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AN ADIAN MANUFACTURER

AND INDUSTRIAL WORLD

DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION

Vol. 16.

TORONTO, JANUARY 18, 1889.

No. 2.

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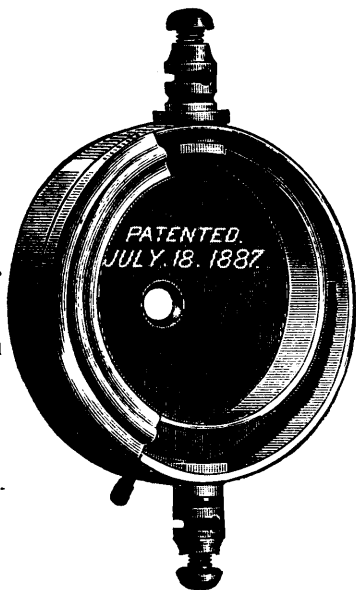
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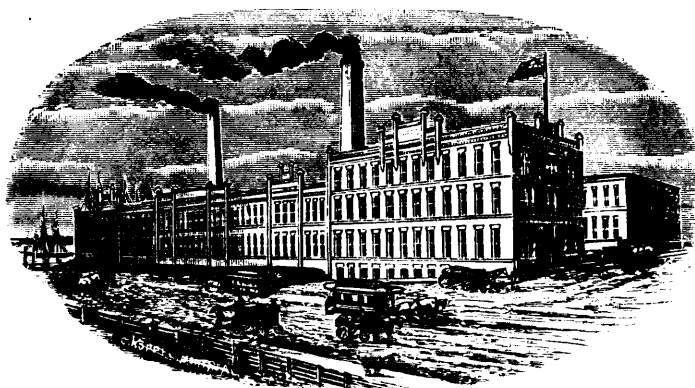


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MR. FREDERIC NICHOLLS is Secretary of
The Canadian Manufacturers' Association,
The Woolen Manufacturers' Association, and
The Tanners' Association.

His Office is at the Publication Office of the
CANADIAN MANUFACTURER,
6 Wellington Street West, Toronto.

INDUSTRIAL DESIGN.

For several years past the Canadian Manufacturers' Association have endeavored to encourage originality in industrial design by awarding medals to be competed for by amateur pupils of the Provincial Art Schools. This year they have decided to enlarge the scope of this competition by leaving it open to all, and by offering ten each silver and bronze medals as first and second prizes, respectively, for the following subjects:

1. Figure or group modelled in clay.
2. Carved panel suitable for sideboard.
3. Model for sailing yacht.
4. Design for wall paper.
5. Design for hearth-rug.
6. Design for stained glass window for hall or library.
7. Design for gasolier suitable for public building.
8. Design for epergne.
9. Design for diploma for use by the association.
10. Design and working drawings for workman's brick cottage, estimates for which shall not exceed \$600 in value.

The medals are in themselves works of art, and the steel dies from which they are made are cut from a first prize design adopted by the association in 1887.

The following rules will govern the competition, which is open to all residents of Canada at the time the work was executed, and who are now residing here:

1st. Each design or model must be original and executed by the designer.

2nd. Each design or model must be marked in a distinctive manner and be accompanied by a sealed envelope, which shall contain the correct name and address of competitor, and the outside of which shall be marked in the same distinctive manner.

3rd. Experts will be selected by the association as judges.

4th. Each model or design must be addressed to Mr. Frederic Nicholls, Secretary Canadian Manufacturers' Association, Toronto, and must reach the office of the association, 6 Wellington street west, not later than May 1st, 1889.

5th. Preference will be given to designs of a national character.

"THE LESSON OF THE SOUTH FOR CANADA."

A FEW days ago the *Toronto Globe* published what it called a "remarkable" letter from a correspondent who signed himself "Freedom," in which the phenomenal advances recently made by some of the Southern States of the American Union, in manufacturing enterprises, were offered as an argument why Canada should merge her individuality into Commercial Union with the United States. It endorsed the idea of its correspondent, and in an editorial, the caption of which is utilized for this article, sneeringly inquired why Canada, with all her natural and other advantages, could not be able to as successfully contend against the manufacturing enterprises of the North as the South has demonstrated itself to be. It spoke of the South as being "poor and unenterprising, with all their disadvantages of laziness-breeding climate, with their tremendous racial problem, their general unsafe condition of life and property, their disheartening antecedents, and their doubtful future;" and demanded to know, if these States could advance thus rapidly in the manufacturing arts, "why should Canadians dread the Northern competition which our Southern cousins treat so lightly." The lesson it wishes to enforce is this: "If the Pennsylvania iron men and the Massachusetts cotton mill owners were unable to strangle at their birth the genuine infant industries of Alabama, Georgia and Tennessee, they surely would have a poor time if they attempted to crush the stalwart manufacturers of these Provinces." It appeals to Canadian farmers to pay no attention to "groanings and lamentations" about the damage to occur to Canadian manufacturers, "when it can be proved that prosperity instead of adversity to the manufacturers will ensue upon the conclusion of a Reciprocity Treaty."

The *Globe* may promulgate its own views upon this subject, but it certainly should admit that the views of those who are greatly and vitally interested in the matter should have some weight. Canadian manufacturers are practically unanimous in the opinion that Unrestricted Reciprocity with the United States, or Continental Free Trade, as the *Globe* sometimes clamors for, would not be for the best interests of Canada or themselves; and not only these but Canadians generally are of the opinion that neither Unrestricted Reciprocity nor Continental Free Trade could be maintained on the part of Canada, and Canada at the same time maintain the political status she now occupies. The advent of either of those political heresies would signalize a beginning which would surely end in the hauling down of the British and the running up of the American flag.

But there are others, alluded to by the *Globe*, who differ widely from it in their conclusions as to the cause of the new and great prosperity of the South—we mean the Southern manufacturers themselves. The *Globe* attributes their pros-

perity to the fact that as between their section and the manufacturing North, there exists just such a freedom of trade as would exist between the United States and Canada should Unrestricted Reciprocity prevail. But these Southern manufacturers are as vehement in demanding the continuance of the protective policy of the United States as the Northern manufacturers are, and as Canadian manufacturers are in demanding the continuance of our National Policy. This fact was remarkably apparent a few days ago, when a large delegation of Southern manufacturers waited upon President-elect Harrison to congratulate him upon his election. In their address they said; "We congratulate you and the country on the success of those principles which have caused your election, because we believe that a Protective Tariff will aid and promote the development of our natural resources." This delegation was composed of representative men, some of whom were Republicans and some Democrats, whose combined manufacturing interests amounted to twenty million dollars; and the memorial they presented to General Harrison was signed by some two hundred other business men and manufacturers, a large majority of whom were Democrats, and who represented wealth amounting to over thirty million dollars.

Why did these Southern manufacturers visit General Harrison? They did not ask for any "protection" as against the North, for they did not want it; but they did ask that the protection which imposed heavy duties upon foreign manufactures might be continued in the interest of the whole country. This policy had built up the manufacturing industries of the great North, and it was none of its fault that the South had not been previously equally benefited. When the South, however, ceased to grieve over its "lost cause;" when it finally concluded to let the dead of the painful past bury its dead; when it found that there was more happiness and prosperity in looking hopefully towards the future than in fruitless repinings over the unfortunate past; then it was that the fallacy of Free Trade became fully apparent, and that only under the ægis of Protection could as great prosperity be hoped for in the South as prevailed in the North. Time was when the South was a solid unit for Free Trade. Free Trade, disloyalty and rebellion were synonymous terms, for Free Trade was an important part of the foundation upon which the Southern Confederacy was built.

The *Globe* makes an appeal to "our farmers," to pay no attention to "groanings and lamentations" of our manufacturers about the damage which would occur to their interests in the event of Unrestricted Reciprocity, and tells them that "the protected Canadian manufacturer has no solid standing ground for his opposition to continental Free Trade." If the same ratios hold good in Canada that prevail in the United States, about one third of the entire population earn wages or live by work, and of these about one-half, or less, are engaged in agricultural pursuits, and there is no other single industry that gives employment to so many people. Perhaps the products of agriculture do not equal in value the products of manufactures, yet agriculture may be considered the basis and foundation of the other industries. If the farmer makes no more than he requires for himself—if he has nothing to sell—he cannot buy other things necessary to his comfort. If he makes a surplus and sells it, the money from this surplus en-

ables him to live. But he must have a market in which to sell this surplus, and it is essential to him that the market in which he offers it for sale shall be secured to him—he must have a home market. Labor, wealth and power are synonymous terms. The thousands who are employed in the manufacturing industries are dependent upon the farmer for the bread which sustains life, and it is to this class that the farmer looks largely for consumers of his surplus products; and it is the products of manufactures which are essential equally with the products of the farm to make the farmer comfortable and happy. This is a condition of interdependence which makes a nation prosperous and self-sustaining when the surplus of the farmer is consumed at home. It is the conviction of American manufacturers, North and South, as well as of Canadian manufacturers, that the removal of the barriers of Protection would result in the destruction of their industries. If, then, Free Trade should prevail, where would the farmers find sale for their surplus products? Would the Canadian farmer be benefited if he lost his home market and had to sell his surplus products in Liverpool? If it was true that under Free Trade he could buy English-made goods for less money than Canadian-made goods now cost him, how would he be benefited by that fact if he had no money with which to buy them? Without the home market most of the articles now raised on the farm and sold for cash to near-by consumers, would have to rot on the ground where raised, or not be raised at all.

The lesson of the South for Canada is indeed an important one which Canada should lay well to heart. It teaches us that our prosperity lies directly under the shadow of our National Policy; and that the Canadian farmer is quite as much interested in preserving that policy as the Canadian manufacturer. It teaches more. It teaches that if Protection is so essential to the prosperity of the United States, it is more essential to the prosperity of Canada.

UNDER-VALUATION.

At a recent meeting of Canadian woolen manufacturers, held in the office of this journal, it was shown that the business was in a precarious and unsatisfactory condition, due in large part to the extraordinarily large importations of certain lines of foreign-made goods. It was claimed that the descriptions of certain styles of goods were vague and indefinite, and that because of this the goods were so classified as to pay a lower duty than was intended. It was also shown that large quantities of woolen goods were being brought into Canada, which were of exceedingly inferior quality, and that these, which were sold at correspondingly low prices, were destroying the demand for Canadian goods of superior quality.

The Canadian duty upon these lines of goods is considerably lower than the duty levied in the United States upon the same lines, but the higher duty there does not prevent the importation of immense quantities of them. But the evil of the introduction of these inferior and deteriorated goods is not all that American woolen manufacturers have to contend against, for, as in Canada, they are undervalued to an alarming extent. The evasion of the spirit of the tariff laws was particularly noticeable in the importations of certain cashmeres, which were made to contain infinitesimal quantities of cotton, introduced for the sole purpose of changing the classification, thereby

saving from six to eight cents per yard in duty. The special committee of the Woolen Goods Association, whose headquarters are in New York, employed a detective to look into the matter, and his recent report discloses some important facts. One of the effects of the investigation was to secure from the Treasury Department a decision which imposed a higher rate of duty on such goods, and out of about 20,000,000 yards for which orders had been placed, only about 1,500,000 yards were ever delivered, and the goods so delivered were either in port or in transit when the decision was promulgated. It is probable that Canada is now feeling the effects of the cancellation of orders for these 18,500,000 yards of undervalued goods in the increased importations here, and the consequent depression of the woolen goods manufacturing industry.

The agent of the Association here alluded to reports that for the eight months from March 1st to November 1st, 1887, advances averaging 6 per cent. were made by the appraiser at the port of New York, and sustained on re-appraisal on about 20,000 yards, chiefly of English worsteds; and that during the corresponding eight months of 1888, advances averaging 8 per cent. were made and sustained on 240,000 yards of these goods, importers adding 5 per cent. on entry to 16,000 yards more, an increase of more than 1,200 per cent. over 1887. From March 1st to November 1st, 1888, an average advance of 9 per cent. was made on 56,000 yards, and importers on entry added an average of 9 per cent. on 230,000 yards more. For the same eight months of 1887, advances averaging 6 per cent. were made on 20,000 yards of ladies' cloth; and during the same months of 1888 an average advance of 8 per cent. was made on 640,000 yards, and importers added, on entry, an average of 7 per cent. on 235,000 yards more—an aggregate of 875,000 yards, and an increase of more than 3,300 per cent. So, too, during the same period of 1887, advances were made averaging 6 per cent. on 1,135,000 yards of flannels, which was 1100 per cent. in excess of the previous year's advances. In women's and children's dress goods imported from France, during the period named, an average advance of 5 per cent. was made on 3,600,000 yards. These additions resulted chiefly from the discovery that certain shippers were falsely invoicing their cashmeres one twill less than their count.

It is further stated that the importations of wool and worsted cloakings in 1887 were very large, but in 1888 experiments were made by a few importers to bring in these goods in small quantities, but the average prices were so greatly advanced that they were discouraged from further attempts in this direction, the result being that domestic woolen and worsted cloakings took the place of the foreign article. Many of the advances made on these New York importations reached as high as 15 and 20 per cent., involving penalties amounting to many thousand dollars. The penalties incurred on the advances of invoices covering flannels and ladies' cloth alone, exceeded \$50,000.

PRISON REFORM.

WARDEN LAVALL, of the Kingston, Ont., penitentiary recently made a tour in the United States at the request of the Dominion Minister of Justice, for the purpose of

observing the system in vogue there where convict labor is not permitted to compete with free labor in mechanical industries. Some 850 convicts are confined in the prison at Elmira, New York, and on the occasion of Dr. Lavall's visit there, the convicts were formed in a battalion on the square and put through several manœuvres with wonderful precision. He was surprised, and says he never saw militia do as well. The men were supplied with mock muskets, and all the officers, including the "colonel," are convicts and appointed by the warden, who is careful to secure the best available men. The officers are very prompt in reporting breaches of discipline, and any offense is punished by exclusion from drill, which is considered most undesirable. After drill the "colonel" and "adjutant" report to the warden, who stands by as an inspector-general, and then the convicts return to their cells. At times there is company drill. When the prisoners are not engaged in drill they are taught trades in different departments of the institution, such as brick-laying, as the bricks can be knocked down after they are built up. Plastering, carpentering and other branches are also taught. Thus the convicts' time is pretty well occupied. After seeing this institution, Warden Lavall is of the opinion that Ontario should have some prisons conducted on the same principle, in so far as attention to youths is concerned, because young men sentenced for the first time, instead of being sent to jails to mix with and be contaminated by older criminals, might be sent to reformatories and an opportunity given them to become good and useful citizens.

This is in line with suggestions frequently made in this journal; that is, that part where the convicts are taught the manual of arms in the school of the soldier. The mechanical trades are now well supplied with competent and skilful workers who are free, and no good can result to the community by using the labor of convicts in producing goods that are sold in competition with the products of free labor. We have heretofore suggested that instead of employing convicts in mechanical industries, they should be educated in law, physic, divinity, military and civil engineering, and the school of the soldier; and we now find Dr. Lavall recommending the same thing to a certain extent. We congratulate him. His suggestion indicates that he has studied what he may have read in these pages; that he is convinced of the correctness of our views, and that he is adopting them. We hope that his suggestion will be carried out, and that some of the prisons in Canada may be set apart for the confinement of only such convicts as are not considered "hardened," and that they be taught to become scientific soldiers, such as we are told are to be seen at the Elmira penitentiary. We would be glad to see a beginning made in this direction, and we think Dr. Lavall a most proper and competent person to superintend such an establishment. Should that much be accomplished, we would then urge the enlargement of the system so as to include some other of our suggestions. There should be schools in which all of the higher branches might be taught, leading eventually into the study of law, and the graduating of a promising array of lawyers; of medicine and surgery, and a consequent output of doctors who would be quite as competent to guess at a case of sickness for a fee as many of those who now make their living in that way; and of divinity

where nice young ministers might be graduated who might acceptably fill the pulpits of some of our aristocratic city churches, or go as missionaries to benighted lands.

Undoubtedly prison reform that reforms begins to loom up as a practical idea, and we hope that Dr Lavall will become its pioneer in Canada.

THE TRADE OF THE DOMINION.

THE Trade and Navigation returns now about being issued by the Dominion Customs Department, afford a good index of the prosperity of Canada. The following table shows the exports, imports, and entries of merchandise for consumption, together with the duty collected thereon, from 1868 to 1888, both included :—

Year.	Total Ex-ports:	Total Im-ports.	Entered for consumption.	Duty.	Total exports and imports.
1868	\$ 57,567,888	\$ 73,459,644	\$ 71,985,306	\$ 8,819,431	\$131,027,532
1869	60,474,781	70,415,165	67,402,170	8,208,909	130,889,946
1870	73,573,490	74,814,339	71,237,603	9,462,942	148,387,829
1871	74,173,618	96,092,971	86,947,482	11,843,655	170,266,589
1872	82,639,663	111,430,527	107,709,116	13,045,493	194,070,190
1873	89,789,922	128,011,281	127,514,594	13,017,730	217,801,203
1874	89,351,928	123,213,582	127,404,169	14,421,882	217,565,510
1875	77,886,979	123,070,283	119,618,657	15,361,382	200,957,262
1876	80,966,435	93,210,346	94,733,218	12,333,114	174,176,781
1877	75,875,393	99,327,962	96,300,483	12,548,451	175,203,355
1878	79,323,667	93,081,787	91,199,577	12,795,693	172,405,454
1879	71,491,255	81,964,427	80,341,608	12,939,540	153,455,582
1880	87,911,458	86,489,747	71,872,349	14,138,849	174,401,205
1881	98,290,823	105,330,840	81,611,604	13,500,785	203,621,663
1882	102,137,203	119,419,500	112,538,827	21,708,837	221,556,703
1883	98,085,804	132,254,022	123,137,019	23,172,308	230,339,826
1884	91,406,496	116,397,044	108,180,644	20,164,963	207,803,539
1885	89,238,361	108,941,486	102,710,019	19,133,558	198,179,847
1886	85,251,314	104,424,561	99,602,694	19,448,123	189,675,875
1887	39,515,811	112,892,236	105,639,428	22,469,705	202,408,047
1888	90,203,000	110,894,630	102,847,100	22,209,641	201,097,630

The exports are made up as follows, contrasting 1887-8 with 1886-7 and with 1885-6 :—

	Year ending June 30.		
	1886.	1887.	1888.
Produce of the mine.....	\$4,147,287	\$4,110,608	\$4,339,488
Produce of the fisheries.....	6,869,033	6,977,674	7,871,105
Produce of the forest.....	22,865,087	22,248,483	22,880,291
Animals and their produce.....	23,077,513	25,012,580	25,620,369
Agricultural products.....	21,441,818	23,719,148	20,825,434
Manufactures.....	3,306,368	3,507,503	4,619,953
Miscellaneous articles.....	706,417	877,297	897,503
Total.....	\$82,413,584	\$86,513,353	\$87,101,144
Coin and bullion.....	56,531	5,569	17,534
Estimated amount short returned at inland ports.....	2,781,314	2,996,789	3,084,322
Grand total.....	\$85,251,314	\$89,515,811	\$90,203,000

EDITORIAL NOTES.

A MEASURE has been introduced in the legislature of South Carolina proposing to confine the right of suffrage to voters who can both read and write. The plain object of the measure is to disfranchise the colored citizens.

A WRITER in the New York Tribune proposes that convicts should be set to work at winding silk; that is to say, the unwinding of cocoons, which is the first process in silk manufacturing. At this work, which is now wholly done abroad by cheap labor, he thinks they could earn from thirty to fifty cents a day, thus keeping them from idleness, benefiting the silk industries of the country, and competing with no one.

THE Newfoundland Government have undertaken a big railway project, with the object of developing the interior of the island and the promotion of the fishing industry. A short line of railway is already built from St. John's west to Spread Eagle, and thence northeast to Harbor Grace. This railway, it is proposed, will be extended in a northwesterly direction about 100 miles, and thence, turning northeasterly, to run to Hall's Bay on the east coast.

THE American Protective Tariff League, following the lead of the Canadian Manufacturers' Association, have recently enjoyed their first annual banquet at Delmonico's, in New York city, a feature of the occasion being the presentation to the League of a very handsome banner by the ladies of the several States and Territories, in acknowledgment of the services rendered by the League to the country in the cause of Protection to American industries. The toasts were appropriate and national in sentiment, and the responses to them were from prominent protectionists from all parts of the country.

THERE are still people who think that more banks are needed in Canada, and who see no warning in the fate of the Exchange Bank, the Bank of London, the Central Bank, the Maritime Bank, etc., etc. We observe that notice has been given in the Gazette of application to Parliament to incorporate the Manufacturers' Bank of Canada, with headquarters at Toronto. —*Monetary Times.*

THERE is not a bank in all Canada operated in the interests of manufacturers, although no other class of people in the country have done, or are doing more to build up Canada and make it great, than the Canadian manufacturers. When these manufacturers happen to want the use of bank funds in carrying on their business, and importers, jobbers, grain speculators or other operators happen to experience the same want at the same time, the latter are generally the favored ones, and the manufacturers have to wait. Our contemporary should not imitate the dog in the manger.

IT was recently reported from London that the bayonets used by the British troops at Suakim, were of a very inferior quality; and that the manufacturers explained that first-class bayonets cannot be made in England now, owing partly to the inability to secure skilled workmen. They also stated that Germany is now the centre of the sword making industry. England has Free Trade. Once England was the centre of a fine silk manufacturing industry, but it has been transferred to France. Once it was celebrated for the excellent gloves made there, but that industry, too, has been surrendered to France. A few years ago there were twenty or more sugar refineries in London, while there are but five there now. Refined sugar, made in Germany and the United States, can be sold in London cheaper than London refineries can make it. Free trade does not seem to agree with the manufacturers of bayonets, gloves, silks and sugar.

THE *Monetary Times*, speaking of the celluloid letter opener souvenir which it recently sent out to its friends, explained that the reason the article was not made in Canada was that the editor did not know of any concern in the country who could produce it, therefore he had to send to the United States

for it. The article is a simple and not expensive affair, and we have occasion to know that celluloid goods of this description are manufactured in Canada—here in Toronto. The difference between some Canadian manufacturers and some American manufacturers is, that while the first do not think it worth while to make their business known to the public, the second are liberal patronizers of trade journals, in the pages of which those who may be in want of certain articles look for the advertisements of the makers. It is poor policy for men to invest their money in manufacturing enterprises, and then decline to let the fact be made public through the columns of the trade papers.

THIS is the season when the princely salary of the country parson is enhanced somewhat by marriage fees. When conductor Charlie Mitchell stepped off the Midland express at the Union Station last evening, he spent considerable time directing the bashful husbands of blushing brides, who had accompanied him down the line, to the leading hotels. There were no less than nine newly married couples on this train. One couple got on at Mariposa, four at Blackwater, one at Uxbridge, two at Stouffville, and one at Unionville.—*Empire*.

THIS shows that Canada is neither hopeless nor helpless, as some anti-Canadians would have the world believe. The fact implies prosperity and business to others than country pastors and railroad corporations. It implies needle work for sempstresses and an increased output of small clothes that will be handed down to posterity, giving place to stouter wear for larger girls and boys by-and-by; and it implies more work for the housebuilder and furnisher, the furniture manufacturer and all those whose business is to supply the growing necessities of the present and coming generations of Canadians. Let the good work go on. This constant marrying and being given in marriage is the hope of Canada.

ONE of the most disastrous storms known for years swept over Ontario on the 9th inst. Probably the most noticeable damage done by it was the destruction of the foot and carriage suspension bridge at Niagara Falls, which was torn from its moorings and precipitated into the Niagara river, the damage done being to the extent of about \$100,000. The work of re-building it has already been begun. In Merritton about half the roof of the mills of the Merritton Cotton Company was blown off; at Thorold Park and Leslie's canning factory was unroofed; L. D. Sawyer's agricultural implement works at Hamilton, were considerably damaged; at St. Thomas, May Bros. flour mill and the St. Thomas White Bronze Monument works were injured by falling chimneys; at Ingersoll, a part of the tannery of Thomas Brown & Son was blown down; at London, the Dominion Baby Carriage works suffered the loss of a chimney, and in Toronto the iron roof of the Gooderham & Worts new elevator was torn off and blown away. Many of the cisco fishermen whose nets were spread in Lake Ontario, found no time to look after them, and many of them were destroyed by the action of the waves. A remarkable incident of the storm occurred at Merritton cotton mills. When the building was unroofed an automatic water sprinkler pipe was broken. This was connected with a large reservoir in the top of the building, and about 8,000 gallons of water was sprinkled over the machinery and contents of the different floors, doing damage to the ex-

tent of about \$5,000. The Merritton knitting mills, at Merritton, suffered the loss of their large chimney, and the roof of the Riordon paper mills warehouse was blown off. Fortunately no loss of life in Canada was reported. In the United States the storm was more severe than in Canada, particularly in Pittsburgh and Reading, Penn., where many lives were lost by falling buildings.

In a recent issue we reproduced a good story told by the Acton, Ont., *Free Press* at the expense of a manufacturing firm in that town, to the effect that, being in want of a superior article of mineral paint, and seeing an advertisement of a Philadelphia dealer offering such an article for sale, the Acton manufacturer bought from him, and was surprised when it was found that the heads of the barrels contained the information that the paint was manufactured at Limehouse, a town within three miles of Acton. The Philadelphia dealer had paid the Limehouse manufacturer for the paint just what the Acton man would have had to have paid; had paid the freight from the factory in Canada to the warehouse in Philadelphia, and also the American duty on the same, and sold it at a profit, of course, to the Acton man, who had to pay the return freight from Philadelphia to Acton and the Canadian duty also. Under the circumstances the paint cost at least fifty per cent. more than if it had not travelled sixteen hundred miles, and the *Free Press* seems to think the joke is upon the Acton purchaser. Perhaps it is, but from our standpoint the transaction does not reflect much credit upon the business acumen of the Limehouse manufacturer, who, we regret to say, is a representative specimen of a large class of manufacturers in this country who do not attach proper importance to the value of advertising. If the Limehouse manufacturer had advertised his paint in the *Free Press*, no doubt the Acton man would have seen it, and have bought his supply from first hands, saving freight charges on sixteen hundred miles of railroading, and two duties to two different governments; and if the advertisement had been placed in the CANADIAN MANUFACTURER it certainly would have been read by about all the manufacturers in Canada who have use for such paint. The Limehouse manufacturer was forced to sell his paint in the United States—probably at a sacrifice—because he could not find sale for it in Canada; and he could not find sale for it in Canada simply because he did not advertise it in Canada. The incident conveys its own moral.

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 Intercolonial Railway of Canada have sent us a beautiful and suggestive 1889 calendar, in which is represented the city of Halifax, N.S., a city set upon a hill which cannot be hid, and in the front of which, riding peacefully at anchor, are a fleet of five British iron-clads, besides a number of merchant vessels. Crossed in the foreground are the Dominion and British flags, supporting the shield of the Dominion. The card includes a great deal of useful information and facts regarding the Intercolonial.

F. E. DIXON & CO.

MANUFACTURERS OF

TO MILL OWNERS

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.

F. E. DIXON & CO.

70 KING STREET EAST,
TORONTO.

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LEATHER BELTS vs. ROPES.

Geo. F. Haworth & Co., Leather Belting Manufacturers, Toronto, have just furnished one of "Hoyt's Pure Oak-Tanned Leather Driving Belts" to Tushingam & Son's Planing Mill in this City, to take the place of Rope Drives, which failed to give satisfaction.—*Toronto World.*

ANY reader of this journal may secure a free subscription to *Wide Awake* or any of the magazines published by the Lothrop Company, of Boston, Mass., by sending new subscriptions to any of them of twice the amount, thus: the subscription price of *Wide Awake* is \$2.40 a year—if twice that amount is sent—say \$4.80 for two subscriptions, a third subscription is awarded free to the sender. By this it will be seen that any girl or boy who has enterprise enough to obtain two new subscribers, with the money to pay for them, can get his own subscription free. This arrangement also extends to *Bybyland*, the price of which is 50 cents a year, *Our Little Men and Women*, \$1 a year, *The Pansy*, \$1, and *Chautauqua Young Folks' Journal*, \$1.

ONE of the most timely publications to be found is "Tropical Africa," by Henry Drummond, LL.D., F.R.S.E., F.G.S., issued by the Humboldt Publishing Company, 24 East 4th Street, New York. Price, fifteen cents. It is a work of most thrilling interest, giving an account of the author's experiences and observations in a trip through some of the most mysterious portions of the continent which is now attracting so largely the attention of the public. Much of the book is devoted to a discussion of the slave trade, which has depopulated whole regions of the continent; and Professor Drummond is very anxious to see a combination of European powers for the purpose of bringing it to an end. The number is 104 of the Humboldt Library publications.

THE *Manufacturer and Inventor*, of London, England, is one of the most interesting exchanges that comes to our editorial table. It is published on the 15th of each month, usually contains 52 pages of the best industrial information obtainable, and circulates extensively among manufacturers, buyers, merchants, importers and exporters in all the principal countries of the world. In many of its characteristics it more nearly resembles the best class of trade journals published on this side the Atlantic, which, in our opinion, are far in advance of similar publications issued on the other side. Judging from the extensive advertising patronage it receives, it is evident it stands high in the estimation of British manufacturers and merchants.

The *Dominion Illustrated* has safely passed the first half of its journalistic career under the most favorable circumstances. It has fulfilled all the promises originally made for it, both as to the style and character of the illustrations which it has displayed in profusion in each number, and the letter-press also. These features have uniformly been in a direction calculated to place Canada in its true and proper light before the world as a great country—great in its wonderful scenery and natural advantages; great as regards those productions which display the taste and energy of Canadians shown in works of art, architecture and mechanics, and great in the brains and arms of those who illustrate these things. The publishers, Messrs. G. E. Desbarats & Sons, Montreal, are forming a joint stock company to own and publish this most excellent journal.

Good Housekeeping is a semi-monthly magazine published at Springfield, Mass., by Messrs. C. W. Bryan & Co., and, as its name indicates, is devoted to such matters as women generally are interested in, and men, too, as to that matter. The bill of fare served up in the number now before us, and which indicates the general style and character of the pabulum on which its readers are fed, contains a history of oysters, and the many ways in which they may be prepared; a chapter on cakes; the etiquette of invitations; an article concerning soups and puddings; an article on quaker housekeeping; a choice display of prose and poetry, both original and selected; a number of sensible hints regarding housekeeping, etc. It is adapted for the homes of the world, and Canadian women would find profit and pleasure in reading it. The price is \$2.50 a year.

In its first issue of the current year the *Tariff League Bulletin*, of New York, changed its name and is now known as the *American Economist*, the idea being to broaden its scope, the ultimate aim being to establish it firmly as a leading journal advocating the American system of economics. The American Protective Tariff League, the publishers of the *Economist*, is composed of a large number of the most influential and thoughtful citizens of the United States, among the officers and managers being counted such men as Thomas H. Dudley, Robert P. Porter, Henry M. Hoyt, and Horace K. Thurber; and there are organizations of the league in every state and territory, officered by well known and influential gentlemen. As the *Tariff League Bulletin*, this journal did heroic service for protection during the recent presidential election, and contributed no little to the victory that gives the United States a Protectionist President. Canadians, supporters of our own National Policy, should subscribe for the *Economist*, for in it they will find many good reasons for the faith that is in them. It is published weekly at 23 west 23rd Street, New York City, at \$1 a year.

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.

A COMPANY has been formed at Chatham, Ont., to bore for natural gas.

REID'S stove factory at Bright, Ont., was destroyed by fire Jan. 7. Loss, about \$2,000.

MR. R. D. WOOD, Baie Verte, N. B., has begun the manufacture of hardwood butter tubs.

THE gas well at Thorold, Ont., is now emitting about 60,000 cubic feet of gas per day.

THE Howard Pulpware Company, Montreal, has been incorporated with \$20,000 capital stock.

THE Sarnia Oil Company, Sarnia, Ont., has been incorporated with a capital stock of \$250,000.

MR. S. S. CHITON'S woolen mill at Aylmer, Ont., was destroyed by fire Jan. 8, loss about \$5,000.

THE capital stock of the Montreal Car-Wheel Company has been increased from \$25,000 to \$75,000.

A PORTION of the works of the Riordon paper mills, at Merrittton, Ont., was destroyed by fire, January 6.

THE carriage shops of Mr. James Forestyle, at Springbrook, Ont., were destroyed by fire Jan. 10; loss, about \$2,000.

THE West Toronto Elevator Company, of West Toronto Junction, Toronto, has been incorporated with \$10,000 capital stock.

MESSRS. DOBSON & SON have commenced the manufacture of heating appliances and elevating machinery generally at Vancouver, B. C.

A THREE-MASTED schooner of about 300 tons will be built by Councillor Everett at Port Gilbert, N.S., to be launched in the coming spring.

MR. R. E. STEEVES, Hillsboro, N. B., is erecting a steam sawmill that will have a capacity to cut about two million feet of lumber a year.

MESSRS. JAMES HARRIS & Co., St. John, N.B., have just finished and sent out a Stackhouse wing snow-plough for the Windsor and Annapolis Railroad.

THE Cataract Manufacturing Company's paper pulp mill and the Cataract Milling Company's flour mill, at Niagara Falls, were destroyed by fire Jan. 1.

THE Sudbury Mining Company has been organized in Toronto with \$100,000 capital stock, for the purpose of carrying on mining operations in the Sudbury district.

MESSRS. SHURLEY & DIETRICK, saw manufacturers, Galt, Ont., will open a branch of their establishment at Orillia, Ont., where saws, etc., will be sold and repaired.

MR. SAML. SLOAN, Tilbury Centre, Ont., will increase the size of his planing mill; put in a sixty-horse power steam engine and considerable new wood-working machinery.

MESSRS. A. R. CLARKE & Co., Toronto, have sent us a useful office calender for 1889. This firm are manufacturers of morocco, goat, calf, and sheep leathers, gloves, mitts, etc.

MR. WM. TROTTER, of Galt, well known as the proprietor of one of the largest hardware stores in the West, has sold 4,760 stoves in fifteen years, an average of over one per day.

THE St. Lawrence Paper Company have been voted a bonus of \$25,000 by the town of Morrisburg, Ont., as an inducement for the location of their new paper mills at that place.

THE new dam for Barber's paper mills at Georgetown, Ont., together with the electric light dynamo, is said to have cost \$15,000. The electricity is intended for both power and light.

MESSRS. JOHN LEWIS & SON, Truro, N.S., whose shoe last and peg factory was recently destroyed by fire, have occupied their new factory and have orders for all the goods they can produce.

THE National Electric Tramway Company has been formed at Victoria, B. C., with a capital stock of \$250,000, with the object to construct and operate an electric street railway in that city.

MESSRS. J. HARRIS & Co., St. John, N. B., have contracted with the Temisconata Railway Company for the construction of a considerable quantity of rolling stock and three new snow plows.

MESSRS. COWAN & Co., Galt, Ont., inform us that they are very busy manufacturing steam engines and boilers, saw-mill and wood-working machinery, etc., some of which is alluded to elsewhere.

MESSRS. CORNWALL, HAYWARD & BELL, of the Bellingham Bay and British Columbia Railway Company, will erect a lumber mill at Sehome, B. C., with capacity to cut 10,000 feet in ten hours.

ARRANGEMENTS are being perfected to introduce Kay's incandescent light into Paris, Ont. The town has no gas works, and owners of shops and private houses are rapidly becoming patrons of the new light.

MR. ROBERT HOPPER, Truro, N.S., who has been doing a large and rapidly increasing business manufacturing shoe lasts and pegs, will erect a larger and more commodious factory the coming season.

CAPT. J. J. RARDON is attempting to organize a company with \$150,000 capital stock to build a dry dock at Port Huron, Ont., which will have capacity to accommodate any vessel employed in the lake trade.

A COMPANY has just been incorporated in Montreal, with \$100,000 capital, for the purpose of manufacturing sewer pipes and other fire clay goods.—*Montreal Herald*. [This statement needs confirmation.—EDITOR.]

THE Canadian Pacific Railway Company have made arrangements for building a mammoth cold storage warehouse and station, at a cost of \$10,000, in Ingersoll, Ont., if the town exempt them from taxes for ten years.

THE Waterous Engine Works Company, Brantford, will build an outfit of saw-mill machinery for Rev. Mr. Bottwood, of St. John, Newfoundland. The new mill will have capacity to cut 100,000 feet of lumber per day.

MESSRS. STAHLSDHMDT & Co. Preston, Ont., manufacturers of office desks, fixtures, fine furniture, etc., are putting in a handsome counter and some other furniture in the new building of the London and Canadian Loan Company in this city.

MR. WILEY'S new winey factory at Paris, Ont., is fast approaching completion. The third story has been built, the roof is nearly completed, and the inside carpenter work, the power and machinery will be proceeded with as fast as possible.

THE boiler-house of the Northumberland Paper Company mills, at Campbellford, Ont., was destroyed by fire, Jan. 6. There was no serious inconvenience to business, as the company has on hand a stock of both egg cases and building paper.

MESSRS. R. W. KING & Co., Georgetown, Ont., are manufacturing a system for heating greenhouses by steam instead of hot water, which is meeting with much favor. Their "King" steam heating apparatus for buildings has proven a great success.

MR. G. A. BUCHANAN, of Revelstoke, B. C., will erect a saw mill at Nelson, a new mining town at the junction of the Ainsworth Knotenaw railway and steamboat navigation on the Columbia and Arrow Lake. The mill will be in operation early in the spring.

MR. A. G. HENDERSON, of Huntingdon, Que., is making decided extensions to his furniture and planing mill business. He recently placed an order with Messrs. Cowan & Co., Galt, Ont., for a full outfit of planing mill machinery, to be supplied as early as possible.

THE mild weather and bad roads has interfered somewhat with the work of getting out gypsum at Paris, Ont., and teaming to the mills, but the proprietors are now taking advantage of the sleighing to get in the stock required for the manufacture of alabastine and land plaster.

AN electric omnibus has been successfully tested on some of the most crowded thoroughfares in London. This is said to be the only electric omnibus in the world capable of steering to right and left, and of running on a common road without rails at a speed greater than that of horses.

MESSRS. S. DAVIS & SONS, manufacturers of cigars, Montreal, with branch establishment at Toronto, have sent the editor a beautiful silver-nickel pocket match safe souvenir. Messrs. Davis operate, we believe, the largest cigar factory in Canada, and their goods are always of the very best quality.

THE planing mill and furniture factory of Messrs. Aldous & Co., at Georgetown, Ont., is a two story stone building 75x50 feet,

ESTABLISHED 1828.

J. HARRIS & CO.

(Formerly HARRIS & ALLAN).

NEW BRUNSWICK FOUNDRY.

RAILWAY CAR WORKS, | PORTLAND ROLLING MILLS,
PARADISE ROW. | STRAIT SHORE.
PORTLAND, ST. JOHN, N. B.

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.

equipped with all modern wood-working machinery, and gives employment to from thirty-five to forty hands.

THE Paris Winey Mill, at Paris, Ont., has been pushed to completion, the contractors being favored in their work by the mild weather which has prevailed. Mr. Wylie has returned from England, having purchased the necessary machinery for his mill, and work will be commenced as soon as possible.

It is satisfactory to know that Davidson's Canadian trimmer, which is being placed in nearly all the leading knitting mills in Canada, is recognized as being about the best in the market. It will shortly be introduced into Great Britain and Germany. It is manufactured by the Paris Trimmer Company, Paris, Ont.

THE *Compagnie Manufacturiere de Laine de Notre Dame de Laterriere* (the Woolen Manufacturing Company of Notre Dame de Laterriere), with a capital stock of \$10,000, head-quarters in the Parish of Notre Dame de Laterriere, Que. The object of the Company is the manufacture and sale of woolen, cotton and linen goods, etc.

THE Ontario Tack Company, Hamilton, Ont., are moving into their own premises, and are arranging to take a new lease of life, and to still further extend their business. Messrs. Cowan & Co., Galt, Ont., are now busy placing for them a Corliss engine, with a boiler and all connections complete, and the factory, under the new order of things, will be in full blast at an early day.

MESSRS. CARROLL BROS. have started their patent lime kiln at Shisler's Point, Ont. They are turning out no less than 450 bushels of lime every twenty-four hours. It is of excellent quality, and there is great demand for it in the Buffalo market. This is another development and another industry brought about by our protective policy. Good for the N. P.—Welland, Ont., *Telegraph*.

FIRE broke out on Jan. 3 in the pulp mill of the Lincoln Paper Mills Company, at Lock No. 7, on the Welland Canal, near St. Catharines, Ont. The building and contents were destroyed; loss, about \$20,000. The fire is supposed to have originated in a logging machine used for chopping rags, by the ignition of matches in the old clothing. The company will immediately rebuild.

THE Canada Copper Company, owned principally in Ohio and supposed to be backed by the Standard Oil Company, have bought out the Canadian interests of the Vermillion Company (Tough mine), in the Sudbury, Ont., district. This is further evidence that American capital regard the Sudbury field as one of the richest in America. Already they have invested over a million dollars in their copper mine.

PATTERSON'S Agricultural Works in Woodstock, Ont., have started in to manufacture an immense output this season. Their supply of binders will be amongst the largest turned out in the country. Their workmen are pleased to know that work in the establishment will be all but continuous throughout the year because of the variety of implements manufactured, such as seeders, ploughs, cutters, etc.

MR. J. R. TACEY, Winnipeg, has invented a heating apparatus as an attachment for stoves, which is claimed to be a great economizer of fuel, and for which he obtained patents in Canada and the United States. He has sold the latter to the Tacey Radiator Company, St. Paul, Minn., for \$10,000. The *Winnipeg Sun* says that Mr. Tacey will come east shortly and endeavor to commence the manufacture of his invention at some point in Ontario.

MR. GEORGE ROBERTS, Lagauchetiere street, Montreal, has decided to rebuild his planing mill lately destroyed by fire, and to thoroughly equip it with the latest and most improved machinery. He will start the building early as the season will permit, and has placed

with Messrs. Cowan & Co., of Galt, Ont., his order for a complete assortment of wood-working machinery, to be delivered early in spring, along with any of his other machines that may be profitably repaired.

The Canadian Pacific Railway Company loaded 200 cars with cotton goods from the Hochelaga Cotton Company's mills at Montreal, a few days ago for Victoria, B. C., consigned to firms in Yokohama, Japan. The first shipment of Canadian cotton to Japan was made in 1887. It was only sent on trial in a small lot, but so well were the Japanese pleased that it is estimated they have received during the past year 900 carloads of Canadian cotton, most of which was consigned to firms at Yokohama.

Twenty tons of saw-mill machinery arrived from the Hamilton Manufacturing Company, of Peterborough, Ont., imported by Messrs. F. G. Strickland & Co., of this city, for A. J. Bovill, who is building a new saw-mill at Langley. This consignment is the complete machinery for a saw-mill—not a bolt, nut or screw being absent, and it is the first complete mill ever brought into the province. Mr. Bovill's mill will have a capacity of about 30,000 feet per day.—*Victoria British Columbian.*

The Standard Drain Pipe Company, St. Johns, Que., have sent us an 1889 calendar, in which considerable information is given regarding their business. There are illustrations given having reference to some of the lines of goods manufactured by them, in which are included traps, junctions, reducing pipe, cesspool pipe, bends, syphons, wind guards, chimney tops, etc. A valuable table is shown by which the carrying capacity of drain pipes, in gallons per minute, is shown; and directions for laying drain pipes, and directions for mixing Portland cement are also given.

It is not generally known that a considerable quantity of spruce gum has been shipped within a year or so from this province to the United States. During the past month or so over a thousand pounds were shipped from Shubenacadie station. It brings a dollar a pound in the Boston market, it being chiefly used in the manufacture of the finer quality of rubber goods. The gum pickers get fifty cents a pound for it from the local dealers. It is one of the few things that the American tariff makers have forgotten to deal with, and it is admitted free.—*Halifax, N.S., Chronicle.*

The knitting machine factory of Messrs. Creelman Bros., at Georgetown, Ont., includes a three story building 85x35 feet, fully equipped with machinery for the manufacture of the World's Star knitting machine. These machines have power attachments and are specially adapted for manufacturing purposes. These machines, of which there are several sizes, are of the best in the market and have a world-wide reputation. About forty of them are in use in the Georgetown Knitting Factory, and shipments are being constantly made to England, France, Spain, and other countries in Europe; to Australia, New Zealand, British Columbia, Maderia and other places.

In Marysville, Cal., there is a seven-set mill which is believed to be running entirely on blankets, and in this mill each season about

2,400 yards of warp yarn is made into blankets for the China trade. These blankets are about six feet wide by twelve feet long. One side of the blanket is pure white, the other is mottled with red and white. These double blankets, when finished, weigh about twenty-four or twenty-five pounds each, and sell at from \$50 to \$60. They are made as heavy as it is possible to make them. All these goods are bought by the Chinese and made to ship to China. The wool used is the finest spring California; there is no shoddy or any intermixture of any name.

A FRENCH electrician, M. G. A. Tabourin, has invented a novel and practicable method for lighting the streets which will do away with underground mains and permit the rapid extension of electric light throughout Paris without interfering with the gas companies. In this most wondrous proposal each gas lamp is to be furnished at its base with a small rotary gas engine 10 in. in diameter with a small dynamo, and these small installations are to supply arc lamps on the top of the lamp posts, thus burning gas at the bottom and producing electric light at the top of each post. The inventor offers to run at his own cost for several days, opposite the Theatre Francais, one of these electric lights on his new system.

A NEW industry will soon be established at Montreal for the production of Portland cement. The movement is being pushed by Mr. Harry Wilson, mining engineer, Point St. Charles, who has had considerable experience in the business, and who has discovered in the immediate vicinity of Montreal the necessary raw materials for the purpose. Samples have been made and submitted to competent judges, who pronounce them equal to the finest imported article. Further experiments are now being made, and when completed a company will be formed for carrying on the manufacture on a large scale, the necessary land having been secured for the quarrying of the rock and clay and the building of the necessary works.

MESSRS. W. H. STOREY & SON, proprietors of the Canada Glove Works, at Acton, Ont., have what is probably the most extensive and best equipped factory of the sort in Canada. The building is four stories, brick, 105x62, and in this and the tanneries in connection 250 hands are employed. The articles manufactured are gloves and moccasins—300 dozen of the former are turned out weekly and from 80 to 100 dozen of the latter. Very little domestic material is used, most of the glove kid being imported. The elk, buck, moose and the Java sea cow, all contribute to the moccasin business. Eastern Canada and the North-West are the chief markets. The factory has been established twenty years and is the largest in the Dominion.

The Hamburg Cordovan Tannery at Acton, Ont., is owned by Mr. P. Jacobi, of Toronto. The only leather manufactured is cordovan, and this is the only tannery in the province engaged in the manufacture of this line of goods, excepting one in Milton. Horse hides are used, and are obtained principally from New York. 150 hides a week are manufactured on an average, and these are all cut up into vamps or shoe fronts, and sold to the trade by the dozen pairs. The weekly output is about 100 dozen pairs of vamps. The

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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.

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MACHINE BRUSHES

All kinds, Made to Order.

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Old Rollers or Blocks Re-filled with special care.

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MANUFACTURERS,

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Factory: 142 to 150 Adelaide St. W.,

TORONTO, CANADA.

leather, when finished, is pliable and handles like silk. Twenty to twenty-seven men are employed, and preparations are now going on for a large extension of capacity. Power is supplied by a 25 horse-power engine.

THE town of Niagara Falls, Ont., has passed a by-law granting exemption from taxation for ten years to the Oneida Community (limited) Manufacturing Co., to their proposed chain works and adjacent lands. The company to give employment to thirty men at the commencement. The location will be in the southern portion of the town, opposite their works on the American side. The power to operate the works will be conducted by electricity to the Canadian side. The proposed works on this side is to supply the Canadian trade. When the company located on the American side some ten years ago, they were given a bonus of \$20,000, and employed fifty men. They now give employment to two hundred and ten persons.

THE New Glasgow *Enterprise* announces that the early development of Pictou county iron deposits may be regarded as an accomplished fact. A staff of engineers have been for some time engaged surveying railway routes from the mines to New Glasgow to connect with the Intercolonial railway. Work will be immediately commenced tunnelling the mountain to ascertain the extent of the deposits. The New York and Nova Scotia Iron and Railway Company propose to erect two furnaces, one for the manufacture of Bessemer pig iron and the other for foundry pig. The erection of one furnace with 25,000 tons capacity means work for many hundred men in the mining of 50,000 tons of ore, 50,000 tons of coal and 25,000 tons of limestone.

THE Toronto Lithographing Company, Toronto, have sent us a portfolio of specimens of colored lithographing work done by them, and which, as to general excellence of design, coloring, printing etc., compares most favorably with any similar work done in the United States or Europe. Many of these pictures were gotten up as calendars for manufacturing and mercantile concerns, the subjects of some of them being designed specially for the purpose, while others of them were executed specially for book work. Some of the specimens so closely resemble water colors, done with the brush, as to deceive even experts. This company make a specialty of fine color work, chromo advertising cards and novelties, etc.; and they also do a superior class of wood engraving.

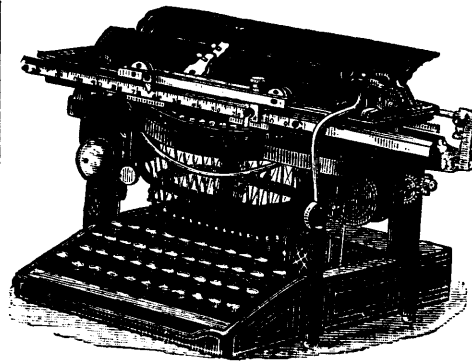
THE Acton Tannery, at Acton, Ont., which is owned by Messrs. Beardmore & Co., of Toronto, is one of the largest and best equipped of any in the Dominion. The buildings are stone and iron, and are almost fire-proof. The power is supplied by two good 35 horse-power engines with two 50 horse-power boilers. As a precaution against fire there is also a steam fire pump and 600 feet of hose. This firm confine themselves exclusively to sole leather, which they manufacture in large quantities, and which is recognized by the trade as being of the very best quality. The tannery is supplied with all the latest machinery, and the facilities for manufacturing, drying, etc., are unsurpassed. The raw material is all imported from Uruguay. Forty men are employed on an average.

MR. JAMES LESLIE, Montreal, manufacturer of English leather belting, card clothing, loom reeds, etc., and dealer in cotton and woolen mill supplies, calls the attention of textile manufacturers in their card in page 65. We are sure the trade will be pleased to learn that Mr. Leslie has begun the manufacture of needle pointed card clothing. The demand for this article in England and the United States has placed those who make it in the virtual control of the entire trade in that specialty. It is claimed for this needle pointed clothing that it is far superior to the old system. It can be put to work as soon as the fillet is wound on the cylinders, no grinding being required. Mr. Leslie is keeping up with the times, and can meet any and all demands that may be made upon him in this line of trade.

THE Boiler Inspection and Insurance Company of Canada, the head office of which is at Toronto, have sent us their 1889 office calendar. The design of this calendar is very unique and suggestive. It represents the front elevation of a multi-flued steam boiler, the dome and whistle, the gauge cocks and glass water tube, the steam pressure indicator, the open doors of the smoke chamber, showing the flue openings; the open furnace door, etc. The flue openings are made to do duty as the calendar proper, the days of the months being shown in them, while the lower part of the front imparts the information that Sir Alex. Campbell, K.C.M.G., Lieut. Gov. of Ontario, is President; John L. Blaikie, Esq., Vice-President; Alex. Fraser, Sec.-Treas., and Geo. C. Robb, Chief Engineer. Mr. H. A. Howard was the designer.

WORK on the St. Clair River tunnel at Port Huron and Point Edward is being prosecuted vigorously, the Grand Trunk Company having taken it over from the contractors. The tunnel is estimated

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Every user of Teazels should purchase those of
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OR

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to cost \$2,500,000. It consists of a 4,000 feet approach on the Canadian side, a tunnel under the river twenty-two feet diameter, 2 200 feet long and fifty feet below the bottom of the river, and an approach on the American side of 2,500 feet. The work of excavation will be done with a steel shield which will be pushed forward by hydraulic pressure. As the earth is excavated a vast iron lining will be inserted in the tunnel. A large number of electric lights will make the inside of the tunnel as light as day. The work will probably be completed in less than two years. It will form an important addition to the Grand Trunk system. Detroit is already foreseeing itself side-tracked unless it can have a tunnel too.

THE Chatham Mfg. Company, Chatham, Ont., inform us that during the year 1888 they sold 2,000 of their Government Standard wagons, 750 of which went to Manitoba and the North West. This company now have something over 8,000 Chatham wagons in actual use between Halifax and Vancouver, giving unbounded satisfaction. The patent climax truss rod is a feature in the construction of these wagons that gives the makers, so they claim, a large monopoly of the wagon building business. None of the large American wagon-building concerns rate the capacity of their wagons which have the 3

inch cast or steel thimble skeins, at more than 2,000 pounds capacity, 3 1/2 inch at 4,500 pounds, and 4 inch at 6,000 pounds, simply because the best wood axles will not bear any more; and it is herein that this patent climax truss rod enables the rating of the capacity of the Chatham Wagon 50 per cent greater. The company have prepared themselves to make 3,000 of these wagons this year.

The Consumers' Gas Co. have closed a contract with the Westinghouse Electric Light Co., whereby they get the exclusive right to use that system in Toronto and suburbs. The plant and 6,000 lights have been ordered. This contract is of greater importance from the fact that it will mark the era of the introduction of electric lighting into private residences. The system is considered one of the best in the United States. In the city of Pittsburg alone the number of lights in use have increased from 2,000 lights two years ago to 25,000 at the present time. The Westinghouse system is specially adapted for house-lighting. It is an incandescent light, but the Westinghouse Co. also control the Waterhouse arc system. A residence fitted up with the Westinghouse system can be lighted in every portion by pressing a single button. One or a dozen lights can be used. The cost is but little more than gas. A meter is used in each house, so that a householder need only pay for the electricity used.

The J. C. McLaren Belting Company, Montreal, are sending out a circular descriptive of the knuckle joint leather link belting manufactured by them. An illustration shows the belt in motion, from instantaneous photo, other cuts showing groups of full sized solid leather sections, showing how the belt is put together, and a centre section soft leather hinge, allowing belt to conform to crown of pulley. Regarding this system the manufacturers say: We claim for this belt, what no other belt can offer: its remarkable grip of pulleys transmitting every particle of power given to it. No slip. No noise. No belt lacing or fasteners required. No cement to give out at joints. In event of accident can be repaired by letting a new section in, causing no loss of time or expense in replacing with a new belt. Guaranteed to outlast ordinary leather belting. No experiment, as this belt has been running under the most trying circumstances since last February. For fast running machinery it is, beyond all question, superior to any other belt manufactured. Samples and trial belts, (if so desired), free of charge with circular.

SOME important changes are being made in connection with the Georgetown Paper Mills, at Georgetown, Ont., owned by Mr. John R. Barber. There are three main buildings, two and three stories high, all built of stone and roofed with slate, and cover over two acres of ground. Two of the main buildings are paper mills and the other is a pulp mill. The pulp mill manufactures over a ton a day of basswood fibre, and the paper mills turn out four tons a day. The manufacture is confined to machine-finished book paper, of the grade between news and fine finished papers. Fifty men and fifteen women and boys are employed. One mill was started in 1855 and the other in 1858. Five engines are now furnishing power and consuming about six tons of coal a day. On account of the failing water, and to obviate the immense consumption of fuel, Mr. Barber is now building a large dam to give twenty-four feet head. Power will be developed by dynamos and transmitted by wire to electric motors at the mill, distant about a mile. The result of Mr. Barber's enterprise will be watched with great interest.

Messrs. NICHOLLS & HOWLAND, proprietors of the Canadian patent for the Batten Balcony Fire Escape, inform us that they have already erected or are preparing to attach this fire escape to the following buildings:—The Insane Asylum, Rossin House, Walker House, the factories of Barber & Ellis Co., Messrs. A. Jardine & Co., and Messrs. C. P. Reid & Co., all in Toronto, and the Deaf and Dumb Asylum at Belleville, Ont. It is the determination of the Ontario Government to insist upon the close observance of the recently enacted law relative to outside fire escapes to factories, hotels, etc., more than two stories in height, and the fact that the Government are placing the Batten escape upon some of the public buildings, to wit, the asylums above mentioned, indicates that this particular escape conforms to their ideas regarding the means of escape from burning buildings. The escape which Messrs. Nicholls & Howland have attached to the five story building of the Barber & Ellis Company on Bay street excites a great deal of attention, and illustrates the facility with which persons within the building may descend safely and quickly to the street in case of necessity.

SPEAKING of the uses of illuminating gas for purposes other than lighting and cooking, Mr. T. N. Riston says in *The Gas and Water Review*:—"Next to cooking, as a means of increasing the consumption, is heating by gas fires. The heating power developed by many of these stoves is immense, without ashes, soot, smoke, and

HENRY PORTER,

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432 to 442 Visitation Street, Montreal, Que.

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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.

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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, Velocipede Cars, Jim Crows, Track Drills, Semaphores, Rail Cars, Double and Single Drum Hoists, etc., etc.

other annoyances. With judicious management they will be found most useful and economical. The danger of heating baths by means of the costly apparatus adapted for coal fires—which get frozen in the winter, often resulting in serious accidents when the fires are lighted—is entirely removed by substituting an instantaneous water heater. By such an apparatus a warm bath can be obtained in a few minutes, which would take hours to prepare by a coal fire. Gas will be found better and cheaper than solid fuel for many trade purposes, such as heating irons for the laundry and clothiers' use, tinsmiths for heating the copperbits, metallurgists, analytical and manufacturing chemists, washing and drying clothes, coffee-roasting, for motive power, and numerous other purposes. It is an ever-willing servant, cheerfully obeying our behests and ministering to our wants, comfort and enjoyment, both night and day."

THE Kemp Manufacturing Company, Toronto, have sent us their new 1889 catalogue having reference to the various lines of goods manufactured by them. Since the issue of the last catalogue of this company, the style and quality of their goods have been greatly improved, and we are told that, in the future as in the past, it will be the aim of the management to furnish goods of the highest standard of quality at the lowest possible price consistent with best

materials and workmanship. The catalogue index alludes to stamped ware; tinner's trimmings; Japanned ware; toys; pieced tinware; heavy polished and galvanized ironware; coal hods; stove shovels and boards; wire goods; spoons; copperware; machine oilers; elbows; thimbles; lanterns; house-furnishing goods; granite ware; special goods, etc. There are hundreds of pictures illustrating the goods by which one can learn just what is being offered; some of these pictures being beautifully colored in exact imitation of the goods they represent. The beautifully ornamented and illustrated front cover was engraved by Mr. J. L. Jones, and the catalogue was printed by Messrs. Bingham & Webber, both of Toronto.

A FIELD trial of reaping and binding harvesters took place at Little River on the 12th ult. The Massey harvester, made by the Massey Manufacturing Company, Toronto, Canada; and the Buckeye harvester, made by Aultman, Miller & Co., Akron, Ohio, U.S.A., were the only competing machines. The trial took place in a field of rye, the crop standing over four feet in height, and resulted in favor of the Massey, as will be seen from the following scale of points:—

	Points Obtainable.	Massey.	Buckeye.
Lowness and evenness of cut.....	20	18	16
Tightness and evenness of sheaf.....	20	17	14
Durability and construction.....	20	20	18
Time.....	15	15	14
Facility of transport.....	10	10	6
Total.....	85	80	68

—*Australian Ironmonger.*

THERE is probably no firm in Canada that has such a reputation for hustling as the McClary Manufacturing Company of this city. It is scarcely more than a month since a large portion of their shops on Wellington street was burned to the ground, and already an immense block on King street has been finished and is ready for occupation. The new wing has a frontage of 160 feet by a depth of 60 feet. It is four stories in height, of white brick, with galvanized iron roof, and fireproof. There is an additional building to the west of three stories, covering an area of 60x56 feet. This is the japanning shop. The large building will take the place of the one burned down a short time ago, and in it will be manufactured the general tin and stamped ware. The ground floor will be devoted to the heavy machinery and stamped ware. The first floor will be occupied by the young ladies who piece the tinware, and the sheet-tin workers. The tinsmiths and heavy sheet metal workers will occupy the second floor, where sheet-iron stoves, furnace fittings and similar articles are made. The top floor is to be occupied by the men who make refrigerators, stove-boards, milk cans, etc. The flooring is two inch hardwood plank, laid with asbestos and sheet-metal lining. There is no wood in the brick work, and the hoist is built into a brick shaft, while all the stairways are protected with metal sheeting.—*London, Ont. Advertiser.*

To what extent in any given period is artificial fuel likely to supplant raw fuel in manufacturing processes is a rather vague and difficult question which has been asked not infrequently of late. At present, Chicago is taking the lead in the adoption of an artificial fuel, and with every indication of success. It is understood that a large number of manufacturers, large and small, are contemplating the early adoption of the processes which have been so thoroughly tried in a few of the larger establishments. All through northern and central Ohio, and in northern Indiana, manufacturers, little and big, contemplate with pleasure the probability of an early transition from the existing to the new method of using either natural gas or artificial fuel. Not a little interest is felt in locations where long piping would be necessary for Lima oil, or for Ohio or Indiana natural gas. The opinions of some very distinguished engineers have been recently paid for by paper companies contemplating enterprises of this character. If no other factor were to be considered than mere cost of fuel, the change would be made quickly in manufacturing localities between Pittsburgh and St. Louis. As it is, progress out of old ruts into new ones will be made very slowly. Inventive talent proposes to furnish cheap fuels from other than petroleum sources, and until the inventors and engineers have done with their work no general adoption of newer methods need be looked for.—*American Manufacturer.*

An explosion of a very serious character took place on Christmas morning, at the works of the Ammonia Company, adjoining the Gas Works, Toronto. The cover of an iron tank blew off, carrying away part of the roof and one side of the building, killing one workman outright, and seriously injuring the engineer. These

COWAN & 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.

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Cylinder, Machinery & Wool Oils

WRITE TO

ROYAL OIL COMPANY,
1, 3 & 5 Sherbourne Street,
TORONTO.

OUR MOTTO: "High Class Oils at Low Prices."

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.

Ammonia works have been in operation for more than a year, the crude material operated on being the liquor of the gas works, the product, containing about twenty per cent. of ammonia gas, being shipped in an unpurified state, in tank cars, to the United States. Expensive apparatus was constructed during the past summer for the purpose of producing pure liquor ammonia, of commercial strength, and this had been running since December 2. Plant is also under construction for the manufacture of anhydrous ammonia, for refrigerating purposes, but this has not yet been put into operation. It was with the liquor ammonia apparatus that the accident occurred. The process consists in agitating the gas liquor with milk of lime, passing it through a distilling column and then purifying the product by passing it through a series of iron cylinders containing purifying agents, and ultimately condensing the gas so as to produce, at one operation, a perfectly pure saturated solution, of specific gravity .891. The damage done to the works amounted to about \$1,200, and will only cause a temporary suspension of work, as it is expected that in three or four weeks the apparatus will again be in complete running order, and the plant for anhy-

drous ammonia will also be working. When finished, the works will be as complete as any to be found in America or Europe.

ONE of the largest and most attractive exhibits at the Exposition is that of the Knowles Loom Works, Worcester, Mass. It occupies one of the most conspicuous positions in the machinery department, and is viewed with curious interest by hundreds every day. The capital stock of the Knowles Loom Works is \$300,000; employs 527 men, and turns out 3,000 looms per annum. The company manufacture looms for all kinds of woven fabrics, and has eight of its machines in operation at the exposition. Its looms are made on the open shed principle. The company have twenty-five harness cassimere looms which is regarded as a great curiosity, as anything of the kind was never before seen in the south. The object of the company, however, in making an exhibit at our exposition is to introduce in the south its gingham, plaid and jeans looms, which are especially adapted for southern mills. Among the looms in operation at the exposition are one pick and pick 4x4 box and one 7x1 box, one 4x1 box, and one fancy loom for light dress goods. It also has on exhibition in jeans and satinet loom, which is especially adapted for the woolen mills of Kentucky. A large number of the Knowles gingham looms have already been put in operation in North Carolina, and are giving eminent satisfaction. The looms on exhibition are turning out great varieties of fancy fabrics, the quality of which demonstrates the superiority of the machinery. Textile manufacturers of the South recognize the need of improved machinery, and they should avail themselves of this opportunity to examine the exhibit of the Knowles Loom Works.—Augusta, Ga. Chronicle.

As will be seen from their advertisement in another page, the Aerated Fuel Co., of Springfield Mass., have introduced their patent aerated crude oil fuel apparatus into Canada. This system has been in use in the United States for the past year and a half, and has been adopted by some of the largest manufacturers in that country. For generating steam a test was made by the Engineering Society of the Lehigh University, with two eighty h. p. locomotive boilers, as near alike as possible, placed side by side, under equal conditions. The test was made by using crude oil for

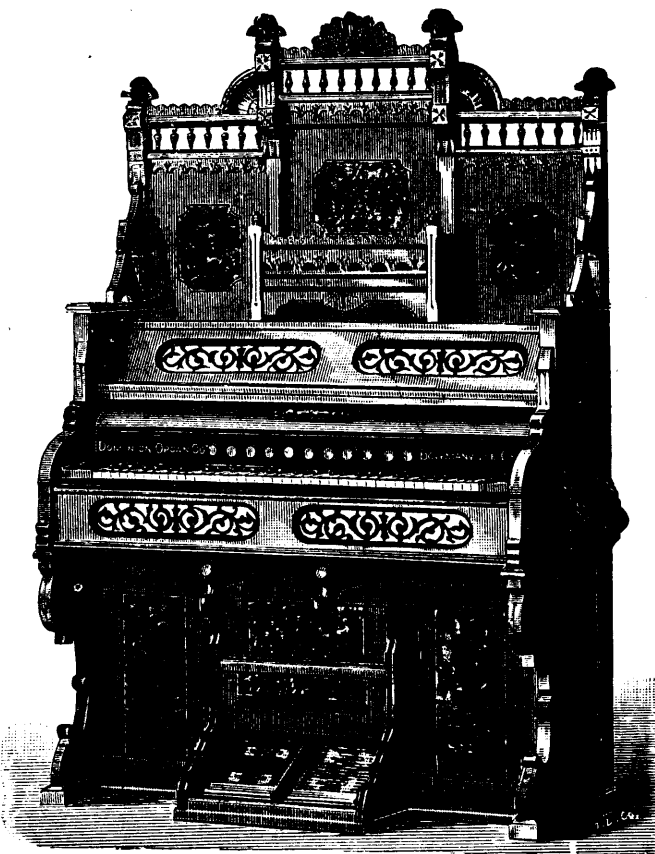
fuel in one and coal for the other, for a week. In this way full data was obtained, and it was found that one pound of the crude oil was equal to 1.9 pounds of Lehigh coal: and that, for generating steam, 3.44 barrels of oil equals 2,000 pounds coal. When oil is used in furnaces by this process, the saving has been almost beyond belief. The Franklin Morse Co. of Winsted, Conn., certify that a furnace in their works run with crude oil for seven days at a cost of \$1.22, when coal used for the same time would cost \$2.73. The Ashtabula Coal Co., of Ashtabula, Ohio, have substituted oil for coal in their furnaces, for welding, heating, tempering, brazing etc., and certify that they save 85 per cent, using only seven gallons of oil in furnaces that consumed from 225 to 250 lbs. of Lehigh egg coal per day. The Fairbanks Scale Co. of St. Johnsbury, Vt.; the St. Louis Shovel Works, St. Louis, Mo.; the Upson Nut Co. Cleveland Ohio; the Boston Boiler Works, and the Globe Nail Company of Boston, Messrs. H. D. Smith & Co. of Plainville, Ct., and the Godel Co., manufacturers of cutlery, Antrim, N. H.; are a few of the manufacturers who are using the Aerated Fuel Co's system; and endorse it in every way. In Canada it is in use in the Dominion Bridge Company's Works at Lachine, Que.; the D. F. Jones Manufacturing Co's Shovel Works at Gananoque, Ont.; and the Grand Trunk Railway are putting in one furnace to test it. The D. F. Jones Manufacturing Co., have just completed a test which lasted for one month, and they inform us that the saving was 60 per cent in favor of crude oil as compared with the best Lehigh lump coal, oil costing 4½c. per gallon and coal \$6.00 per ton of 2,000 lbs. The furnaces in their rolling mills (where oil is used) are run for \$6.00 per day less than when they used coal, and if the saving of labor in handling ashes, coal etc. is allowed, the saving is one dollar per day more. In addition to the economy of using crude oil as fuel there are other advantages to be considered. Shops are free from gas, smoke, dust etc. The fires are under perfect control and uniform. The heat thrown out from oil furnaces is not near as intense as it is from coal furnaces. The workmen greatly prefer it in every way, and more work can be done in the same time; while insurance companies in the United States and Canada accept risks at the same rate or less where oil is used as fuel under this process.

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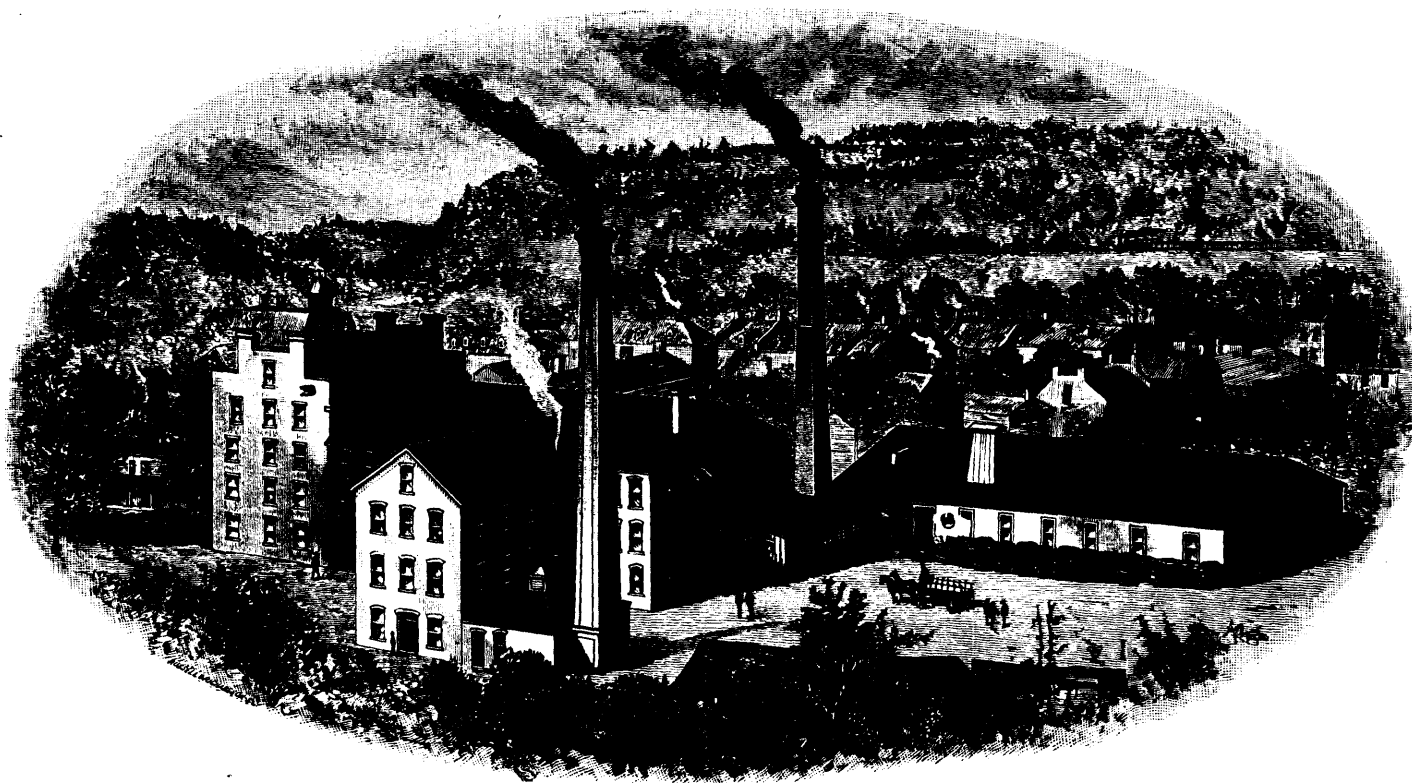
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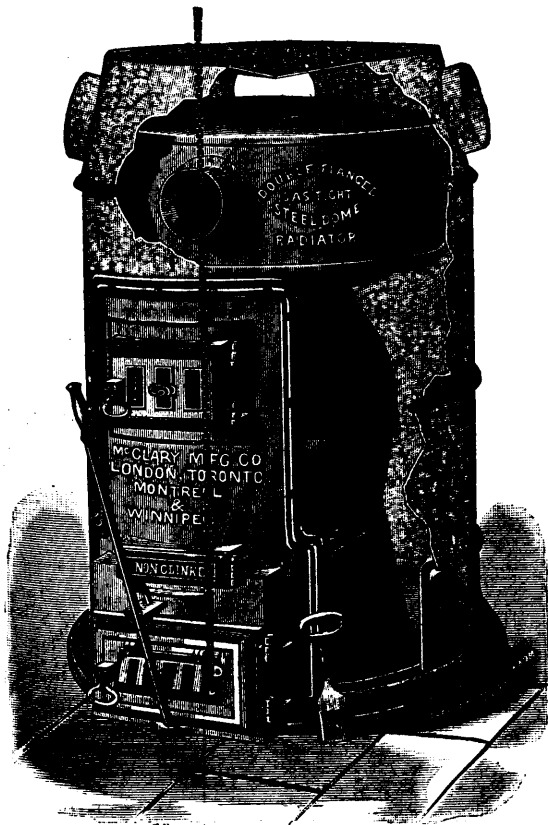
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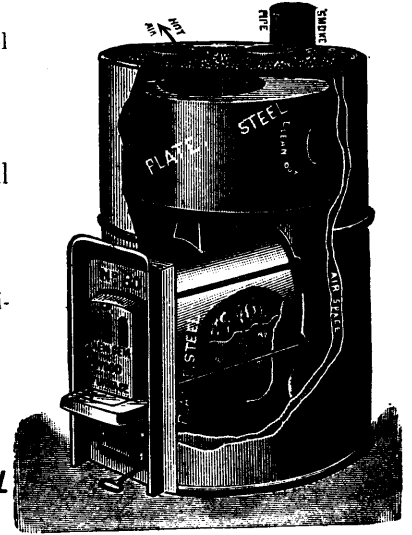
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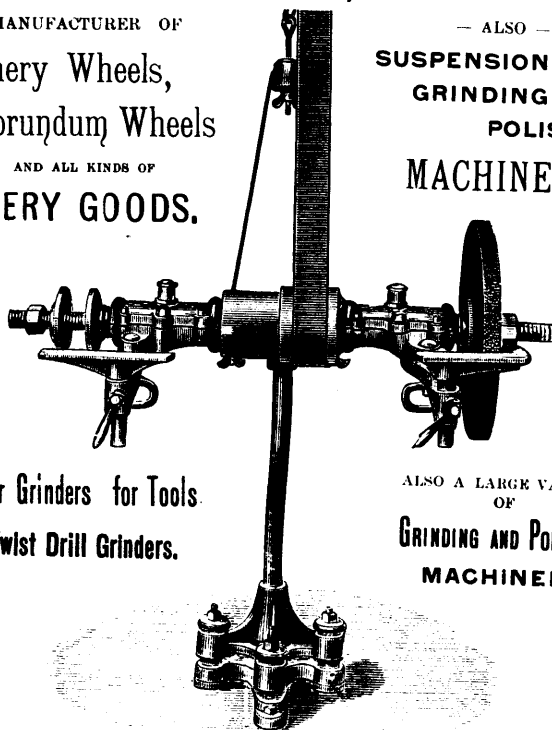
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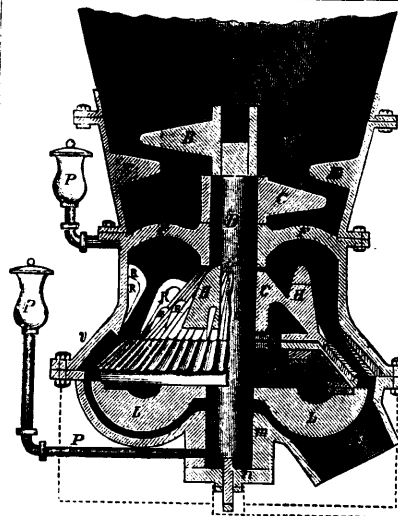
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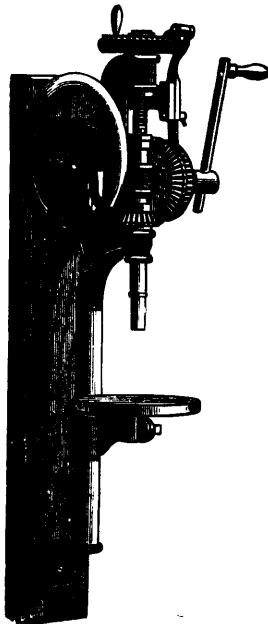
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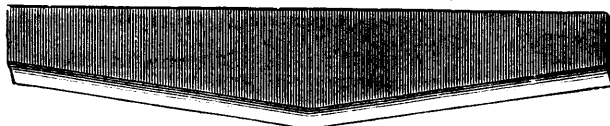
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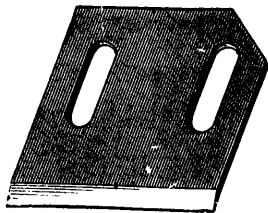
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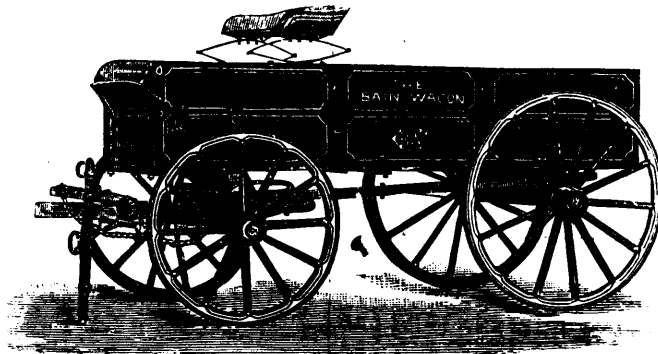
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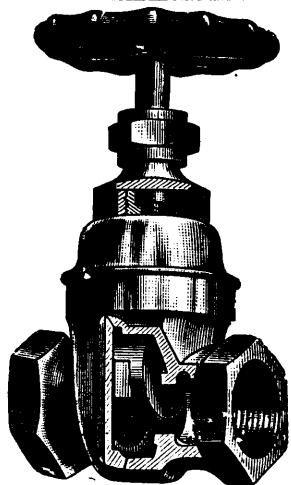
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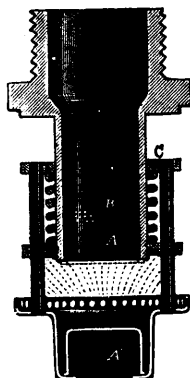
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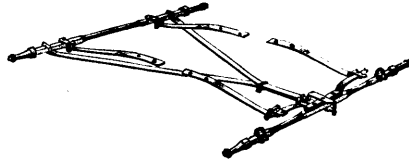
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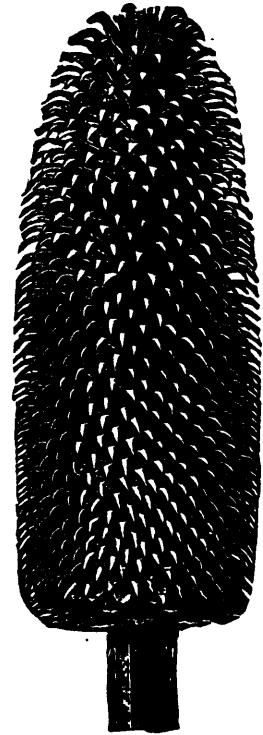
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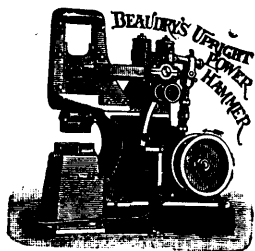
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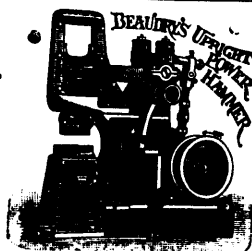
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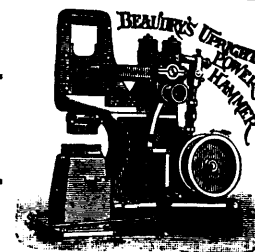
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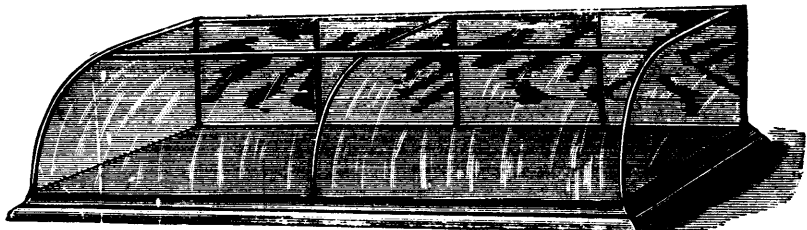
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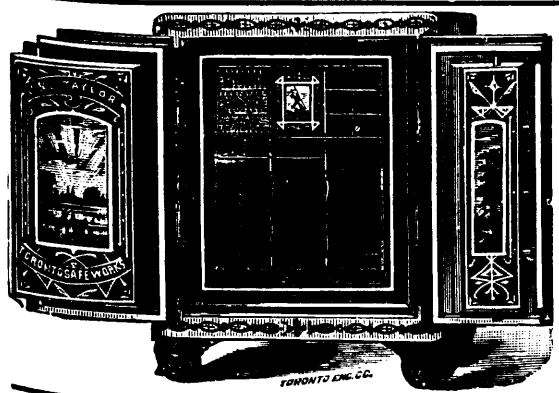
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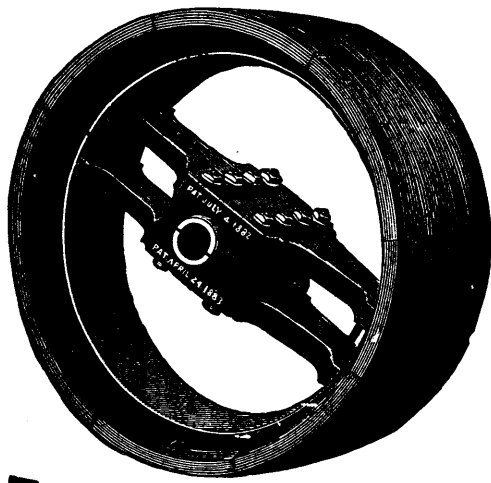
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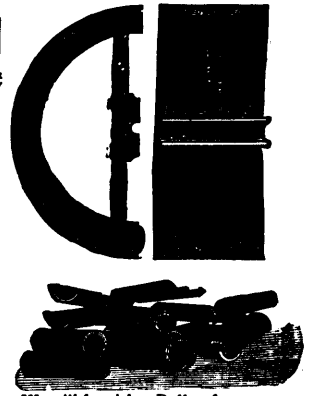
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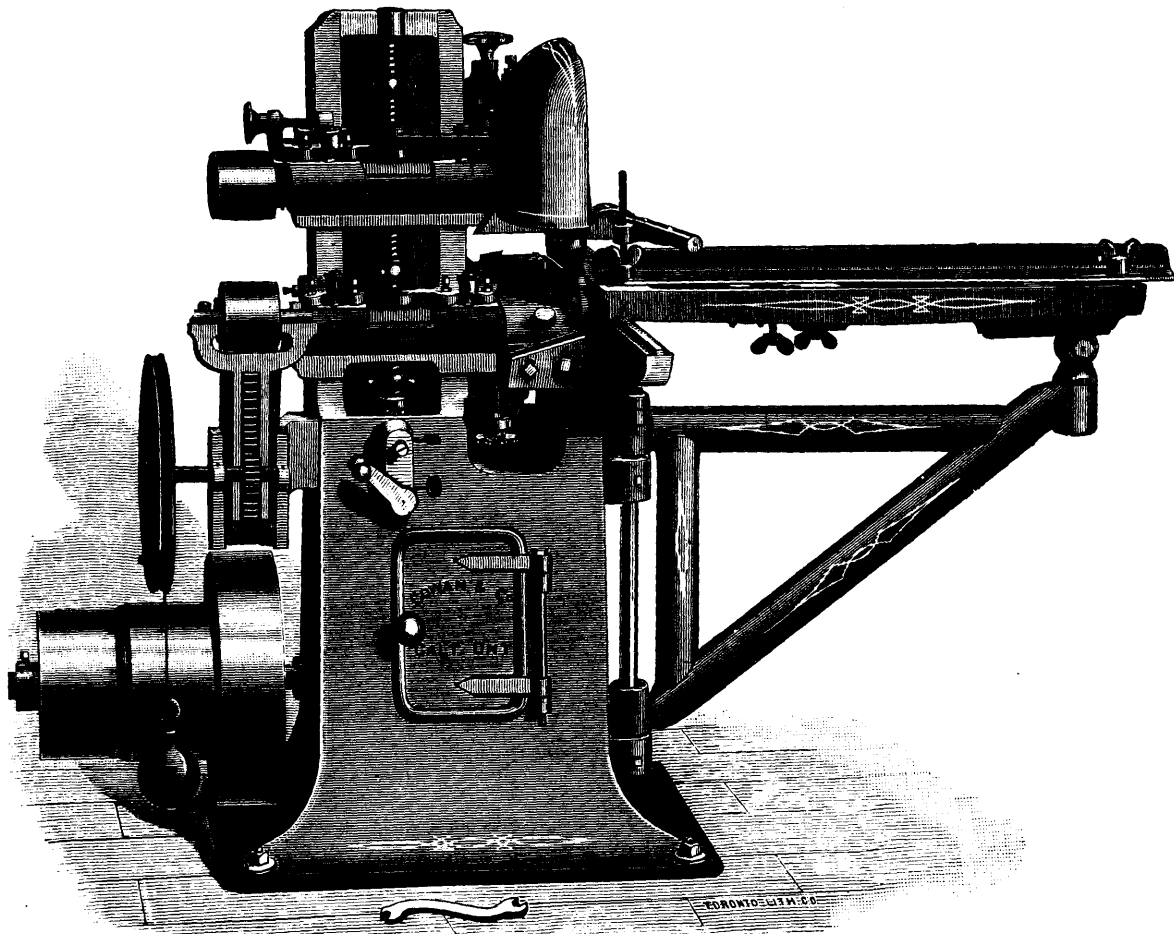
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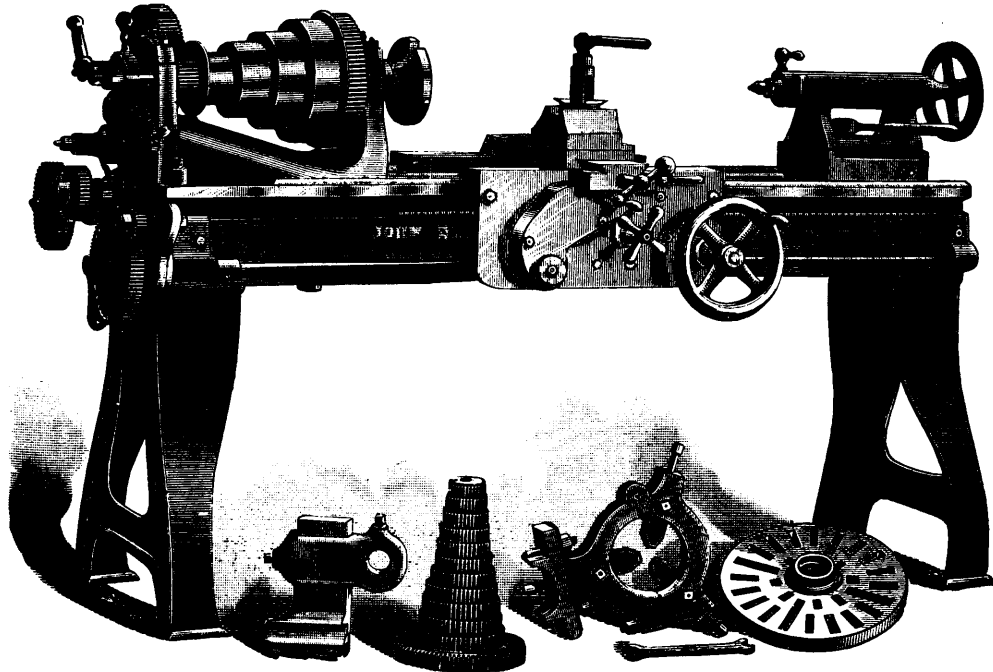
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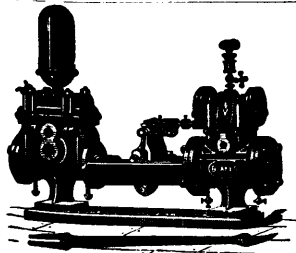


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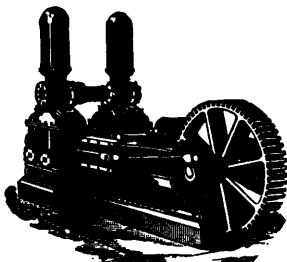
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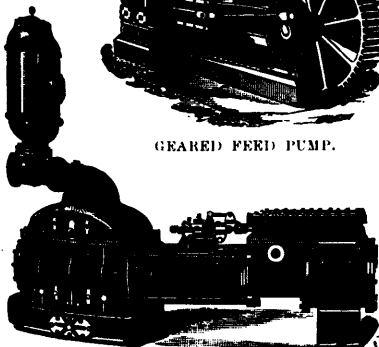
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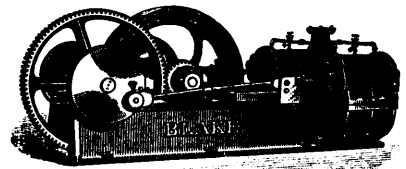
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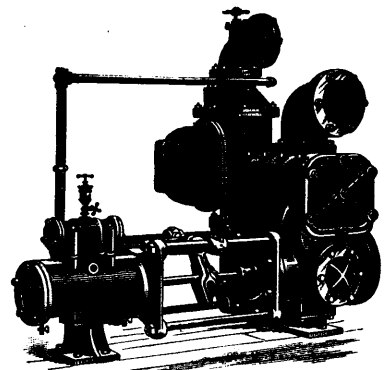


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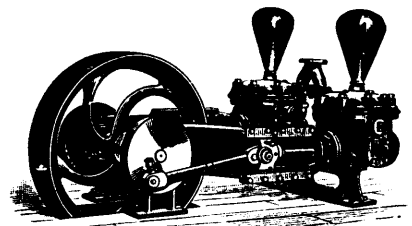
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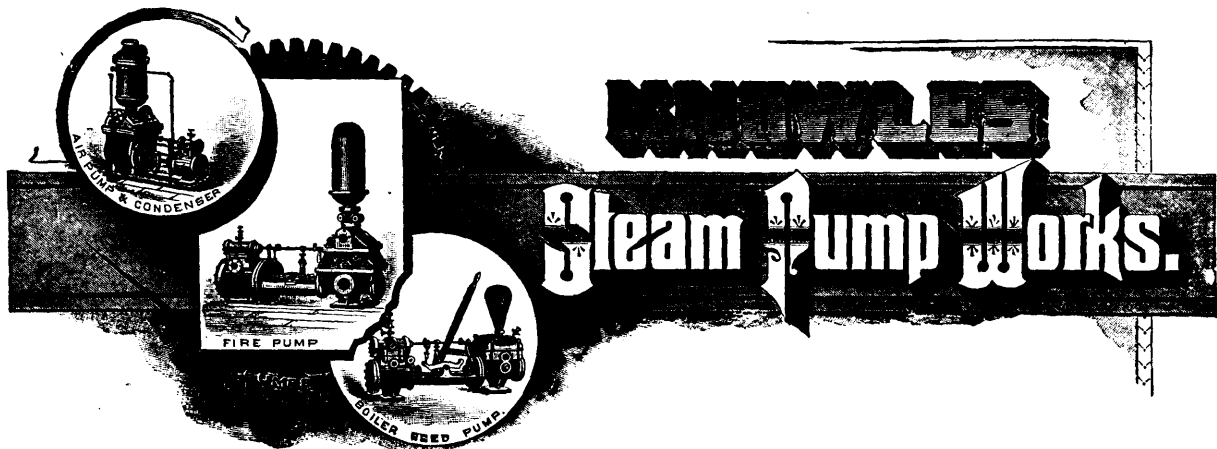
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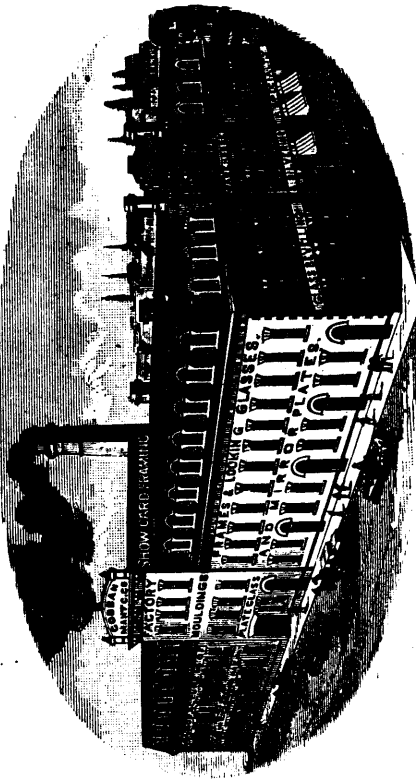
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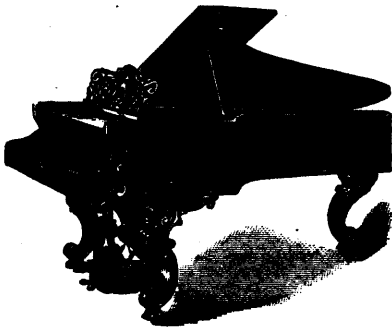


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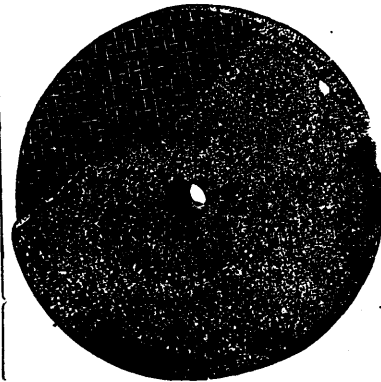
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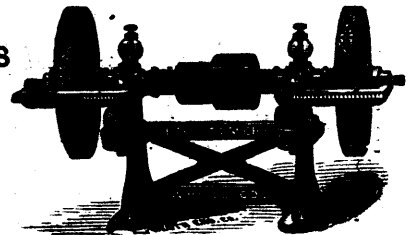
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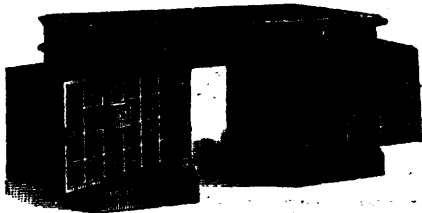
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