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

Vol. 32.

TORONTO, FEBRUARY 21, 1896.

No. 4.

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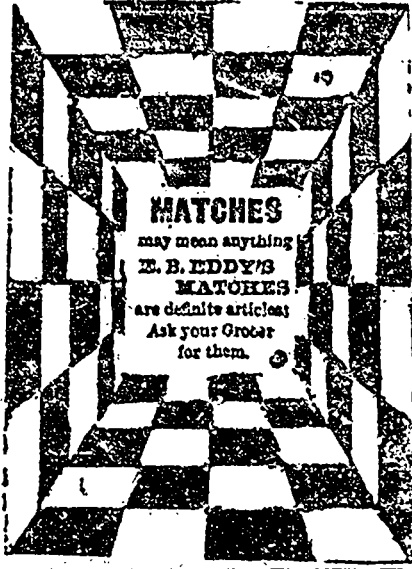
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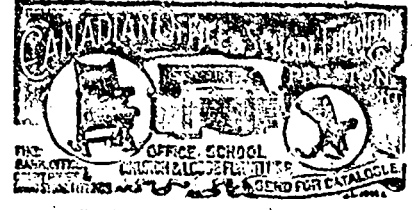
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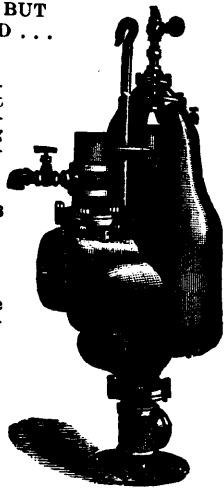
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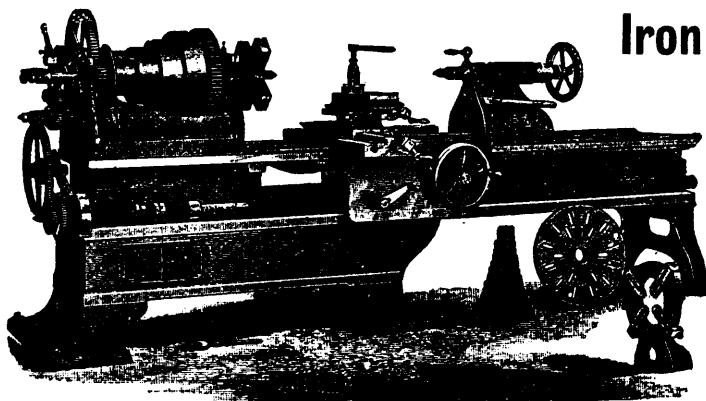
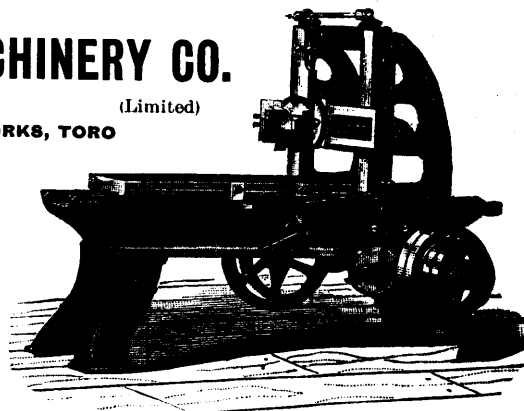
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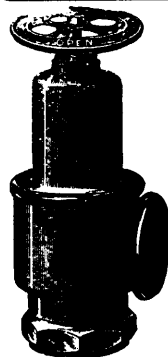
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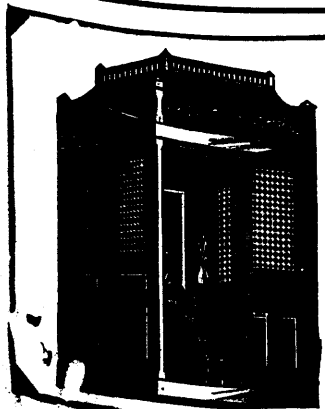
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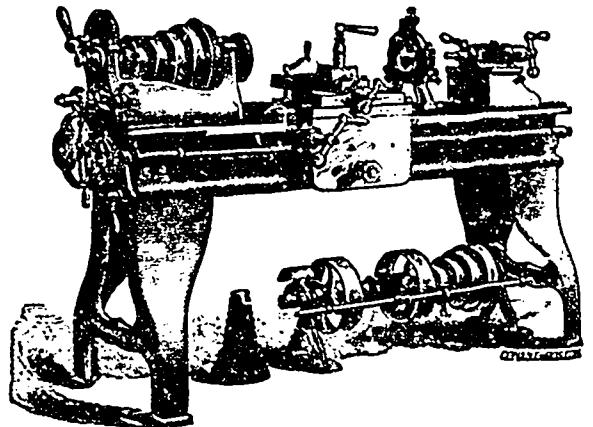
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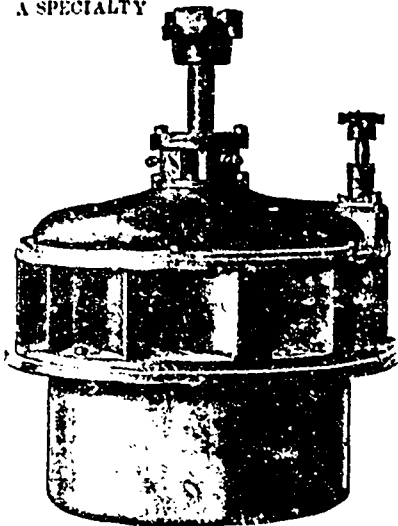
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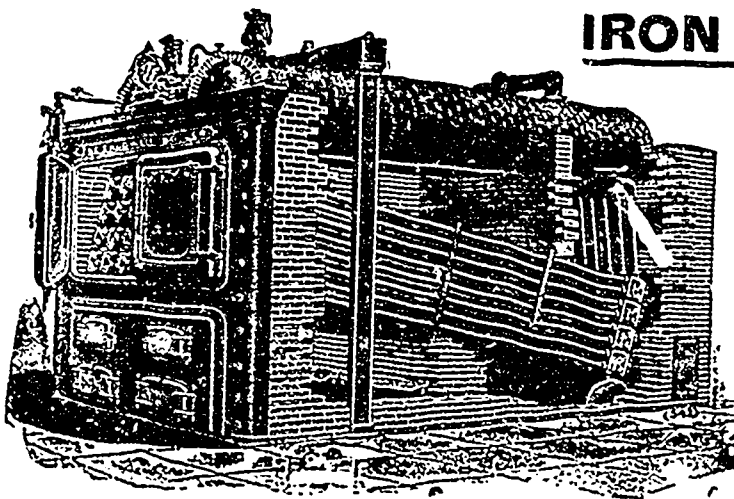
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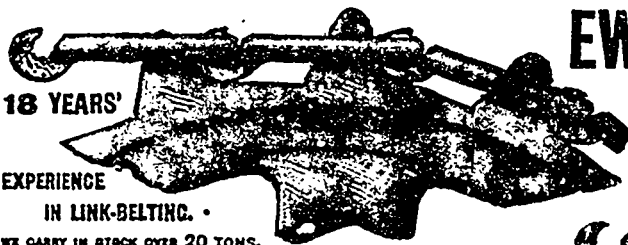
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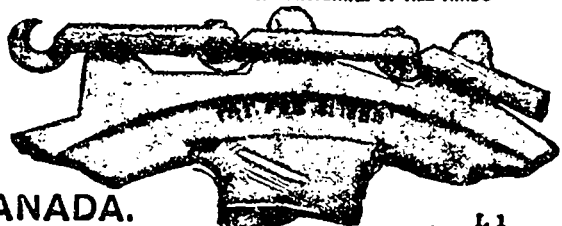
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Communications to the undersigned may be addressed to 701 Ferguson Building, Pittsburg, Pa., U.S.A.

(Signed) The Pittsburg Reduction Co.

ASSIGNEE.

..JAMES W. PYKE..

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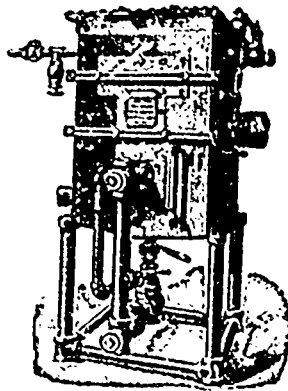
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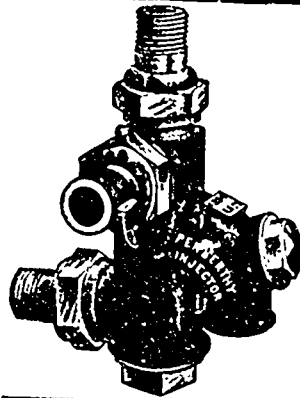
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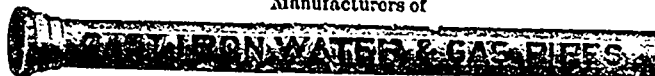
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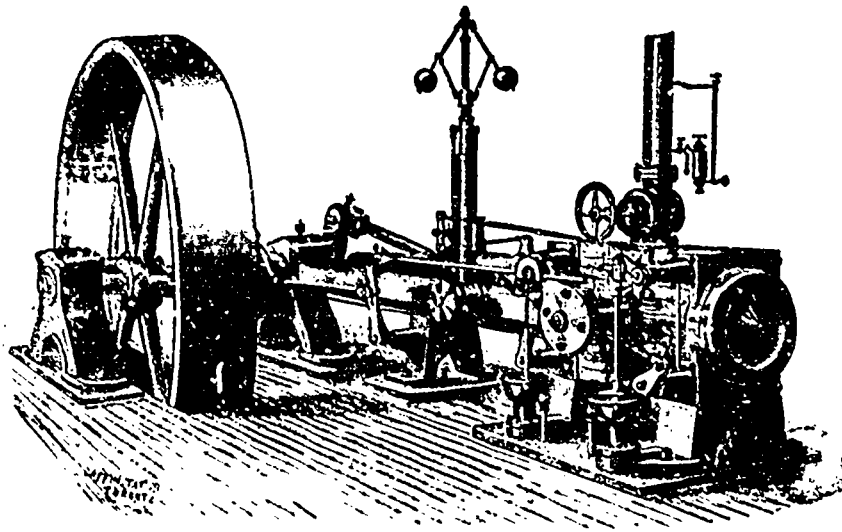
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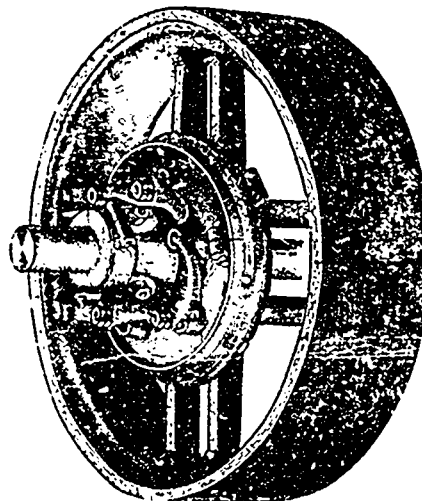
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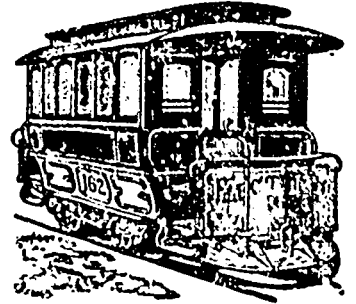
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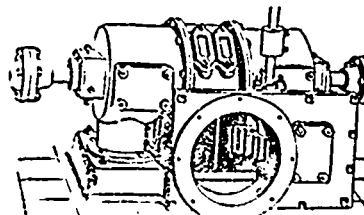
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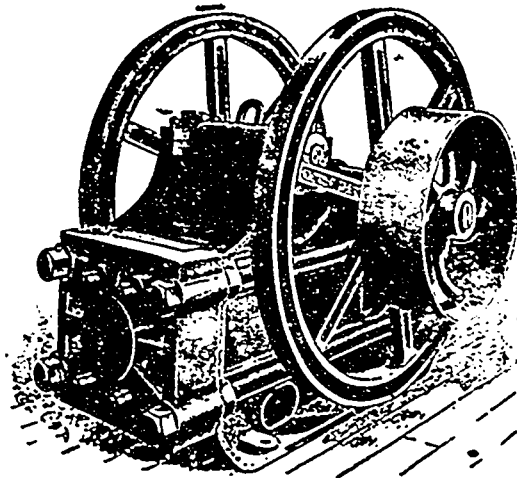
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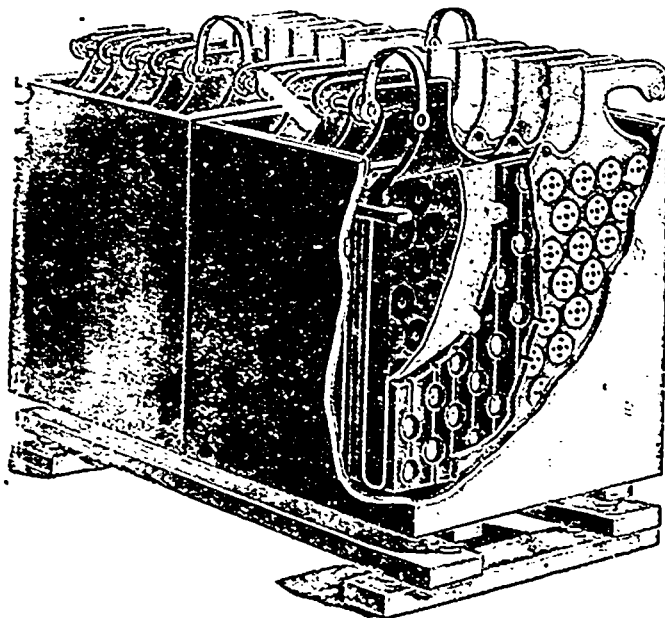
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ESTABLISHED IN 1880.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

J. J. CASSIDEY, Editor

SUBSCRIPTION . . . \$1.00 per year.
ADVERTISING RATES SENT ON APPLICATION.

The Canadian Manufacturer Publishing Company, Ltd.
Room 66 Canada Life Building, King St. W., Toronto.

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MANUFACTURERS, ATTENTION!

No Canadian who observes the course of current political events in this country, can but be impressed with the startling importance that characterizes the crisis through which the Dominion Government is now passing. That Government acceded to power upon the one great question of the fiscal policy that was to influence the legislation of Canada—a policy that was formulated and put into operation by Sir John Macdonald in 1878. Since then many questions of varying interest have been presented for the consideration of our legislators, but until now none of them have so distracted the Government, and the party that placed it in power, as

that which now seems to overshadow all other questions. This incubus was not a live factor when the Government acceded to office, therefore it had no influence, and cut no figure in either the Dominion elections of 1891 or the formation of the Government consequent thereon. The great and only issue at that time was as to whether the National Policy should be continued, and this question was answered, as it had so often previously been, in most unmistakable terms. It is easily understood, therefore, that a question that was then dormant, but which has since quickened into a most unhappy and disastrous liveliness, should be viewed from different standpoints by different members of the Government, and of the party, and that these divergent views should lead to the impending crisis. This divergency of views is not confined to the dominant political party of the country, but exists with quite as much emphasis in the Reform party. If Conservatives are at variance on the question, so are the Reformers; but what is of the very greatest importance to the manufacturing, and all other industrial interests of Canada, is the possibility that before the agitation is quieted and the question settled and removed from the sphere of practical politics, the Government of Canada may pass from the hands of the Conservatives into the control of the Reformers.

We all know what that would mean, and therefore the great and vital interest manufacturers have in the question.

We all know that before the agitation that resulted in the establishment of the National Policy was begun, most of the manufacturers gave allegiance to the Reform party, and that if that party had properly considered the best interests of the country, and listened to the demands of the manufacturers for tariff protection for their respective industries—in other words, if the party had espoused that cause, there would not have been that defection from it that placed Sir John Macdonald in power. The National Policy was the sole and only issue upon which these manufacturers split from the Reform party, and, in the case of every man of them, the only issue that now holds them from it. To them and to the country at large, as has been demonstrated time and again, the National Policy is of more importance than anything and everything else. Other issues may be of importance—some of them are of great importance—but the National Policy is of vital importance, and those who infused life and activity into it will fight hard and long to preserve it. They will stand as a solid phalanx to protect and defend it, and all other political ties and affiliations will be hurled aside and trampled down now as they were in 1878 in its defense.

Sir John Macdonald frequently declared that without the adhesion and support of the manufacturers he could never have attained to power, and the same influence has been acknowledged time and again by Conservative statesmen both in and out of parliament. Then why should it be that at this time these statesmen should allow themselves to be drawn into a position where the outcome of it may result in a most grievous injury to the National Policy to which they have been so profuse in declaring their allegiance? Are their most sacred pledges to be set aside under any circumstances whatever? It is true that whenever they open their mouths it is to reiterate their unchanging devotion to the National Policy, but actions rather than words are most to be desired.

It is proper to enquire what would be the effect upon the manufacturers, if the Conservatives should retire from power,

giving place to the Reformers. There is but one answer to the question. That party in 1878 sacrificed their hold upon power rather than concede tariff protection to the manufacturers. Bourbon-like they have forgotten nothing of their old prejudices, nor have they yet learned that Canada needs protection now quite as much as it did then. Manufacturers should therefore not be deceived, for they have absolutely nothing to be gained, but everything to lose in a change of political rulers.

MANUFACTURERS' ASSOCIATIONS IN THE UNITED STATES.

Perhaps the most important convention of manufacturers that ever convened in the United States was that which assembled in Chicago last month. We allude to the National Association of American Manufacturers. It is said that the members of this Association, of whom more than 250 were present, represented in their different industries more than \$3,500,000,000.

The Textile Manufacturers' Association of the West and South held a convention at the same time in the same city.

Regarding the first named Association, one of the objects of the gathering, as was stated by Hon. Warner Miller, was to bring the manufacturers closely in touch with each other and with the industrial life of the country, and to create a public sentiment that would influence Congress to establish the policy of reciprocity and to foster the creation of fast mail and direct communication with South American nations, Japan, China, and other points whose trade, they thought, ought to be theirs. The importance of holding the home market was not lost sight of. President Dolan in his address said that their home market was the best in the world, better, probably, than any other two or three markets in existence. It is the only market of which they might have absolute control, and the most ordinary considerations of business prudence should induce them to hold it fast, not surrendering any portion of it to foreigners in the vague hope that they might compensate themselves for the losses of such folly by gaining entrance to the "markets of the world," of which they knew so little. Other speakers declared that a home market for American producers is sound business sense, and true charity, and ought to be the policy of the American people irrespective of politics.

The resolutions adopted were such as to affect favorably many lines of trade. Congress was called upon to prepare at the earliest possible time a classification of railway freight, which should be uniform throughout the United States, and to order the same to be put in effect Jan. 1, 1897, on all the railroads in the United States engaged in interstate commerce. The establishment of a Department of Manufactures under a secretary of equal rank with the Secretary of Agriculture was recommended. As certain state laws bearing upon so-called foreign corporations, created by the authority of other states, impose conditions sometimes severe and often inequitable, upon which alone the said corporations may do business in the states having such laws in operation, the executive committee was requested to consider what action, if any, should be taken to prevent such obstruction of traffic between the states of the union. It was also resolved to request Congress to appoint a commission, or to direct one of its own committees to inquire respecting the alleged invasion of the United States market, and the menace

offered to American manufacturing industry, by the products of cheap Oriental labor, and to determine what is the cause of this menace and what means should be adopted to avert the threatened injury to American producers.

The Textile Manufacturers' Association of the West and South, adopted elaborate resolutions in favor of a protective tariff and the preservation of the home market, and recommended the adoption of the reciprocity principle in framing a free list.

Considering the fact that these associations of manufacturers are but very recently formed organizations, and that they are the representatives of such vast wealth invested in manufacturing enterprises; and the further fact that there is scarcely a section of the United States where somewhat similar organizations do not exist, it is apparent that the American manufacturers are not sleeping on their interests, but are up and doing and actively at work using their utmost endeavors to prevent the continuance of the unwise fiscal legislation that has so unfortunately lately affected their country.

SIR RICHARD CARTWRIGHT.

Our esteemed Montreal contemporary, The Shareholder, which seems to entertain a tender regard for the welfare of the Liberal party, warns it against the influence being exerted by a prominent member of that party—to wit, Sir Richard Cartwright—the baleful effects of whose oft-repeated expressions cannot, it thinks, but result disastrously to any party whose cause he may espouse. We do not agree with our contemporary that the leaders of the Liberal party should rid themselves of Sir Richard. In fact we greatly desire that he remain just where he is, and to continue doing just what he has been doing ever since he ceased to be a Conservative. His vituperation and abuse, his bitter sarcasms and his innuendos, launched at the National Policy and at all who believe in it, particularly the manufacturers, whom he so freely and frequently consigns to a much more torrid place than Canada, or even the equator, are more effective in maintaining the cause that he so constantly denounces than anything he could possibly say in its favor, if, unfortunately, he should again slip back to where he was some years ago. It is quite evident that the Liberal party look upon Sir Richard as an elephant that they would gladly get off their hands if they could. And in addition to being an elephant for which they have no use, to his party he is an Old Man of the Sea who is a burden which is constantly keeping it in a position from which it would possibly be relieved were it not that in his hands it is entirely helpless. No, no! let Sir Richard stay where he is.

It may be interesting to our readers, however, to learn what The Shareholder, that calls him a Jonah, thinks of him. It says:—

That Sir Richard Cartwright is an able man and well versed in financial matters will be generally admitted, but Sir Richard has his faults, faults which are creating much dissatisfaction among those who would not be unwilling to see a change of Government. These, and their name is legion, do not hesitate to look with disfavor on his efforts to increase trade relations between this country and the United States, to the disadvantage of Great Britain. The tendency of late years has been to draw the ties of union closer between

Canada and the Mother Country. The expressions of fervent loyalty to Great Britain which found utterance in the House of Commons on Wednesday last were both timely and called for. These expressions will carry to the foot of the Imperial Throne the conviction that Canadians love the constitution, the institutions and the prestige of Great Britain and will strengthen the conviction that the people of Canada are loyal to the core to their noble Queen. They will do more, they will give the lie to those mischievous and irresponsible praters who have represented that Canadians are hankering after annexation. Sir Richard Cartwright's trade notions, as frequently expressed, are not in accord with those of the people of this country, and the sooner he abandons them the better will it be for the political party with which he is allied. The Liberal party has suffered, and will suffer, from Sir Richard's connection with it. Be he never so loyal to the British Crown, his trade ideas are widely different from those of the men who control the destinies of this country, and those ideas must be respected, even by the great Sir Richard. If the Liberal party is to assume the government of this country, they must to a man adopt the policy of placing their dependance for improved trade relations, not with the United States, but with Great Britain. If this policy cannot be carried out without the sacrifice of Sir Richard, it will be better a thousand times for that party to sacrifice Sir Richard than to attempt to divert the trade of the country from its manifest destiny. Heaven forbid that the horrors of war should ever be realized between Great Britain and the United States, but we should guard against possibilities as well as probabilities. The recent utterances of the United States press have taught us that should war at any time arise, this country would become at once the object of attack. Our homes would be ruthlessly violated, our young men would become the targets of their marksmen, if any they have, and desolation would be hurled among us to gratify ambitious and covetous designs. And yet, in the face of all this, Sir Richard would cultivate and extend trade relations with those who would gladly avail themselves of an opportunity to become our murderers and the despoilers of our liberties, our homes, our institutions, and our household gods. We are on the eve of a general election, dissatisfaction with the administration of the affairs of the Dominion by its present Government is assuming huge proportions, the weight of which, if hurled against it, will crush it out of existence. But Sir Richard's trade ideas may prevent such a consummation, and we warn the Liberal party of the danger which threatens them.

CUSTOMS DECISIONS.

The Controller of Customs has approved of the following decisions of the Customs Board which are therefore law. In reading the tariff these changes should be kept in mind.

| Articles. | Tariff item. | Rate p. c. |
|--|--------------|------------|
| Jute rugs | 447 | 30 |
| Felt hat bodies | | |
| Secs. 13 and 61, C.A., and | 458 | 30 |
| Screw jacks | 295 | 30 |
| Ladies' belt and garter buckles, for the adornment of the person | 343 | 25 |
| Syringes, viz.: Hypodermic, lachrymal, hydrocolo, sulpalpebral and laryngeal | 288 | 15 |

| Articles. | Tariff item. | Rate p. c. |
|---|----------------------|------------|
| Syringes, all other: Dutiable according to the material of which they are made. | | |
| Ice flows | 319 | 27½ |
| Quassia chips | 481 | 20 |
| Advertising pens of glass and paper | 103 | 35 |
| & sec. 15, C.A. | | |
| Advertising paper weights, glass | 103 | 35 |
| & sec. 15, C.A. | | |
| Shirt, collar and cuff studs (except those made wholly of bone) | 343 | 25 |
| Straw boards, lined or covered with paper | 120 | 35 |
| Lactic acid, for medicinal, chemical or manufacturing purposes | 493 | Free |
| Malt extracts, liquid, "Pabst," "Hoff's" and "Dukehart's" | 128 | 50 |
| Cigar and cigarette cases, of all kinds | 479 | 30 |
| Door springs | 286 | 32½ |
| Axle boxes, cart bushes and wagon skems | 286 | 32½ |
| Clock and watch keys | 347-349 | 25 |
| Washing machines, stationary | 293 | 27½ |
| Washing machines, portable | 295 | 30 |
| Pulls and chains for water closets, dutiable according to the material of which they are made. | | |
| Spokes, hubs and felloes, finished | 365 | 25 |
| Shafts, wheels, poles and gears, finished, as parts of wagons or carriages | 378-379 | |
| Toboggans | Sec. 13, C.A., & 381 | 30 |
| Catheters | 288 | 15 |
| Potato chips, sliced and cooked potatoes | 481 | 20 |
| Violin, guitar and other musical instrument cases, dutiable according to the material of which they are made. | | |
| Carpet stretchers | 281 | 35 |
| Ingluvin, proprietary medicine | 128 | 25 |
| Ophthalmometers | 288 | 15 |
| Anatomical charts | 105 | 20 |
| Slide rules, for use in colleges | 183 | 25 |
| Baths, sinks and urinals, dutiable according to the material of which they are made. | | |
| Steel crank pins, for locomotives | 246 | 35 |
| but not less than \$15 per ton. | | |
| Olive oil, for use in lubricating machinery | 650 | Free |
| Clover tops, when imported for medicinal purposes only | 570 | Free |
| Corn harvesters | 294 | 20 |
| Advertising frogs | 353 | 35 |
| Steel shoe shanks | 229 | 25 |
| Urinometers | 288 | 15 |
| Clinical thermometers | 288 | 15 |
| Sterilizers, when used for surgical purposes | 288 | 15 |
| Pastiles, for fumigating | 481 | 20 |
| Grey or unbleached cotton tubing for bicycle tires | 401 | 22½ |
| Ligni-salvor, a wood stain and preserver | 151 | 25 |
| Latin or Greek books, with English or French notations | 515 | Free |
| "Handel's" Anthems, with music | 100 | 10c |
| per lb. | | |
| Paper punchings and felt punchings, for pianos | 387 | 25 |
| Embossing machines, for book-binders' use | 300 | 10 |
| Veneers of wood, three thicknesses glued together | 365 | 25 |
| Oxide of zinc and sulphide of zinc | 148 | 5 |
| Brass angles, rolled, not bent, etc., as provided for bars, etc. | 524 | Free |
| Bullet moulds | 281 | 35 |
| Parchment, vellum and lacing parchment | 481 | 20 |
| Artists' prepared canvas of linen or cotton | 452 | 27½ |
| Shelf brackets, of all kinds, dutiable according to the material of which they are made. | | |
| Electrotypes, for copying, drawing and music books | 303 | 2c sq. in. |
| Wax matches | 481 | 20 |
| Deer heads, mounted | 481 | 20 |
| Freight rates, for railroads, bound in book or pamphlet form | 100 | 6c per lb. |
| Telegraph rates, bound in book or pamphlet form | 100 | 6c per lb. |
| Alboline, in liquid form | 128 | 50 |
| Alboline, solid | 144 | 35 |

| Articles. | Tariff Item. | Rate p.c. |
|---|--------------|-----------|
| Insecticide, for killing insects on plants, etc.. | 128 | .. |
| Dental engines..... | 288 | 15 |
| Aluminum leaf..... | 481 | 20 |
| Crochet needles of steel..... | 287 | 30 |
| Communion plate, the following articles are to be rated as such, viz.: Flagons, chalices, patens, cruets and alms dishes..... | 557 | Free |

The following articles, being chemicals, are entitled to entry at 20 per cent. under item No. 481: Acetanilid, antifebrin, antipyrine, analgesin, analgen, antithermin, aristol, aseptol, coumarin, coloralamide, chloride of ethyl, creosotal, diastase, exalgen, euphorin, formalhyde, formalin, guaiacol, gaduol, heliotropine, hypnone, hypnal, ichthyol, iodol, lycetol, lactophenin, morrhual, oil of tar, phenacetin, phenylacetamide, piperazin, pyrazole, preservalin, resorcin, salol, salophen, soziodol, strophanthine, spermin, salacetol, somatose, savaline, terpin hydrate, trional.

The Customs Department have sent out a memorandum to collectors, having reference to the prices at which the shoe dressing manufactured by a concern in Boston, Mass., is sold to the trade in the United States, and which are, therefore, the values at which the article should be entered for duty in Canada. The instructions are timely and are intended to prevent the undervaluation of such merchandise. Instructions are also sent out to the effect that the Odell typewriter, manufactured in Chicago, should not be allowed to be entered at any less value than \$20 each; and that paper packages containing Lipton's tea are to be valued for duty purposes at one and one-half cent each for pound packages, and one cent for half pound packages, the package to be rated for duty at 35 per cent., under item No. 120 of the tariff. The Department is informed that at some ports colored cotton blankets have been entered as rugs at 25 per cent., under item No. 441, whereas they are properly dutiable at 30 per cent., under item No. 403. Instructions are therefore given that all such importations should be carefully examined, and if the articles represented as rugs are found to be double, they should be entered as blankets, rugs being in all cases single.

ADVANTAGES OF SUGAR-BEET CULTIVATION.

This journal has frequently directed attention to the fact that the establishment of the beet sugar industry would not only prove to be remunerative to those interested in the mechanical portion of it, but that it would be of even greater advantage to the farmers who cultivated and produced the sugar beet for the factory. In the United States, where the soil, climate and other circumstances affecting the industry are approximate so closely akin to those of Canada, the production of beet sugar has passed the experimental stage, and has become one of the permanent industries of the country; and, as a matter of course, in connection therewith, there are several most excellent trade journals that give much attention to the matter. Of these, one, The Sugar Beet, of Philadelphia, as may be judged from its name, is devoted exclusively to the interests of that industry, and, which publishes from time to time most excellent articles and suggestions on the subject. In a recent issue it points out some of the many advantages to the country at large, and particularly to the farming classes, of sugar beet cultivation which has as much force and application in Canada as in the United States.

The article points out that the beet flourishes in a soil that

has been worked to considerable depth, and the crops that follow derive advantage therefrom, their yield being greater and the cost of preparing the soil for their reception being reduced almost to a minimum. In consequence of the constant weeding during the sugar-beet development the next crop will have few weeds to contend with, and hence derives the entire benefit from the plant foods of the soil. Many agronomists go so far as to assert that the beneficial effects are such that the beets may be considered as having been obtained free of cost. The residuum pulp from factories feeds cattle and means cheap milk, butter and meat; furnishes fertilizers gratis, and by the feeding of these pulps, combined with necks and leaves, all the plant foods—with the exception of that contained in residuum molasses—is returned to the soil. Besides this there is a social question too frequently overlooked. The farmer, instead of being brought in contact only with other tillers of the soil, is forced through circumstances to have dealings with chemists, engineers and men of education at the factory, which stimulates his ambition for his children, and the rising generation thus becomes of a higher standard than if the factory had not been started in the locality.

The transportation of beets, of raw and manufactured material of the factory, necessitates the building of railways from which the farmer derives an advantage by his farm's soon becoming divided off in lots. He avails himself of the increased value of property, makes money in a hundred different ways, and sees a certain future not only for his land, but for all his belongings. The cultivation of beets demands more labor than most crops; hence it prevents the farming districts from becoming depopulated for want of occupation. The factory working during the winter, many of the hands who were employed on the fields during the summer find work there during a period of the year when they would evidently be unable to find employment elsewhere. The fact that the women and children can do the work of weeding increases the actual money returns for each family, and the work being done in open air is healthful and excellent exercise when the boys are home from school.

In Europe it is admitted that for every acre devoted to beets there is a money return just double that possible to obtain from any cereal. These examples could be continued almost without limit. It should be remembered that sugar from beets may be profitable or not to the manufacturer, but beets cultivated with care always mean in the end a fortune to the farmer. He does not always realize the fact, but the truth is, the tiller after a term of years turns his capital over many times, which the capitalist is never able to accomplish when extracting the sugar from beets furnished him.

THE AMERICAN PIG IRON INDUSTRY.

The statistics of pig iron production recently published by the American Iron and Steel Association give the official stamp, as it were, to the various reports of the recent rising tide in the iron trade. As in previous periods of great activity, all estimates of the output of the past six months fell short of the actual yield. The magnificent total for the year, 9,446,308 gross tons, causes a feeling of exultation among those who watch the progress of the iron trade. Not only has the record of the United States been beaten, but all other countries have been left far in the rear. The nearest competitor, Great

Britain, will probably fall below more than 1,000,000 tons, although in the previous year surpassing by over 700,000 tons. The recuperative energy of the United States was never more strikingly shown than in the jump made in the production of pig iron in 1895—namely from 4,087,558 tons in the first six months to 5,358,750 tons in the last six months.

The huge output thus attained undoubtedly exceeded the requirements of the country, and the iron trade is now suffering from the consequences of the excessive production. Yet despite present appearances it is altogether probable that this year will see the figures for 1895 exceeded, and that the 10,000,000-ton mark will be finally reached and passed. The overproduction of last year was in the last half of the year, when the output was 5,358,750 tons. Up to October 1st there seemed to be almost a pig iron famine. At that time the production of pig iron was proceeding at the rate of about 200,000 tons weekly. By November 1st, however, furnaces were making 217,000 tons weekly and that rate was practically kept up until in December, closing the year with furnaces running at the rate of 207,000 tons weekly. For a time, therefore, the output was at the prodigious rate per annum of 11,250,000 tons. At the close of the year the annual rate had fallen to 10,750,000. With consumption proceeding at its current rate production cannot be restricted much further. The country is very far from being in the condition of paralysis which followed the panic of 1893 and continued all through 1894.

The consumption of pig iron last year, according to the data of production and stocks presented by the American Iron and Steel Association, and estimating total imports at 50,000 tons, was 9,651,504 tons, against 6,718,960 tons in 1894, 7,007,194 tons in 1893 and 9,318,742 tons in 1892, which was the next largest year. The consumption therefore exceeded the production by over 200,000 tons. But this does not tell the story quite so forcibly as the figures for the consumption during the last half of the year, which are 5,379,208 tons, or far beyond any period in the history of the country. From these figures similar a considerable shrinkage could take place and still leave the requirements of the United States at over 10,000,000 tons of pig iron annually from this time forward.

EDITORIAL NOTES.

In fifteen years the number of gasoline stoves in use in the United States has grown from a thousand to over two million.

We have pleasure in stating that pig iron is now being made in Ontario, the furnace of the Hamilton Iron and Steel Company, Ont., just blown in, having turned out its first batch of pig on Feb. 3rd instant. It is expected that in a few days the furnace will be working to its full capacity of 150 tons per day.

Mr B. T. A. Bell, who has edited and published the Canadian Mining Review for the past ten years, has acquired the whole ownership of the paper and its property. For the present the office of publication of the Review will remain at Ottawa, but offices will be established at Montreal from which, in future, the paper will be dated.

The returns which Finance Minister Foster recently presented to the House of Commons, showed that from April 4

1895 to January 9, 1896, 30,311 tons of pig iron were made in Canada, upon which \$72,688 had been paid in bounty; and that from March 31, 1895 to December 31, 1895, 26,419 tons of steel billets were made calling for a bounty \$52,838.

The North Eastern Lumberman says that if the proposed new United States tariff bill should become a law it would help the lumber business in that country by relieving the strain of Canadian competition. It is more than probable that if that bill becomes law, and a duty is laid upon Canadian lumber that is now going into that country free, the challenge would be quickly answered by Canada in the imposition of an export duty on logs. The sooner such a duty is imposed the better for Canada.

Canvas sails have heretofore been used exclusively, but as a lighter, more elastic and air tight material is desired, the proposition at present is to make the sails gossamer weight from rubber, rope them strongly along foot, luff and leach, and the result may be superior sails. But even rubber has its drawbacks. A sudden increase of wind-power expands the sail too much, and difficulty is experienced in governing the course of the boat. So attention has been turned to that unfailling source from which so many things are now made—paper, says an exchange. The paper pulp is obtained from usual sources, pressed into sheets and stitched together, making a light and effective sail.

A movement is on foot in New South Wales to develop the iron resources of that colony. At a meeting held recently in Sydney it was stated that the colony, of which it is the capital, annually imported about 170,000 tons of pig iron, while the imports of iron and steel in its crude and manufactured state equals about \$12,500,000. It is estimated that the pig iron requirements of the colony will be about half a million tons by 1920. Although ore is plenty there is not a pound of iron produced in any of the seven colonies comprising Australia. In New South Wales particularly there are important deposits of rich iron ores, and that, too, with coal and limestone in unlimited supply.

The record of embezzlements in the United States, last year, revealed losses of only \$10,000,000 compared with \$25,000,000 1894 and \$19,000,000 in 1893. The Herald, which gives these figures, thinks they are an evidence of the improvement in trade, resulting from the operation of the Wilson tariff law. Unfortunately for this theory the failure statistics for 1895 in the United States show an increase, both in number and liabilities over 1894. If the embezzlers got less last year than they have been in the habit of securing, it looks as if it was because, under a so called tariff reform party, the country's business concerns had less for them to take. There is a proverb which says it is hard to remove the breeches from a Scotchman in kilts.—Montreal Gazette.

The agent of an American concern has on exhibition in Toronto, a weighing and calculating machine made in the United States, and which he is offering for sale here at precisely the same prices it is sold at in that country. To a representative of this journal the agent explained that, to obtain a foothold in Canada his company recognized the fact that it must pay the Canadian duty upon the machine. The Canadian

consumer gets the machine at precisely the same price as the American consumer, the American manufacturer paying the full Canadian duty. This is a proposition for The Globe to solve: Who pays the duty?

The discovery of coal has revolutionized the whole state of affairs in Newfoundland, says an exchange. Lying, as it does, right alongside the track of the railway, and only forty miles from a good shipping port on the coast, and eighty miles from salt water on the north coast, it will supply the thousands of tons now procured from Cape Breton and elsewhere; employment will be given to laboring population, not only in the mines, but also in a great pulp factory, and in the manufacture of paper from wood. There are in Newfoundland all the ingredients for the successful prosecution of this industry—abundance of spruce and other wood, cheap labor and finally, coal.

Never before in the history of this country would a dollar buy as much of the products of the loom, the factory and the workshop as it will buy to-day. Even agricultural products are nearly as cheap now as they ever were, we are sorry to say, for we have always held that this country is most prosperous when the farmers are paid good prices. A Missouri farmer, who is not one of the complaining kind, writes as follows in a recent letter: "We had large crops last year and things are cheap and plenty. Hay is selling at from \$3 to \$4 a ton, corn 16 cents per bushel, oats 11 cents, potatoes 25 cents, apples from 40 to 50 cents, and other grain and provisions in proportion." We may add to the above that flour is this winter only \$4 a barrel in Philadelphia.—The Bulletin.

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.

Neither a royal commission nor any other human invention could ever hope to mend, or change, or reform the assinnity 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.

Mr. R. W. Elliot, the well-known manufacturer and dealer in drugs, chemicals and pharmaceutical preparations, in Toronto, has taken passage on the steamer Duart Castle that leaves St. John, N. B., next week for Jamaica and other tropical parts. Mr. Elliot was unanimously elected president of the Canadian Manufacturers' Association in 1884 and again in 1885, since which time he has been almost continuously chairman of the Executive Committee of the Association; and a very large measure of the success and influence of the Association is attributable to his indomitable energy and perseverance, backed by a practical knowledge of the necessities of Canadian manufacturers. His trip will be in the nature of an excursion that will be terminated by his return probably in April. He carries fishing tackle and other necessary et ceteras.

Following is a comparison of vessels of war in service or now under construction in Great Britain and United States

| | United States. | Great Britain. |
|----------------------------|----------------|----------------|
| Battleships..... | 8 | 60 |
| Const defense vessels..... | 20 | 11 |
| Armored cruisers..... | 2 | 29 |
| Protected cruisers..... | 13 | 74 |
| Cruisers..... | 20 | 92 |
| Gun vessels..... | 17 | 16 |
| Torpedo vessels..... | 1 | 34 |
| Total vessels..... | 81 | 316 |
| Torpedo boats..... | 9 | 251 |
| Grand total .. | 90 | 567 |

The total force of officers and men in the British navy is 82,850 against 13,460 in the United States navy.

The rapid progress made in the use of wood pulp for paper-making is one of the most remarkable among modern enterprises. In the United States in 1886 only about 97,000 tons were produced. During 1894 the quantity was estimated to exceed a million tons, of the value of \$25,000,000. First practised in Germany, as early as 1846, it was adopted considerably later in the United States and Canada. The Canadian census of 1891 gives a product of 261,155 cords of pulp wood. There is comparatively little pulp wood cut on licensed crown lands, a large proportion being obtained from private property. There has been a great increase in the number of pulp mills in Canada. Thus in 1881 there were five pulp mills, while in 1891 there were twenty-four pulp mills, yielding a product worth about \$1,000,000.

Do not let Englishmen lose the moral of the war scare. In 1894, the last year for which full official figures are available, the total consumption of wheat and wheat flour in the United Kingdom amounted in round figures, to 27,000,000 quarters, of which quantity only 30 per cent. was produced at home. Of the imports no less than 50 per cent. came from the United States alone. That 50 per cent. would have been cut off had trouble arisen. Moreover, of the remaining sources of supply upwards of 19½ per cent. came from ports the only outlet for which is through the Dardanelles—a very hotbed of possible trouble just now. England cannot supply all her own food needs, but the colonies can, and a wise man will encourage in times of peace the development of supplies upon which he can place most reliance when peace is at an end.—Canadian Gazette.

One of the propositions made for the development of the iron resources of New South Wales is that the government of that colony shall place with the gentleman who makes the proposition an order for all the steel rails (estimated 200,000 tons) the government railways will require for the next seven years and giving a bonus of 10 per cent. over English price, freight, insurance and interest added. This granted, works shall be started within the year. If Canada is ever to have a steel rail industry our Government must offer some such inducement. If New South Wales, where the estimated requirement for seven years is only 200,000 tons, feels the necessity of the establishment of a steel rail industry, how much more is such an industry needed in Canada where the consumption is probably from 150,000 to 175,000 tons per year. Let us have a steel rail industry.

The time has passed for great commercial and manufacturing firms to depend upon the catalogue as a means of selling. The catalogue issued once or twice a year is behind the times. Live firms realize that in order to keep before the trade they must have at least a weekly rendering of what they offer for sale. Prices fluctuate and goods change to such an extent that the old annual catalogue takes about the same place in the business world that the flat-boat does upon the river and the ox wagon across the plains. As a matter of course, very few houses of a manufacturing and commercial nature can afford to advertise largely in the daily papers and at the same time send to the country merchant expensive commercial travellers, but they are realizing that the trade paper reaches every man that they wish to talk to; hence the growth and importance of trade papers.—St. Louis Grocer.

Here's an idea from Profitable Advertising, and it states the fact exactly when it says: "No doubt lots of money are squandered every year in catalogue advertising. Frequently a firm believes it good policy to restrict its newspaper and trade-journal advertising, and spend this appropriation in compiling an elaborate catalogue. Now, a catalogue may be a good thing, but it will prove more valuable to the house using it if, by continued advertising in suitable trade papers and others, a demand for it is created. It is better to have one inquiry requesting the catalogue, from some one really interested, than to send copies to two people who have expressed no desire for it. The clever trick is to interest people to the point of making them come to you, or write you for the goods you have for sale. Advertising is valuable if it succeeds in pulling replies from the people who want your catalogue because they want your goods."

In the Dominion Government the Department of Trade and Commerce fills that requirement of Canada which, in the United States, is as yet unanswered. A move is being made in that direction, however. The bill introduced in the House of Representatives, providing for the establishment of an executive department of the Government to be known as the Department of Commerce, in charge of a cabinet officer, whose title shall be the Secretary of Commerce, is the measure that will probably be passed. The establishment of such a department has been agitated from time to time in commercial and manufacturing circles for a number of years and the movement in favor of it of late has become very strong. Leading associations of manufacturers and merchants have endorsed it and it is one of the objects sought to be obtained by the National Association of Manufacturers. The trade press of the country is almost a unit in demanding the creation of such a department.

The numerous generals that abound in civil life in the United States, all agree that the first thing to do in the event of war would be for the United States army to take Canada. The idea is not new. Numerous generals in the United States had it at various times during the wars between Great Britain and their country. One of them, Montgomery, met a brave man's death under the walls of Quebec. One of them, Hull, entered Canada as a prisoner of war. One of them, Dearborn, retired before the Canadian force at Lacolle river. One of them, Hampton, retreated from Chateauguy. One

of them, Wilkinson, was driven back at Chrysler's farm. Three of them, Brown, Scott and Ripley, retired in disorder from the field of Lundy's Lane. One of them, Van Rensselaer, was driven back from Queenston Heights. Not one of them went out of Canada with the fame of a conqueror, and most of them were fairly good men, too. It is easier for a general to talk of taking Canada to a newspaper interviewer than to carry out the task in the field.—Montreal Gazette.

San Bernardino County, Cal., has 20,160 square miles of territory. This area is as large as the Kingdom of Greece; one and one-half as large as Denmark, two-fifths as large as England and Wales, twice the size of Belgium, four times as large as Alsace Lorraine, and sixteen times as large as Rhode Island. Think of the size of one county in one State by comparison, and then consider the importance of the United States.—St. Louis Grocer.

This takes the cake for Yankee brag. The importance of the United States, according to the Grocer, is to be considered and measured by the fact that one county in California contains an area as large as the Kingdom of Greece. There are thousands of ten acre lots in Greece of more value each than all the twenty thousand square miles of the California county. As far as the Grocer's information to its readers goes to the contrary the Sahara desert in Africa, which is twenty times as big as the California county, is more than twenty times as valuable. Do human beings live in San Bernardino county, or is its value to be measured only by its area?

There are several large lumber plants, embracing saw mills and timber limits situated in Canada, now for sale in the United States. The war scare, happily growing less every day, and the possibilities of the passage of the new tariff bill, which places a duty again upon lumber, cause intending investors to hesitate before buying Canadian properties, however good these latter may be. It is the uncertainty which checks business. If the tariff were finally determined, then buyers of such properties might make their own and certain calculations, but, as the matter stands now, they do not know exactly the basis upon which to calculate. The uncertainties of the situation will, undoubtedly, cause much hesitancy on the part of American investors toward Canadian lumber plants. Some of the wood-pulp men, however, think they may be obliged to do business in Canada, even with all the surrounding uncertainties, as they think there is a larger demand for New England spruce pulp wood than there is a supply.—North Eastern Lumberman.

If the United States Congress, in its wisdom or the lack of it, should impose duties upon Canadian lumber that now goes into that country free, the Dominion Government will have a ready answer thereto in the imposition of an export duty upon saw logs and pulp wood.

The *Textile Mercury*, of Manchester, England, is publishing a series of photographs of the interiors of certain cotton mills in Bombay, India. These pictures represent the conditions actually existing in those great factories. They show the rooms swarming with native workmen, most of whom have nothing on but a breech-clout. Some are dressed in baggy cotton trousers and are naked from the waist up. One picture, representing a room in the "Peroo Mohamed Cotton Mill," has a boy of fifteen years in the foreground stark naked. The few persons who are fully clothed wear cotton garments which a generous estimate may suppose to be

worth thirty-five cents each. These are workmen who, sooner or later, will come into sharp competition with American cotton mill operatives. What do the Americans think of the prospect? Here are people whose clothes probably do not cost a dollar a year, and who can get all the food they want for five or ten cents a day. They are laboring in an industry that is expanding with tremendous rapidity; and while it grows in India, it is growing at an equal or greater pace in Japan and China, where labor is just as cheap.—The Manufacturer.

Now that the success of the Hamilton Smelting works is pretty well assured, the Belleville Sun calls upon the progressive citizens of Belleville to "set about making preparations for the erection of works in Belleville." The progressive citizens should not act hastily in this matter. It is probable that the Hamilton works will be able to supply all the pig iron that this province can use for some time to come.—Hamilton Spectator.

The Spectator should forget its local selfishness for just a little while, and amuse itself by studying the Trade and Navigation Returns, and therein discover the quantities not only of pig iron but also of bar iron and steel imported into Canada. It would then probably comprehend the fact that the output of the Hamilton furnace would be but a drop in the bucket. It may not be aware of the fact, but in the very city of Hamilton are mills that will ere long probably be large consumers of the products of the Hamilton furnace in the manufacture of different forms of bar iron. It is a noticeable fact that when the political daily papers undertake to discuss industrial questions they generally don't know what they talk about.

According to a report of the Customs Department, the drawbacks paid during the last fiscal year aggregated \$58,641. The Liberals complain that these are undue concessions to the manufacturers, but the facts do not justify any apprehension on that score. The drawbacks were as follows:

| | |
|--|----------|
| Indian corn ground into meal for food for human beings.. | \$13,300 |
| Ships' materials..... | 7,158 |
| Goods exported to Newfoundland..... | 1,544 |
| Organs and pianos..... | 1,275 |
| Paddy used in manufacture of rice..... | 150 |
| Hoop iron for casks..... | 131 |
| Wire and bristol for mattresses..... | 58 |
| Lead used in cartridges..... | 251 |
| Bridge iron..... | 1,183 |
| Agricultural implements, castings, axles, car wheels, etc. | 1,854 |
| Steel used in windmills..... | 107 |
| Steel used in springs..... | 147 |
| Materials used in carriage tops..... | 188 |
| Muslin and fringo used in window shades..... | 45 |
| Cheese jars..... | 277 |
| Rice flour..... | 277 |
| Corn and maize flour..... | 41 |
| Crates of bottles, etc..... | 25 |
| Horseshoe nails..... | 65 |
| Glycerine used in manufacture of dynamite..... | 23 |
| Lime used in pulp..... | 27 |

Under the McKinley Tariff the rate of duty upon foreign macaroni, vermicelli and such preparations was two cents per pound. During the two years, 1892 and 1893, we imported 12,500,000 pounds a year, the custom duties collected thereon averaging \$250,000 a year. The free traders thought this was too much. They wanted to build up the macaroni industry in Italy, not in America, so the great Gorman Tariff Reform bill fixed the duty at twenty per cent. ad valorem.

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MONTREAL AND TORONTO.

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Goods will be forwarded same day as order is received.

As soon as the new law went into effect the Italians lowered their export price. Macaroni, that averaged 4 8-10 cents per pound in 1894, averaged only 3 6-10 cents in 1895. The twenty per cent. ad valorem rate made the duty less than three fourths of a cent instead of two cents. During the first ten months of the Gorman bill our imports were 12,792,218 pounds, or 242,000 pounds more than our average imports in the full years of 1892 and 1893. The Gorman Tariff for revenue only has given the Government \$156,770 less revenue than we had under protection and has increased the foreign competition with the American macaroni industry, not only by 2,500,000 pounds a year, but also through the lower prices fixed in Italy so as to cheat our Customs Department.—
American Economist.

According to the annual report of the Department of Railways and Canals the number of miles of completed railway in Canada on June 30th last was 16,091, and 2,054 miles of siding, a total of 18,145 miles, of which 15,745 miles are laid with steel rails. The number of miles in operation was 15,977. Allowing one hundred tons of rails to each mile of roadway, no less than 1,514,500 tons of rails are now in use in Canada, which, at an average cost of \$25 per ton represents an expenditure of \$45,362,500. As the life of a rail is about ten years, this shows an expenditure of some \$4,500,000 per year. Owing to what we conceive to be a mistaken policy, not one of these rails was made in Canada. If, when Canada was entering upon its era of railway construction, it had been determined that this country should produce its own rails, and a duty of \$10 per ton had been imposed upon the article,

and at the same time a bounty of \$10 per ton had been offered for the production of rails made in Canada of native materials, to extend over a period of say fifteen years, this country would have long since had a well established and efficient steel industry with capacity to meet all our demands, not only for rails but for all other forms and shapes of mild steel. It is probable that the demand for forms of steel other than rails is now much greater than for rails; and as none of these forms are made in Canada, the value of the steel consumed here represents the wealth that goes, not into the pockets of our own capitalists and laborers, but into the pockets of people in other countries.

Domestic paper manufacturers find considerable encouragement in the increased amounts of their commodity which has been reported during the past year, a considerable business having been worked up so that shipments are now being made pretty regularly to England, Antwerp, and other Continental countries, as well as to Australia and the British dependencies. Treasurer Haskell, of the Rumford Falls Paper Mills, who has been abroad a good deal within the past few years in the interest of the export business, says of the possibilities of increasing American paper shipments, that of the countries and markets which are open to our makers, England and some of her colonies, Australia especially, are the most prominent and are well worth acquiring. "I do not feel that I am overstating it when I say that England alone offers to-day the most promising market to our paper makers of any country outside of our own, on which may be termed the book and manillas or brown wrappings, also on the cheaper grades of sulphate and soda fibre. Were it not for the unfortunate action taken by the present administration in the repeal of the various reciprocity treaties made with many of the Central and South

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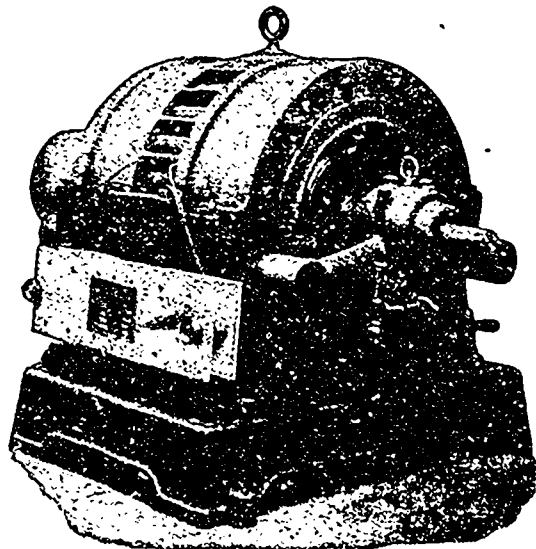
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No Collector

No Moving Wire

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S.K.C. 30 Kilowatt Two-Phase Generator.

American republics, which had but just begun to open to our various industries a most profitable market, the products of our paper mills would have been assured. But the consumption in England is represented to be far in advance of any other country."—*Boston Advertiser*.

American paper manufacturers who obtain much of their raw material from Canada find it profitable to sell paper to England and other Continental countries as well as to Australia, and consider that England offers the most promising market of any foreign country. What is Canada doing in the way of exporting paper?

Ernest Faber, director of the Johann Faber Pencil Works in Germany, stated in a recent lecture that there are twenty six pencil factories in Bavaria, of which twenty-three are in Nurnberg, employing about 10,000 workers, and turning out 4,300,000 pencils per week. In this figure the makers of fancy pencils and of pencil boxes and packing cases are not included. The firm of Faber alone makes nearly one and one-fourth million pencils a week. It must, however, not be overlooked, he said, that this industry has lately been coping with unexpected difficulties through raised import duties in many of the export countries. In the United States this duty is about half the value of the pencils. Lower class pencils can therefore no longer be exported to the United States. By such protective duties a pencil industry has been developed there which produces about as many pencils as the whole of Bavaria. The valuable cedar wood is wasted in America in a most unaccountable way, and exhausted woods are not replanted. Therefore good cedar wood is difficult to obtain, and the blocks no longer give the

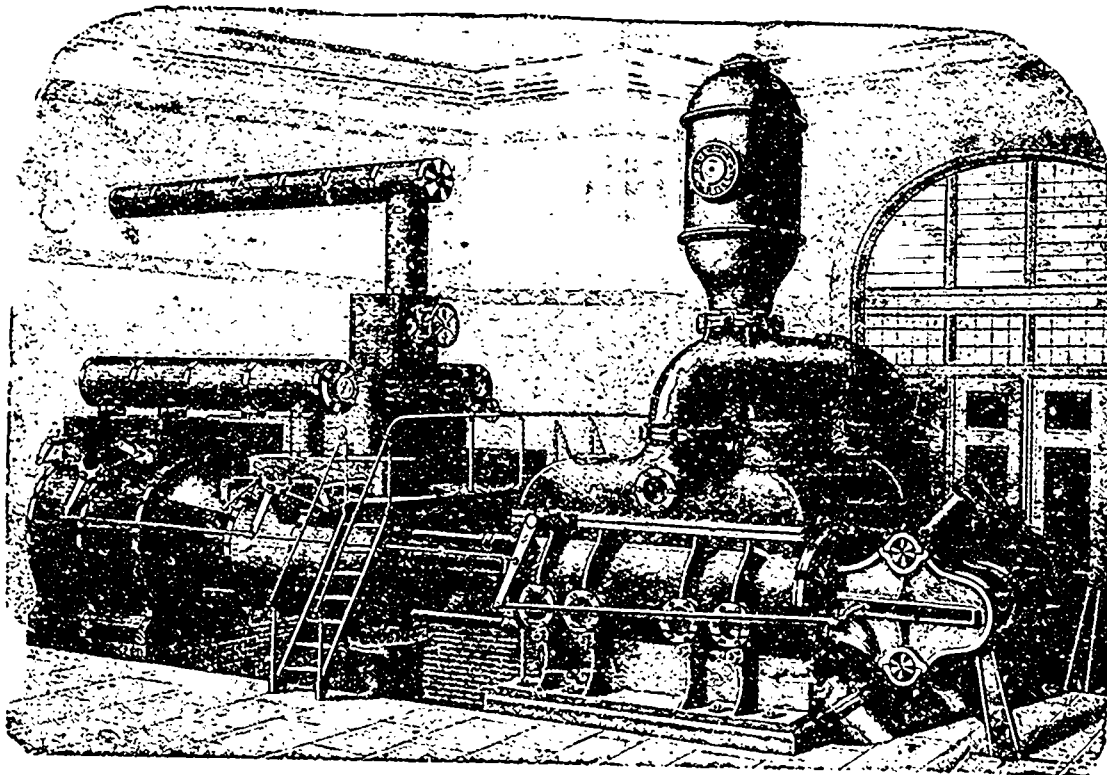
same number of pencils as before. In addition to the higher price of the raw wood, makers suffer from the fact that the Americans export their overproduction below cost price to countries charging a very low duty. Great Britain particularly is overrun with cheap American produce, India, Mexico, Japan, Australia are as good as lost to the Bavarian makers. In Italy the duty is 100 lire for the metre cwt., also France and Russia have high rates. In Russia likewise pencil factories have lately been erected. France has forbidden in schools the use of German pencils. The unfavorable commercial treaties with Spain, Italy and Greece, and the unsatisfactory political and financial conditions in South America have made the export business of the German pencil industry most unsatisfactory. The new treaty with Russia somewhat improved matters. The exportation to that country, which was entirely closed during the time of the Customs war, has thus been reopened and it is hoped that some good results may follow in consequence of the large business relations Russia entertains as far as Persia, China and India.

Good Housekeeping for February may properly be called a floral number. In addition to other seasonable topics, it has a number of papers and much poetry relating to flowers and their cultivation; while the puzzle department, which has become widely famed, presents as its leading feature a floral anagram, with a large number of valuable prizes. The number contains the first of a series of practical papers on "Domestic Economy," there are some short stories of good merit, and a wide variety of original papers and carefully edited selections. This model journal touches every worthy interest connected with the home, and its pages are always fresh and bright. Clark W. Bryan Company, Springfield, Mass.

JOHN McDOUGALL

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WORTHINGTON PUMPS ARE UNEQUALLED FOR EFFICIENCY AND ECONOMY

CAPTAINS OF INDUSTRY.

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

Mr. Lam Qung will build a cannery at Westminster, B.C.
 Mr. J. R. Booth is erecting a 100x60 ft. saw mill at Hull, Que.
 Authority has been conferred upon the Toronto Electric Light Co., to increase its capital stock from \$700,000 to \$2,000,000.

The Booth Copper Co., Toronto, have been incorporated, with a capital stock of \$25,000, to manufacture Resisto-copper range bath tubs, metal goods, etc.

The Empress Gold Mining Company, Fort Wilham, Ont., have been incorporated, with a capital stock of \$100,000, to carry on the business of mining, smelting, etc.

The Hill Chair Co., Warton, Ont., are applying for incorporation, with a capital stock of \$25,000, to manufacture chairs, furniture, etc.

Messrs. R. B. Robinson and G. T. Armstrong, of Sherbrooke, Que., have formed a company called The Sherbrooke Yarn Mill Co., for the manufacture of yarn, etc. They will occupy a part of the building now occupied by the Whitney Electric Company. Mr R. B. Robinson was for twenty-six years in the employment of the Paton Mfg Co., and was foreman of their carding department.

Messrs. Darling, Brown & Sharpe, Providence, R.I., have sent us a small pamphlet having reference to the tempered steel rules manufactured by them. We are informed that in addition to the lines of rules which they have made for such a number of years,

they have recently introduced this line of tempered rules. After having made an extended series of experiments they have perfected machinery wherewith they are now able to furnish these tempered rules as accurately graduated as their well-known standard or soft rules.

Writing of the operations of the new ground wood pulp mill of the Sault Ste. Marie (Ont) Pulp and Paper Co., a correspondent of the Paper Mill says:—There are twelve grounders, fourteen screens and fourteen wet machines at work. Two of the latter are double cylinder machines and they are doing excellent work. This is something new in ground wood mills. Four barkers are at work. The new freight shed is completed and ready for use. The boiler house is to have another boiler, the one already set up being insufficient in capacity for the purposes of the mill. The machine shop and foundry are well under way and will soon be in operation as an independent concern under the name of the Algoma Iron Works. The pulp mill is turning out a pretty fair quantity for a start, with the machinery in operation, but it is understood the managers are speeding up their present wet machines so as to make them turn out more pulp with the same machines. It is also understood that several more wet machines and screens have been ordered, to take care of the pulp from the ten grinders not yet started. The excavators for the No. 2 pulp mill are at a standstill, being flooded. The company is arranging pumps to be driven by water power, which will keep the water out of the way of the excavators. It is proposed to push the work of this mill during the winter as far as possible. Farmers are drawing pulp wood in from the country in large quantities.

Messrs. W. Doherty & Co., manufacturers of the celebrated Doherty organ, Clinton, Ont., have sent us a copy of their new catalogue having reference to their business. The publication is beautifully illustrated, and contains full descriptions of the organs alluded to. If any man, woman or child has any music in his, her or its soul, and is capable of receiving pleasure by a concord of sweet sounds there is interest in this catalogue for him, her or it. The man incapable of enjoyment under the sounds of a Doherty organ should be relegated to the back benches of the Opposition where his great and only enjoyment would be to croak like a frog in a swamp against the National Policy.

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.

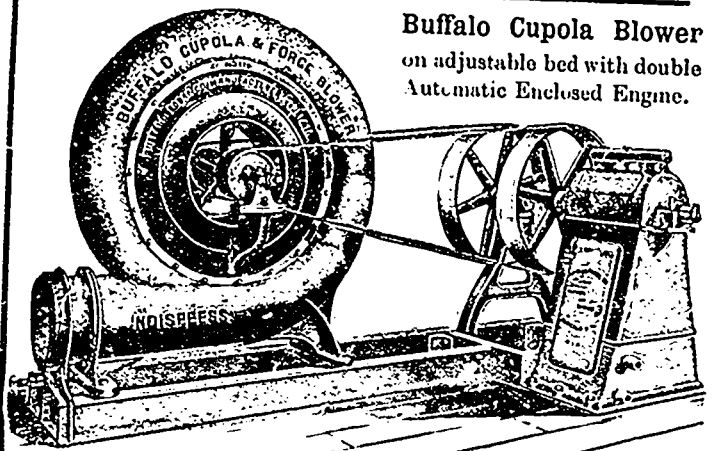
The above have been used in lumber dry kilns, but are also applicable to heating buildings, etc.

For Prices and full particulars, address

McEACHERN

Heating and Ventilating Company

GALT, - ONTARIO



Buffalo Cupola Blower on adjustable bed with double Automatic Enclosed Engine.

Buffalo Dry Kilns, Shaving Fans, Forges, Blowers, Exhausters, Blacksmith Drills, Etc.

Are described in Sectional Catalogues FREE on application.

Their Efficiency, Smooth Running, and Durability are Unsurpassed.

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

SOLD IN

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

Amhorstburg, Ont., was left in darkness last week owing to the burning out of the 500 light alternator of the Canadian General Electric Co's make.

John Vance, Wrentham, Ont., has built a saw mill near that place.

Joseph Donoghue is building a cheese factory at Wolfe Island, Ont.

The Cant Bros. Co., Galt, Ont., are very busy, having received several good orders for some of their wood-working machines. Among them are four surface planers, two exhaust fans and three revolving bed planers for New Brunswick; one of their celebrated patented carving machines, one of their hollow square chisel morticers (of which they are the only Canadian makers), a large double exhaust fan for Owen Sound, two large planers and matchers, and a rip saw, moulder and Stengel dovetailer for Toronto; besides an order for a considerable quantity of shafting and for a number of their patented solid web wood-split pulleys.

The boiler in Moore & Wallace's sash and door factory at Chesley, Ont., exploded Feb. 17th. The building was destroyed. Loss about \$2,000.

The grain elevator belonging to Mr. Thos. Nichol, of Rosebank, Man., was destroyed by fire Feb. 16th. Loss about \$7,000.

Mr. C. Hill is erecting a chair factory at Warton, Ont.

The Ottawa Truss Mfg Co., Ottawa, are applying for incorporation with a capital stock of \$50,000 to manufacture trusses, artificial limbs, etc.

The Ontario Graphite Co., Ottawa, are applying for incorporation with a capital stock of \$200,000 to engage in the business of mining, etc.

Mr. John Fisher, Arnprior, Ont., will establish a carriage factory at North Bay, Ont.

The Modern Art Company, of Toronto, have been incorporated with a capital stock of \$3,000 to manufacture picture frames, etc.

Messrs. T. H. Lee & Son, of Toronto, are applying for incorporation with a capital stock of \$75,000 to manufacture jewelry, watches, watch cases, clocks, etc.

Henry J. McCreary is erecting a saw mill at Chatham, Ont.

The Goldie McCulloch Co., Galt, Ont., have received an order for two Wheelock engines from St. Hyacinthe, Que. The firm is also filling an order for an engine from the Standard Shirt Company of Montreal, and another big contract received from that city.

Wm. C. Wilson, Toronto, has been appointed agent of the Peerless Rubber Co., of New York city. He is in receipt of a large consignment of their goods in the shape of Rainbow sheet and Eclipse Gasket. Mr. Wilson will now be able to keep up with his orders in these lines.

Messrs. Campbell & McNab's roller mill and grain shed at Douglas, Ont., were destroyed by fire Feb. 11th. Loss about \$6,000.

The Central Bridge and Engineering Co., Peterborough Ont. have just completed a 450-foot bridge at Tusket, N.S., for the Coast Line Railway.

The Cornwall Street Railway Company, Cornwall, Ont., are applying for incorporation, with a capital stock of \$150,000, to operate an electric street railway in that city and vicinity, and to operate works for the production of electricity for light, heat and power.

The Ira Cornwall Co., Ltd., St. John, N.E., have been incorporated, with a capital stock of \$10,000, to manufacture and repair bicycles, typewriters, electrical apparatus, etc.

The Aylmer Canning Co., Aylmer, Ont., will erect large additions to their buildings this spring.

Messrs. Wideman & Clemens, Guelph, Ont., will add new machinery to their planing mill.

We direct attention to the fact that the name of what has heretofore been known as the Ingersoll Rock Drill Co., of Montreal, has been changed to Ingersoll-Sergeant Drill Department, and is being operated by Mr. James Cooper. This concern manufacture rock drills, air compressors, stone channeling machines, coal cutters, boilers, hoists, quarry bars, electric blasting apparatus, etc.; and also complete plants of mining, tunneling and quarrying machinery.

We have been appointed the exclusive agents for the celebrated Homer Commutator, made by F. E. Homer & Co., of Cleveland, Ohio. This is the highest grade Commutator made in the United States; it will last two to four times as long as any of domestic manufacture. We can quote competing prices on all Commutators, especially those for Street Railway work. Write us before ordering.

N.B.—Do not forget that we are making incandescent lamps of all commercial efficiencies from three to four watts per candle. We can make prompt shipment of transformers as well as lamps.

Rewinding of Transformers and Street Railway Armatures a Specialty.

WRITE US FOR PRICES ON ALL KINDS OF REPAIR WORK.

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

The Acadia Sugar Refining Co., Ltd., has ordered two sixty-horse power Robb-Armstrong engines, for the Woodside and Nova Scotia refineries.

Messrs. Hunter Bros., Kincardine, Ont., inform us that they have just constructed a sixty h.p. boiler for Thos. Todd, St. Helens, Ont.; a thirty-five h.p. boiler for Gillies & Martin, Teeswater, Ont.; a 100 h.p. boiler, a sixty foot steam pipe and two large steel tanks 18x4 feet for the Soda and Salt Co., Kincardine, Ont., and a large marine boiler for the Crawford Tug Co., Warton, Ont.

John S. Moore, Dominion Gas Meter Works, London, Ont., will put in some new and latest improved machinery.

Mr. J. R. Baird, Woodstock, Ont., informs us that he is now building a four h.p. electric gas engine for the office of the Sarma, Ont., Observer.

The Royal Paper Mills Co., East Angus, Que., have erected a saw mill with a 60,000 ft. capacity to employ about seventy-five men.

Geo. Hawkin's glue factory at Port Hope, Ont., was damaged by fire Feb. 7th, to the extent of about \$3,000.

Napanee, Ont., will have a new sash and blind factory. Messrs. Wm. Grier, Wm. Embury and M. S. Madore are interested.

The Onoda Community, Niagara Falls Centre, Ont., will build a 100x40 ft. addition to their factory.

Mr. Crandall Prescott is erecting a saw mill at New Mills, N.B., with a 30,000 ft. capacity.

Mr. J. Bruce Payne will build a 60x20 ft. addition to his cigar factory at Granby, Que., and will put in a system of hot water heating.

Mr. M. Malcolm will start a shingle factory at Scotland, Ont. The Gould Bicycle Co., Brantford, Ont., have established a branch store and repair house at St. John's, N.B.

A by-law to grant a bonus of \$10,000 in aid of an electric road from Perth, Ont., to Lanark, Ont., has been carried.

The Drummond Electric Co., Drummondville, Que., are applying for incorporation with a capital stock of \$10,000 to operate works for the production and distribution of electricity for light, heat, power, etc.

The Carey Wire Sewing Machine Co. have been authorized to increase their capital stock from \$250,000 to \$350,000.

Brantford, Ont., is to have a new bicycle industry. The mayor will give information.

H A Jones and Wm. McKay, of Victoria, B. C., will erect a salmon cannery at Lummi Island, B.C.

The Bear River, N.S., Electric Co. have decided to extend the Bear River light system to Digby, N.S.

The Alexandria Mfg Co., Alexandria, Ont., will rebuild their furniture factory which was recently destroyed by fire.

Plans are being drawn for a proposed addition to the buildings at the Institution for the Deaf and Dumb at Belleville, Ont., the cost of which is estimated at \$30,000. It is expected that the work will be done during the coming summer.

Morrisburg, Ont., is contemplating putting in an electric light plant.

Mr. Bolfield, Eganville, Ont., is seeking a franchise for electric lighting.

The Toronto Electric Light Company have invited tenders for pile driving and excavating necessary for the foundation of its new power-house.

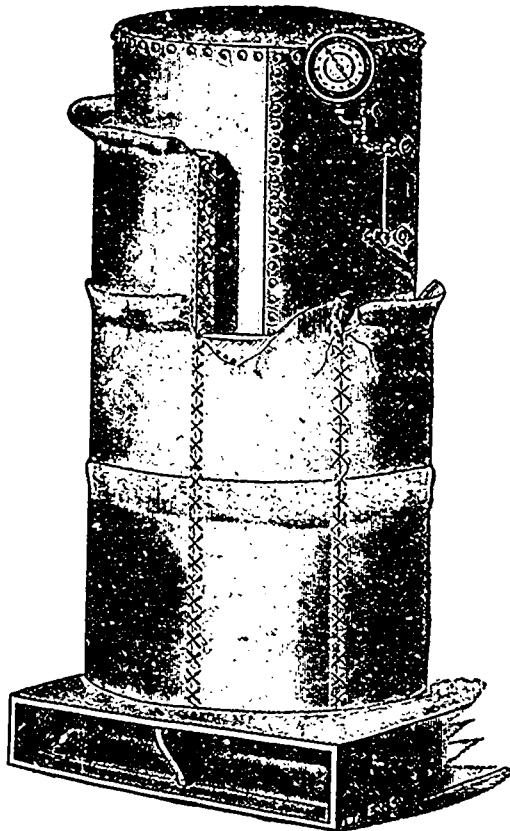
Heidermann & Trachsel's flax mill, Shakespeare, Ont., was destroyed by fire Feb. 12th. Loss about \$2,500.

T Viau, of the Hull Electric Co., Hull, Que., which proposes to construct an electric railway between Hull and Aylmer, Que., says that he has a first class water power, and is forming a joint stock company to build the line which will be seven miles in length. In the lighting service 3,000 incandescent lights and 100 arc lamps will be used. Probable cost of the work \$65,000.

Work on the electric railway to be built by the Electric Street Railway Co., Brockville, Ont., will be begun before the fall.

The Okotoks Irrigation Co., Calgary, N W T, have been incorporated with a capital stock of \$10,000 to carry on the business of land irrigation, etc.

The Barclay Clark Co., Toronto, are applying for incorporation with a capital stock of \$75,000 to acquire the business of Messrs. Barclay, Clark & Co., lithographers, and to manufacture office supplies, etc.



1895.

The Latest Invention in Coal Saving Appliances

“MICA”

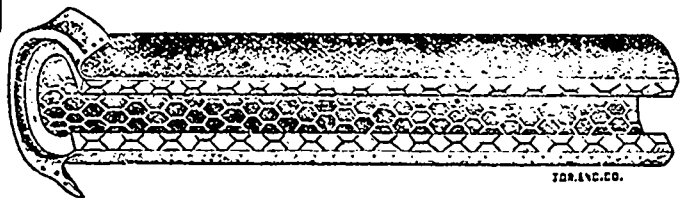
The well-known Electrical Insulator successfully adapted as an insulator of Steam heat. Enormous Saving of Fuel Guaranteed by the use of Mica boiler and steam pipe covering.

Patented

1894

and

1895



Now being used with great success by the Toronto Street Railway Co., Niagara Navigation Co., Toronto Ferry Co., etc. 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.

PULP AND PAPER IN CANADA.

A correspondent for the North-eastern Lumberman, writes as follows, concerning pulp, pulp wood and paper enterprises in Canada :

In connection with the Hon. W. B. Ives and the Hon. R. H. Pope, of Canada, George Van Dyke has recently built a well equipped mill at Angus, on the St. Francis river, where it is proposed to saw day and night, and produce 60,000 to 65,000 feet of spruce in the twenty four hours. It is stated that this mill will run entirely on foreign orders, but I question whether all the products of such a mill can be sold in South America.

The prime object of building this mill was to furnish raw material for the Royal Paper Mills Company, which is run upon the same water power as the sawmill. The Royal Company has heretofore paid as high as \$40,000 a year for its raw material and fuel and soda pulp, whereas now the pulp wood is to be taken from the lands purchased by the above syndicate in the St. Francis district, Eastern townships, and the slabs and edgings from the saw mill are to be utilized in the pulp mill, while the sawdust of the saw mill will be utilized in making the steam which is needed in parts of the operation in connection with the making of pulp.

The Royal Company produce only soda pulp, and turn out a very fine article of book and office paper, selling their product mainly in Canada, much of which is ordered by the Dominion Government. They will turn out about fourteen tons of pulp and paper per day, and in the use of some of their highest grades of paper they are obliged to employ a percentage of rags with the pulp.

Mr. Van Dyke says the local trade in Canada is large, and will utilize a very considerable portion of the Eastern townships spruce. It is also proposed to turn many of the short boards and pieces into boxes, and sell them for local use throughout the Dominion of Canada. There have been no box mills in this immediate vicinity before. The Angus Mill will cut about fifteen million feet of logs this year on the St. Francis waters, which will cost, cut and landed on the banks of the river, less than \$3 per thousand feet, with an additional charge of fifty to seventy-five cents per thousand feet for driving. Thus it will be seen even by the addition of a liberal charge for stumpage, the cost of lumber at this mill would be so low as to compete favorably with anything in New England. Angus is on the Quebec Central, and has an excellent outlet by rail

to Quebec, to Portland, and to other points in the United States.

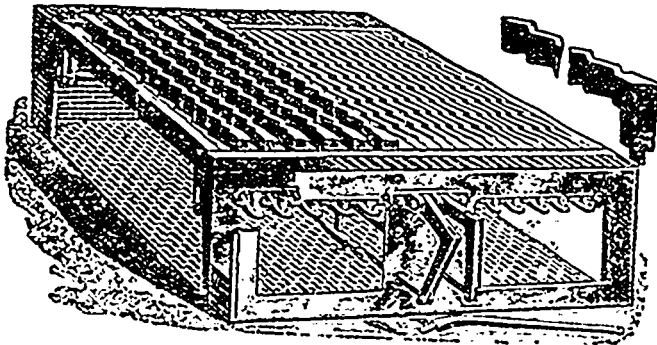
Another large concern, called the Canada Paper Company, has been making an outlay of \$200,000 or more at Windsor, P.Q. There is also another good-sized paper concern in the immediate vicinity, neither of which own any lands. These mills will be dependent on the Eastern Township spruce for their supply. The Hon. R. H. Pope has been under contract for a year or two to furnish many thousand cords of pulp wood the Bowdoin Paper Manufacturing Company, on the lower Androscoggin at Brunswick, which he ships by rail to that point. An export duty on pulp wood would somewhat affect the profits of this transaction, but of course such an export duty is optional with Canada, and may not be levied.

No doubt a very large percentage of the pulp wood for our New England mills is now secured in Canada. It looked strange last year to see carload after carload of pulp wood coming in from points on the Quebec Central Railroad, almost down to the city of Quebec, thence over the Grand Trunk Railroad to Portland, at a freight of only \$18 per car, thence transferred to the Maine Central tracks, and shipped from Portland to South Gardiner, to the Richards Paper Company, the Maine Central charging \$10 per car for the short haul on their line. This showed, perhaps, as well as anything else, that the Kennebec River supply was insufficient for the saw mills and the pulp mills last year, or else it would not have been necessary to call on Canadian source of supply to run a Kennebec pulp mill.

The Buffalo Forge Co., Buffalo, N.Y., are in receipt of the following letter which explains itself. They inform us that such unsolicited letters is very frequent in their office:—Greencastle, Ind., Feb. 13, 1896. Buffalo Forge Co., Buffalo, N.Y. Gentlemen.—We recently purchased one of your No. 8 blowers, and are running it with an eight h.p. engine made by the James Leffel & Co., Springfield, Ohio. The blower gives us perfect satisfaction, running light and giving good pressure. We poured an eight thousand pound casting, melting nine thousand pounds of iron in fifty-three minutes, with sixty pounds of steam, and without crowding the blower. Our cupola is forty-four inches diameter. Yours truly, Greencastle Foundry & Machine Co.

THE VOLCANIC PATENT SHAKING GRATE

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



TORONTO, June 17th, 1895.

THE GURNEY FOUNDRY CO., LTD., Toronto.

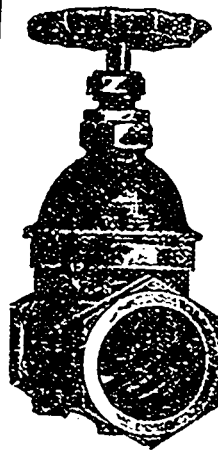
GENTLEMEN.—With reference to the Volcanic Patent Shaking Grates—I am glad to say that I am well satisfied with the working of the grates and am convinced there is a very considerable saving of fuel by their use.

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.

WALKERVILLE, ONT.

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

ANDREW ALLAN
President

J. O. GRAVEL
Secretary-Treasurer

F. SCHOLES
Man.-Director

J. J. MCGILL
General Manager

Canadian Rubber Company

(TORONTO)

OF MONTREAL

(WINNIPEG)

Capital, - - - - - \$2,000,000.00

.....MANUFACTURE ALL KINDS OF.....

RUBBER HOSE Made with our Patent
Process Seamless Tube
Rubber Valves, Packings, Gaskets, Etc.

Superior Quality **RUBBER BELTING** the following Grades :

"Extra Star"

"Extra Heavy Star"

"Fine Para"

"C. R. Co. Stitched"

"Forsyth Patent" Seamless

First Quality RUBBER BOOTS and SHOES

Western Branch : Cor. Front & Yonge Sts., Toronto J. H. WALKER, Manager

...INCANDESCENT LAMPS...

Manufactured by....

THE EDISON AND SWAN UNITED ELECTRIC LIGHT CO.

STAND HIGHEST IN THE MARKETS OF THE WORLD
FOR GENERAL ELECTRICAL AND MECHANICAL
PERFECTION, AND ARE MADE FROM 1 TO 2,000 C.P.
IN ALL VOLTAGES, COLORS AND SHAPES . . .

Electrical Supplies of Every Description

JOHN FORMAN, 650 CRAIG STREET
MONTREAL



FOR
Pleasant Flavor, Positive Strength,
Perfect Solubility, Peerless Purity,
and Perpetual Uniformity.

“BLUE SEAL”

Birch Beer

Extract stands unrivaled. We make it of the finest ingredients, sell it on its merits, and, knowing its worth, agree with pleasure to take back at full price every ounce of it that is not absolutely satisfactory. You buy it always under this guarantee, but if you want to test it before ordering, send to-day for

Free Sample Bottle.

*Requires but one ounce to the gallon.
 Costs but \$5.00 a gallon.*

No charge for Packages.

Send for Bottler's Price List.

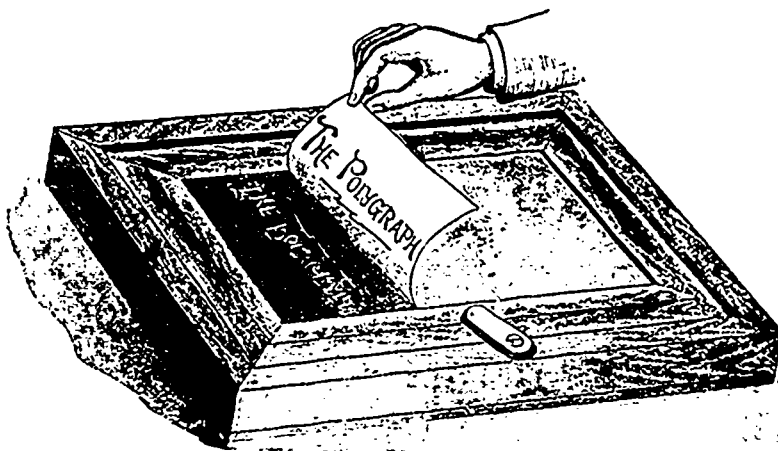
McKEY & CO.,
Boston, Mass.

BURLEIGH'S POLYGRAPH.

The accompanying illustration is of the Polygraph manufactured by Mr. Geo. H. Burleigh of Gananoque, Ont. With this machine anything that can be done on paper with an ordinary pen using a chemical ink, can easily be reproduced to the extent of seventy-five to one hundred and fifty copies in about half an hour. Ordinary writing can be multiplied to the extent of ninety to one hundred and twenty-five copies, bright and clear, from one original. The number of copies that can be obtained vary a little according to the work. The process was invented by Messrs. Kwaysser and Husak in Austria, and patented in several countries. It has gone through several modifications, and been sold under different names. Some of these embody many objections, in a great many instances failing to work satisfactorily. Among the causes of failure may be mentioned: The public were not instructed how to properly work it; or, it would print very poor copies; the lines would blur, and the sheets would stick to the surface and sometimes tear; and after it was used once or twice the surface was left in a condition unfit for further use. Mr. Burleigh saw the need of an apparatus that would be at once reliable and cheap, minus the above disagreeable features. He undertook to remove the objections mentioned, and has after two years of careful experiments, brought it to a high state of perfection. Producing a machine which will print a clean, sharp line; give bright copies; will not blur; will let the sheets leave the surface quickly and easily; can be used over and over again in quick succession; the remaining ink can be removed in half a minute; and in the using of it the surface is left in good condition for use the next time, as good as when new.

It will be found very convenient in every office for printing price lists, circular letters, notices of meetings, programmes, invitations, reports, statements, designs, music, examination papers, drawings, etc. With the Polygraph and a method of the proprietor's own invention, copies of music, drawings, designs, etc., can be multiplied perfectly, and quicker than by any other method. Full directions how to do this are sent with each machine. It will print anything from the finest penwork to a building design. Complete

and simple directions how to work it are also sent. These directions are copyrighted. Anyone can easily follow them and do the finest work. The Polygraph consists of a handsome varnished wooden case, neatly and durably made, in which is the printing surface from which the impressions are taken. If used once a month with

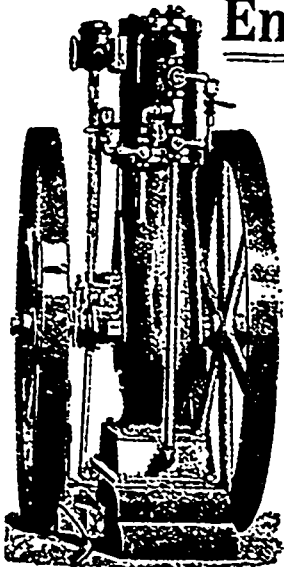


ordinary care it is estimated to last from five to seven years, and a double one twice as long. Six sizes are listed and larger ones made to order. For illustrated circular, testimonials and samples of its work, address the proprietor and manufacturer, Geo. H. Burleigh, Gananoque, Ont.

The W. R. Gardner Tool Co., Brockville, Ont., are applying for incorporation with a capital stock of \$100,000, to acquire the business now carried on by the W. R. Gardner Tool Co., to manufacture edged tools, saws, hammers, etc.

The electric street railway in Sherbrooke, Que., will probably be built during the coming summer.

THE ELECTRICAL GAS OR GASOLINE... Engine



WRITE FOR PRICES AND TESTIMONIALS

J. R. BAIRD

WOODSTOCK, - - - ONTARIO

Firstbrook Bros.

Dovetail and Packing Boxes

Top Pins, Side Blocks and Cross Arms, Wood Printers, Etc.

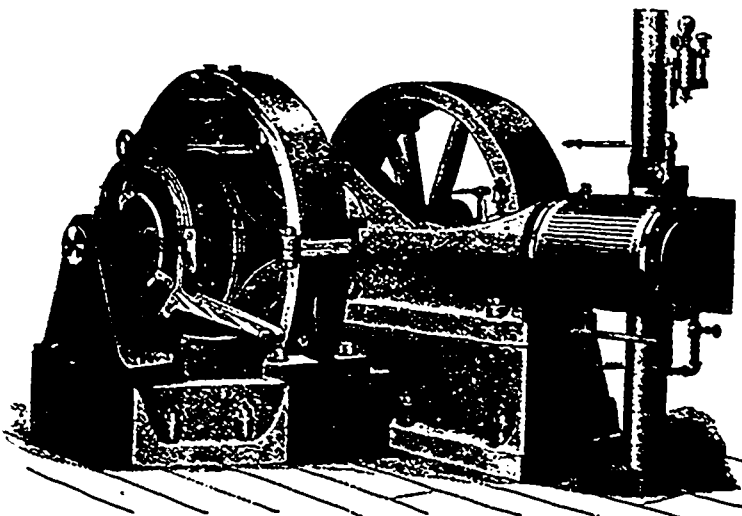
Cigar Boxes, Shipping Cases,

TORONTO, - - - ONTARIO.

Write for Prices

ROBB-ARMSTRONG ENGINES.

Simple, Tandem and Cross Compound.



Correct Design

Superior Workmanship

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

Robb Engineering Company (Ltd.)

AMHERST, N.S.

AGENTS--

Canada Machinery Agency, 321 St. James Street, Montreal
William McKay, Seaforth, Ont., Traveller.

Above
all

COMPETITORS

Coal is money, why not save it by using the

T.J.C. INJECTOR

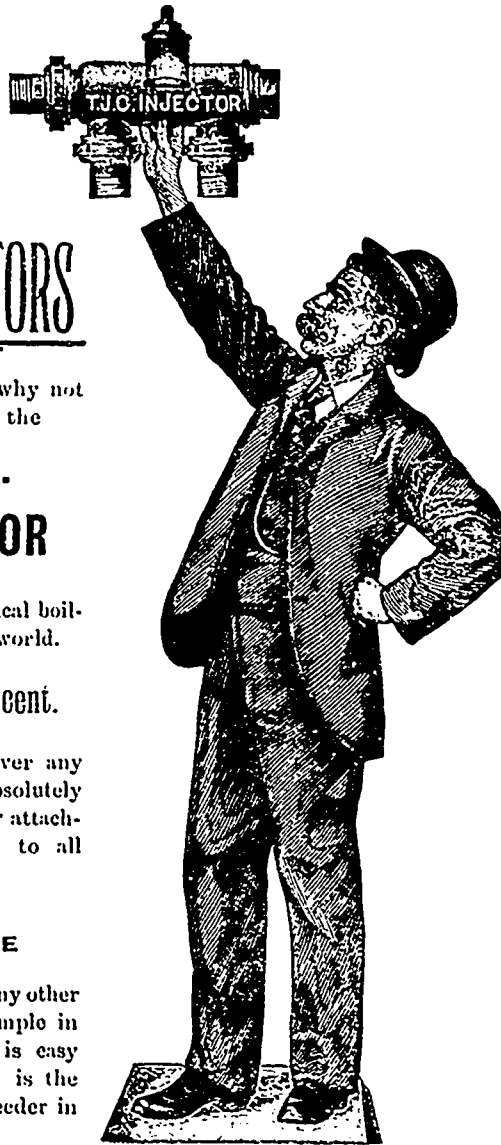
the most economical boiler feeder in the world.

20 Per cent.

saved in coal over any other make. Absolutely automatic. Easily attached. Applicable to all kinds of boilers.

NOT EXPENSIVE

Will outwear any other make and is simple in construction. It is easy to operate, and is the most powerful feeder in the world.



The T. J. C. Injector

is the best because you cannot possibly go wrong with it. With high or low steam the result is equally satisfactory.

It combines the utmost simplicity with perfect efficiency, and any boy can operate it.

PRICE LIST :

| No. | Price. | Horse Power. |
|---------|---------|--------------|
| 7..... | \$ 7 00 | 4 to 8 |
| 10..... | 7 00 | 8 to 16 |
| 15..... | 10 50 | 16 to 40 |
| 20..... | 15 00 | 40 to 72 |
| 25..... | 22 50 | 72 to 120 |
| 35..... | 30 00 | 120 to 220 |
| 45..... | 45 00 | 220 to 300 |

HAMILTON BRASS MFG CO.

LIMITED

HAMILTON, - ONT.

RECOVERY OF FATTY MATTER FROM WASTE SCOURING LIQUORS.

In the better regulated establishments this waste water is specially treated for the purpose not only of getting from it the fat contained in the wool, but also of regenerating the fatty matter from the soap used in washing. The waste water consists essentially of an emulsion of the wool grease in soap solution, and the yolk of the wool. This yolk varies greatly in quantity in different classes of wool and is a complicated mixture of fatty and waxy bodies.

Recovered fatty matter from the washing of greasy wool contains a high percentage of wool fat. If the wool contains but little grease the recovered fat consists principally of the fatty acids derived from the soap. In some cases the wool is steeped in water only previous to scouring, by which means much of the yolk and potash salts are removed. When this is done the soapy liquors give a less yield of recovered fat, but it is of superior quality. The following figures show the percentage of recovered grease from wool scouring of four different lots: From one thousand gallons of waste liquor

| | | |
|--------------|--------------|--------------------|
| Sample No. 1 | yielded..... | 136 lbs oil grease |
| " 2 | "..... | 152 " |
| " 3 | "..... | 120 " |
| " 4 | "..... | 27 " |

After the wool has been washed it is treated to a certain amount of oil to facilitate the carding operation. The wool in form of sliver is subsequently washed in soap, in what is known as a back washing machine. In most works the waste (suds) from this operation are mixed with the waste liquors obtained in washing the raw wool, but it is far preferable to treat the back washing liquor separately, since the recovered fatty matter is more valuable than the common brown grease.

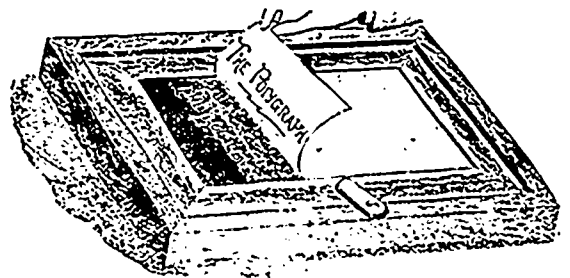
The waste liquors from yarn scouring, especially worsted yarn, also yield a superior quality of recovered fat and should be saved for reasons of economy.

Messrs. A. P. Mende & Co., New York, are manufacturers of what they denominate the Industrial Economizer Apparatus for reclaiming the valuable products from waste waters, such as grease from wool and cloth scouring, etc., and they will take much pleasure in giving further information on application. These recovered greases have a ready sale for different purposes, and the apparatus is comparatively simple and inexpensive.

THE RAT PORTAGE DAM.

A despatch from Rat Portage, Ont., says: Now that the power dam here is about completed, and when an effort is being made to raise an international complication in regard to what it may do

WITH A POLYGRAPH.



You can quickly and cheaply print circulars, notices, reports, statements, music, drawings, price lists, etc. Ninety to one hundred and twenty five letters can easily be produced in about half an hour from one original, and each one will be clear and bright. The Polygraph is the most satisfactory form of this kind of apparatus yet made. Everything about it is near perfect as is possible to make it. Satisfaction is guaranteed. In a hand-ome wooden case finely finished, and is neat, cleanly, and reliable.

Simple and complete directions which are copyrighted, are sent with each machine. From the Standard Drain Pipe Co., who use a No. 4 machine, 17 x 11 inches:

St. Johns, P.Q. February 13, 1896.

DEAR SIR,—We have tested the Polygraph recently bought from you, and are pleased to be able to certify to its performing all you claim for it in your advertisement. It is a saving of time in copying, and expense in pasting in many cases. Yours truly, H. G. PERCHARD, Secretary.

Circular and samples of its work on application.

Address,

GEORGE H. BURLEIGH,
Gananoque, Ont.

regard to flooding United States lands, a description of the immense work will be in order. Work was begun here about a year ago to construct a dam across the Winnipeg river at the outlet of Lake of the Woods, which would harness a water power, since shown to be equal to 40,000 horse power. The dam constructed is now finished, the work costing some \$250,000. There are twenty-two piers built of solid masonry and Portland cement, on the granite bed of the river, thus making a dam practically indestructible and impervious to the mightiest flood that might come from the Lake of the Woods.

Between the piers will be placed flood gates which will be used as regulators. When the lake is high they can be opened, thus allowing a huge volume of water to escape—more, in fact, than would escape naturally, if the dam were still unconstructed. It has been rumored that the dam will raise the water in the lake, and flood the low lands on the Minnesota shores. This is not so, for there will be sufficient water entering the Winnipeg river at all seasons of the year to obviate the necessity of raising the lake even to the level of the standing high water level. The Minnesota low lands have been frequently flooded in the past, when the level of the lake reached the mark, usual after very rainy seasons.

Numerous mill sites have been laid out all along the banks of the river, and all around Tunnel island, upon which a small town has been surveyed, and arranged in building lots for the workmen. There are five wide streets and public squares planned, and the houses and buildings will be lighted by electricity and possibly heated by the same power, generated on the island. The possibilities for industries are almost unlimited. The well wooded country circumjacent to the Lake of the Woods, and on both sides of Rainy river, offers almost inexhaustible material for pulp and paper mills. Logs can be cut and rafted from Rainy lake and Lake of the Woods, to the Winnipeg river at a minimum cost. Tanning factories could be run here. It is understood that the Dominion Gold Mining and Reduction Company is now negotiating with a company being formed to purchase an electric plant for power to run the reduction works at Rat Portage. But there is no doubt that the biggest industry will be flour milling. Looking back to the production of wheat in northwestern Canada ten years ago, comparing it with 1895 and looking forward to the same progress in the future, one can see that circumstances may make it imperative for business men to take hold vigorously, of the natural advantages at Rat Portage for export mills, and it will be impossible to rush out of the country three fourths of the crop before the close of navigation.

Navigation on Rainy river will be greatly facilitated on account of the dam regulating and keeping up to a normal height the water in the lake and consequently in Rainy river. The great trouble in the past has been the shallowness of the water at Long Sault rapids. At low water the sharp, jagged rocks in the rapids can be plainly seen from the American side of the river; the rocks which wrecked the three steamers last summer. The Canadian Pacific is making the survey for tracks to the dam, so as to allow those firms which have already bought sites to ship their building material to Tunnel island or the banks of the river.

A very important point in favor of the water power is the fact that there is never any anchor ice or frazil, even in the severest weather. The Lake of the Woods covers an area of 3,000 square miles and drains a country of 30,000 square miles. The average annual rise and fall of the lake is about three feet. The dam, by keeping the water in the lake at its normal level, will only flood those lowlands, both in Minnesota and Canada, that are usually

under water a portion of each year. If the dam was to raise the water in the lake above its normal level, the Canadian interests to suffer are much greater than those on the Minnesota side.

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.

As will be perceived by reference to their advertisement, the Packard Electric Co., St. Catharines, Ont., have been appointed the exclusive agents in Canada for the Homer commutator, manufactured by F. E. Homer & Co., Cleveland, Ohio. It is claimed for this commutator that it is of the highest grade made in the United States, and that it will last from two to four times as long as other similar instruments. The Packard Co. will take pleasure in giving further information.

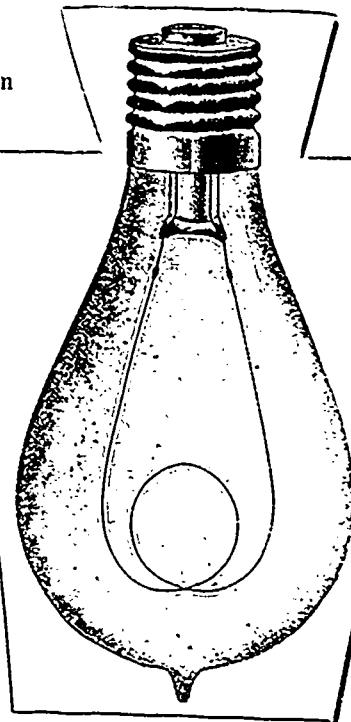
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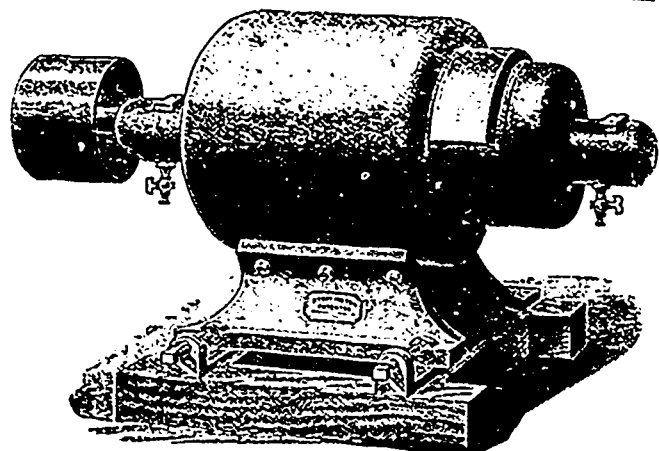
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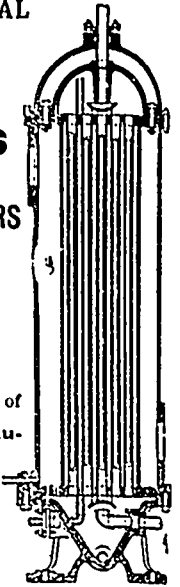
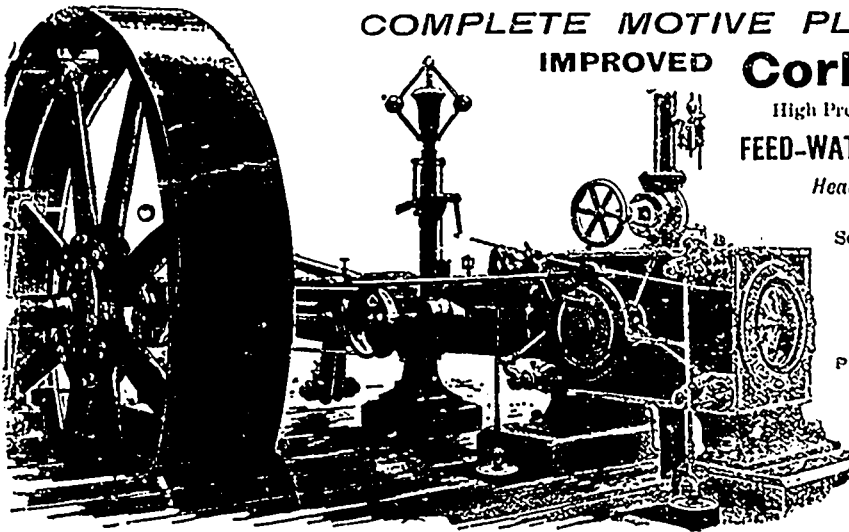
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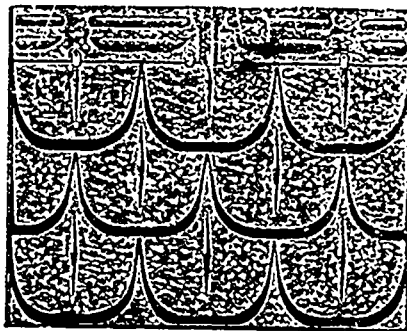
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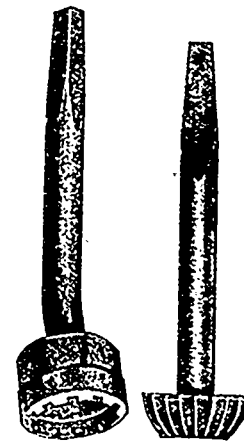
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CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office, from December 2nd to December 13th, 1895.

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.

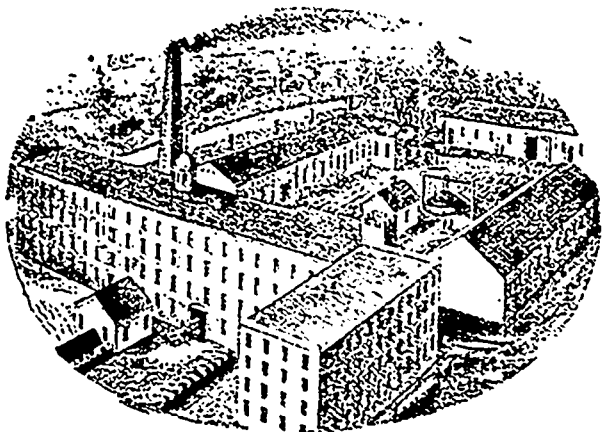
Copies of any American patents can be procured from either of these attorneys for the sum of twenty-five cents each.

- 50,686 Hose nozzle, Chas. V. T. Pollock, Greenwich, Conn., and Benj. F. Morrett, Newark, N.J.
- 50,687 Combined pipe and nozzle, Chas. V. T. Pollock, Greenwich, Conn.
- 50,688 Pneumatic tool, James Wolstencroft, assignee of John G. Carlinet, Frankford, Pa.
- 50,689 Pipe wrench, etc., Chas. L. Dunham and Cochran C. Stover, Centerville, O.
- 50,690 Cigarette machine, Wm. Maxfield and Edmond C. Brown, Brooklyn, N.Y.
- 50,691 Front grate for cook stoves, Fay O. Farwell and the Adams Company, Dubuque, Ia.
- 50,692 Kitchen cabinet, John Fisher, Geo. W. Jones, Theodore Parker and Millard Perry, all of Springdale, Ark.
- 50,693 Vehicle, John H. Curl and Clay Faulkner, assignees of Gailbreath Cummins, MacMinville, Tenn.
- 50,694 Composition of artificial stone, etc., Frederick Brown and John King, Fort William, Ont.
- 50,695 Steam boiler, John MacCormack, Bayonne, N.J.

- 50,696 Lever for turning steam engines off their dead centres, John Donnelly, St. Henri, Que.
- 50,697 Buckle, Frank B. Conobise, New York, N.Y.
- 50,698 Triangle for operating oil and water wells, Peter Babcock, Petrolia, Ont.
- 50,699 Method of and means of measuring the energy of alternating electric currents, Oliver B. Shallenberger, Rochester, Pa.
- 50,700 Method of and means for measuring alternating electric currents, Oliver B. Shallenberger, Rochester, Pa.
- 50,701 Indicating watt meter for alternating electric currents, Oliver B. Shallenberger, Rochester, Pa.
- 50,702 Watt meter for multiphase alternating electric currents, Oliver B. Shallenberger, Rochester, Pa.
- 50,703 Alternating current measuring instrument, Oliver B. Shallenberger, Rochester, Pa.
- 50,704 Coal dumping cars, Wm. G. Lane, Pietou, N.S.
- 50,705 Pump, Wm. H. Heard, London, Ont.
- 50,706 Rocking chair, Thos. W. Wigg, Jamestown, N.Y.
- 50,707 Hydraulic or steam ram, John P. Randerson and John M. Seward, New York, N.Y.
- 50,708 Potato digger, Daniel Daniel, Lonoke, Ark.
- 50,709 Hoist, etc., Jas. W. Martin, Manchester, Eng.
- 50,710 Draft rigging for cars, Wm. H. Miner, Chicago, Ill.
- 50,711 Horse hay rake fender, Daniel V. Mott, Nanton, N.W.T.
- 50,712 Car coupler, Geo. H. Pacaud, Fall River, Mass., and Ernest F. E. Barthe, Montreal.
- 50,713 Suspender buckle, Burkhard Frey, Zizers, Switzerland.
- 50,714 Nut lock, Wm. A. Bode, Orange, N.J.
- 50,715 Boot, Bruno Wesselmann, Göttingen, Prussia.
- 50,716 Pump, Emil Noppel, Philadelphia, Pa.
- 50,717 Non-fillable bottle, Wm. A. Hubener, Hoboken, N.J.
- 50,718 Device for cleaning brushes, Hermann Runge, Griefswald, Prussia.

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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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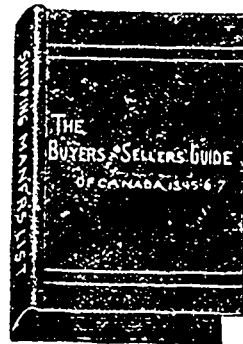
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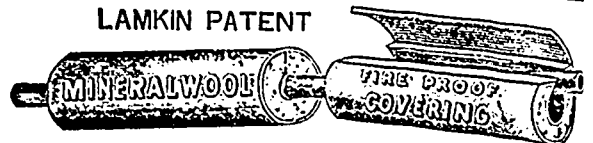
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- 50,721 Pipe wrench, Frank L. Folger and Robert D. Shafer, Fayette, O.
- 50,722 Wind-wheel, Wm. C. Bramwell, Hyde Park, Mass.
- 50,723 Barrel support, Robert Walker, Oakland, Cal.
- 50,724 Lightning arrester, Alexander J. Wurts, Pittsburg, Pa.
- 50,725 Bolt, John W. Sammis, Mary B. Evers, and Cornelia B. Lee, all of Dover, N.J.
- 50,726 Sewing machine, the Self-Threading Sewing Machine Co., New York, N.Y., assignee of A. Legg, Allendale, N. J., and F. J. Treacy, Brooklyn, N.Y.
- 50,727 Boiler feeder, Robt. G. McAuley and Louis B. Fulton, Pittsburg, Pa.
- 50,728 Coin delivery apparatus, Edward J. Brandt, Watertown, Wis.
- 50,729 Machine for untwisting and picking ropes of curled fibre, Samuel A. Flower of Newark, N.J.
- 50,730 Tool chuck, James T. Fink, Washington, D.C., and Albert Stephen, Mount Pleasant, D.C.
- 50,731 Siphon valve, Frederick Booth, Concord, N.H.
- 50,732 Car seat, Jas. M. Osgood, Boston, Mass.
- 50,733 Method of and means for hermetically sealing metal boxes, etc., Jules Gersant, Deal, Eng., and A. G. Battifant, London, Eng.
- 50,734 Balance attachment for bicycle pedals, John R. Bliven, Daytona, Fla.
- 50,735 Machine for marking leather, Winfield S. Soule, Brockton, Mass.
- 50,736 Saw setting tool, John A. Minger, Bern, Kan.
- 50,737 Incandescent lamp, Peter Steins, Leyton, Eng.
- 50,738 Envelope, David Ambrose, New York, N.Y.

- 50,739 Garment securing device, O.V. Oostrum, Portland, Oregon
- 50,740 Carpenter's roof holder and gauge, Chas. Bainbridge, Werneth, Eng.
- 50,741 Lamp for the production of spirit-gas incandescent light, with lighting and extinguishing contrivance, Albin Porlich, Dresden Striesen, Germany.
- 50,742 Harp, Leopold Lehman, Joliet, Ill.
- 50,743 Hose bridge, Wm. H. Baker and Geo. McFarlane, Detroit, Mich.
- 50,744 Thermometer case, Alfred A. Smith and Frederick S. Smith, assignees of Philip Jaisohn, Washington, D.C.
- 50,745 Pot holder and strainer, Sarah Jane Cushman, assignee of Wm. G. Bohns, Rochester, N.Y.
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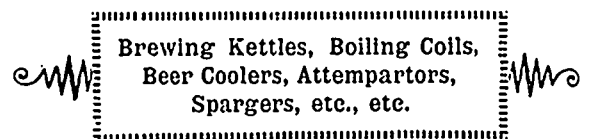
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- 50,780 Automatic cut-off mechanism, Wm. M. Williams, Opelika, Ala.

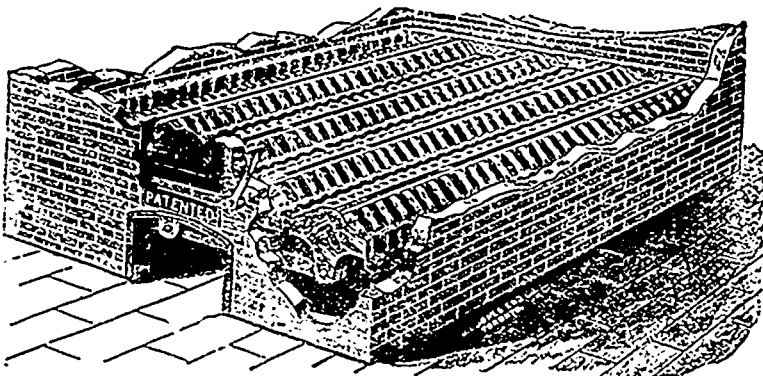
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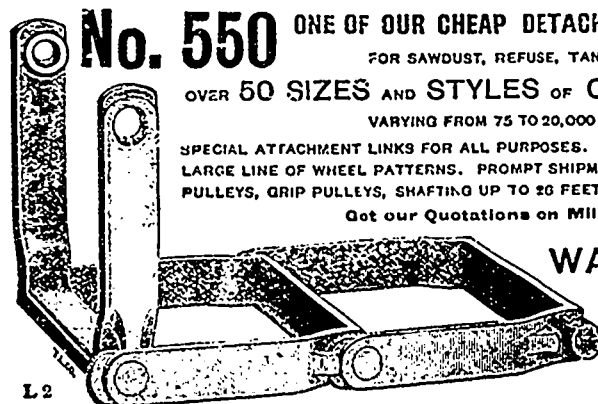
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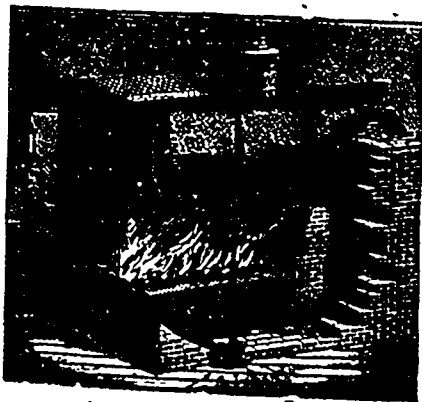
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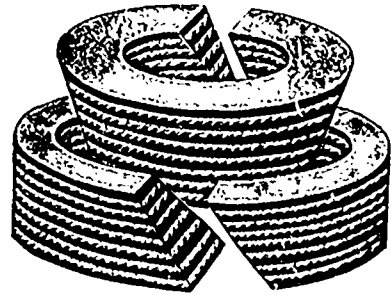
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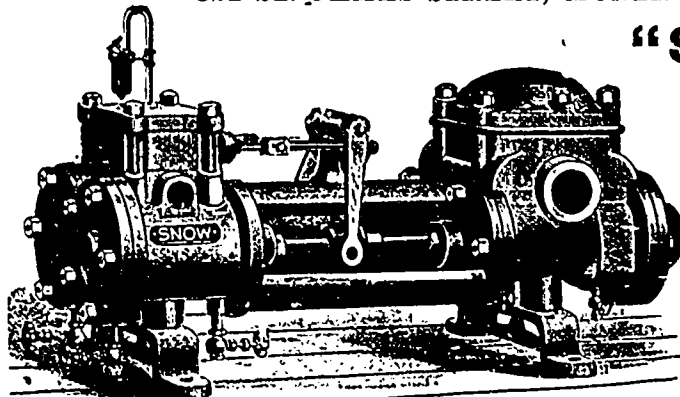
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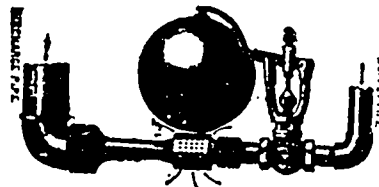
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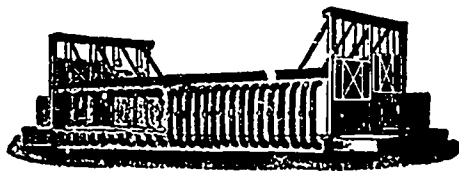
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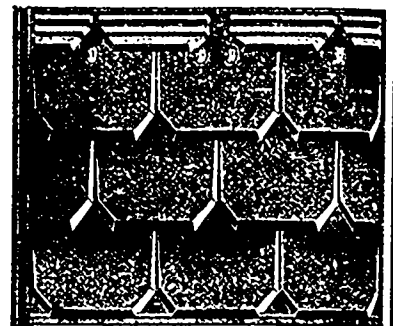
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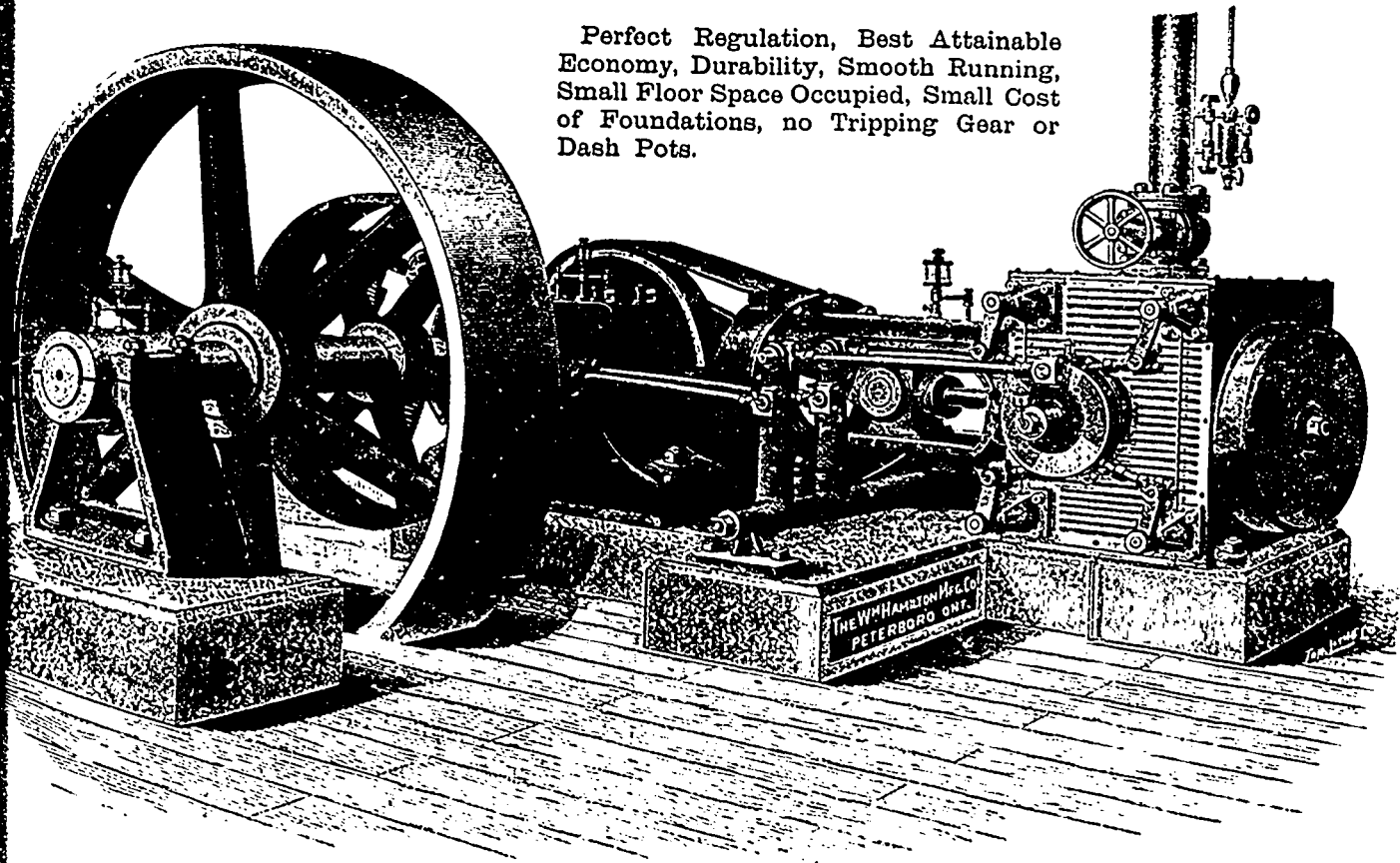
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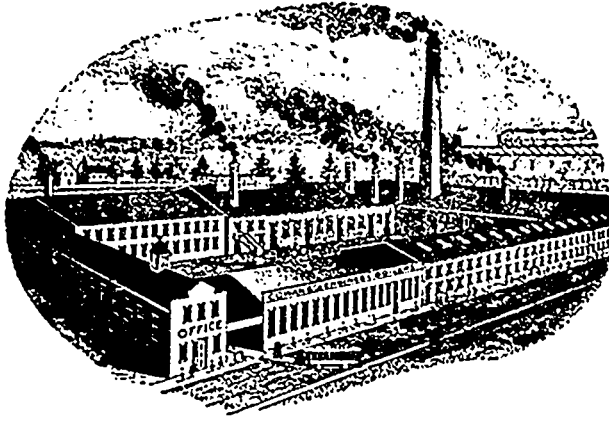
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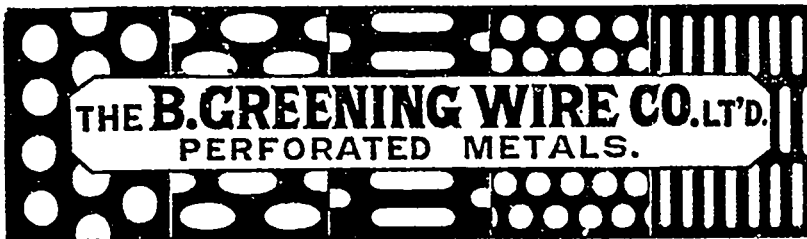
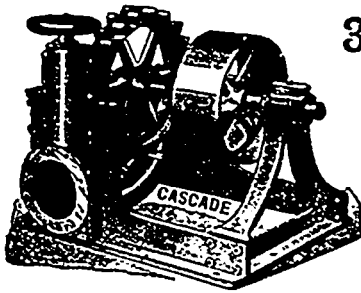
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- 554,214 Broom, Jas. Bowell, Port Arthur, Ont.
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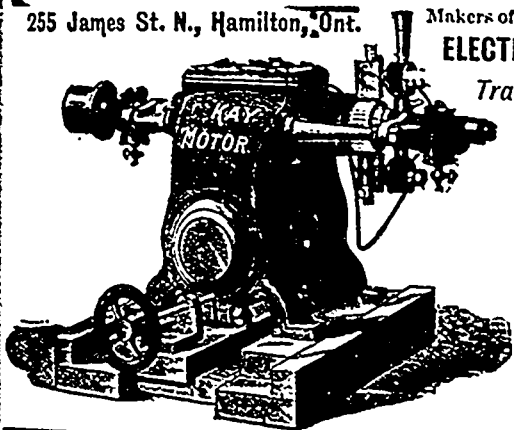
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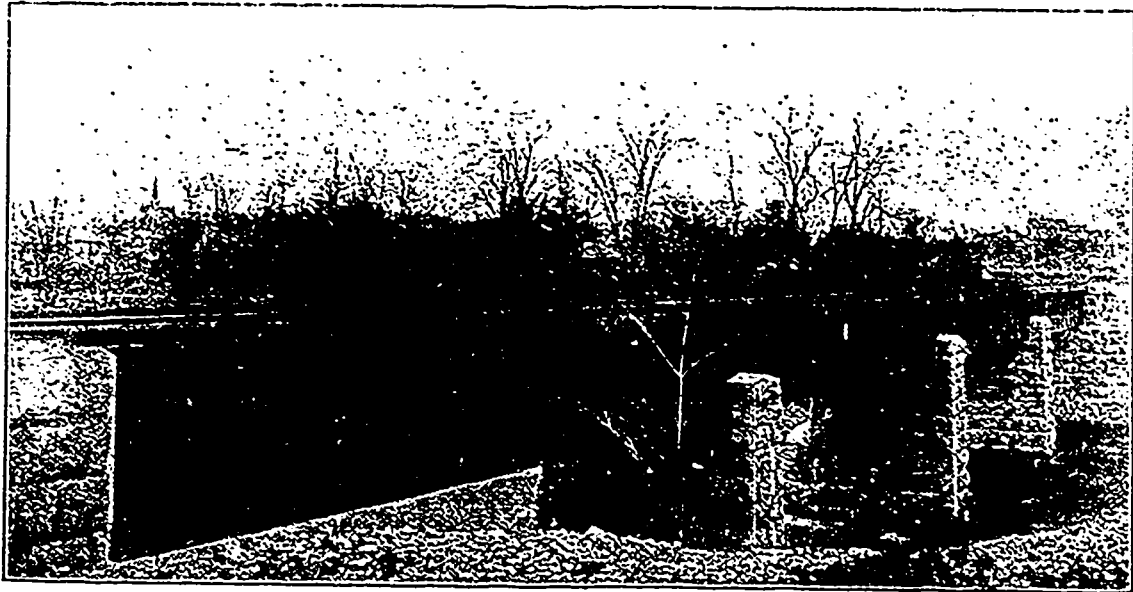
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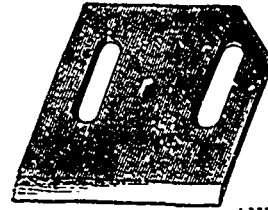


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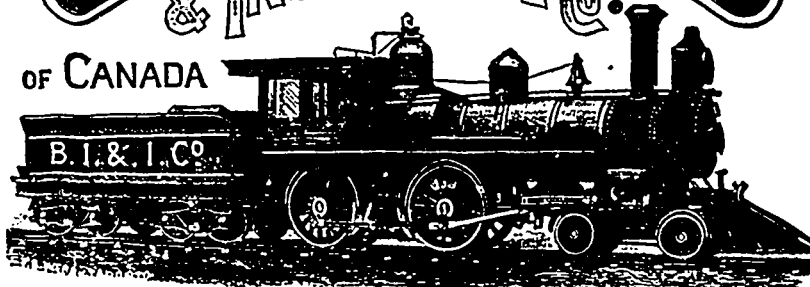
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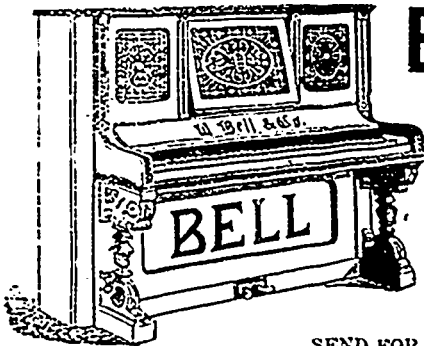
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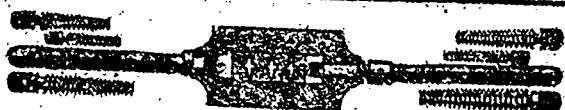
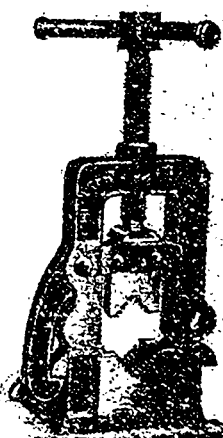


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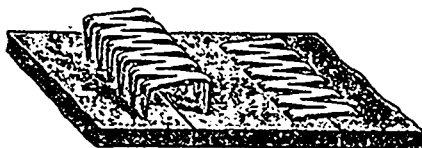
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