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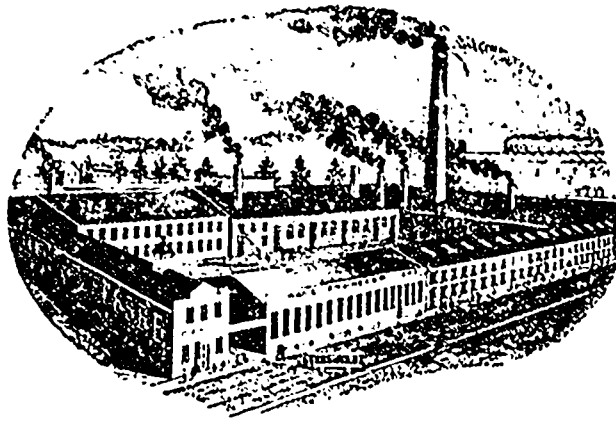
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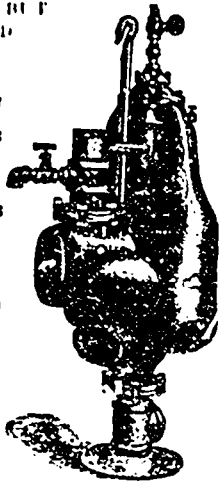
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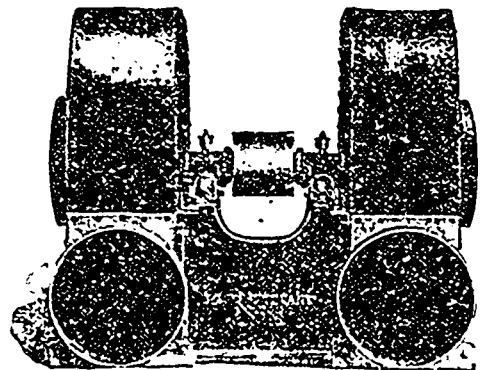
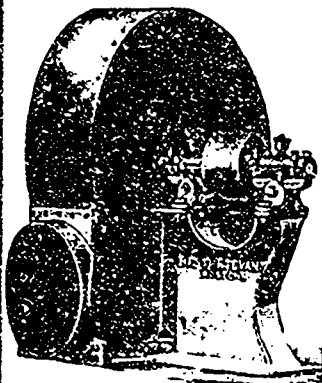
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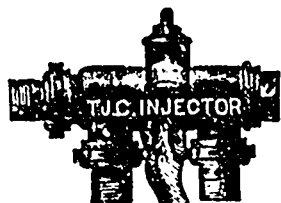
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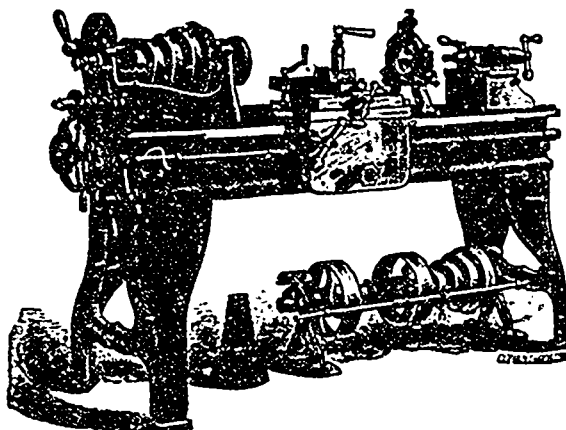
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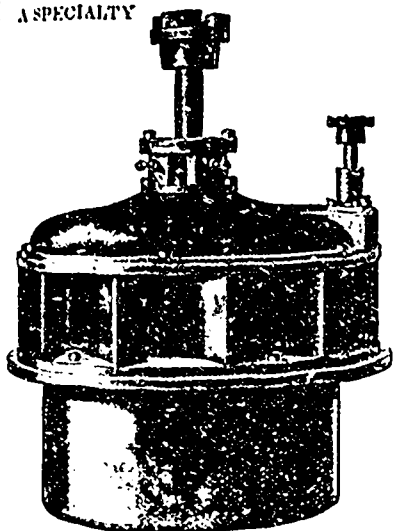
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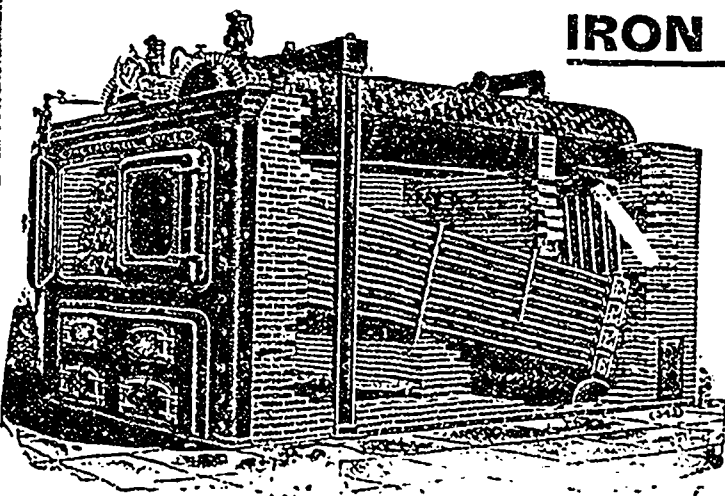
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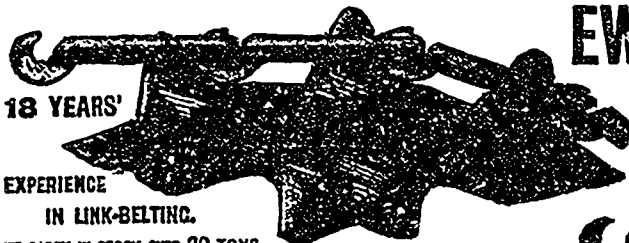
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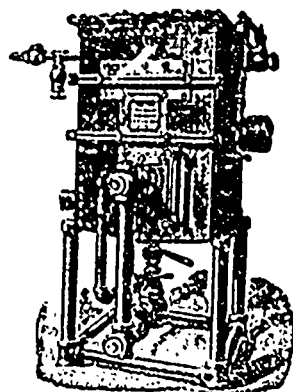
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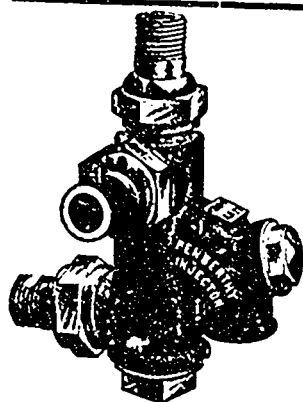
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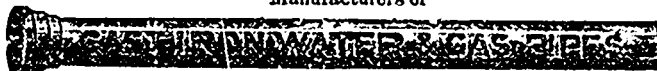
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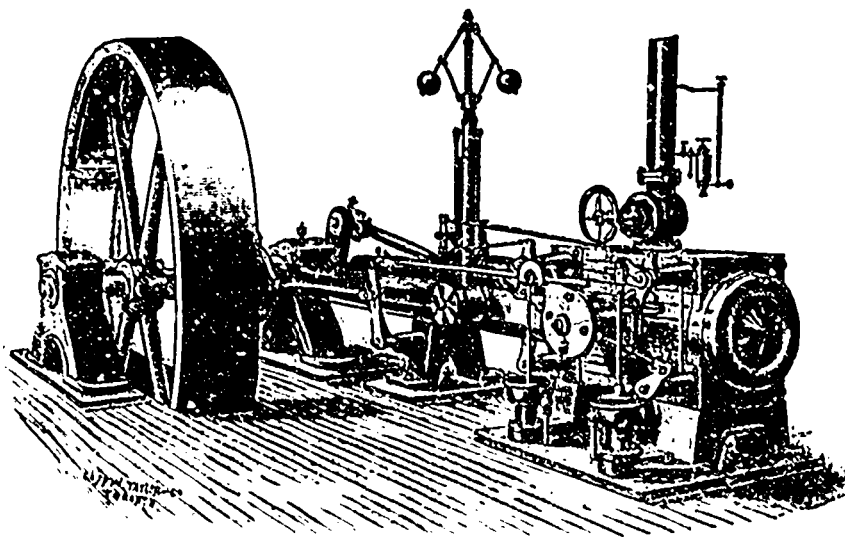
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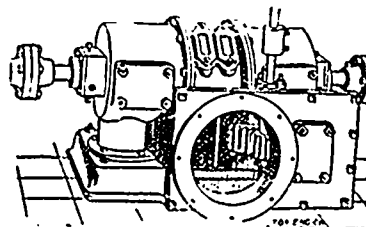
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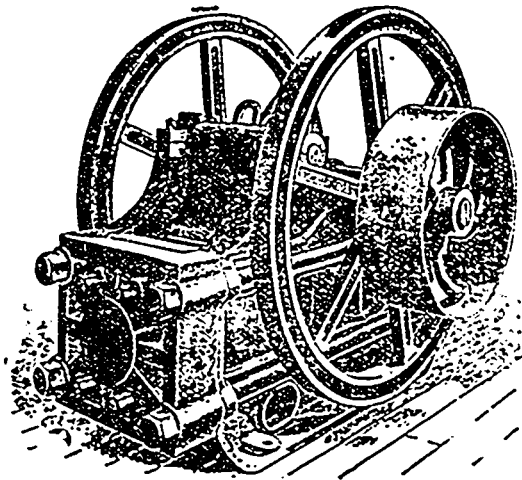
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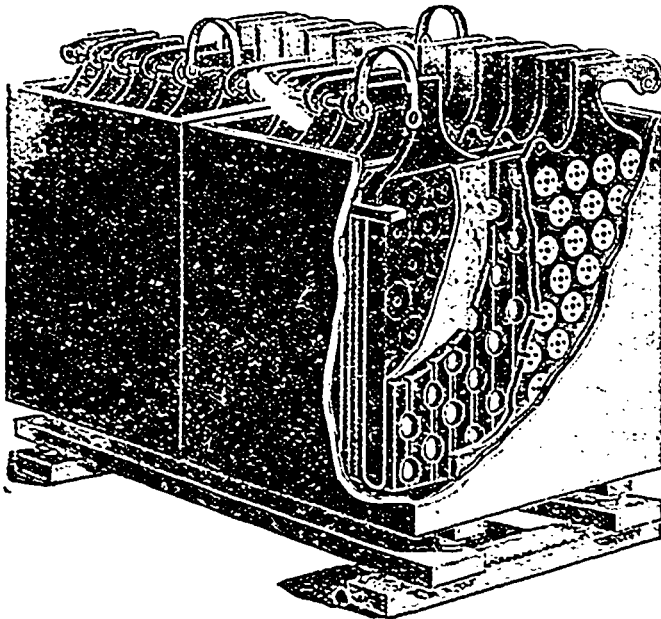
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AS TO ARCHITECTS.

The bill to amend the Ontario Architects Act, which is, we believe, now before the Legislature, is a remarkable document which if enacted into law will confer some remarkable privileges upon those in whose favor the legislation is asked. The Mail and Empire seems to be championing the bill, and educating public sentiment in its favor; and while it advances some good arguments why the bill should be passed, it fails to point out some of its glaring defects. We admit the undesirability of having buildings designed by incompetent men; and agree that those who superintend the erection of large edifices should be able to calculate the strains

to which they may be subject, and we also agree that no man ought to undertake the erection of buildings who has not passed a proper examination as to his knowledge and ability as an architect, and that such examination should be by a board of competent men. If there is no law covering these points there should be one passed without delay; but the proposed act now before the legislature seems to be drawn more with a view to restrict the increase in the number of those who may desire to pose as architects, thereby keeping the business in the hands and control of the few, than to impose penalties upon those who may be licensed, or registered as architects, but who, either through incompetence or neglect, fail in their duty or in what is expected or required of them. There is certainly just as much reason for men practising as architects understanding their business as for physicians to understand theirs. It has been frequently proved that an architect's bungle may mean the loss of many lives, or the maiming or breaking of people's limbs; and it may be that the tendency of the proposed legislation will be to minimise the amount of this kind of manslaughter and misery; but it does not aim at making culpable ignorance or neglect or bad planing on the part of the architect a penal offence. If bad architectural planing results in manslaughter and misery, as our contemporary puts it, why not provide in the proposed law that the culpable architect shall be punished for the manslaughter committed by him.

We are told that the bill does not aim at making architecture a close profession such as those of law and medicine—that there may be some men, not classed as architects, of constructional ability who may make successful designs for buildings of a modest character, such as cow-sheds and out-houses—and that it is not proposed to interfere with such as these—that they may go on making plans and drawings as long as they like, and they may even style themselves architects by having themselves registered during certain days of grace allowed them after the passage of the act, which is allowed for all and sundry who practise as architects to come under the aegis of the profession, and by paying a certain fee. Even if these incompetent unprofessionals do not register they will not, we are told, be interfered with in their calling, but they may not call themselves "architects," and thereby deceive the public, into the belief that they are what they are not.

This is all right—for the "profession," but somewhat rough for the fellows who may be competent, but who do not happen to be registered and do not find it convenient to pay the necessary fee; and perhaps a little more than rough upon the public who, seeing the conspicuously displayed signs of a so-called architect who may be by law authorized to display such a sign, not by virtue of his attainment as an architect, but because he had paid the necessary fee, employs him to design and superintend the erection of a palace where his knowledge fitted him to design nothing more pretentious than a hovel. So it seems that the payment of a fee of a few dollars may authorize a jack leg to hang out his sign as an architect, and in the eyes of the law to be considered such, and the equal of Sir Christopher Wren, while the failure to pay the fee may prevent a perfectly competent architect from following his profession. And still the Mail and Empire tells its readers that the proposed legislation does not aim at making architecture a close profession.

We are also informed that the bill proposes to raise the

status of the profession and to weed out sham architects—that in proportion as the proposed law succeeds in reaching these ends it will benefit the public quite as much as the profession. We fail to observe how the status of the profession is to be raised, or how sham professors are to be weeded out, while both impostors and incompetents are allowed to remain and proclaim themselves as architects upon the payment of a certain fee. We have knowledge of the fact that disastrous collapses of buildings have occurred in different parts of the country because of faulty construction—it was only a year ago that Toronto architects testified in this direction in connection with such occurrences in this city: but it was never charged that the collapsed buildings had been designed by incompetent architects, though such might have been the case. As the Mail and Empire remarks, proprietors and building committees are frequently easily taken captive by a moderate exhibition of facile draughtsmanship, and that questions are not always asked as to the capacity of the designer; and it goes without challenge that the designing of large buildings that have collapsed has been but too frequently entrusted to architects who might well have been called to answer in criminal courts for manslaughter for deaths caused thereby.

It is to be hoped that the legislature will not act precipitately in considering the bill that it has been requested to enact into a law.

THE N.P. AND THE LOAD IT CARRIES.

The National Policy has many sins to answer for if we are to accept all that its enemies charge against it. For instance a writer in *The Globe*, to analyze his argument seriatim, attributes to it the sentiment that impels Canada to maintain her militia system, military schools and colleges; build drill sheds, have camps of instruction, field and garrison artillery competition; clothing, food, etc., for the soldier boys when on duty; to keep up a mounted police system in the territories and sections where turbulence is apt to break out; that builds monuments to the memory of soldiers who died in defence of their country; that teaches patriotism in the public schools; that makes us celebrate the anniversaries of our battles; that places commercial agents in different business centres of the world; that blames the Government for not having more such agencies; protects our industries against the unfair competition of other countries; that gives us protection that does not protect; that gives us ultra protection; that makes millionaires of our manufacturers; that impoverishes those who invest their wealth in manufacturing industries; that gives us rapid and certain communication over the face of land and water; that does not give us the necessary facilities for transportation; that forces our banks to loan money at ruinously low rates of interest; that obliges our manufacturers and business men to pay ruinously high rates of interest whenever they may desire bank accommodation; for giving us departmental stores where merchandise is sold at such low prices as to drive the smaller dealers into bankruptcy; that forces consumers to pay more for their merchandise than they ought; that induces some manufacturers to operate their works long hours to enable them to engage in foreign trade; that forces other manufacturers to close their works, or to operate them on short time and low wages; that as a result of the National Policy we elect military men, lawyers, etc., with their limited knowledge of com-

mercial matters, but with evident weakness for display, to our Parliaments to adjudicate upon trade questions; that manufacturers and practical business men who uphold the National Policy are not sent to our Parliaments, and so on to the end of the chapter. Really the N.P. is a terrible fellow.

BEET SUGAR.

Our esteemed free trade contemporary, the *London Advertiser*, says:

The talk of growing sugar beets in Western Ontario continues. It may come to something one of these days. In other countries the beet sugar development has been something wonderful. It is a growth of the present century, in a territory that did not yield a pound of sugar, and has reduced the price of the sugar supply to an extraordinary degree, almost displacing cane sugar. Contrast the main crops of each, according to Mr. Licht's estimates for 1895-6:

	Beet Sugar. Tons
Germany.....	1,560,000
Austria-Hungary.....	770,000
France.....	670,000
Russia and Poland.....	670,000
Belgium.....	230,000
Holland.....	100,000
Other countries.....	130,000
Total.....	4,130,000
	Cane Sugar. Tons
Java.....	540,000
Cuba.....	400,000
Louisiana.....	270,000
Philippine.....	230,000
Brazil.....	220,000
Hawaii.....	190,000
Other countries.....	690,000
Total.....	2,540,000

The "other" sugar cane countries are Demerara, Peru, Egypt, Porto Rico, Barbadoes, Trinidad, Guadaloupe, Martinique, Jamaica, Roumania, and the Antilles. The cheapness of last year came from immense stocks of January, 1894.

Certainly the growing of sugar beets in Ontario "may come to something one of these days" if it receives proper encouragement, and we urge upon the *Advertiser* to help and hasten the coming by advocating the encouragement by saying whatever it can in its favor. There is no country enumerated in the above list as a producer of beet sugar any better calculated for the business than Canada, perhaps not as well. The *Advertiser* knows, or ought to know, that sugar beets grow at Leamington, Ont., and on the Ontario Agricultural College farm at Guelph, Ont., last year, and which were analysed at that farm by a government analyst, showed exceeding saccharine richness. A copy of this analysis that was sent to interested parties in Germany, has elicited the statement from them that "The analyses of the sugar beets of which you enclose a return are indeed wonderful. They prove beyond peradventure the adaptability of your soil for the successful cultivation of the sugar beet."

And yet, with the knowledge of the wonderful productiveness in sugar of Canadian grown beets, and the adaptability of Canadian soil for the business, as so frequently demonstrated, with the exception of what is being done in the Province of Quebec, Canada has taken no stand as a producer of sugar. The Trade and Navigation Returns for 1895 show that during that fiscal year the imports of raw sugars into Canada aggregated 310,000,000 pounds valued at more than \$6,700,000. This is at the rate of sixty-two pounds, valued at \$1.34 per

capita; and there is no sufficient reason why this large amount of money should not have been earned by Canadian farmers, in producing sugar beets, and Canadian labor in extracting the sugar therefrom, instead of sending it broadcast over the world to pay for labor in foreign countries. Will the Advertiser lend its valuable aid in keeping this wealth at home by advocating the establishment of a Canadian beet sugar industry?

The American Agriculturist, speaking of this industry says:

The best news for American farmers is the authentic report that the three beet sugar factories in California have the past fall turned out 50,000,000 lbs of granulated sugar, while the Utah factory has made 7,500,000. Here is a product worth nearly \$2,500,000. Instead of sending that money out of the country to pay for imported sugar, the people of California and Utah have kept it at home! It has gone into the pockets of their own farmers, laborers, merchants, capitalists and railroads interested in this beet sugar business. The coming fall these factories will probably turn out \$3,000,000 worth of sugar. That sum, too, will be distributed among the people of these states, and thus will be kept where it will do the most good. We rejoice to learn that everything is ready to establish several new beet sugar factories the moment congress puts the sugar tariff in a fair way and then leaves it alone.

BAH!

In a recent issue of this journal, in commenting upon a paragraph from Secretary Olney's letter to Ambassador Bayard in which were some highfalutin claims about the United States being practically Sovereign on this continent, we repeated what our esteemed contemporary, The Manufacturer, of Philadelphia, said in maintaining these claims. Among other things of an amusing character it said: "We are masters here because this is our part of the world, and we are strong enough to maintain mastery . . . that we may protect the weak, and keep flying the flag of liberty, and uphold righteousness and equity. Having irresistible power we also have a sacred calling to use it that justice may reign." All this sounds very nice, but we enquired "who ever hears of the observance in the United States, of any rights of a negro that a white man is bound to respect? To accuse an American citizen of a crime, if he be a negro, is to ensure the filling of his body with buckshot, or a short and futile death struggle at the end of a rope."

It will be remembered that a few months ago, Miss Elizabeth Flagler, a daughter of General Flagler, chief of ordnance, U.S.A., residing in Washington City, the capital of the great American Republic, finding a negro boy named Green, son of a Treasury Department messenger, in her father's garden pilfering fruit, very deliberately with her gun loaded the lad with buckshot, so that he died in short order and without hesitation. This was clearly a case of a white woman committing a dreadful outrage upon a helpless negro of the male gender. Of course the petted darling of Washington society was arrested, but then there were extenuating circumstances, and the young lady was admitted to nominal bail. The extenuating circumstances consisted in the fact that the murderer was a young lady who was a belle of Washington society and the daughter of a gallant Yankee general holding the high position of Chief of Ordnance, and the murdered only a negro boy who, without authority, was helping himself to a few tempting pears hanging upon a tree in the garden of the aforesaid gallant general. According to the law as it is adminis-

tered in Washington, the capital of the Great American Republic, the country, as our esteemed contemporary The Manufacturer states it, that protects the weak and keeps flying the flag of liberty, upholding righteousness and equity, and possessing irresistible power and a sacred calling to use it to the end that justice may reign, this society belle, Miss Elizabeth Flagler, daughter of General Flagler, Chief of Ordnance of the United States Army, was brought to trial in a court of justice a few days ago, charged with the unlawful killing of the negro boy Green for pilfering fruit from her father's garden. The young society lady very graciously condescended to plead guilty to "involuntary manslaughter" and was thereupon sentenced by the complaisant judge to pass three hours of her leisure time in jail, and to pay a fine of \$500. We are informed that the gallant general, her father, forthwith paid the fine, and Miss Flagler was driven to the jail in the family carriage where she was received with great courtesy by the warden, the three hour's term of imprisonment being passed in the matron's reception room in the company of the general and ladies of the family, after which the party returned home.

We would very much like to know how this case would have progressed under a change of circumstances. If Miss Flagler had been detected in purloining fruit from the dooryard of the negro man Green, and the negro boy Green had even used a few cuss words on the occasion, and gone so far as to intimate that the young lady was a thief, does anyone suppose that upon her reporting the occurrence to her society friends the boy would not have been quite as promptly filled with buck shot? It would have been either that or a short struggle at the end of a rope attached to the nearest lamp post. And this in the land of the free and the home of the brave. In the United States it is not even necessary for it to be proven that a negro has committed a crime to ensure his prompt execution by lynch law mobs of the best citizens. An accusation is quite sufficient. At the same time a negro may be shot to death, deliberately and in cold blood, by a society lady in the capital city of the great republic, for pilfering a few pears, and the law is considered as having been fully avenged by the imposition of a nominal fine and three hours imprisonment. Bah!

NON COMPOS MENTIS.

Good Sir Oliver is always exceedingly kind to the Americans. He gives them all the pine logs they want to keep their saw mills busy and their men employed. He has given them exceptional privileges at Sault Ste. Marie, where they have erected a big pulp factory. Sir Oliver has given these Americans a large tract of country from which to take their supply of wood to be made into pulp. The same Americans are now building a large pulp factory on the Michigan side of the Soo, and propose to feed that mill with wood from the Ontario side. It is now in order for the federal government to spoil that little game by putting a heavy export duty on wood intended to be made into pulp. And while the government is at it, it would be just as well if it put a big export duty on pulp. Canada has the whip hand in this matter, and the government will be very foolish if it does not make a move to secure to Canadians the performance of the whole operation of making pulp. Canadian paper mills should be enabled to supply the world.—Hamilton Spectator.

One of the most remarkable features of journalism, particularly of the Canadian style, is that papers that assume to be leaders of public thought, and that seem to think, or desire to have people think they are to some degree posted in matters

that they discuss, really do not know anything that they prate about. The fact is, their isolated ideas allow them to see nothing more than opportunities to make faces at their political opponents. The above is a fit illustration; and it is high time for the Spectator to know that Mr. Mowat does not give pine logs to Americans; and if a reward of a dollar per log were offered for such occurrences, if our contemporary devoted the balance of its life to the search it would not in that way earn the pennies supposed to be required to keep its eyelids closed when dead. What privileges has he given them at Sault Ste Marie that were not ready to be conferred upon any Canadian applying for the same? And then the unpatriotic Sir Oliver Mowat has allowed these grasping Yankees to come into Canada and cut a canal through the solid rock at Sault Ste Marie, and to erect an immense pulp factory there at an expense of hundreds of thousands of dollars. Just to think of it. They get their pine logs at no lower cost than Canadians get theirs, and their ready money goes into the public treasury when slower Canadians don't appreciate their opportunity to purchase. They build saw mills in Canada and thereby give employment to Canadian labor. He graciously allows Yankees to purchase the spruce timber standing in the Algoma district, paying full value therefor, and to convert the same into pulp in their Canadian mills, giving employment to Canadian labor. Surely Mr. Mowat is disloyal in the extreme. And these same Yankees have the temerity to build pulp mills on the Michigan side of the Soo with the idea that they may use Canadian raw material therein. And for all these crimes the Spectator holds Mr. Mowat responsible. In politics the Spectator does not play in Mr. Mowat's back yard, nor does Mr. Mowat slide down on the Spectator's cellar door. Hence this thussness. The Spectator knows that the man who has the ready money with which to pay for Ontario timber limits can have the timber, his nationality cutting no figure in the transaction. It also knows that Mr. Mowat has no right or authority whatever to prevent the exportation of any manner of property from Ontario. It also knows that the Dominion Government alone has that power; and it also knows that it is a vassal and henchman of that Government. Our sometimes sober contemporary in this matter is an exhibition of partyism gone daft.

EDITORIAL NOTES.

An American paper mill concern are manufacturing a high grade of paper which is used for making carpets, rugs and art squares. The paper is about the thickness of an ordinary tissue paper, and after being cut in strips, is twisted tightly and then woven into warps.

THE CANADIAN MANUFACTURER is wrong in a good many points, but it is just right when it comes to gasolene stoves, as it always has a good word to say about them. In its last issue it says: "In fifteen years the number of gasolene stoves in use in the United States has grown from a thousand to over two million." We believe that the number of gasolene stoves in use is a good deal nearer 3,000,000 than it is 2,000,000.—American Artisan.

The state department has instructed consuls in Canada and Mexico to be on their guard against permitting the sending into this country of hides of meat cattle coming from countries where contagious diseases exist unless previously disinfected.

The circular says: "You are directed to thoroughly satisfy yourself as to the actual country of origin of such hides before allowing entry thereof, and, if the hides come from countries where cattle diseases exist, to refuse entry unless evidence is produced showing that the hides have been thoroughly disinfected, or are salted or arsenic cured."

The Pusey & Jones Co., of Wilmington, Del., have just contracted with the Sault Ste Marie Pulp and Paper Co., for lease and lease of power at Sault Ste Marie, Ont., their intention being to build an extensive plant there for the manufacture of pulp and paper mill machinery. The Pusey & Jones Co are one of the largest builders of this particular line of machinery in the world, making a specialty of machinery for making paper in rolls for large daily newspapers, and having a capacity of 500 feet of this kind of paper per minute. We understand that the iron foundry for making the castings for these new Canadian works is about ready for operation, and that the construction of a large machine shop, equipped with the latest and best tools, will soon be begun. Another triumph for the National Policy.

In answer to a request for a statement of the conditions of commerce between the United States and Great Britain before and since the existing tariff law went into effect Mr. W. E. Curtis, Washington correspondent of the Chicago Record, has furnished the following figures: "The imports into the United States from Great Britain during the first eleven months of 1894 were \$110,224,920, and for the corresponding period of 1895 they were \$170,053,601, showing the increase in the amount of merchandise purchased by the people of the United States in England under the reduced rates of duties to be \$59,828,684. The exports of merchandise from the United States to Great Britain during the same period of 1894 were \$351,178,853, and in 1895 they were \$345,997,180, which shows a falling off of \$5,181,664 in our sales since the Wilson bill was passed."

Toronto and Ontario papers print long accounts of the funeral of the late Mr. H. A. Massey, and tell of the esteem in which he was held by the citizens and by his work-people, and of the generous gifts he made to educational and public institutions. The total of these is half a million dollars. When Mr. Massey was alive he was regularly referred to by one section of the same papers as a ringster, a combiner, a tariff baron and a robber. It was Mr. Massey's misfortune in life to have invested his money in a Canadian manufacturing enterprise.—Montreal Gazette.

And it was Canada's misfortune that when Mr. Massey had accumulated a large fortune in a Canadian manufacturing enterprise, largely through the protection afforded him by a National Policy tariff, he endeavored to kick away the ladder by which he had made his millions. It will not be forgotten the efforts that were made to destroy our iron industry by having pig iron, bar iron and steel placed in the free list.

The influence of the big new pulp mill on the Canadian side of the "Soo" has been felt on the market for ground wood pulp in the Fox River valley. The price of pulp in this valley has ranged very high during the past six or eight months, because the lack of water power has made it impossible for the paper manufacturers to grind their own pulp. As high as \$1.25 per hundred pounds has been demanded and paid, and manufacturers of paper have been glad to get pulp even at that price.

At present the quotation is about \$1.05 to \$1.10, and the reason is that "Soo" pulp is shipped into the valley and sold at a cent a pound. And by the way, that price must afford the "Soo" people a very good profit.—The Paper Mill.

And thus doth the National Policy enrich Canada. In the face of the fact that numerous pulp mills exist in the United States, whose dependence for pulp wood is upon Canada, we find that that policy has brought about the establishment in Canada of perhaps as large and important a pulp mill as there is in the world, giving employment to Canadian labor and a source of revenue to the country.

The Welsh tinplate industry is said to be in a precarious condition owing to light demand, particularly from the United States, added to the low prices ruling. The number of mills closing down increases every week, and at the present time but a comparatively small proportion of the total capacity of the Welsh tinplate works is in active operation. The manufacturers claim that they find it impossible to continue working at the present prices except at a loss, which they are no longer inclined to sustain, while the workmen, instead of bearing their share of the burden, are adding to it by striking for the maintenance of the old wage scale which was in operation at a time when the price of tinplates was materially higher than at present.—Bradstreet's.

The manufacture of transparent leather has been for some time past accomplished by different methods, but experiments show, as reported in the Magazine Pittoresque, that, for simplicity and effectiveness, the method described below is reliable: After the hair has been removed from the hide the latter, tightly stretched upon a suitable frame, is rubbed with a mixture consisting of 1,000 parts glycerine of 26B, two parts salicylic acid, two parts picric acid and twenty-five parts boric acid. Before the hide is absolutely dry it is placed in a room which the rays of the sun do not penetrate, and it is saturated with a solution of bichromate of potash. When the hide is very dry, there is applied to its surface an alcoholic solution of tortoise shell, a transparent aspect being thus obtained, and the leather is very flexible.

A nail factory has been started at Brantford, with the latest and most improved machinery. How does this chime with Mr. Paterson's theories of trade with the continent to which we belong? If those theories were to be adopted in Canada, Brantford would be getting its nail supplies from Pittsburg, Pa., rather than encouraging home industry. We have a nail factory in London, but, strange to say, the conductors of it, while taking advantage of the tariff to establish such manufacture, and while boasting of the large number of hands it employs, profess to oppose the N. P., under which only they can make their boast good. What is in the inference? That it is all one to them as merchants whether they make the goods they sell or import them; but they find it better to make them, under the tariff regulations of the country. And thus the N. P. compels those gentlemen to do in their own interest what is also for the interest of the wage-earning people. Is not this reason enough for the N. P.?—London Free Press.

It is always pleasing to find one's predictions verified. At various times during the past few years we have predicted

that the immediate future would witness the development of the paper and pulp industries in Canada, on a very large scale. It was a pleasing duty, therefore, to chronicle the beginning of work on the great pulp and paper making plant on the Canadian side of the "Soo," a year ago, and equally pleasant to make known the fact that a portion of the projected plant was put in operation some two months or more ago. A bit of information that is rather significant comes from that section. It is to the effect that one of the largest and most progressive of our paper and pulp machinery building companies is about to establish a complete plant on the Canadian side of St. Mary's river. In a very short time the Canadians will be able to secure pulp and paper machinery of American design, and embodying American ideas, built on their own side of the border, and without the necessity of paying a duty of 30 per cent. This is an important step in the development of the industry north of the great lakes.—The Paper Mill.

In the Papermaker and British Paper Trade Journal we find a few particulars of what is reputed to be the largest power-loom in the world. The loom has been made by Messrs. Robert Hall and Sons, Hope Foundry, Bury, England, for Messrs. Porritt Bros. & Austin, of Stubbins. It is for weaving woollen dry felt for paper-makers, and has already furnished the first felt (156 in. wide) for the Clyde Paper Company. The reed space is 28 feet and a piece can be woven 27 feet wide. Some idea of the ponderousness of this loom may be obtained from the fact that its total length is 38ft. and its width 11ft., while the approximate weight is about 20 tons. Two sets of pulley blocks were required to raise the hand or slay top. The loom was started without hitch and is working well. It is, it is claimed, the largest power-loom in the world for weaving yarn drying felts—or for weaving anything else by power. We understand that the next largest power-loom in existence was made by the same firm for Messrs. James Kenyon and Son, Bury; it is 26 feet in width, and produces a cloth about 25 feet wide.

A few days ago a deputation of pulp manufacturers waited upon the Government asking for the imposition of an export duty of \$3 a ton upon pulp for the following among other reasons. At the present time there is very little pulp wood in the United States, with the exception of a quantity in the State of Maine, which however is rapidly becoming exhausted. Enormous quantities are therefore being imported into the United States from this country for the use of almost all the paper mills there, but when the product of the Canadian mills enters the United States it is met with a Customs duty, which handicaps the Canadian manufacturers, and constitutes a serious interference with the business. While about 100,000 cords are manufactured into pulp in this country, about 600,000 cords are exported. An export duty, it is claimed, would lead to the manufacture of pulp wood for the United States market in this country, and would lead to the investment here of many millions of dollars, and the employment of from 15,000 to 18,000 men.

In the Ontario Legislature on February 28th in reply to a question by Mr. Marter as to what was the average cost per year for each prisoner confined in the Central Prison for the years 1891-'92-'93-'94 and '95 for provisions and clothing, and also

the average earnings for each of the same years of each prisoner, Hon. Mr. Gibson replied as follows :

	For Clothing.	For Provisions.	Earnings.
1891.....	\$10.36	\$42.60	\$37.38
1892.....	13.69	40.28	23.46
1893.....	12.92	38.02	62.37
1894.....	11.80	28.52	29.18
1895.....	12.49	26.70	68.74
Average per year....	\$12.25	\$35.22	\$44.23

By which it will be observed that the cost for food and clothing averaged \$47.47 per year, and the earnings \$44.23, leaving an average loss of \$3.22 per year per prisoner. If the labor were expended in producing food, clothing, shoes, etc., for prison use, the employment of them thus would be all right; but if they are employed in producing merchandise for the open market, in competition with free labor, it is all wrong.

The State's Duty, published monthly at St. Louis, and edited by W. H. Moore, says in the number for February:—

"Three leading industries are being crippled, and unless the taxpayers demand and secure protection, will be annihilated through the pernicious influence of convict labor. We refer to boots and shoes, harness and furniture. It seems these three special branches of industry, employing thousands of honest wage-earners, are selected as targets for the army of convicts to destroy by the 50c. per day wage process."

The above applies, of course, to American prison methods in relation to that country's industries. To obviate the complaints made by American wage-earners, a few years ago the prison authorities in the neighboring States conceived the happy idea of shipping their convict labor products into Canada. The National Policy, however, has put a special embargo on this class of imports for the protection of Canadian workmen. Under "free trade as it is in England," however, the prison output of continental Europe finds its way into the ports of Great Britain, and lately a commission there has been investigating the question of the injury wrought to British industry, but it is found a most difficult matter to deal with. The free trade policy blocks all remedy, apparently.—London Free Press.

In the issue of The Globe of November 23rd the name of the firm of Sylvester Bros., manufacturers of agricultural implements and harvesting machinery, Lindsay, was inserted in a list of manufacturing firms which had suspended permanently or temporarily since 1879. The fact is that the firm did not in any way suspend business either permanently or temporarily, and that it has no creditors that it has not paid in full with interest. Two years ago the firm asked for an extension of time from its creditors, because farmers were unable to meet their obligations, and the firm was loth to force a settlement on men who were willing and able to meet their engagements if time were given them. The extension of time was granted, and not a dollar of loss has been suffered thereby. The business of the firm has been increasing from year to year, and this year it is doing a larger business than in any previous year. Messrs. Sylvester have a large amount of money invested in the business, a business which requires a large capital consequent upon the lengthened credit given customers. They are doing a good, healthy business, and we hope they may go on steadily increasing in prosperity.—Toronto Globe.

And thus doth our veracious and fair dealing contemporary dine heartily upon crow. In its plain, honest arguments against the manufacturers it will rival Ananias, and wait until the venom of its falsehood has worked all the evil it can before it finds time to atone for the injury done.

In a recent issue the following items appeared:—

When Sir Charles Tupper reaches Ottawa he should give Parliament and the country an answer to the burning question as to where he got his fortune.—Montreal Herald.

There seems to be no doubt now that the Montreal Herald is under the delusion that parliament was called for the purpose of finding out how Sir Charles Tupper made his money. Nothing short of a royal commission on the subject will satisfy the Herald.—Hamilton Spectator.

Regarding which we said:—

Neither a royal commission or any other human invention could ever hope to mend, or change, or reform the assuinity of the Herald or its impertinence. Without courage to make a substantial charge against Sir Charles, and with a due regard for its safety from prosecution for malicious libel, parrot-like it keeps up its innuendos, delighting, skunk-like in befouling the atmosphere with its vile insinuations.

We retract so much as we then said as may be proper, and explain that, in the face of a charge of criminal libel then about to be brought by Sir Charles against the Montreal Herald, the expeditious haste shown by that journal in seeking a hole, crawling therein and pulling the hole in after it, is one of the most remarkable feats of precipitate gymnastics that has come under our observation. Discretion, however, was indeed the better part of valor.

The Sault Ste Marie Pulp and Paper Co., Sault Ste Marie, Ont., who have recently erected at that place what is probably the largest ground wood pulp mill in Canada, own an immense water power on the opposite, or American side of the Sault Ste Marie river which they are rapidly developing, and which they expect to have ready for use at an early day. We understand that already many American manufacturers are planning to locate at the place to utilize the valuable water power as soon as it is developed. When asked concerning these companies Mr. F. H. Clergue, the president of the Canadian company said:—

We have already been corresponding with parties in at least six states for power at our American water power canal. We expect to lease a large amount of our American canal power to companies owning patents for the manufacture of acetylene, the production of which will require unlimited power. So far we have been practically assured of companies in Michigan, Minnesota and Missouri. The American Soo is especially adapted to the manufacture of this gas. The raw material is more easily obtainable there at lower figures than at any other place in the country. While power is unlimited, there is an inexhaustible supply of lime and coal, which is another essential, can be landed there at a very low figure. The product known as calcium carbide is a compressed form of gas. Its weight amounts practically to nothing, and the cost of transportation will be small. The gas will be shipped direct to consumers in tanks, and can be easily stored.

It is to be hoped that some of these American concerns who are about embarking in the manufacture of calcium carbide at the Soo will find it to their interest to establish similar works on the Canadian side for the purpose of supplying the Canadian market.

The demand for pulp for other purposes than paper making is likely to increase largely the next few years, should the various branches of industry, which are constantly cropping up, meet with the success which sanguine inventors anticipate. Whatever opinion may be expressed with regard to these new ventures, there are already a couple of manufacturers in Norway who seem to have struck out in the right direction in the making of marketable goods where pulp



ADDRESS:

ROBIN, SADLER & HAWORTH
TORONTO OR MONTREAL

is the chief factor as raw material. In one of these undertakings the mills employed in making roofing tiles, which are now being shipped to different parts of the globe; the product having gained a reputation for its superior qualities over other tiles in the market. "Norway tiles," as they are termed, are made from wood pulp, which under very high pressure is formed into thin cakes of sizes like the ordinary roofing slates. After a chemical treatment the tiles become hard like brick and attain a deep black appearance, which lends itself admirably to give a soft tone to houses with prominent roofs and gables. It is claimed for the Norway tiles that they possess every advantage of the best slates in the market, their composition makes them light and durable, and they are not so liable to breakage as ordinary slates. They are not subject to any expansion or contraction, and when a roof is once covered with this material, it will stand for a good many years without any repairs whatever. The price of Norway slates is very low, and compared to what other roofing costs admits of a saving of thirty-five per cent., an item of no small importance. Architects who have examined these tiles pronounce them superior as to quality, appearance and price, and the insurance companies appear favorably disposed and stamp the tiles as a very desirable and safe roofing material.

The Question of the Hour is the title of a little brochure issued by Messrs. Bryant & May, proprietors of the Fairfield Works, Bow, London East, England. The important question discussed by this large British manufacturing concern is stated briefly as follows: "If there be one question of greater importance than any other, it is 'How are our working people

to be kept employed?' Down at Bow, in the east end of London, is the largest match factory in the world, where constant employment is found for nearly two thousand workers of the female sex. Notwithstanding the best efforts of an energetic staff to encourage the demand, large numbers of applicants for work are turned away every day, solely through the increase of foreign competition. More than £400,000 (\$2,000,000) worth of foreign matches have been purchased by inconsiderate consumers in this country (England) during the last twelve months. When shall we wake up to the importance of supporting home industries in matches?" This concern asserts that if all consumers in Great Britain would only use their matches they would be able to pay one thousand pounds (\$5,000) weekly in wages to additional workers in their factory. They appeal to the British public to support home industries thereby giving employment to British labor. We commend this remarkable statement of facts to those of our Canadian friends who declare that tariff protection can be of no advantage to the Canadian people. In the British factory here alluded to, some two thousand women and girls find constant employment, and we are told that if Britain would exclude the importation of foreign matches, of which \$2,000,000 worth find their way into that country every year, this one concern by an increase of output would be able to increase their payment to labor \$5,000 per week. As it is the British public pay that amount to the employes of match factories in Sweden, Germany, and other countries where labor is cheaper than in England.

FOR SALE 40 inch Set
WOOLLEN MACHINERY In good running order
 Must be sold at once **LONDON WOOLLEN MILLS, London, Ont.**

The Royal Electric Co'y

MONTREAL, QUE.

Western Office.... TORONTO, ONT.

S.K.C. Two-Phase Alternators

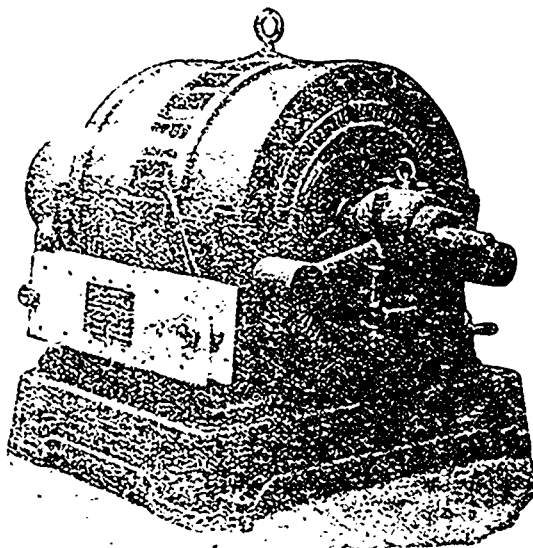
Incandescent Light, Arc Light and Power from same Dynamo and Circuit.

Highest Efficiency

Best Regulation

Slow Speed

Least Attention



No Collector

No Moving Wire

No Exposed Parts

No Compounding

S.K.C. 50 Kilowatt Two-Phase Generator.

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.

Tilley, Ont.—Butter factory.—The Tilley Creamery Co. will build and equip a butter factory.

North Sydney, N.S.—Mining, etc.—The Victoria Tripolite Co. are applying for incorporation with a capital stock of \$7,000 to mine and manufacture tripolite, clays, etc.

Victoria, B.C.—Brush and Broom factory.—Messrs. Wood & McKay will start a brush and broom factory.

Belleville, Ont.—Cigar factory.—A cigar factory will be erected. Address the Mayor.

Port Hope, Ont.—Lace factory burned. Buckle & Sons' factory March 10th. Loss about \$6,000.

O'tawa.—Paper box factory.—Messrs. Thoburn & Co. will establish a paper box factory.

Lake Megantic, Que.—Saw mill burned.—E. F. Keeno of Sherbrooke, Que.'s mill burned Feb. 20th. He will rebuild immediately.

Orangville, Ont.—Factory burned.—The McMaster Mfg. Co.'s works, March 7th. Loss about \$10,000.

Ormond, Ont.—Cold storage building.—John McConnell is erecting a cold storage building.

Takush Harbor, B.C.—Saw mill.—The Takush Harbor Lumber Co. will erect a saw mill with 50,000 ft. capacity.

Newmarket, Ont.—Electric plant.—The town has decided to raise \$9,000 to erect and operate an electric plant.

Vancouver, B.C.—Cannery.—The Anglo-American Canning Co., are applying for incorporation with a capital stock of \$30,000.

Toronto Pumping engine.—Contract has been awarded to the Northey Mfg. Co. for supplying pumping engine at the Island to cost \$2,260.

Albert, N.W.T.—Woolen mill.—A woolen mill will be built. Address the Mayor.

Stanbridge East, Que.—Tannery burned.—H. C. Hall's tannery March 5th. He will rebuild at once.

Waterville, Que.—Furniture factory.—A large furniture manufacturing company is being formed. They will buy all machinery of the latest and most approved patterns. The Mayor will give information.

Toronto.—Motor cars.—Seventeen open motor cars are now being built for the Toronto Street Railway Co.

Montreal—New Engine—The Standard Shirt Co., have placed a 100 h.p. Wheelock engine in their factory.

Somerses, Que.—Saw mill burned.—Francis Rousseau's saw mill March 3rd. Loss about \$3,000. He will rebuild immediately.

Toronto.—Electric works.—The Royal Electric Co. have rented the vacant store immediately south of their premises on York St., and by removing the partition wall have doubled their office and show-room accommodation, besides adding much to the attractiveness of their establishment.

Montreal.—Street railway.—The Montreal Street Railway Co. will make some extensions to their car sheds, power house, etc., besides laying considerable additional track.

Portage la Prairie, Man.—Mill and Elevator.—The Lake of the Woods mill and elevator will have a stone foundation put in this summer.

Woodstock, Ont.—Bicycle factory.—The New Barnes Cycle Co. have been incorporated with a capital stock of \$25,000. Mr. S. G. McKay is president and Mr. R. M. Ball secretary and treasurer.

New Westminster, B.C.—Twine factory.—A twine factory will be erected. Mr. Jenns can give information.

Quebec, Que.—Cold storage.—The Quebec Cold Storage and Warehouse Co., have been incorporated with a capital stock of \$50,000.

DRY KILNS

and HEATERS

CHEAP

One Second-hand Sturtevant Heater, 1,000 feet one-inch Pipe and Fan to match, has been used only about four months.

One Sturtevant Heater, 5,500 feet one inch Pipe and Fan to match; in first-class order.

The above have been used in lumber dry kilns, but are also applicable to heating buildings, etc.

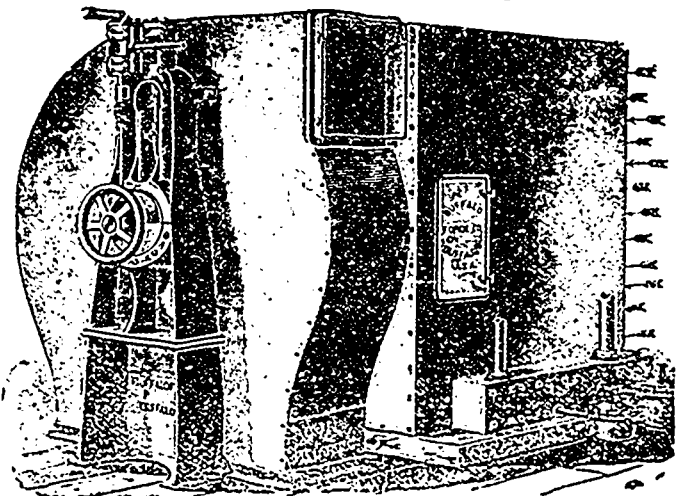
For Prices and full particulars, address

McEACHREN

Heating and Ventilating Company

GALT, - ONTARIO

Buffalo Lumber Dry Kilns



THE LARGEST DRIER IN AMERICA IS EQUIPPED WITH A "BUFFALO" HOT BLAST APPARATUS. THE OWNERS ARE ENTHUSIASTIC.

All users of Buffalo Kilns write letters similar to this one: "The Kiln answers every purpose to perfection; the Dry Rooms are run with exhaust steam at mere nothing in the way of cost, compared with the old way. Your arrangement is very simple and easily managed, besides being a money saver in operation. We are able, with the Kiln you sent us, to dry soft woods in three days, and hardwoods in five days. That's good enough for anyone."—SMITH BROS., Sayre, Penn.

Send for Catalogue.

Buffalo Forge Co., Buffalo, N.Y., U.S.A.

SOLD IN

Toronto, Ont., by H. W. Patrio.
 Brantford, Ont., by Canadian Machinery and Supply Co.
 Montreal, Que., by Canada Machinery Agency.
 Chicago Store, 22 and 24 West Randolph Street

The Anderson Furniture Co., Woodstock, Ont., will build a saw mill with 60,000 feet capacity.

W. J. Gibson, Gananoque, Ont., will go extensively into the manufacture of gloves.

The Empiro Carpet Co., of St. Catharines, Ont., inform us that they are now putting in a new fourteen horse power electric motor, also five power looms, and they are working night and day to complete their orders.

Dundas, Ont. - Factory. - Mr. Stevens, formerly of Macgregor, Stevens & Hamilton, Galt, Ont., was in Dundas a few days inspecting some vacant factories with a view to purchase. His intention is to manufacture special machines for export.

We have received from T. Draper, Petrolia, Ont., his new circular in which are many letters from those who have purchased his valve tools. We observe these letters are from various parts of Canada and the United States, and all speak very highly of them. He informs us that his trade in these goods is increasing very rapidly. He directs the attention of steamboat owners and engineers who are about fitting out their vessels for the season to these tools, and that it would be worth their while to write and get particulars regarding this useful device.

Meadows & Co's woolen mill at Woodstock, Ont., is being equipped as a bicycle factory.

The Montreal Cotton Co., Valleyfield, Que., has just placed in position a new boiler made by Jno. MacDougall, Montreal. It is a Lancashire boiler, 7 feet 6 inches in diameter, and 30 feet long, weighs 18 tons, and is the second of the kind with which Mr. MacDougall has supplied the company during the past year.

A company has been formed in Goderich, Ont., to be known as the Kensington Furniture Co., for the purpose of taking over the stock and machinery of the Kensington Furniture Co. of London, Ont., and removing the same to Goderich. They will erect factory buildings 110 x 60 ft., of white brick, and will put in the latest and most improved machinery. Mr. William Hinton is manager.

Aylmer, Ont. - Canning factory. - The Aylmer Canning Co. will build a brick addition to their Hamilton factory and a frame addition to the one in Aylmer.

Halifax, N.S. - Electric railway. - The initial trip of the electric street railway proved quite successful. The generators are operated by a 300 h.p. Robb-Armstrong compound engine.

Montreal. - Wall paper factory. - Messrs. Watson & Foster will build an additional wall paper factory 325x106 ft., and an additional warehouse 108 feet square.

Ridgetown, Ont. - Railway. - Stockholders in the Crystal Beach Improvement Company held a meeting a few days ago, and subscribed \$4,500 for the erection of the Beecher single rail elevated railway scheme. Work will be begun on the new road immediately. If the experiment proves the success anticipated, it will be extended down the beach to Point Abino, and perhaps to Niagara Falls, Ont. The line now projected must be completed by May 15th next.

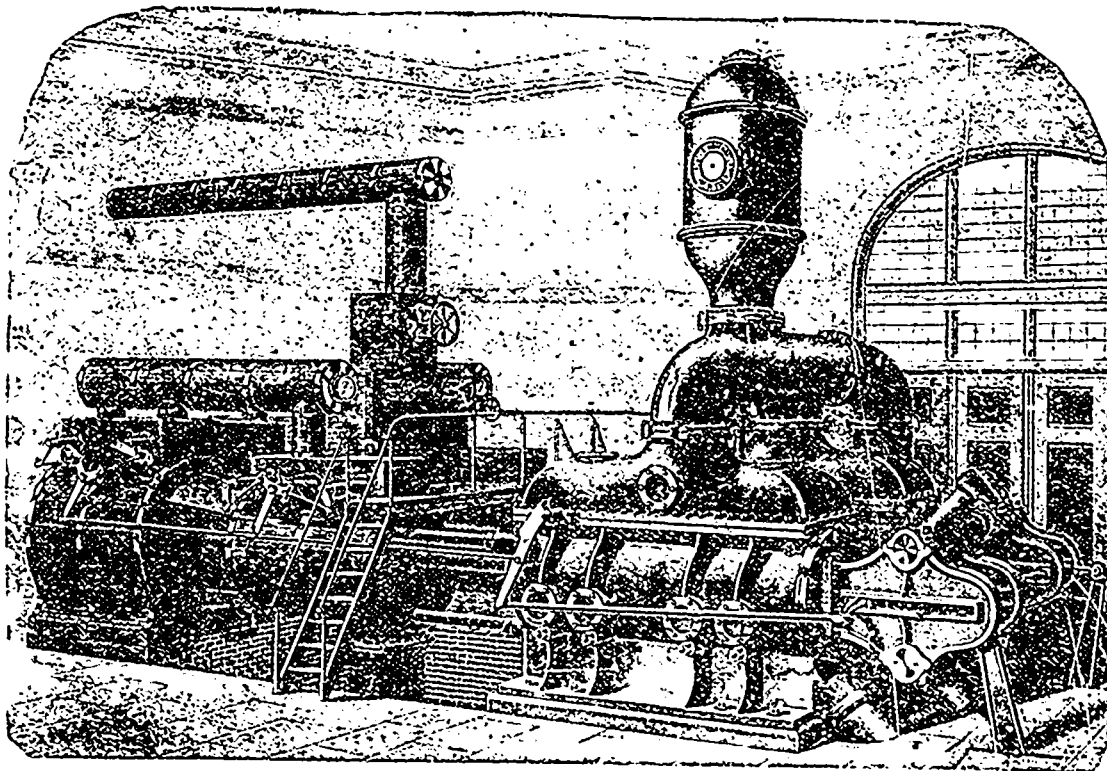
Brantford, Ont. - Engene Works. - The Waterous Engine Works Company received a cable from London a few days ago closing for one of their largest portable saw mills, for South Africa, including a seventy h.p. engine with locomotive boiler, heaviest saw frame with top saw attachment, taking a seventy-two inch lower and forty inch upper saw, girder steel carriage to carry logs six feet diameter twenty-five long, of the heaviest hardwood, carriage actuated by steam feed. On the same day they sold one of their smallest portable outfits for mule transportations to the mining districts of British Columbia. They have got fully started in their new works in Brantford, and are rushing out a large number of Allis band mills, and other heavy saw mill equipments.

Lequille, N.S. - Manufacturing. - The Annapolis Mfg Co are applying for incorporation with a capital stock of \$10,000 to manufacture barrel stock, hard and soft wood, etc. They will acquire the property known as the Lequille Woolen Mills, situated at Lequille, within two miles of Annapolis, N.S. The main building is three storeys high, 60x40 feet, and is strongly and heavily framed. The ground floor is of granite. Power is furnished by a Lefloll Turbine Wheel under twenty-six feet head. The steam that drives the wheel is capable of being developed into 100 h.p. all the year round. It is proposed to put in machinery suitable to supply barrel stock for a new apple barrel to be made of hard wood at a very little, if any, extra cost of the common soft wood barrel.

JOHN M^CDOUGALL

CALEDONIAN IRON WORKS,

MONTREAL, QUEBEC



WORTHINGTON PUMPS ARE UNEQUALLED FOR EFFICIENCY AND ECONOMY

General Agents
in Canada for

THE FAMOUS

Worthington
Pumps

Hydraulic
Machinery

Condensers

AND

Water Works
Supplies

Knox church congregation, of Woodstock, Ont., decided at a recent meeting to erect a new church at the cost of \$35,000.

The Metallic Roofing Co., Toronto, have removed their plant, machinery, etc., to their new factory at the intersection of King and Dufferin streets.

Messrs. Ahearn & Soper, Ottawa, inform us that they have lately sold to the Montmorency Electric Power Co., Montmorency, Que., a 200-light slow speed multipolar dynamo. They have also just supplied a 750-light alternating machine for the lighting station at Pakenham, Ont.

The Packard Electric Co., St. Catharines, Ont., announce to universities, schools and students, and to the public in general, that they are prepared to furnish Crooke's Tubes, in any shape or size according to specifications; and that they have secured the agency from Messrs. Baker & Co., of Newark, N. J., for their barium platino cyanide which is put up in bottles of one gramme each. No one interested in Roentzen rays should be without these articles in their experimental work. The Packard Co. are wide awake and up to the times, and can furnish barium platino cyanide of a quality superior to any of European manufacture. This is the first time, we are informed, that this precious chemical, indispensable in shadow photography, has been made on this continent.

Brockville, Ont. Electric street railway. — An agreement between the Brockville Electric Street Railway Co., and the town of Brockville has been ratified, providing that the work of construction shall be commenced on or before May, 1897, and at least one mile shall be completed, equipped, and in operation within a year from that date. Before commencing work the company has to give security in the sum of \$20,000 that the contract will be carried out, and the corporation indemnified against all damages, costs and expenses in consequence of anything done or omitted to be done in the construction of the work.

Montreal and Toronto. — Leather belting. — The attention of our readers is directed to the full page advertisement of this concern. The man who is so frantically waving the flag from within the big belt is supposed to be George W. Sadler — any one could tell that from the truthfulness of the likeness. The old hay seed granger with the umbrella who looks so admiringly at the belt, and the flag, is George F. Howorth.

Montreal. — Woolen Mfg. Co. The Dominion Woolen Manufacturing Co. have been incorporated with a capital stock of 300,000 to manufacture blankets, woollens, etc.

Montreal. Paper Pencil Co. — The Blaisdell Paper Pencil Co. of Canada, have been incorporated with a capital stock of \$50,000 to manufacture Blaisdell paper pencils, etc.

Elmira, Ont. — Woolen and Felt Co. — The Winger Woolen and Felt Co. are applying for incorporation with a capital stock of \$25,000 to acquire the business of H. & J. B. Winger & Co., and to manufacture woolen and felt goods, etc.

Woodstock, Ont. — Rattan Co. — We understand that there is a company being organized in Woodstock under the name of the Woodstock Rattan Co., to manufacture baby carriages, etc.

Sherbrooke, Que. — Yarn mill — Almost all of the machinery for The Sherbrooke Yarn Co.'s mill has arrived and work will commence soon.

Sherbrooke, Que. — Sash and door factory. — Mr. Geo. Long will erect a sash and door factory 80x55 feet.

Wolfville, N. S. Lumber Co. S. P. Benjamin & Sons are applying for incorporation with a capital stock of \$100,000 to manufacture lumber, etc.

Pilot Bay, B. C. Refining Works. — The Kootenay Mining & Smelting Co. will erect works at Pilot Bay for refining its own bullion.

Derwin, Man. — Electric railway. — Mr. W. S. Adams will build an electric railway from Derwin on the C.P.R. to Winnipeg river, a distance of twelve miles. The water power on the river will be utilized for supplying electricity for the line.

The Port Dalhousie, St. Catharines and Thorold Electric Railway Co. will build eight miles of overhead construction and two miles of track this spring.

In the February 21st, issue of this journal, the following item appeared: "We are informed that one of the electric railways in St. Catharines, Ont., operating some twenty-six cars with General Electric commutators, have an average life of only three months, while motor cars on another road, using another commutator, have an average life of one year." This was published under a misapprehension of facts, and we withdraw the item.

IMPORTANT NOTICE

Crooke's Tubes

Barium-Platino-Cyanide

We take pleasure in informing all Universities, Schools and Students, and the Public in general, that we are prepared to furnish promptly, **Crooke's Tubes** in any shape or size, according to specifications given, and that we have secured the agency from Messrs. Baker & Co., of Newark, N.J., for their **Barium-Platino-Cyanide**. It is put up in bottles containing 1 Gramme, and, for use, is dissolved in 33 parts of water.

No one interested in the Roentzen Rays should be without it in their experimental work. Write for prices on Tubes and the Barium-Platino-Cyanide.

The PACKARD ELECTRIC CO., Ltd. St. Catharines
ONTARIO

N.B. INCANDESCENT LAMPS, TRANSFORMERS, DIAMOND METERS and HOMER COMMUTATORS, furnished promptly.

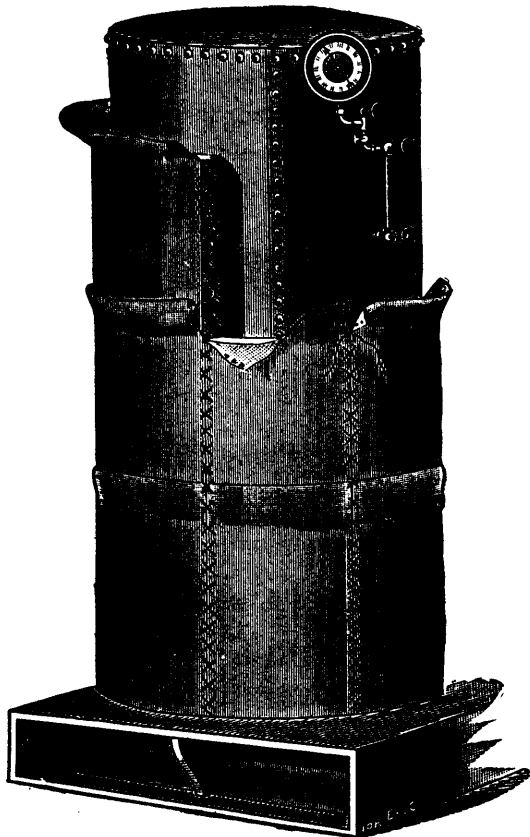
The Electric Launch Co., whose office and works are at Morris Heights, New York City, have sent us a very beautiful illustrated pamphlet descriptive of the electric launches manufactured by them, specially adapted for passenger and ferry purposes, at pleasure resorts and public parks, and as auxiliaries to electric railway systems. The fleet of electric launches at the Chicago World's Fair, built by this company, and exhibited upon a large scale, demonstrated the superiority of electricity as compared with any other motive power for pleasure boats. Electric launches are noticeably clean and free from all noise, smoke, ashes and similar annoyances; and the economic feature of them is that the instant the motor stops the expenditure of energy ceases; and its maximum power may be had at a moment's notice and without waiting to fire and get up steam.

Messrs. Butterfield & Co., Rock Island, Que., have sent us their new 1896 illustrated catalogue and price list, having reference to the special lines of machinists' tools manufactured by them. Descriptions are given of their blacksmiths' stocks and dies; machinists' stocks and dies; pole or fishing tool stocks and dies; Reece's screw plates with adjustable tap wrenches; taper seamers, countersinks, taps for every purpose; bit brace holders; gummer cutters, etc. Allusion is also made to their Chatwin pipe vise in different sizes, pipe cutter wheels, etc. The catalogue is got up in excellent and beautiful style, and should be conveniently at hand to all machinists and blacksmiths.

From an inquiry recently received at the Imperial Institute it would appear that it is not generally known that wood-wool, an important article of packing, is manufactured in Canada. Whilst small quantities of what is technically designated as "wood-wool" have been made in Great Britain, the attempts have not been very successful, and the greater part is imported from Scandinavia, where wood is cheap. Correspondence with the Ontario Bureau of Industries shows that "wood-wool," which in Canada is known as "Excelsior," is manufactured both by the Maitland Excelsior Company of Gorrie, Ontario, and the Ontario Excelsior Manufacturing Company of Chatham, Ontario. Excelsior is made from basswood, and is put up in bales weighing about 80 lbs. each. Small samples and information as to price can be supplied by the Curator of the Canadian section at the Imperial Institute.—Canadian Gazette, London.

St. Johns, Que.—Straw hat factory.—Mr. J. E. Mollur, St. Johns, P.Q., is said to own the largest straw hat factory in the world. The full capacity of the concern is 1200 dozen hats per day—the actual output now averages 800 dozen per day. The number of employees now averages about 250. Girls make from \$3 to 9 per week and men from \$6 to \$16. There is a single shaft in the establishment about 150 feet long, from which are operated 100 sewing machines. Hats are made of every conceivable pattern, and are subject to numerous handlings, such as moulding, stiffening, dyeing, drying, finishing, labelling, etc. Mr. Mollur runs a carpenter and machine shop in an adjacent building, has a small foundry, makes his own boxes and cases, cut his own ribbons and braid, and fairly challenges the world to compete with him either as respects price or excellency of work.

The Bristol Co., Waterbury, Conn., have sent us an illustrated circular having reference to the Bristol recording thermometer for atmospheric ranges of temperature manufactured by them. It will make continuous records of temperature day and night upon a chart revolved once in one week, the instrument intended to be located within a building while recording outside temperatures. The recorder need not be exposed to injurious influences of inclement weather, and may be placed twenty-five feet from the point at which the temperature is to be measured. It is especially adapted for use in observatories, colleges, institutions, clubs, hotels, private residences, offices, cold storage plants, drying rooms, etc. The recorder consists simply of a Bristol recording gauge of the helical tube type. The bulb portion is made up of a series of helical pressure gauge tubes, with their lower ends free and at points of suspension opening into the capillary tube which is shown connecting the recorder with the bulb portion. The system of tubes forming the bulb, the capillary connecting tube and the recorder tube are completely filled with alcohol and sealed under pressure. Changes in temperature at the bulb produce corresponding changes of pressures, which are transmitted to the pressure gauge and recorded on a chart graduated to read in degrees Fahrenheit. The volume of the bulb is proportioned so that the record is practically independent of changes of temperature at the recorder. The expansible form of the bulb portion provides against excessive pressures due to high temperatures. For further information enquire as above.



1895.

The Latest Invention in Coal Saving Appliances

"MICA"

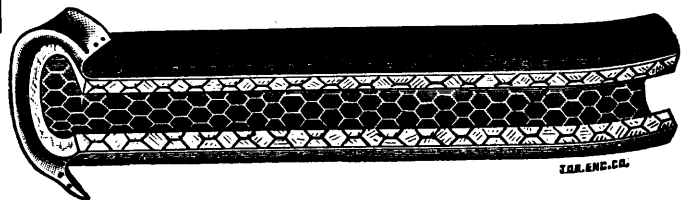
The well-known **Electrical Insulator** successfully adapted as an insulator of **Steam heat. Enormous Saving of Fuel Guaranteed** by the use of **Mica** boiler and steam pipe covering.

Patented

1894

and

1895



Now being used with great success by the Toronto Street Railway Co., Niagara Navigation Co., Toronto Ferry Co., etc., etc. Has been tested and thoroughly examined by the highest authorities and pronounced the most effective in the market. Impervious to the extremes of heat or cold, damp or vibration. Made in any size mats in any shape. Can be applied and removed as often as desired without injury.

SOLE MANUFACTURERS

The Mica Boiler Covering Company (Ltd)

9 JORDAN STREET, TORONTO.

The not uninteresting distinction is claimed for the town of Deseronto, in Canada, where there are several extensive lumber mills, of being partially lighted by gas made from sawdust. In carrying out this plan, as stated, the sawdust is charged in retorts which are heated by wood fire, the gas from the retorts passing into a series of coils, and thence into purifiers, which are similar to those used for coal gas. Lime is the principal purifying agent employed, and when it passes out of the retorts, the gas possesses an odor much less disagreeable than that of ordinary lighting gas, and resembles somewhat that of the smoke from a fire of green wood or leaves. The works in use are small, turning out daily about nineteen thousand cubic feet of gas, for the production of which quantity some two tons of sawdust are required, and a man and boy furnish all the labor that is needed for the purpose. The gas in an ordinary burner gives an illumination of about eighteen c. p., and the best quality comes from resinous woods.—The Paper Mill.

The Pusey and Jones Company has for some time been making paper machinery for Canadian concerns. Canada is to be one of the largest paper and pulp making countries in the world. At present pulp making machinery for Canada is being built at the works in Wilmington. It is a long haul to Canada and at the same time the Canadian tariff on machinery was so high, thirty-five per cent., that it caused the Wilmington company to consider the advisability of forming a Canadian branch, locating a factory in Canada and making machinery for that country within its own limits, so that the duty and the long haul might both be saved. The company organized its Canadian branch and received the backing of some of the best business men of the United States and Canada. It was decided to locate at Sault Ste. Marie for the reason that the place is remarkably well adapted for shipping, being on the ship canal which connects the Great Lakes. It is also the point where the largest pulp mills in the world are located. This and other advantages caused the company to start its new plant there. Work on the new building was begun some time ago. The large foundry has been completed and will probably be put into use.—Wilmington, Del., News.

The Montreal Electric Co., inform us that, referring to a recent application for the incorporation of a concern under the name of Montreal Electric Light Co., the application in question was opposed by the Montreal Electric Co. because of the similarity of names, the contention being upheld by the provincial authorities.

The name under which incorporation of the concern is now being asked, is The People's Electric Light Co., which we are informed is virtually the old St. Jean Baptiste Electric Light Co., under a new name.

Regarding the manufacture of chemical pulp in the Maritime Provinces Mr. Edward Jack, of Fredericton, N.B., writes:— Having been in Richibucto, on the Gulf of St. Lawrence, a few days since, the writer found that Mr. F. Schilde—a German chemical pulp maker, who has been for years in America, a large part of that time engaged as a pulp-mill manager—had been employed by some citizens of that place to estimate the cost of erecting a chemical pulp mill there, to manufacture twenty-five tons per day. This he placed at the sum of \$200,000. Although Richibucto has almost ceased to be a spruce deal exporting port, there are yet great quantities of that wood of undersize which can be delivered to that town by water for the sum of two dollars per cord. One dollar seventy-five cents is now being paid for it on the railway-cars on the line of the Intercolonial for the use of the Chatham Chemical Fibre Company, the only pulp mill in operation in New Brunswick. I find from Mr. Peters, mill owner of Richibucto, that he pays for undersized spruce saw logs at his mill four dollars per thousand feet board measure, which is about equivalent to two dollars per cord. The harbor of Richibucto is very good for small vessels. It is distant by rail (Kont, Northern and Intercolonial) seventy-two miles from the port of Moncton. Mr. Schilde's estimates as to the cost of manufacturing chemical pulp at Richibucto and in the United States are as follows per ton.—

In the United States.		In Richibucto.	
Two cords wood..	\$12.00	..	\$4.00 (6in. and upwards)
300 lbs sulphur ..	2.75	..	2.25 (\$1 if Pynus)
Limestone, ½ ton	.75	..	0.50
1½ tons coal.....	3.75	..	3.75
Labor	10.00	..	5.00
Freight on pulp..	3.00	..	4.00 (all to England)
Keeping up of plant, insurance and other expenses.....	5.00	..	6.50
	37.25		29.00

BRUNNER, MOND & CO., (LTD.), Northwich, Eng.

MANUFACTURERS OF

PURE ALKALI

GUARANTEED 53 DEGREES

BLEACHING POWDER AND

CAUSTIC SODA, 70%, 74%, & 76%

Winn & Holland, Montreal

SOLE AGENTS FOR THE DOMINION OF CANADA.

The Strongest and Cheapest Form of SODA ASH for the Manufacture of . .

SOAP, GLASS, PAPER, WOOD PULP AND COLORS

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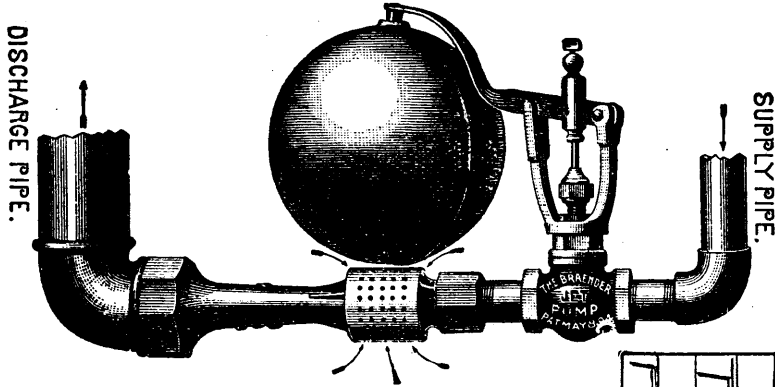
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WE MANUFACTURE AND IMPORT

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Albany Coal Tar Dye & Chemical Co., Albany, N.Y.



THE BRAENDER JET PUMP AND WATER ELEVATOR.

The accompanying illustrations are of the Braender Jet Pump and Water Elevator, manufactured in Canada, by Messrs. Garth & Co., Montreal.

This is an automatic device for removing water from cellars, excavations, wheel pits, or any depressions where water may in any manner, or from any cause accumulate, its construction being such that it will, at any time, and with but a very small amount of water under moderate pressure remove a large body of water, discharging it at a higher level. When idle the supply water is cut off, but

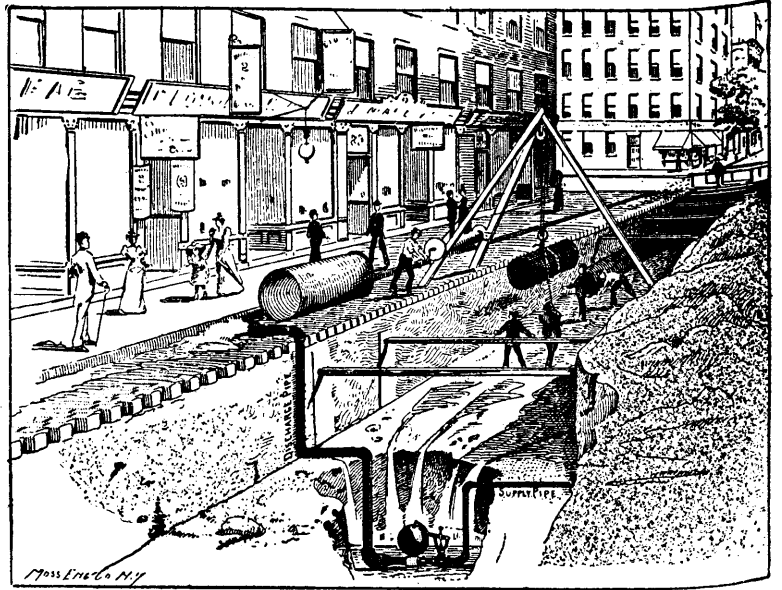
The Braender Jet Pump and Water Elevator. No. 1.

the apparatus commences pumping the moment water accumulates, the operation being automatic.

The simplicity and durability of construction, and capacity in removing large bodies of water, and the rapidity of its operation, are strong features to be considered in its use, as in many places pipe connections can only be made by using Ls and Ts. With this jet pump all such connections can be made without decreasing its working capacity. It is also so constructed that any foreign substance which will pass through the strainer, having openings of an eighth of an inch, will not clog the pump.

The conditions to which this pump may be applied are innumerable and will readily suggest themselves, and its use would be found to be invaluable in excavations in which water collects either from springs, surface or rain; in trenches of all kinds for sewers, drains, gas or water pipes, foundations, etc.

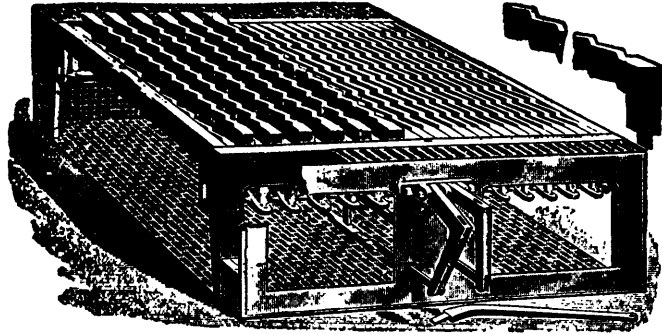
The mechanism is simple, durable, and not liable to injury. It consists of only three working parts. The jet, which sucks and elevates the water to be removed, is constructed of brass (steam metal), will not corrode,



The Braender Jet Pump and Water Elevator. No. 2.

THE VOLCANIC PATENT SHAKING GRATE

MANUFACTURED BY THE GURNEY FOUNDRY CO., Ltd., Toronto.



TORONTO, June 17th, 1895.

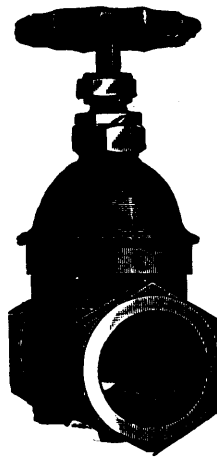
THE GURNEY FOUNDRY CO., LTD., Toronto.

GENTLEMEN,—With reference to the Volcanic Patent Shaking Grates I am glad to say that I am well satisfied with the working of the grates and am convinced there is a very considerable saving of fuel by their use. Since putting in the "Volcanic" we have no clinkers at all, and use common uncleaned slack coal. We only clean out the fire once a week. When shutting down at night, the dampers are closed to shut off the fire and the next morning a few shavings thrown on top with a little fresh coal, is all that is needed to start the fire. This alone adds materially to economy in coal consumption.

My first impression that it was a first-class device and the best I had ever seen has been fully confirmed by the work the bars have done. I have no hesitation in recommending them as the best grate bars I have seen or used since I first entered the engine business eight years since.

F. W. BARRETT,
Late of the Polson Iron Works Co.

THE GURNEY FOUNDRY CO., Ltd., TORONTO.



**THE WEBBER PATENT
-STRAITWAY VALVE-**

For Steam, Water or Gas.

EVERY VALVE TESTED.

The Kerr Engine Co. Ltd.

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SOLE MANUFACTURERS FOR CANADA.
SEND FOR PRICE LIST

TORONTO ELECTRIC
MOTOR CO



BEWARE
of the
PIRATE

A large and pretentious concern doing business in Canada, having no regard for the rights of others, are manufacturing a motor copied, as far as possible, from that made by us, but without the name of the Toronto Electric Motor Co., thereon. Pirates exist in all communities, and the one here alluded to is a big one, sailing under a high-sounding title. The public should be on their guard against the big pirate.

Toronto Electric Motor Co., 107-109 Adelaide St. W.
TORONTO

and being entirely free from working parts, such as plungers, stems, and valves, has nothing exposed to injury or wear. To the pump is connected a double disc brass valve with metal seats and ground joints; requiring no leather or other packing; and as the water to be removed does not pass through this valve, being only used to regulate the supply of pressure water, is not exposed to injury or liable to stick or clog. The valve is operated by a brass lever and copper float-ball, which is so attached to the stem of the valve as to make the opening and shutting of the valve (regulating the water supply) entirely automatic and at all times perfectly reliable.

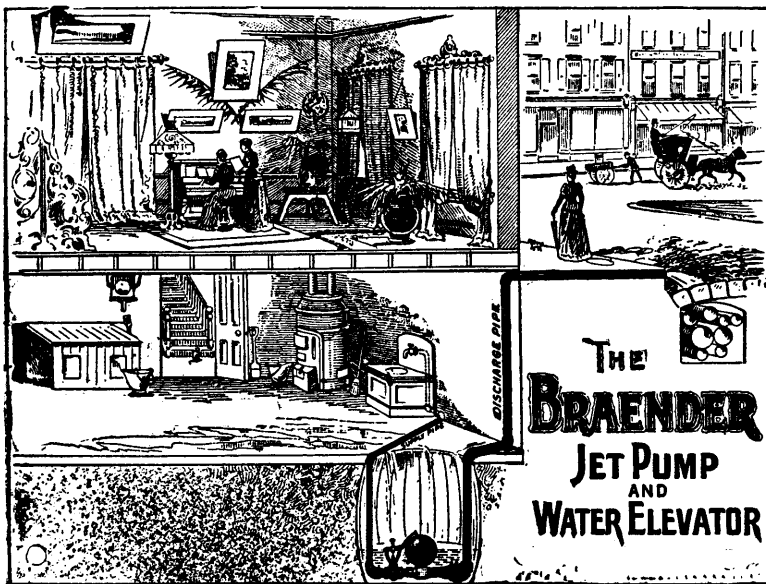
The operation of the pump is very simple. As soon as the water to be removed accumulates the float-ball will rise, which opens the valve, admitting the water under pressure through the supply pipe, which being forced through a small opening causes a vacuum or suction, and draws the accumulated water forcing it and the supply water through the discharge pipe, continuing until all the water accumulated is removed. The float-ball will then fall and close the valve, shut off the water supply and cease pumping, this starting and stopping continuing automatically as water accumulates and is removed.

The power to operate is through a moderate supply of water under pressure. This pressure in the supply pipe may be obtained through several sources. From the service pipe connected with street mains, or from a tank supplying water with not less than ten lbs. pressure, or, for temporary purposes, such as excavations, trenches, cisterns, etc., from connections made to steam or hot air pumps. The greater the pressure in the supply pipe the larger the body of water it will remove in a specified time; and it can be operated with a jet of steam instead of water with equally good results.

Messrs. Garth & Co., Montreal, will give further information.

WOOD PULP IN CANADA.

The Canadians are beginning to realize the advantages they possess for the development of the wood pulp industry. Their country stands perhaps foremost in the world in the possession of a wealth of advantages requisite for the furtherance of such an in-



The Braender Jet Pump and Water Elevator. No. 3.

dustry; namely, vast forests of suitable wood of unsurpassed quality, abundant water-power and rivers for the transportation of logs and produce, besides numerous seaports and low ocean freights to Europe. United States manufacturers have long since gone to Canada for large supplies of wood, recognizing the superiority of the spruce forests, not only in size and quality of timber but in the quantity of standing timber per acre, to those of Maine and New Hampshire.

This denudation of the Canadian forests is likely to be accelerated still further, as it is reported that a number of prominent American capitalists have under consideration the organization of a wood supply company which will endeavor to secure a wide extent of timber land, and undertake to supply the pulp manu-

JOHN FORMAN

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Correspondence Solicited Low Prices on everything in the Electrical Line

Agent, EDISON & SWAN UNITED ELECTRIC LIGHT CO., of London, Eng.

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FOR DIRECT CURRENT INCANDESCENT CIRCUITS,
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NEW CONSTANT CURRENT AUTOMATIC DYNAMO FOR SERIES ARC LIGHTING
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“BLUE SEAL”



“BLUE SEAL” EXTRACTS

For Bottlers.

- “Blue Seal” Distilled Ginger Ale Extract (4 ozs. to 1 gal.), \$5.00 a gal.
- “Blue Seal” Birch Beer (1 oz. to 1 gal.) 5.00 ..
- “Blue Seal” Orange Extract (1 oz. to 1 gal.) 5.00 ..
- “Blue Seal” Lemon Sour Extract (1 oz. to 1 gal.) 5.00 ..
- “Blue Seal” Strawberry Extract (1 oz. to 1 gal.) 5.00 ..
- “Blue Seal” Root Beer Extract (2 ozs. to 1 gal.) 5.00 ..
- “Blue Seal” Cream Soda Extract (1 oz. to 1 gal.) 8.00 ..
- “Blue Seal” Sarsaparilla Extract (1 oz. to 1 gal.) 5.00 ..
- “Blue Seal” Crab Apple Cider Extract (3 ozs. to 1 gal.) 4.00 ..
- “Blue Seal” Cherry Phosphate Extract (2 ozs. to 1 gal.) 5.00 ..

Solubility, Strength, and Flavor Guaranteed.

No charge for packages.

Send for Bottlers' Price-List.

McKEY & CO., BOSTON.



“BLUE SEAL”



facturers of the United States with wood. Such a state of things ought to be regarded with regret by Canadians, seeing so vast a percentage of their spruce wood pulp material being removed without any perceptible advantage accruing to them, when with so much plentiful labor and so much efficient water power, they are in a position to make cheaper wood pulp than other countries and to insure to themselves a great source of wealth.

It appears to be a question which ought not to require a deal of deliberation on the part of Canadian statesmen. There is of course, a ready market for the cordwood, but it is not taking the fullest advantage of the country's resources, nor does it in any way tend to a country's development to depend so exclusively on the exportation of a raw product. A much greater profit would be derived by protecting the wood by an impost of export duty and then manufacturing the raw material into a marketable commodity. The one or two firms that have been enterprising enough to commence the manufacture and exportation of wood pulp have successfully faced Scandinavian competition, the high quality of it insuring a ready market.

It is rumored that the government is considering the question of an export tax; the imposition of such a duty is the only way of preventing the wood from being shipped out of the country at the rate at which it is now going, and would also possess the advantages of protecting mills which might be established from severe competition. Given the export duty there is no reason why the pulp making industry should not grow up with great rapidity, and no reason why investors should hesitate to place their capital in such an industry.—Paper Makers' Monthly Journal.

THE BUFFALO FAN SYSTEM.

The Buffalo Forge Co., Buffalo, N.Y., have sent us copies of letters as below regarding their fan system of ventilation and heating which explain themselves:—

Messrs. BEGENT & LYNCH,

January 25, 1896.

Gentlemen,—It gives me pleasure to say that the heating and ventilating apparatus installed by you in the Stamford High School has proven to be entirely satisfactory. There has been no difficulty in keeping the school warm and the air has at all times

been fresh. I say this with more confidence, because the Principal of the school is quite particular on this point, and I should certainly have had it called to my attention if the contrary had been the case, so that experience confirms my own observation. I may add that the workmanship appears to be first-class; that your work was done promptly and in accordance with the specifications, and finally that I have entire confidence in your firm, both as business men and heating engineers. Yours very truly,

SCHUYLER MERRITT,
Chairman Bldg. Com.

P.S.—The apparatus used is the Buffalo Fan System.

Detroit, Mich., March 11, 1896.

THE BUFFALO FORGE CO., Buffalo, N.Y.

Gentlemen,—In reply to you favor of March 7th, would say, we are perfectly satisfied with the working of the Buffalo fan system in our church. It not only heats the building evenly and with ease, but keeps the air pure without disagreeable drafts of cold air.

Sincerely yours, A. B. STORMS, Pastor,
Cass Ave. M.E. Church.

Brooklyn, N.Y., March 11, 1896.

MY DEAR SIR,—I have built several churches during my ministry. The Buffalo fan system introduced into the present Embury Memorial Methodist Episcopal Church is the most perfect for heating and ventilating I have ever known. This system works in both church and parsonage like a charm. This I have said to others who have written me about this same subject, and I am glad to express this commendation directly to you. Any word that I can say to others, you can rely upon words only of highest praises for the Buffalo fan system. I have never had the pleasure of a visit to Buffalo, but when I do I will avail myself of the personal profit I shall get by an examination of your works.

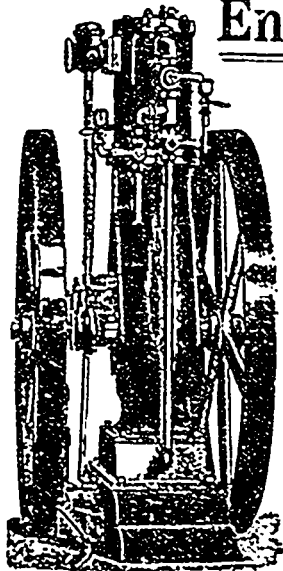
Faithfully truly yours,

WELLESLEY H. BOWDISH,

Pastor Embury Memorial Methodist Episcopal Church.

St. Johns, Que. — Electric lighting.—The corporation of St. Johns are threatening to close their contract with the St. Johns Electric Light Co. unless the service is improved.

THE ELECTRICAL GAS OR GASOLINE...
Engine



WRITE FOR
FILES
AND
TESTI-
MONIALS

J. R. BAIRD

WOODSTOCK, - - - ONTARIO

Firstbrook Bros.

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Top Pins, Side Blocks and Cross Arms. Wood
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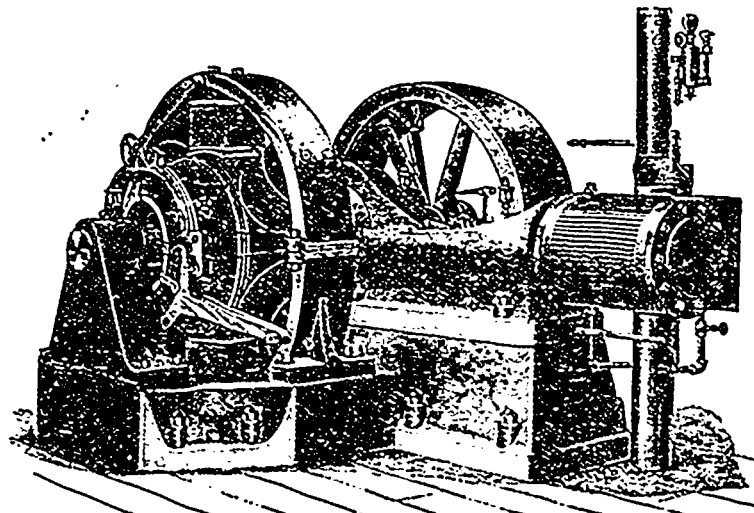
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Simple, Tandem and Cross Compound.

Correct Design



Superior Workmanship

We highly recommend the Robb Armstrong Engine for direct connection to Dynamo.

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THE BOOTH COPPER CO.,
TORONTO, ONT. Ltd.
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CAUSTIC SODA, 60°, 70°, 74°, 76°, 77°; SODA ASH, all strengths;
SAL. SODA; PURE ALKALI, 58°.

Sulphate of Alumina, Borax, Caustic Potash, Hyposulphite of Soda, Bichromate of Soda, Silicate of Soda, Crystal Carbonate, Coconut Oil, Palm Oil, Castor Oil, Cottonseed Oil, Rosin Oil.

ROSIN of all Grades SOAP MAKERS' SUPPLIES
New York Office, 134 Front St.

AUSTRALIA.

Boswell, Son & Gilbert
CANADIAN MANUFACTURERS' AGENTS

Wyonyard Square, Sydney, New South Wales.

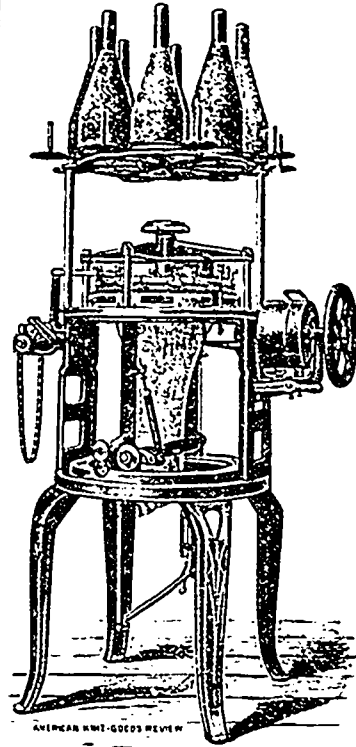
All Communications promptly attended to.

References: { Menzie, Turner & Company, Toronto.
Dominion Suspender Co., Niagara Falls, Ont.

STAFFORD & BABCOCK'S IMPROVED RIB UNDERWEAR MACHINE.

We present to the attention of our readers the new improved underwear machine, manufactured by Messrs. Stafford & Babcock, Little Falls, N.Y.

Perhaps in no other line of machinery has there been more rapid progress during the past few years than in the improvement of circular rib knitting machines. The builders of this machine claim that it excels other machines in the market in point of production, convenience, simplicity, durability, design and workmanship.



The special original features of the "Stafford" have been thoroughly tested by years of service in many of the leading mills of the country, running on all kinds and varieties of stock, and finished product that can be made on circular rib knitters, and have merited the approval of practical manufacturers everywhere.

The cylinders and dials are forged solid, without weld, from the bar steel, and are carefully finished and accurately cut on automatic machinery, especially designed and built for the purpose.

The cam rings are so constructed as to insure all the rigidity of a solid cam ring combined with the convenience of a sectional one, and the cam plates are made with the cams for each feed on separate segments, so arranged as to be readily removed without disturbing the needles.

Stafford & Babcock's Improved Rib Underwear Machine.

The cams are of the best tool steel, carefully tempered and ground after hardening, and shaped with great care to

avoid all possible strain on the bands of cylinder, dial and butts of needles.

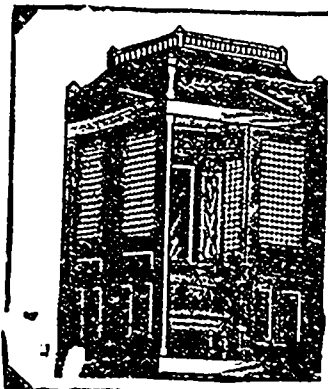
The dial drivers are adjustable from the outside, without in any way interfering with the fabric and have a rolling contact.

The dial arch has four points of support. The shaft is of steel one one-and-quarter inches diameter, and is adjustable vertically only, which renders dial very rigid. The vertical adjustment of dial is regulated by disc, graduated to .01 inch and adjustable pointer.

The take-up has rolls of ample width and is of the "spring" type, worked by an eccentric, driven in an encased gear cut in the bed plate of machine, making a neat, direct arrangement, very sensitive in adjustment and positive in action.

All machines have brake for stopping quickly when belt is shifted.

Great care is taken in the design and construction of these machines. Standard sizes are used throughout and all parts are interchangeable, with material and workmanship the best procurable.



ELEVATORS

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

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

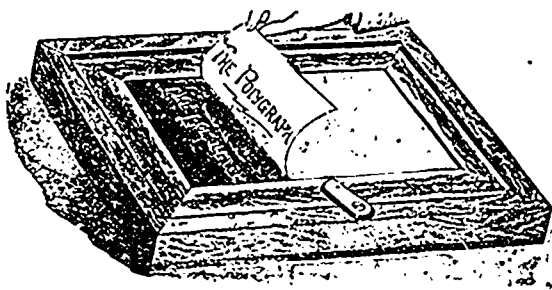
Expensive special machinery, tools, jigs, etc., are used to a large extent in their manufacture, and the makers guarantee them equal, and in some respects superior to any machine of this type now in use.

Messrs. Stafford & Babcock would be pleased to correspond with any parties who contemplate using rib knitting machinery of any kind.

THE STURTEVANT BLOWER.

A Third of a Century of Progress, being a Brief History of the development of the B. F. Sturtevant Co., of Boston, Mass., is the title of an exceedingly beautiful and attractive brochure sent us by that concern. It alludes to the fact that the head and founder of the industry who was, in long years ago, a young shoemaker of Norridgewock, Maine, who invented a machine that would do away with much of the drudgery of the manual labor involved in that business for which he obtained a patent, and who, in 1857, migrated to the city of Boston, Mass., where he interested certain capitalists through whom he succeeded in bringing his invention before the public. The unique feature of the invention lay in the original form of the pegs with which shoes were fastened together before the pegs themselves were placed in the machine. As placed in the machine these pegs formed a continuous roll or strip of wood so cut from the log that a single blow properly struck would shear from the strip a piece the size of a peg, and drive it home in the shoe. Among many other inventions of Mr. Sturtevant was a buffing wheel for smoothing the soles of shoes. The dust created

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RELIABLE, NEAT, CLEANLY, CHEAP

THE BEST YET MADE

75 to 150 Copies in Half an Hour

ELEGANT CASE FINELY FINISHED
SATISFACTION GUARANTEED

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Address, **GEO. H. BURLEIGH**, Manufacturer
GANANOQUE, ONTARIO

The STOREY STEEL MOTOR and DYNAMO

Manufactured by

The Storey Motor and Tool Co.

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The following are some of the advantages for the Storey Motors and Dynamos:

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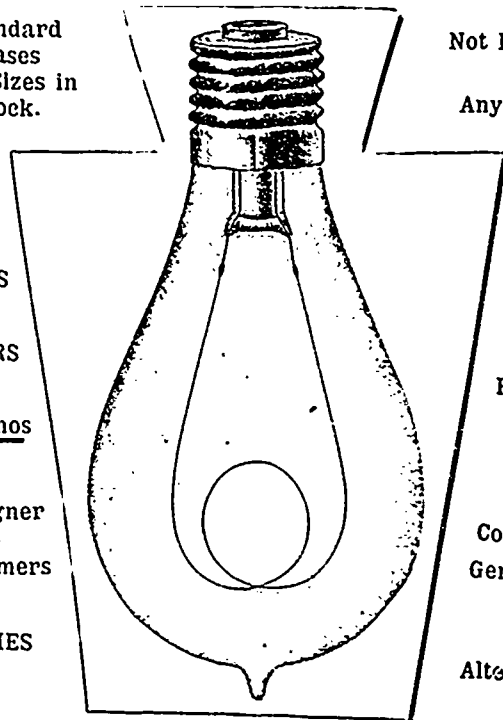
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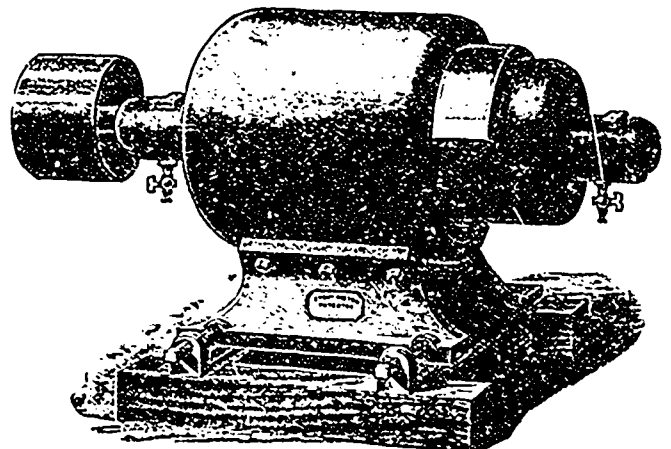
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Walker Steel Railroad Motors and Direct Connected Generators

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in the use of this machine created an annoyance until he invented an arrangement of exhaust fan for drawing the dust away. The success of this machine in drawing away the dust led to its trial for the removal of refuse from wood working machinery, and thence to its employment in handling all classes of light materials, and almost coincident was its application for blowing forge, boiler and cupola fires. Foreseeing even then the vast possibilities of the business Mr. Sturtevant established himself in a small way in Boston a third of a century ago. The success of this business of manufacturing blowers for various purposes was so pronounced that in 1878 Mr. Sturtevant purchased large and more suitable premises at Jamaica Plain, a suburb of Boston, where he erected a substantial two-storey building 225 feet long by fifty feet wide, thoroughly equipped for the manufacture of blowers; and the development of the business soon placed before the public many machines of that character, including blowers with directly connected

steam engine power; steel plate planing mill exhauster; the Sturtevant steam engine designed for driving a fan either by direct connection or by belt from a more distant location; the Sturtevant steam hot blast apparatus for heating and ventilating all classes of buildings, which has now developed into the well-known Sturtevant standard hot blast apparatus. In 1886 the business of the firm required the enlargement of the works by the addition of a foundry measuring 215x115 feet, making the floor space equal an area of about five acres. To-day the fan blower may be found in almost every line of manufacture—in the office, the public building, the mine and the steam ship. These blowers, adapted to every conceivable purpose, are now carried in stock by the dealers in machinery in all the principal centres in all the chief countries of the world.

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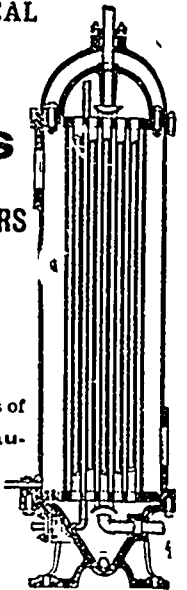
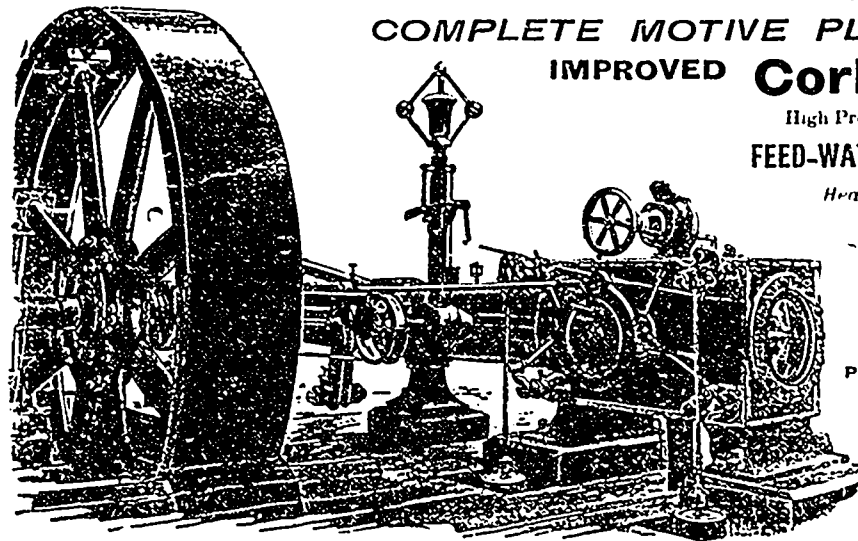
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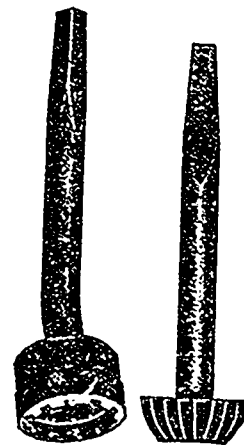


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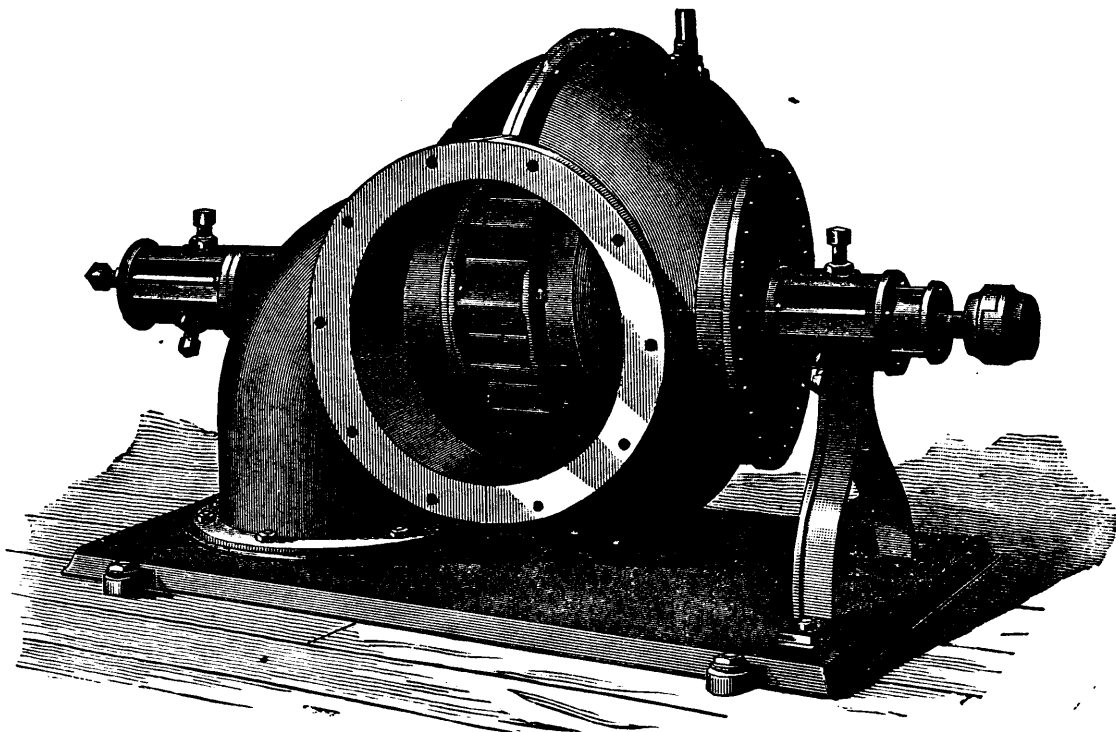
PETROLEA, ONT.

BURNHAM'S NEW IMPROVED STANDARD TURBINE.

In presenting the accompanying illustrations of Burnham's New Improved Standard Turbine Wheel to the readers of the

CANADIAN MANUFACTURER, the makers of it desire to say that it is not a combination of several other turbine wheels invented by different persons, but a wheel formed from the several patented turbines of N. F. Burnham, bearing dates ranging from 1856 to 1890, and is the result and embodiment of more than thirty-seven years experience in manufacturing and experimenting with turbines. Each part is constructed in the best manner by the most skilled mechanics; the adjustments are simply perfect, and each piece of the wheel and case proportioned to the work it is intended to perform, thus securing a perfect whole which has no superior for simplicity of construction, durability, complete workmanship and economy in the use of water. While other turbines are constructed with a view to obtain a large amount of power out of a given diameter wheel regardless of percentage for water used. The Burnham turbine is as near perfection in all res-

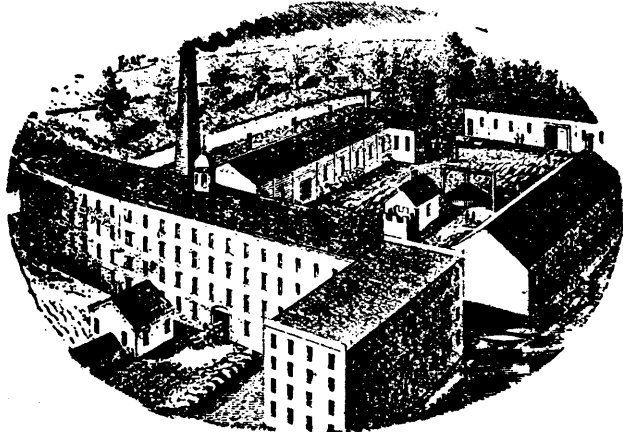
pects as can be made. It is new in principle as well as design, and has been thoroughly tested by actual use during the past twelve years, running all kinds of machinery, and to yield the very highest percentage of power for the water used.



The illustrations show vertical shaft turbine, and one style of horizontal shaft outercased turbine, which latter is so constructed that all adjustments are made from the outside; and by removing the cap on outercase the wheel can be taken out. This arrange-

Weston Woolen Mills.

This valuable Seven Set Mill, including 25 acres of Land, with 10 dwellings, etc., is now offered **FOR SALE**. It contains seven sets of 60 inch manufacturing Cards, 2,500 Spindles (Tatham Mules), 45 Broad Looms, and all other machinery to match. It is advantageously situated on the banks of the Humber River, and has an excellent water power.



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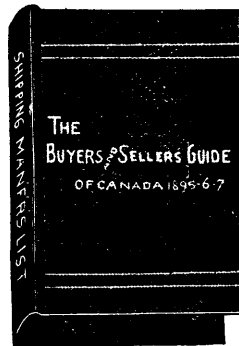
As this fine property is offered at very reduced figures an eminently favorable opportunity is afforded to intending purchasers.

I also have for sale, one set of 48 inch Cards, 2 sets of 60 inch Cards, 4 Tatham Mules, 20 Broad Looms, 2 English Gigs, 2 Chinchilla Machines, Eight 60 inch Shoddy Cards, 2 Fulling Machines, 3 Shoddy Pickers, 1 Rag Duster, etc., etc.

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(Signed), J. L. Buck.

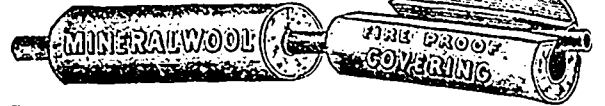
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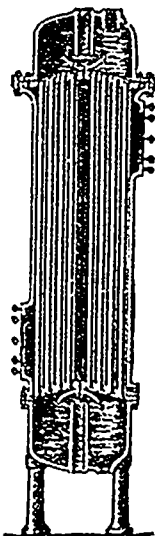
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ment takes very little space, and as all joints are water tight, it can be placed in the same room with the machinery to be run by it. As the entire structure is on a heavy bed-plate, should the timbers under it settle and throw the wheel out of level, the wheel will run free until it can be leveled up, which is very essential with small wheels running at high speed.

We herewith attach the testimonial of Mr. E. D. Tilson, who has been using this make of turbines for twenty years.

TILSONBURG, ONT., February 7, 1895.

Messrs. Burnham Bros. :

Dear Sirs, - In reply to your favor of 4th, I beg to say that I am now using seven of your turbine wheels.

One thirty six inch wheel under sixteen feet head, driving a very large oatmeal mill with eight run of stones, one chopper and one pot barley mill in addition, and a very large amount of machinery requiring seventy-five to eighty horse power.

One thirty inch wheel under twenty-eight feet head, driving pump for town water-works.

One thirty inch wheel under eighteen feet head, driving planing mill, sash and door factory.

One twenty-one inch wheel under sixteen feet head, driving split pea mill with two run of stones and pot barley mill.

One six inch wheel under thirty six feet head, driving pump for private water-works.

One thirteen and a half inch wheel under thirty feet head, driving brick yard.

One ten and a half inch wheel under sixteen feet head, driving elevator and drying pans in oat mill.

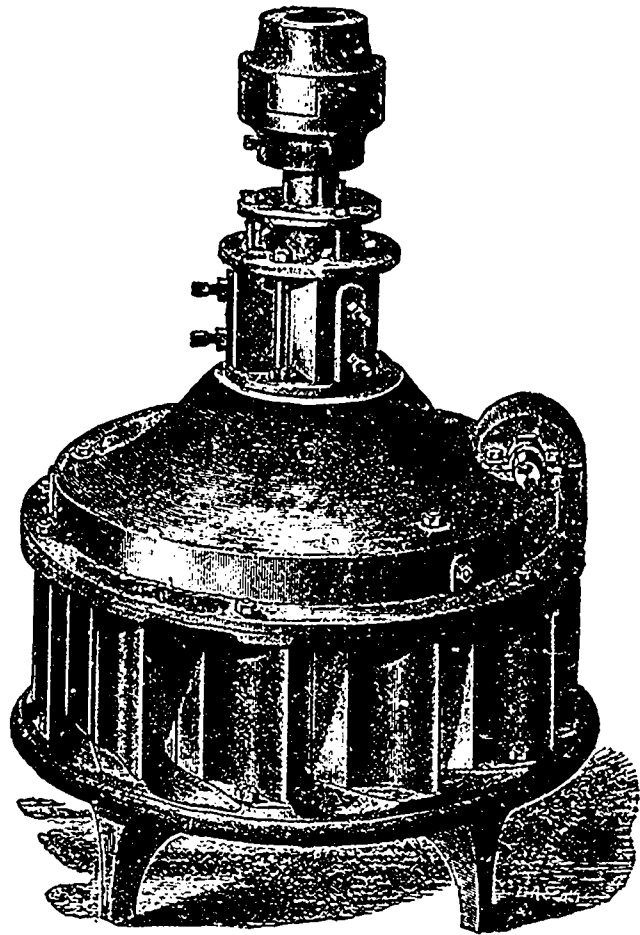
All these wheels are giving good satisfaction and several of them have been running from fifteen to twenty years. Sixteen years ago I took out a thirty inch Lefsel turbine wheel from the planing mill and replaced it with one of your thirty inch wheels, which takes less water and gives more power and much better satisfaction than the Lefsel did. Yours truly,
E. D. TILSON.

We also attach testimonial just received from Messrs. M. N. Stephens & Sons.

GLENCARR, ONT., March 10, 1896.

Messrs. Burnham Bros. :

Dear Sirs, - Your enquiry as to how we like the thirty six inch new improved standard turbine purchased from you, is received,



ANDREW ALLAN
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and we have pleasure in stating that the wheel has given us the utmost satisfaction since the moment of starting. We find it to be very economical in the use of water in proportion to the power derived, and believe that results justify all your claims for it in this respect. The worm gear on gate works perfectly.

To all requiring a first-class water wheel we most heartily recommend your new improved standard turbine.

Yours very truly,
M. N. STEPLENS & SONS.

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New Westminster, B. C.—Electric railway.—The city council has received a communication from Mr. J. Buntzen, secretary of the Consolidated Railway & Light Co., offering to build an electric railway from Westminster to Steveston with a branch to Sapperton, and to locate the central offices and repair shops in New Westminster. A bonus of \$50,000 is asked from the city.

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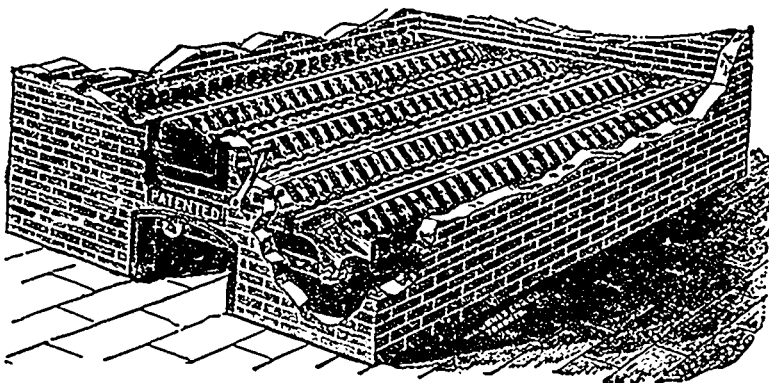
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CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office, from January 3rd to January 13th, 1896.

Information regarding any of these patents made be had on application as follows:—

- Fotherstonhaugh & Co., Bank of Commerce Building, Toronto.
- Ridout & Maybee, 103 Bay Street, Toronto.
- C. H. Riches, Canada Life Building, Toronto.
- A. Harvey, Central Chambers, Ottawa.

Copies of any American patents can be procured from either of these attorneys for the sum of twenty-five cents each.

- 50,942 Suppository machine and mould, Wm. H. Dickson, assignee of Robt. M. Dickson, Ottawa.
- 50,943 Machine for cutting wood, Wm. F. Hutchinson and Edwin Gould, New York, N. Y.
- 50,944 Carpet stretcher, Frederick M. Zander, Dayton, O.
- 50,945 Machine for extracting stumps, John A. Coates, Victoria, B. C.

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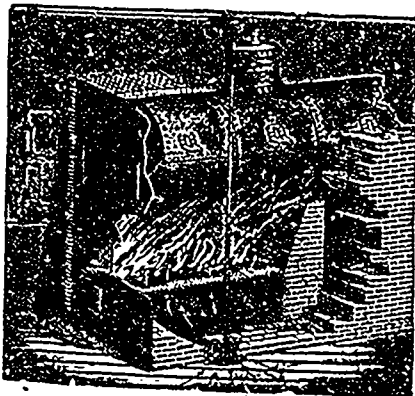
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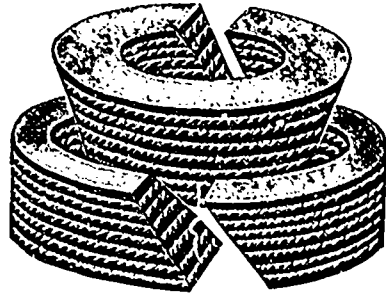
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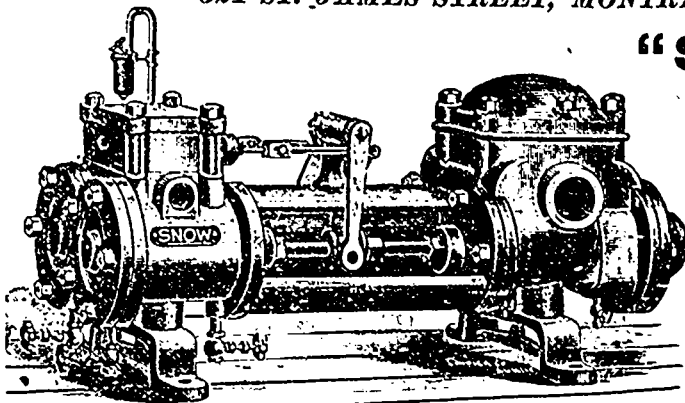
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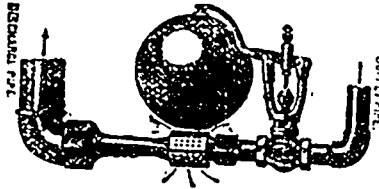
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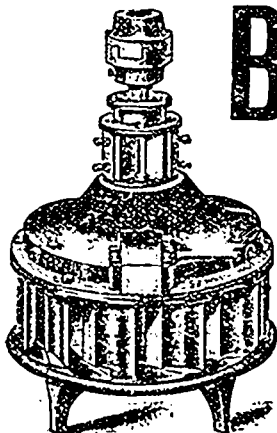
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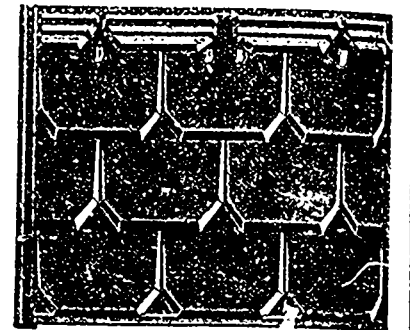
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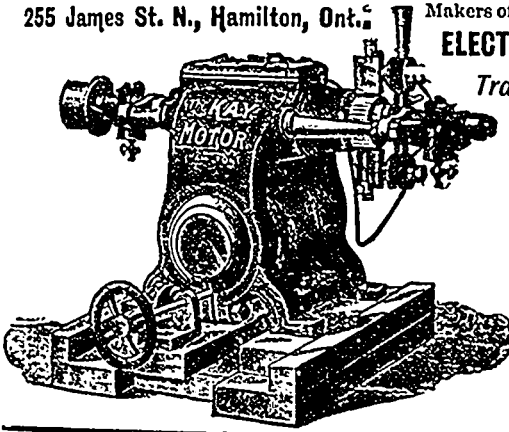
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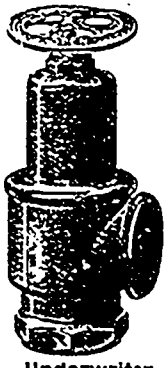
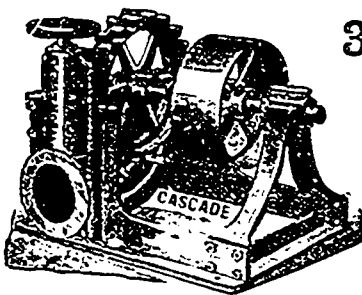
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- 50,042 Chair, Jos. O. Lemay, Montreal.
- 51,043 Velocipede, B. Chapin Hicks, Chicago, Ill.
- 51,044 Electric alarm mail box, Edward C. T. Belding, Chicago, Ill.
- 51,045 Secondary voltaic battery, Ludwig Epstein, Westminster, Eng.
- 51,046 Neck yoke, Wm. A. Whitney, Byron, Ill.
- 51,047 Revolving fan, Samuel O. Tuerk, Fulton, N.Y.
- 51,048 Milk can, James M. Williams, Pittsburg, Pa.
- 51,049 Tent, Jas. J. Rinn, San Francisco, Cal.
- 51,050 Attachment for sewing machines, J. H. H. Wohl, Sande, Germany.

- 51,051 Apparatus for producing stage illusions, Phineas B. Myers Brooklyn, N.Y.
- 51,052 Medicinal compound, Robt. J. W. Atwood, Victoria, B.C.
- 51,053 Coin feed gas meter, Frank Wright, Westminster, Eng.
- 51,054 Machine for generating gear teeth, Herbert C. Warren, Hartford, Conn.
- 51,055 Pineapple knife, Mary F. Postley, New York, N.Y.
- 51,056 Snap hook, Frank White and Fra F. White, Pomona, Cal.

United States Patents to Canadian Inventors.

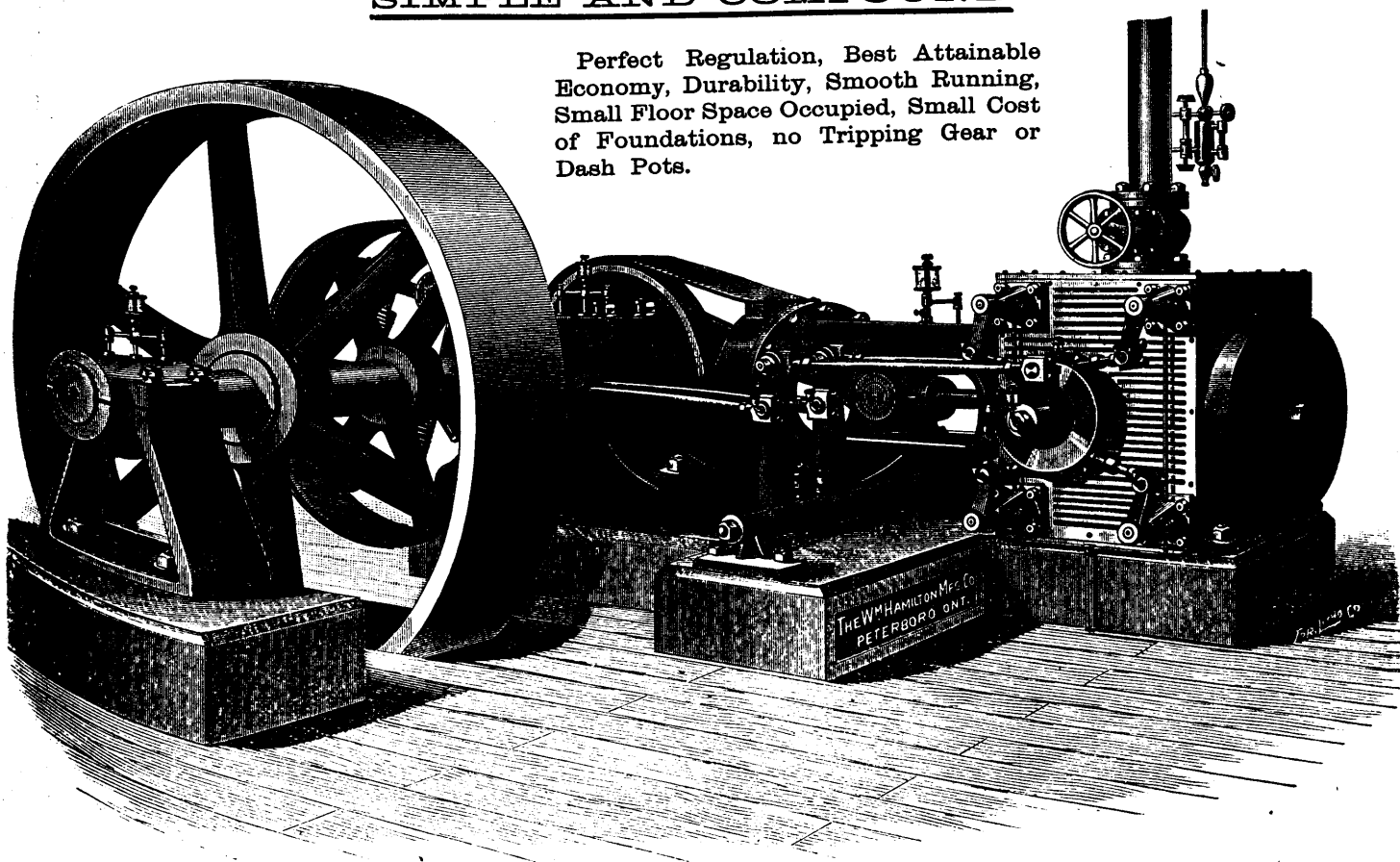
Since our last issue, United States patents to Canadian inventors have been issued as follows:—

- 555,507 Means for changing motion, J. J. Hamilton, Neepawa, Man.
- 555,684 Driving mechanism for bicycles, A. Dubreuil, Montreal, Que.
- 555,765 Automatic lighter for gas stoves, W. J. Gurd, London, Ont.
- 555,827 Car axle lubricator, A. R. Pringle, London, Ont.
- 555,868 Button and button fastener, O. W. Ketchum, Toronto, Ont.
- 555,878 Bicycle lock, E. A. Parson, Ottawa.
- 555,890 Car brake, G. I. Root, Ottawa.
- 556,171 Gate, John Anderson, Woodstock, Ont.
- 556,243 Pile fabric, Ludger Beauregard, St. Joseph de Levis, Que.

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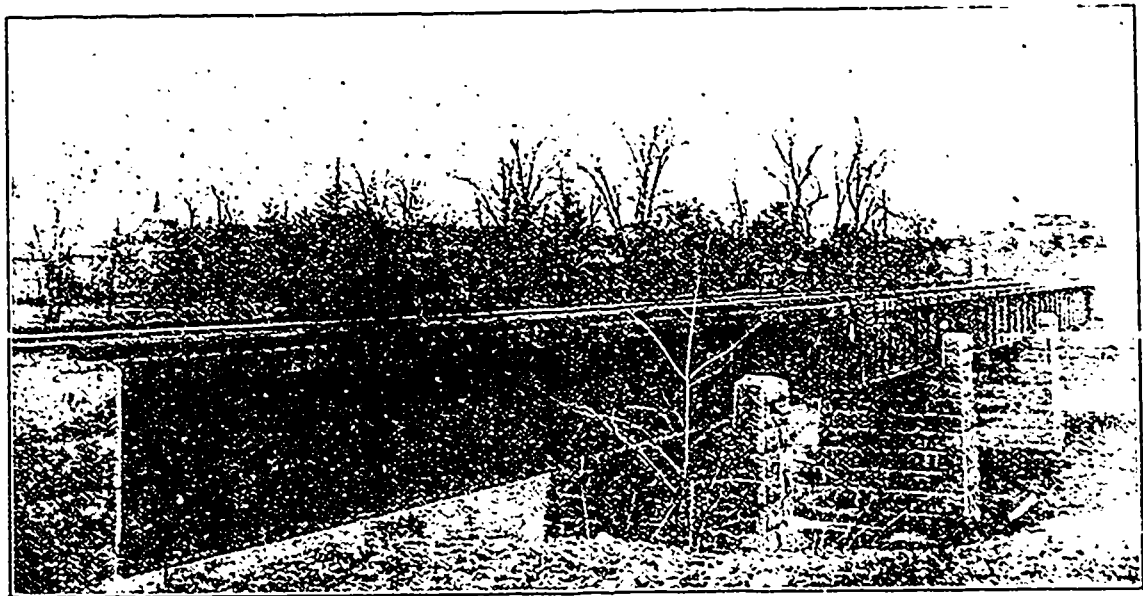
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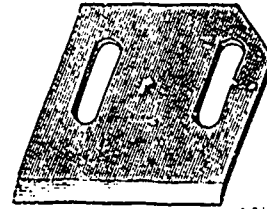
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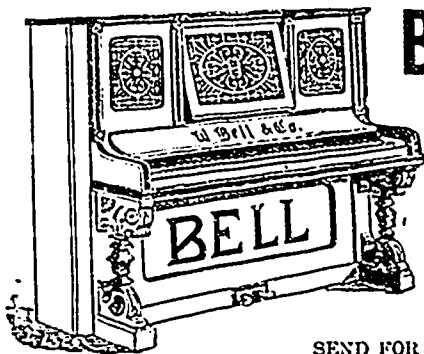
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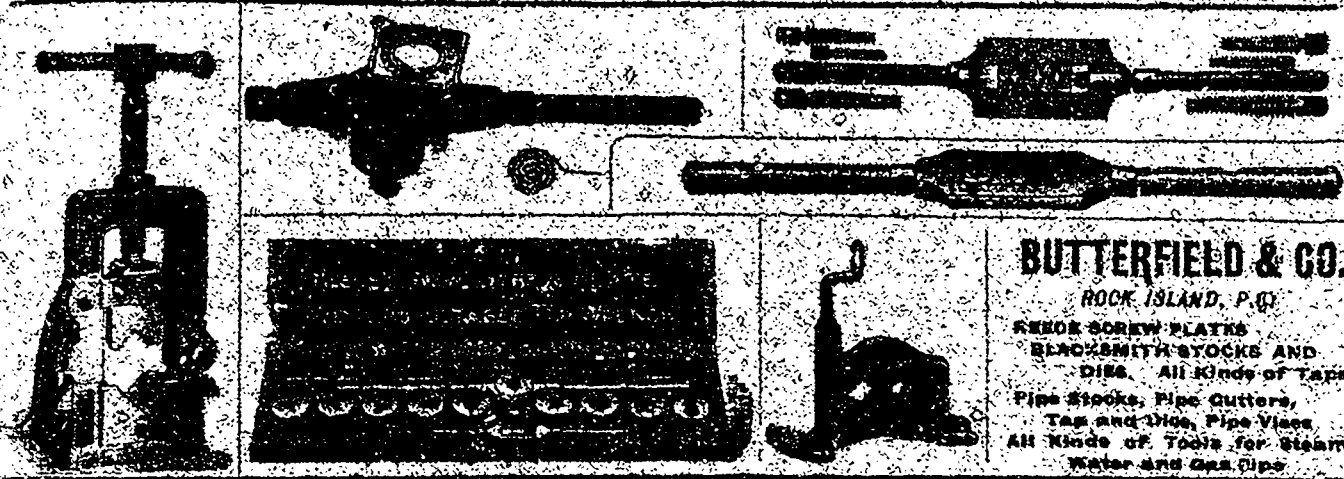
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