inches diameter.

Apply to _____

The D. F. JONES Mfg. Co., Ltd.

GANANOQUE, ONTARIO

WE MANUFACTURE
FANS FOR NOTHING
but hard work, and having had twenty years' experience we know how to get steam out of Dye Houses and the largest possible product from Dry Rooms

Our Compound Wheel is the most powerful in the world, and if we can't be of actual value to you we don't want your money.
Send for Circular and information. **BARNEY VENTILATING FAN CO., 70 Pearl St., Boston, Mass., U.S.A.**



THE CANADIAN

Colored Cotton Mills Co.

SPRING, 1893

Ginghams, Zephyrs, Cravenettes, Bedford Cords,
Cheviot Suitings, Flannelettes, Dress Goods,
Skirtings, Oxfords, Shirtings, Cotton-
ades, Awnings, Tickings, Etc.

See samples in
Wholesale Houses.

: NOW READY

D. MORRICE, SONS & CO., Agents

MONTREAL AND TORONTO.

Canadians, the Messrs. Doran, the chief spirits in this enterprise, is most noticeable and commendable. Their "Hercules" goods are well known and in strong demand throughout Canada, and no doubt they will soon be as well known in the United States in a very short time, after their American factory is put in operation. They deserve success, and they are receiving the deserts to which they are entitled.

The Hobbs Manufacturing Company, London, Ont., announce that they are now handling "Joyes' Fluid," which they inform us is a disinfectant to prevent the spread of cholera, and recognized as the best and most efficient for that purpose by many of the more prominent health officers of Europe. The compound met with much favor at Hamburg last season when the cholera raged with such virulence there. For some time the regular shipments of the article to that city from the factory in London amounted to 2,000 gallons per week, but the demand grew rapidly until in one day an order was placed for 33,000 gallons, followed immediately by another order for 44,000 gallons. Samples, medical pamphlets, prescription formulary, etc., free on request to Hobbs' Manufacturing Company, London, Ont.

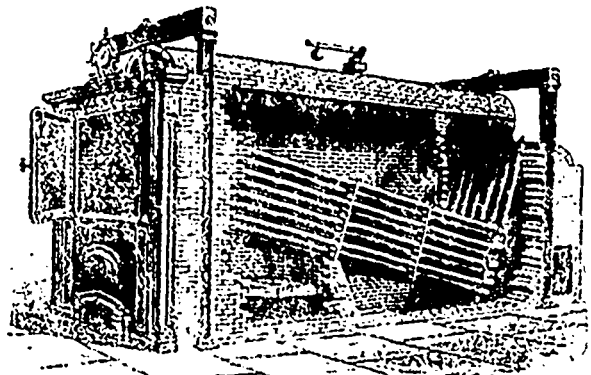
The following named parties in Canada have purchased Morse & Co. reosating machines from the manufacturers, Messrs. Darling Bros., Montreal, since January 1st.—Windsor Hotel, Montreal Gas Company, J. R. Molson & Bros., Joseph Robert et Fils, Dominion Oil Cloth Company, Montreal Steam Laundry, Wm. Rutherford & Sons, Witness Printing Company, H. S. & W. H. Masterman, St. Lawrence Sugar Refinery, Daily Star, J. A. Stevenson, Dominion Wire Company, Montreal; Wm. Davies Company, Allen Manufacturing Company, Toronto Brewing Company, Goederham & Worts, Toronto; Dominion Cotton Mills, Magog, Que.; John Bertram & Sons, Dundas, Ont.; Almonte Knitting Company, Almonte, Ont.; Standard Drain Pipe Company, St. Johns, Que.; Granite Mills, L. Coté et Frère, Duclès & Payan, St. Hyacinthe, Que.

The Toronto Incandescent Electric Light Company, in issuing a notice of 40 per cent. reduction in the price of their incandescent electric light, say that in view of the satisfactory earnings of the Company, due to the increase of business during the past year, it has been decided to share the profits with customers by reducing the price of incandescent electric light to six-tenths of a cent per hour,

net, per sixteen candle power lamp. This reduction has been rendered possible by the rapid growth of business and the very general adoption of the use of incandescent electric light by the public. Other advantages accruing to users of this light, in addition to the low price, are that it is convenient; it is safe; it is healthy; it does not injure house plants; it does not tarnish silver nor blacken ceilings or decorations.

The Reliance Electric Manufacturing Company, Waterford, Ont., have recently made sales as follows:—St. Thomas Gas Company, one 100 h.p. 500 volt generator; the Brantford, Ont., Electric & Power Company, one 80 h.p. 500 volt generator; Lakesfield, Ont., Electric Light Company, one 15 light arc dynamo; Wm. Cooke & Son, St. Catharines, Ont., one 40 h.p. motor; S. Taylor & Sons, St. Catharines, Ont., one 5 h.p. motor; Walker & Co., Guelph, Ont., one 10 h.p. motor; Lawson Bros., Toronto, one 15 h.p. motor; H. R. Stewart, Toronto, one 5 h.p. motor; Dominion Show Case Company, Montreal, one 5 h.p. motor; John M. Poole & Co., Toronto, one 7 h.p. motor; Wm. G. Osgeedy, Toronto, one 10 h.p. and one 2 h.p. motors; T. W. Ness, Montreal, one 5 h.p., one 7 h.p., one 10 h.p. and one 2 h.p. motors.

Mr. W. S. Rockwell, constructing engineer, 81 Centre Street, New York City, desires us to announce to our readers that he is manufacturing and establishing an improved duplex system of fuel oil appliances for annealing, forging, welding, melting, enamelling, brazing, and heating generally; and that heating furnaces are designed and built by him for every purpose. Mr. Rockwell is at this time placing a large plant of this description in the extensive



The Babcock & Wilcox Co.

Water Tube Steam Boilers

Now being manufactured in Canada.

Agents for the Dominion

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Send for book "STEAM" free on application.

JAS. A. CANTLIE & CO.

GENERAL MERCHANTS

AND

MANUFACTURERS' AGENTS

ESTABLISHED 22 YEARS.

COTTONS—Grey Sheetings, Checked Shirtings, Denims, Cottonades, Tickings, Bags, Yarn, Twine, etc.

TWEEDS—Fine, Medium and Low Priced Tweeds, Serges, Cassimeres, Do-skins, Etoiles, Kerseys, etc.

FLANNELS—Plain and Fancy Flannels, Overcoat Linings, Plain and Fancy Dress Goods, etc.

KNITTED GOODS—Shirts, Drawers, Hosiery, etc.

BLANKETS—White, Grey and Colored Blankets.

Wholesale Trade only Supplied

13 & 15 St. Helen St., MONTREAL.

20 Wellington St. W., TORONTO.

Advances made on Consignments. Correspondence Solicited

A LONG FELT WANT!

A TYPE WRITER | Which does the Work
For \$20.00 | of the
\$100.00 Machines.

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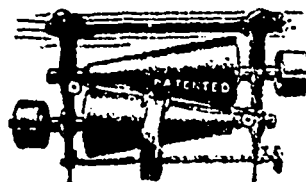
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works of the Kemp Manufacturing Company, Toronto, a detailed description of which will be published in these pages when the apparatus has been completed and is in working order. The Kemp Manufacturing Company are going extensively into the manufacture of enamelled granite hollow ware, and this fuel oil heating plant now being erected by Mr. Rockwell is to be used in that business.

The Burrell-Johnson Iron Company, of Yarmouth, N.S., have just turned out a fine 1,200 h. p. steam engine for the new mill of the Yarmouth Duck and Yarn Company, Yarmouth, N.S. It is a Corliss cross compound, having cylinders 17 and 30 inches diameter by 30 inch stroke, making ninety revolutions a minute, with a belt fly-wheel ten feet in diameter, with 30-inch face, fitted for two belts. This fly-wheel is said to be the largest ever turned in a lathe in the Maritime Provinces. It weighs about six and a half tons. The engine is so constructed that it can be worked separately as a condensing or atmosphere exhausting, but when working together is a jet condensing compound machine. It is supplied with steam from two large steel boilers, manufactured by the Burrell-Johnson Company, carrying ninety pounds pressure. These boilers also supply steam for heating the building. The water to supply the condenser

is taken from the harbor 350 feet distant, being drawn by an independent air pump of Patten's patent valve motion.

At the Toronto Industrial Exhibition last September Mr. F. E. Gaudrie, of Port Hope, Ont., the inventor, had in operation in Machinery Hall his patent can and bottle labeling machine, which was alluded to in these pages at that time. Since then Mr. Gaudrie has made important improvements in his machine, by which its capacity is very largely increased. At a recent test, when being operated by hand power, it labeled vegetable and fruit cans at the rate of 100 per minute, which was quite as fast as three men could place and remove the cans. Mr. A. W. Spooner, the only man in the world who manufactures Spooner's copperine, of Port Hope, which, he says, is the handsomest town in the whole world, is the selling agent for this labeling machine, and to whom all enquiries concerning it should be addressed. The machine is made to be operated by either steam or hand power, and is rapidly coming into use in bottling and canning works throughout Canada. Patents have been obtained for it in Canada, United States, England, France and Germany. The patents in these foreign countries are for sale. For further information address A. W. Spooner, Port Hope, Ont.

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THREE 25 H.P. PORTABLE loco. fire box boilers, in good order.

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ONE 12 x 16 SLIDE-VALVE ENGINE, Beckett's make.

TWO 9 x 12 HORIZONTAL ENGINES, Waterous make, "Clipper."

ONE 9 x 12 HORIZONTAL ENGINE, Morrison maker, Hamilton.

TWO 5½ x 9 SLIDE-VALVE ENGINES, Beckett's make.

ONE 14 H.P. ENGINE, Leonard make, nearly new.

ONE 12 H.P. HORIZONTAL PORTABLE ENGINE and boiler on skids; Ames & Co., makers, Oswego, N.Y.

ONE 12-IN. H.P. TRACTION PORTABLE ENGINE and boiler Oshawa make.

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ONE 26-INCH MCGREGOR, GOURLAY & CO. make. heavy surface planer, almost new.

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ONE ALMOST NEW VERTICAL SPINDLE boring machine, McGregor, Gourlay and Co.'s make.

ONE ALMOST NEW IRON TOP JIG SAW, Cowan and Co., makers.

ONE BLIND SLAT TENONING MACHINE.

SIX GOOD SAW TABLES.

ONE WOOD FRAME TENONER in good shape.

ONE SET TWO HEAD BLOCK SAW MILL irons.

ONE ALMOST NEW GENUINE "BAILEY" GAUGE, or handle lathe, with countershaft.

ONE ALMOST NEW SPINNING LATHE, for spun metal work, with countershaft.

FOUR DOWELL MACHINES.

ONE ALMOST NEW 40-INCH WHEELS BESON BAND SAWING MACHINE, with one 2½-inch blade.

ONE ALMOST NEW DOUBLE EXCELSIOR CUTTING MACHINE, with packer.

ONE SELF-ACTING WATEROUS MAKE SHINGLE MACHINE and jointer.

ONE ALMOST NEW, GOLDIE & McCULLOCH make, Purifier.

ONE 20-INCH "WATEROUS" CHOPPER, almost new, complete with double elevators.

ONE LOZENGE MAKING MACHINE, of large capacity, American make, complete with brass dies and printing attachment.

ONE DOUBLE EXCELSIOR CUTTING MACHINE, almost new.

ONE GOLDIE, McCULLOCH PURIFIER, almost new.

FULL PARTICULARS CHEERFULLY GIVEN upon enquiry at the Canada Machinery and Supply Co., Brantford, Ont.

THE Dodge Wood Split Pulley Co., Toronto, are sending out the following notice which explains itself:—" We wish to notify the public that wooden pulleys are being manufactured which violate rights secured by us by letters patent 17243 of the Dominion of Canada, and are being offered for sale. In a recent patent case an eminent judge, in giving judgment, stated that an invention is entitled to a liberal construction of its claims, and all persons who make devices or machines operating on the same principle and performing the same functions by analogous means, or equivalent combinations, even though the machine may be an improvement of the original, and patentable as such, are to be treated as infringers. The law also equally prohibits the making, selling and using a patented article. All persons interested are therefore warned against purchasing or using wooden pulleys manufactured according to our methods, unless such pulleys bear our legal patent stamps. When ordering specify plainly 'Dodge' patent pulleys, as case. Have come to our knowledge wherein customers have innocently ordered 'Wood Split Pulleys,' and unscrupulous dealers have supplied the 'imitation.'"

Messrs. DAVIS & SONS, yacht and engine builders, Kingston, Ont., inform us that they are now very busy in their ship-yard. They have twenty-eight men employed in the building of three steamboats. The largest one of these is for the Kingston & Ottawa Navigation Company and will be named *James Swift*. She is 107 feet long, 23 feet beam, 7 feet deep, to be equipped with a steel return tubular boiler and compound engine, now building at the Davis' shops. There will be eighteen state rooms, eight of which will be double, so as to make four large rooms for families. The vessel will be lighted by electricity throughout, and all modern improvements will be adopted. The next vessel being built is a 48 foot passenger yacht, 10 feet beam and 4½ feet hold, with a compound engine and steel return tubular boiler. They are also build-

ing a yacht 40 feet long by 8 feet beam, for Mr. Timothy Eaton, of the T. Eaton Company, of Toronto, to be shipped to Gravenhurst by June 1st, for his private use at Port Carling. She will have a very fine fore and aft compound engine, steam duplex pump, steel return tubular boiler, to burn wood or coal, all to be fitted with carpets, cushions, canvass awnings, etc.

THE Whitman & Barnes Manufacturing Company, manufacturers of machine knives of all descriptions, twist drills, special machines, etc., who have a large establishment at St. Catharines, Ont., for supplying their Canadian trade, and other extensive works at several places in the United States, have recently obtained a desirable location at West Pullman, Illinois, near Chicago, where they will erect what will probably be the largest plant in the world for that business. The site is an excellent one, containing twenty acres of land, and having the best of shipping facilities, and connections with all the various railroads entering Chicago. This western plant will not in any way interfere with the factories already located at Akron and Canton, O.; Syracuse, N.Y., and at St. Catharines, Ont., which will still be run to their full capacity upon eastern and foreign trade; but it will be used to take care of the company's rapidly growing western business. It is expected that several new lines of manufacture, including agricultural implements, will be added when the new plant is completed. The engine house of the new plant will be 75 x 40 feet, and the boiler house 100 x 40 feet. Employment will be given to 1,500 men.

SOME time since it was announced in these pages that the Gananoque Carriage Company, at Gananoque, Ont., and the Brockville Carriage Company, at Brockville, Ont., had been merged into one concern, retaining the name of the latter company. This move has proven eminently successful and profitable; and while the headquarters of the new concern are at Brockville, a certain part of the

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- Boiler, 42 in. diam. x 10 ft. long.** Complete with heating connections. In use about two years, and attended by a practical man who knew the care of machinery—a bargain.
- Band Sawing Machine, Cant-Laidlaw make, No. 2,** with 34 in. wheels. In first-class shape.
- Upright Shaper, Cant-Laidlaw make, No. 1,** complete and in A 1 condition.
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- Wood Lathe, 16 in. swing, 8 feet shears,** by Cant Bros., Galt, almost new.
- Boring Machine, Swing Cross Cut Saw, Copper Glue Heater, Comb. Cross Cut and Rip Saw Table** with boring attachments applied. **Hand Feed Rod Machine, Sanding Machine, Polishing Tumbler, Emory Grinders, Etc.**

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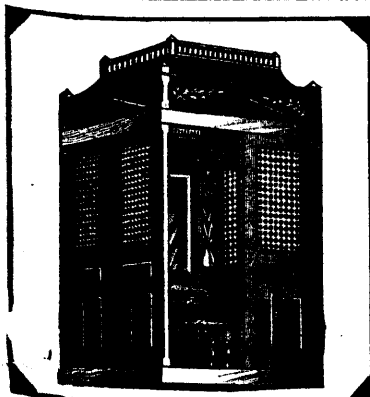
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manufacturing is continued at Gananoque. We are now in receipt of an illustrated catalogue from this concern, descriptive of the vehicles manufactured by them; and of course it includes a very large and exceedingly well chosen line of goods specially adapted for the Canadian trade. The excellent character of these carriages is well known throughout the country; but any in the trade who may desire further information are requested to intimate their wishes to the company at Brockville, when full particulars will be sent. The Brockville factory is situated on the lines of both the Grand Trunk and Canadian Pacific Railways, with sidings from each road. The main building is five stories high with a frontage of 185 feet on one railroad and 136 feet on the other, giving a total floor area of 71,580 square feet, which, with the Gananoque factory, gives over four acres of floor space.

The Dominion Sanitary Company, of St. Johns, Que. have prepared a fine exhibit of their products to go to the World's Fair, at Chicago, and this is the way the St. John's News describes it:—"Some people might regard it as presumptuous for the little town of St. Johns, in the Province of Quebec, to place itself in competition with the great potteries of the United States, England, and France, yet the Dominion Sanitary Co. have dared to do this, well knowing what they are attempting, and with the hope of at least winning a World's Fair medal. They are sending some sixty different varieties of closets, inclusive of the following patterns: The Unitas, the Inodoro, the Pilot, the Merrimac, the Monarch, the Stork, the Clawfoot, the Prima Syphon, the Improved Sanitary in one and two pieces, the Demorset Hopper, the Long Oval Hopper.

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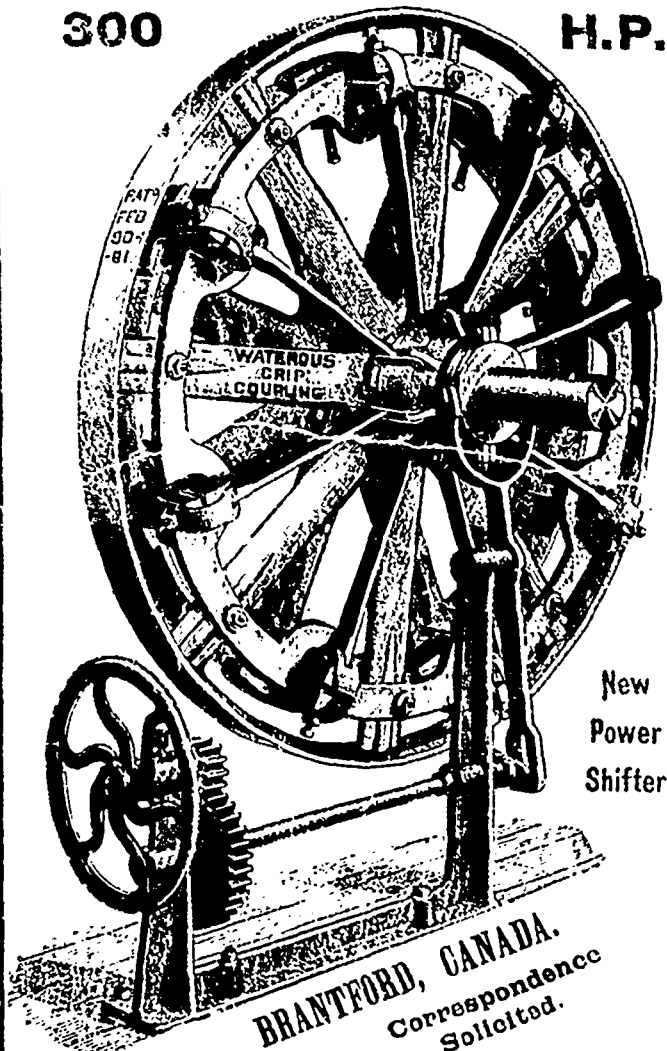
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Correspondence
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the Undine, etc., etc. Some of these are plain white or brown, while others are most artistically and even elaborately decorated, and in this particular the skill of the Artistic Decorating Co., of St. Johns, as well as of the manufacturers of the ware, is brought into prominence. Taken for all in all, the make and finish of these goods are as near perfection as could be desired, and reveal the remarkable progress that has been made in a few years' time in this important branch of sanitary ware. The goods are sold here at about the price as similar ware fetches in England, and at less than current prices in the United States."

In recent issues of this journal allusion has been made to the Steel Bath Manufacturing Co., of Toronto, of which Mr. George Booth, treasurer for many years of the Canadian Manufacturers' Association, is president. This company was formed to manufacture a steel clad bath tub, invented and patented by Mr. Booth; and ever since their factory on Queen Street East, Toronto, was first put in operation, it has been taxed to its utmost capacity in the production of this bath. Although the capacity of this factory was large the demand for the article has increased so rapidly, that a consid-

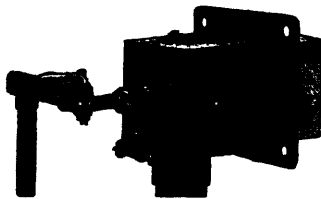
erable enlargement of it is required and is now being made. This factory supplies only the Canadian demand; but to meet the demand in the United States a factory was established in Detroit. This was thought to be of capacity sufficient to meet the demand in that country, but the experience there is similar to that here, and now the company find it necessary to considerably enlarge their American plant. A large demand for this bath has also sprung up across the water, and to meet it the company are establishing works in London, England. Of course a great deal of heavy machinery is essential in such business, and the whole outfit for the London factory was manufactured here in Toronto, under the personal supervision of Mr. Booth, and was shipped to destination a few days ago. The fact that this machinery was built in Canada, and shipped to England, is suggestive of the progress this country is making in that direction. Mr. Booth informs us that his company have secured desirable space at the World's Columbian Exposition, at Chicago, and will make a most beautiful and attractive exhibit there.

The Canadian Pacific Railway Company are building an engine

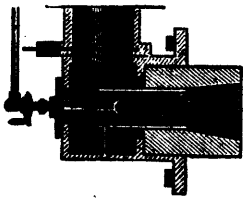
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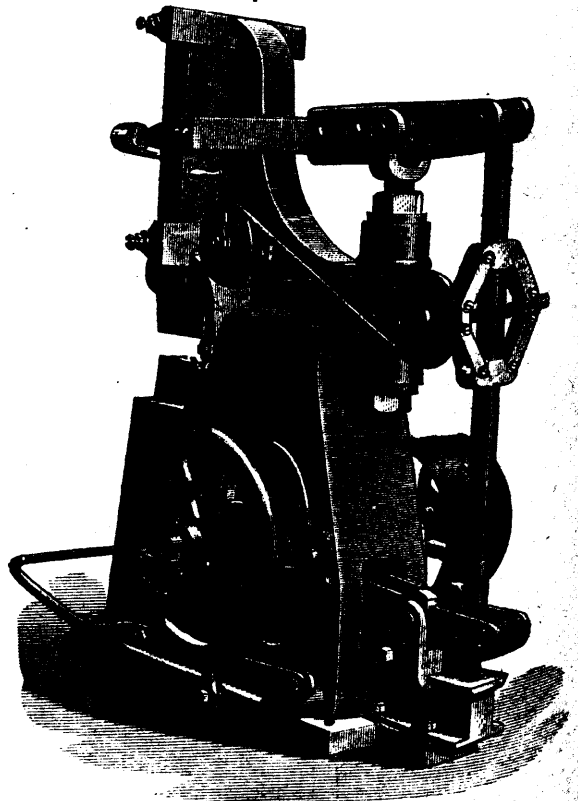
Patented in the United States, Canada, and England.

W. H. LAW,
Inventor.

MANUFACTURED BY

The Central Bridge and Engineering Co., Ltd.

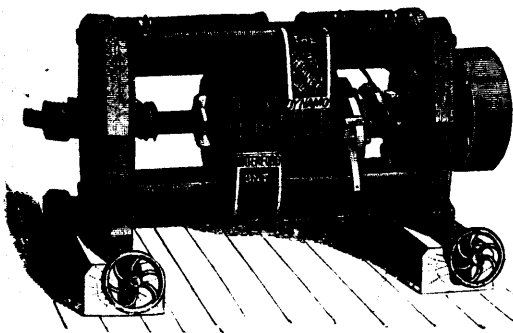
PETERBOROUGH, ONTARIO, CAN.



and train of passenger cars for exhibition at the Chicago World's Fair, of which the following is a description: The train is 400 feet in length, 10 feet 3½ inches wide, and 14 feet 8 inches high. It has been built entirely in Montreal. It is vestibuled throughout, is lighted with electricity, heated with steam, and fitted up with all the latest signals, brake and coupler devices. Its exterior is finished in Honduras mahogany. The interior decorations are from special designs by Mr. E. Colonna, architect. The locomotive was constructed by D. Preston, the company's master mechanic, and the coaches by John Higginson, the master car builder. The sleeping car, "Satsuma," is decorated in Spanish renaissance style with woodwork of white mahogany, with metal furnishings of old bronze. The seats are upholstered in sage green plush. The ceiling is paneled. The car contains eight sections and two staterooms en suite, bath-room and smoking-room. It can accommodate forty-four passengers. The dining car "Savoy," has tables for thirty. The Italian renaissance style has been copied in its interior decorations. The seats are upholstered in yellow brown leather. The carpet is old Indian rug pattern; the metal work is old bronze; the wood work is white mahogany in the main room and old oak in

the passages. The kitchen and pantry is most complete. The first-class car will carry fifty-six passengers. It is finished in the early Italian renaissance style with woodwork of white mahogany in the main room, and old oak, upholstered with olive corduroy in the smoking-room; the plush is copper red. The second class is upholstered in leather. It can be made into a sleeping car at night and can carry sixty-four passengers. It has a smoking compartment and separate closets and lavatories for men and women. The locomotive is a powerful one of the 10-wheeled passenger type, with driver diameter of 5 feet 9½ inches. It is capable of hauling ten coaches at sixty miles an hour. Altogether the exhibit will reflect the highest credit on C.P.R. enterprise and Canadian workmanship.

FOLLOWING is a description of the steel steam yacht now being built for Mr. A. E. Gooderham, of Toronto, by the Hamilton Bridge and Tool Company, of Hamilton; from designs by Watson, the famous Scotch yacht builder. She will be entirely of steel, and her dimensions are: Length over all, 118 feet; length l.w.l., 101 feet 10 inches; beam extreme, 17 feet ½ inch; beam l.w.l. 16 feet 10 inches; least freeboard, 3 feet 6 inches; draught 8 feet 6 inches. The deck house, which, with all deck joiner work, will be of teak,



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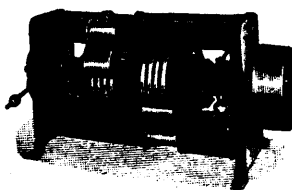
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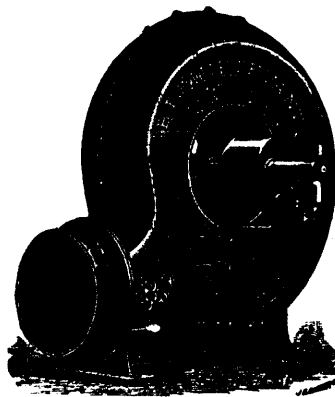
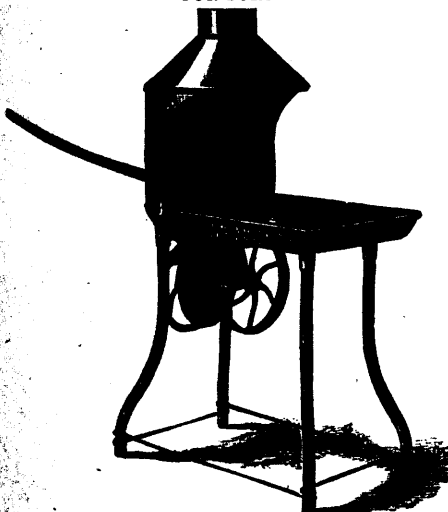
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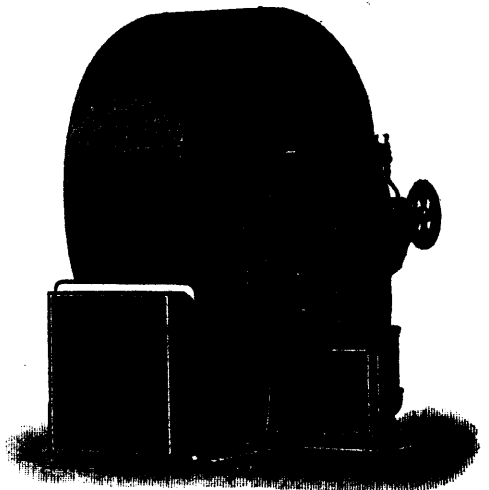
B. F. Sturtevant Co.
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THE STURTEVANT

STEAM - FANS

FOR

Boiler Fires, FORCED OR INDUCED DRAUGHT



is 17 feet long, containing a smoking-room forward with a galley abaft it, just over the fore end of the boiler and ventilating into the stack. The forecabin, with hammock berths for six men, is forward, finished in clear white pine varnish. The dining saloon is 12 feet 6 inches long and the full width of the vessel, finished in quarter oak, the wainscoting being about 4 feet high, with tapestry hangings above. The space between the dining saloon and machinery, 10 feet 3 inches, is given to the owner's room on the port side, the stairway and the pantry to starboard. This room will be finished in bird's-eye maple with tapestry hangings, fitted with wardrobe, dressing case, folding bed, etc., and communicating with a small toilet room. The pantry will be finished in black ash. It is located just below the galley and opens directly on the dining saloon. The engine and boiler space is 28 feet long, abaft, which is the ladies' cabin, 8 x 15 feet, finished like the owner's room, with a divan around three sides. Under the floor is a bath tub. To starboard of after companion is a state-room, and to port are two toilet rooms, the after one for the officers, who occupy two after state-rooms, these three being finished in quarter oak. The engine is a triple compound, built by the Kerr Engine Company, of Walkerville, Ont. The cylinders are 10, 15 and 25 x 12 inches, to make 330

turns per minute with a working pressure of 200 pounds. The boiler will be a Thornycroft, imported from England. A Sturtevant blower will be used for the forced draught, and the condenser will be independent. The wheel is a three-blade Thornycroft, of manganese bronze. The rig will be a two-masted schooner, with pole masts.

The Standard Drain Pipe Company, St. John's, Que., have sent us their new illustrated catalogue and price list, having reference to the vitrified salt-glazed drain pipes and connections, etc., made by them. Included in these products are junctions, elbows, bends, syphons, cesspools, gully traps, flue and stove linings, chimney tops, wind guards, smoke jackets, garden vases, monuments, pedestals, etc. Appropriate cuts illustrate all these various articles, and the text explains them in detail. There are also numerous tables imparting useful information relative to these articles. In one of these tables the size of sewer pipe required for draining purposes shows the carrying capacity of different sizes pipe, and the effects to be expected when the area to be drained, and the declivity of the sewer per hundred feet are known. The information contained in the pamphlet relates to all matters where these goods are required; and there are tables showing the tests to which the goods

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have been subjected, and many letters of recommendation from engineers and others who have examined carefully into the merits of them. Speaking of the works of the Standard Drain Pipe Co., the St. John's News says:—"Some eight years ago when Major Trotter took hold of the pottery, there was one kiln in use, having a capacity of twenty-five tons; to-day there are ten kilns, with a capacity ranging for twenty-five to seventy five tons each - and two more massive kilns are to be built this spring. In every portion of the establishment the works have similarly expanded. The drain pipes, which were formerly moulded by a slow process are now turned out of a press perfectly made at the rate of two per minute. There are two of these presses in use. The operation is a most interesting one to watch. The pipes are shipped to every part of Canada, and as their superiority over the Scotch pipes has been proved by repeated severe tests, they have gradually superseded the imported article, spite of the most determined opposition on the part of the old country manufacturers to retain the Canadian trade. The ordinary Standard drain pipes will resist a tremendous

pressure, while the double strength culvert pipes are practically indestructible. To show in what favor they are held, the Canadian Pacific Co. recently placed on order here for ten thousand of these culvert pipes, of eighteen inches diameter. A single culvert pipe weighs from 500 to 700 pounds, when ready for shipment. The clay used is a mixture of domestic and imported. By an ingenious contrivance, which Major Trotter is now having patented in Canada and the United States, the heat of one kiln after passing through the pipes, instead of being permitted to go to waste, is carried through a second kiln and so on through a third. In this there is an immense saving of coal. It takes, for example, nine tons of coal to fire the first of these kilns; by the heat which is saved and again utilized, the second kiln requires only three additional tons of coal for the the same service and the third kiln from five to six tons; or in other words by Major Trotter's invention three kilns are fired at the cost of two—a saving of one-third in fuel—an important consideration for a concern using about 500 tons of coal a month.

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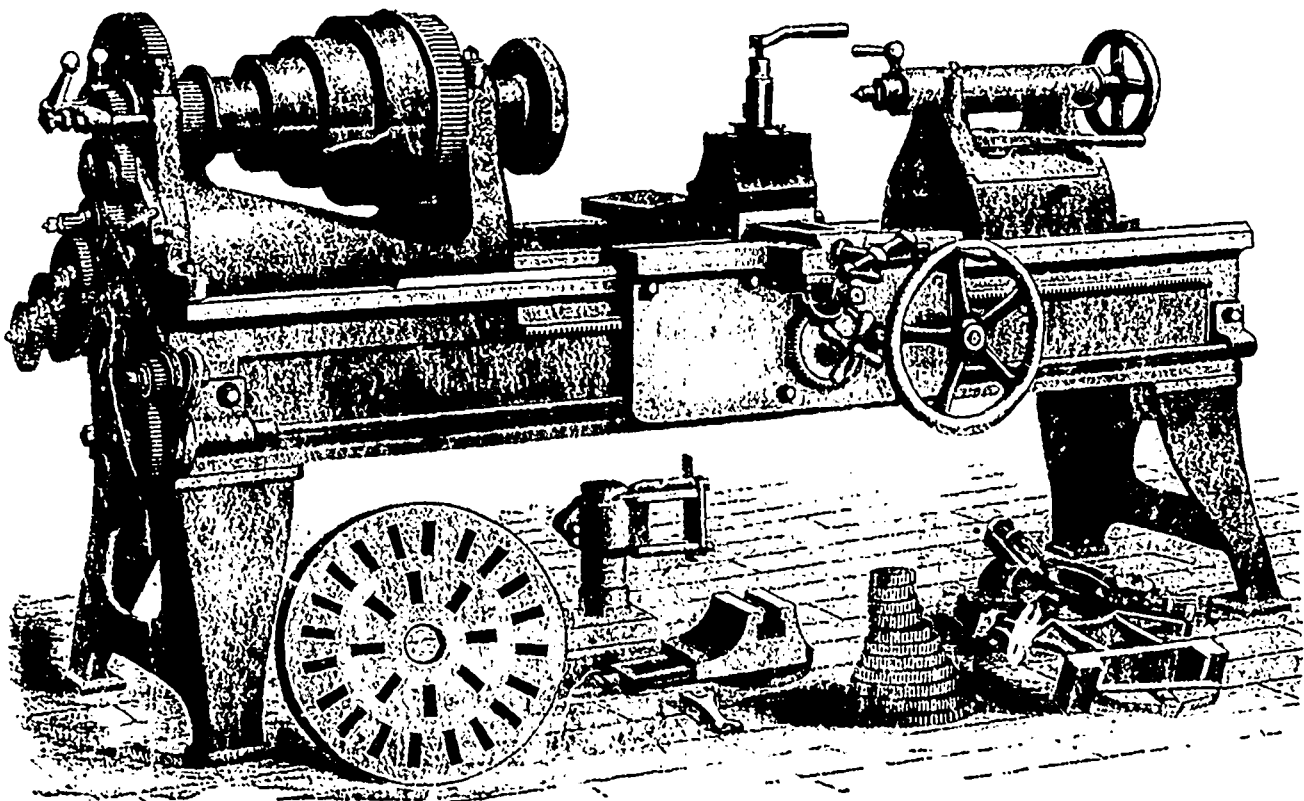
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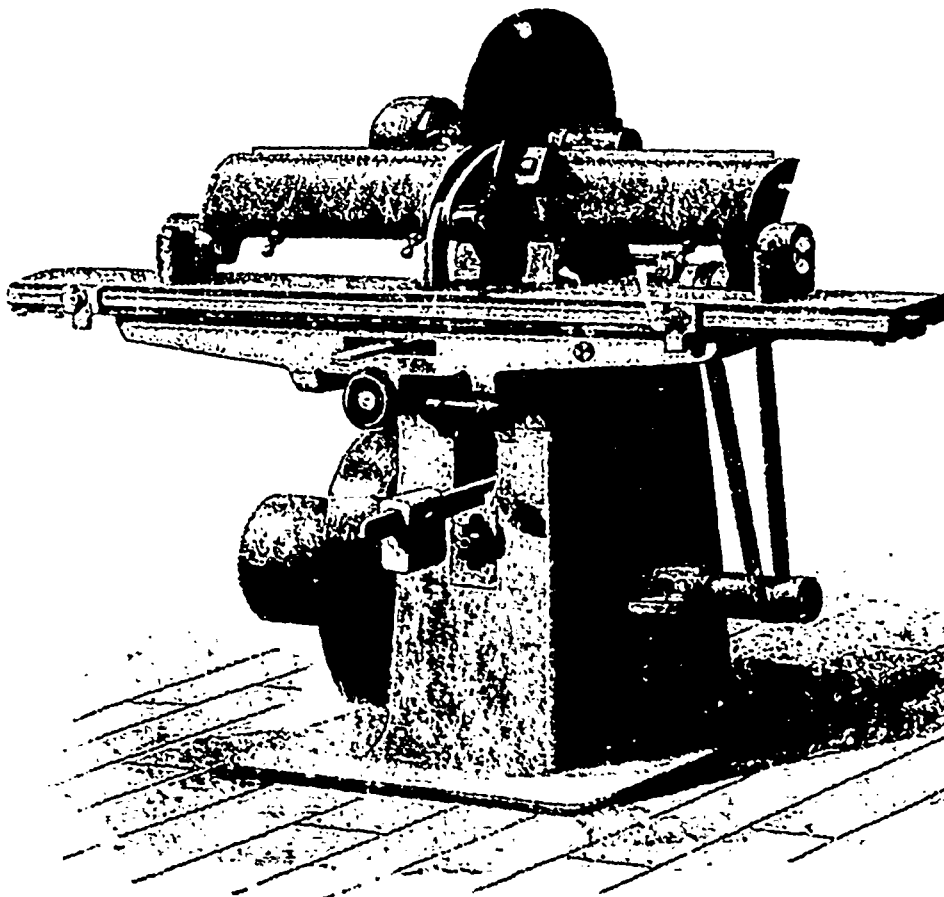
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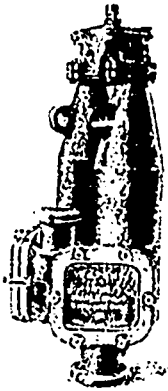
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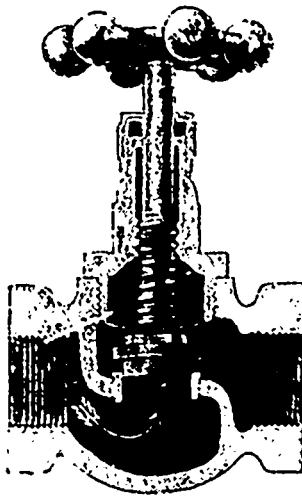
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	6 "	654.52	636.20	394.70	389.72	531.20	308.24	26.40	311.50	175.64
	9 "	664.16	646.50	not test	629.36	501.20	406.86	33.96	370.20	129.70
	12 "	685.76	648.00	not test	644.00	616.00	428.28	267.60	388.22	221.00
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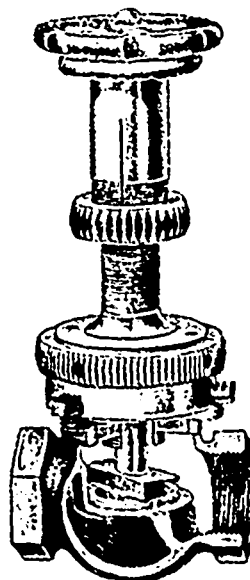
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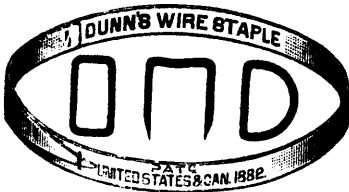
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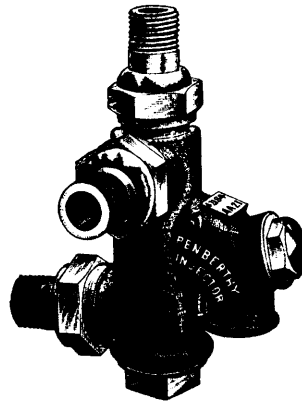
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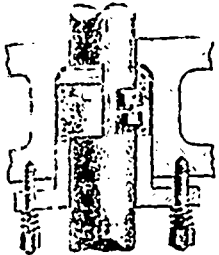
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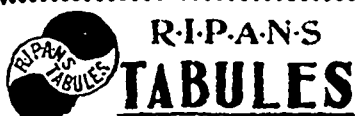
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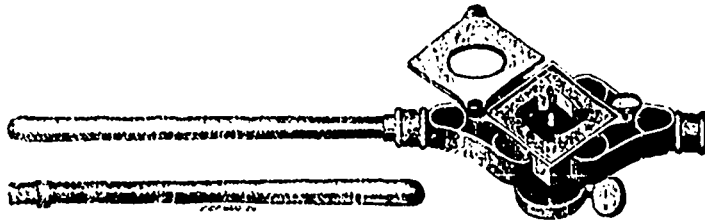
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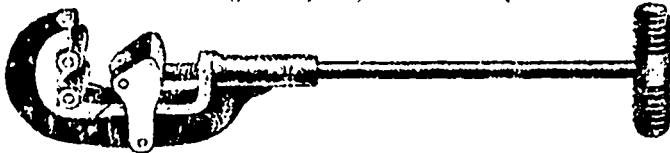
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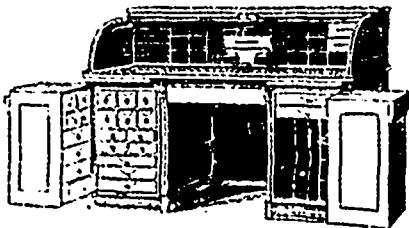
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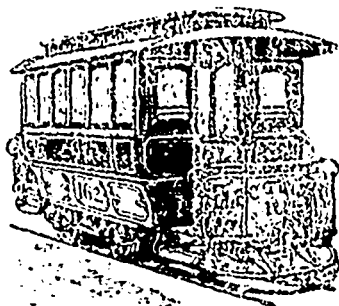
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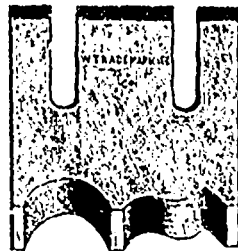
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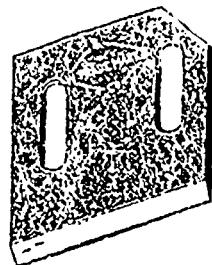
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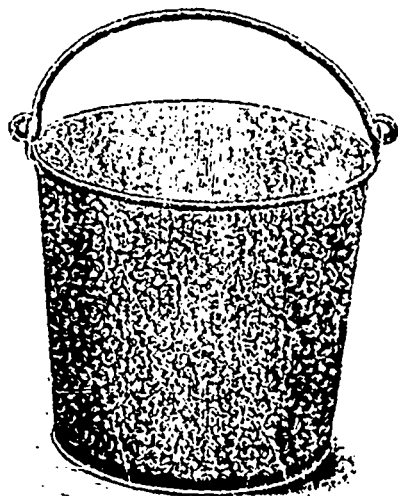
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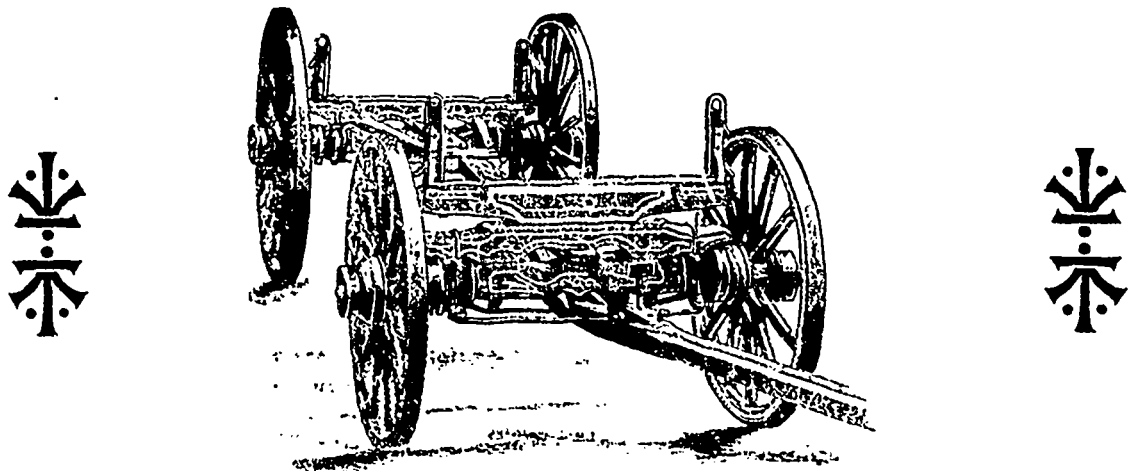
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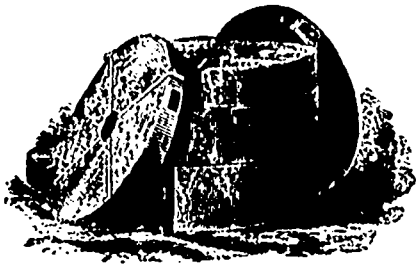
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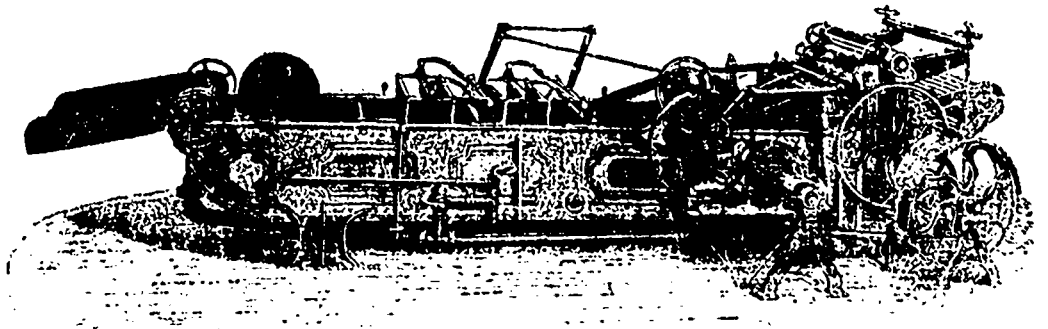
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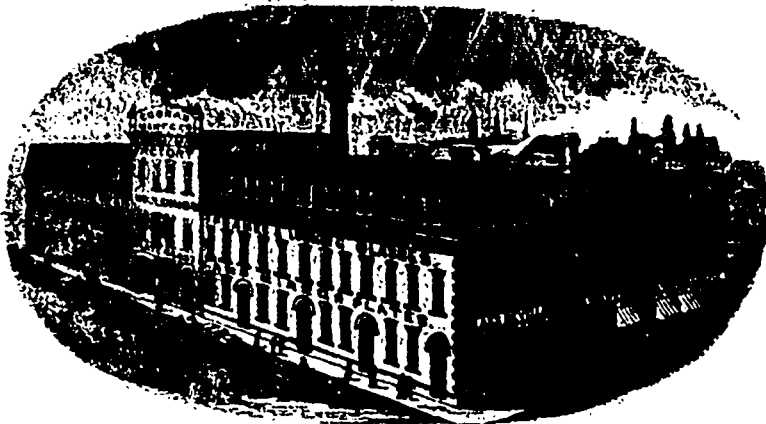
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