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

Vol. 24. TORONTO, MARCH 3 1897. No. 5.

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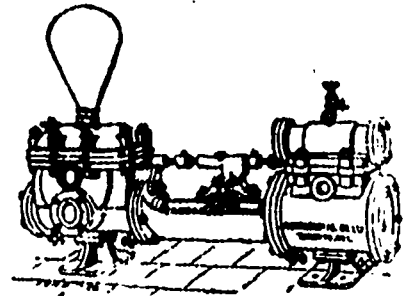
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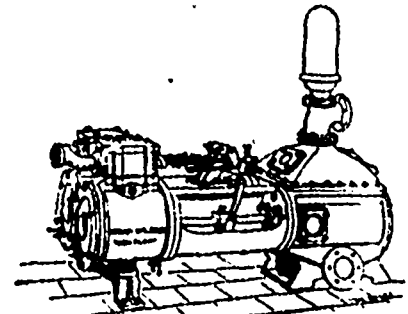
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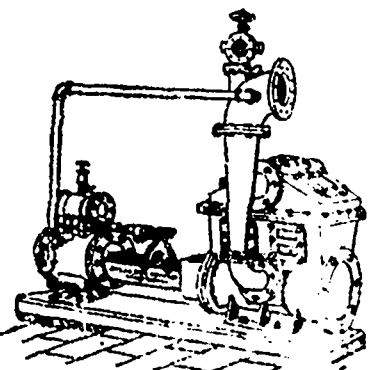


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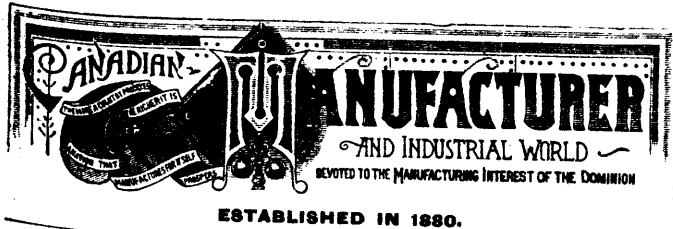
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A CANADIAN IRON INDUSTRY—SHALL WE HAVE IT?

The time seems to have arrived when it is to be decided if we are or are not to have a Canadian iron industry; whether the policy of the Government will be to extend such guarantees and safeguards as will put us in a position and condition to meet the demands of the country for pig iron; or if all idea of propagating such an industry is to be abandoned, leaving us entirely dependent upon other countries for that most important and necessary article. Thus far the matter seems to be in a nebulous condition, the wildest and most contradictory theories and propositions being advanced from different quarters, none of them presenting any practical solution of the question, but all of them going to indicate that the Government is being brought face to face with a condition which they cannot escape if they would, and should not if they could.

It goes without contradiction that Canada would be immensely benefitted by the establishment of an industry which would make us commercially independent of the rest of the world as far as pig iron is concerned. We know that we

possess practically inexhaustible supplies of ores of excellent quality and very accessible; and that the necessary fuel is within easy reach. We know that, were suitable conditions established, we would in a few years be able to meet not only all the demands for pig iron, but also for many of the products of pig iron—mild steel, puddled bars, and probably such forms of finished iron as girders, ship and boiler plate, and even steel rails. This would, undoubtedly, be a good thing for Canada; but like all other good things it will cost us something to produce the situation. Are we ready to pay the cost? This is the question which now agitates the country.

We recognize the fact that iron is the basis of national prosperity. It is possible for Canada to be prosperous even if never a ton of pig iron is made in the country. We may attain a certain altitude of prosperity even if every bar of iron we use, and if every form of iron which enters into our internal economy were made in distant lands. We know that thus far we have never made a steel rail, but that we have railroads. We know that we have never rolled a girder, nor produced a sheet of boiler plate, or turned out angle and structural iron, and yet we have large buildings, and steamships and steam boilers, and railway and highway bridges, all constructed in whole or in part of the products of foreign mills. And so on through the whole list of articles made in whole or in part of iron or steel; and while we have and use them we know that their production in Canada is practically impossible because we do not have the foundation—the pig iron—of our own production with which to make them.

Our wise men are not blind to this situation, nor have they been. Ever since the adoption of the National Policy it has been the desire of the Government to so frame our tariff laws as to build up an iron industry in Canada; and the failure of the industry to materialize has been not because we have not enjoyed the natural advantages necessary to be present, but because the precise arrangement of the tariff necessary to bring about the desired result was not hit upon and adopted. The failure to produce a pig iron industry of large and adequate proportions, however, did not prevent the development of many other industries in which iron is an important integer. Thus we have extensive works for the production of agricultural implements, wood and iron working machinery, harvesting tools, etc., very much of the iron consumed in them being brought from other countries. It is true that under certain favorable circumstances which do not generally exist, we have some furnaces which produce most excellent pig iron, and one establishment, at least, which produces as good mild steel as can be made in any similar works anywhere. But these are exceptions to the rule. Under the influences of the favorable conditions alluded to, and the operations of the tariff and bounty policies of the Government, these establishments are in a fairly prosperous condition; but the fact that we have no extensive and sufficient iron industry is proof that the policy of the Government in this direction has not been sufficiently comprehensive and far-reaching.

Under the ægis of protection many of our industries have accomplished just what the promoters of the National Policy desired that they should accomplish—increase in importance and capacity until they should occupy the home market to the virtual exclusion of foreign products of similar character;

and in accomplishing this, competition has reduced prices to such an extent that these products are about as cheap in Canada as anywhere else in the world. In illustration of this we mention agricultural and farming implements and machinery, wheel vehicles, musical instruments, many lines of cotton and woolen goods, binder twine, etc.

It is not surprising, then, that those engaged in some of these industries, particularly those where iron and steel are very important items, should, in their selfishness, desire that the duties upon what they require of these should be reduced or removed. In the case of the manufacturers of agricultural implements, we observe, some of them, connected with concerns which have made perhaps millions of dollars in their business, clamoring for reductions of the iron duties, to enable them to extend and enlarge their operations, and to swallow up smaller concerns; but we do not hear of their making any request or suggestion whatever looking to a reduction of duty on their products. There are several classes in the community who are joining in this clamor for the reduction of the iron duties; for in addition to the manufacturers of agricultural implements, we see the dealers in iron and hardware who imagine they see increased profits for themselves in the transaction; and the owners of foreign ships, and their Canadian agents, are vigorous in their hue and cry for the same thing. These latter classes are not manufacturers, nor specially interested in our manufacturing industries, nor in the development of Canadian industrial independence.

We are glad, however, to point to a large class who think differently in this matter. And while many of these are workers in iron and steel—men who manufacture steam engines and boilers, saw mills, wood and iron working machinery, bridges, etc.—they are staunch upholders of a policy which should develop the very foundation of their enterprises—the pig iron industry. They well know that they can never meet with the entirety of success which their energy and ability entitle them to if they have to depend upon other countries for their supplies of raw material.

Considering these diverse interests and the influence they carry, it can readily be seen that in deciding upon their line of action in the matter the Government do not—cannot rest upon a bed of roses. They stand upon the banks of a Rubicon which must be crossed. A false step would, probably, retard the advancement of the country for many years; while a step in the right direction—a step which would result in giving us a nation-wide iron industry—would place Canada upon the road to a greatness which she could not otherwise attain.

It is necessary then for all who love Canada and desire her prosperity, to approach the discussion of this matter in a fair and impartial spirit. Selfishness must be ignored; and every effort should be made in assisting the Government to arrive at a truthful knowledge of the needs of the country and the sentiments of the people.

If the Dominion Government will remove the duty on coal Ontario manufacturers will be greatly benefitted. When the work of enlarging our canals is finished, steamers loaded with Welsh coal would discharge their cargoes in the docks at Toronto, Hamilton and other places, and we would not be subject to the extortions of Yankee coal combines. Remove the duty.

CANADIAN ROLLED IRON.

It is quite amusing to observe how much technical and other knowledge the *Hamilton Spectator* does not possess when it assumes to criticise the *Times* and other journals when they have something to say about bar iron. In fact what it does not know would make a pile higher than a mountain. Hear it:

If the *Times* were well informed it would understand that the quality of Canadian iron has nothing to do with the use or the non-use of puddled bar along with its scrap by the Hamilton rolling mill. The mill here does not possess puddling furnaces. It can buy scrap iron, domestic or foreign, more cheaply than puddled bars, domestic or foreign, and it uses the material it can buy most cheaply. We are sorry the *Times* should feel called upon to reflect upon the quality of the iron made at the Hamilton rolling mill. We understand that the reflection is wholly unwarranted.

In the first place puddled bar iron is not used in the manufacture of any sort of bar iron. Puddled bar iron is produced from muck iron, and muck iron is the first output of a puddling furnace where pig iron is converted into iron which may be rolled or hammered. Good bar iron may be made from wrought scrap, but this cannot be unless the wrought scrap is itself quite as good as the finished iron is desired to be. If the scrap is not up to requirement it may be improved by the admixture or addition of a higher grade of muck iron, but not otherwise. In the production of rolled iron, where it is made chiefly of scrap, if there is no puddling furnace in connection with the rolling mill, if a really excellent grade of rolled iron is desired, muck iron must be obtained elsewhere; and if no muck iron is used then the quality of the rolled iron cannot be better than the scrap of which it is made. The *Spectator* tells us that the mills in that city do not possess puddling furnaces; and we presume they are confined exclusively to the production of rolled iron made of scrap. The scrap, then, that these mills consume is the standard of the finished iron they produce; and it is because of the inferior quality of the scraps they use, and which cannot be improved, that so much fault is found with their rolled iron. It cannot be that these mills make any effort to improve the quality of their iron by judicious admixtures of better material; for, during the past year, according to the Trade and Navigation Returns, there was imported into Ontario but 300 hundredweight—less than 34 tons, of iron in slabs, blooms, puddled bars or other forms of iron less finished than iron in bars, and more advanced than pig iron. Now if all this 34 tons had been muck iron, and if the Hamilton mills had imported it and consumed the whole of it in improving the quality of their scrap, it could not have gone very far in that direction, when we consider that the capacity of these mills is to produce some 40 tons of rolled iron per day. The fact is the *Spectator* gives its friends away very badly when it tells that they can buy scrap iron "more cheaply" than any other kind, and that they use the material they can buy "most cheaply." And this desire for cheapness has worked and is working like a two-edged sword. The situation is such, that whoever in Ontario may have wrought scrap iron to sell, there is but one possible purchaser, and that is the Ontario Rolling Mills Company. The accumulations of scrap in blacksmith shops, machine shops, boiler shops, railroad shops and junk shops, all have one common destination

and no other, and that is the scrap pile of this company. There being no other purchaser in the market, this only one generously fixes a price which is certainly very low and very much in its own favor; and with its raw material thus cheaply obtained, and without any effort whatever to produce an article which the necessities of the community demand, by the admixture of muck iron, and having railway charges, the tariff and other things all in its favor, it keeps its three rolling mills in full operation producing rolled iron upon which it realizes a clear profit of probably \$20 per ton upon its entire output. This upon an article of such prime necessity as bar iron is what gives the opponents of the Government such a good cause for most vigorous kicking. And still the *Spectator* feels sorry that a hostile critic should reflect upon the quality of the iron made at these mills. This may not be a mouldering branch of the National Policy tree, but it appears very much like a sucker that is absorbing the sap most fearfully at the expense of other industries.

OUR IMPORTS OF IRON.

FOLLOWING are some important facts regarding some of our imports of iron in 1892:—

The imports of wrought scrap iron amounted to 652,551 hundredweight (about 36,543 tons), valued at \$433,695, or nearly \$12 per ton. The duty on this article is \$2 per ton, which, added to the value, makes the Canadian cost about \$14 per ton. A little over 6,000 tons of this was imported into Nova Scotia, presumably for consumption in the steel works at New Glasgow; and the balance, about 30,500 tons, represents the consumption of scrap iron in Canadian rolling mills, chiefly for making bar iron.

The imports of pig iron amounted to 68,918 tons, valued at \$886,485, or about \$12.80 per ton. The duty is \$4 per ton, which, added to the value, made the cost \$16.80 per ton.

The imports of blooms, muck iron, etc., amounted to 64,397 hundredweight (about 3,100 tons), valued at \$56,186, or about \$18 per ton. The duty is \$9 per ton, which, added to the value, increased the cost to \$27 per ton.

The imports of bar iron amounted to 133,353 hundredweight (about 7,500 tons), valued at \$231,468, or about \$31 per ton. The duty on this iron is \$13 per ton, which increased the cost to \$44 per ton.

The mill price for Canadian rolled iron is, we understand, \$42 per ton. This iron corresponds somewhat with imported bar iron; and the slightly lower cost of it is sufficient to prevent the importation of any foreign iron except such qualities as are not produced in Canada.

The difference in value in Great Britain between wrought scrap and bar iron was \$19—in Canada \$28 per ton.

The difference in value in Great Britain between pig iron and bar iron was \$18.20—in Canada \$23.20 per ton.

The difference in value in Great Britain between muck iron and bar iron was \$13—in Canada \$15 per ton.

In Ontario the average price paid by rolling mills for domestic wrought scrap is \$8 per ton.

The difference in price at Ontario rolling mills for wrought scrap and finished iron is \$34.

These are valuable facts in studying the iron question.

THE SOULANGES CANAL AND CANADIAN CEMENT.

If we are correctly informed that the Dominion Government intend using no other than English Portland cement in the construction of the Soulanges Canal, we must protest that a grave injustice is being done our Canadian cement manufacturers. Of late the Ministers in their speeches, delivered in this city and elsewhere, expressed their determination to do all in their power to legitimately assist and protect the manufacturing industries of Canada; and now that they themselves should go abroad to purchase an article that could be procured at home, is, to say the least, setting a very bad example, and is hardly practicing what they preach. Natural cement has been manufactured for years at Hull, Napanee, Georgetown and Thorold, and of late at Queenston and Hamilton. Portland cement is also, we understand, now manufactured at Owen Sound, Napanee, Hull and Montreal, and it does seem strange that our National Policy Government cannot see its way clear to distribute among these Canadian cement manufacturers the money they propose paying to the English makers. Instead of operating their works five or six months in the year, our manufacturers would be able to run the year round, and furnish employment to double the number of hands at present employed. Efforts have been made to obtain the views of the Minister of Railways and Canals in this matter, but thus far he has declined to express himself. This is not the time to be taking employment from Canadian workmen and bestowing it upon strangers. We most seriously protest against the transaction.

FAKIRS AND FAKES.

THE regular annual meeting of the Canadian Press Association was held in Toronto a few days ago, the event affording the opportunity for a most sublime display of fakirs and a booming of their fakes. Perhaps the most attractive exhibition was that made by a New York Yankee named Somerville, who undertook to instruct Canadian newspaper men regarding their business, and how best to work to bring about the commercial and finally the political subjection of Canada to the United States. Mr. Somerville delivered an address on "Foreign Advertising," viewed from the standpoint of a Yankee newspaper agent desirous of obtaining Yankee patent medicine and baking powder advertisements for Canadian newspapers; and he spoke by the card, for that is just what he and his business is. He figured out that if the duties on patent medicines, soaps and cleansing preparations, baking powders, and similar articles, were removed, so that Yankee manufacturers could be allowed to overflow the country with their preparations, the resultant income to Canadian newspapers for advertising would amount to \$1,300,000 extra per annum; and the glamor of this imaginary wealth which was to flow into the pockets of his constituents so excited the imagination of some of them from the rural regions and far-off concessions, that one editor, against whom a motion was pending to expel him from the Association for disloyalty to his country, obtained the passage of a resolution appointing a deputation to wait upon the Dominion Government and urge

the removal of the duties upon Yankee patent medicines and printing presses.

According to the report in the *Globe*, some discussion preceded the adoption of this resolution, during which the suggestion was made that baking powders and canned goods be included in the list, but Mr. J. B. McLean, of the *Canadian Grocer*, pointed out that injury would accrue to Canadian manufacturers of such goods. The *Empire* credits Mr. McLean with saying that "although a protectionist, he did not see any harm in reducing the duty on patent medicines, which would not injure any industry in Canada, but he objected to any interference with the duties on baking powder and canned goods." It might be borne in mind that the *Grocer* carries the ads. of some Canadian manufacturers of baking powders, and that Mr. McLean is secretary of the Canadian Cannery Association.

We are pleased to record the fact that at least two editors, members of the Press Association, made vigorous protests against the desire to convert the Association into a political machine, operating in the direction of the destruction of Canadian manufacturing industries and of the present fiscal policy of the Government for the most selfish ends; and we cannot too highly commend the remarks of Mr. P. D. Ross and Dr. Playter, both of Ottawa, in that direction. Mr. Ross showed that in going to the Government to ask for reduction of duties on these articles they would be asked why they deserved it, and that they would have to reply that it was because it was to benefit their pockets, and not for the general good; while Dr. Playter, in his contributed paper on "Patent Medicine Advertising," argued that the press should not lend its influence to inducing people to indulge in the ill-advised use of patent medicines. Mr. Ross is to be specially commended for his outspoken declaration that he objected to the Press Association going to the Government as the advocate of a special attempt to fatten the pockets of Canadian newspapers by deluging the Canadian people with unmeasured quantities of "rot-gut" Yankee products.

Among the many inconsistent positions taken by the Association was that in the passage of a resolution denouncing a certain class of medical advertisements "which offer immunity from the results of immorality," and such. Reference to some of the goody-good papers, such, for instance, as the *London Advertiser*, show that quack Yankee doctors who show "before and after" pictures of the awful results of "early indiscretions," and the happy and glorious disenchantment from such results through their treatment, are not objectionable from a moral standpoint, particularly when Yankee dollars glimmer in the perspective; and really there seems to be little difference in publishing such medical advertisements, as the *Advertiser* does, and which the Press Association denounce, and in publishing patent medicine advertisements which the Association are so clamorous for.

But the world abounds in fakirs who push their fakes for all they are worth; and, unfortunately, many members of the Press Association are of this class.

CANADIAN ASSOCIATION OF STATIONARY ENGINEERS.

THE recent meeting in Montreal of the Canadian Association of Stationary Engineers was a gathering of a class of men who are of much more importance to the manufacturing, industrial and other interests of Canada than many are aware of. They are the men who in our cities, towns and manufacturing centres have under their control and in their management a confined power which is most essential to the prosperity of the country, and without which we could enjoy no material greatness. If these men are sober, intelligent and capable, prosperity and success are results of their ministrations; if they are incompetent or careless the most dire results may characterize their ignorance or crime. How important, then, is it that every effort these men may put forth looking to their advancement in their profession; looking to the raising among themselves of their standard of excellence, should be recognized and encouraged not only by manufacturers and all who use steam, but also by the community at large. In these days of improved appliances when every large building has its own steam plant for heating and power purposes; when factories and industrial establishments where both ponderous and light machinery is actuated by the power generated in steam boilers; where, perhaps, unconsciously to most passers-by, even beneath the sidewalks upon which they tread, there exists an element which, by the carelessness of the attendant, might in a twinkling hurl them into eternity; it is well that whatever these men into whose control this great power is committed do in the direction of technical education should be recognized and encouraged; and also, that the suggestions they may make as to the creation and enforcement of laws for their protection and that of the community should receive the most careful consideration.

At this Montreal meeting, in a very vigorous and sensible address made in advocacy of a law licensing engineers having charge of stationary steam plants, and requiring the frequent official inspection of stationary steam boilers, Mr. O. E. Granberg, who is a man of large experience and is an inspector for a boiler inspection and insurance company, said:

We have general laws to protect life against the carelessness of those who handle drugs and poisons as well as powder and other explosives, and why should we not have a general license law for those who handle steam boilers which may be the most destructive element to life and property when placed in the hands of ignorant and careless men. I know of steam plants being run by men who know no more about the vast power and destructive elements contained in the boilers they neglect and abuse, than they do about the North Pole. To illustrate this I will relate a few circumstances that came under my observation. I called at a steam plant where they were putting up a second boiler, and the engineer asked me place the safety valve at 60 lbs., that was all his cylinder would stand. I pointed to the steam gauge on the boiler in use at the time. It stood at 80 lbs. "Oh, yes!" he said, that is all right for one boiler, but I intend using two boilers connected together with 60 lbs. of steam on each that will give me 120 in my cylinder." And he appeared to pity my ignorance when I told him I could not see it and took considerable trouble to enlighten me on the subject. He knew how to add 60 and 60 together to make 120. I called at another plant and found the condenser stopped. I asked the reason and was told something was wrong with it—they got too much

The Canadian Manufacturer \$1.00
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vacuum. I was surprised at this, as my troubles had always been the other way. I looked around and found they had a pressure gauge on the condenser. I asked about the vacuum gauge, and the engineer told me Mr. Vacuum's gauges were no good.

If there were more associations through the country where engineers are banded together for mutual improvement and instruction, and to devise ways and means to secure safety and economy, and get the best results out of their steam plants for their employers, it could not fail to be of great benefit to owners of steam plants and engineers, for there is no class of men to-day who need to understand their work so thoroughly than the engineer. The engineer holds a responsible position, one that requires his constant watchfulness, a position that requires knowledge of his work. And yet, notwithstanding all this, I have found men wholly unfitted and unqualified for their work, with boilers just on the point of giving out, with dozens of men, women and children working around them, and that from the pure ignorance of the man in charge. I once found a man just coming out from under his boiler after having cleaned it and assuring me his boiler was all right, and yet, when I went under it, I found it in such a condition that money could not have hired me to get up steam on it—and I have found two men sitting fast asleep under the influence of strong drink with a roaring fire under the boiler and the water out of sight. I would forever debar such men from taking charge of a steam plant. I feel this association is doing a good work. It deserves the hearty support and co-operation of steam users and engineers. I am glad to see it growing and its influence for good felt.

Now, as regards inspection, I will not take up your time with more than a few illustrations, and lay before you a few facts to show you the necessity of inspection, and as I have inspected between 500 and 600 boilers during the last year I ought to be in a position to judge of its usefulness. In addition I have condemned eleven boilers in the province and had them taken out and replaced by new ones. I might say here that there ought to be a law to have boilers condemned by an inspector and made into scrap iron. All those eleven boilers had been running up to time of inspection. I have stopped sixteen boilers for immediate repairs to be done on them, thereby rendering them safe and fit for use. I feel sure that had these boilers not been inspected, some of them would have exploded and much suffering followed. I have had boilers cleaned out that had not had the hand hole covers off since they were put to work; some of them five years ago. I have found some boilers so full of scale that it touched the tubes from end to end, and have had to weld a wide chisel into a one inch pipe to get it out of the hand hole. I have found boilers so filled up with scale among the tubes that half of them had to be taken out to clean it. I have found plates burnt and cracked, rivets, and stays broken, safety valves stuck, old iron hanging on levers to stop valves from leaking when it would take 1,000 lbs. to lift them. I have found gauge glasses and cocks choked up, blow off pipes and feed pipes so corroded and eaten near the boiler that when I touched them with a hammer it went through and steam gauges ten and fifteen pounds out. These facts show the necessity of boiler inspection.

I have found men who knew their work, but did not like to do it, and needed watching; and I have no doubt but that many boilers have been kept in better order for having the inspector coming around from time to time. But I have found men who knew their work and did it well. Men who took a pride in their work, into whose boiler houses it is a pleasure to go—not a leak to be seen about the boilers or piping, safety valves, gauges, glasses and cocks all in perfect order, everything neat and clean inside and out. You could see at a glance that an engineer was in charge. You did not have to rub his gauge glass for half an hour in order to see if water was in it. You did not have to wade through a lot of

ashes and coal in front of his boiler. He had his ashes properly taken out, and the floor between the coal pile and his boiler swept off clear. It does an inspector good to see him take the shovel and put coal on his fire. He only takes what he can handle neatly and spreads it over his fire, and he doesn't stop to tell you a long story with his furnace door open. He does not slobber his coal all over the floor, putting about half in the fire, and that all in one pile, a quarter on the floor and a quarter in the ash pit to be wasted. You may look as his ashes and you find ashes only. Go into his engine room and you do not need creepers on to keep you from slipping on the dirty, oily floor. You do not find a lot of old pipe fittings, old steam and water pipes, monkey wrenches, pipe tongs, hammers, oil cans, old boots and rubbers, paint cans and brushes all scattered about the engine room floor; engine pounding and oil flying about and the place half full of steam. No! You find the place clean, the floors washed, the engine running smoothly. All is clean and neat about the place and himself.

EDITORIAL NOTES.

In a recent letter to the Editor from Mr. C. H. Waterous, jun., general manager of the Waterous Engine Works Company, Brantford, Ont., the following statement is made: "We take pleasure in saying that for some years we have been advertising our business in THE CANADIAN MANUFACTURER with very excellent results. We are glad to notice that THE MANUFACTURER is prospering, and trust it may continue to do so."

THE imports into Canada in 1892 of copper bars, rods, bolts, ingots and sheathing, amounted to 1,705,000 pounds, valued at \$98,547, or \$5 75 cents per pound. Our exports of fine copper during the same year amounted to 3,797,203 pounds valued at \$185,848, or about 5 cents per pound. These exports were entirely from the Province of Quebec. It will be seen by this that our exports exceeded our imports more than 2,000,000 pounds.

MR. COCKBURN, the after-dinner speech-maker, at a club of jolly young fellows, achieving notoriety as a clamorer for tariff reform, and Mr. Cockburn, M.P., as an orator in the House of Commons, vigorously upholding the National Policy and the Government, are observed to be two very different personages. The manner in which he recently stepped around into the traces and settled his neck in his collar, would make a mule driver stare with astonishment.

MR. THOMAS J. DRUMMOND, of Drummond McCall & Co., Montreal, has been elected to the Council of the Montreal Board of Trade, as representative of the Iron and Hardware interests. Apart from his connection with the general metal trade as a merchant, Mr. Drummond is largely identified with the manufacturing interests of the country, being president of the Drummond McCall Pipe Foundry Co., Ltd., a director of the Canada Iron Furnace Co., makers of charcoal pig iron, and managing director of the Montreal Car Wheel Co., makers of railway car wheels, etc.

DURING the season of 1892 the tonnage of vessels passing through the St. Mary's Falls canal again exceeded that passing through the Suez canal during the entire year. There were 3,559 vessels passed through the Suez canal during 1892, with

a net registered tonnage of 7,712,028; while during the season of 233 days, 12,580 vessels passed through the St. Mary's Falls canal, the net registered tonnage of which was, 10,647,203. This shows an excess of 38 per cent. in favor of the American canal, and indicates the immense business done on the fresh water seas of the American continent.

THE *Empire* says: "Nearly every American newspaper of note is urging annexation just now. Our railways, fisheries and wheatfields are the chief objects of desire." They have our coal deposits and many of our infant industries already.—*Toronto Globe*.

And Sir Oliver Mowat allows them to carry off Canadian logs to give employment to American mill-hands and put profits into the pockets of American mill-owners.—*Hamilton Spectator*.

Sir Oliver Mowat has no more to do with the export of saw-logs than the *Empire* or *Spectator* have. But the Dominion Government have the power and ought to exercise it.

HON. J. S. MORTON, who is to be Secretary of the Interior in Mr. Cleveland's incoming Cabinet, made a statement a few days ago, as follows: "I am troubled every day that passes to see the timber lands of this country reduced by 25,000 acres. There are but 40,000,000 acres of timber left in this country, and at this rate of destruction it will last but a generation." And still Yankee lumbermen are permitted to denude Canadian forests, towing the logs across to saw-mills in their own country, where a Canadian is denied the privilege of working unless he forswears his own land. This is not right and should be prohibited. An export duty should be imposed on saw logs. Also upon pulp wood.

THE inhabitants of Nova Scotia have not yet recovered from their surprise at the quickness and thoroughness with which Boston capitalists recently bought up their coal mines, and it is now said they intend carrying the matter to the British House of Commons. The Tory papers say that without the coal supply Halifax harbor, which England at great expense has just succeeded in making a second Gibraltar, would hardly be worth holding. All this should have been thought of before. The only proper thing for the natives to do now is to make the best of the situation and to gracefully accept the benefits that are to come to them through American capital and enterprise.—*Manufacturers' Gazette*.

Our Boston contemporary should go a little slow, and accept the situation as gracefully as possible. The deal has not yet been consummated, nor is it likely to be. Halifax will continue to be a first-class Gibraltar, and British war ships will never be deprived of Nova Scotia coal.

A FEW days ago a deputation of the Patrons of Industry, headed by Mr. C. A. Malory, grand president, and other officers of the order, waited upon Sir John Thompson and Minister Foster, and among other modest things, asked that it be made a criminal offence for manufacturers to combine together to raise the price of any article. No doubt these modest men think it would be all right for them to combine together to raise the price of wheat; nor did they seem to think that it would be wrong for merchants to combine to raise the price of any article they might have to sell. But if manufacturers should agree together to quit working for nothing and try to make a living out of their business, they should go to prison.

The president and other officers of the Patrons of Industry should try to practice the golden rule of doing unto others as they would have others do unto them.

THE works of the Illinois Steel Company at Chicago are no better situated, so far as natural advantages are concerned, than Toronto. Their supply of ore is obtained from a greater distance than inexhaustible ore beds in Ontario are from Toronto and Connelsville, the common source of supply for fuel is much nearer Toronto than Chicago; and while the Canadian demand for such products is very large, and while we have every natural facility for making iron, with the exception of the works at New Glasgow, we have no steel making plant in Canada. At the annual meeting of the Illinois Steel Company held a few days ago, bonds to the value of \$7,000,000 were authorized for the purpose of building a new steel plant, a plate mill, a mill for rolling structural iron and a universal mill. And all this in addition to the already existing plant. The net earnings for the past year were \$2,019,268, or nearly double what they were the previous year. Wages and salaries paid during the year amounted to \$6,522,352; average number of hands per day 8,208; raw material handled 3,604,964 tons, requiring the use of 143,534 cars.

REGARDED as consumers, it is never denied that protection injures us; yet it is not so generally recognized that we suffer in the same degree as producers from the effects of a high tariff policy. Weak industries are kept alive by the exclusion of competition, and the people produce whatever is produced both badly and scantily, instead of what can be produced abundantly and well, the manufacturers relying, not upon their industry, brains and skill, but upon the assistance furnished by an artificial law.—*Toronto Evening Star*.

The *Star* may speak for itself and recognize the fact that it is a "weak industry," but it cannot truthfully be said that Canadian manufacturing industries generally are kept alive by the exclusion of competition; for under protection while we supply the demand for much of what we require, we constantly see the weak going to the wall because of the fierce competition they are forced to encounter. It is a slander not only upon the manufacturers but upon their employees as well to declare that the products of Canadian factories are both bad and scanty. This is absolutely untrue. As excellent goods are made in Canada as anywhere else in the world, and in many instances quite as cheaply. Protection does it.

WE understand the binder twine factory at the Kingston Penitentiary will be in operation by the first of July. The capacity of the works will be 500 tons a year, and we presume the Dominion Government have gone into the scheme in order to be even with the Ontario Government, who have a binder twine factory in the Central Prison, Toronto. Both Governments have made a mistake in policy, and have entered into a field in which they have no legitimate business. There are plenty of industries in which convicts may be employed to supply the needs of their own institution and other government institutions—thus doing away to some extent with the evils that have sprung up in the contract system—without going into an unfair competition with free labor.—*Journal of Fabrics*.

It does seem that both the Ontario and the Dominion Governments have deliberately determined to injure the cause of free labor as far as they can in this binder twine business.

In the anxiety of the politicians to curry favor with the farmers, the labor element finds itself between the upper millstone manipulated by Mr. Mowat, and the nether stone utilized by the Ottawa Government. And the grinding will be fine—very fine. But the labor element have votes, and it would be very foolish if it did not hereafter cast them with this binder twine incident in view.

A RECENT bulletin issued by the Bureau of Statistics at Washington shows the proportion which free and dutiable goods assume in the make-up of the total imports of merchandise into the United States for the last fiscal year. From this it appears that the percentage of free goods from South America was 97.23, and from Africa 87.56. This is in striking contrast with the figures for Europe, which show that the free imports from that continent were only 22.76 per cent., while the dutiable imports were 77.24 per cent. The total amount of dutiable imports for the fiscal year was \$369,402,804, while the value of imports free of duty was \$457,999,658, or more than 55 per cent. of the entire imports.

A COMPANY of American capitalists will establish a large agricultural implement factory on the Canadian side at Chipewawa, and, of course, they will demand protection from the superior machinery and concentrated capital of their factories on the other side of the river. And when the Democratic party removes the American tariff they will deluge the Republic with their surplus products and ruin the Yankee farmers with self-binders at cost.—*Toronto Globe*.

Why worry about the ruin of Yankee farmers? If the American capitalists establish their works in Canada, Canadian farmers will undoubtedly be benefitted. Competition in the life of business. This inflow of outside capital is a direct result of the N.P. Without the N.P. the American capitalists would prefer investing their money in their own country.

ABOUT three weeks ago, under the direction of the British Admiralty, a test was made at Portsmouth of the nickel steel armor plates, and the result gave the highest satisfaction to everyone concerned. The plates, produced by the Harvey process, were the handiwork of the Carnegie Steel Company, of Pittsburg. While there was no doubt of an ultimate influence that the success of the test would have, an immediate effect as regards the Canadian nickel-steel industry was hardly hoped for, yet such has been the case. Last week the agents of Carnegie, Phipps & Co., in New York, made the announcement that they would require 1,000 tons of nickel per day from Canada. The offer was made to the Commercial Mining Company, which possesses nickeliferous tracts in the Sudbury district, through one of the company's directors, Mr. Hemmingway, in Boston. The directors of the Commercial Mining Company, in Toronto, say that all that is needed is a custom smelter in the Sudbury district, and claim that the Ontario Government should take instant steps towards the erection of one. At present only four mining companies have smelters of their own, and their united capacity is only in the neighborhood of 300 tons per day. The Carnegie Company would prefer merely that the ore should be roasted in Canada, but should be taken to Cleveland to be smelted and refined. This procedure would have the effect of losing a very large industry to the country.—*Empire*.

Of course the Yankees prefer that the ore should only be roasted in Canada and then carried to Yankee refineries for conversion into pure metal. The *Empire*, however, does not propose that any efficient steps should be taken to force the

refining to be done in Canada; it has not yet been informed of the views of the Dominion Government in the matter, but it prates about what the Ontario Government should do in the way of erecting a customs smelter at Sudbury and to enter into opposition with existing works there in a commercial transaction. It is no part of the duty of the Ontario Government to do any thing of the sort, any more than it is its duty to require that saw logs should be manufactured into lumber in Canada. The way to help the nickel industry is for the Dominion Government to impose an export duty on the nickel contained in the ore and matte the Yankees want to take to Cleveland to be refined; and the way to help the Canadian saw mill industry is to impose an export duty on saw logs. Impose the duty.

IN his recent brilliant speech in the House of Commons, Mr. G. R. R. Cockburn, member for Centre Toronto, said: "Some people think, whether rightly or wrongly, that we are leaving, perhaps unconsciously, the safe moorings in which we were lodged when the National Policy was started; and that if the Government are not careful against yielding to the clamorous claims of many for increased protection, the ship of state might perhaps be wrecked on the shoals and shallows of Canadian McKinleyism." Mr. Cockburn here admits that the National Policy was and is a "safe mooring," and from what he said a few weeks ago at a club dinner in Toronto he imagines that we are leaving our moorings. His intimation is that we are yielding to "clamorous claims" for increased protection, and that if this is not resisted by the Government we will be wrecked on the shoals and shallows of Canadian McKinleyism. Mr. Cockburn became member for Centre Toronto by the grace of a constituency composed largely of both manufacturers and employes in manufacturing establishments; and it might naturally be supposed that he would endeavor to represent these interests in the Dominion Parliament, no matter what he might say over the wine at a club dinner. Certainly he should not be expected to misrepresent those interests, particularly those of the manufacturers. But in his Parliamentary speech he intimates that the manufacturers make clamorous claims for increased protection, which, if not resisted by the Government, would inevitably wreck it. Mr. Cockburn should fyle a bill of particulars. Glib and vague generalities will not do. He should show that for a fact the manufacturers are really making clamorous claims, or any other sort of claims for more protection. We take issue with him in this matter. We think we know more about the views of the manufacturers regarding the tariff than he does. We know that the manufacturers do not desire any increased protection, and do not ask for any change in the tariff in that direction, further than to correct obvious and unjust anomalies; and we also know that they desire numerous changes in the other direction. Like an antiquated and fossilized pedagogue he talks about Canadian McKinleyism; but he utterly fails to tell what constitutes that thing, where it exists, and who created and supports it. Mr. Cockburn does not seem to be as much in touch and sympathy with those who made the mistake of electing him to his position, as with the Cartrights, the Charltons, and other dolorous denouncers of the National Policy.

Good Housekeeping for March has a rich table of contents, many of its best contributors being represented by able and timely articles. Among the prose writers may be mentioned Miss Maria Parloa, H. Annette Poole, E. C. Gardner, Ruth Hall, Mrs. Oliver Bell Bunce, Helena Rowe, Mona Faragher Purdy, with many others of similar excellence, some of whom hide their individuality under more or less transparent pen names. No journal of its class is more widely quoted than *Good Housekeeping*, largely because it avoids the sensational, frivolous and transient, striving to give its readers that which is of present interest while at the same time permanently valuable. This quality makes a journal which carries authority and influence wherever it goes. Clark W. Bryan Company, Springfield, Mass.

RECENTLY when making a new departure in their publication the proprietors of *Godey's Magazine* promised that it should be first-class in every particular, second to none, and possess features of rare value which all lovers of the beautiful and refined would appreciate. How well this promise has been kept is shown in each and every issue, but in none more so than that of the current month. It would be impossible to even epitomise the contents in the space here allotted to it, but some of the more attractive features are the water color portraits of H. R. H. Mary Adelaide, Duchess of Teck; Mrs. Grover Cleveland, and Mrs. William Jay Schieffelin; "The Romance of a Trained Nurse," a complete novel by Kate Upton Clark, profusely illustrated, and what is said to be the Duchess of Teck's first contribution to literature "Princess Mary Village Home." Of course there is the usual pleasantly diversified menu of prose, poetry, fiction, illustrated fashion plates, etc. Issued monthly by the Godey Publishing Company, 21 Park Row, New York, \$3 a year.

CELEBRATING the beginning of its twelfth year, the *Electrical Review*, of New York, published on February 25th a particularly interesting and instructive issue of nearly seventy pages. We quote the following from the introduction to a handsomely illustrated and well written description of the progress made in all branches of electricity during the past year: "While the year which closes with this number of the *Electrical Review* has not been characterized by the production of any of the marvels in which the electrical prodigy has been so fruitful, it bears evidences of a steady march of improvement, signalized by the introduction of more perfect apparatus and an expansion of the field of application for electrical inventions the birth of which occurred at an earlier date." Other valuable articles in this number of the *Electrical Review* are a description of the largest arc lighting plant in the world; an interview with Prof. George Forbes, the great English electrician, in which much information about the transmission of electric power from Niagara Falls is given; "The Inventor," by Julian A. Moses; a very interesting description of the present status of "The Telephone," by Grosvenor P. Lowrey, the celebrated patent attorney; "The Place of Electricity in the Modern Office Building," by an office building manager; "A Combination Electrode and Stand for Use in Static Treatment," by Dr. Lucy Hall-Brown; "A Visit to the World's Fair," by Stephen L. Coles, and "The Durability of Underground Wires," by Herbert Laws Webb

THE March *Wide Awake* is a vigorous and breezy number. Rose G. Kingsley tells about the quaint "Rag Market at Bruges," and thirteen pen illustrations by Joseph Pennell, add interest to the text. Marion Harland has one of her characteristic stories, "Miss Butterfly;" Mrs. M. E. M. Davis has a thoroughly charming New Orleans Carnival story, "Judy's Mardi-Gras;" Edith Robinson contributes a delightful boy-study, "Alexander the Little's Foreign Mission;" Nora A. Smith furnishes a typical March tale, "A Windy Story," and the three serials by W. O. Stoddard, Molly Elliot Seawell, and Theodora R. Jenness are at the high tide of interest. Tello d'Apery, the boy editor, tells about his labors "Among the Barefoots" of New York; Frederick A. Ober continues his Columbus papers by a sketch of his travels along the discoverer's track "On the Shores of Cathay," and Annie Sawyer Downs tells, in "Younge Folks at the Eddy," how children can act as real hosts. *Wide Awake Athletics* has a brief paper on "Handing and Training a College Base-ball Team," and a description of "Hare and Hounds Runs." The poems are strong and varied, and the boys and girls will open their eyes with surprise at the story of "The Real Casabianca," the hero of Mrs. Hemans's poem, as told by Henry Bacon. Mr. Bacon's picture of Casabianca and his father is a splendid frontispiece to this splendid March number of *Wide Awake*. Price 20 cents a number, \$2.40 a year, D. Lothrop Company, Publishers, Boston.

IN *The Popular Science Monthly* for March Prof. C. Hanford Henderson completes his illustrated account of "The Glass Industry," describing the gradual advance of glass-making in America from

1800 to 1880, and the immense stride it has taken since the introduction of natural gas as fuel. Considerable light is thrown upon the problem of irrigating Western lands in an illustrated article on "Artesian Waters in the Arid Region," by Robert T. Hill. A strange phase of life in colonial times is exhibited in Colonel A. B. Ellis's paper on "White Slaves and Bond Servants in the Plantations." An explanation of "The Decrease of Rural Population" is attempted by John C. Rose. Under the title "An Agricultural Revolution," Prof. Clarence M. Weed describes, with illustrations, the operation of spraying fruit trees with insecticides and fungicides. Grant Allen's study of "Ghost Worship and Tree Worship" is concluded in this number. Edith Sellers tells "The Story of a Colony of Epileptics," which gives excellent testimony to the beneficial effect of steady occupation in nervous diseases. "The Brooklyn Ethical Association," a society for the study of social problems by scientific methods, is described by Dr. Lewis G. Janes, its president. Other articles are "Notes on Paleopathology," by Dr. R. W. Shufeldt; "The Scheele Monument at Stockholm," by Fred. Hoffman; "East Central African Customs," by James Macdonald; and a "Sketch of Robert Hare," with Portrait. In the Editor's Table, "The Everlasting Ghost," "A Shattered Argument," and "Stoves without Flues," are sharply dealt with. New York: D. Appleton & Company. Fifty cents a number \$5 a year.

Scribner's Magazine for March contains several remarkable articles in the line of "personal reminiscences and memoirs" which were announced to be one of the features of the year. Through the courtesy of a granddaughter of the great naturalist, J. J. Audubon, the publishers present "Audubon's Story of his Youth," a charming bit of autobiography written by the naturalist for his children. The illustrations are from rare old portraits in the possession of the family. Another striking article in the Historic Moments' series is a description of "The Death of John Quincy Adams in the Capitol," by the Hon. Robert C. Winthrop of Massachusetts, who was Speaker of the House of Representatives forty-five years ago, when Adams rose to speak and fell back unconscious. The recent completion of "The Jaffa and Jerusalem Railway," and the running of the first train over the road in August last, is described by Selah Merrill, United States Consul at Jerusalem, who was an eye-witness of that event which linked the region of biblical history with the most modern feature of civilization. In the "Poor" series, Professor W. J. Tucker, of Andover, describes the work of "The Andover House in Boston." It is illustrated with sketches among the Boston poor and Boston institutions by Walter Shirlaw. A unique contribution is "The Tale of Goblin's Horse," by Judge Charles C. Nott, of the Court of Claims, who supports this almost impossible narrative with affidavits. The fiction of the number includes another long and entertaining instalment of Mrs. Burnett's serial, "The One I Knew the Best of All," which has already found its way into the hearts of thousands of readers. T. R. Sullivan contributes one of his most finished short stories, "The Man in Red," and their is an amusing sketch of university life entitled "Ezra Hardman, M.A."

MR. HOWELLS is to be congratulated upon the felicity of description, with which he is depicting the Bohemian artist life of New York City in his latest novel, "The Coast of Bohemia." This charming story is one of the most noticeable of the many features of the March *Ladies' Home Journal*. Miss Dickens' reminiscences of her father are made interesting by some touching allusions to his visit to the United States. Miss Harriet Ogden Morrison, the American expert on ecclesiastical embroideries, contributes several original designs for Advent and Lenten church hangings, as well as several suggestions for funeral palls. Edward W. Bok discusses the problem "Does Poetry Pay?" and John Lambert Payne gives a delightful essay on "The Secret of Happy Marriages." Lucy Hamilton Hooper contributes a sketch, with portrait, of "The First Lady of France," Madame Carnot, and Grace Wassell is equally happy in her delineation of "The Author of *Boots' Baby*." The children are remembered in a full page of Palmer Cox's inimitable "Brownies," and the young people with a trio of "Games for March Evenings." A dainty love story, "Between Love and Creed," by Sara Parr, illustrated by Alice Barber Stephens, and several pretty poems, will delight the hearts of all women. Miss Parloa discusses "The Division of the Family Income," and Miss Hooper talks intelligently of the "Dressing of Unusual Figures." Eben E. Rexford tells of the care of "Greenhouse and Window Plants;" Elizabeth Robinson Scovill writes of how the children are to be cared for "Before They go to School," and Maude Haywood of "Modeling in Clay." Altogether, the *March Journal*, with its artistic cover, and its admirable contents, cannot fail to please its monthly audience of many thousands. *The Ladies' Home Journal* is published by The Curtis Publishing Company of Philadelphia, for ten cents per number and \$1.00 per year.



INVENTIONS.



This department of THE CANADIAN MANUFACTURER is devoted to the interests of inventors, of patentees of inventions, and of manufacturers of patented articles. Patents are granted in Canada for eighteen years, the Government fee for which may be paid by instalments. Arrangements have been made by which the issue of all patents by the Canadian Patent Office and all renewals and extensions thereof will be promptly noticed in this department, and a brief description thereof given. Enquiries on these subjects are invited and will receive prompt attention. No charge will be made for answers by mail when return postage is sent. Information given free regarding patent laws and the obtaining of patents in Canada, United States, Great Britain and all foreign countries. Claims for inventions, as embodied in Letters Patent, also the illustrations of them, will be inserted in this journal at moderate charges. The attention of manufacturers is specially directed to the opportunities for lucrative business which may be acquired by close observation of whatever may appear in this department.

CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office from February 2 to February 14, 1893, inclusive. Information in regard to any of these patents may be had free on application to THE CANADIAN MANUFACTURER, or copies of American patents corresponding to these, where the American patent has been previously granted, can be procured through us for the sum of twenty-five cents.

MECHANICAL.

- 41,782 Woodworking machine, H. M. Albee, February 2nd.
- 41,783 Woodworking machine, H. M. Albee, February 2nd.
- 41,785 Fruit evaporator, J. W. Doty, February 2nd.
- 41,786 Square-cornered tins, cans, boxes or cases, for holding petroleum or other liquids or materials, W. Woolnough, February 2nd.
- 41,787 Standard barrel, J. Plenkharp, February 2nd.
- 41,788 Fishing basket, W. Greaves, February 2nd.
- 41,789 Finger guard for table knife, J. May, February 2nd.
- 41,790 Manufacturing yarn from waste, D. E. Coe, February 2nd.
- 41,791 Screw wrench, W. C. Riesberry, February 2nd.
- 41,792 Perpetual calendar, W. N. Kitchen, February 2nd.
- 41,793 Car coupling, J. W. Poston, February 2nd.
- 41,794 Lowering burial caskets, J. B. Bengler, February 2nd.
- 41,795 Corset, L. Schiele, February 2nd.
- 41,796 Rock drill, T. F. Farrell, February 2nd.
- 41,797 Medicine for coughs, etc., W. W. Baer and W. J. Manson, February 2nd.
- 41,798 Inking attaching for printing press, T. G. Spence, February 2.
- 41,799 Reversible envelope, D. J. Barnett, February 2nd.
- 41,800 Self-acting railway car coupling, A. Hoyermann and A. Stern, February 2nd.
- 41,801 Papeterie, A. Buhler, February 4th.
- 41,802 Bitters, J. B. Ditmars, February 4th.
- 41,804 Scythes and kindred tools, J. R. Mann, February 4th.
- 41,805 Peat fuel manufacturing, The Ontario Peat Fuel Company (Ltd.), February 4th.
- 41,806 Case for jewelry, The Detector Patent Safety Postal Box Syndicate (Ltd.), February 4th.
- 41,807 Game apparatus, F. T. Butler, February 4th.
- 41,808 Inner sole, A. F. Littlefield et al, February 4th.
- 41,809 Computing machine, T. B. Walker and S. E. Wilson, February 4th.
- 41,810 Railway danger signal, A. W. Berne and W. H. Walsh, February 4th.
- 41,811 Animal muzzle, M and C. Gillespie, February 4th.
- 41,812 Car coupling, W. B. Knight et al, February 4th.
- 41,813 Book rest, Benjamin and Bengt Gunnarson, February 4th.
- 41,814 Stopping engine, The Electro Automatic Appliance Company, February 4th.
- 41,815 Cash register and indicator, H. Cook, February 4th.
- 41,816 Car coupling, T. B. Brower and F. M. White, February 4th.
- 41,817 Sawing machine for sawing stave bolts, R. Aldred and B. H. Tunks, February 4th.
- 41,818 Drying, calcining and otherwise treating town and other refuse, or substances and materials, R. Cunliffe and E. Barlow, February 4th.

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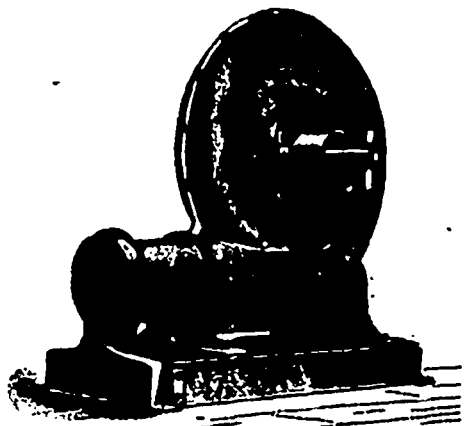
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 41,820 Axle box, W. S. Mordon, February 4th.
 41,821 Carving machine, T. L. Smith and P. W. Post, February 6th.
 41,822 Ironing board, G. N. Simmons, February 6th.
 41,824 Safety ladder, A. Necker, February 6th.
 41,825 Purification of sewage and other foul waters, H. Lockwood, February 6th.
 41,827 Lawn mower, E. C. Stearns & Co., February 6th.
 41,828 Preserving timber, J. McKeon, February 6th.
 41,829 Molds for casting knitting machine cylinder, J. E. Genhart, February 6th.
 41,833 Leather loop for harness, F. J. Bringham, February 6th.
 41,834 Cyclometer, F. C. Weston, February 6th.
 41,835 Bolting or power transmitter, E. Todd, February 6th.
 41,836 Builders' level, W. Nisbett, February 6th.
 41,837 Applying insecticide, M. A. Hawley, February 6th.
 41,838 Tree protector, M. B. Ryan and P. Ward, February 6th.
 41,839 Barbed wire manufacture, J. D. Curtis, February 6th.
 41,840 Water meter, J. Thomson, February 6th.
 41,841 Brick machine, J. Q. Adams, February 6th.
 41,842 Sharpening razors and other sharp implements requiring a fine edge, C. A. Worden, February 6th.
 41,843 Adjustable auger, G. S. Decatur, February 6th.
 41,844 Combined air injector and exhaust, S. A. Earle, February 6th.
 41,845 Grinding glass, J. W. Bonta, February 6th.
 41,846 Load lifter, S. Jones, February 6th.
 41,847 Milk agitating machine, B. Ewing, February 6th.
 41,848 Horse shoe, G. Custer, February 6th.
 41,849 Steam pump, T. C. Eicher, February 6th.
 41,850 Jetty apparatus, T. De La Mare, February 7th.
 41,851 Adjustable seat for vehicles, H. McCann, February 7th.
 41,852 Throatlatch lock, V. A. Coleman, February 7th.
 41,853 Construction of plows or cultivators, W. C. Moore, February 7th.
 41,854 Water tube locomotive boiler, G. J. Perkins, February 7th.
 41,855 Earth auger, H. & L. Iwan, February 7th.
 41,856 Sash balance, R. McMullen, February 7th.
 41,857 Steam drop press, J. H. Mason, February 7th.
 41,858 Harrow, A. Callender, February 7th.
 41,859 Holding and dipping pills, A. D. Stearns, February 7th.
 41,860 Creating and copying, C. B. Nelson, February 7th.
 41,861 Adjustable supporting standards for school desks and seats, F. A. Chandler, February 7th.
 41,862 Covering dress stay, G. O. Schueller, February 7th.
 41,863 Window frame and sash support, G. Harvey, February 7th.
 41,864 Cushion for billiard table, The Brunswick-Balke-Collender Company, February 7th.
 41,865 Cushion for billiard table, The Brunswick-Balke-Collender Company, February 7th.
 41,866 Toothed gearing, M. P. Campbell and J. Rutherford, February 7th.
 41,868 Shear, T. M. Underwood and J. Rowan, February 7th.
 41,869 Grain cleaner, A. Hoine, February 7th.
 41,870 Balance scale, R. M. Shaffer, February 7th.
 41,871 Grain binder, L. H. Grieser, February 7th.
 41,872 Making sheet metal check hooks, H. E. Kelley, February 7th.
 41,874 Steering, propelling and reversing apparatus, D. J. Reynolds, February 8th.
 41,875 Raising and moving material, H. A. Carson, et al, February 8th.
 41,877 Manufacturing ice cream, etc., J. Baker, February 8th.
 41,880 Window step fastener, O. B. White, February 8th.
 41,882 Milking machine, J. C. McColium and W. W. Murphy, February 8th.
 41,883 Necktie fastener, W. M. Bragger, February 8th.
 41,884 Horse shoe, J. McHarric and A. Murdoch, February 8th.
 41,885 Fire escapes, D. Beaudry and E. Mireau, February 8th.
 41,886 Furnace grate, W. H. Heeson, February 8th.
 41,887 School-room gymnastic apparatus, T. Bessing and A. Way, February 8th.
 41,888 Oil cloth printing machine, G. F. Eisenhardt and H. D. Daulton, February 8th.
 41,889 Cash and parcel carrier, S. Tucker et al, February 8th.
 41,890 Churn, H. M. Cooper, February 8th.
 41,892 Spade harrow, J. Drader, February 8th.
 41,893 Working metals by electricity, M. W. Dewey, February 8th.
 41,894 Power transmitting device, E. H. Johnson, February 8th.
 41,895 Grinding mill stone, H. Cloutier, February 8th.
 41,896 Fence, J. Spillinger, February 8th.
 41,897 Signalling apparatus, J. H. McCartney, February 11th.
 41,898 Candelabrum, A. Gauthier, February 11th.
 41,899 Vaporizing saline, National Salt & Chemical Company, February 11th.
 41,900 Dehydrating liquids, S. Jenkins et al, February 11th.
 41,904 Brick, C. Borgner, February 11th.
 41,906 Cigar bunching machine, A. Gordon, February 11th.
 41,907 Folding confessional, G. A. Firnstein, February 11th.
 41,908 Tower for windmill, T. Snow, February 11th.
 41,909 Tower for windmill, T. Snow, February 11th.
 41,910 Hydrocarbon burner for stoves, etc., W. F. Otis, February 11th.
 41,911 Presser flyer, J. Newton, February 11th.
 41,912 Railway signal, J. H. McCartney, February 11th.
 41,913 Pop safety valve, J. Rivers and W. L. Gray, February 11th.
 41,914 Hot air furnace, A. Gregorie, February 11th.
 41,915 Music leaf turner, O. W. Cather and N. B. Knudsen, February 11th.
 41,916 Slow-closing valve for water closet tank, J. V. Gloor and W. D. Stevens, February 11th.
 41,917 Bob sleigh, J. H. Jackson, February 11th.
 41,918 Revolving tower fortification, T. R. Timby, February 11th.
 41,919 Evaporating brine, T. R. Timby, February 11th.
 41,920 Leas, or annealing furnaces for sheet or plate glass, J. W. Bonta, February 11th.
 41,921 Water conductor, S. Silberstein, February 11th.
 41,922 Hay and stock rack, P. Hewitt, February 11th.
 41,923 Land roller, J. S. Corbin, February 11th.
 41,924 Weighing truck, E. E. Chandler, February 11th.
 41,925 Ball cock, H. C. Folger, February 13th.
 41,926 Cigar box, O. K. Zell, February 13th.
 41,927 Cask, J. Shanton, February 13th.
 41,928 Exhibiting tabulated public information and advertisements, H. L. Manton, February 13th.
 41,929 Type distributing machine, J. L. M. McLan and C. H. J. Lynn, February 13th.
 41,930 Heating and sterilizing surgical bandages, J. M. V. Jensen, February 13th.
 41,931 Wire for wire strands and wire ropes, T. C. Batchelor and A. Latch, February 13th.
 41,933 Steam actuated air pump, E. Smudley, February 13th.
 41,934 Back band hoos, P. Ward, February 13th.
 41,935 Car coupling, C. W. Diederich, February 13th.
 41,936 Wheels and tyres for carriages, bicycles, etc., W. Swan and W. Philipson, February 13th.
 41,937 Potato cutter, L. A. Aspinwall, February 13th.
 41,938 Washstand, M. O. Bond, February 13th.
 41,939 Corn case, R. D. Culver, February 13th.
 41,940 Front gear for vehicle, W. N. Morrell and G. A. Elly, February 13th.
 41,941 Vise, C. Ernst, February 13th.
 41,942 Fire escape, J. F. Shaw, February 13th.
 41,943 Hammer, J. C. Richardson, February 13th.
 41,944 Self-feeding machine, W. Reid, February 13th.
 41,945 Hot air furnace, H. N. Hemmingway, February 13th.
 41,946 Sticky fly paper, O. and W. Thum, February 13th.
 41,947 Railway signalling, R. S. Wiley, February 13th.
 41,948 Matches, C. S. Bowman, February 13th.

- 41,919 Churn, A. Hamlin, February 13th.
- 41,920 Oat cleaner, G. H. Rich, February 13th.
- 41,953 Bottle stopper, W. J. Ferris, February 13th.
- 41,952 Breast collar, C. T. Cain, February 13th.
- 41,953 Trunk, F. D. Barrington, February 13th.
- 41,954 Grindstone hanger, O. H. Peterson, February 13th.
- 41,955 Gate, R. E. Harbaugh, February 13th.
- 41,956 Cinder or gravel sifter, M. M. Vardon, February 13th.
- 41,957 Window sash, J. B. Cohen, February 14th.
- 41,958 Steam engine and motor for operating the valves thereof, H. Bolthoff, February 14th.
- 41,960 Shifting seat for vehicles, The Star Slide Seat Company, February 14th.
- 41,962 Heater, J. S. Harkins, February 14th.
- 41,963 Cooking stove, J. S. Harkins, February 14th.
- 41,964 Treatment of dustbin and similar refuse, J. C. W. Stanley and J. Russell, February 14th.
- 41,965 Mechanism for the doubling up or increasing of the purchase of the hoist rope of a hoisting and conveying machine, A. E. Brown, February 14th.
- 41,966 Mechanism for the doubling up or increasing of the purchase of the hoist rope of a hoisting and conveying machine, A. E. Brown, February 14th.
- 41,967 Supporting and controlling the movements of flexible supply pipes, A. E. Brown, February 14th.
- 41,968 Doubling up or increasing the purchase of the hoist rope of a hoisting and conveying machine, E. A. Brown, February 14th.
- 41,969 Hoisting and conveying machine, A. E. Brown, February 14th.
- 41,970 Printing telegraph, F. J. Silkman et al, February 14th.
- 41,971 Window blind, J. W. T. Gilliam et al, February 14th.
- 41,972 Atomizer, McKesson & Robbins, February 14th.
- 41,973 Matrix-making machine, A. Kletzker, February 14th.

- 41,974 Making fence posts, F. P. Rosback and H. F. Band, February 14th.
- ELECTRICAL.
- 41,784 Impregnation of organic, fibrous and cellular matter by means of an electric current, G. A. Oucken, February 2nd.
 - 41,803 Electric railway, The Universal Electric Company, February 4th.
 - 41,823 Armature for motor and generator, N. C. Bassett, February 6th.
 - 41,826 Electric railway, M. W. Dewey, February 6th.
 - 41,830 Phonogram blank, T. A. Edison, February 6th.
 - 41,831 Phonograph, T. A. Edison, February 6th.
 - 41,832 Phonogram blank, T. A. Edison, February 6th.
 - 41,873 Electric battery, Electrolibration Company, February 8th.
 - 41,876 Making grids for secondary batteries, A. F. Madden, February 8th.
 - 41,878 Automatic determining device for phonographs, T. A. Edison, February 8th.
 - 41,881 Conduit for electric railways, C. D. C. Huestis, February 8th.
 - 41,891 Magnetic separator, T. A. Edison, February 8th.
 - 41,901 Gramophone, E. Berliner, February 11th.
 - 41,902 Electric welding or metal working, M. W. Dewey, February 11th.
 - 41,903 Electric arc lamp, H. Harper et al, February 11th.
 - 41,932 Electric magnet, R. Varsley, jr., February 13th.
 - 41,959 Conductor for electric railways, E. A. Warren, February 14th.
 - 41,961 Electric rivetting, M. W. Dewey, February 14th.
- SCIENTIFIC PROCESSES.
- 41,867 Electrolytically producing soda and chlorine, E. B. Cutter, February 7th.
 - 41,879 Producing chlorine in liquid form, E. B. Cutter, February 8th.
 - 41,905 Freeing malodorous hydrocarbons from offensive odors, E. D. Kendall, February 11th.



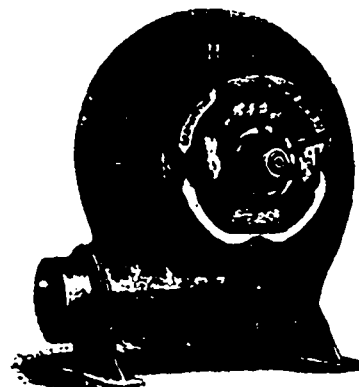
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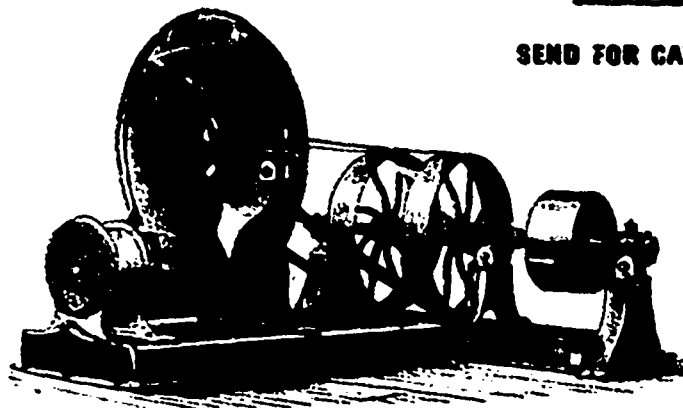
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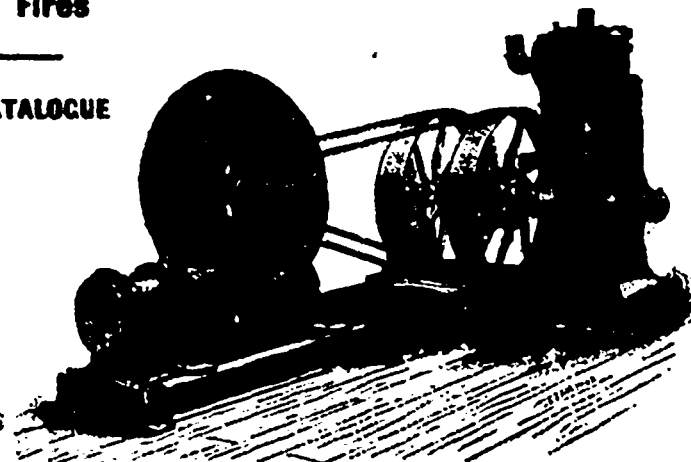


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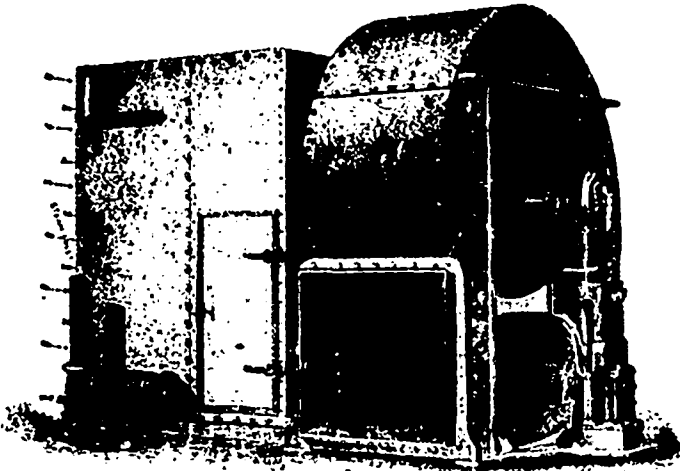


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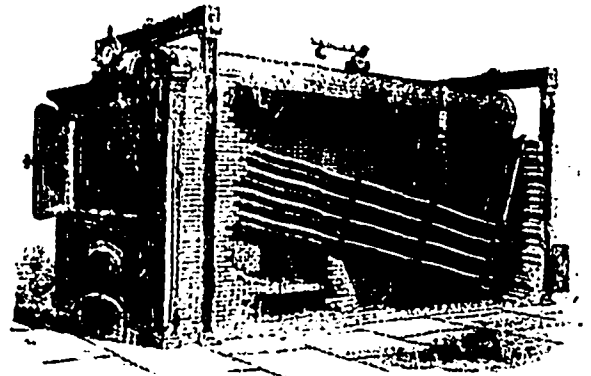
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Embodied in the Sturtevant system are, we are told, the vital elements requisite to successful heating and ventilation, namely: positive control over the quality, quantity and temperature of the air, and the heating of the air by indirect steam coils. Reduced to its primary parts the system comprises a fan, motor, heater and system of air-distributing ducts, together with the necessary means of generating steam, conveying it to the apparatus, and for returning the water of condensation therefrom.

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The Sturtevant Company have a large and attractive card in another page in which reference is made to their business; and any who may be interested may obtain full particulars, with illustrated catalogue, prices, etc., by application to them.



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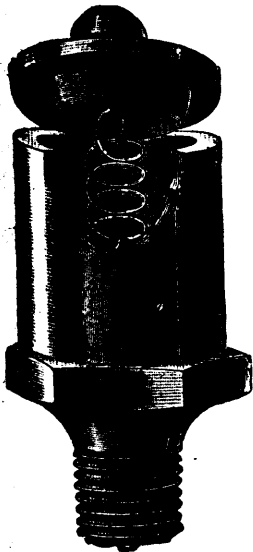
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SELF-CLOSING SPRING COVER OIL CUP.

The Pemberthy Injector Company, Detroit, Mich., are manufacturing a self-closing spring cover oil cup for lubricating machinery, the operation of which is herewith illustrated. The advantage they claim in this cup over the ordinary oiler, in its self-closing spring cover. The spring is attached to the lid, and passes down through oil-way, where it is held by a loop, which admits of the cover being turned at will without affecting the spring. In filling the cup the cover is simply lifted out and to one side, and when released springs back again into place. No amount of jar or motion can displace it, and cover can never be lost. It is especially adapted for traction and portable engines, etc. A small amount of wicking is placed at the mouth of the oil-way, which prevents the oil feeding faster than necessary. The time saved in unscrewing and screwing on covers, replacing lost ones, etc., will about pay for this cup. The tension of the spring can be increased by simply giving the loop an extra turn with a pair of nippers. Extra springs can be put in by any user, and will be furnished upon application at a nominal charge.



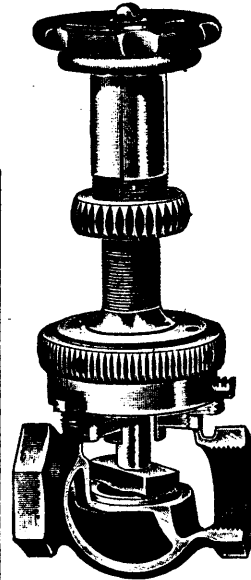
To put in a new spring: Hook loop in cover, pass straight wire through oil-way, and put cover in place. Cut wire off even with threaded end, and with a pair of nippers pull wire down and turn a loop.

Illustrated descriptive catalogue sent on application to above address.

VALVE RESEATING MACHINE.

The accompanying illustration is of the Morse valve reseating machine manufactured by Messrs. Darling Brothers, Montreal.

This machine can be used to reseat any make of valve from 1/4 inch to 4 inches inclusive, regardless of the size of thread or diameter of the opening in the valve. The device consists in an expanding chuck with threaded jaws that can be quickly and securely adjusted; while other machines use bushings of various diameters, or taper plugs, intended to fit the openings of the valves; but the variation in threads and size of openings of different makes of valves render such appliances impracticable. In the operation of the Morse machine the valve seat is not ground with a rotary file and bit-stock, or with emery, but the cutting is done with hardened steel cutters, which make a true seat that cannot be otherwise obtained. With this machine and outfit all flat and taper seated valves that get to leaking can be made absolutely steam-tight without disconnecting the valves from the pipes; and all steam users will quickly comprehend this great advantage. And they will also appreciate the further advantage in having a machine with which they can reseat old and discarded valves, making them quite as good as new, and the ability to renew this operation a dozen times if necessary. Further information regarding this machine, and the cost of it, may be had on application to Messrs. Darling Brothers, Reliance Works, Montreal.



Wants =

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

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

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WANTED—Stationary engineer, with first-class certificate, wants situation. Best references. Competent to take charge of electric plant. Address No. 4, care CANADIAN MANUFACTURER.

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

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34 OLIVER STREET - BOSTON, MASS.

THE DAVIDSON VENTILATING FAN.

The Davidson Ventilating Fan Company, Boston, Mass., have sent us a pamphlet descriptive of the ventilating fan manufactured by them; and in the preface of it they call attention to the fact that ventilation, a now recognized necessity, can, by the introduction of electricity as a motive power, be easily obtained in buildings where heretofore it has been practically impossible. Churches, schools, public buildings, offices and factories of every description can, at a comparatively small expense, be supplied with fresh air of any desired temperature; a thing which a few years ago was, owing to the great cost, practically impossible.

In view of the constantly increasing uses to which fans are being applied for ventilating purposes, a few of the uses to which the Davidson fan is well adapted are here alluded to: Removal of heat from engine, boiler, dynamo, drying rooms, paper mills, breweries, laundries, steamers, and from all buildings where there is an excess of heat. Removal of foul air from workshops, theatres, school houses, churches, hospitals, and mines. Moisture and steam from wool and paper mills, laundries, breweries, dye houses, etc. Dust from tug room, of paper mills, picker rooms, wood-working establishments, and wherever grinding and buffing machines are used. Smoke from forges and foundries, and for removing the odors of cooking from hotels and restaurants. Drying lumber, malt, yarn, wool, etc., and in all places where a large supply of warm, dry air is required.

The points of superiority claimed for this fan are its strength throughout; its blades, arms and braces being made of rolled steel. It has wrought iron rings and spokes with drop forge connections securing the blades to the hub. All boxes are rabbitted and self-oiling. The hubs are made in one piece. In having a steel shaft and spool pulley which is usually made crowning. It is constructed with the blade not perpendicular to the axis of the shaft at the centre; and it has a feeding surface the whole length of the blade from the periphery down to the point of delivery at the centre. The blades do not overlap one another; and when in motion offer but little obstruction to the light. The surface of the blades are both concave and convex. A 12-inch Davidson fan driven with a 2-inch round belt, and making 1900 revolutions per minute, will give a pressure of 1 1/2 ounces to the square inch.

The Davidson Ventilating Fan Company inform us that they have just completed a new three story brick factory, 150 x 50, for the manufacture of their goods, for which they are enjoying a good demand. Further information in this matter, with illustrated catalogue, price list, etc., furnished on application to head office of company, 34 Oliver Street, Boston, Mass.

Outing for March is an excellent number, containing many interesting articles of fiction, sport and travel, and, as usual, carries fine illustrations. The contents are as follows: "Chasers and Chasing in Ireland," by Capt. P. Blackwell; "Shooting in Japan," by S. Hartman; "The Flagellante's Sin," by Thorese M. Randall; "Fishing Through the Ice," by Ed. W. Sandys; "Eider-Shooting in Cape Breton," by W. H. Mac; "Lenz's World Tour Awheel," "Track Athletics at Yale," by S. Scoville, Jr.; "Through Darkest America" (concluded), by Mrs. K. White; "Yachting Around a San Francisco Bay," by Chas. H. Shinn; "Militia and National Guard of Ohio," by Lieut. W. H. C. Bowen, U.S.A.; "Harry's Career at Yale" (concluded), by John Seymour Wood; "A Dog's Ghost," by Geoff; "The Tell-tale Mirror," by Herman Rave; "A Glimpse of the Northland," by F. Houghton, and the usual editorials, poems, records, etc.

THE WATERSPOUT

PATENT

Pulsating Steam Pump

The most Durable, Handy, Economical Pump in the World.

PRICES AND TESTIMONIALS FROM:

The Waterspout Engineering Co.

MANCHESTER, ENG.

U.S. and Canadian PATENTS on sale.



A LONG FELT WANT!

A TYPE WRITER Which does the Work of the

For \$20.00 \$100.00 Machines.

A Perfect Type Writer at a Low Price has long been a crying necessity.

THE ODELL TYPE WRITER

is a perfect machine in every particular, at the remarkably low price of

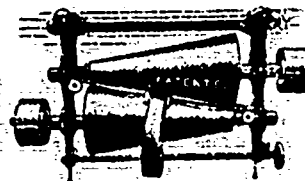
\$20.00 - \$20.00

HEAD OFFICE FOR CANADA,

ROOM 36 CANADA LIFE BUILDING
J. W. RUTHERFORD, Manager.

The Evans Friction Cone Co.

85 WATER STREET, BOSTON



Thousands of sets of Cones driving all classes of machinery.

Thousands of Horse Power in use driving Dynamos.

Cones for Varying Speed.

Address, **Jenckes Machine Co.**
SHERBROOKE, QUE.



ELEVATORS

FENSOM ELEVATOR WORKS
52-54-56 DUKE ST
TORONTO.

ELECTRIC HYDRAULIC
STEAM & HAND-POWER
PASSENGER & GOODS
ELEVATORS. DUMB WAITERS

Captains of Industry.

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

TENDERS are being asked for lighting Lanmington, Ont., by electricity.

The town of Mitchell, Ont., is installing an incandescence electric light plant.

Mr. R. NEWBOLD, 92 Queen Street East, Toronto, has installed a Kay motor.

Messrs. H. N. BATE & SONS, Ottawa, have installed a 10-horse-power Kay motor.

Mr. JOHN H. GREER, Peterborough, Ont., has installed a Kay motor in his workshops.

The Brantford Electric Light Company have installed a Reliance 50-light arc dynamo for street lighting purposes.

Mr. Geo. F. BISHOP, builder, Toronto, has installed a Reliance motor to run the machines in his workshop.

Messrs. MCKINLAY & MCKINLAY, London, Ont., are placing a 30-h.p. Reliance motor in their new planing mill.

Mr. H. W. PRYDE, Toronto, is taking out his engine and installing an electric motor for running his machine shop.

Messrs. WOOD & LEONARD, Hamilton, Ont., are having a Leitch & Turnbull elevator placed in their new warehouse.

Mr. A. HOPKINS, Toronto, has put a 3 horse-power Kay motor for running his cream-extractor, and for churning purposes.

The saw mill of the Rathbun Company, at Campbellford, Ont., was destroyed by fire, February 22nd; loss about \$8,000.

The Laurentide Pulp Company are applying for authority to change their head office from Grand Mere, Que., to Montreal.

The Allen Manufacturing Company, Toronto, have just put in one of the Northey Manufacturing Company's plunging pumps.

The Toronto and Scarborough Electric Railway have given an order to Mr. J. J. GARTSHORE, Toronto, for five miles of rails for their new road.

The dry kiln of the Crossen Car Manufacturing Company, at Cobourg, Ont., was destroyed by fire February 17th; loss about \$6,000.

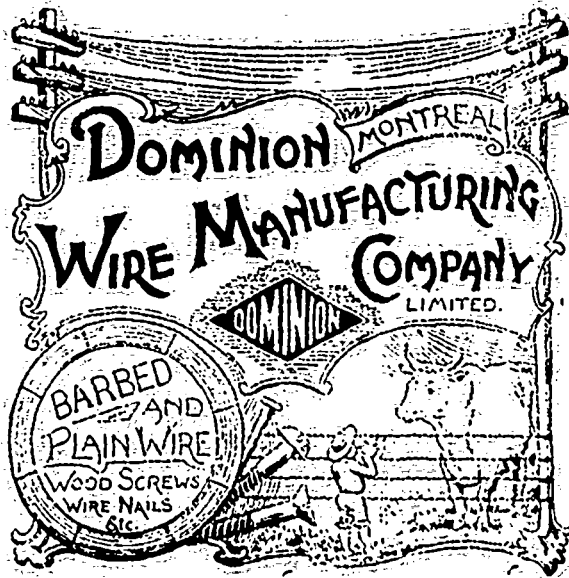
The whole plant for the new electric light company at Smith's Falls, Ont., is being supplied by the Royal Electric Company, Montreal.

The Rotary Pump Company, of London, Ont., are applying for incorporation with a capital stock of \$10,000 to manufacture a new patent rotary pump.

The Northey Manufacturing Company, Toronto, have lately shipped two artesian well pumps to Montreal. These are to pump from wells 140 feet deep.

The Southwick Oil Company is being incorporated at Toronto, with a capital stock of \$25,000, to manufacture lubricating oils, engineers supplies, etc.

The Locked Wire Fence Company is being incorporated at Igersoll, Ont., with a capital stock of \$20,000, to manufacture a patent locked-wire fence.



THE CANADIAN Colored Cotton Mills Co.

SPRING, 1893

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

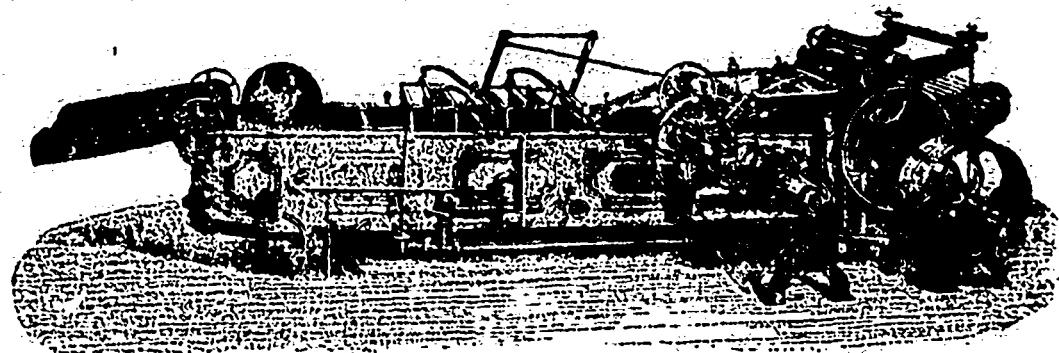
See samples in Wholesale House : **NOW READY**

D. MORRICE, SONS & CO., Agents

MONTREAL AND TORONTO.

IMPROVED WOOL WASHER

BUILT BY
C. G. Sargent's Sons
Graniteville, Mass.,
U.S.A.
Builders of Wool Washers,
Burr Pickers, Wool
Dryers, etc.



The above represents our New Hydraulic Wool Washer, superior to Rake Machine. Send for Illustrated Catalogue

FAC-SIMILE OF SOME OF THE WIDE

Double Leather Main Driving Belts

MANUFACTURED BY US

Makers
of
the
Wide
Double
LEATHER
BELTS
for
Toronto
Hamilton
Niagara Falls
Brantford
Winnipeg
and
Victoria, B.C.
Electric
Street
Railways
also
for
Canadian
General
Electric
Company
Toronto



The
following
Electric
Light
Companies
use
our
BELTS:
Toronto
Incandescent
Kingston
Ottawa
Brockville
Camanoque
Napawee
Peterboro
Orillia
Barrie
Collingwood
Woodstock
Ingersoll
London
Chatham
Aylmer
Stratford
Essex Centre
Waterford
and
Winnipeg

A Substantial Guarantee given with all our Belts.

THE HAWORTH BELTING CO.

11 Jordan Street, TORONTO.

Messrs. STIRLING BROTHERS, also manufacturers, London, Ont., have installed a 10-horse-power Kay motor in place of the 5-horse-power motor formerly in use.

Messrs. DOUGLASS BROTHERS are placing another electric elevator from Letch & Turnbull in the new factory they have built on Adelaide Street West, Toronto.

Messrs. JOHN MCLAREN & COMPANY, Renfrew, Ont., have installed an electric light plant in their flour mill, supplied from the Kay Electric Works, Hamilton.

The annual general meeting of the Luskderry Iron Company is called for the 8th inst., at Montreal, to receive statements of the company's affairs, to elect officers, etc.

Messrs. A. JARDINE & Co., Toronto, have installed an electric elevator in their warehouse, put in by Messrs. Letch & Turnbull, Hamilton, and operated by a Kay motor.

The town of Pembroke is having a large size duplex water-works pump built by the Northey Manufacturing Company, Toronto, who make a specialty of this class of work.

The British American Starch Company, Brantford, Ont., have just placed a large condenser for their engine, bought from the Northey Manufacturing Company, Toronto.

The Georgian Bay Box and Planing Mill Company, of Midland, has been incorporated at Midland, Ont., with a capital stock of \$10,000, to manufacture packing boxes, etc.

The Ontario Excelsior Manufacturing Company is being incorporated at Chatham, Ont., with a capital stock of \$25,000, to manufacture excelsior, cooperage stock, etc.

The Erie Glass Company, Port Colborne, Ont., whose works were destroyed by fire February 4th, have begun to rebuild and will be again in operation during the present month.

The Gutta Percha & Rubber Manufacturing Company, Toronto, have just placed a direct electric elevator in their warehouse, made for them by the Fensom Elevator Works, Toronto.

The Brantford Spring Tooth Cultivator and Implement Company, of Brantford, Ont., are applying for incorporation with a capital stock of \$50,000 to manufacture agricultural implements.

The Holmes Fibre Graphite Company is being incorporated, with a capital stock of \$250,000, to manufacture fibre graphite bearings. Mr. G. H. L. Bland is one of the incorporators.

Messrs. JAMES ROBERTSON & COMPANY have put in an electric elevator in their Winnipeg warehouse, built by Messrs. Letch & Turnbull, Hamilton, the power being supplied by a Kay motor.

The Elmwood Lumber and Manufacturing Company is being incorporated at Elmwood, Ont., with a capital stock of \$15,000, to manufacture lumber, laths, shingles, sash doors, wooden ware, etc.

Messrs. NIE & LYNN, Hamilton, Ont., are building the 100-horse-power Arnington-Sims engine for the electric plant for the steamer Niagara, which is being built by the Hamilton Bridge Company.

The Hamilton Facing Mill Company, Hamilton, Ont., request the attention of foundrymen to their business. They manufacture

FOUNDRY FACINGS

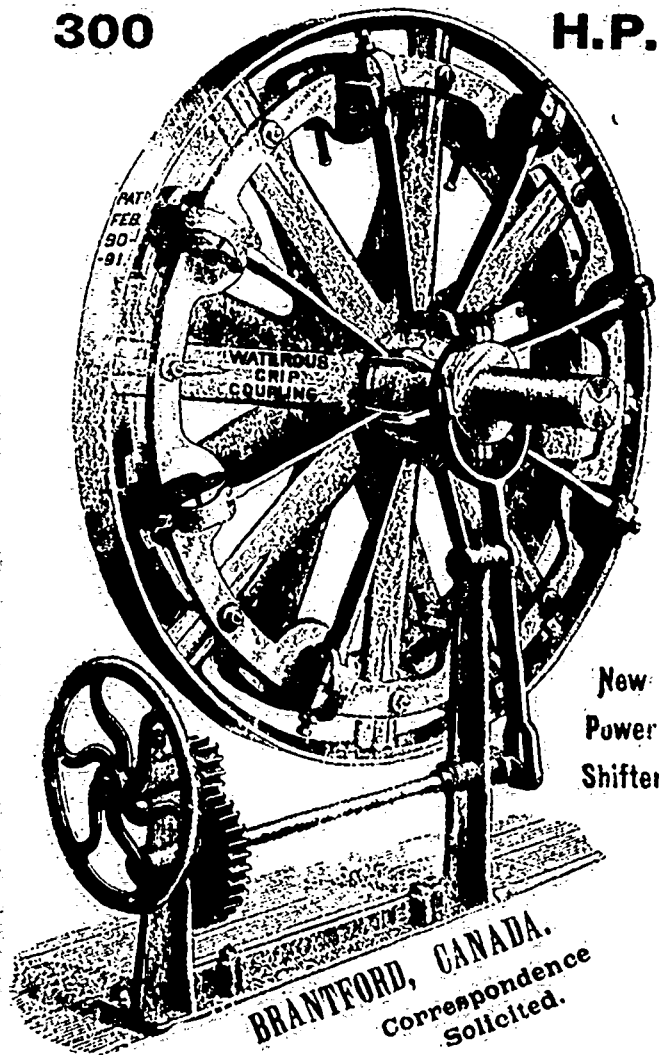
Core Compound, Ceylon Plumbago, And Foundry Supplies.

WRITE FOR CATALOGUE AND PRICES.

Hamilton Facing Mill Co., Hamilton, Ont.

300

H.P.



New Glasgow. **I. MATHESON & CO.** Nova Scotia.

Engineers and Boiler Makers

MANUFACTURERS OF

Corliss Steam Engines

Especially adapted for Mills and Factories.

Agents for

D. H. and C. Haggie's Patent Wire Rope for Mining Purposes

DRAPER'S IMPROVED

GLOBE VALVE

Patented.

Constructed to prevent Seals or Grains of Dirt being Caught Between faces at point of closing.

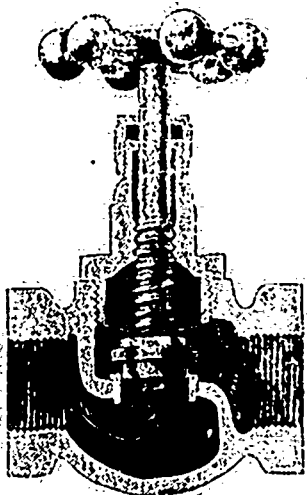
When the projection on valve enters the seat of the valve, which it is an easy fit, only seat, ball, cushion, past, seals, etc., are pushed back and faces meet with nothing between to fill them. Seal for prices and particulars to

T. DRAPER,

Manufacturer.

BALL VALVES for various purposes, oil and Salt Well Supplies, Etc., Etc.

PETROLEA, ONT.



foundry facings, core compound, Ceylon plumbago and foundry supplies generally.

MESSRS. THORNTON & DOUGLASS, Stratford, Ont., and W. W. Greenwood, St. Catharines, Ont., are placing passenger elevators in their warehouses, manufactured for them by Messrs. Leitch & Turnbull, Hamilton, Ont.

THE Gould Bicycle Company, Brantford, Ont., have opened a branch in Toronto, at 113 Yonge Street, where they will keep a good display of all styles of their "Brantford" and "Ontario" bicycles.

THE power in Messrs. W. C. Edwards & Co.'s new saw mill now in course of construction at New Edinburgh, Ottawa, will be transmitted by several of the Dodge Wood Split Pulley Company's large rope drives.

THE Rathbun Company's new car shops at Deseronto, Ont. are being equipped throughout with Dodge wood split pulleys. They have already placed a 150 h.p. transmission of some 300 feet centres in these shops.

MESSRS. HIRAM WALKER & SONS, Walkerville, Ont., are placing another spirit pump in their distillery. This is the third of these pumps they have bought from the Northey Manufacturing Company, of Toronto.

MESSRS. COOK & SON, St. Catharines, Ont., have installed a 166-horse-power generator 500 volt machine, and are renting out power. This generator is already loaded to its full capacity with Reliance motors.

ROBERT CONNORS, Upper St. Francis, N.B., who is remodelling his sawmill, has recently received a large shipment of the Dodge wood split pulleys. He has adopted these pulleys throughout the whole of his mill.

THE Pennington-Baker Seating Company, Dundas, Ont., have lately shipped several carloads of church furniture to Vancouver, B.C. This company have received the contract for the seating in a new church in Montreal.

THE large flour mill of Messrs. Wenger Bros., at Ayton, Ont., was destroyed by fire February 25th; loss about \$10,000. This mill

had a capacity of 200 barrels per day, and was one of the best equipped flour mills in the country.

MESSRS. R. & W. CONROY, of Aylmer, Ont., are remodelling their saw mill at Duchesne, Ont., and are installing a 300 h.p. rope driver made by the Dodge Wood Split Pulley Company, to transmit the power from their new water wheel.

THE Pembroke Electric Light & Power Company are taking in the outlying districts of the town and have extended their plant by the addition of an 800 light alternating dynamo, procured from the Royal Electric Company, Montreal.

THE Jenckes Machine Company, Sherbrooke, Que., who are agents for the Dodge Wood Split Pulley Company, Toronto, have lately been supplied with a large stock of these pulleys, and are now in good shape to fill orders on short notice.

THE Heat Deflector Company is being incorporated at Montreal with a capital stock of \$100,000 to manufacture heat deflectors, dampers, etc., for the economy of fuel and proper diffusion of heat as applied to ranges, stoves, furnaces, boilers, etc.

MR. T. W. NESS, Craig Street, Montreal, has been appointed agent for the Reliance Electric Manufacturing Company, of Waterford, Ont., to handle their motors for Ottawa and east to Quebec, and Mr. Ness has already had five motors shipped to him.

MESSRS. J. Y. SHANTZ & Co., Berlin, Ont., have bought the factory formerly owned by the Crompton Corset Company, and are having it altered and fitted up for their use. The two new elevators are being put in by Messrs. Leitch & Turnbull, Hamilton.

THE Standard Ice Machine and Refrigerating Company is being incorporated at Toronto, with a capital stock of \$50,000, to manufacture a patent machine for the manufacture of ice, for purposes of refrigeration, etc. Mr. G. H. L. Bland is one of the incorporators.

THE Dominion Government have ordered several vacuum and feed pumps from the Northey Manufacturing Company, Toronto, to be used in connection with disinfectants in the various quarantine stations, also a large duplex pump for use in the Government fish hatcheries in N. W. T.

THE

"OPTIMATES" POWER HAMMER

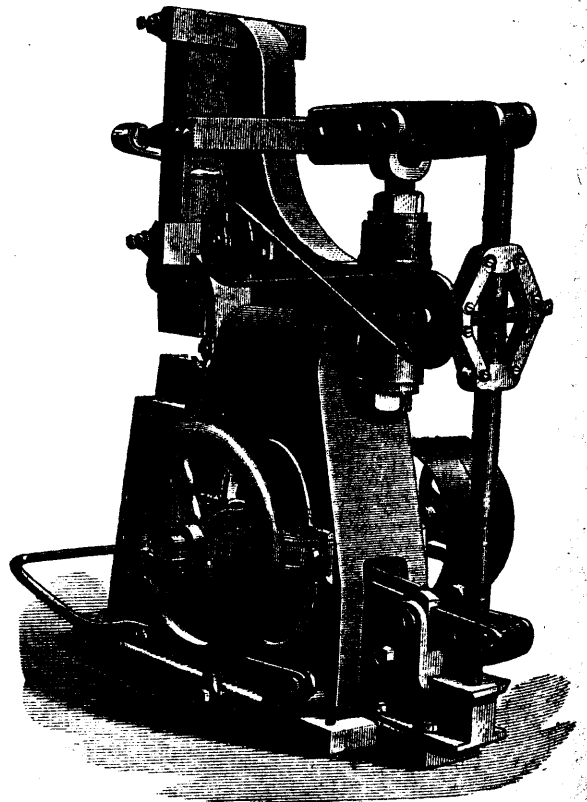
Patented in the United States, Canada, and England.

W. H. LAW,
Inventor.

MANUFACTURED BY

The Central Bridge and Engineering Co., Ltd.

PETERBOROUGH, ONTARIO, CAN.



The Dominion Blanket & Fibre Company, Montreal, are placing in their factory an automatic duplex pump with a receiver to return condensed steam from coils to boiler, also a large fire pump and a power pump, all of which were bought from the Northey Manufacturing Company, Toronto.

The Niagara Falls Electric Light & Power Company are extending their plant by the addition of an 800 light alternating dynamo procured from the Royal Electric Company, Montreal. They are also increasing their field of lighting by taking in Drummondville and Niagara Falls South.

The Royal Electric Company, Montreal, are putting in what is claimed to be the largest independent condenser in Canada. It is to be used to condense steam from their new 1,000 h.p. engine. It was built by the Northey Manufacturing Company, Toronto, and is a very fine specimen of their work.

The Ottawa Electric Light Company are claimed to be the first electric company in Canada to transmit the whole of their power with rope drives instead of by leather belting. The Dodge Wood Split Pulley Company have just completed the installation of two 300 h.p. rope drives for this station.

The Fensom Elevator Works, Toronto, report business good. They have in hand at present two electric pumping systems, with three elevators to each; two direct electric passenger elevators; also an order for a hydraulic passenger elevator for the Queen's Royal Hotel, at Niagara-on-the-Lake, beside other orders.

Mr. GEORGE SLEEMAN, Guelph, Ont., has built a large addition to his brewery and is putting in an entirely new brewing plant. It is claimed that this brewery, when the alterations are finished and the new plant is installed, will be the most complete in Canada. Messrs. Coulter & Campbell, Toronto, have the contract for all the copper work.

The Brantford Carriage Company, Brantford, Ont., have sent us a very beautiful hanger intended for office use, having reference to their business. Lithographed in colors are representations of the various vehicles manufactured by them, and which proclaim that their products are of the most modern and desirable construction. They build only one grade of work, viz., "The Best."

The Merchants Electric & General Service Company is a new

concern started in Montreal. They will erect buildings and put in a large plant for supplying electric lighting and power. Some of the gentlemen interested in it are: Hon. A. W. Ogilvie, Samuel H. Ewing, James Cooper, George S. Brush, Edwin Hanson, John A. Grose, Samuel Farley and George A. Greene, all of Montreal.

The E. B. Eddy Company, Hull, Que., are having another 200 h.p. Wheelock engine placed in their works, and are transmitting the power therefrom by means of rope drives. They are also conveying 300 h.p. to their sulphite mills by rope drives. This makes in all 2,100 h.p. of rope drives which this company have recently had installed in their mills by the Dodge Wood Split Pulley Company of Toronto.

The Lunenberg Iron Company has completed its first year, and the stockholders are well satisfied with the success of the enterprise and are hopeful for a prosperous future. Stoves manufactured by this company have sold advantageously throughout the Province, and the managers feel confident of a largely increased demand during the coming year. It is proposed to increase the capital stock from \$10,000 to \$20,000.—Halifax, N.S., *Critic*.

MESSRS. JOHN M. FRENCH & Co., Toronto, present a very attractive card on inside of our front cover. It will be remembered that when the works of this concern on Bay Street were destroyed by fire a few weeks ago, they acquired the large and commodious premises previously occupied by the Toronto Carpet Manufacturing Company at the foot of Jarvis Street, on Esplanade. Messrs. French & Co. have equipped this place with every convenience for their business, and are now in full swing, manufacturing paints, colors, varnishes, etc.

MESSRS. DARLING BROTHERS, Montreal, manufacturers of the Morse valve re-seating machine, inform us that they have recently supplied these machines to the following parties:—Windsor Hotel, Montreal Gas Company, Messrs. John H. R. Molson & Bro., Dominion Oilcloth Company, Montreal *Witness*, Messrs. James Robert et Fils, Messrs. Wm. Rutherford & Sons, Montreal Steam Laundry, and Messrs. H. S. & W. H. Masterman, Montreal; Messrs. John Bertram & Sons, Dundas, Ont.; Almonte Knitting Company, Almonte, Ont.; Dominion Cotton Mills, Magog, Que., and others.

BRUNNER, MOND & CO., Limited, Northwich, Eng.

Manufacturers of **PURE ALKALI** Guaranteed 58 degrees.

The Strongest and Purest Form of **SODA ASH** in the market, and the most Economical Form of **SODA** for the Manufacture of



Glass, Paper, Wood Pulp, Soap and Starch

Also for **PRINTERS, BLEACHERS and COLORS.**

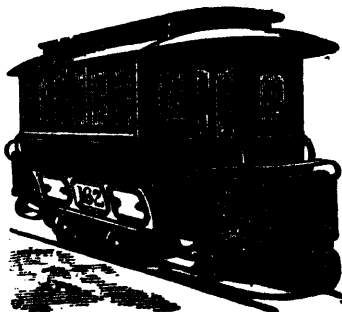
WINN & HOLLAND, Montreal,

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PATTERSON & CORBIN

FINE
ELECTRIC CARS

OUR
SPECIALTY



ST. CATHARINES, ONT.

MANUFACTURERS OF

Horse and Trail Cars

OF

EVERY DESCRIPTION

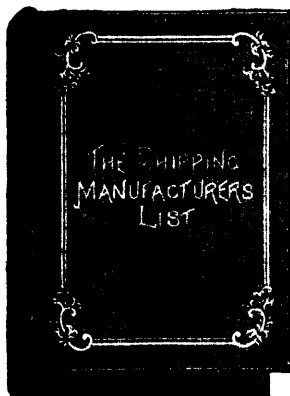
MACHINERY

FOLLOWING list of New and Second-Hand Boilers, Engines and General Machinery for sale by The Canada Machinery and Supply Co., Brantford, Ont., dealers in New and Second-Hand Machinery and Supplies:—

- ONE BOILER, TO BRICK IN, 44 in. dia. x 11 ft. 7 in. long, 41 3 in tubes, in first-class order.
 - ONE BOILER, TO BRICK IN, 44 in. dia., x 11 ft. 8 in. long, 38 3-in tubes, in first-class shape.
 - THREE 25 H.P. PORTABLE loco. fire box boilers, in good order.
 - TWO 6 H.P. FIRE BOX BOILERS for cheese factories.
 - ONE 12 x 16 SLIDE-VALVE ENGINE, Beckett's make.
 - TWO 9 x 12 SLIDE-VALVE ENGINES, Goldie & McCulloch and Morrison makes.
 - TWO 5½ x 9 SLIDE-VALVE ENGINES, Beckett's make.
 - ONE 6 H.P. ENGINE, upright, with 8 h.p. boiler combined on one cast iron base.
 - ONE 15 H.P. ENGINE, English make.
 - ONE 14 H.P. ENGINE, Leonard make, nearly new.
 - ONE 12 H.P. HORIZONTAL PORTABLE ENGINE and boiler on skids; Ames & Co., makers, Oswego, N. Y.
- MACHINERY:
- ONE 26-INCH MCGREGOR, GOURLAY & CO. make. heavy surface planer, almost new.

- TWO 24-INCH CANT, GOURLAY & CO. make, light surface planers, in good order.
 - ONE ONE-SIDE MOULDER.
 - ONE ALMOST NEW VERTICAL SPINDLE boring machine, McGregor, Gourlay and Co.'s make.
 - ONE ALMOST NEW IRON TOP JIG SAW, Cowan and Co., makers.
 - ONE BLIND SLAT TENONING MACHINE.
 - SIX GOOD SAW TABLES.
 - ONE NEARLY NEW GOLDIE & McCULLOCH tenoner, with double copes.
 - ONE WOOD FRAME TENONER in good shape.
 - ONE SET TWO HEAD BLOCK SAW MILL irons.
 - ONE ALMOST NEW GENUINE "BAILEY" GAUGE, or handle lathe, with countershaft.
 - ONE ALMOST NEW SPINNING LATHE, for spun metal work, with countershaft.
 - FOUR DOWELL MACHINES.
 - ONE 20-INCH "WATEROUS" CHOPPER, almost new, complete with double elevators.
 - ONE LOZENGE MAKING MACHINE, of large capacity, American make, complete with brass dies and printing attachment.
 - ONE DOUBLE ELCELSIOR CUTTING MACHINE, alm st new.
 - ONE GOLDIE, McCULLOCH PURIFIER, almost new.
- FULL PARTICULARS CHEERFULLY GIVEN upon enquiry at the Canada Machinery and Supply Co., Brantford, Ont.

ARE YOU INTERESTED



IF NOT WHY NOT
Manufacturers' - PURSE -
 A Free for All Race
 No Entrance Fee
 Over 15,000
ARTICLES

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SHIPPING MANUFACTURERS' LIST

Less than 60 days remain now to enter any articles not reported. We do not put your photo on the front cover of this work, but we do tell the world

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Machinists' Fine Tools

DRILLS, CHUCKS, REAMERS, ETC.

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RICE LEWIS & SON, Ltd.
 TORONTO.

Hamilton Cotton Co.
 HAMILTON, - ONTARIO.

DYERS, BLEACHERS,
 AND MANUFACTURERS OF

Warp Yarn, in Beam, Chain or Skein, White or Colored, Single and Double Yarns, Cop Yarn, Single and Double Hosiery Yarn in all Colors, including genuine "FAST BLACK."

PAUL FRIND & CO., Toronto, SELLING AGENTS For Beam Warps

It has been heretofore recorded in these pages that the Peterborough Canoe Company, Peterboro', Ont., were the successors in business of the Ontario Canoe Company, which ceased to exist soon after the destruction of their factory by fire some time since. The new company have recently completed the erection of new works, and are now occupying them, the building being 110 x 40 feet, two stories high. They will make canoes, skiffs and yachts of all descriptions, as well as all necessary fittings therefor, such as paddles, oars, spars, sails, etc. They have orders in hand for small craft from England, United States and all parts of Canada as far as British Columbia.

Mr. James Watson, president of the Strathroy Knitting Company, whose mills at Strathroy, Ont., were destroyed by fire several months ago, and who is largely interested in the Watson Manufacturing Company, who have recently started knitting mills at St. Catharines, Ont., has withdrawn from active connection with his manufacturing interests, leaving them in the hands of his two sons and successors, and has established himself as general agent and broker in Hamilton, which city has been his place of residence for many years. Mr. Watson was the first president of the Canadian Manufacturers' Association, and is still an active member of its Tariff Committee.

As previously noticed in these pages, the Kemp Manufacturing Company, of Toronto, are putting in a plant for the manufacture of granite hollow-ware. The method of heating the annealing furnaces is by or with petroleum fuel: and Mr. W. S. Rockwell, of New York, who is an engineer of large experience in such matters, is superintending the erection of the apparatus and appliances for this purpose. It is well known that very much better results can be obtained by the use of crude oil as fuel than with coal: and the plant here alluded to is, we are informed, the first of the kind erected in Canada for this purpose. It will be two or three weeks before the new works will be in readiness for operation.

A fact significant of the excellence of Canadian workmanship and material is that a great many Americans doing business in this country, and who know a good thing when they see it, in buying steam pumps give the preference to those of Canadian make. Our attention has been called to this fact by the Northey Manufacturing Company, of Toronto, who inform us that they have recently filled many such orders. This is another indication of the benefit

of the National Policy. Without it we never could have established such works; but having them established, competition among our own manufacturers keeps the price at a reasonable figure and at the same time the quality of the goods is maintained.

The Jenckes Machine Company, Sherbrooke, Que., report business improving. Among their late orders are two steel boilers for J. F. Beckman, Montreal; one 50 h.p. steel boiler with engine and saw mill for L. C. Patten, Milan, Que.; one 30 h.p. locomotive boiler with engine and crushing plant for the Dominion Mineral Company, Sudbury, Ont.; one 30 h.p. steel tubular boiler with engine and saw mill for the Eaton Milling Company, Eaton, Que.; one 50 h.p. engine for the Dominion Paper Company, Montreal; one 30 h.p. engine and boiler for Abram Wallace, Waterloo, Que.; one 16 h.p. marine boiler and engine for the Right Rev. Bishop Grouard, Nativity Mission, Edmonton, N.W.T.; two horizontal steel boilers with 25 h.p. engine for Legor & Co., St. Henri, Que.; one 25 h.p. horizontal steel boiler with engine for John Wood, Montreal; one saw mill outfit for M. Clancy, Leeds, Que.; one Griffin roller pulverizer for Wright & Sons, Ottawa.

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Stoves, Ranges and Furnaces,

Enjoy the unique distinction of being made entirely from original designs and original wood patterns. We confidently place them in competition with the best American productions duplicated by Canadian makers.

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General Electrical Supplies of Every Description

CORRESPONDENCE INVITED.

Please address all Correspondence to the Company.

If the Consumers' Cordage Company were the only manufacturers in Canada of binder twine, and if they were the monopolists they are represented by their enemies to be, it might have been well for the Government to punish them as it has done by taking away one-half of the duty. But there are several other concerns in the country engaged in the same business, and who give employment to large numbers of men, women and children; and the Government should have considered their welfare in the matter. Instead of removing the duty from the finished product—binder twine—it might have been quite as well to have increased the duty upon the raw material—jute. We understand that the Consumers' Cordage Company use no native grown fibre in their mills, but rather import every pound they consume. And while this may be the case also with other concerns, notably the works of the Ontario Government at the Central Prison, and perhaps the Farmers' Binder Twine Factory at Brantford, there are other works which do not use any imported material whatever, depending entirely

upon Canadian farmers for the flax they produce, and which they manufacture into binder twine. And it is a severe blow the Government have dealt to these last alluded to mills and flax growers, for under the new order of things the mills will necessarily have to close down and the laborers be thrown out of employment. It does not seem to us that the matter received the careful consideration its importance demanded.

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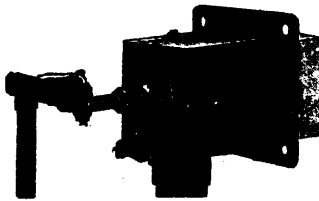
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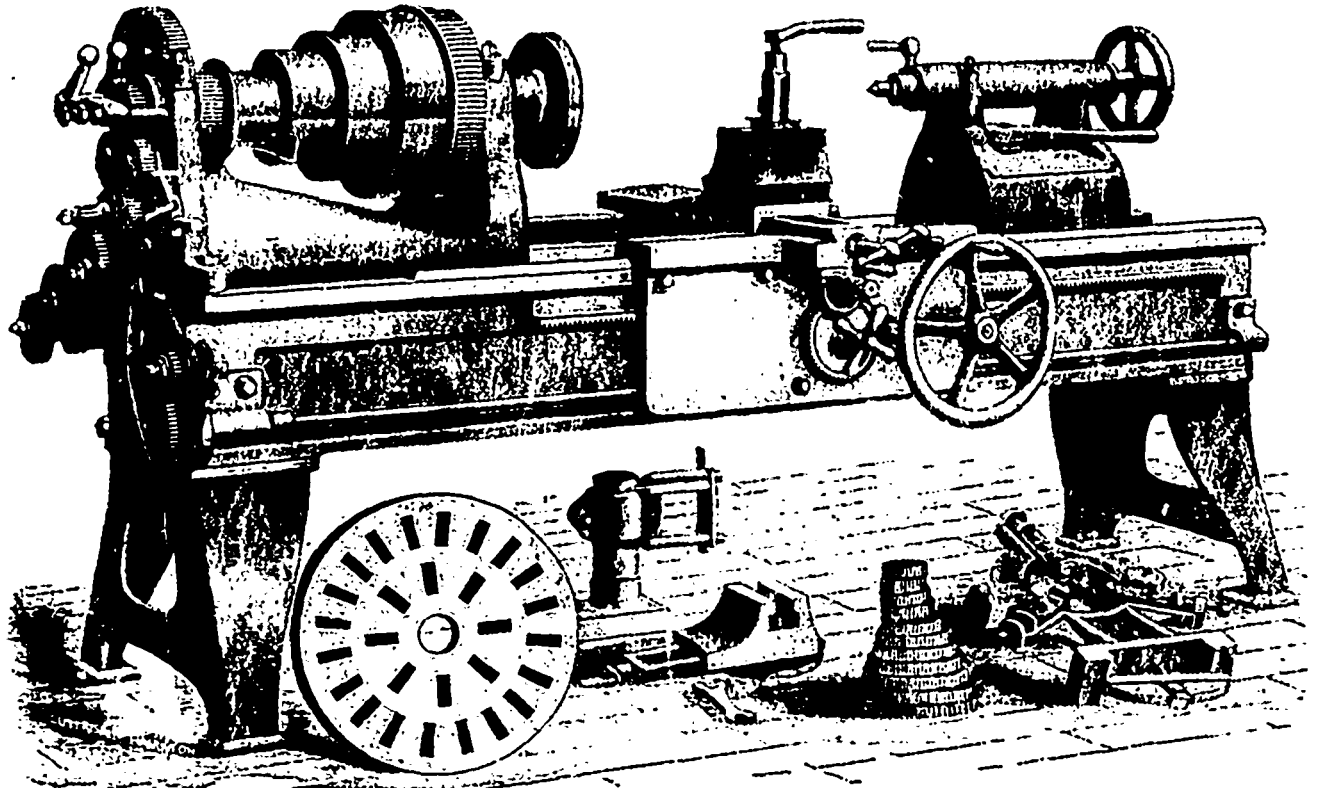
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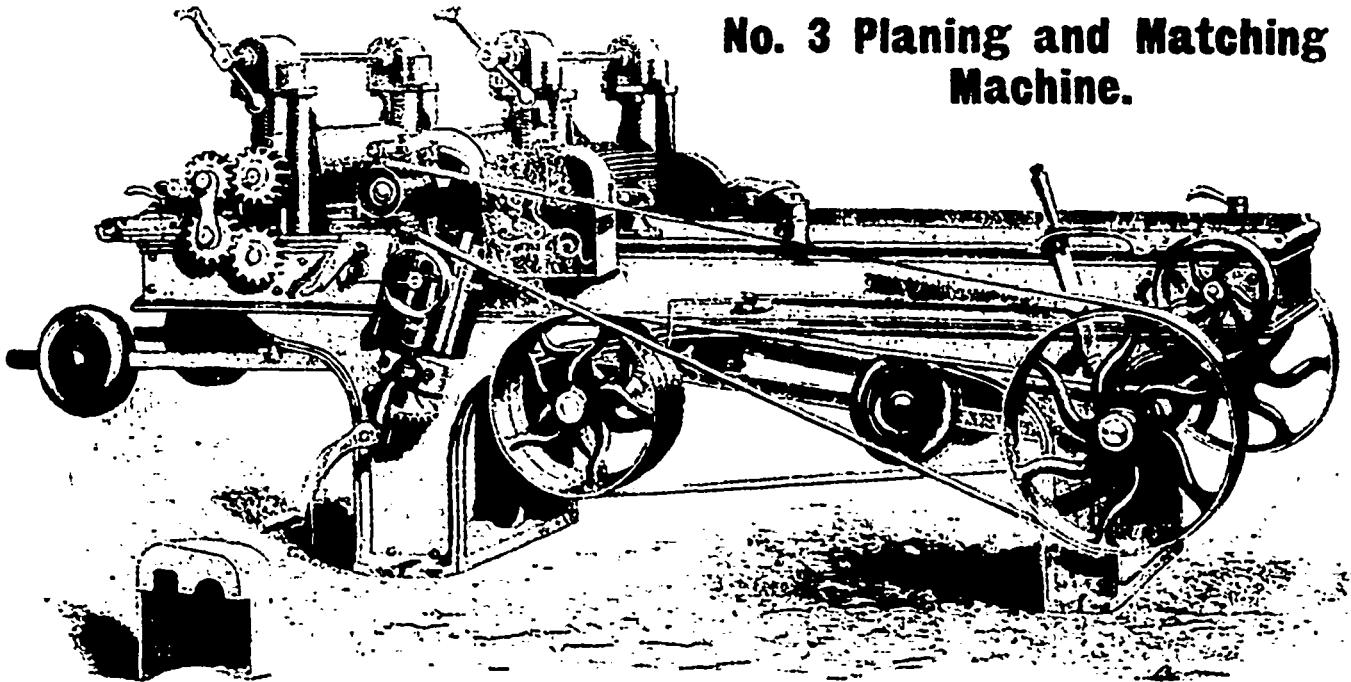
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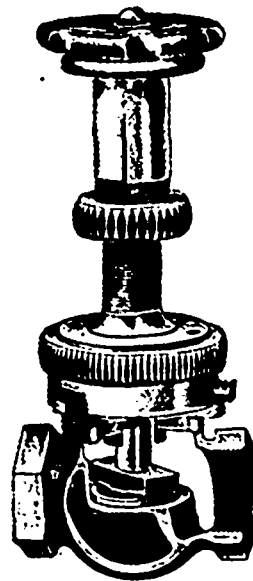
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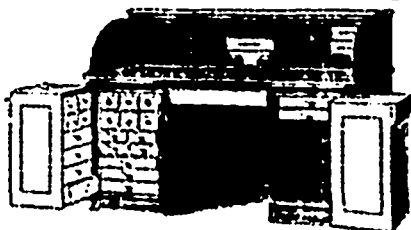
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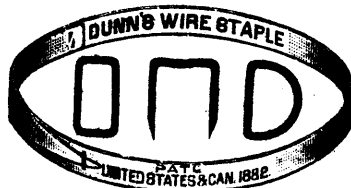
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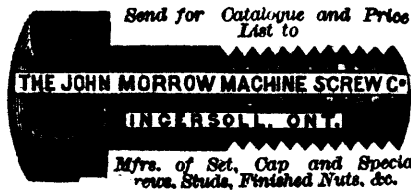
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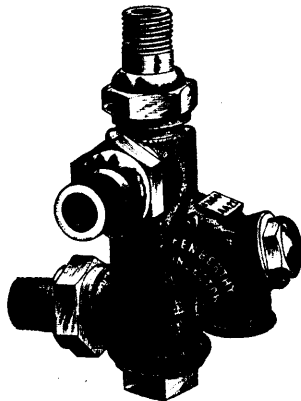
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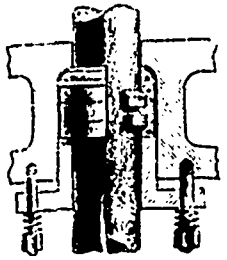
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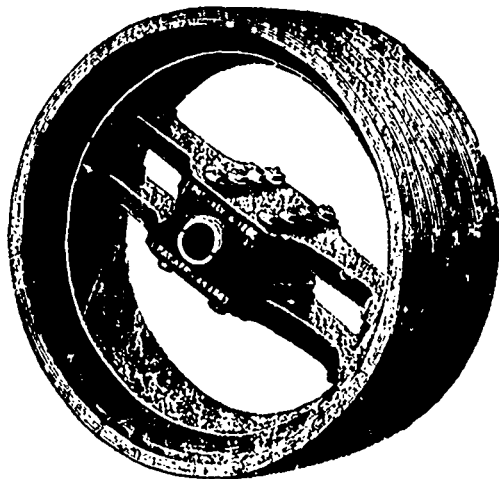
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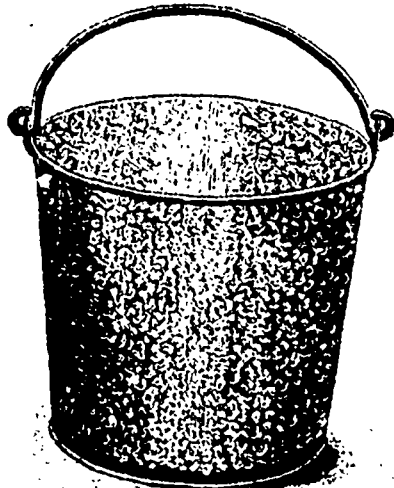
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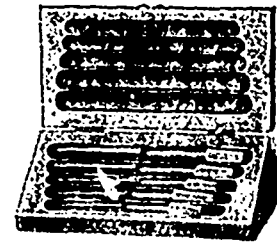
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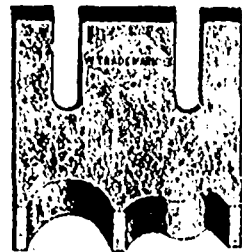
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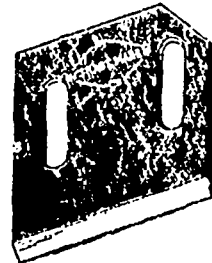
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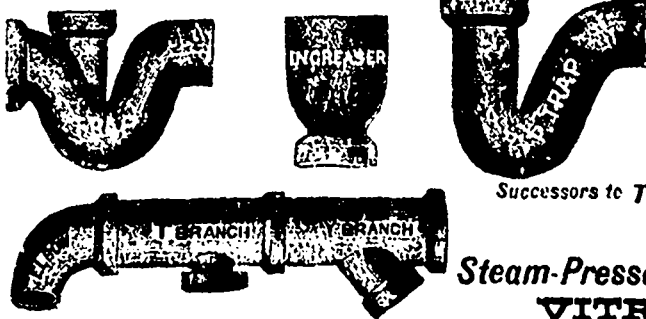
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- To enable those in all branches of manufacturing enterprises to act in concert as a united body whenever action in behalf of any particular industry, or of the whole body, is necessary.
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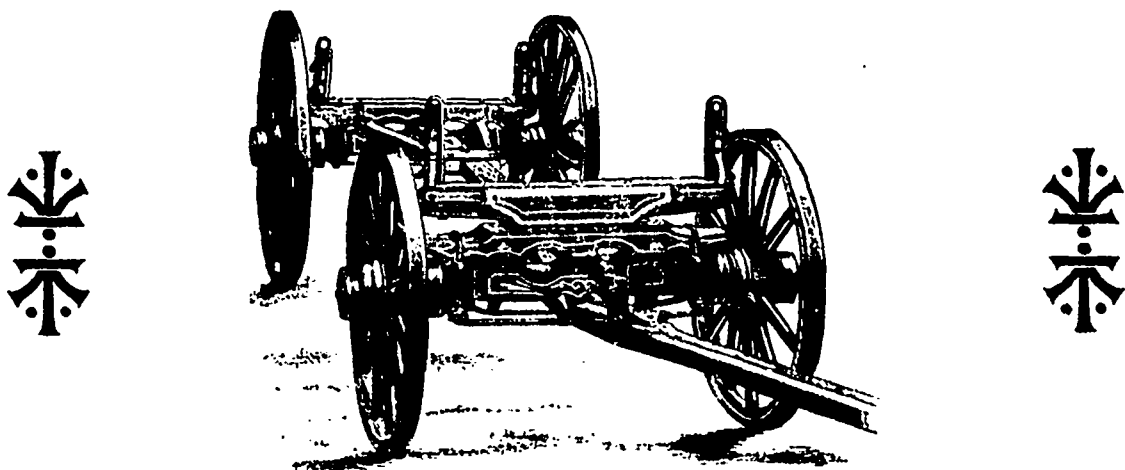
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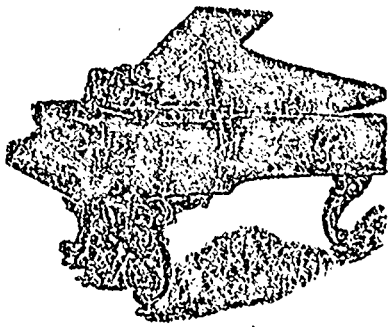
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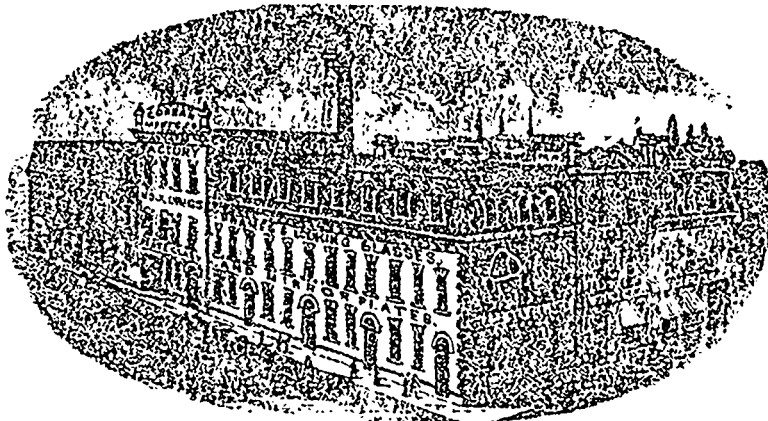
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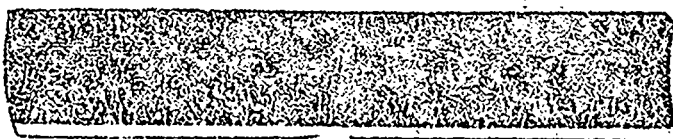
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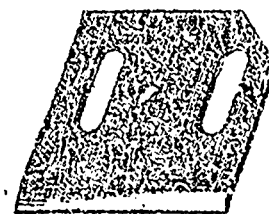


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