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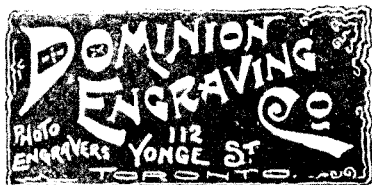
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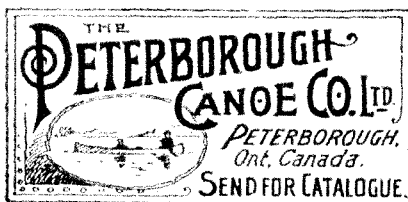
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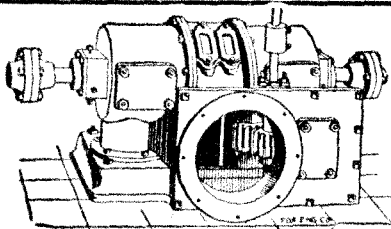
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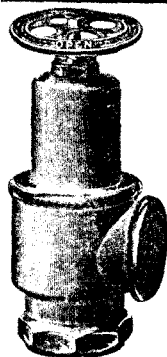
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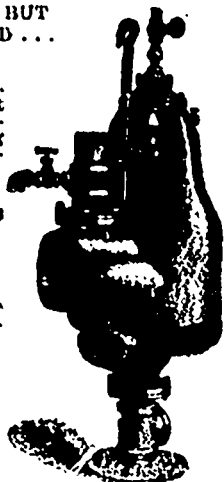
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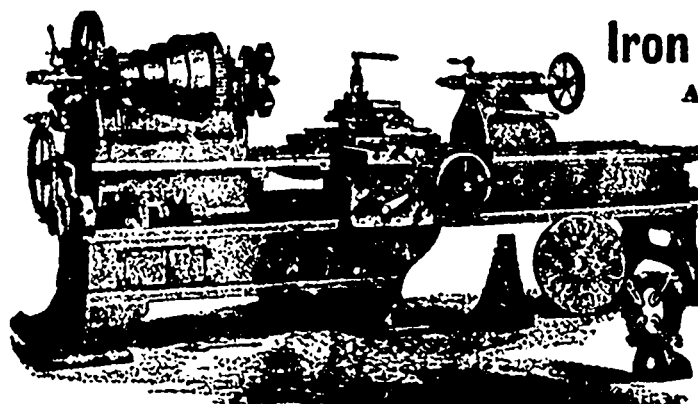
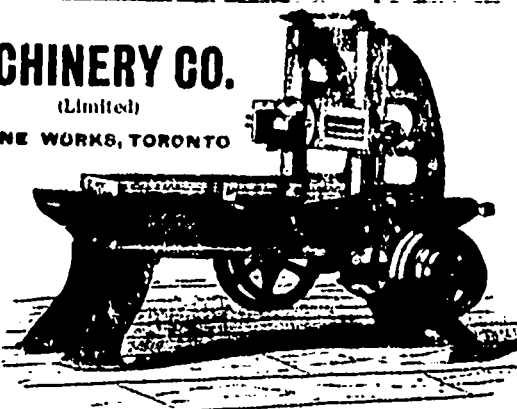
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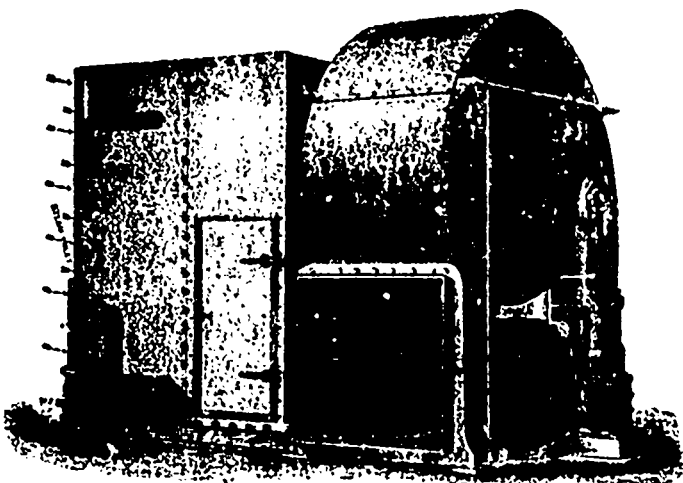
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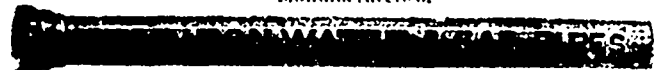
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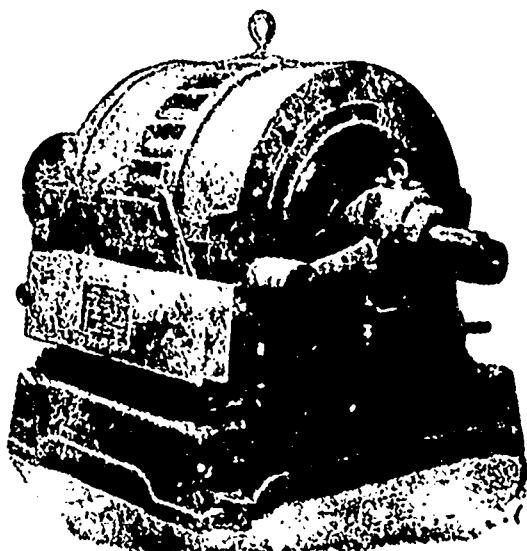
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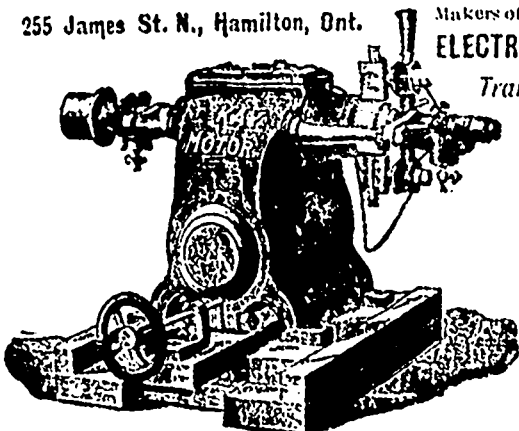
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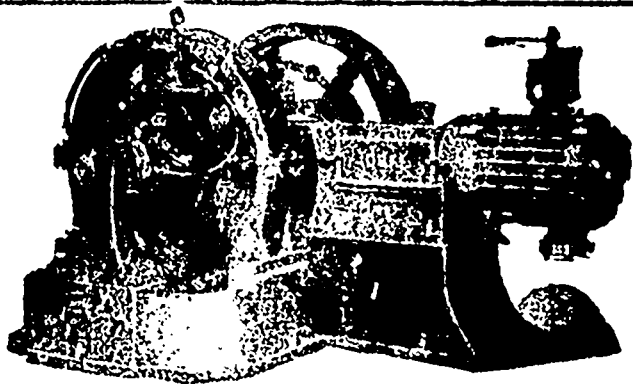
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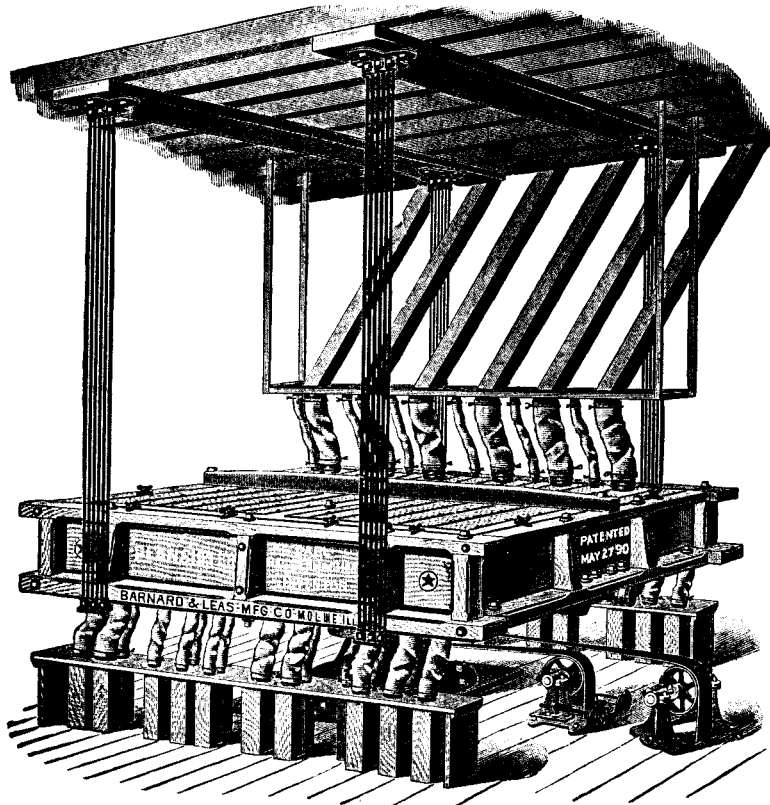
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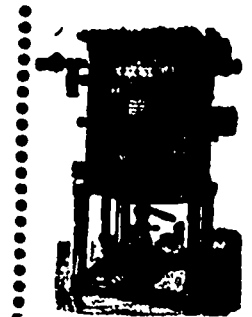
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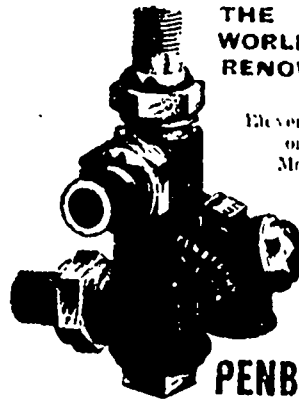


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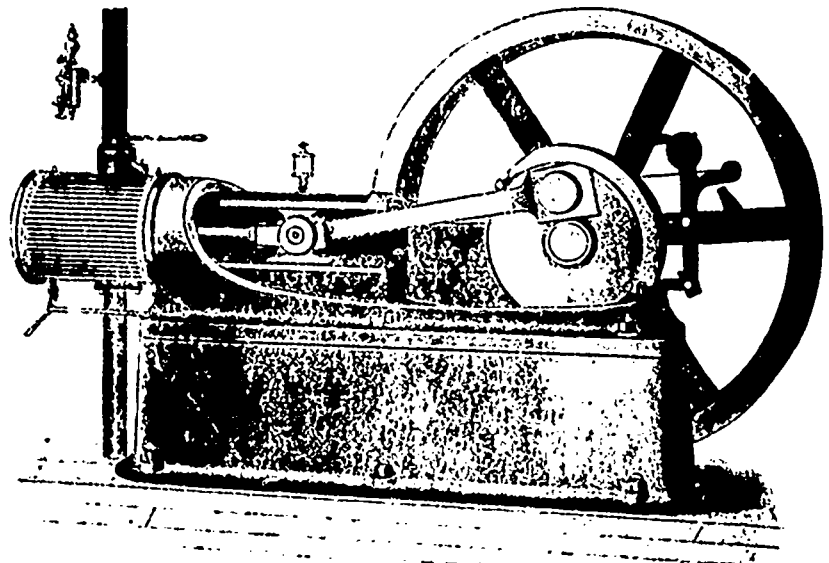
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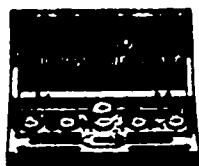
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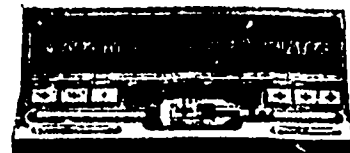
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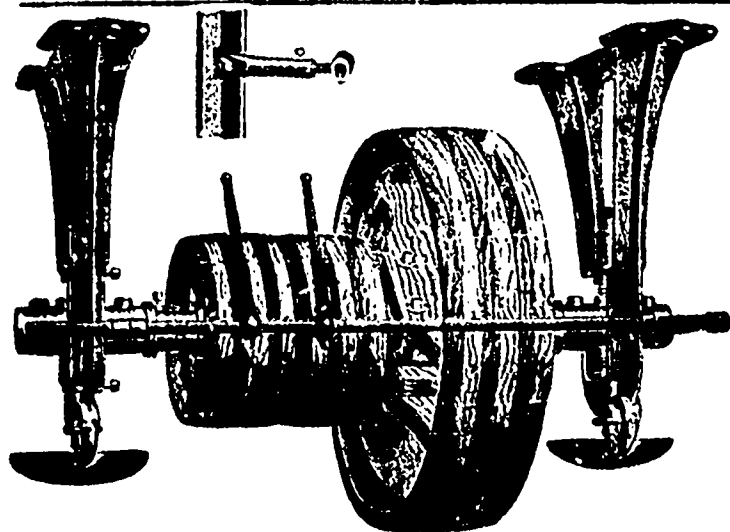
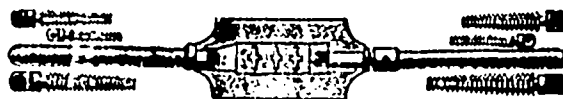
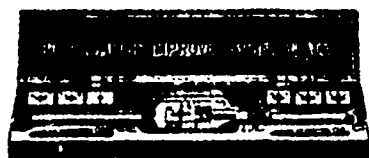


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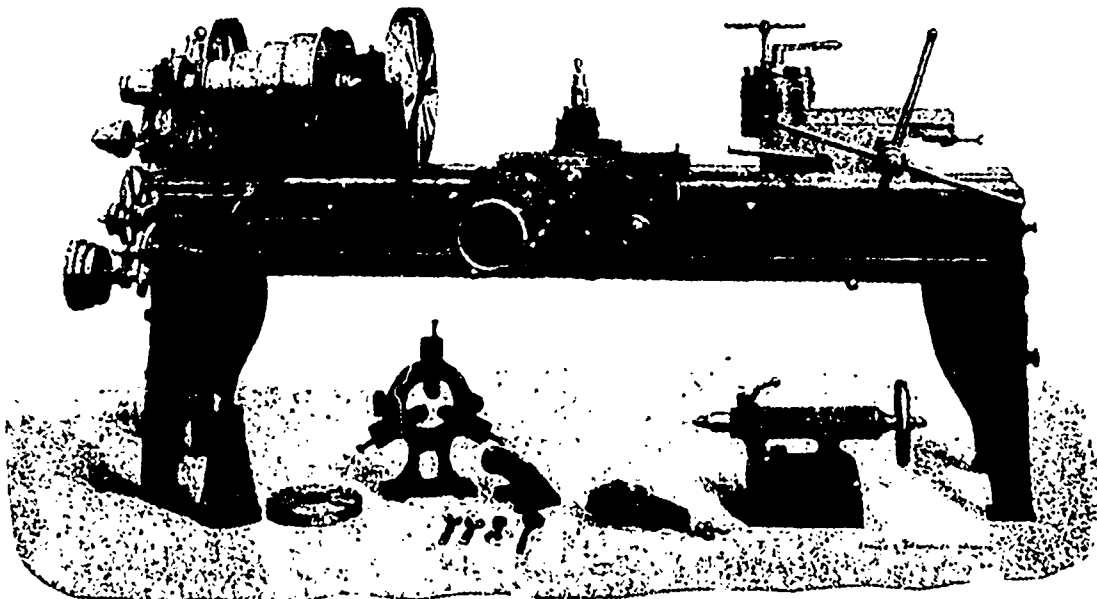
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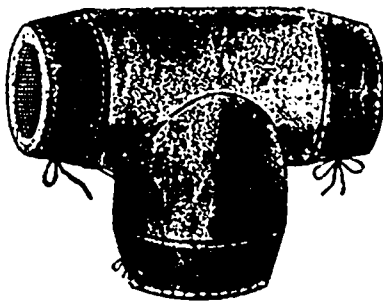
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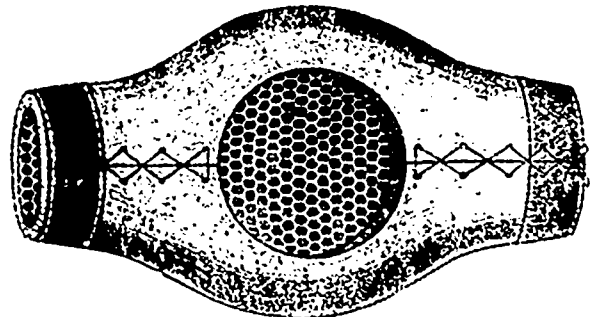
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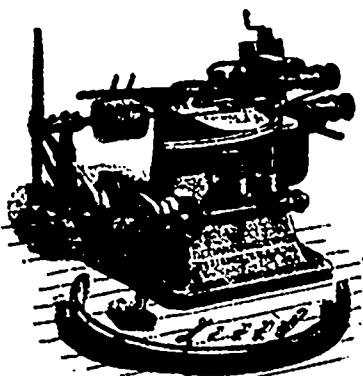
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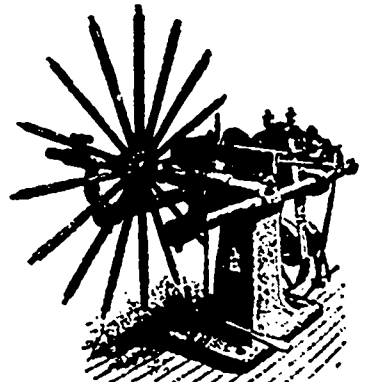
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CANADA MUST GROW.

Canada is growing. There is no doubt about it. The young giant has just found out his own strength. Mentally, physically, morally he is now developing. Nothing can stop it. To stand in his way is dangerous. Beware! Have a care that every advantage is contributed, and Canada may develop to the utmost.

Engineers have estimated that, along the St. Lawrence,

between Montreal and the great lakes, Canada has 200,000,000 horse power of water going to waste. Just examine into this. Experts say that, in Ontario, we have easily available millions of tons of iron ore of the best quality.

Give us a tariff and bonus that will set our iron mining and smelting industry on its feet solidly. The pulp wood industry is becoming immense. Every year we send out 500,000 tons of pulp wood to Europe, besides the vast quantity that goes to American pulp mills. There is no reason why the tremendous water-power of the St. Lawrence should not be utilized to run a line of factories that would make us the greatest manufacturing nation in the world. Sir Wilfrid Laurier said, here and at Montreal, that a St. Lawrence water-way to Montreal was our need, and that we should have it. A million bushels of grain per day is what Buffalo boasts of having received in September. The figures are very remarkable. During the month of September there were received at that port 1,679,980 barrels of flour and 31,051,221 bushels of grain, an increase of twenty-five per cent. over the corresponding month last year. From the opening of navigation to the close of October the receipts at Buffalo have been as follows: Flour, 7,715,738 barrels; grain, 128,156,616 bushels. This is by far the largest amount of grain and flour ever received in that time at the great Lake Erie city.

Why is all this going by way of American bottoms, and American railways to American seaports to cross the Atlantic? Why should Canada receive no benefit for the hundred million dollars it has cost us to build up our Great Northwest? Why should we carry but ten per cent. of our own grain to these abroad? Why, indeed, but that we have not the equipment to handle this freight ourselves as economically as the Americans do. Give us a St. Lawrence deep water-way, and we will carry our own and the products of the lake states of the Union. We will get back that which belongs to us, and the forethought of the American grain man will give us his patronage, because it will put money in his pockets.

Develop our manufacturing industries and our agriculture, and, with the two combined, we can supply our own canals and water-ways with all the freight they can carry. Millions of acres that are fitted only and splendidly for grain growing; millions of acres of timber and pulp wood; millions of tons of ore of a score of kinds. Give us development, Mr. Laurier, or you will soon find yourself obliged to give way to those whose stand in trade matters is more certain than your own, and who are in no danger of handing over our markets to the American and German manufacturers.

THE TWO GREAT STRIKES.

Coal and Iron deals, at some length, with the strike of engineers who are demanding an eight hour day from English employers. In the course of its remarks it says:—

We feel certain that, as regards the Amalgamated Society of Engineers, the workmen would never have consented to subscribe £300,000 if they had been told that all this money was intended to provide "the sinews of war" in attempt to coerce the employers into conceding an eight hours day. These funds, which were originally subscribed for affording relief and mitigating distress in case of accident, illness, or death, are now commonly diverted to strangely different objects, even to the levying of war upon the employers for resisting the claim to an eight hours day. Such a war, as Sir Edward Reed justly points out, is as reasonable as the war of

a town against its reservoirs as a means of improving its water supply, inasmuch as the proprietors of prosperous concerns are truly "the reservoirs from which the people are supplied with employment and with pay." It is certain that if such funds were not at the absolute disposal of a few individuals, as is at present the case, they could not be utilized for strike purposes. If they were confined to their original objects, the workmen would be more contented, the trade of the country would be saved from periodical convulsions, and a far better feeling would exist between employers and employed. As matters now stand, the tendency is to use these funds as a war chest for the most unjustifiable and aggressive purposes.

The strike of the Engineers seems, in some sense, to be different in principle to that of the American coal miners. In both instances there is certainly the fund feature, but the turn of our English contemporary's argument indicates that, in Great Britain the leaders of the strike have the rank and file completely in their power, and are not, by any means, slow to make use of it to such an extent that the workingmen are not at all pleased. In the case of the recent coal strike the difficulty appeared rather to be for the leaders among the men to keep them from going too far. When the offer of sixty-five cents a ton was made by the coal operators, the men did not want to accept the compromise, although it meant that they were to get within four cents of what they asked. It took the leaders three days of hard work and steady argument to convince enough men to secure them a narrow majority, to support the acceptance of the offer.

While it would be a sad setback to labor, had it not the right to combine in unions to secure and defend their best interest, yet it would seem that difficulty can scarcely be avoided because of the overcrowding of all these pursuits. Men who have been trained for one calling and understand nothing else, do not relish the idea of trying to compete for a livelihood in any other sphere than that they have been accustomed to work in. Thus, when the supply of labor, in any particular branch of industry, becomes proportionately too large for the amount of work to be done, trouble very naturally ensues, and the purpose of the labor union is frustrated by the necessity for bread—a necessity that knows no law and will brook none. One man offers to work for less than the union rate of wages, and thus spoils the system. Until the labor organizations can reduce competition in their individual trades they cannot possibly attain their object.

Another feature of this big strike is worth noting: We have followed its course with much interest from the day that the men first went out, and it has been impossible not to notice the great amount of space given to its description by those journals of the "yellow" school. No one can justly object to their lengthy descriptions. It is their prerogative to publish them, and it is certainly their business to furnish their readers with such news as they find most interesting. But what we wish to call in question is the attitude taken by some of the journals in question. In glaring cartoons the employers have been depicted as monsters who were eager to crush their prey (the workingmen), in their talons. The workingman was represented as in defence of his home, and in search of his rights. This might be popular for a brief time, with a certain class, but the habit of thus drawing unfair and insidious comparisons, both in word and in picture, was carried to such excess that it became unbearable. Surely, the

"yellow" journals do not soberly think that the employe looks upon his employer in such a light. Surely, the right-thinking leader of labor does not want his trade-unionists to get into their heads the doctrines unfortunately preached by some of those, whose mouths are readier to incite men to murder and arson than their hands are to obtain by honest work the wherewithal to put food into the mouths aforesaid. Some day these blunderers who stir up the passions of the people, will find out that it is dangerous to thus stir up strife. The torch of "reason" of this kind is perilously close to a torch of another kind, and they should remember that but for these very capitalists, whom they decry, these thousands of men would be unemployed, these thousands of dollars would not be in circulation, and the man who works with his hands would understand that it requires ability to employ men and arrive at a painful realization of who are his real benefactors.

WHAT PROTECTION DOES.

Since 1860 the United States has increased its exports from \$40,345,000 to \$228,480,000, despite the one-time fallacious proposition that a system of protection would prevent the export of anything but natural products, or those very slightly manufactured (if that term may be permitted) from the highly-protected country.

This development of its export trade has been accomplished by the United States, to no small extent at the expense of the Dominion of Canada, by means of the discrepancy that has existed in the tariffs of the two adjacent countries. Free Trade propositions, in Canada, have not hitherto brought to their supporters any particularly enviable honors in their own country. Like the prophet of old, their honor lies elsewhere, and in the big republic to the south of us, they are in particularly good favor and their utterances have been much praised and widely advertised. For, have they not endeavored to fix upon Canada a system that would prove fatal to her manufacturing industries, and through that, cripple those natural industries that are interdependent with the manufacturer. The American manufacturer has used every possible method to force his Canadian competitor, not only from such a field as the English market (which is open alike to both, but also even from the very market that lies at the door of the Canadian manufacturer—the Canadian consumer.

You can buy an American watch of some makes to-day in Canada for as little as, or for less than, the same watch costs you in Buffalo or Rochester, and yet, there is the duty to be paid between the United States and Canada. The American watch manufacturer sends out all he can to the market most accessible. His superfluous stock he is willing to sell at a sacrifice. He does this by paying the duty himself and placing his watch in the hands of the Canadian dealer for exactly the same as the net cost to the man who handles his watches on Uncle Sam's side of the line. This is but one instance out of hundreds.

And yet, there are those who insist that we have too much protection in Canada. What we want is not less protection but more. Sir Wilfrid Laurier has opposed preferential trade with Great Britain and injured our chances of securing it. Some day we will have it, nevertheless. But, in the meantime, our tariff should keep out all intrusions from the very forward country to the south of us.

CHEAPNESS AND LOW PRICES.

When a man of practical business experience takes issue with a clever theorist of no practical experience, experiment proves the practical man to have been correct. The man of theories reconsiders his demonstration. He can find no flaw in his reasoning and he still holds to his argument, and declares the practical man to be wrong. And the practical man goes ahead, in the way that his experience teaches him, until he effect the results he desires. This is exactly the position to-day with reference to the N.P. The theorist says it is all wrong. The man of affairs says it is all right. He knows it.

The free trader would erase boundary lines from the map, oblivious of the fact that national boundaries are necessary to secure that distinctiveness which is necessary to civilization, for the very simple reason that competition is necessary to progress. Would the free trader carry his theories to their extreme, and, applying them individually to every man in this world, place all upon equal footing, irrespective of ability and experience? Not he. He would be the last to thus make society a machine in which each human being would be a cog, with nothing before him but to perform the same duty as long as he lived. Here are just a few points of the hundreds that may be adduced in favor of protection:—

In the first place, it is to be premised that a purely agricultural nation can never equal a manufacturing nation in its civilization. The well-being of the masses is the criterion of progress. We must guard the Canadian wage level against the lower wage level of other countries. To do this a protective tariff is an absolute necessity. Those countries where the wage level is lower than ours must pay the fees fixed by our tariff for the privilege of entering our market. If they sell their goods here under our tariff, then they must do it upon their superior economic skill. And there they cannot beat us. We cannot afford to degrade our people, no matter what apparent benefits might accrue. If we would have Canada progress we must make wealth cheap without cheapening the man.

Cheapness and low prices are two different things. A five dollar article made by a man whose wages were one dollar a day would be dearer than a ten dollar article made by a man who was paid ten dollars a day. We can maintain the wage-level of Canada by a National Policy Tariff because no foreign manufacturer can sell his goods in Canada in competition with Canadian goods, unless he uses superior labor-saving devices. We will not let him cheapen our labor by filling our market with goods which are low-priced because the workmen who make them are low-priced.

DOWN WITH THE SWEAT-SHOP.

No reputable manufacturer in the Dominion of Canada will sanction that iniquitous method of manufacture known as the "sweating" system. Especially in connection with garment workers is "sweating" in vogue. It has been claimed in official quarters that in the city of Toronto such a state of affairs had practically no existence, but The Mail and Empire of a recent date disproves that claim. A reporter was sent to visit shops where clothing is being made by contractors under the "sweating" system, and a terrible story was unfolded between dawn and nightfall. Giving out work to be

done by contract at "sweat-shops," and in the homes of sub-contractors is the first move in the double shuffle by which these contractors and sub-contractors squeeze out of their unfortunate employes every uttermost farthing to put in their own pockets, and in the pockets of the wholesale houses that give them their contracts.

Here is a sample of the interview The Mail and Empire man had with one contractor who employed five men and seven women at work in their own home making ulsters:—

One time, he said, he was forced to quit when it was discovered that some of his children were sick in the house with diphtheria, but would not have stopped if the authorities had not found him out.

Think of that. If he hadn't been found out diphtheria might have been spread abroad in a hundred retail stores, and into thousands of homes. Had it been small-pox the state of affairs would probably have been the same. And this man had contracted to make heavy winter ulsters at sixty-five cents each. In another instance an old woman was visited.

It was plain to see that she had become a complete cripple, bent nearly double from her work, and no longer able to walk without the assistance of a cane. She was now fifty-four years of age, and regretted that working by lamp-light till after ten at night was fast helping to make her blind. She had been making pants for ten years past, and was now receiving fourteen to sixteen cents a pair. When her husband was well the two working together would sometimes make thirty pairs in a week.

Her work under the "sweating" system had kept her so closely that but four times in two years had she had been out in the street. Could any man look an honest man in the face, and, at the same time, be conscious that he was contributory to such an industrial infamy? Another woman—a young woman, worked ten hours a day with a Jew family who could not speak a word of English. Her wages were \$1.50 a week, and she was entirely dependent upon herself. Listen to the climax of her story:—

Later on, she said that she had been driven to crime to supplement her wages, but she called God to witness that the fact of her working steadily week after week at whatever she could get was evidence enough to prove that she was an unwilling party to it.

These are but a few of the cases cited. It is fearful to think that such conditions exist. Not alone from the standpoint of labor, but, still further, when we consider that every garment made in an unsanitary, crowded workshop, or in a room that serves for several workmen, and also as parlor, dining-room and kitchen for the employer and his family, is a menace to public health. We have good inspection, we have inspection of almost everything. We have a law in Ontario that goes a long way. Why should it not go further? In some American States clothing made in a house where any infectious disease exists is immediately destroyed. We cannot afford to take greater risks than the American public. Let us therefore look to this.

Industrially, the "sweating" system is an unsightly blot on the clean escutcheon of Canadian trade. The manufacturer is no less interested than the workman. It is to his interest to stamp it out. If he is an honest man he pays his employes what they honestly are worth. He cannot afford to have the "sweating" system in existence. There are those who, in criticism, will fail to distinguish him from the other manufacturer whose pockets are laden with the fruit of

the "sweat-shops." Thus, for his own character's sake, he may not stand by and let the abominable practice go on. Further than that. Such illegitimate competition is hard to meet when he is paying fair wages. Therefore, for these two reasons, every reputable manufacturer in Canada should seek, by all means in his power, to diminish the evils of the "sweating" system, and work towards its abolition.

THE UNANSWERABLE FACTS

In its zeal for the policy of the Liberal party (for that party, wonderful to some as it may seem, has a policy), The Toronto Globe occasionally breaks out in a volcano of absurdity that would rather baffle a collegiate student of theoretic economics, than the editor of a great journal that claims to be for the best interests of this country. Here is The Globe's latest fulmination:—

The German manufacturers who have protested against the Dingley tariff recognize in their resolution the injurious effects of retaliation. That is, in itself, a sign of an awakening economic understanding. Every protective measure, whether a bonus given directly to an industry, or an obstruction enabling an industry to secure help in the shape of enhanced prices, must have, in the ultimate, an injurious effect. A bonus given to one industry must be taken from another. The loss is distributed among so many that it is hidden from the unthinking observer. It is none the less real, and none the less in amount in the aggregate. All other industries are crippled to the extent of the impost made necessary by the bonus, and the injurious effect in the aggregate must be greater than the advantage secured by the favored industry. The bonusing of an industry is, economically, a childish device like that of the small boy who enjoys a feast by stealing a small amount from every jar of jam. The peculations are hidden, but the shortage is none the less real. The creation or encouragement of an industry by an obstructive tariff has the same result. The impost causes a great number to contribute to the aid of the encouraged. These small contributions are made at the expense of other industries, and in the aggregate cause a shrinkage more than counter-balancing the encouragement given the favored one. The German manufacturers have learned that a protective tariff costs something. They will learn in time that the cost must be more than the benefit.

The reader of The Globe's gushing outburst, who is aware of the state of affairs existing in connection with the Ontario Legislature, knows this: That the Ontario Government, several years since, passed a statute against permission being granted to municipalities to bonus industries by way of inducement to locate in some particular place. Thus far they were in accord with The Globe. But what do we find? Simply this: That under this law a special private bill must be passed to secure the privilege of granting a bonus, and that the frequency with which such bills are passed almost warrants the supposition that the payment of sundry \$100 fees for the necessary private bills has been about the only noticeable result. More than this, Hon. G. W. Ross was the very first member of the Legislature to introduce such a bill after the prohibitory law was enrolled on the statute books. But to return to The Globe.

By way of proof that The Globe's position is not tenable, let us take up the beet sugar question, upon which the Ontario Government caused a report to be prepared in 1890 by Mr. Robert H. Lauder and Prof. C. C. James.

France and Germany are properly the home of the sugar

beet, and it is especially in Germany that the industry has been developed. This is evidenced by the fact that in 1890 Germany imported 50,825 tons of raw sugar, and exported 2,964 tons. In 1896 Germany imported 465 tons of refined sugar, and 765 tons of raw sugar; the exports were 407,447 tons of refined sugar, and 504,406 tons of raw sugar, and of this is the result of protection and bonus.

In the United States the industry is being experimented upon. Last spring the Department of Agriculture, at Washington, sent packages of sugar beet seeds to 10,000 farmers in every State in the Union. The seeds were furnished by the American Beet Sugar Association. In addition, from 3,000 to 5,000 packages of seeds were sent out to farmers by State agricultural stations. With each package were sent directions for the preparation of the soil, and the culture, harvesting and sampling of the beets.

Samples of beets grown have been received from twenty-four states, and the chemists of the department report that their analysis shows in New York and New Jersey a high saccharine strength and purity. In the Province of Ontario sugar beets were analyzed, and in the report of 1890 it appears that the average weight of a beet was two pounds and three ounces, while the Washington chemists report that, in many cases, the beets from New York and New Jersey were small. The Ontario report established that we have a climate and soil suited to the production of sugar beets in large quantities, and averaging 13.63 per cent. sugar.

Beet sugar manufacture has been attempted in Canada before, and has failed because it had not that protection that could give it a chance to compete for the sugar market of Canada. The Owen Sound Sugar Company is, at present, trying to establish the industry. If it is properly encouraged Canada can furnish herself with sugar. The example of Germany shows it.

The Globe goes into Colddenite hysterics over the "awakening economic understanding" of the German manufacturers who protested against the Dingley tariff. The Michigan lumbermen took the same course when they visited Premier Hardy, but The Globe forgot its consistency, and shed no tears of joy over their "awakening." The German manufacturer, including the manufacturer of beet sugar, wants his home market, and as much of the rest of the world's market as he possibly can secure. When the German government protected the sugar industry they placed it on such a footing that it was presently ready to compete with the cane sugar planter of the American tropics. He who runs may read, and these figures cannot lie: A decrease of over ninety per cent. in Germany's sugar imports since 1840, and an increase of over 315 per cent. in exports. Surely that is a desirable state of affairs. The official report tells us that in Germany there are 325 beet root sugar factories. Why should not Canada produce her own sugar? Every year we import into Canada, for refining purposes, 200,000,000 pounds of raw sugar. Of this no less than 40,000,000 pounds comes from Germany. If we had the same conditions why should we not succeed as well as Germany? Why cannot we make the 40,000,000 pounds of beet sugar we import every year from Germany, and force the German manufacturer to look elsewhere for a market. We have the soil, we have the climate, and only The Globe, and its like, with their "awakened economic understanding," prevent us from having the great industry right here in Ontario. When we produce

the 40,000,000 that we now get from Germany, we will go farther, we will produce the other 160,000,000, that we consume annually. The Globe and the Liberal party have a penchant for the farmer, whose friend they claim to be. They also express an occasional desire to see the country dotted with big manufactories. But they persist in a practical course, that is the exact opposite of what their theory dictates. Here is a chance for the Laurier Government. Protect our beet sugar growers, and out of the demand will arise the supply. Then we shall have, in a very short time, 80,000 acres of land devoted to beet culture, and thirty or forty factories making the sugar.

Probably no more striking illustration of the rise of a successful and most important industry depending upon the application of the scientific principles of engineering and chemistry can be found than in the continental beet root sugar manufacture. The increase in the consumption of sugar in this country has been very great. In 1843 it amounted to 200,000 tons: this figure was doubled in 1854; in 1874 it reached 850,000 tons, and in 1882 1,000,000 tons of sugar were consumed in the United Kingdom. Of these quantities in 1870, 165,000 tons consisted of beet root sugar, whilst in 1882 the total was over 400,000 tons, valued at £10,000,000. The whole of this amount is imported from Belgium, France and Germany, as no beet root sugar is manufactured in this country.

Above is a quotation from the report of the British Royal Commissioners on Technical Instruction, Vol. 1, page 227. Note its significance. Preferential trade is coming with the dawn of the century. Great Britain pays out annually £10,000,000 for sugar. Shall the money go into the pockets of the German, the Belgian, the Frenchman? Shall we sit by and allow the United States to develop an immense sugar industry that will get part of this trade, or shall we rather not make every effort to divert to Canada every shilling that we can get for every acre in this country that can be profitably put to use in the cultivation of beets for beet root sugar?

FREE TRADE IN GREAT BRITAIN

Free trade was established as the National Policy of Great Britain in 1846. And to-day it is upon the eve of being discarded, after a tenure of rule for half a century, under governments of every party. Cobden and Bright are the two names most prominently identified with the saddling of free trade upon the United Kingdom, and ever since that, the supporters of free trade (what a misnomer!), have been able to see nothing but with rose-colored spectacles. Was there a raise of wages in a certain line—free trade did it. Was there a new factory established—behold the results of free trade. But was there a bread riot, well, something else must have caused that.

And so the mistaken councillors of Her Majesty the Queen have gone on from year to year persisting in their error, until to-day the eyes of the Empire are just opening to the possibilities of a world-wide federation, that would keep the commerce of the world under the British flag, and secure to Britain and her colonies, for all time, the peerless place among nations on this orb of ours. Even in Great Britain, that conservative of all conservative nations, the tide is turning. In their eagerness for new markets and extension of trade, the manufacturers of the Old Land have spent all their energy in acquiring trade with the greatest disregard for their home

market, while the manufacturers of Germany and the United States, under protective tariff, have attained technical and economic perfection that fit them for competition. Despite the expense of transportation to-day we find that the products of American manufacturers are being sold and used in Great Britain, while British manufacturers of the same articles are hunting for fresh foreign markets. That this is not as it should be is just beginning to dawn upon the British manufacturer, and, to-day, the British nation looks to its color. A word at the right time will bring about the change, and Free Trade will be ousted from Great Britain, the only country to-day that retains this antiquated relic of a school of theorists.

Richard Cobden used to moralize over the starvation of the poor man in Great Britain. It is not the fault of Mr. Cobden or his followers that the poor man is not long since dead for lack of food. Cardinal Manning makes bold to tell us that starvation has not yet been erased from the British workman's vocabulary. He even adds that free trade has created the irresponsibility of wealth, that stagnates, and the starvation wages of the labor market. Charles Kingsley agreed with him and went so far as to apply the—at least—unpleasant terms, "narrow," "conceited," "hypocritical," and "anarchic," to the unfortunate gentlemen of the Manchester school.

Opponents of the Cobden Club's tenets are wicked enough to hint that British workingmen's wages increased between 1860-70 because the dearth of artisans, and the high wages paid them in the United States, at that time, obliged the British manufacturers to pay equally good wages or lose his employes. To this they add, that this rise of wages (which is the free trader's stock argument), has occurred equally in other countries where protection, and the strongest kind of protection, has been the rule.

British statesmen are admitting that, except under protection, we cannot test the productive facilities of a country fairly and fully, and secure fair play and a true economical expenditure of effort. A man is not so much horse power or so many foot pounds, and the measure of cost is the amount of human effort expended in producing an article and placing it at the door of the consumer.

WILL SIR WILFRID EXPLAIN?

The pages of Sir Wilfrid Laurier's history are just unrolling, and their perusal offers already one or two points for explanation. It might be well for the Rt. Hon. gentleman to enlighten the people of Canada as to what he proposes with regard to certain premises he has already laid down.

Sir Wilfrid Laurier is a member of the Federal Parliament of Canada. Does he remember the oath he took then? Sir Wilfrid Laurier is Premier of this vast Dominion. Has his oath of office no memories of the past to render him ill at ease? More than that. Sir Wilfrid Laurier is a Knight of the Order of the Grand Cross of St. Michael and St. George. Was he strictly honest when he swore fealty to the Queen as he received his knightly honors? "Right Honorable" is the climax of Sir Wilfrid's recently acquired honors. Are Her Majesty's Privy Councillors bound with so slight an oath that they can reconcile within it intentions that are diametrically opposite to their fealty to their sovereign, and deliberately expressed hopes that are false to the unity of the Empire.

From every Grit platform in the land we have had Sir Wilfrid held up to us as the example of what an honest, upright, fearlessly patriotic Canadian should be. When he was plain Wilfrid Laurier every Grit journal in the Dominion wrote in great letters all through their pages, the name and the fame of this man against whom no one might point the finger of just criticism. What a fall is there! Surely when the Cobden Club presented their precious medal to the Premier of all the Canadas the shades of John Bright must have writhed in agony. Surely the Cobden Club were unaware that they bestowed their medal upon a man who had dared—on the floor of the House of Commons, where he was the representative of Canadian electors and sworn to serve our gracious Queen—to speak of the secession of Canada from the British Crown. Yet, here are some extracts from an address by Sir Wilfrid, which you will find on page 1,137 of Hansard for April 7, 1892.

The honorable gentleman (Mr. Foster) has tried to make some fun out of the statement that nations were not made in a day, and he says there is nothing very new in that. I admit there is nothing new in that, but the honorable gentleman would imply that nations are never formed at all. He speaks as if Canada was to remain for ever a colony, but I say that Canada is not always to remain a colony. Light as our dependence may be on the mother country, that dependence is not to remain forever. If we were to admit that, if we were to say that we were always to remain in a dependent condition, we would be the scorn of the world, and it would be scorn well deserved. We have self-government, we have a constitution of our own, we have interests which are separate and distinct from those which we hold in common with the Empire of which we form a part, and our energies must seek wider fields abroad. Perhaps the next step may be said to be complete independence, but there is no desire to have complete independence in Canada to-day. Even with those, who, like myself, look to independence as the supreme goal, there remains a love for the motherland, and a desire to remain in connection with it, but in the nature of things, as I said in the speech the honorable gentleman has done me the honor to quote, our relations must be compatible with our interests. I do not believe in Imperial Federation. If colonists are to be represented at Westminster in the same way that Englishmen, Irishmen, and Scotchmen are represented, then, of course, colonists must assume the duties and responsibilities which are borne by Englishmen, Irishmen and Scotchmen, to carry on the wars in which they are almost perpetually engaged throughout the civilized and uncivilized world. I think these are consequences before which the people of Canada will recoil.

When the Cobden Club see these lines they will, of course, immediately demand that Sir Wilfrid Laurier shall return his decorations. They will understand why he could not see his way clear to accept the preferential trade terms that were practically offered by Great Britain. They will understand why he treasures the Grand Cross of the Legion of Honor, and why he told the Union Nationale in Montreal that "they should all strive to bring about closer relations, commercial and social, with France, of whom they were all so proud."

As for us in Canada. Well—there seem to be but few more honors in view for the Right Honorable Sir Wilfrid Laurier. A movement is on foot to ask the Imperial Government to make him the next Governor-General of Canada. Sir Oliver Mowat is about to leave the Federal Cabinet. The next man of stamina that will stand in Sir Wilfrid's way will likely be Sir Henri Joly De Lotbiniere. After he is disposed of, Sir Richard Cartwright will furnish a problem that may

not be so easy of solution. Then—we have Mr. Laurier's word for it that he approves—Canada's destiny is to be separation from the Mother land (albeit not with bloodshed, but on terms of mutual satisfaction). Oh! for a Merlin to lift the veil of the future, and read in the shadows. What shall it be? Laurier, President? Laurier, King! Or Laurier, still the same uncertain, vacillating maker of promises and national "jollies?"

Let the men who made him Premier of Canada, G.C.M.G. and Right Honorable, answer but one question, and answer it honorably:—

"Are they proud of their choice?"

THE GLOBE WOULD BETRAY CANADA.

The problem of preferential trade just now engages the attention of every practical man who is in public life in Canada. In the other colonies, the same question is equally a subject of serious consideration, and even the statesmen of Great Britain are beginning to view the proposition with some appreciation of the effect of its realization.

The position of Great Britain is unique. "Splendid isolation," is the description that has been given of our motherland, and in more senses than one it is so. The term was applied in pride, but that same "splendid isolation" is no less a weakness than a strength. It is related that a man once went to Bismarck and offered him a wonderful military discovery.

"What is it?" asked the Iron Chancellor.

"I have found a way to get an army into England," was the reply.

"Pshaw! that is nothing," said Bismarck, "I know half-a-dozen ways to get in, but I don't know one single way to get out."

It is true that from this standpoint, Great Britain's isolation is splendid, but there is another standpoint from which the situation must be viewed. If Great Britain became involved in war she might find her sources of food supply closed against her. She derives her breadstuffs to a large extent from other than her own possessions, and if the dogs of war were once let loose the armies of Britain must starve. In the face of this, some shortsighted persons tell us that we want free trade and not preferential trade. The egregious idiosyncrasy of certain of these philosophers is almost beyond belief. Hon. A. S. Hardy allows Michigan lumbermen to line their pockets with good dollars made out of Canadian saw logs. He may have reasons for that, but what reason, what faint shadow of excuse, can The Toronto Globe offer for its editorial opinion on October 18th last, when it said:—

We do not know what substance there may be in the story of the negotiations for an arbitration treaty between Great Britain and the United States, but the idea is so eminently sensible that one may hope it will be realized some day. The principal foreign business of the people of the United States is the sale of food products, and of these the people of Great Britain are by far the largest consumers. On the other hand, the main thing that the people of Great Britain have to fear is that the food supply will fail, and that Britain may be starved out. If they were sure that the United States would not join in a combination to shut off the food supply this anxiety would be at an end. The cutting off of the trade would be a great misfortune to both countries, and its continuance is one of their highest interests.

The Globe needs a physician. Surely, no one of The Globe's capable editorial writers has in these lines given us a correct epitome of The Globe's opinion. Surely The Globe's intellect is not stunted so that it failed to grasp the full meaning of what it said. At first glance we expected, in the next edition of The Globe, to see a full denial, but, even yet, no disclaimer has been made, and we must now accept the statement as The Globe's ultimatum. Let us see what it means. Great Britain and the United States arm in arm. Very good: THE CANADIAN MANUFACTURER yields to none in its wish for the most amicable relations to exist between us and our competitors over the line. But just glance at the last sentence of the editorial. Canada's immense area has not population that can cultivate it. The United States grows rich on the cash John Bull pays for American grain. Canada does not supply Great Britain with breadstuffs, but Canada can, and Canada will. No matter how The Globe may croak its betrayal of the interests of the Canadian farmer. No matter how it tries to throw dust in the agricultural eye. Once or twice in a while The Globe makes a mistake. The few lines quoted above were, doubtless, one of these mistakes. But, fortunately, there is good sense enough in Canada to more than counteract such nonsense, and within a few years we shall have an Imperial system of tariffs that will enable us to supply Great Britain with food in times of peace as well as in times of war. Then Canada will develop, as she should, into the Great Britain of the western hemisphere.

"Great Britain has succeeded under free trade. Give us free trade." Thus, cries the ignoramus who would tamper with our fiscal systems, and destroy our stability as a great

manufacturing and producing country, growing rapidly greater. Ignorance is verily bliss, and he who clamors for free trade is, doubtless, ignorant that since 1873 Great Britain's yearly imports have increased £70,500,000. How has this happened? Simply because, while Great Britain devoted herself to manufacturing and poured goods into many nations of the world, other countries fostered their industries by protection, till, before Great Britain was aware of it, American and German manufacturers were sending the products of their mills, their foundries, and their looms into the markets of Great Britain abroad, and then of Great Britain at home.

Canada taught Great Britain first to realize the effect of this, and the denunciation of the Belgian and German treaties was fairly forced from the statesmen of Great Britain. In the same way Canada and the other colonies can easily secure preference by tariff in the British markets.

Among those Canadians who are ever in the van of the movement toward Imperial Federation, whether of trade or government—or both, is Lieut.-Col. George T. Denison, who is always ready with tongue and pen to defend his principles, and place the facts of the case before the public. Listen to what he said recently on a public platform—

Take, for instance, the food problem in England, the vital question of the day there at all times. Free trade has killed the agricultural interests there. In 1856 there were 4,215,651 acres of wheat in England; in 1896 there were 1,456,200. Last year the Old Country imported 23,431,000 quarters of wheat and consumed besides 4,325,000 produced at home. Of the imported wheat, Russia and the United States controlled 19,160,000 quarters, leaving 4,271,000 to come from other

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sources. In other words, the Old Country was depending for her food supplies upon the two countries which at any moment might become hostile, and have it in their power to starve her. There was another side to the question. The agricultural population, the backbone of every country, was diminishing, and the race of men was by degrees falling off in physique. At the present rate, ere long, Britain could not produce soldiers or sailors capable of undergoing hardships of war. But the food supply was the great danger, and the British Government and people must be made to understand it. They must be made to comprehend that Britain's food must be grown on British soil, guarded by British people.

EDITORIAL NOTES.

In 1882 American lumbermen cut in the Saginaw Valley 1,439,852,067 feet of lumber. In Ontario, last year, the whole cut amounted to 904,379,710 feet, of which 261,236,314 feet went to American mills to be cut. With their great capacity, the Michigan mills could cut twice as much as Ontario's annual output. Two dollars per thousand feet is pretty effectual protection on such a closely run commodity as lumber. If Premier Hardy don't believe it let him ask any Canadian lumberman who has ever tried to market his lumber in the United States. Let him look out. If the American indus-

try recovers its old-time vigor the Michigan lumbermen will cut all the logs in Georgian Bay district in five years.

The Ontario Government have called a session of the Legislature for the 30th of November. The public have a right to expect that the timber question will be settled before that session closes. The voice of the Legislature can surely be but for one proposition:—That all logs cut on Ontario public lands must be manufactured into lumber in Ontario.

"The First Thanksgiving Dinner," "Lillian Bell's First Days in London," and "When Dr. Whitman Added Three Stars to Our Flag," are among the leading features of the November Ladies Home Journal. Miss Bell finds much in London to inspire her pen to its smartest activity, and the descriptions of her sight-seeing tours, her impressions and experiences fairly sparkle with wit. Dr. Whitman's service to the United States in saving Oregon, Washington and Idaho from the British are acknowledged in an article which follows the first women across the continent, and the first whites over the Rocky Mountains. Magician Kellar writes on "How I Do My Tricks," showing how simple is their solution when it is known. The second article on "Inside of a Hundred Homes" is more attractive and rich in suggestions on furnishing and fitting up a home, than was the excellent inaugural one of the series. Edward W. Bok advises young married people against living in a hotel or boarding-house. Alice Wellington Rollins introduces a new and charming character in fiction in the first of her Philippa sketches—"The Mistakes of Philippa"—and Clara

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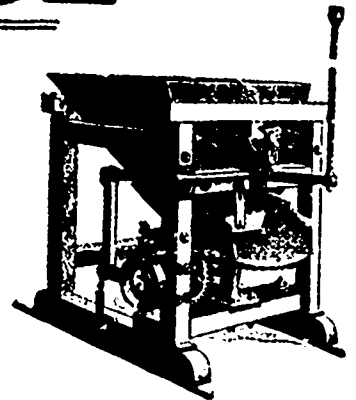
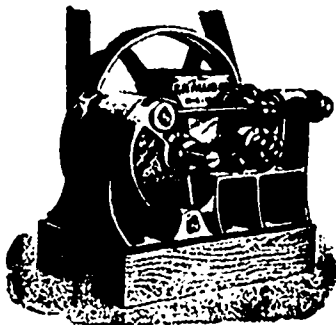
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The illustrated articles in the Methodist Magazine are "Rural England," with numerous beautiful cuts; a character-study of Emperor William I. of Germany, and the stirring times in which he lived, by the Rev. J. C. Seymour, with excellent engravings; "Light, a Branch of Electricity," by C. A. Chant, B.A., of Toronto University, with nine diagrams, explaining telegraphy without wires, and many other curiosities of electricity, and a study of "Madame de Stael," by the late Abel Stevens, LL.D., with a fine portrait. A fine study of "Bernard of Clairvaux," one of the noblest saints of the Mediaeval Church; an interesting sketch of Sir Arthur Blackwood, chief officer of Her Majesty's Post Office, by the Editor; "The Slave and His Champions," by Rev. Dr. Lambly, and the new "Sayings of our Lord," are striking articles. A stirring new story, "In His Steps," by Chas. M. Sheldon, is begun. The "World's Progress" and "Current Thought" are fully treated and illustrated. Fourteen numbers of this monthly, to the end of 1898, are offered for one year's subscription. Toronto: William Briggs. Price, \$2.00 a year; \$1.00 for six months; single number, twenty cents.

There is unusual variety of exceptionally interesting material in the November Scribner's. The opening paper, the seventh on the "Conduct of Great Business," is by William Allen White. The instalment of Mr. Wyckoff's "Workers," which has proved such a notable contribution to the literature dealing with actual conditions of labor and not with theories, tells of his experiences as a "Farm-hand" in Pennsylvania. An illustrated article by William B. Bigelow, the well-known architect, on "The Country Church in America." Miss Sarah Barnwell Elliott's story, "The Durket Sperret," is brought to a conclusion in this number. The poems are by Charles Edwin Markham, Rosamund Mariott Watson, Gertrude Hall, and Edith M. Thomas.

Outing, for November, bright and bracing as a November day, appears again in a most handsome cover. The sport most prominently depicted without and within, as it should be, is Football. This is the month when all other events in the world of sport are temporarily lost sight of in our enthusiasm over the latest achievements of our favorite football team, and Walter Camp satisfies the appetites of football enthusiasts with an exhaustive article forecasting the season. Thousands at this season are devoting their attention to their equine beauties and with great pomp and ceremony displaying their fine points before the critical eyes of the judges. The interests of this class are well cared for in "The Round of Summer Horse Shows," by A. H. Godfrey, with twenty-five illustrations, and "Fox Hunting on the Eastern Shore of Maryland," by Hanson Hiss. "Yachting on Northwestern Lakes," by Captain Walter S. Milnor, is exceptionally well written and will interest yachtsmen everywhere. Other features of a very strong number are: "Lawn Tennis Honors of the Season," by J. Parnly Paret; "Turkey Hunting on the Wekiva, Florida," by L. L. Canova; "A Day Over Dogs," by Ed. W. Sandys; "Thanksgiving with the Steelheads," by M. S. Gibson; "From Genoa to the Bay of Biscay," by Paul E. Jenks; "Thanksgiving with the Jacks," by I. A. G.; "His Majesty the Moose," by Parker Symms, M.D.; "Lullaby Mullen of Porphyry Gulch," by P. V. Mighels, and the usual monthly record department, giving a digest of the affairs of the month in the world of sport.

MODERN INDUSTRIAL METHODS.

There is something delightfully simple in the announcement of the inspectors under the Factories and Shops Act of their discovery that the old system of apprenticeship, by which lads were thoroughly taught their trade, is gradually passing away, and being superseded by a system under which "a youth is kept to one section for most of his time, so that on the expiry of his articles he has only a knowledge of one portion of his trade, and could not produce a finished article." It is, of course, quite possible that in making this announcement the inspectors believe they are informing the public of New South Wales and the universe at large of the discovery of an economic law which is changing the world's industrial methods; yet it is hard to believe that these gentlemen have only just had their eyes opened to a trend of affairs of which every man of ordinary intelligence is cognisant. Every schoolboy, as Lord Macaulay would say, has heard of the principle of division of labor, and knows something, theoretically at least, of the wonderful effect the application of it has exercised upon manufacturing industries. It has, in short, revolutionised them.

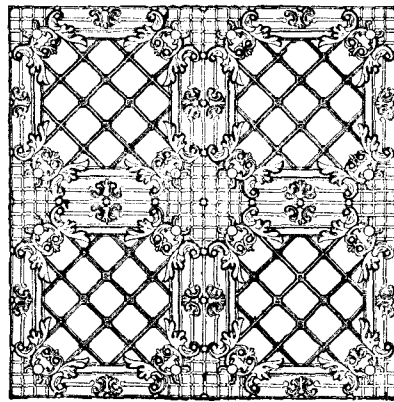
It would be difficult to point to any industry that has not felt the influence of the changes which have come over the methods of the times since the days when Simon Tappertit admired his legs and talked red-hot republicanism to his fellow apprentices. These changes, gradual in some directions and swift in others, have been universal, and, viewed broadly, of incalculable benefit to the human race. The tendency of our day is towards specialisation, and the inventive genius of man is constantly striving to perfect some contrivance, mechanical or other, which, by saving labor and quickening and cheapening production, will benefit alike the producer and the consumer. Where formerly one or two artisans were engaged in the production of a certain article there are now, perhaps, thirty or forty whose duty consists chiefly in watching machines, each of which is specially designed to do a certain portion of the work. But the finished article is eventually produced much more expeditiously, more economically, and more perfectly than was the case when it was the sole handiwork of one workman.

Take boots, for example. Those of us who are still without grey hairs in our beard can remember the time when a boot made by machinery was an unheard-of thing. Every pair of boots was made, slowly and laboriously, by hand. But we have changed all that, and the cobbler is now almost as extinct as the dodo. In a few remote localities he may still be found, the tottering survivor of an age that knew not the possibilities of machinery. Visit a modern boot factory, and you will be astounded at the number of hands through which a boot passes ere it is ready to be exhibited in a boot-seller's window, and still more astounded at the important part machinery plays in the manufacture. The cutting of the uppers and of the soles, the making of the heels, the fixing of the various parts together, the eyeletting, the finishing,—all is done by machinery, each machine being, in most cases, controlled by a lad or girl who could no more make a pair of boots than they could jump across Sydney Heads.

And the end is not yet. Hardly a week passes without some improvement to already existing machinery, or some absolutely new machine being placed on the market, and the tendency is for labor to become still more subdivided, still more specialised. Even in the manufacture of watches, where the greatest nicety of workmanship is required, by far the greater part of the watch is nowadays made by machinery.

EMBOSSED METAL CEILINGS.

These Ceilings are made from mild annealed steel plates in a great variety of designs, suitable for every description of building, including



ONE OF OUR DESIGNS.

Hospitals,
Churches,
Schools,
Convents,
Opera Houses,
Asylums,
Offices,
Stores,
Residences,
Etc., Etc.

The many advantages of their use, as a modern substitute for wood and plaster, lies in the fact that they are light in weight, will not crack or drop off, consequently no danger of falling plaster; are unquestionably durable, have air-tight joints, are easily applied, are practically fire-proof, are highly artistic, do not harbor vermin or the germs of disease, and possess splendid acoustic properties in addition to many other points of excellence over any other form of interior decoration

Sole Manufacturers:

Write for Prices:

The **METALLIC ROOFING CO., Limited,**
'Phone 5481.
TORONTO.

THE BEET SUGAR TRADE.

The world's production of cane sugar ten years ago was larger than that of beet sugar, but the estimate for 1897 is 4,773,000 tons of beet, and 2,432,000 tons of cane. At the present rate of beet sugar production, the trade will be shortly revolutionized. The residents of Owen Sound, Ont., are resolved to be "in the swim" on the beet sugar question, and have organized a company with a large capital for the purpose. The sugar beet grows in any rich soil with a porous, well-drained sub soil. If the climatic conditions are such that the beets receive sufficient moisture, either from rains or irrigation for the first three months, followed by a limited amount of moisture and sunny weather for the last thirty days after the land is seeded, a crop of sugar beets is assured. In the neighboring States the industry is attaining large proportions. The money to build factories is, in most cases, secured on the co-operative plan by subscription from farmers, or from outside capital if the farmers will bind themselves to plant the necessary acreage in sugar beets to supply the factory. The factory must be located convenient to beet growers, and should be located as near the centre of the beet growing district as possible. All material required for the manufacture of beet sugar should be close at hand. Residuals of the factory, the beetships and molasses, should find a ready market near the factory, which should be located on convenient lines of transportation. Materials required are fuel, water and lime stone. The fuel and lime stone used for the purification of beet juice must be procurable either by rail or water at a low rate of transportation. The

cassets from which the sugar has been extracted is used to feed cattle, which makes it desirable to combine fattening cattle with beet sugar. The company can buy lean cattle and fatten them, and thus make a profit on fat cattle. The molasses from the factory is used for three purposes. First, it is worked into low grades of sugar; second, for feeding live stock; third, for manufacturing into spirits. Beet sugar factories should be built with a view of retaining their own molasses, which can be done with good profit. In Germany beet sugar factories manufacture raw sugar, which they can sell to refineries. The beet sugar industry in the United States at present indicates that the factories will find it more advantageous to manufacture granulated sugar.

THE PRODUCTION OF ALUMINIUM.

It has only been a few years, comparatively, since aluminium was practically classed among the precious metals, having a value nearly, if not quite that of gold. Indeed, until about 1895 it was almost exclusively a laboratory product, and it was not until the introduction of electrical appliances that it became possible to regard the metal as one to be used for general purposes. Since cheaper and better methods of producing aluminium have been employed, the output has steadily and rapidly increased, until now it is confidently stated by some that before another year is gone only three commercial metals—iron, lead, and zinc will be rated at a cheaper price. Practically all the aluminium in the world's market, up to and including 1895, was produced in France, Switzerland, and the United States. The three countries, with slight additions from others,

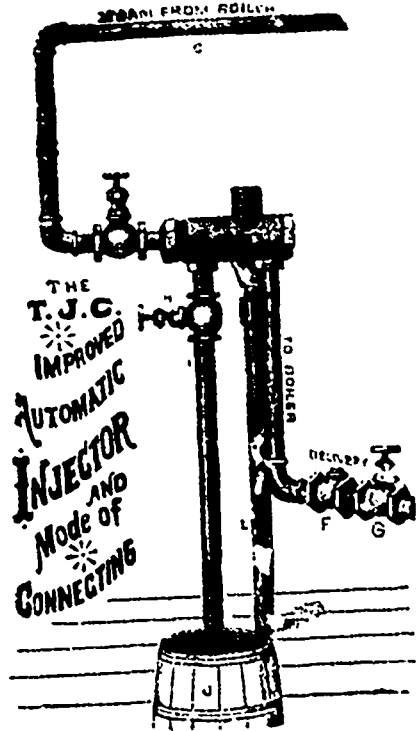
produced in 1895 about 7,000 pounds daily, of which the largest amount was furnished by France, the next by Switzerland, with the United States as a close third. Each of these, as well as Great Britain, added largely to their aluminium plants in 1896, with the result that the output reached about 14,674 pounds daily.

According to Mr. E. German, the United States Consul at Zurich, in a recent consular report, the producers of this useful metal abroad have added largely to their plants. The additions to the works at Neuhausen, in Switzerland, when completed, he says, will add about 5,940 pounds to the daily production. He also states that a German-American syndicate has planned the erection of works for the manufacture of aluminium at the waterfalls of Sarpsfoss, in Norway, to be ready for operation by the beginning of next year, and that these works are to have a capacity of some 6,000 pounds daily. Consul German estimates that with the additions in Switzerland, the new plant in Norway, and the increased capacity of the Niagara Falls plant, the output of aluminium in 1898 will average 42,460 pounds daily, or about six times the amount produced in 1895. If the figures given by the above-named official in a recent report to this Government, are correct, they exhibit almost an astonishingly early increase in the world's supply of this useful metal, the realization of which, it is almost needless to say, will be heartily welcomed. The malleability of aluminium, its exceeding lightness, and its immunity from rust render it a favorite metal for many purposes, and its more general use has only been delayed through its costing considerably more than iron. A marked increase in the world's supply will speedily remedy this objection.

THE IMPROVED AUTOMATIC INJECTOR,

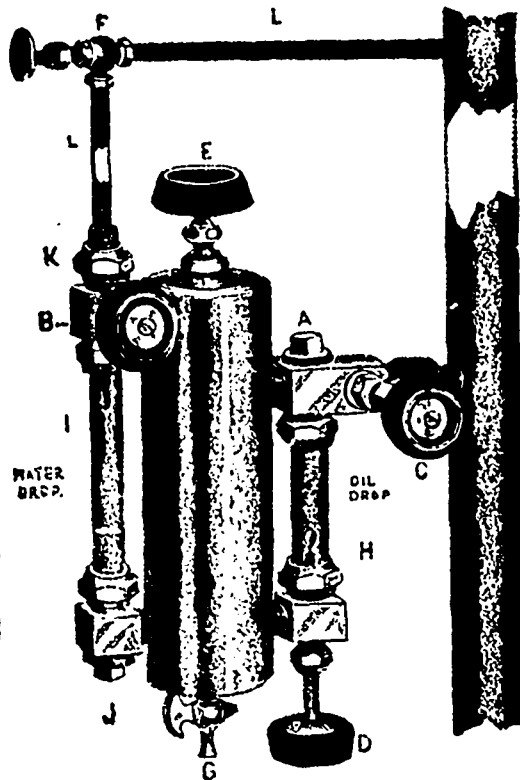
Pat. by T. J. CARROLL.

No.	PRICE	GAL. PER HIG. 65 LBS. PRESS.	SIZE OF PIPE CONNECTIONS.	HORSE POWER	
				8 to 16	16 to 300
10	\$7.50	120	1 1/2	10	10
15	10.00	200	2	16	16
20	15.00	300	3	25	25
25	22.50	400	4	40	40
30	30.00	500	5	60	60
35	38.00	600	6	80	80



REDUCED PRICES OF

Michigan, Eagle, and Queen Lubricators.



SIZE	PRICE LIST
1 Pint	\$1.50
1 Pint	3.00
1 Pint	5.00
1 Quart	11.00
1 Quart	16.00

For STATIONERY, MARINE, PORTABLE and LOCOMOTIVE BOILERS Simple, Reliable, and Durable. Range 20 to 150. Will lift 20 feet. A written guarantee with each Injector for two years.

HAMILTON BRASS MFG. CO., Limited, 259 to 265 James Street North, HAMILTON, ONT.

CAPTAINS OF INDUSTRY.

The following items of information, which are classified under the title "Captains of Industry," relate to matters that are of special interest to every advertiser in these pages, and to every concern in Canada interested in any manufacturing industry whatever, this interest extending to supply houses also.

If a new manufacturing enterprise of any kind is being started, or an electric lighting plant instituted, or an electric railroad, or a telephone, or a telegraph line is being constructed; or a saw mill, a woolen, cotton, or knitting mill; or if any industrial establishment has been destroyed by fire with a probability of its being rebuilt, our friends should understand that possibly there may be something in the event for them. Do you catch on to the idea?

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, belting, lubricants, machinery supplies, wood or iron working machinery, ventilating and drying apparatus; pumps, valves, packing, dynamos, meters, wire, arc and incandescent lamps, and an infinite variety of electrical supplies, chemicals, acids, alkalies, etc. It is well worth the while of every reader of the Canadian Manufacturer to closely inspect all items under the head of Captains of Industry.

The Jones and Moore Electric Company, Toronto, have recently installed electroplating plants for T. McDermott & Co., and Atkinson Bros., Toronto, also the motors for both plants.

Additions to the Willson Carbide works at St. Catharines, Ont., involving an expenditure of \$30,000, are under way. When these have been completed the entire works will have cost \$200,000.

The first rail of the Atlantic and Lake Superior Railway was laid a few days ago at Carlisle, Que.

The Teeswater Electric Light Co., which has taken over the operation of the water-works and electric light systems at Teeswater, Ont., will install an incandescent electric lighting system, and for this purpose have placed an order with the Royal Electric Co., for one of their 500 light S.K.C. generators with transformers, etc., the work of installation to begin at once.

The Victoriaville Furniture Co., of Victoriaville, Que., are putting up a progressive lumber dry kiln, the drying apparatus for which will be supplied by The McEachren Heating and Ventilating Co., of Galt, Ont.

Mr. J. J. Trory, of St. Catharines, is erecting a building to be used for chicory drying. The boiler, heater and fan are to be supplied by The McEachren Heating & Ventilating Co., of Galt, Ont.

The Atkinson Marble and Granite Company, Simcoe, Ont., has been incorporated with a capital stock of \$20,000, to manufacture mantels, monuments, etc.

W. J. Cline has sold his sawmill at Victoria, B. C., to James Leigh & Sons.

The Richelieu and Ontario Navigation Company have given the Bertram Engine Works Company, Toronto, the contract to build two new steamers to run between Toronto and Prescott. The new boats will be 277 feet long, with a breadth over guards of sixty-one feet, and depth of hold fourteen feet. Each steamer will be fitted up with 140 state rooms, and will have accommodation for over 1,500 passengers. The specifications call for a maximum speed of twenty knots, and a minimum speed of eighteen knots. The Bertram Company are enlarging the capacity of their works by erecting new buildings, and placing new machinery, so that the steamers for the R. & O. Co., as well as the barges for the Prescott Elevator Company, will be constructed with the greatest possible despatch.

The Chatham Gas Co., Chatham, Ont., who have been operating an arc and incandescent plant in that town for the last ten years, have decided, owing to the corporation installing a plant and doing the street lighting, to go more extensively into incandescent lighting, and for this purpose have purchased a 2,000 light alternating dynamo from the Royal Electric Co., to be installed at once.

The McEachren Heating and Ventilating Company, Galt, Ont., have dissolved. J. D. McEachren and Wm. D. Sheldon continue the business under the same firm style as before.

The saw mill owned by the F. J. McManus estate, Bathurst, N. B., was burned a few days ago. Loss about \$3,000.

A cheese factory at Paramount, near Lucknow, Ont., was destroyed by fire a few days ago. Loss about \$6,000.

The Verity Plough Works, Brantford, Ont., were destroyed by fire a few days ago. Loss about \$30,000.

Messrs. Bouchard, Son & Co. have commenced the manufacture of boots and shoes in Quebec city.

The Cranbrooke Power and Light Company, and the Cranbrooke Water Company, both of Cranbrooke, B. C., have been incorporated.

George Nugent has opened a lumber yard at Wapella, Assa.

H. Byrnes has sold his saw and planing factory at Winnipeg, to the Rat Portage Lumber Company.

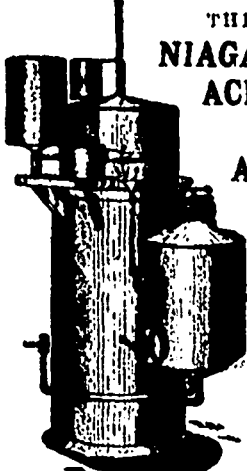
Richard Lockhart has sold his sawmill at Riversdale, Ont., to Elliott and Fulton.

The Montreal Flour Works, manufacturers of self-raising flour, have commenced business in Montreal.

John Hunt, manufacturer of woollen goods, closing up business at Erin, Ont., and will remove to Glen Williams, Ont.

Mr. H. L. McLennan, of St. John, N. B., is building mills opposite L'Anse St. Jean, in order to cut the wood of the St. Marguerite Valley, on the Saguenay.

**THE
NIAGARA FALLS
ACETYLENE
GAS
APPARATUS**



Patented in
Canada, United
States and
Great Britain.

This is the
only machine
perfectly auto-
matic in its ac-
tion, requiring
little or no main-
tenance. Machines
made in 10 sizes
costing \$15 and
upwards.

Acetylene Gas the Coming Light.
CHEAPER THAN ELECTRIC LIGHT
COAL GAS OR COAL OIL
For Private Dwellings, Business Houses
Churches, Public Halls and Offices.
For particulars write to the
NIAGARA FALLS ACETYLENE GAS MACHINE CO.
NIAGARA FALLS, ONT. LIMITED.

THE CROCKER TURBINE.

The cut shows the direct connection of two 20 inch.

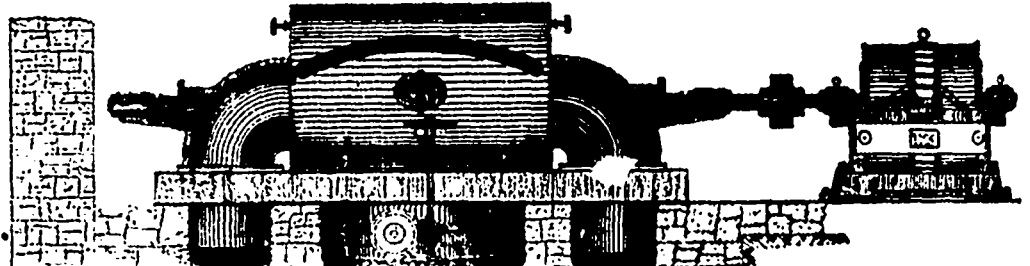
Crocker TURBINES

Under 50 feet head to
ELECTRICAL GENERATOR

At Power Station of North Shore
Power Co., at St. Narcisse
Quebec.

Two sets were furnished for lighting
and power for City of Three Rivers,

17 Miles Distant from
Power Station



THE JENCKES MACHINE CO., SHERBROOKE, QUE.

Address for Catalogue and full information - 28 LANSDOWNE STREET

COMPLETE WATER POWER PLANTS
EJILT AND INSTALLED.

The fly wheel and pulley furnished by the Jencks Machine Co., Sherbrooke, Que., for the new power house of the street railway of that city, have been placed in position. They are both wheels of large dimensions, the former being fourteen feet in diameter and weighing about 8,000 pounds; the latter is twelve feet in diameter, with a twenty-six inch face, and weighs something over 7,000 pounds. Both these wheels are on one steel shaft which is six and one-half inches in diameter and twenty-five feet long, carrying also a forty inch water wheel inside the case.—*Sherbrooke Daily Record.*

Mr. C. E. Sontum, representing the Department of Trade and Commerce at Christiania, in Norway, sends an interesting report to Sir Richard Cartwright for the quarter ending September 30th., last. Self-binding harvesters from Canada are attracting attention in Norway. "It is only a question of time," said Mr. Sontum, "when they will come into general use, as the farmers have a great difficulty in getting hands to do their work owing to the high rate of wages. A recent test of farm implements at the Government Farming School gave the second and third prizes to Canadian self-binders. In Bergen next year there is to be an exposition, and Canada should send an agricultural exhibit, as it would be the means of attracting immigration."

The Electrical Engineer publishes an authoritative account of Thomas A. Edison's success in recovering by electrical means, the iron contained in low grade ore. The inventor's experiments have been carried on

during the past six years at the old Ogden iron mines, a few miles from Dover, N.J., where he has built up a plant covering several acres of ground, and which, after many experiments, is now capable of producing daily from a thousand to fifteen hundred tons of almost chemically pure iron. The ore worked contains, on the average, about twenty-five per cent. of iron and resembles in appearance, a very poor quality of grain rock. Mr. Edison states that there are two hundred million tons of this ore on the land immediately surrounding his plant, from which can be produced fifty million tons of iron. His process, in brief, consists of blasting the ore from the mountain sides, and then, by means of steam shovel and miniature cars conveying it to massive crushers, where it is broken up and passed on to other mills, where it is pulverized. The powder is then allowed to fall in close proximity to electro magnets, which deflect the iron ore to one side and the non metallic matter falls to the other side by gravity. From the time the ore is blasted until it is resolved into this metallic form and compressed to briquettes for shipment, the process is entirely automatic.

Mr. Wm. T. Bonner, formerly general agent for Canada for The Babcock & Wilcox Company, has recently returned from a trip abroad and will take up his residence in Montreal again, as manager for Canada for Babcock & Wilcox, Limited, of London and Glasgow. Temporary quarters have been taken in the Board of Trade Building, but as soon as the decorators and furnishers can complete their work, the Babcock and Wilcox offices will be located in the Mechan-

ics Institute Building at the corner of St. James and St. Peter Streets. A full line of samples and models of The Babcock & Wilcox Company's water tube boilers and accessories will be exhibited, and every facility and convenience placed at the disposal of the engineers and steam users to give them a thorough understanding of the Babcock & Wilcox Company's goods.

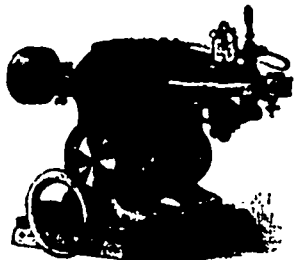
Motors for the following Toronto firms have recently been installed by the Jones and Moore Electric Co., Toronto:—Geo. Weston & Co.; Mrs. K. Dilworth; Superior Coal Co.; Dwight & Co.; J. Stinson, Richelieu & Co.; A. Stewart & Co.; J. E. Ellis & Co.; J. Nesbitt; F. B. Gullett & Sons; Weld, Grissett & Darling; the Powers Syndicate; S. Nicholson and J. W. Gillard. They have also installed motors for W. Swanson, Peterboro, Ont., and Wilson & Son, Halifax, N.S.

The Montreal Cotton Company will erect a \$100,000 extension to their mills at Valleyfield, Que. These mills turned out during the past nine months one million more yards than during the corresponding period of 1896.

The Jones and Moore Electric Company, Toronto, have recently installed the following lighting plants:—For the Art Goods Manufacturing Company, Toronto Junction; the W. C. White Boiler Works, Montreal; Bolton Woolen Mills, Bolton, Ont.; Meaford Woolen Mills, Meaford, Ont.; Boulter & Sons, Picton, Ont.; Chas. McInnes, Orillia, Ont.; and J. D. Irving, Buctouche, N.B.

Peter Weber's brewery at Chepstow, Ont., was destroyed by fire a few days ago.

ELECTRIC BARGAINS.



**ONE EDISON MOTOR,
ONE BALL MOTOR,
TWO DYNAMOS.**

Above almost new.

We install complete plants at lowest possible figure. Write us before buying.

Motors, Dynamos and Platers
Manufactured in all sizes.

THE JONES & MOORE ELECTRIC CO.
22 Adelaide Street West,
TORONTO.

VALVES AND PIPE . . . FITTINGS

WRITE FOR LATEST PRICES

RICE LEWIS & SON, Limited

Corner King and Victoria Streets

TORONTO

BREWERS COPPER WORK

Brewing Kettles, Boiling Coils,
Beer Coolers, Attempartors
Spargers, etc., etc.

—THE—
BOOTH COPPER CO.
LIMITED,

TORONTO, ONT.

Established 1854.

**WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY
PITTSBURG, PA.**

THE LEADING MANUFACTURERS OF ELECTRICAL APPARATUS FOR ELECTRIC LIGHTING, POWER TRANSMISSION, AND ELECTRIC RAILWAY PLANTS

NEW YORK—190 Broadway. CHICAGO—New York Life Bldg. PITTSBURG—Westinghouse Building. SYRACUSE, N.Y.—Bastable Bldg.
BOSTON—Exchange Bldg. PHILADELPHIA—Girard Bldg. ST. LOUIS—American Central Bldg. TACOMA, WASH.—102 South 10th St.
BUFFALO—No. 1130, Guarantee Bldg. WESTINGHOUSE ELECTRIC COMPANY, Ltd., 32 Victoria Street, LONDON, S.W., ENGLAND. ATLANTA, GA.—Equitable Bldg.

For CANADA address, - - - - - **AHEARN & SOPER,** - - - - - **OTTAWA, CANADA.**

At Antigonish, N.S., the other day there arrived a new plant recently purchased from the Canadian Rand Drill Co., for the Purvis property. The compressor is of their modern duplex type. It is expected that within a few days this will be in active operation.

The Abbey Effervescent Salt Company, Montreal, has been incorporated with a capital stock of \$500,000, to manufacture the proprietary medicine known as Abbey's effervescent salt.

The Spokane Fort Steele Telegraph and Telephone Company, of Spokane, Washington, has been registered in British Columbia with head office for the province at Fort Steele, B.C.

The Milner-Walker Wagon Works Company, of Walkerville, with head office at Walkerville, Ont., has been incorporated with a capital stock of \$250,000, to manufacture wagons, sleighs and wheeled vehicles of every description.

The annual reports of the Railway Commissioners of New York and Massachusetts show that the cost of running a trolley-car a mile varies very remarkably in different cities. Of nineteen companies operating less than 250,000 car miles per annum, four obtained their power at less than two cents per car mile under average conditions of load, track, etc.; six, between two and three cents; five, between three and four cents; one, between four and five cents, and three at more than five cents. Of five companies operating over 5,000,000 car miles per year, one obtains its power at less than one cent a car mile; three, between one and two cents, and one between two and three cents. The Brooklyn Heights Company have the cheapest power, eighty-six mills per car mile, and the Binghamton next, ninety-four mills. Cheapness of coal at the given point is, of course, a factor in the price of power, but the controlling one seems to be good, sound, common-sense in electrical engineering. The man who makes two cars run where only one ran before is of more use to the world than the engineer who designs a warship or a dynamite-gun. —Hartford Courant.

The large compressed air plant, recently installed by the Canadian Rand Drill Co., of Montreal, at the new pit of the old Sydney Mines, has been started and put into service. The machine is of their standard duplex type of the latest pattern.

Telephore Auger's boot and shoe factory at Montreal, was damaged by fire a few days ago.

The Canadian Asbestos Company is being incorporated with a capital stock of \$30,000. Mr. Feodore Boas, St. Hyacinthe, Que., is one of the incorporators.

We have received from Messrs. Baker & Company, Newark, N.J., a booklet entitled Platinum, Sources of Supply, Identification and Separation of the Ore. Facts of Interest to Prospectors and Miners. Messrs. Baker & Co., are extensive buyers and refiners of platinum and manufacturers of the metal in all forms, and being anxious to encourage the search for and the development of new sources of supply of the ore will be pleased to give detailed information bearing upon this subject to such persons as are practically interested in this matter, and to make tests for platinum, free of charge, on samples delivered at their works.

The heavy compressor and the two immense boilers, shipped some time ago by The Canadian Rand Drill Company, Montreal, to the Foley Mine, have arrived and are being put in place by the Company's engineer. The compressor is of the modern type with compound cylinders, condenser, and other modern and economical appliances.

The Toronto Cold Storage Company, with head office at Toronto, has been incorporated with a capital stock of \$50,000.

C. E. Shedrick, Sherbrooke, Que., will hereafter manufacture and sell in Canada, the line of electrical instruments being manufactured and sold by the Whitney Electrical Instrument Company, Penacook, N.H.

The Toronto and Hamilton Sewer Pipe Company, whose works at Hamilton were destroyed by fire some time ago, will rebuild on the old site.

A plant has just been installed by The Canadian Rand Drill Company, of Montreal, at Bruce Mines, Ontario.

The Victoria Wheel Works, Galt, Ont., are to be lighted by electricity. A complete plant is being installed.

The Pipestone Elevator and Milling Company, Pipestone, Man., is being incorporated with a capital stock of \$5,000.

The large plant, which has just been installed by The Canadian Rand Drill Company, of Montreal, at the Sultana property, is about ready to start. The mill which contains 30 stamps is already in place, and it is expected that the whole will be in working shape very shortly.

The Montreal Linotype Company has received orders for a number of their machines from South Africa.

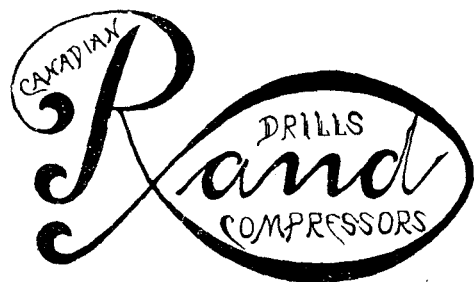
The Bell Organ and Piano Company, Guelph, Ont., is opening a branch at Windsor, Ont.

The Standard Light and Power Company, Montreal, have contracted with The Lachine Rapids Land and Hydraulic Company to take one thousand horse power from the latter company for distribution by the Standard Company.

A party of wealthy Americans have bonded one of the large mining properties at Thessalon, Ont., and contracted with The Canadian Rand Drill Company, of Montreal, to install a complete mining plant. They are going at the matter in earnest and have a large force of men on the ground. The machinery is already there and being set up.

The Tombyll Upholstering and Frame Manufacturing Company, St. Henri, Que., is being incorporated with a capital stock of \$75,000, to acquire the business heretofore carried on by R. N. Tombyll at St. Henri; to manufacture frames for parlor furniture, covering for parlor furniture, and to do a general upholstering business.

The Northumberland Paper Company's Mills at Campbellford, Ont., were damaged by fire a few days ago, to the extent of about \$2,800.

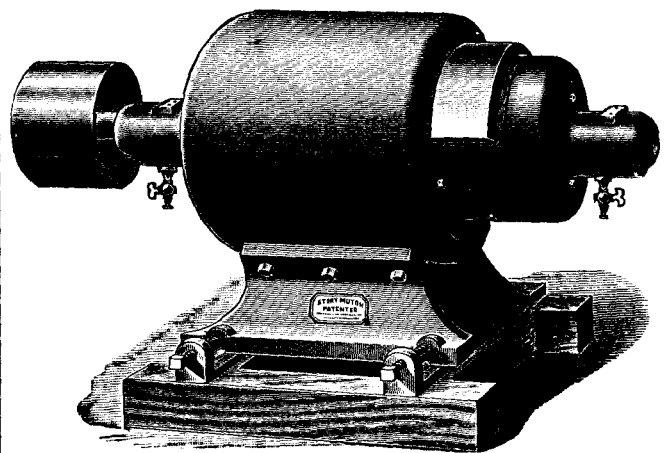


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THE

Storey Motor and Dynamo



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THE STOREY MOTOR AND TOOL CO.

John St. North, Hamilton, Can., and Philadelphia.

Send for Catalogue.

Among the recent exports from New York were 2,000 tons of news paper. This paper was manufactured at Appleton, Wis., and was consigned to Japan. This is the first shipment of paper manufactured on this continent, to any of the Pacific nations. A large export business in paper is being done between the United States and Europe. This export movement to Japan is regarded most favorably by United States dealers, who expect to see a great expansion of it in the near future. There is no reason why Canada should not participate in this business. We possess better natural facilities for manufacturing paper than the United States, and we have direct steamship communication with the principal ports of the Orient. Canada should do a large paper trade both in Europe and in Asia. The increasing export trade of the United States in paper is possible only because that country receives its pulp wood from Canada free of duty. By placing an export duty on pulp wood, Canada will re-

ceive a goodly share of the foreign trade that is now controlled by the United States. —The World.

The Stevens Manufacturing Company, London, Ont., will install an electric light plant in the Broad Woolen Mills at Hespelet, Ont.

The Montreal Elevating Company have contracted for two new floating elevators of steel, with a capacity of 8,000 bushels per hour each. With this addition the company's plant will consist of sixteen screw-propelling, floating elevators, with a combined capacity of 85,000 bushels an hour.

The Universal Patent Developing Company, Montreal, has been incorporated with a capital stock of \$20,000.

The Scotia Steamship Company, Halifax, N. S., has been incorporated with a capital stock of \$25,000 to carry on a general steamship business.

Isaac Walker's planing mill, Toronto, was burned a few days ago. Loss about \$1,500. The Shippe Wood Kim Company, Toronto, were burned out a few days ago.

Wm. Ball's planing mill at Papineauville, Que., was destroyed by fire a few days ago. The Eckardt Collin Company's factory at Toronto was destroyed by fire October 20th. Loss about \$15,000.

The Sackville Machine and Foundry Company, Sackville, N.B., decided, at a general meeting held a few days ago, to purchase the business and property of Seaman, Murray & Co., at that place, and to enlarge the same.

The Eureka Specialty Company, Stratford, Ont., has been succeeded by George East and Charles G. Harvey.

George Easterbrook, miller, Tweed, Ont., has been succeeded by the Deseronto Milling Company, Limited.

The Packard Electric Co., Limited.

MAKERS OF

Lamps and Transformers

Sole Agents for SCHEEFFER RECORDING WATT METERS
ST. CATHARINES, ONT.

Cleveland WIRE SPRING Company, CLEVELAND, OHIO, U.S.



TEMPERED STEEL MACHINE SPRINGS.
SPECIAL SPRINGS of all description to order and for Upholstery. Furniture, Beds, Chairs, etc.
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Manufacturers of STEEL
PLOW SHAPES, NARROW DISKS,
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AGRICULTURAL STEEL of all kinds.

FINE TOOL STEEL

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DIES, DRILLS, TAPS,
BICYCLE CONES,
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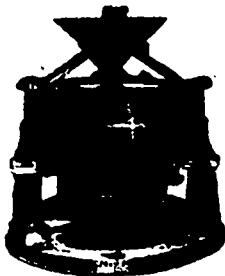
And for all purposes where requirements are exacting.

For Prices, Etc., Address,

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Agent for Canada.

29 Melinda St., - Toronto, Ont.



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MILLS
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MILLSTONES.

FRENCH BURR AND ESOPUS STONES. Send for Circular.

STURTEVANT MILL CO.

BOSTON, MASS.

The DRIER the STEAM the GREATER the POWER.

"Eureka"



OUR SECTIONAL PIPE AND BOILER COVERING

Almost Entirely Prevents Condensation of Steam when Passing Through the Pipes
EUREKA MINERAL WOOL & ASBESTOS CO.

114 BAY STREET, TORONTO.

ASBESTOS GOODS.

MINERAL WOOL.

ENGINE PACKING

The Prescott Elevator Company has taken a hand in the improvement of the export facilities at this port. It has recently closed a contract for the construction of three large steel tow barges to be used in conveying grain from Fort William to Montreal. These barges will have a capacity of 40,000 bushels each, but as soon as the canals shall have been deepened to admit of the passage of vessels drawing fourteen feet of water, the company will have barges constructed with a carrying capacity of 80,000 bushels. Simultaneously with the inauguration of the scheme of carriage from Fort William to Montreal the company will take another step in the same direction. It is now preparing to have floating elevators constructed for use in the Montreal harbor, so that transportation to open steamers can be effected with the greatest economy and expedition. The company has satisfied itself that grain can be sent to England by way of Montreal more cheaply than by New York.—Montreal Herald.

The Dodge Wood Split Pulley Company, Toronto, recently received an order for 3,900 pulleys for an English firm.

F. Smeath's planing mill at Goderich, Ont., was burned a few days ago. Loss about \$5,000.

The corporation of the village of Ashburnham, adjacent to Peterboro, Ont., have had plans prepared for a system of waterworks for the village.

The Goldie & McCulloch Company, Galt, Ont., have received from the Dominion Bank an order for twenty time locks for safes and vaults.

The news comes from the office of the Bell Organ and Piano Company that orders are pouring in from Australia, New Zealand, South Africa, and other places. The factories will have to run over-time for quite a period in order to meet the demand for instruments.—Guelph Herald.

At the glass factory in Wallaceburg, Ont., a force of 250 men is now at work. Over \$100,000 in wages will be paid out by this establishment this year.

John Philip, of Grand Valley, Ont., who has heretofore been operating an arc and incandescent electric lighting plant, has decided to go into electric lighting more extensively, and for this purpose has purchased from the Royal Electric one of their S.K.C., two-phase alternating current generators with 300 light capacity of transformers and supplies. The work of construction is being proceeded with.

Gilman Wilson's carriage shops at Nipissing Junction, Ont., were destroyed by fire a few days ago.

Messrs. Flook & Babcock, Chatham, Ont., have been awarded the contract by the Lake Erie and Detroit River Railway Company to construct a pier and slip-dock for a car ferry at Port Stanley, Ont.

The northern elevator, at Nesbitt Station, Man., containing 25,000 bushels of wheat, was burned a few days ago.

The Roberval Wool Manufacturing Company, Roberval, Que., will apply for incorporation.

Among the losses by fire, on October 17th, when the town of Windsor, N.S., was nearly wiped out, were the Windsor Foundry Company, \$40,000; the Electric Light Company, \$32,000; and the Windsor Plaster Company, \$12,000.

Messrs. Pugsley, Dingman & Co., soap manufacturers, Toronto., have purchased the factory formerly occupied by the Dominion Art Woodwork Manufacturing Company, Toronto Junction, and are fitting it up with new machinery, with the view of removing their whole plant there in the near future.

The Sherbrooke Gas & Water Co., of Sherbrooke, Que., are making extensive additions to their incandescent lighting system and have added another 180 K.W., S.K.C. machine to their plant. They have now two 180 K.W. and two sixty K.W. S.K.C. machines, from which they are furnishing both light and power.

The South River Lumber Company, South River, Ont., have purchased from the Moore

Lumber Company, Detroit, Mich., bush No. 3, Ballantyne, for \$120,000. The South River Company will remodel their mills at a cost of \$15,000.

The Kent Mills Company, Chatham, Ont., has been incorporated with a capital stock of \$99,900, to do a general milling business and to acquire the business heretofore carried on at Blenheim, Ont., and Chatham, Ont., by the Stevens-Campbell Company.

The Art Goods Manufacturing Company, Toronto Junction, have recently installed in their works a complete incandescent electric lighting plant of 150. The Jones and Moore Electric Company, Toronto, had the contract.

6 OPTIONS - 6

Manufacturers' Life

Granted to the holder of the 20-year DISTRIBUTION POLICY of the

IF HE SURVIVES THE PERIOD HE MAY

- (a) Surrender his policy and receive (1) Cash, (2) Paid-up Insurance (3) Annuity; or,
- (b) Retain his policy and take his profits as (4) Cash, (5) Bonus addition, (6) Annuity.

If he dies during the term his beneficiaries receive the face value of the policy. These options, together with the liberal benefits guaranteed in the policy, render this plan one of the most attractive ever offered.

HEAD OFFICE, - TORONTO.

GEORGE GOODERHAM, President.

J. F. JUNKIN, General Manager.

GEO. A. STERLING, Secretary.

Agents Wanted in Unrepresented Localities.

CUT NAILS.

Bar Iron and Steel

Railway Spikes

Pressed Spikes

Washers.

Rhode Island Horse Shoes

ABBOTT & CO., - MONTREAL

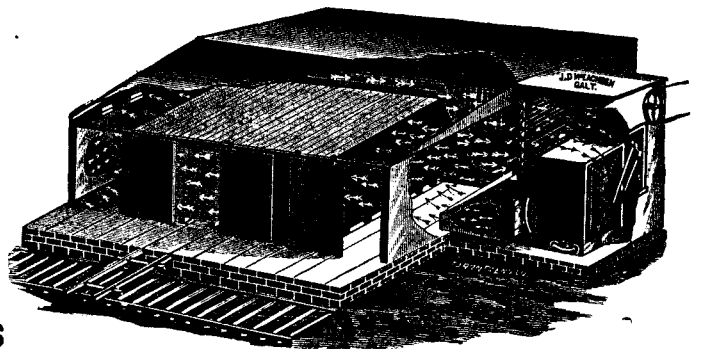
DRY KILNS AND HEATERS

HOT BLAST HEATING SYSTEM FOR LARGE BUILDINGS

Ventilating Fans,

Shaving Fans,

Blowers and Exhausters



LITTLE WONDER HOT WATER BOILER for Heating Dwellings.

McEACHREN HEATING AND VENTILATING CO.

GALT, ONT.

The Howell Lithographing Company's establishment, at Hamilton, was damaged by fire October 20th, to the extent of about \$8,000.

The Royal Electric Company, Montreal, has secured a contract from the Cataract Power Company, Hamilton, for \$200,000 worth of dynamos.

One of the most modern compressors of its size that has ever been in Nova Scotia, was forwarded by the Canadian Rand Drill Co., the other day to Messrs. H. H. Fuller & Co., of Halifax. The machine is designed for both mining and high pressures, the air cylinders being compounded and worked in conjunction with an intercooler of the latest type. The heads of the machine were of the hooded type, which renders the compressor in operation practically noiseless.

Robert Metalew's cheese factory near Odessa, Ont., was destroyed a few days ago. Loss about \$4,000.

*At the Mikado mine, back of Rat Portage, Ont., preparations are being made for a new plant lately contracted for with the Canadian Rand Drill Co. The plant is to consist of one of Rand's latest typeduplex compressors and with a complete equipment of boilers, air receivers, drills and other accessories.

The Mount Royal Milling Company, Montreal, is being incorporated with a capital stock of \$50,000.

The Ross Mackenzie syndicate, the headquarters of which are in Toronto and Montreal, and which controls the street railways of those and other cities, has made arrangements for laying twenty-three miles of electric railway in the city of Kingston, Jamaica.

Messrs. Noble & Barber, electrical contractors, have started business in Montreal. James G. Francis' dyeworks at Moncton, N.B., has sold out to Messrs. Sample & Proctor.

Oliver Haley, carriage maker, Sussex, N.B., has sold out to Pickles & Foster.

Word has just been received by the Canadian Rand Drill Co., to the effect that the guarantee on the large stamp mill erected at the Crystal mine has in every way been fulfilled, in fact, the machinery throughout has been found to surpass in every way contract specifications. The contract called for a complete equipment from the supplying of plans for the building, to the starting and operating of the mill for thirty days. Since this a hoisting plant has been ordered and is in daily operation.

Sulphur

**ROCK
ROLL
FLOUR
GROUND**

English Recovered

- Sicilian -

Etc,

The Anglo-Sicilian Sulphur Co.,
Limited.

Arthur P. Tippet & Co.,

CANADIAN AGENTS,

30 St. Francois-Xavier Street,
MONTREAL.

TO BELT USERS :

IT IS NOT WIND YOU WANT.

RESULT OF MY TRIP :

GENUINE

ENGLISH OAK

TANNED BELTING

D. K. McLAREN

24 Victoria Square, - MONTREAL

FIRE PROTECTION.

INDICATOR VALVES. CHECK VALVES.

INDICATOR POSTS.

FIRE HYDRANTS. CAST IRON PIPE.

For the modern equipment of your Mill with Automatic "Sprinkling System," write us.

We manufacture a full line of these goods.

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OF TORONTO (Limited).

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Dominion Oil Cloth Co.,

Manufacturers of....

OIL-CLOTHS OF EVERY DESCRIPTION

Flour Oil-Cloth, Table Oil-Cloth, Carriage Oil-Cloth, Emuclled Oil-Cloth, Stair Oil-Cloth, etc, etc.

Office and Works

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FORD, RUTHVEN & CO.,

26 PITT ST., SYDNEY, AUSTRALIA.

Wool Buyers' on Commission.

Letters of Credit must accompany Orders.
BANKERS: Bank of Australasia, Sydney.

ATTENTION CENTRAL STATION MANAGERS!

A GOLDEN OPPORTUNITY!

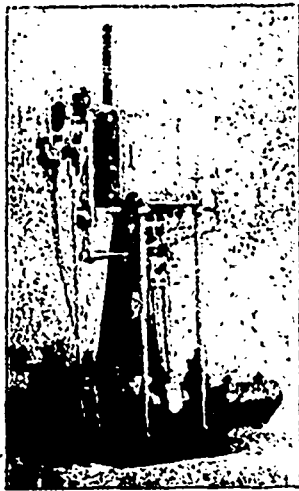
Are you desirous of purchasing

**ARC LIGHTING MACHINERY, LEATHER BELTING,
WATER WHEELS, or SHAFTING?**

If so, you cannot afford to miss this opportunity. Owing to extensions necessitated at our generating station we are obliged to discard the above-mentioned material. Communicate with us at once for all information and particulars.

THE MONTMORENCY ELECTRIC POWER CO., - - QUEBEC.

ALBERT BELL
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Maker of

YACHT ENGINES, 1 H.P. to 50 H.P.
Safety Water Tube BOILERS
PROPELLER WHEELS
Stationary Engines and Boilers

WRITE FOR CIRCULARS



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ATLAS FACTS
ATLAS METAL

Speak louder than words, and

ATLAS does not rely on empty talk for its UNDISPUTED REPUTATION.

It Has Been Undenially Proved that ATLAS METAL is Superior to all and has stood under Enormous Pressures and Phenomenal Speed.

TRY ATLAS METAL WHERE ALL OTHERS HAVE FAILED.

WE CHALLENGE A TEST

Against any Anti-Friction Metal on the Market.

THE ATLAS METAL CO., Limited
75 Queen Victoria St., London, Eng.

H. G. McLAREN, General Agent for Canada,
318 ST. PAUL ST., MONTREAL, QUE.

Kemp Mfg. Co.
TORONTO.

Galvanized Steel Pails

FOR FIRE PURPOSES ONLY.
NO HOOPS TO FALL OFF.
PRICES ON APPLICATION.

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PUBLIC ACCOUNTANTS, AUDITORS
ASSIGNEES, ETC.
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Offers exceptional facilities to young people in its several departments for **SHORTHAND, Typewriting, Telegraphy, and all Commercial Subjects.**

Full Session now open, and students are admitted at any time. Good results guaranteed, and graduates assisted to positions.

Particulars free. Write **W. H. SHAW, Principal,** Yonge and Gerrard Streets, Toronto.

Leitch & Turnbull

Canada Elevator Works.

Queen and Peter Streets, Hamilton, Ont.

Patent Safety Hydraulic Hand and **POWER ELEVATORS**
Telephone Connection.

The Empire Carpet Company, St. Catharines, Ont., write us that they have increased the capacity of their factory by adding four high speed Munkland power looms, and will shortly put in four Crompton yard looms, and a Crompton art square loom. They say they are rushed with orders so that they are obliged to work overtime, and have been for the past six weeks.

The Foundry and machine shop of T. A. McLean, at Charlottetown, P. E. I., have been kept busy on important jobs during the past season. We learn that there has recently been completed at these works the following, among other undertakings: A huge rotary and shingle mill for James Angel & Co., St. John's, Nfld., comprising a fifty-two inch circular saw. Four large boilers or digesters for the new packing house of Messrs. Rattenbury, each weighing 5,700 pounds, each of three-eighth inch steel plate. Also two large steam boilers of 100 h. p. capacity. The firm are also engaged in the construction of the suction and delivery pipes and valves for the pumping station of the North Sydney Water Works. About fifty hands are employed and they have had to keep their machine shop running until 9:30 every night in order to keep up with the rush.—Maritime Merchant.

NOTES ON DYEING.

Silk Dyeing—The Farbenfabriken of Elberfeld, have pleasure in bringing before public notice part eleven of their recipe book called "Dyestuffs of the Farbenfabri-

(From "Free Press," London, Ont., December 9th, 1896.)

"Number two Committee of the Board of Education met last night. . . . It was decided to put in two No. 25 Heeson Fire Grates in the Colligate Institute furnaces. One of these Grates is said to have saved four tons of coal at Princess Ave. School last winter."

These Grates, 16 x 26 inches, are supplied by

The HEESON ROCKING GRATE BAR CO. OF TORONTO (Limited),
120 VICTORIA STREET.
Phone 1924.

Twelve additional sets of these bars have since been put in for the London Board of Education.

ALEX. GARTSHORE, President. J. G. ALLAN, Sec.-Treas. JAS. THOMPSON, Vice-Pres. and Gen. Mgr.

THE GARTSHORE-THOMPSON PIPE & FOUNDRY CO. Limited



3 in. to 60 in. diameter.

For Water, Gas, Culverts and Sewers

Special Castings and all kinds of **FLEXIBLE AND FLANGE PIPE.**
WATER WORKS SUPPLIES HAMILTON, ONT.

BENT RIM WOOD SPLIT PULLEYS

(REID'S PATENT).

THE STRONGEST, LIGHTEST, AND BEST BELT SURFACE IN THE WORLD.

No Glue, no Nails in Rim like Segment Rim Pulleys, to be affected by Steam, Dampness or Moist Temperature.

EVERY PULLEY GUARANTEED

The Reid Bros. Mngf. Co., of Toronto, 102-103 Adelaide St. West, Toronto.

JOHN J. KELLER & CO.

104 and 106 MURRAY ST.
NEW YORK

220 Church St., Philadelphia.
135 Pearl Street, Boston.

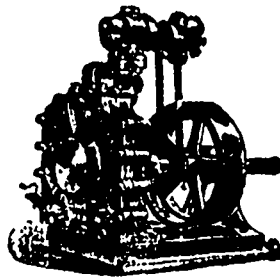
**Aniline Colors,
Dyewood Extracts,
Sumac and
Nutmeg Extracts.**

FAST COLORS for Wool Dyeing.
One Dip Cotton Colors, Novelties
and Specialties for Calico
Printing.

MANUFACTURED BY
JOHN R. GEIGY & CO.
BASEL, SWITZERLAND

The Dake Engine

For Running Dynamos in



Small Isolated Plants

CONTRACTORS' HOISTS

STEADY AND EVEN MOTION.

ALSO FOR

Attachment Direct to Fans, Blowers, Centrifugal
Pumps, Stokers, Steering Gear, Etc.

Correspondence Solicited.

Phelps Machine Co'y,
EASTMAN, P.Q.

ken, vom Fr. Boyer & Co., and their application in the dyeing of silk."

This book has been compiled by a practical silk dyer, and deserves credit in the manner in which it describes the way to finish the material and to prepare it for dyeing. This pamphlet, although containing little which is new to the old practitioner, will be welcome and prove very useful, because it is drafted in a very comprehensive and concise form.

The paragraph "General review of the most important colors used for silk," shows all silk dyestuffs in systematic order, with an exact description and with reference to pattern card. "Spin silk No. 575-1897," you find most of the colors mentioned in the instruction book.

The "Comparative tables of fastness," added to the pamphlet, will greatly increase the practical value and utility of the book, and will permit the dyer a reliable selection of the fastest colors.

Paper Dyeing.—A new pattern card, comprising "patterns on paper dyed in the pulp 593-1897," has been brought out by the Farbentabriken, which comprises all the colors, suitable for paper dyeing with exact methods, as for properties of dyestuff they are already very well known. Attention, however, is directed to the following dyes—turquoise blue, brilliant crocine, 3 B., brilliant rhoduline red B., azo crimson L., chloramine yellow, quinoline yellow and acid green, which are very clear and penetrate well. This card, although done in an experimental way, has been prepared with great care, and dyers will find this a most useful card for forming shades and comparing tints and estimating depths of colors, etc.

New Colors.—Benzo nitrol brown, a new color recently brought on the market for cotton printing, throws a peculiar brown shade not obtained with any other colors. It is described in Benzidine Supplement Pamphlet, together with many other colors already introduced and well known. This supplement, together with the pamphlet published at Elberfeld last year, forms one complete book, and this contains all the particulars of the benzidine colors up to date, and gives customers a good idea about all branches of cotton printing. The illustrated tables on the properties of the benzidine colors and their application in cotton printing will prove very useful, and meet with general approval, as they are a good guide to printers when selecting products to be used.

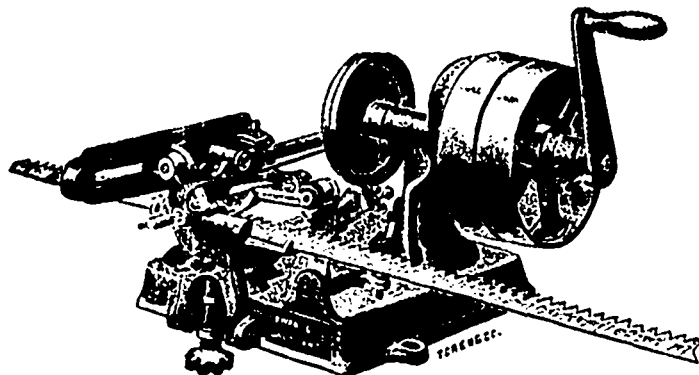
New Toluylene Browns B.M. and B.B.O.—Three new shades of toluylene browns which resemble the former brands very closely, but are somewhat faster and cheaper in price. It would scarcely prove of benefit for dyers, who are using the former brands of brown, to change to the new toluylene browns. The benzo browns are more suitable for some purposes. The benzo chrome browns by the system of after chroming are fastest of all, and should always take preference where price does not stand in the way. The benzo chrome browns, besides being remarkably fast, give similar shades on cotton and wool, thereby being especially suitable for unions and half-woollens.

Alizarine Viridene, in paste (patented).—A printed circular has recently been brought out in which the printer is offered a most interesting color in the form of alizarine viridene, which is, as the name implies, a fast green. In cotton printing, a direct green of uniform make, fixable by chrome and dischargeable by means of oxydation, is of greatest importance, and as the properties of fastness of this product appear to suit for

BAND SAW FILING MACHINE

The Simplest, Best, Most Durable and
Accurate Machine of its Class

Every User of
Band Saws
Should Have
One



WRITE FOR
PRICE

COWAN & CO., GALT, ONTARIO

Manufacturers of....

Saw Mills and Wood-Working Machinery of all kinds, Corliss and
Slide Valve Engines, Boilers, Moffat's Improved Feed Water
Heaters and Purifiers. We make the Best. Write and Get Our Prices

Toronto Warehouse, - - 160 King Street West



THE B. GREENING WIRE CO. LTD.
PERFORATED METALS.

HAMILTON, - CANADA

CATALOGUE AND PRICES ON APPLICATION.....

the above method, it should meet with approval.

Sulfon-Acid Blue B. and R.—In May and June last, these two new colors were brought out, but now pattern cards have been prepared, and printed circulars have been issued, which describe the above colors exactly, pointing out their fastness to light and relation to the sulfon cyanine family.

Fashion Shades on Woolen Cloth, 1897-98.—This new card, containing hundreds of shades and tints heretofore unknown, is brought out each year by the Farbenfabriken Co., of Elberfeld, at great expense; it has been prepared with great care and accuracy and with special pains. Only the most suitable fast colors selected, making all recipes as simple as possible for the practical dyer.

This card has proved of inestimable value for comparing shades and in matching colors accurately and expeditiously.

Benzidine colors on mercerized cotton linings, 628.—Benzidine colors on mercerized cotton yarn 599-1897 met with such general interest, and all cards having been distributed, a new card, named the above, on pieces for all those interested has been brought out by the Farbenfabriken of Elberfeld. This card is prepared with a number of shades just now in fashion for linings; to produce such shades the benzidine colors suited extremely well. For cards, pamphlets, circulars, etc., for any of above address the Dominion Dyewood & Chemical Co., Toronto.

HAHLO & LIEBREICH, BRADFORD, ENG.

Machinery Merchants and Exporters

NEW and GOOD SECOND-HAND **WOOLLEN MACHINERY**

SHAKE WILLEYS, TEAZERS, RAG PICKERS, GARNETTS,
AUTOMATIC FEEDS, WASTE CLEANERS, CARDS, CONDENSERS, SELF-ACTING
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GOOD Second-Hand **COTTON and WORSTED MACHINERY**

BELTING, CARD-CLOTHING, PICKERS, PICKING BANDS, etc.

Hamilton Blast Furnace Co.

(Limited)

HAMILTON, - - ONTARIO

Manufacturers of

HIGH GRADE PIG IRON

THE . . . DOMINION WATER WHEEL

SPECIAL FEATURES

Economy in Use of Water, Great Power
Equal Efficiency at any Gate-Opening
Steadiness and Strength of Motion
Sensitiveness to Change in Gate-Opening
Ease for Regulation by Governor
Strength and Durability
Freedom from Trouble with Step
Not Clogged by Ice
Accessibility to all Parts

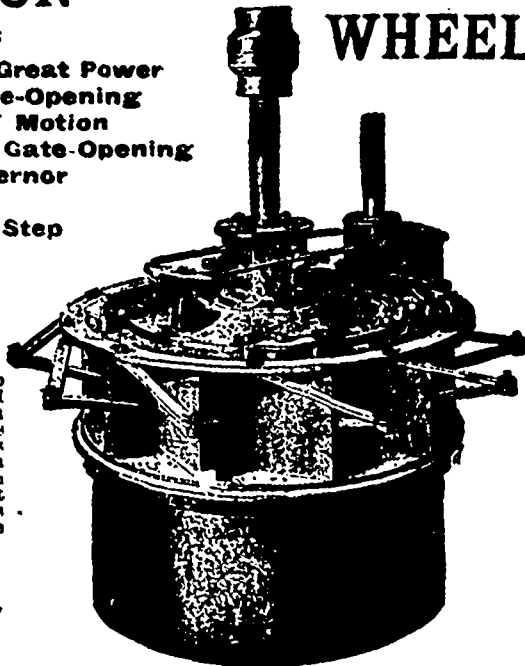
St. CATHARINES,
February 9, 1897

Messrs. Wm. & J. G. Greey,
Toronto.

GENTLEMEN.—Your favor of the 5th to hand. Have been away from home, and hence delay in answering your letter. You ask us how your Dominion Wheel compares with the . . . Well, sir, the comparison is this—we have been using two . . . 38 inch diameter, double wheels, and your 54 inch Dominion wheel we put in December last gives us as much power as both, and does not use but very little more water than one of the 38 inch wheels. Yours truly,
Cooks & Son.

MANUFACTURED ONLY BY

WM. & J. G. GREY
TORONTO



THE TRACY PATENT OIL FILTER

The accompanying illustration represents the Tracy Patent Oil Filter for sale by Messrs Darling Bros, Montreal, regarding which they write as follows:—

When oil has been once used, its value has not been consumed. It is dirty, contains particles of contaminating metal gum, dirt and acid, but it still has life, and its lubricating quality is scarcely impaired. Why not use it again and again until it is taken up by the machinery? The filtration of oil is one of the devices used for the saving of money in the best managed and most successful plants and factories. It does perfect work; it makes dirty oil absolutely pure and safe to use on the most rapid running and finest machinery. It has stood the test of time, and will save you 75 per cent. of your oil bills. You can use your oil over and over again and get all the life not out of it.

It is a fact that a good filter is in demand, and that all factories of any pretensions whatever, and who study economy, will see the benefit of using a good oil filter. The Tracy Oil Filter is endorsed by the best concerns in the country. Further information will be furnished by Messrs. Darling Bros. Montreal.

Dyestuff Salesman Wanted for Canada.

Address "DYESTUFF"
Care of The Canadian Manufacturer,
McKinnon Building,
Toronto, Ont.

THE TORONTO PAPER MFG. CO.

CORNWALL, ONT.
Manufacturers of . . .
Engine Sized Superfine Papers
White and Tinted Book Papers
Blue and Cream Laid and Wave Fool-caps, Account, Envelope and Lithographic Papers, etc.

C. G. ELRICK & CO.

MANUFACTURERS OF
HORN and RUBBER COMBS, Etc.
FACTORY—Sheppard Street, Toronto.
MONTREAL OFFICE—Fraser Building.

THE ELECTRICAL CONSTRUCTION CO., OF LONDON, LIMITED, LONDON, - - ONTARIO.

DIRECT-CURRENT MULTIPOLAR LIGHTING MACHINES, From 2 to 40 K.W.
BELTED OR DIRECT-CONNECTED.

MULTIPOLAR MOTORS, up to 50 k.w.
Knife Switches, all Sizes and Kinds.

REPAIRS ON SHORT NOTICE.

Two Second-hand 150 k.w. Multipolar, and two 80 k.w. Bipolar 500 Volt Generators for Sale at a Bargain.

Jubilee Smoke Consumer.

Advice
to
Owners
of
Boilers.

THE JUBILEE SMOKE CONSUMER

Is the only Smoke Consuming Device which at once CONSUMES COMPLETELY Smoke and Gases of every kind.

THE JUBILEE SMOKE CONSUMER

Is the only one which can be adapted to locomotive and steamboat boilers, as well as to boilers used in workshops and large factories.

THE JUBILEE SMOKE CONSUMER

Is the only one which saves fuel considerably.

THE JUBILEE SMOKE CONSUMER

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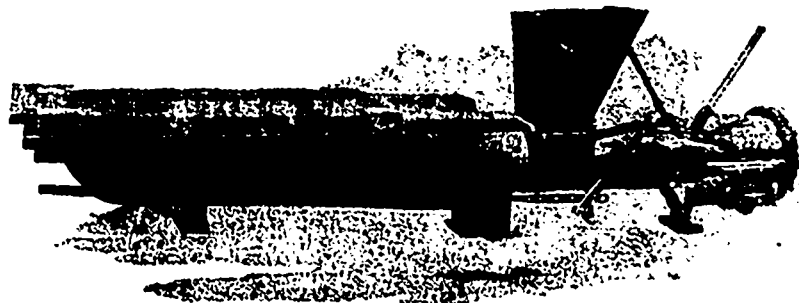
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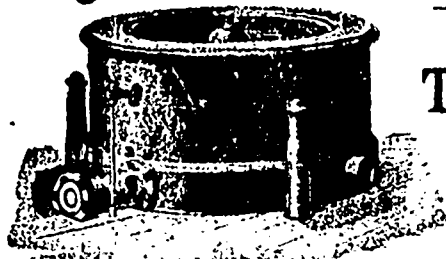
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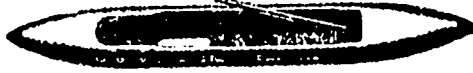
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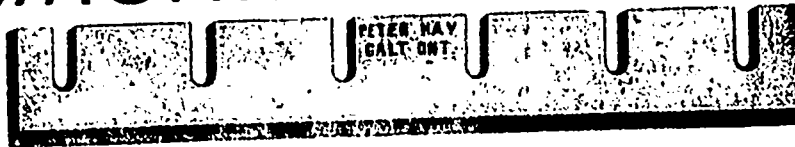
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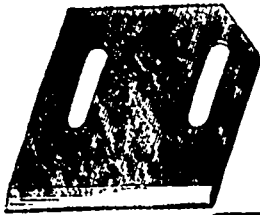


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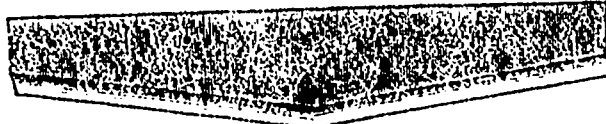
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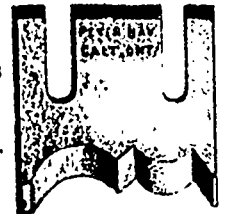
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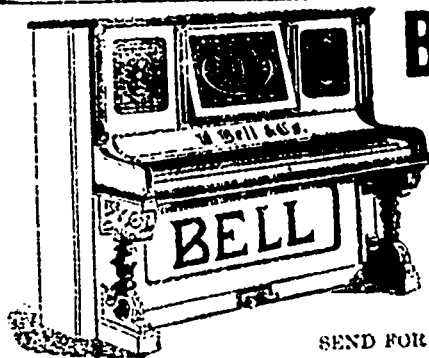
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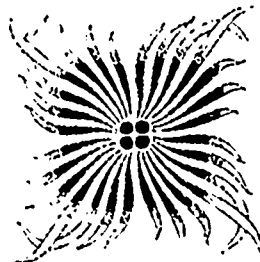
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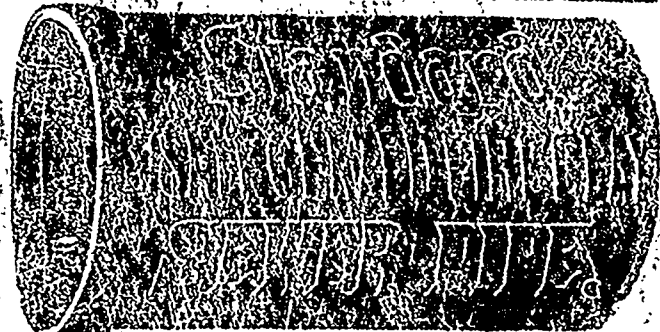
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