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CANADIAN MANUFACTURER
 AND INDUSTRIAL WORLD
 DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION

Vol. 16.

TORONTO, JANUARY 4, 1889.

No. 1.

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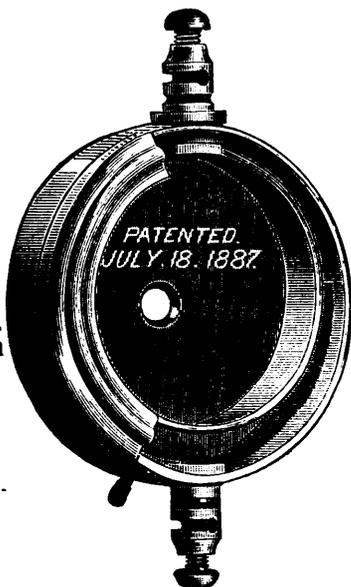
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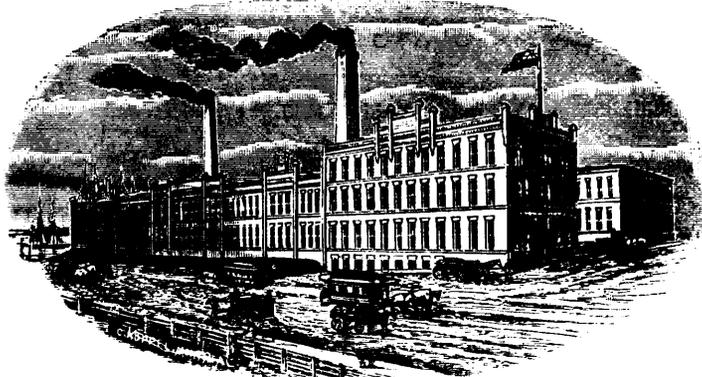
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The Canadian Manufacturers' Association,
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6 Wellington Street West, Toronto.

[OUR next issue will contain our usual instalment of artotype portraits of Captains of Canadian Industry. The festivities of the holiday season just past are chargeable with their invisibility in this issue.]

OURSELVES.

THE CANADIAN MANUFACTURER, with this issue, enters upon the last half of the eighth year of its existence. It is not an experiment in the field of trade journalism, and it is well and favorably known among all the more important manufacturers and business men throughout the Dominion. An inspection of its pages demonstrates the esteem in which it is held by enterprising advertisers. That it is steadily improving in all the essentials of a representative trade journal is apparent. Its aims are not diffused in many directions, but are confined (1) to the special interests of Canadian manufacturing enterprises, and (2) to sustaining the Dominion Government in that distinctively National Policy which has made Canada the great manufacturing country it is to-day. We trust and believe that the patronage and support of friends heretofore extended to this journal will be continued and increased, enabling the management to still further extend and enlarge its sphere of usefulness. We suggest that those who may already be subscribers can still further advance their interests by subscribing for it for some of the appreciative ones who may be in their employ. It would be a useful and valuable present to a worthy employé, an apprentice, or some bright youth who would thus be informed of the steps Canada is constantly taking in her path to greatness. Aiming to be intensely practical, we have

no inclination to pad our pages with love stories or poetry, but the reader who follows us closely will learn about all that transpires in the country relating to the manufacturing industries. The subscription price is only \$2 a year.

CUSTOMS SEIZURES.

THE Montreal *Star*, speaking of the revenue from Customs seizures and what becomes of it, declares that the arguments of those who take the view that the system of rewards in connection with seizures is wrong in principle, and ought to be abolished. It states that the total receipts from Customs seizures in the fiscal year 1886-87, aggregated \$133,028, of which \$80,056 went to Customs officials and informers; \$30,000 was refunded, and \$20,000 found its way into the public treasury. It states further that "a number of officials actually made as much additional through their seizures as their salaries for the year amounted to, that is, they received double pay for doing the work which they were appointed to perform;" and that "it is inevitable that as long as Customs officials are guaranteed one-third of the spoils in successful seizures, partisans they will continue to be."

If the *Star* really meant to state that Customs officials and informers had been paid \$80,000 as their share of the penalties imposed upon violators of the Customs laws during the fiscal year 1886-87, it is mistaken, and in its own editorial contradicts itself. If these officials are allowed "one-third of the spoils in successful seizures," it certainly must have been that the successful seizures in the year alluded to amounted to three times the amount we are told was given for making the seizures, or over \$240,000. But the gross seizures that year amounted to but \$133,000, of which \$30,000 was refunded, making the aggregate penalties to amount to only \$103,000, one-third of which to the officials would be only about \$34,000. The *Star* should be more accurate and more honest. It should have stated what is actually the fact, that the difference which it says was paid to officials and informers for their services during the year under consideration and what they actually earned during that year, was fees upon seizures that had been previously made, some of them three and four years before, and not until that year adjudicated by the proper authorities.

Stress is laid upon the fact that some of the Customs officials actually made as much additional through their seizures as their salaries for the year amounted to. In this connection it should be remembered that while it is the duty of these officials to make these seizures, their influence in the matter ceases when the seizures are turned over to the Government, and that it is the Government and not they who decide whether the seizures are properly made and the amount of penalties, if any, attaching to them. These officials and informers are not in themselves judges, juries, and executioners in the seizures they make; and they well know that if they make seizures where there has been no violation of the law, they will get no reward for so doing, and that if such blunders are of frequent or unnecessary occurrence their prompt discharge from the service would be inevitable.

All civilized governments maintain corps of customs officers, detectives and informers, and Canada is no exception to the

rule. The *Star* suggests that these men should be paid by the Government what they are worth, all the fines to go into the public purse. Experience has shown that this is not the best plan to adopt. The business of detecting customs irregularities is not the most pleasant in the world; and if the Government were to regularly pay these men any such amounts as salaries as the *Star* says they gain under the present system, that journal would undoubtedly raise its voice against what it would call "extravagance." The plan pursued by the Government is to pay small salaries to competent men, not as full remuneration for their services, but rather as retainers, and the desire to increase their exchequer by seizures where the Customs law has been violated, makes them vigilant in their calling. Further, where the *Star* shows that large sums are paid to Customs officials as their shares of seizures, it fails to show the important fact that these sums do not usually go to the exclusive use of such officials, but are distributed by them proportionately to other officials and informers who had assisted in working up the cases.

The Government aim at all times to dispense even handed justice in all these violations of the Customs laws; and when in any of the details of the business it is discovered that abuses exist, or that the door is open for the introduction of abuses, they are quickly remedied, as was the case about a year ago when Customs appraisers ceased to receive a portion of the penalties inflicted for under-valuation of merchandise detected by them.

PRODUCTIVE CONVICT LABOR.

By their attitude in regard to prison labor the workingmen are standing in their own light, as well as opposing the true interests of society and the State. No one is more benefited than the laboring man by whatever helps to prevent crime, to lessen taxation, to increase productive industry, and to promote the moral well-being of the community. That the tendency of a judicious system of prison labor is to do all these things will not be questioned by any one who has given intelligent attention to the subject. Such a system is one of the most efficient and indispensable means of accomplishing the higher ends of all prison discipline, whether those ends be regarded as punitive, preventive, or reformatory. Statistics show that the evil of competition which the workingmen so greatly dread is little more than a bugbear. Mr. Brockway in the December *Forum*, asserts, presumably not without good authority, that the output of prison manufactures has never anywhere exceeded one fifth of one per cent. of the mechanical products of free labor, a mere bagatelle to be put in the balance against all the benefits that would accrue to the individual and the State from a proper use of the beneficent agency of productive labor in the prisons and penitentiaries. With the growth of democracy the balance of power is gradually passing into the hands of the workingman. Great will be the disastrous results to society and the State if he fails to keep the apparent interests of himself and his class far enough away from his eye to enable him to take in those broader views and relations, the intelligent comprehension of which is essential to enlightened government. We say "apparent interests" because it is at least doubtful whether the cost of maintaining convicts in idleness is not a heavier tax on the workingman's resources than any that their competition in labor could possibly inflict.—*The Week*.

This disposes of a very important social question in a few terse sentences like unto the majestic waving of the hand. The

question is one which has occupied the attention of statesmen from the early dawn of history, through all the ages of the world until the present time, and without satisfactory solution until *The Week* settles it in what is here quoted. Athens and Rome, Assyria and Egypt failed to properly grasp the situation; and the humanitarians of the present day are far at sea in agreeing upon a satisfactory system which would solve the problem: and "the workingmen" are not alone in their opposition to having the labor of convicts brought into competition with theirs. It is not conceded that they stand in their own light in their opposition to the system; or that it is against the true interests of society or the State. It goes without the saying that whatever helps to prevent crime, lessen taxation, increase productive industry and promote morality, benefits the community generally; but *The Week* fails to show wherein that benefit accrues specially or in larger proportion to workingmen than to any other class. On the other hand, there is abundant proof to show that the competition of convict labor with free labor works most woefully against the latter in communities where certain systems prevail, involving idleness to men, want and suffering to women and children, and but too frequently crime and degradation to all.

The Week quotes a writer in *The Forum* to show that the evil of this competition "is little more than a bugbear," that "the output of prison manufactures has never anywhere exceeded one fifth of one per cent of the mechanical products of free labor—a mere bagatelle to be put in the balance against all the benefits that would accrue from a proper use of productive labor in prisons and penitentiaries." We presume the writer in *The Forum* alludes to the situation in the United States. Statistics compiled in 1886 show that during the year therein alluded to there were 45,277 convicts in the penal institutions in that country employed in productive labor, who produced goods of the value of \$28,753,999; and that in the manufacture of boots and shoes alone 7,609 convicts were employed, producing goods valued at \$10,100,279. Of course, convict labor is not quite as productive as free labor, for where these 45,277 convicts were employed to effect the production of nearly twenty-nine millions worth of goods, but 35,534 free laborers would have been required; and 5,378 free laborers could have manufactured the boots and shoes which required the labor of 7,609 convicts. In other words, a free laborer was equal to 1.27 convict, or, to reverse the statement, one convict was equal to .78 of a free laborer.

In quite a number of States the value of prison made goods exceeded a million of dollars, thus:—

New York.....	\$ 6,236,320
Illinois.....	3,284,267
Indiana.....	1,570,901
Ohio.....	1,368,122
Missouri.....	1,342,020
Pennsylvania.....	1,317,265
Kansas.....	1,270,575
Tennessee.....	1,142,000
Michigan.....	1,087,735
New Jersey.....	1,019,608
In ten States.....	\$19,638,813

The prison population of the United States as compared with the entire population of the country was one in 930; but the proportion to those engaged in industrial pursuits—mechanical, agricultural, and mining—was one convict to 300 persons so employed.

Whatever competition arises from the employment of convicts should be considered from three standpoints. First, the competition with all the industries of the country; second, the competition with special industries; and third, the competition in special localities. In regard to the competition with the whole United States, it is shown that, according to the last census, the manufactured products of that country amounted to \$5,369,579,191. As we have shown, the merchantable products of the penal institutions of the country for the year covered by the investigation amounted to \$28,753,999, which is fifty-four one hundredths of one per cent. of the total products of the industries of the country, not one-fifth of one per cent., as *The Week* suggests. The wages paid to free labor in the production of goods valued at over five thousand million dollars, was \$1 in wages to \$5.66 in product; while the remuneration paid by contractors for the labor of the convicts who produced over twenty eight million dollars worth of goods, was \$1 in wages to \$8.19 of product of convict labor.

In Canada the manufacture of boots and shoes is an important industry. Allusion is made to this industry in the United States. The per capita per annum product there of free labor in this industry in the States in which boots and shoes were manufactured in prisons was \$1,492, while the per capita for convict labor was \$1,327. These values show that, so far as boots and shoes are concerned, the convict produces as much per annum as the free laborer, lacking \$169 per capita. In boots and shoes alone, in all the States where these were made in prisons, \$1 in prison products represented \$18.23 of free labor products. Of those employed in the business, there was one convict employed to 16.2 free laborers. In New York there was one convict in this industry to eight free laborers.

The effect of convict labor in competition with free labor in the United States is most disastrous to the latter, and the weight of the testimony is strongly corroborative of the statement. In Alabama, where ninety per cent. of the convicts are negroes, mine owners say they could not work at a profit without the lowering effect in wages of convict labor competition. In Georgia the convicts, mostly negroes, are all leased out to contractors who work them to the utmost, treating them barbarously, the death rate being phenomenally high. In Illinois, Indiana and many other States, strong popular feeling exists against the employment of convicts, while in Kentucky, where convict labor has supplanted free labor in the mining industry, beggary and suffering on the part of the latter is the prevailing situation. In Minnesota convicts and free laborers worked side by side, a weighty complaint being that the contractors heavily underbid all other dealers. In Mississippi ninety-two per cent. of the convicts are negroes. They are generally overworked, the death rate being very high. Convicts do thirty per cent. more work than free laborers, being worked long, hard and steadily. In North Carolina the manufacture of penitentiary-made shoes was abandoned, as laboring people refused to buy them. In Tennessee the prison system is always atrocious, but the State makes a large profit from its convict labor. In Virginia public sentiment tends towards prevention of competitive convict labor.

The average daily price paid for convict labor in certain industries in some of the States, and the average daily price for

free labor in vicinity of the penal institutions, are remarkable, as will be seen by the following, allusion being to males only:—

	Convict Labor per day.	Free Labor per day.
Alabama, farming.....	\$0 32	\$0 50
Arizona, public works.....	8	1 50
Arkansas, coal mining.....	14½	2 40
California, stone quarrying.....	7½	2 50
Colorado, brickmaking.....	9	2 00
Dakota, stone masons.....	20	4 00
Georgia, railroad building.....	5½	1 00
Illinois, boots and shoes.....	51	1 50
Indiana, brooms, etc.....	45	2 00
Kansas, wagon building.....	84½	3 50
Kentucky, coal mining.....	2½	2 40
Louisiana, farming.....	7½	1 25
Maryland, marble cutters.....	57½	1 75
Massachusetts, women's shoes.....	20½	2 75
Michigan, furniture.....	40	1 50
Missouri, boots and shoes.....	48½	1 50
Nebraska, stone dressing.....	40	3 00
New Jersey, clothing.....	8½	2 00
New York, shoes.....	27	1 50
Ohio, stoves.....	72	2 15
Oregon, stoves.....	40	4 00
Pennsylvania, hosiery.....	13½	1 25
Tennessee, wagon building.....	24½	2 00
Virginia, women's shoes.....	25	1 50

The Week says that the evil of this competition which workmen so much dread is a "bugbear," and that the competition is a "mere bagatelle," put in the balance against the benefits that would accrue from a proper use of the beneficent agency of productive prison labor. Facts do not sustain this assertion. The report of the bureau of labor statistics for the State of Illinois shows that (in 1885) one of the shops in the Joliet Penitentiary was devoted to the manufacture of cooperage chiefly for the Chicago market. They employed 204 convicts, and they also had contracts and a cooper shop in an Indiana penitentiary, where they employed 169 convicts. During eleven years—1875-1885, both included—this firm sold in Chicago 5,124,687 packages of convict-made cooperage. A canvass made in Chicago discovered that, during the same eleven years, there were fifteen establishments, employing 182 coopers, engaged in the same line as the prison shops, and that they turned out 1,685,746 packages. Thus, during the eleven years Chicago consumed 5,124,687 packages of cooperage manufactured by convicts, as against 1,685,746 packages made by free labor. The prison contractor's business increased 360 per cent. during the eleven years, while the increase in private establishments was only thirty-one per cent. in the same time. The manufacture of cooperage, considering the enormous meat-packing trade in Chicago, should have increased four or five fold during the term, and would no doubt have done so, if it had not been so terribly handicapped by prison labor. As it is, it barely maintains its existence. Under the operation of the competition, which *The Week* calls a "bugbear" and its effects a "bagatelle," prices declined, and the manufacturer, in his fruitless effort to compete with the prison contractor, was forced to visit upon the free journeyman every reduction in price in the form of a reduction in wages. The consequence was that Chicago coopers could generally earn more by sweeping the streets than they could at a trade which they had spent years to acquire. In 1875 the average annual earnings of Chicago coopers was \$511, but in 1885 it was but \$390, a decline of twenty per cent.

No doubt *The Week* will discover some day that with the growth of democracy and the balance of power in the hands of the workingman, he will hold his interests in such a position before his eyes as will enable him, taking in broad views of the essentials to enlightened government, to settle this question equitably to the whole community. He would be untrue to himself if he submitted to all the weight of the burden himself, as *The Week* asks him to do.

"THE STREAM OF COMMERCE."

MR. G. MERCER ADAM, in a letter in *The Week*, commenting on what a Canadian resident in Maine had said in that paper on the question of the trade relations between Canada and the United States, says: "New England may oppose Free Trade with all sections of the continent, but in other quarters of the United States there is not only a disposition to entertain the proposal, but to carry it into effect. In the group of States of which Chicago is the centre, there is a feeling manifested for the removal of the Customs line. The Chamber of Commerce of the State of New York is favorably disposed towards the proposal. To effect the object it is not necessary that all the States should be in favor of the scheme; it will be enough if some desire it and others are not opposed to it. Nor do Americans desire access to Canada only, or even chiefly, in the interests of their manufacturers; the mere market is perhaps the least part of the matter. They seek it as an extended field for investment, from which both countries would be the gainers. The stream of commerce, like the rivers, seeks the channels which nature has cut for it. Into these natural channels, whatever artificial obstacle be in the way, trade must finally flow."

In view of the results of the recent presidential election in the United States, these assertions are very wild. Without discussing the question as to whether the prevailing sentiment in New England is or is not in favor of Free Trade, and we think it is not, it is certain that "in other quarters of the United States" very little disposition was shown in November to entertain the proposal to carry Free Trade into effect. And this anti-Free Trade sentiment was very pronounced in the group of States of which Chicago is the centre, as was shown in the defeat of quite a number of Free Trade candidates for reelection to Congress, and the election of men who were avowed Protectionists. We were not aware that any such institution existed as "the Chamber of Commerce of the State of New York." Perhaps Mr. Adam intended to speak of the Chamber of Commerce of the City of New York; but it is well known that that body is composed largely—perhaps we might say overwhelmingly—of men who are notorious for their anti-American Free Trade proclivities, and who do not represent public sentiment, or indeed any sentiment at all but their own. It was this same New York Chamber of Commerce, we believe, who, during the dark days of the Rebellion, instead of rallying to the support of the Federal Government, agitated the question of making New York a Free City, as a result of the disruption of the Union, which to them seemed to be a foregone conclusion. Patriotic Americans do not quote the sentiments of the New York Chamber of Commerce, and it is surprising that Mr. Adam should do so to Canadians.

Mr. Adam says: "To effect the object (Free Trade) it is not necessary that all the states should be in favor of the scheme; it will be enough if some desire it and others are not opposed to it." It should be borne in mind that the states of the American Union, as such, have nothing whatever to say as regards the question of Free Trade or Protection, for that is a matter over which the Federal Government have absolute and exclusive control. South Carolina once, led by John C. Calhoun, attempted to nullify an Act of Congress relating to tariff matters, but that sturdy old Federalist, General Jackson, who was then President, incontinently squelched the movement; and later, when the rebellious states of the South formed a compact for a similar purpose, the result was equally futile, though terribly bloody. Mr. Adam says that the movement to annex Canada to the United States is not so much in the interest of American manufacturers as it is to afford to Americans "an extended field for investment." The necessity of an explanatory diagram here is very apparent. He also proclaims, with a rhetorical flourish, something about the stream of commerce seeking the channels cut by nature, in which natural channels trade must finally flow. The expression of such an idea can be nothing more than poetic license. Britain is the only first-class Free Trade nation of the earth, although it raises millions of revenue annually by duties levied upon imports of foreign merchandise; as the United States is the most highly protected nation, and still it is evident that the "stream of commerce," whether cut by nature or not, flows in larger volume between these two than between either of them and any other countries.

EDITORIAL NOTES.

THE Lehigh Valley railroad has twelve trains equipped with telegraphic instruments for transmitting messages to points along the road while the trains are in motion.

A RECENT change in the Statutes of Massachusetts permitting towns and cities to raise funds for industrial education in the public schools, has already resulted in the establishment of manual training schools in many of the towns and cities of the State.

AN AIR ship made a trial trip near New York the other day with two passengers, rising to a height of some 500 feet, remaining stationary several minutes, then moving about in different courses, and finally flying off several miles and alighting with safety. The machine, which is worked by electricity, is an ingenious combination of propellers, with a vertical rudder of large size hinged on the keel of the car.

THE Buffalo *Courier* says that an electrical locomotive is about to be built at the New York Locomotive Works in Rome, N.Y. It will be constructed as an experiment, and if it can be shown that such engines can be successfully operated, the invention will rank as one of the most important of the nineteenth century. The engine is to be operated solely by electricity, and is designed to run on all roads where steam is now used. It will weigh fifteen tons, and when turned out of the shops will be an exact counterpart of an ordinary locomotive, though considerably smaller and lighter.

THE annual report of the Southern Indiana penitentiary, at Jeffersonville, Ind., furnishes some interesting statistics as regards convict labor in prison workshops. The total receipts from earnings were \$74,137.71; the total cost of maintaining the prison was \$71,606.29, leaving a net balance in favor of the State of \$2,531.42. The average cost for food, clothing and attendance was but 35 cents per day for each prisoner. The following gives an idea of the amounts paid by the contractors for leased labor: A boot and shoe manufacturer secured seventy-five men at 50 cents per day; another shoe manufacturer, sixty men at 66 cents per day, and fifty men at 31 cents per day; a holloware manufacturing company contracted for one hundred men at 60 cents per day, one hundred at 55 cents, and fifty at 40 cents; a saddle-tree manufacturer has fifty men at 55 cents per day, and other contracts are on the same basis. The average pay is but a fraction over 50 cents a day for each man, or only about one third the wages paid for similar labor in free establishments. It is therefore plainly impossible for manufacturers employing free labor to successfully compete with the products of prison workshops.—*Stoves and Hardware.*

THE Canadian duty on charcoal pig iron is \$2 per ton; on other varieties, \$2 or \$4. As Canada does not make much pig iron, it may be an advantage to admit it at a low rate of duty. By the way, all the manufacturing industries of Canada, which is only separated from the United States by an imaginary line, are immeasurably behind those of the United States. To what extent this is owing to the tariff systems of the two countries it would, of course, be difficult to estimate with certainty, but that it is largely owing to this there can be no manner of doubt; for as good a class of people settle in Canada as in the United States, and, as already said, the line between the two countries is only imaginary.—*American Manufacturer.*

WE believe the American duty on pig iron has, since the war, never been less than seven dollars a ton, and under this the industry there has developed into wonderful proportions. The duty was high enough, and Protection did it. Under the low duty in Canada the industry languishes, although this country possesses as many facilities for producing pig iron as the United States. The duty is not high enough, and the protection it affords does not protect the industry from the cheap irons of Great Britain. The unfavorable situation of Canada in this respect is due, as our contemporary suggests, to the difference in the tariff systems of the two countries.

THE report of the Superintendent of the United States Bureau of Labor shows that during the six years from 1881 to 1886, a total of 3,902 strikes in 22,304 establishments occurred in that country, the striking employes aggregating 1,323,203 hands; and during the same time lock-outs occurred in 2,214 establishments. Of the 22,304 establishments in which strikes occurred, 18,342, or 82.24 per cent of the whole, were ordered by labor organizations; while of the 2,214 establishments in which lock-outs occurred, 1,753, or 79.18 per cent. were ordered by combinations of managers. Success for these strikes and lock-outs was achieved in nearly 47 per cent. of the establishments affected; partial success in about 13½ per cent. of them; and failure followed in 10,375 establishments, or a trifle more than 46½ per cent. of the whole. The

losses resulting from these contests were of vast proportions and beyond the reach of exact computation. From the best information obtainable, however, it appears that the loss to the strikers for the six years was but little short of \$52,000,000, and the loss to employes through lock outs was over \$8,000,000, or say a total wage loss, in round numbers, of 60,000,000. The employers' losses through strikes for the same six years amounted to \$30,701,000; through lock-outs, to \$3,462,000—or a total loss to the establishments involved in both strikes and lock-outs of \$34,163,000.

A FEW days ago the Toronto *Telegram* exhibited commendable journalistic enterprise in collecting, collating and tabulating a number of important facts regarding the churches in this city. It showed that there are 145 churches, which have a total value of \$4,282,305; that they have capacity to seat 97,000 persons, and that the average attendance is about 40,000 persons. The value of other church property, such as the buildings in which the pastors live, would increase the valuation to at least \$5,000,000. From which we see \$5,000,000 worth of property in this city entirely exempt from taxation, the average share to each attendant being \$125. The question naturally arises—Why is every factory, foundry, machine shop, place of business and residence taxed to support the Government, and this church property go untaxed? and why should the entire population of this city be taxed to the extent of the exemption from taxation of this property to support churches in which only 40,000 people worship? Churches are a good thing to have, but why not let those who own them pay the taxes on them, as well as on all other property? The poor man who earns probably less than \$500 a year is obliged to pay taxes on the cottage which shelters him and his family, while the pretentious and expensive cathedral, into which he is not enthusiastically welcomed, is exempt. There is evidently something wrong in the system which tolerates such things.

RECENTLY the grand jury of a court at Kingston, in their report, discussing the convict labor question, recommended that the convicts in the penitentiary there be employed at some sort of remunerative labor, with a view to make the whole institution self-supporting if possible. It suggested that the Government should start iron smelting works in connection with the prison, as such would not conflict with any private enterprise. Regarding this, Sir John Thompson, Minister of Justice, in an interview with a reporter, said he had seen the recommendation of the jury, but did not know that the convicts could be employed to any greater degree than they are at present. "Every man and woman," said the Minister, "is kept employed from morning until night, and they have not an hour to spare for any other purpose. True, we do not dispose of their work outside, but all the proceeds go towards the maintenance of the prisons. At Kingston we have the convicts constantly employed in the quarries, and as new cells are being built or old ones rebuilt, convicts are also employed in that work. For the iron work that is required there are convicts who as blacksmiths prepare all that is required. At New Westminster the convicts have carried out repairs which, if given to outside contractors, would have necessitated the expenditure of a considerable sum. At that

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And Manufacturers.

We do not profess to make the **VERY BEST BELTING IN THE WHOLE WORLD**, but we claim that we can make as good as any one else, whether English or American or Canadian. Here is one instance. We made a 14 inch Double Driving Belt for Messrs. Hastings & Peterkin's Planing Mill and Sash Factory on Bay Street, Toronto (now occupied by Mr. C. R. Peterkin), in July, 1873. This belt has been in constant use driving the machinery of the whole factory ever since, and is still good.

If you want a really good Driving Belt, or any other Belt, send to us and we will give you one which will give you thorough satisfaction. You will find both our prices and the quality of our goods all right.

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THERE'S NOTHING LIKE LEATHER.

Messrs. Geo. F. Haworth & Co., Leather Belting makers, No. 11 Jordan Street, have just built for Wagner & Ziedler, of this city, a large Main Driving Belt, to take the place of Rope drives and groove pulleys, which proved a complete failure in their Factory.—*Toronto World.*

institution an instructor has been engaged to teach carpentering. Many of the convicts are kept at farming work, the products of which are all used within the institution. On the whole I do not see that we should gain anything by deviating from our present system."

THE following is taken from *The Manufacturer* of Philadelphia. It commends itself to all who abhor and detest such illustrated personalities as those to which it refers. This offensive and disgusting caricaturing of public men is not confined to the United States, we are sorry to say, but is the leading feature of at least one so-called funny paper in Canada. That the Canadian publication is but a very weak imitation of its Yankee contemporaries is no palliation of its offence:—

"Caricature has long been employed as a political weapon and as a means of amusement; and, from its nature, it can hardly avoid exposing its victims to the pains of ridicule. But we submit that it has both legitimate and illegitimate uses, and that when it is abused it should encounter popular reprobation. It may fairly be employed against persons and objects intrinsically vicious and hostile to good morals and good government; and there may be some justification for good natured satire of political opponents. When, however, it is made the instrument of savage assault upon the character of distinguished public men of good report, or is prostituted to the expression of the animosities of malignant partizanship, it becomes merely scandalous. During the late campaign all the comic papers, so-called, offended in this respect, but the journal called *Puck* indulged in peculiarly intense foulness in its assaults upon decent citizens. The ingenuity of some of its pictorial designs cannot be denied; but we do dispute the right of any artist or publisher to produce, week after week, drawings in which gentlemen who offend only in differing in opinion with their assailants, are portrayed in situations and circumstances which, if they represented facts, would entitle the victims to infamy. The cowardly cruelty of these vulgar pictures may be estimated by any man who shall try to conceive what his feelings would be if he should encounter such representations of himself at every news-stand and in every railway station. The most callous public man, whose self-respect survives at all, cannot escape sometimes being wounded by these stabs aimed by the pen of the caricaturist. *Puck* is a striking proof that wit and blackguardism are occasionally found in conjunction; but blackguardism is never less offensive because there is a gleam of wit amid the dirt.

SPECIAL ADVERTISEMENTS.

TISDALE'S BRANTFORD IRON STABLE FITTINGS.—We lose no job we can figure upon. Catalogue sent free. The B. G. Tisdale Co., Brantford, Canada.

KNITTING **CREELMAN BROS.,** **MACHINES.**
Georgetown, Ont.

THE *Monetary Times*, Toronto, has sent us a very useful souvenir in the form of a letter opener. It is of celluloid, of convenient shape, and a handy thing to have on one's desk.

THE *Canadian Journal of Fabrics*, Montreal, has sent us an 1889 office calendar in which is embodied considerable useful information regarding the textile business of the Dominion.

At the Rockwood Insane Asylum, near Kingston, Ont., there is a brass band, all of the members of which are insane—some of them incurably so. The insane musicians are devoted to practice, and the band promises ere long to be most efficient.

THE Manchester, England, Chamber of Commerce at a recent meeting passed a resolution by an overwhelming majority providing that all foreign goods, similar to those produced in England, should pay the same proportion of the Imperial and local taxation which they would have paid had they been manufactured in Great Britain.

IN relation to the complaints of the inferior quality of the bayonets used by the British troops in Suakim, Messrs. Wilkinson & Co., the arm manufacturers who furnished the weapons, explain that they are unable to make bayonets in England now, owing to their inability to secure good workmen. They say that Germany is now the centre of the sword-making industry of the world.

THE *National Builder* Company, Chicago, have sent us a pocket edition of "American Homes," in which is illustrated and described fifty-four designs of cheap cottages, medium priced dwellings, costly residences, churches, school houses, opera houses, court houses, fire halls, and stables, estimates being given of cost of each design. All of these designs are reductions from the originals which have appeared in the *National Builder*, and are the product of Mr. Geo. O. Garnsey, one of the most prominent architects in Chicago.

THOSE who wish to keep abreast of the industrial and scientific progress of the day cannot afford to be without the *Scientific American*, advertised in another page. It is fully illustrated with the best class of wood engravings, and each subject is treated in as popular a manner as the nature of the theme will permit. This paper sprang into public favor and appreciation when it was first established, in 1845, by its present proprietors, Messrs. Munn & Co. It is probably the best and most popular publication in the country for those interested in science, engineering, mechanics, inventions, etc. The subscription price is \$3 a year.

THE Massey Manufacturing Company, Toronto, who have heretofore issued at spasmodic intervals a brochure which they called *Massey's Illustrated Journal*, recently scoured the services of Mr. Charles Morrison, late of the *Toronto Mail*, who has taken the venture in hand and made of it a really meritorious and delightful monthly, which is called *Massey's Illustrated, a Journal for Rural Homes*. It is not really an advertising sheet devoted exclusively to the interests of the Massey Manufacturing Company, but a legitimate venture on the sea of journalism, which, under the skilful management of Mr. Morrison, will evidently prove a gratifying success. The initial number has reached this office and is just what its name indicates.

"THE COMING SLAVERY; THE SINS OF LEGISLATORS; AND THE GREAT POLITICAL SUPERSTITION." By Herbert Spencer. New York, 24 East 4th street: The Humboldt Publishing Company. Price 15 cents. The works of Herbert Spencer are too well known to need encomium. Whatever the great naturalist treats he treats exhaustively, and with that careful attention to detail which carries conviction. These three essays are peculiarly happy in the treatment of the subject, which refer to the proper relations between the citizen and the State. It is a subject greatly confused in current discussion, and it needs the services of men with the ability of Mr. Spencer to give a presentation that will exert a favorable influence on legislation.

"1889. I wish you a Merry Christmas and a Happy New Year from the bottom of my sole. Daniel Stern." This is the inscription on a souvenir which we have received from the editor of the *American Artisan*, of Chicago. The souvenir is a piece of leather cut, we suppose, in the shape and size of the foot of the editor of our esteemed contemporary. It measures just six inches in length and two and a quarter inches across the ball of the foot. Our understanding heretofore was that friend Stern was a Chicagoan, but the souvenir does not indicate such to be the fact; Chicagoans all have feet of enormous size. Perhaps he is trying to create the impression that he is a St. Louisan, where all the people have small feet. The souvenir is a diagram which needs an explanation.

ONE of the strongest attractions of *Wide Awake* for 1889 will be the sparkling serial by Margaret Sidney, entitled "Five Little Peppers Midway," being the further history of the "Five Little Peppers." "Five Little Peppers and How They Grew" was published serially in *Wide Awake* several years ago. It was enthusiastically praised by the young folks, and innumerable requests have been received by the publishers for a continuation of the happenings of that delightful family. In its bound form the story has found a hundred thousand new readers, and is as popular to-day as when first issued. Thousands of the new readers of *Wide Awake* will wish to read "Five Little Peppers," and the publishers have decided to issue a special edition (exactly like the regular edition except that the covers will be of paper instead of cloth). This special edition will not be sold at the book stores, and can be obtained only in accordance with the following conditions:—Subscription for *Wide Awake*, price \$2.40 a year, and for *Babyland*, price 50 cents a year. The book is given as a premium for sending the two subscriptions at one time, not separately, and for which \$3 must be remitted direct to D. Lothrop Company, Boston, Mass.—not through any agent—to pay for the two subscriptions and postage and packing on the book.

Manufacturing.

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.

MESSRS. HASTINGS & MCGRAW will build a 600 barrel flour mill at Winnipeg, Man.

MR. WILLIAM BELL, late of Michipicoton, Ont., will build a large machine shop at Sault Ste. Marie.

THE Cline Manufacturing Company, Toronto, have been incorporated with \$75,000 capital stock.

THE Saskatchewan coal mines near Medicine Hat, Man., will be put in order and operated immediately.

THE Hallowell flouring mills near Picton, Ont., were destroyed by fire December 19th, loss about \$5,000.

THE saw mill in the New Sweden Colony, north of Minnedosa, Man., was destroyed by fire a few days ago.

MESSRS. W. N. JOHNSON & Co., Winnipeg, Man., have gone extensively into the manufacture of horse collars.

THE capital stock of the Kay Electric Light Company, Hamilton, Ont., has been increased from \$3,000 to \$20,000.

MESSRS. BLAIR BROS., Chesley, Ont., suffered the entire loss of their fanning mill factory and contents Dec. 27; loss about \$1,500.

A SLIGHT fire in James Fraser's woolen mills at Kincardine, Ont., on December 19th, did damage to the machinery to the extent of about \$800.

THE municipality of Birtle, Man., is opposed to taking stock in the flour mill proposed to be erected by the Birtle Milling Company in that town.

MESSRS. ROSS, HALL AND BROWN, Rat Portage, Man., expect to be given a bonus of \$15,000 as an inducement to establish a large saw mill there.

THE anthracite coal mines, near Banff, Alberta, will shortly be worked by a force of 500 men. The mines have been closed down since last summer.

A LARGE railway ferry steamer will be built at Westminster, B. C., for the purpose of transferring trains across the Fraser river, for the Westminster Southern Railway, now under construction.

THE Reliance Electric Manufacturing Company, Waterford, Ont., have just completed and put in operation the electric lighting plant for the town of Goderich, Ont. It is a gratifying success.

A REPRESENTATIVE of a large stove manufacturing concern in the United States, who propose transferring their business to Canada, was in St. Thomas, Ont., a few days ago looking after a suitable location.

MESSRS. GUGGISBURG BROS., of Preston, Ont., have secured from Mr. E. Philips, of Mount Forest, the right to manufacture his patent letter file. The royalty to be paid will net the fortunate inventor \$1,000 per year.

THE Kingston Cotton Company, Kingston, Ont., have sufficient orders on hand to keep their mills working full time up to July next. Orders from China, which could not be filled, have been refused.

PETROLEUM oil has been discovered in the Crow's Nest pass of the Rocky Mountains. This is the pass directly west of Macleod, Alberta. Coal and valuable mineral finds have also been discovered in this pass.

MESSRS. HEINTZMAN & COMPANY, Toronto, manufacturers of pianos, have sent us an exquisitely beautiful 1889 office calendar. It represents a beautiful Canadian maiden perched like a song bird upon the branch of a tree.

MESSRS. R. PARK & Co., Newmarket, Ont., have recently made considerable additions to their tannery works, which will enlarge their capacity to 500 sides of leather per week. The improvements include a wing to the main building, thirty additional vats, new machinery, etc.

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RAILWAY CAR WORKS, | PORTLAND ROLLING MILLS,
PARADISE ROW. | STRAIT SHORE.

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Railway Cars of all descriptions. Chilled Car Wheels, "Washburn Peerless" Steel Car Wheels. Car, Machine, Mill, Ship, and all kinds of Castings. Steam Engines, Mill and other Machinery. Nail-Plate, Bar Iron, Street and Mine Rails, Ships' Iron Knees, Hammered Car Axles, Shafting and Shapes.

John Doty Engine Co.

Cor. Bathurst and Front Sts.

TORONTO, ONT.

MANUFACTURERS OF

ENGINES and BOILERS

OF EVERY DESCRIPTION.

SEND FOR CATALOGUES.

MR. DAVID MOORE, Neepawa, Man., will make an offer to that and the adjoining municipalities to build a first-class roller flour mill there, of a capacity of 100 bbls. per day, if the municipalities give a bonus of \$6,000, and the town of Neepawa exemption from taxation for 20 years.

THE Canadian Anthracite Coal Company have re-started operations at Anthracite, N.W.T., on a large scale. One hundred and twenty-five miners are already employed, and a number of others will soon be added to the force. The output will be shipped to the San Francisco market.

THE Canada Bank Note Company, Montreal, have sent us a beautiful office calendar for the current year, the head of which is of about the size and shape of a bank note, engraved and ornamented in the most artistic style. It is a fair specimen of the character of work done by them.

MESSRS. I. MATHESON & Co., New Glasgow, N.S., who make a specialty of gold mining machinery, have supplied the machinery for the mines of the Minnesota Mining Company at Malaga Lake. The new stamp mill, consisting of twenty-one stamps, is pronounced one of the best equipped mills in the province.

ST ALBANS, Vt., has been chosen as a flour distributing centre for New England. The Minneapolis flour men co-operating with the Central Vermont and Canada Atlantic railroads, are building two immense warehouses for storage purposes. A supply of 20,000 barrels can be kept there ready for Eastern buyers.

MR. F. A. PARKIN, of the Galt File Works, is putting in three machines for cutting files, as he finds himself unable to keep up to his orders with all hand work. Each machine will do the work of three or four men, and the work can be produced very much better as well as cheaper by the use of machinery.—Galt, Ont., Reporter.

THE Montreal Woollen Company, of Montreal, have been making extensive improvements in their mills at St. Gabriel locks. The company have put in three set cards, two pair mules, and twenty-two looms, all of which were imported from England. The new addition to their building is a 140 x 60 feet factory, three stories high.

MR. W. J. McCULLOUGH, Brockville, Ont., informs us that he has been awarded the contract for supplying all the sewer pipe to be used in that town during 1889. The pipe that he will supply will be drawn from the works of the Standard Drain Pipe Company, St.

Johns, Quebec, which, he says, is superior in every way to any Scotch pipe on the market.

MESSRS. JOHN CORBETT, R. J. Doyle, William Robinson and R. R. Butchart are forming a joint stock company at Owen Sound, Ont., for the purpose of manufacturing Portland cement. An extensive deposit, specially adapted for this purpose, has been discovered near Owen Sound, and operations will be begun in the early spring, which will produce about 500 barrels of cement a day.

MESSRS. WILLIAM KENNEDY & SONS, Owen Sound, Ont., have recently supplied turbine water wheels and machinery for the Stomont Cotton Manufacturing Company's mills at Cornwall, Ont.; the Montreal Cotton Company's mills at Valleyfield, Que.; the Toronto Paper Company's mills at Cornwall, Ont.; the Trent Woolen Mills at Campbellford, Ont.; the water-works at Morrisburg, Ont., and the water-works at Welland, Ont.

THE Massey Manufacturing Company, Toronto, have completed their new malleable iron works. The foundry is 265x62 feet, pattern shop 62x47 feet, and a storage shed 114x20 feet. The capacity of the cupolas is about fifty tons per week. About 100 hands will be required to operate these works, which is only an annex in connection with the company's immense plant used in the manufacture of agricultural implements.

THE contracts for the building of the approaches to the ship canal at Sault Ste. Marie were awarded a few days ago by the Dominion Government. The western or upper section goes to Messrs. Allan & Fleming, of Ottawa, while the successful tenderers for the lower or eastern section are Messrs. Ryan & Haney, of Toronto. The aggregate amount of the two contracts is between six and seven hundred thousand dollars.

THE year 1889 will be the 50th anniversary of the establishing of the Frost & Wood works in this town. They are to celebrate their jubilee by the introduction of a new machine, or at least part new. The works employ 200 regular mechanics and workmen, a number of office clerks, twelve salaried agents, and 350 local agents. The amount of wages paid is \$75,000 a year. Such enterprises cannot fail to build up any town.—Smith's Falls, Ont., *Record*.

THE Dominion Hat, Cap & Fur Company, of Toronto, are still considering the propriety of removing their works to Paris, Ont. They have capital in cash and plant of some \$22,000; and employ 40 hands, one-fourth being men and the rest women. If they go to Paris they will employ 150 hands. The goods they make are cloth, felt, silk and fur hats and caps. The company have a desirable site in view, and would be prepared to start operations at once.

THE Dominion Piano and Organ Company, Bowmanville, Ont., make liberal use of space in our advertising pages to call attention to the pianos and organs manufactured by them. A description of instruments manufactured by this company as displayed by them in their beautiful pavilion at the recent Toronto Industrial Exhibition was published in these pages on September 21st last. Messrs. J. S. Powley & Co., 68 King street west, are the Toronto agents.

BRUSHES

Paint, Whitewash, Kalsomine, Household Brushes.
Horse, Factory, Machine Brushes, etc., etc.
Corn Brooms and Whisks.

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T. S. SIMMS & CO., - ST. JOHN, N.B.

Balcony Fire Escapes

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ADVANTAGES:

The advantages of the BATTEN FIRE ESCAPE over all others are:

That the balconies are made of the best wrought iron, of any ornamental design or pattern, and securely bolted through the walls. Can be made any length or width. The brackets and flooring are capable of bearing any number of persons standing on them. The ladders, with wide steps and of easy grade, can remain down permanently, or folded up, as desired, showing the ornamental balcony only in sight, which does not mar the architectural beauty of the building, and can be instantly released when desired. No ice or snow will remain on them, neither will the working parts rust; and they will work admirably in any weather.

A Stand Pipe is also connected for high buildings, with valves at each floor and on the roof.

Our Escapes have been fully tested at fires and proved themselves invaluable for saving life and property. Iron guards on windows of Asylums and Reform Schools can be so adjusted as to be instantly released in the case of fire by the unfolding of ladder or sounding of a gong.

Sole Manufacturers for Canada,

NICHOLLS & HOWLAND,

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Established 1872.

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NEW FEATURE,

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FOR PARTNERSHIPS

IMPORTANT TO MANUFACTURING FIRMS.

MEDLAND & JONES,

GENERAL AGENTS.

Corner Adelaide and Victoria Streets,

TORONTO.

FOR SALE, CANADA PATENT

For the Best Selling Toy in America.



(Patented in Canada Sept. 11th, 1888.)

A new and novel toy for boys, adapted to be straddled and ridden, and is so constructed that when ridden the legs move forward and backward in imitation of a real horse walking or running.

For terms and circulars address

OTTO E. ROOKER,
Inventor and Manufacturer,
Mooreville, Indiana, U.S.A.

MACHINE BRUSHES

All kinds, Made to Order.

Highest Quality of Work Guaranteed.

SEND FULL PARTICULARS OF DIMENSIONS AND QUALITY WHEN ORDERING.

Old Rollers or Blocks Re-filled with special care.

CHAS. BOECKH & SONS,

MANUFACTURERS,

Office and Warerooms: 80 York St.

Factory: 142 to 150 Adelaide St. W.,

TORONTO, CANADA.

THE iron foundry of the Grand Trunk Railway Company, at Hamilton, Ont., is to be considerably enlarged, and machines introduced for the manufacture of bolts and nuts. Hitherto the car wheels for the Great Western division of the road only have been made at that place. At present the number of wheels made and purchased by the company is 40,000 annually. The castings for the great tunnel under the St. Clair river at Sarnia will also be done at Hamilton.

AN important discovery of magnetic iron ore has been made at St. George's Bay, Newfoundland, the quality of it proving, on analysis, to be the very best. As coal beds exist in proximity to the ore, great hopes are indulged of extensive operations being commenced there within a short period. Mining capitalists have sent an expert there to report upon the prospects, and if he reports favorably, it is said that the mines will be developed on a large scale without delay.—*Halifax Critic.*

MR. T. MCLROY, JR., of the Toronto Rubber Company, Toronto, has been advised that the highest award, a gold medal, has been awarded for his exhibit of fire hose at the Spanish Exposition. This award makes three gold medals won for the well-known brands of fire hose, "Eureka," "Paragon" and "Red Cross." The City Council of Montreal a few days ago ordered 3,000 feet of the "Paragon" brand, and on that date the corporation of Markham also ordered 1,000 feet, same kind.

AN Ohio stave manufacturer says: "All the staves used in this country are made in Indiana, Michigan, Northwestern Ohio and Canada. Indiana turns out about 75,000,000, Michigan 600,000,000, Canada 200,000,000, and Northwestern Ohio makes a big third of all the staves used in the United States. In Northwestern Ohio there are more staves made to-day than ever before, and I believe the business has been doubled within the last ten years, and we look for a greater increase in the years to come."

THE Dodge Wood Split Pulley Company, Toronto, inform us that they now have in hand and nearly completed a set of their grooved pulleys for the transmission of the power from the engine to the machinery in the new cordage works of Messrs. A. W. Morris & Co., at Port Hope, Ont. The immense factory of this concern—the J. A. Converse Manufacturing Company—at Montreal, is equipped with the Dodge system, and the proprietors are so well pleased with it that they are duplicating it in their Port Hope works.

IN Paris, France, sardine and other tin boxes, of which thousands are thrown away every month, form the basis for an industry which has reached vast proportions, and in which the youth of the country are interested. These refuse cans are taken and stamped into tin soldiers by suitable machines, and these regiments, brigades and corps of tin soldiers are formed, and are sold so low that the poorest children can possess and enjoy them, yet the manufacturer makes a fair profit, which could not be if he used new material.

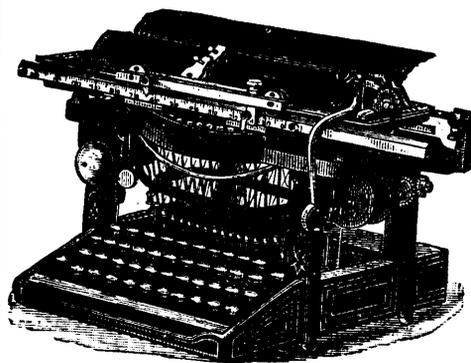
MR. OTTO E. ROOKER, Mooresville, Indiana, has invented and patented a new and novel toy for boys, which is exceedingly useful and bound to "catch on" to the popular taste. He desires to sell the Canadian patent right, and manufacturers who are making that class of goods would do well to investigate the matter. The device embodies a stick horse which may be straddled and ridden, and is so constructed that when ridden by a boy, the legs of the horse move backward and forward in imitation of a real horse while walking or running.

THE J. B. Armstrong Manufacturing Company, Guelph, Ont., call attention to the steel cutter gears manufactured by them, and which they say every reader of THE CANADIAN MANUFACTURER can have at a reduction of fifteen per cent. from regular prices by ordering direct from the factory, mentioning this paper. They have a number of finished specimen cutters which they wish to distribute, as they must make room for wheeled vehicles. Descriptive circulars will be sent on application. See their advertisement on page 26 of this issue.

A FEW days ago it was reported that the Doherty Organ Company, of Clinton, Ont., had made application to the city of St. Catharines asking what inducement would be offered them to remove their works to that place. It was also stated that the company had offered to locate in Goderich and employ 100 workmen, if a bonus of \$40,000 was voted to them. A proposition was also received from another party, offering to establish a new organ factory in Goderich which would start with a working force of twenty men, the bonus asked for in this instance being \$8,000.

THE McClary Manufacturing Company, London, Ont., inform us that at the time of the recent fire in their works, it was their intention to use the third story of the new building they were then

Remington Standard Typewriter



AWARDED FIRST AND SECOND PRIZES

Gold & Silver Medal

BY
CANADIAN
Shorthand Society

Aug. 13, '88.

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AGENT,
36 KING ST. EAST
TORONTO.

MUNDERLOH & CO.

MONTREAL,

SOLE AGENTS FOR THE DOMINION

OF

Meyer's Watchman Control Clock.

REDUCED PREMIUMS ON FIRE INSURANCE
SECURED BY USING THIS CLOCK.

Description and particulars on application.

CANADIAN TEAZELS.

PATRONIZE HOME INDUSTRY

Every user of Teazels should purchase those of
Canadian Growth in preference to Foreign
Importations.

ORDERS FILLED BY

F. W. SCHWENDIMAN, DRAYTON, ONT.

OR

THE DOMINION DYEWOOD & CHEMICAL CO
TORONTO, ONT.

IMPORTANT TO TEXTILE MANUFACTURERS AND ALL WHO DESIRE
TO SELL TO THE MILLS.

THE BLUE BOOK

A Pocket Directory of the Cotton, Woolen and Worsted Mills, Dyers,
Bleachers and Print Works of the United States and Canada.

Compiled to meet the demand for a small, compact Directory (as the large and cumbersome Directories contain a mass of matter of no interest to mill men). It gives name of place, county, railroad (or nearest railroad station), hotel, telegraph and express; name of mill, proprietor or company agents, and superintendents; class of goods made; number of cards, looms, spindles, knitting and sewing machines, boilers, water wheels, and if THERE IS A DYE-HOUSE.

It contains full particulars of ALL NEW MILLS under construction, with probable date of completion.

As much care has been taken, and as full particulars are given of a 1-set mill as of the largest.

Manufacturers and travelling salesmen who subscribed for it, and have received their copies, pronounce it the most accurate and complete Directory of the Trade ever published. Size, 7 by 4 inches.

Price, postpaid, \$2.00, bound in cloth; \$2.50, bound in leather.
(Canadian Bills accepted).

JAMES E. PALMER, 176 Broadway, New York.

erecting for their japan department, but as the fire originated in the old japan shop they have concluded to remove the risk from their other works, and that they are now putting up a special building for that purpose, isolated from all other buildings. The new building, which will be 60 x 55 feet, three stories high, will be used for japanning and decorating. It was expected that the whole concern would be again in full operation during this week, recent additions and improvements affording them double their former capacity.

A NUMBER of sample coats have been made up from dark cow-skins with a view to testing them for use by the Dominion Mounted Police. The skins were dressed by the Sarcee Indians, and it is hoped that the Indians may be encouraged to make this a lucrative industry. Since the disappearance of the buffalo, the Mounted Police Department has had to look around for an available substitute for buffalo pelts out of which to make warm winter overcoats for the police, and much satisfaction is expressed at the really neat coat which can be made from the well-dressed cowskin. Of late years polled Angus cattle have been largely imported into the Territories, and by crossing these with other breeds a good dark skin is secured.

MESSRS. MYLES, HUNTING & Co., Hamilton, Ont., have secured the contract for building the waterworks at Teeswater, Ont. The pumping engine will be of 50 horse-power, with two steam cylinders 12 x 14 inches, a pair of duplex pumps with water cylinders 7 x 14 inches, of an easy capacity of 500 gallons per minute, and capable of doing 600 gallons when necessary, with the additional machinery to run an electric light system. Engines and pumps are to be of the highest class for efficiency, economy and regularity of working, and calculated to run 50 arc lights of 2,000 candle-power, or 450 incandescent lights of sixteen candle-power each. It is expected that an electric light system will be established there at once, as some capitalists are talking of going into the scheme.

The Dominion Customs Department have received a sample of sugar made from sugar beets at the Berthier sugar factory, at Bethier, Que. The sample was submitted to the testers of the department, who expressed their surprise at its bright color and freedom from the disagreeable odor which beet root sugar from Germany and other foreign countries has. The sugar grades 95.1, which is a very high grade. A Berthier gentleman, writing to the department, says that the beet root sugar industry in that town is now on a firm footing. Last year 1,600 farmers were prevailed upon to cultivate sugar beets in the parishes lying adjacent to the line of the C. P. R. and in the valleys of the St. Lawrence and the Richelieu, and in spite of a very unfavorable year the majority have pronounced it a paying crop. Hon. Mr. Bowell has written the proprietors of the factory, congratulating them on the excellence of their product.

WE learn that the American Watch Case Co., of Toronto, have for some time past been quietly conducting a series of experiments looking toward the manufacture of gold-filled cases. The result of these has been, that although somewhat in advance of the actual requirements of the country, the company have decided to add this branch to their already large business, and as heretofore to keep fully abreast of the times. With their accustomed energy, the fine special machinery for this new departure has been in hand for some little time, and is already well under way. It is highly probable therefore that the first gold-filled case ever manufactured in Canada will be in the hands of the trade before the new year is very old, and the well-earned reputation of the company will ensure the success of this new venture in every way.—*The Trader.*

RECENTLY in Montreal an investigation was made into the charge of alleged neglect of duty on the part of drain inspector Lowe, in the course of which Mr. Lowe stated that when he visited the drain complained of in which the sewer pipe was being laid, he discovered that pipe was being used which he had uniformly condemned and rejected, and that he also rejected these. These condemned pipes were taken out and Canadian made pipes substituted. He had condemned Canadian pipes two or three years ago, because they were badly made. The moulds have since been altered, and the pipes were now all right. Only one brand of Scotch pipe was equal to the Canadian brand now. The general run of Scotch pipes sent here were only "culls." Some were not even glazed inside. A smoke test proved them useless; the smoke would come through the middle. Had blocked Scotch pipes at each end and filled them with water, when all the liquid would filter out in thirty-six hours through the pores. The Canadian pipes referred to were manufactured by the Standard Drain Pipe Company, of St. Johns, Que.

THE Standard Needle Company, of Paris, Ont., is a new concern just organized in that town for the purpose of taking over and carrying on the business lately started there by Messrs. Dixon & Davidson. The capital stock of the company is \$50,000, the officers

HENRY PORTER,

MANUFACTURER OF

LEATHER

BELTING

432 to 442 Visitation Street, Montreal, Que.

AND

36 FRONT STREET EAST, TORONTO.

Mill owners will do well to write for estimates before placing their orders.

Standard Drain Pipe

I am prepared to supply in any desired quantities first-class CANADIAN SALT GLAZED VITRIFIED FIRE CLAY DRAIN PIPE, manufactured by the Standard Drain Pipe Company, of St. John's, Que.

ROBT. CARROLL, 66 Adelaide St. West,

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(LIMITED).

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Engineers, Machinists, Boiler Makers,

Foundrymen and Bridge Builders.

RAILWAY and CONTRACTORS' SUPPLIES A SPECIALTY.

Frogs, Diamond Crossings, Switches, Hand Cars, Lorries, Velocipedes, Cars, Jim Crows, Track Drills, Semaphores, Rail Cars, Double and Single Drum Hoists, etc., etc.

GOWAN & BRITTON,

GANANOQUE, ONT.

MANUFACTURERS OF

Strap and T. Hinges, Screw Hooks and Hinges, Wrought Steel Butts for Builders and Cabinet Makers, Washers, Staples, Hooks, Hasps, Hay Carrier Hooks, Patent Hasp Locks, Bed Fasteners, Steel and Iron Cut Nails, Clout, Truck and Finishing Nails, Brads, Tacks and Shoe Nails.

We are also prepared to make special Nails or Hinges, or other articles made from iron from samples. The quality of our goods is always A. 1, and our facilities for making them are unequalled.

being Messrs. John Allen, president; R. B. Dixon, vice-president, and David Brown, treasurer. Mr. George Davidson and M. M. Allan are also of the directorate. The company will manufacture machine needles for all the various sewing machines used in Canada, whether of domestic or foreign make; also latch needles for knitting machines, trimmers and other specialties required in the knit goods industry. Messrs. Dixon and Davidson are both practical men and skilled mechanics; and Messrs. Brown and Allan have long been known in connection with the Ontario Nut Works, and the Paris & Cayuga Land Plaster Mills, both at Paris, Ont. The business of manufacturing sewing machine and latch needles is, we believe, a new one in Canada, and the machinery necessary in the business is both complicated and costly. This new enterprise is a valuable addition to the list of Canadian manufacturing industries. We are not informed whether the business will be located permanently in Paris or not, but presume it will be carried on there for some time at least.

THE new electric sugar refining process promises to revolutionize the manufacture of that commodity and reduce its cost to a degree at present incalculable. The process is as yet a secret, guarded most jealously. There have been several trials in New York at which experts have been present, who were permitted to witness the raw sugar put into the first portion of the machinery and then examine it as the refined article poured from the spouts. The machinery was in a secret room into which only the representative of the Electric Sugar Refining Company and the operatives were allowed. An expert who was in the mill during progress of one of the tests writes: "23,753 lbs. net of raw sugar were used in the secret room. This sugar analysed as follows: cane, 94.70; grape, 1.14; water, 1.84; ash, .43; organic substance, 1.89; total, 100. This sugar was delivered in half bags for convenience of handling. The machinery was started and inside of ten minutes refined sugar began to appear two stories below, and continued until seventy-nine barrels were filled, which weighed 22,341 lbs. net. The running time, not counting intervals, was 217 minutes, or at the rate of one barrel every 2½ minutes. The operators were two women and six men. By the old process it would take fifty men two days to accomplish the same result.—*Toronto World.*

THE Polson Iron Works Company, Toronto, have been voted a bonus of \$15,000 by the municipality of Owen Sound, Ont., to assist them in enlarging their ship-yard and dry dock works at that place. When this company decided to make Owen Sound the headquarters of their industry in building steel steam-ships, they found that it would be necessary to the proper carrying out of their work to have a dry dock larger than the one now in existence, and which was the first erected on the Canadian side of the upper lakes; and they made proposals to the town that if granted a bonus of \$15,000 they would take the present dock, enlarge and otherwise improve it, besides going on at their own expense with other works which the town had undertaken in view of the new Canadian Pacific Railway steel steamship being built here. The works are quite extensive, covering eight acres, three acres of which are buildings; 400 men being steadily employed. The Polsons are now building a sister vessel for the Canadian Pacific Railway Company, but larger than any of the others; she is 305 feet over all, 293 keel, thirty-eight feet breadth of beam, twenty-four feet three inches deep and will cost \$250,000. 320 hands work day and night on this vessel, and she will be launched about the middle of January. Another large steel steamer for the Parry Sound Lumber Company will then be proceeded with. She will be 220x34 feet; and the company have work for three years in prospect. The Polson Works are an interesting sight at any time, and at night when the yard and works are lit up by electric light, for which they have a dynamo of their own, they are very picturesque.

THE Canadian Pacific road is distributing rotary snow excavators along the line as fast as they are turned out of the shops at Montreal. Two excavators will be placed on the western division, one on the eastern and one on the western end. Two will also be placed on the Pacific division. These new excavators are of novel construction. Each is a huge affair weighing sixty-five tons, and a violent departure in the way of snow plows. It is longer than the longest locomotive and tender, and is painted a bright black. To get a proper conception of an excavator one must think of it as a mighty auger. The front presents the appearance of the immense gates of a prison. At regular intervals there are openings, with iron knives or blades, securely attached in their proper places by hinges or bolts, something similar to a Waterous turbine wheel inclosed in a sheet iron cylinder. This massive piece of complicated machinery is driven by steam from an ingenious engine within the excavator itself, made to revolve at the rate of two hundred revolutions to the minute. It is pushed into embankments by a powerful

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FACTORY, with water privilege, near Black's Bridge, Montreal. Building 60 x 60, five flats, extra well lighted and very strong; rare opportunity for party wanting cheap power. Apply

WM. JOHNSON & CO.

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Fine Manufacturing Premises in a central part of the City of Toronto, 100 x 100 feet, with Engine, Boiler, Shafting, Steam Heating, Gas and Water Pipes and other fixtures.

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J. D. HENDERSON,

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FOR Cylinder, Machinery & Wool Oils

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239 Fifth Avenue, New York.

locomotive, and as it bores, the snow which it receives is caught by fans and sent whirling through a large pipe to a distance of thirty or forty feet. It is calculated that it will tunnel through solid impacts of snow at the rate of eight miles an hour. The roadmaster, whose duty it is to direct its progress, stands in front and directs the engineer inside as well as the engineer who drives the locomotive in the rear. The fireman is entirely separate from the engineer. There is a standard tender attached, which holds the coal that supplies the furnace for the double boiler. It is thought the excavators cannot jump the track or be effected in the least by ice. The patent for the contrivance is owned by the Canadian Pacific road.
—*Winnipeg Call.*

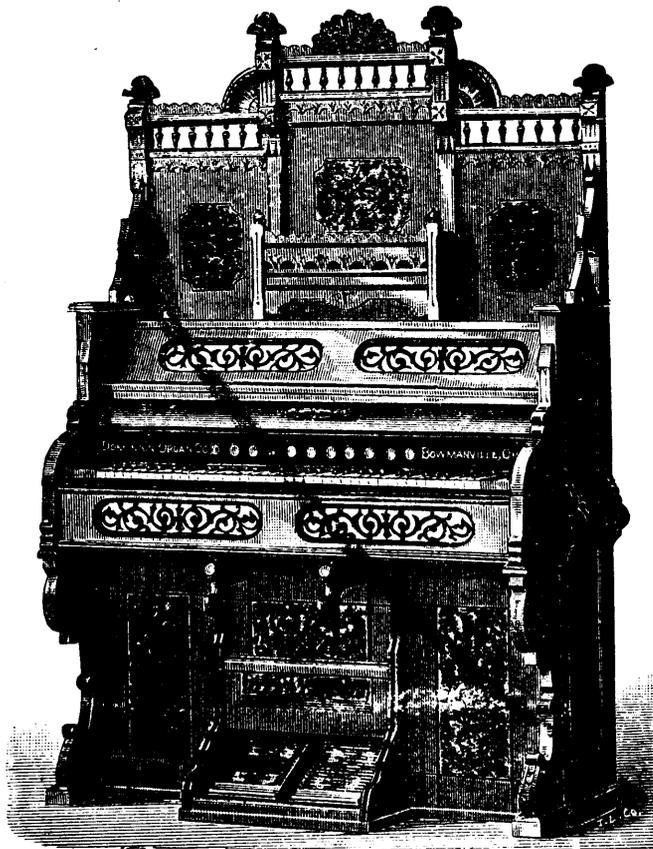
Messrs. J. L. Goodhue & Co., manufacturers of leather and leather belting, Danville, Que., inform us that business in their line was very active during the past season, and that they enjoyed a large demand for their goods. Included in the orders recently filled by them were an outfit of belting for the new mills of Messrs. Kelly Bros., at Joliette, Que., which they supplied with a double belt 22 inches wide and 63½ feet long; a 15-inch double belt, 44½ feet long; two 12-inch doubles, 41½ and 36 feet long respectively, and a large quantity of smaller belts from three to eight inches wide. All of the large belts in this mill were put on endless, workmen having been sent from the factory for the purpose. They also supplied the mills of Messrs. Gilmour & Co., at Trenton, Ont., with more than 4,000 feet of belting, included in which were the following:—One 28-inch double belt 105 feet long; one 26-inch double 32 feet long; one 25-inch double 93 feet long; one 24-inch double 98 feet long; one 19-inch double 41 feet long, and one 15-inch double 109 feet long; besides several hundred feet of smaller double from six to twelve inches wide. Among the large belts made by Messrs. Goodhue & Co. during the past summer were a waterproof 30-inch double 88 feet long, for Messrs. Pierce & Co., of Ottawa; a 24-inch and a 22-inch double, for Messrs. C. Beck & Co., Penetanguishene, Ont.; a 20-inch double for the Longford Manufacturing Company, Orillia, Ont.; and a 22-inch double for Messrs. Boyd Caldwell & Son, Carleton Place, Ont. The firm filled some large orders for parties in British Columbia,

which included the complete outfit for the immense new mills of Messrs. Fader Bros., at Vancouver. In this order were a main driving belt 30 inches wide and 72 feet long; two 20 inches wide and 68 and 57 feet long; one 16-inch 65 feet long; one 14-inch 60 feet long, and a quantity of ten and twelve-inch belting. Also an outfit for the new mill of Messrs. Anderson & Grady, consisting of a 24-inch double 60 feet long; a 22-inch double 37½ feet long, and a 14-inch double 97 feet long, all of which were made endless, and a part of them waterproof. Among other large orders recently filled, Messrs. Goodhue & Co. mention the following:—To the new mill of the Cookshire Mill Company, at Sawyerville, Que., a main driving belt 30 inches wide and 74½ feet long; an 18-inch belt 45½ feet long; a 16-inch belt 82½ feet long; a 12-inch belt 113 feet long; a 10-inch belt 120 feet long, and over 1,000 feet of other belting from three to eight inches wide. All of the larger of these belts were made endless over the pulleys, workmen having been sent from the factory for that purpose. During the past season they also supplied to the Rathbun Company, at Deseronto, Ont., upwards of 3,000 feet of their superior quality leather belting, included in which were a 20-inch double 70 feet long and a 14-inch double 73 feet long, besides a number of smaller doubles from eight to twelve inches wide. About an equal quantity of belting was supplied to the E. B. Eddy Manufacturing Company, at Hull, Que., which included an 18-inch double 40 feet long and a 12-inch double 60 feet long. Sawmill work is the hardest that belting has to perform, and Messrs. Goodhue & Co. refer by permission to the following sawmill proprietors regarding the excellence of the belting manufactured by them:—Messrs. Gilmour & Co., Trenton, Ont.; the Rathbun Company, Deseronto, Ont.; Messrs. Boyd Caldwell & Son, Carleton Place, Ont.; the E. B. Eddy Manufacturing Company, Hull, Que.; Messrs. C. Beck & Co., Penetanguishene, Ont.; Messrs. Flatt & Bradley, Casselman, Ont.; Messrs. Hall, Neilson & Co., Three Rivers, Que.; the Cookshire Mills Co., Sawyerville, Que.; the Burnett Sawmill Company, New Westminster, B.C.; the Waterous Engine Works Company, Brantford, Ont.; and the Wm. Hamilton Manufacturing Company, Peterborough, Ont.

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PIANOS

Hold more Gold
Medals from the
World's Fairs than
all other Canadian
makes put together.



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Large stock now on
hand at very low
prices at the

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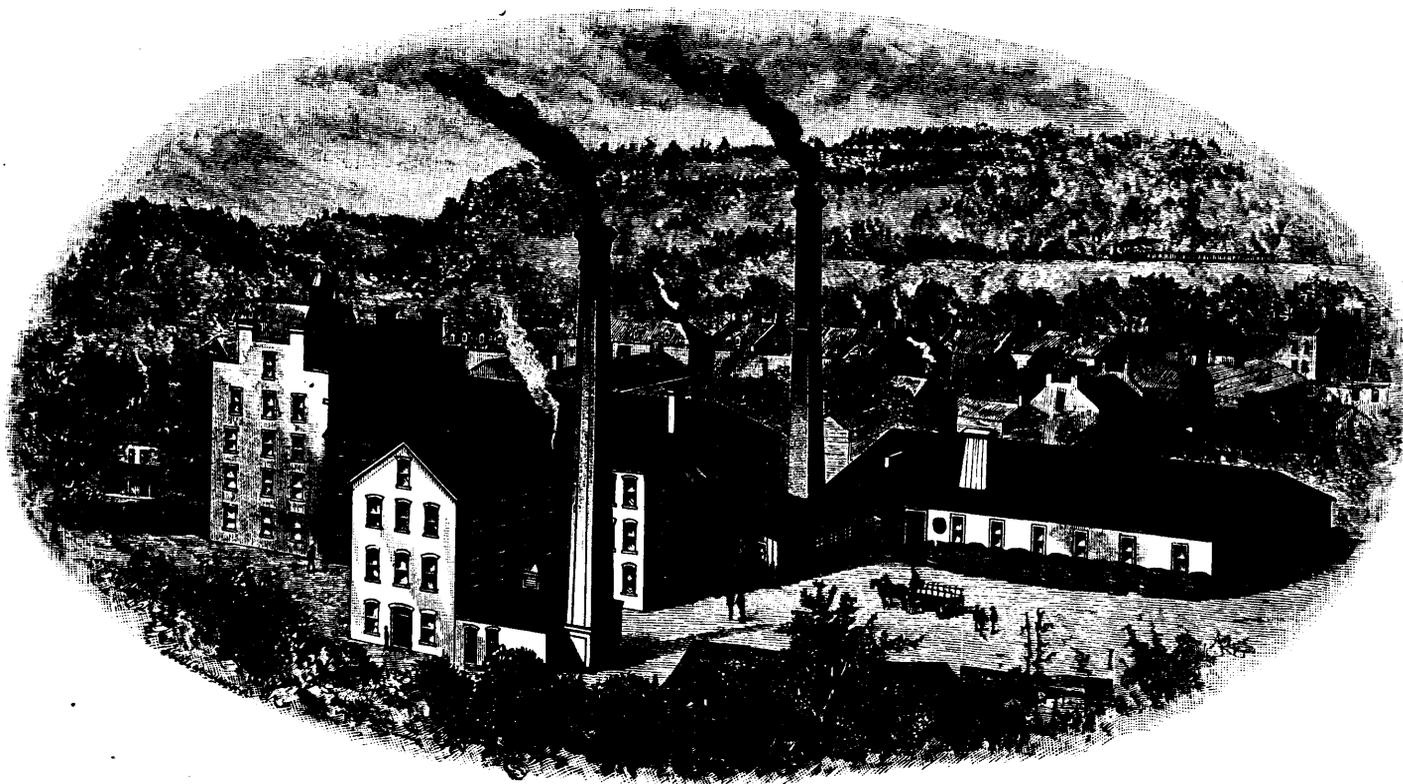
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A splendid opportunity to lease, with the privilege of purchasing on very favorable terms, one of the

BEST EQUIPPED FACTORY BUILDINGS IN CANADA.



Having 33,000 feet of floor surface; well lighted; heated by direct steam; has highly economical steam plant, consisting of 150 horse-power Brown Automatic Cut-off Engine with two Horizontal Tubular Boilers of 80 horse-power each, with Heaters, Pumps, Injectors, etc., situated in one of the best manufacturing towns in Canada, and possessing valuable privileges from the town that can be transferred to the lessee or purchaser.

 We solicit correspondence and inspection of the property, possession of which can be given at short notice. Address

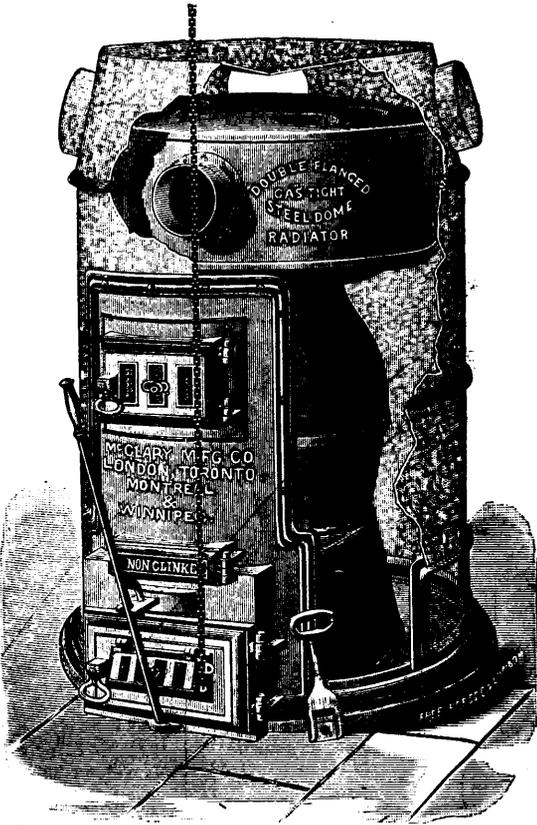
THE CANADA SCREW CO.

HAMILTON, ONT

FAMOUS TOP RETURN FLUE FURNACE.

NEW GEM WOOD FURNACE

IN THREE SIZES. FOR BRICK OR PORTABLE SETTING.



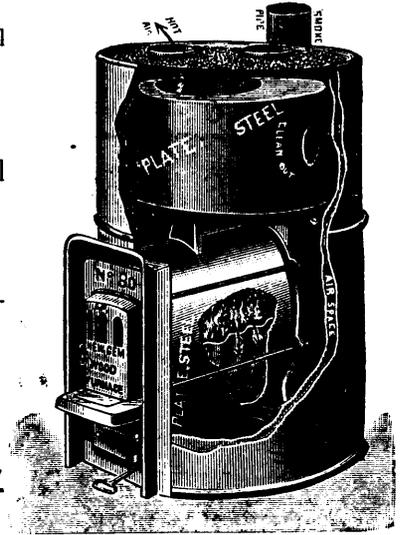
WITH EITHER CAST IRON OR STEEL RADIATOR.

Entirely new and of novel design.

A Powerful and Economical Heater.

Thoroughly tested. Specially adapted for medium sized dwellings.

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McClary Mf'g Co.

London, Toronto, Montreal and Winnipeg.

Unequaled for economy of fuel, simplicity of construction, ease of management and heating capacity.

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MANUFACTURERS OF

Cast Steel Files and Rasps, Anchor Brand.
Cotton Waste, white and colored.

Asbestos Cement for covering Steam Pipes and Boilers

Asbestos Piston and Joint Packing. Asbestos and Rubber Piston and Joint Packing. Plumbago Packing.

HOSE—Rubber, Canvas and Linen.

HOSE—Cotton, Rubber-Lined for Fire Brigades.

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A. C. LESLIE & CO.

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Iron, Steel, Wire, Tinplate,
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PRESCOTT EMERY WHEEL CO.

PRESCOTT, ONT.

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Water Grinders for Tools.

Twist Drill Grinders.

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GRINDING AND POLISHING
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Discounts and Price Lists on application.

NEW BRUNSWICK CORDAGE WORKS,

THOS. CONNOR & SONS,

MANUFACTURERS OF ALL KINDS OF

HEMP and MANILLA CORDAGE,

BINDER TWINE, ETC. ETC.

VESSELS' OUTFITS A SPECIALTY.

BINDER TWINE,

MANILLA CORDAGE,

CLOTHES LINES,

LATH AND PALING TIES,

LOBSTER MARLINE,

RATLINE,

LANYARD ROPE

PORTLAND, N.B.

To Manufacturers!

THE LAND SECURITY COMPANY

OF TORONTO

Offer for sale or to lease a number of very desirable sites suitable for manufacturing purposes, among which they mention one lot containing $1\frac{1}{2}$ acres, and one lot containing $1\frac{3}{4}$ acres on King Street west, on Subway, and on line of Grand Trunk. Toronto Grey & Bruce, and Canadian Pacific Railways. Also the contiguous property, containing about 3 acres, known as the Dominion Bridge Co's Works, having switches connecting with all the Railways entering Toronto. The Shops, Forges, Steam Power and Shafting are all in capital working order.

The Company have also lands where the main lines of the Grand Trunk (Northern) and Canadian Pacific Railways cross at Davenport. Switches are obtainable from either or both roads, and abundant space can be afforded for very extensive works; and for the erection of all dwellings that may be required by workmen.

Portions of these lands are in York Township whence suburban and street car services will give frequent access to the city.

WM. I. MACKENZIE,

Manager.

COMPANY'S OFFICES IN TORONTO,
No. 7 VICTORIA STREET.

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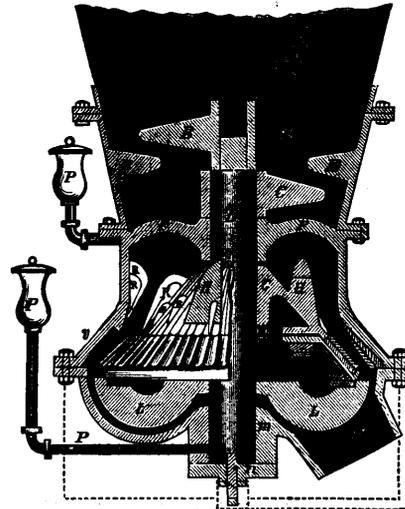
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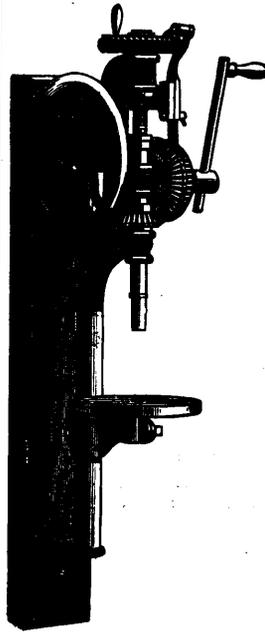
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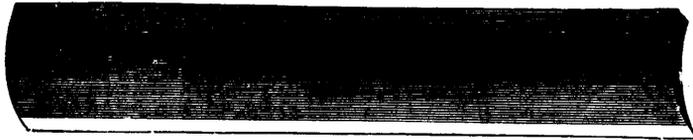
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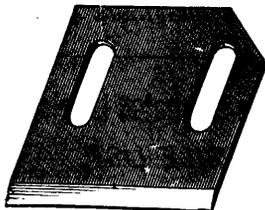
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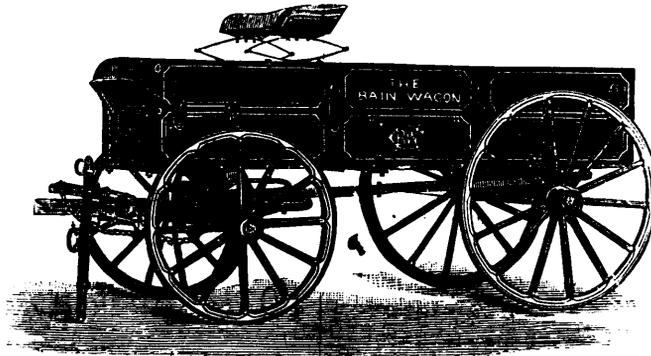
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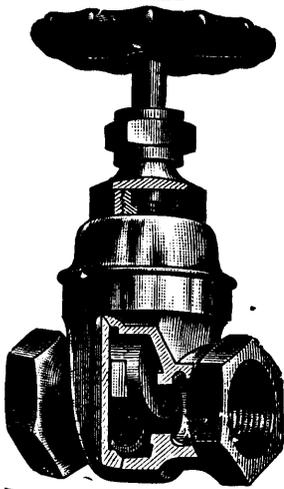
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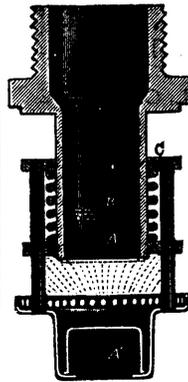
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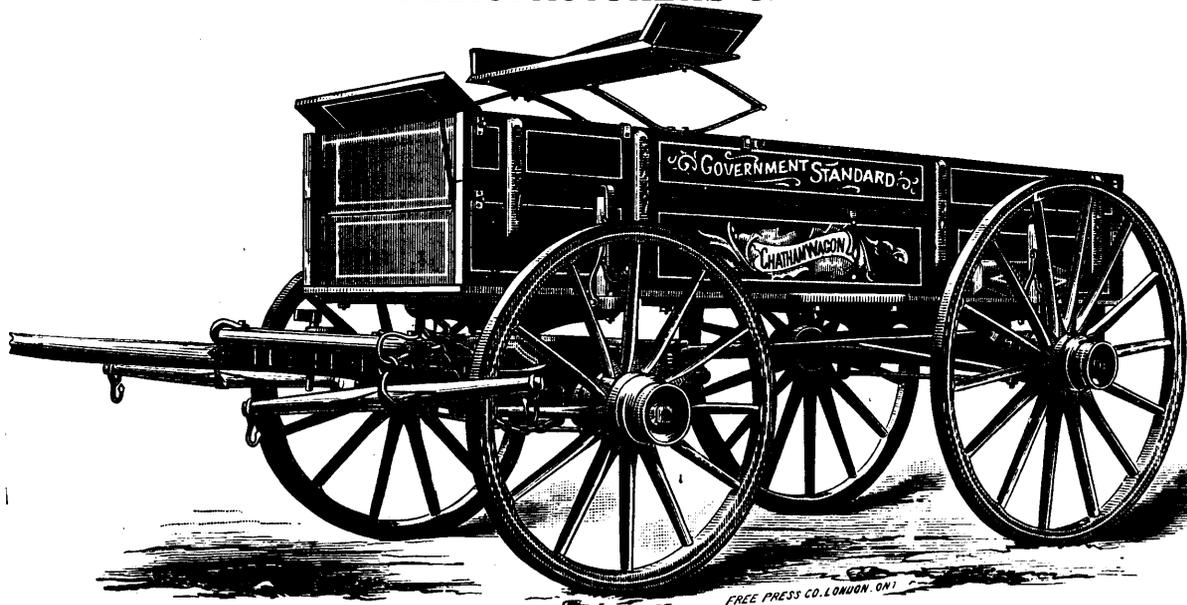
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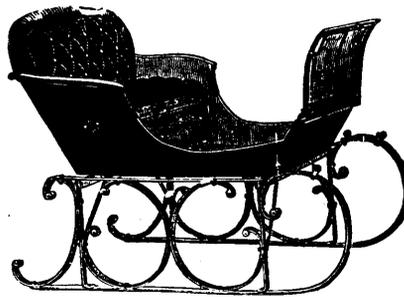
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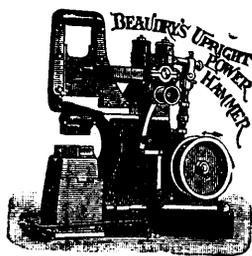
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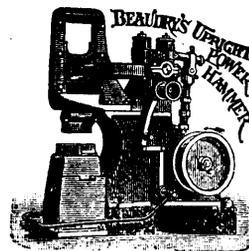
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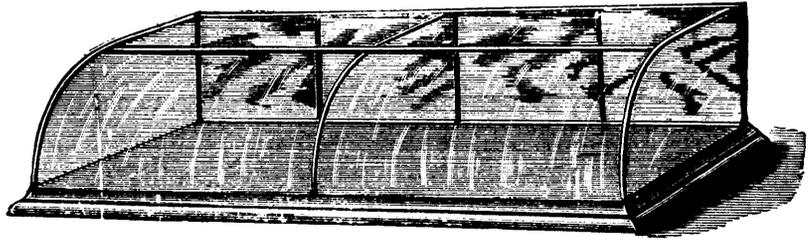
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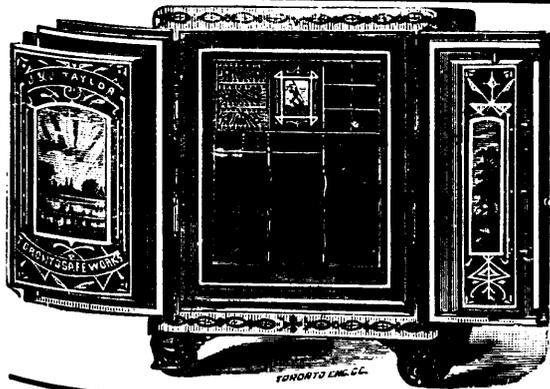
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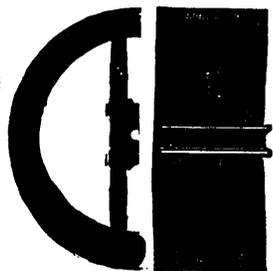
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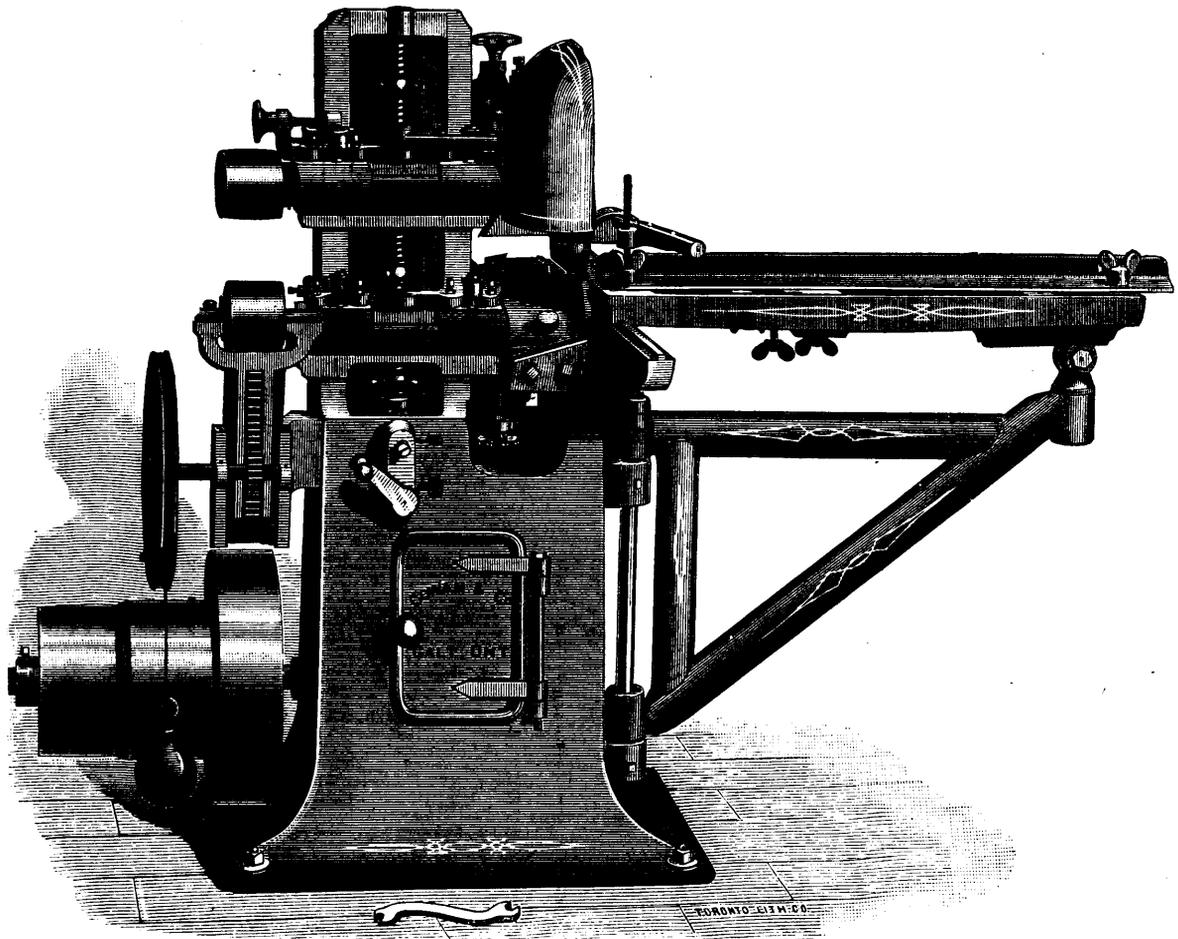
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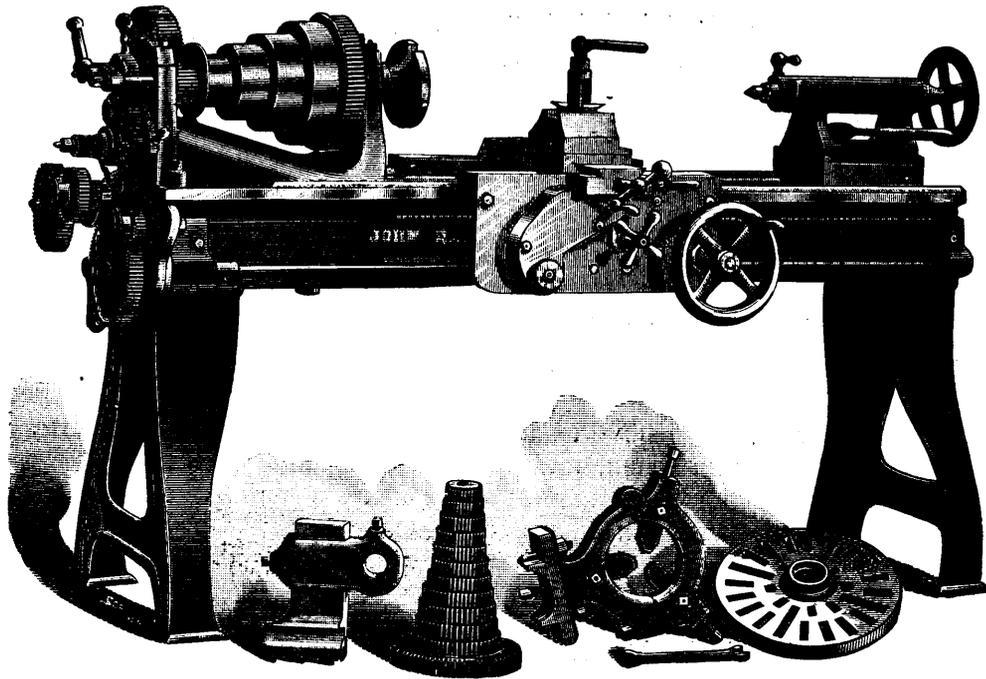
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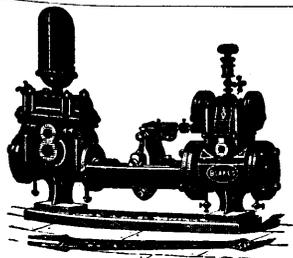
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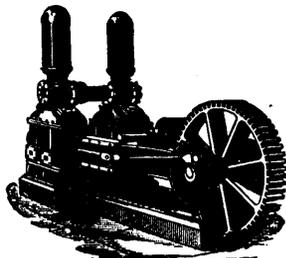
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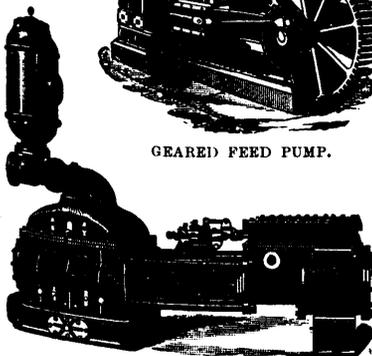
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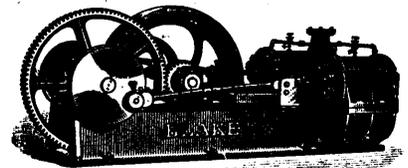
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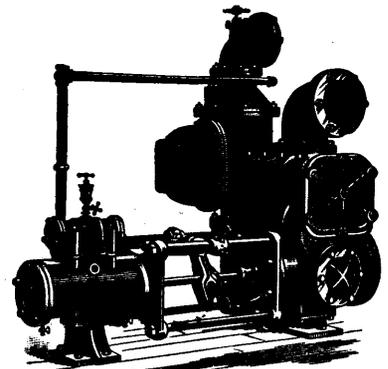
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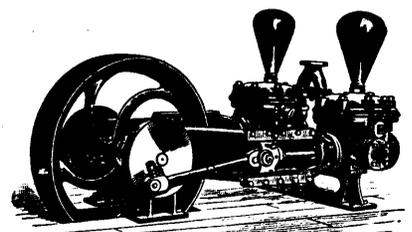
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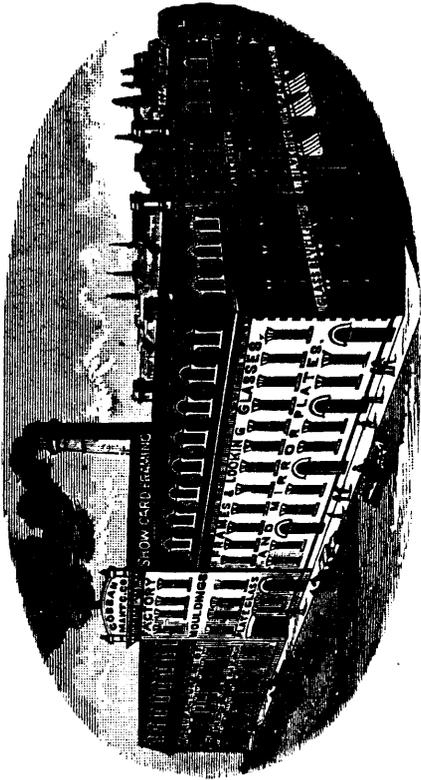
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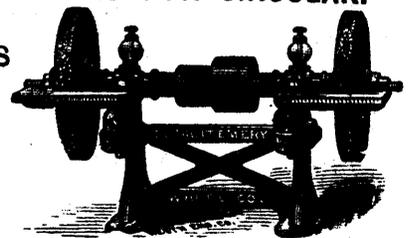
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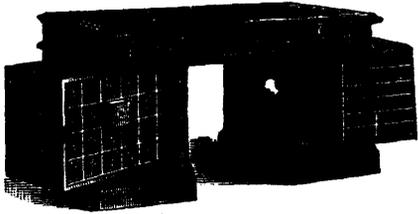
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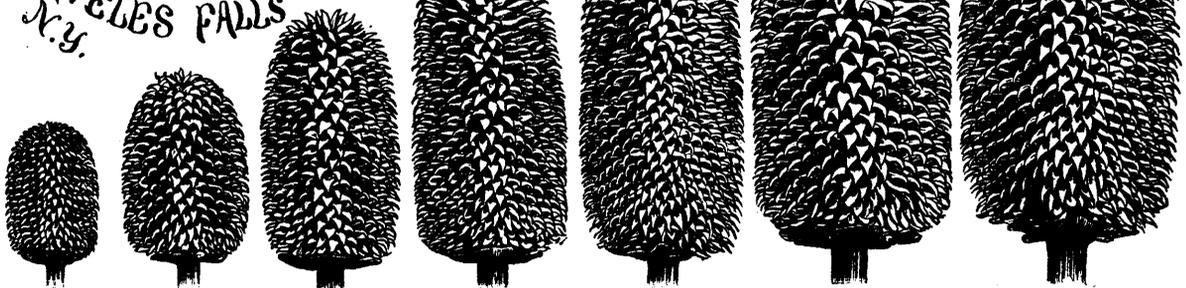
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