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Vol. 31.

TORONTO, AUGUST 2, 1895.

No. 3.

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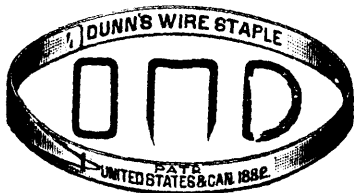
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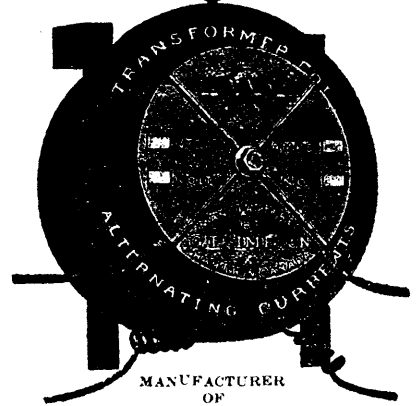
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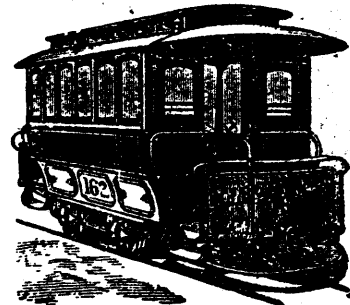
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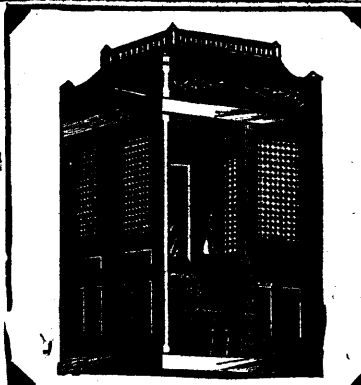
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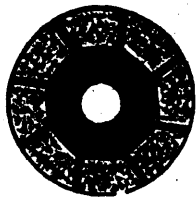
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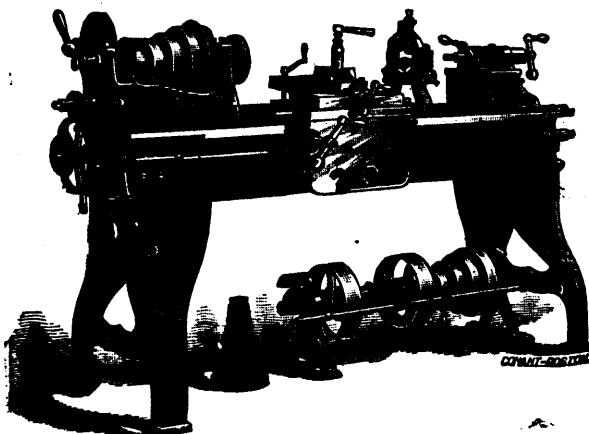
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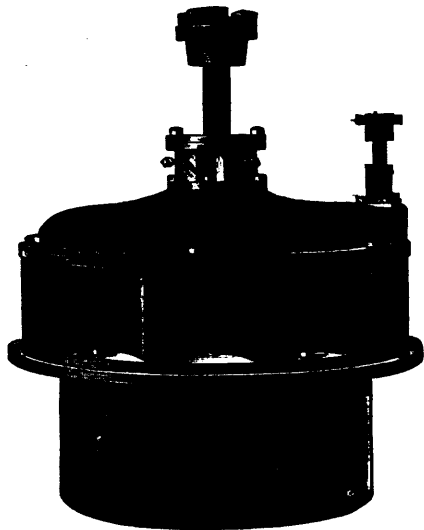
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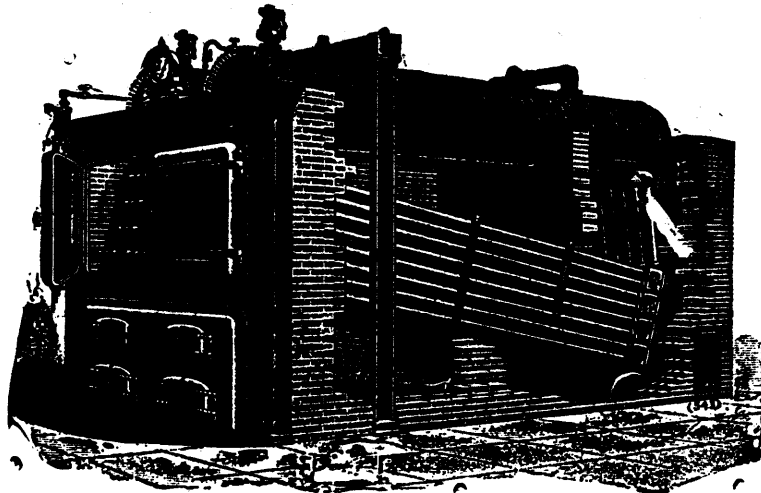
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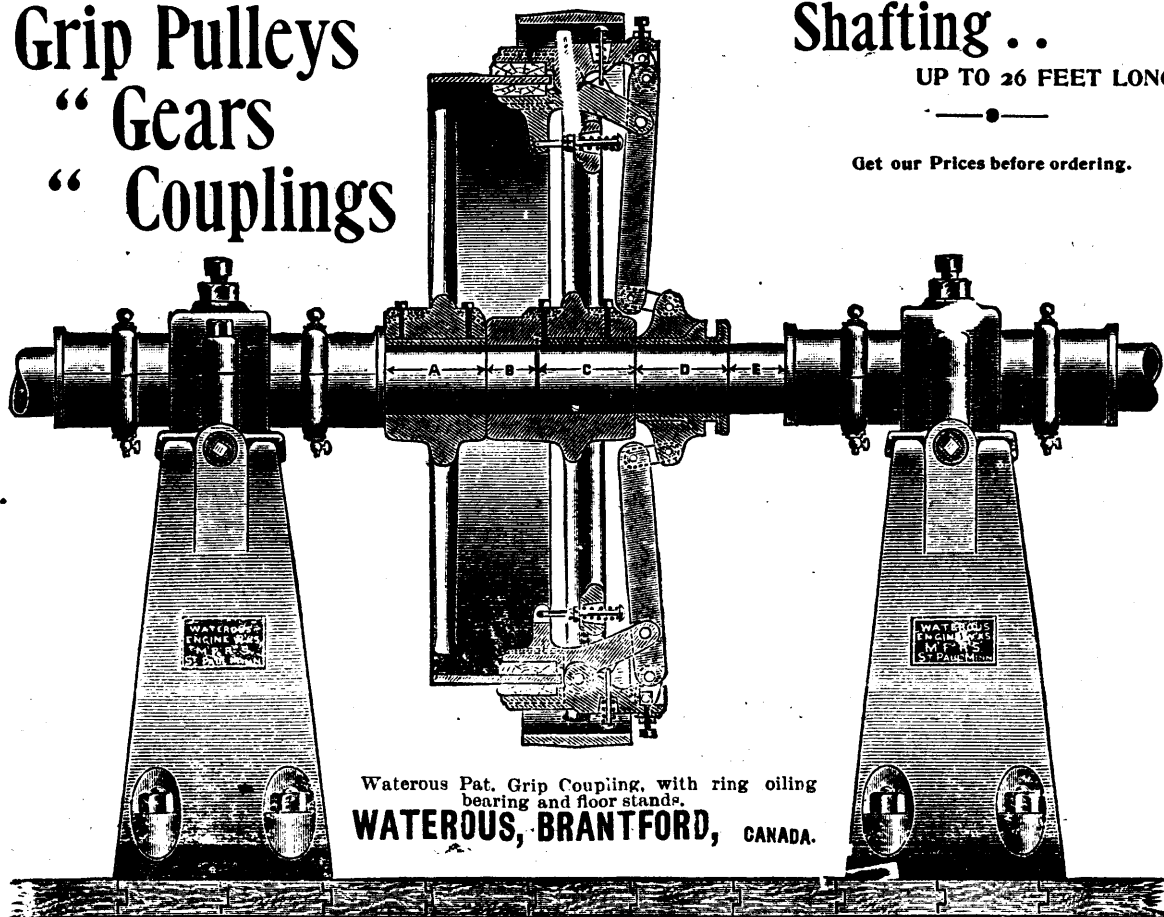
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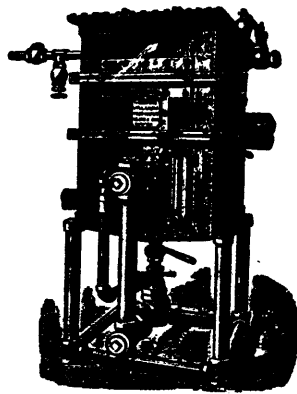
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 NOTICE is hereby given to all persons de-  
 siring of practicing the invention in the  
 manufacture of Aluminum and Alloys  
 thereof, for which certain letters patent of the  
 Dominion of Canada were granted on June  
 7th, 1889, to Chas. Martin Hall, assignor to the  
 Pittsburg Reduction Co., to wit., Nos. 31, 512,  
 31,513, 31,514, 31,515, 31,516, 31,517; and also the  
 invention in aluminum alloys and manufac-  
 ture thereof, for which certain letters patent  
 of the Dominion of Canada were granted on  
 July 20th, 1892, to John W. Langley, assignor  
 to the Pittsburg Reduction Company, to wit,  
 No. 39,402, that the undersigned is prepared to  
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 each and all of same letters patent, and other-  
 wise place the patent inventions in possession  
 of the public in accordance with the provisions  
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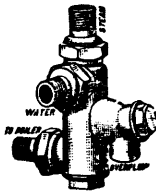
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A universal favorite. Spills no  
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**FANS FOR NOTHING**



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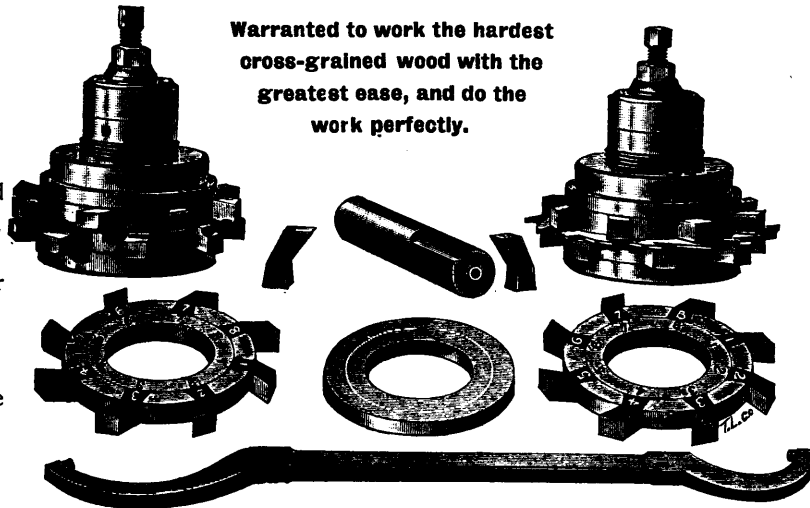
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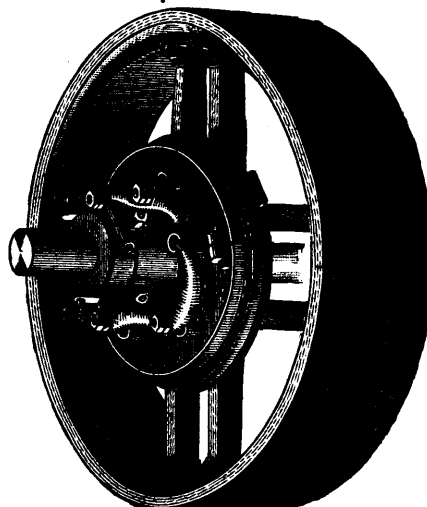
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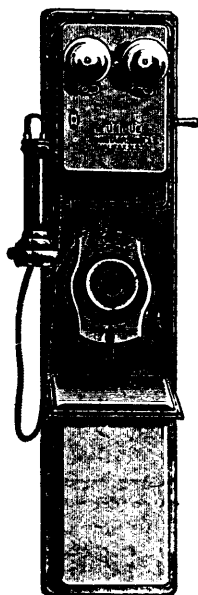
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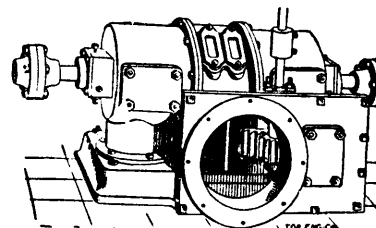
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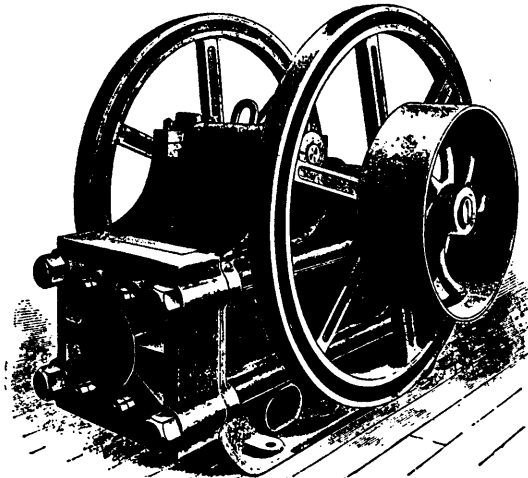
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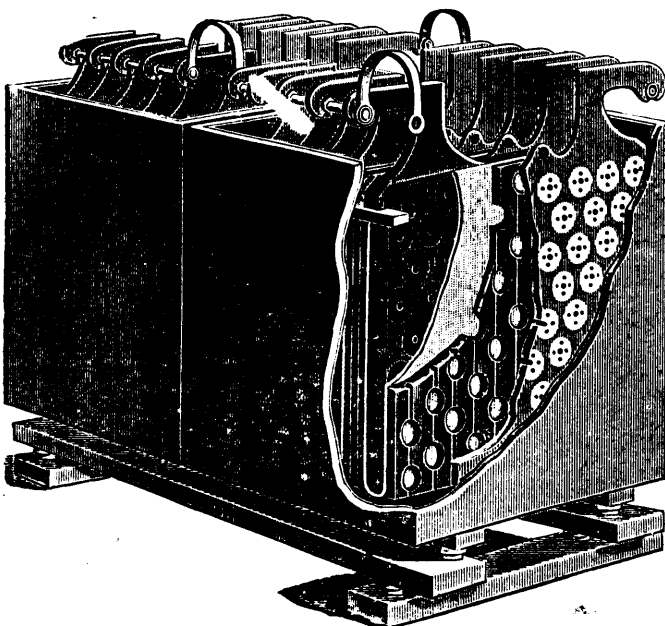
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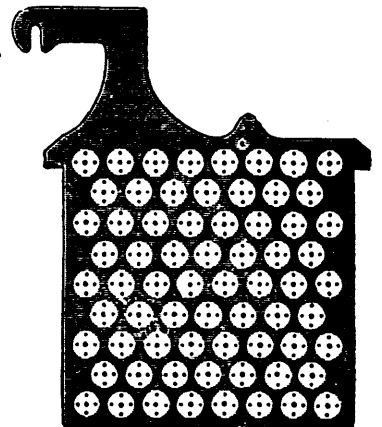
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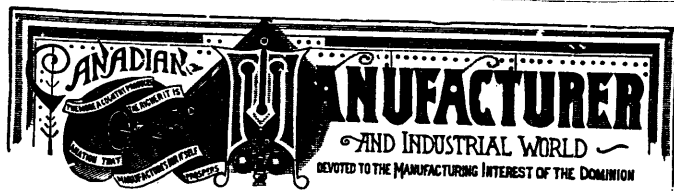
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**UNDERVALUATIONS.**

Hardware and Metal is responsible for the rumor that Messrs. Chaplin and Hawthorne, of the scythe and axe combination, have been in Ottawa interviewing the Government, and that, in consequence, a circular is to be issued fixing arbitrary values at which axes must be rated for duty by importers. Controller Wallace is said to have been interviewed in the matter, and declined to make any statement except that the department had the matter under consideration. Should such a circular be issued, the Government will show itself shameless in its subserviency

to the manufacturers. How long does the importer mean to vote Tory? —Montreal Herald.

Hardware, that the Herald holds responsible for the so-called rumor, is a journal that professes to be published in the interests of certain Canadian trades, but of late it has classified those trades as between the importers and the manufacturers. Not all the importers, however, but those who endeavor to defraud the Government by a systematic under valuation of their imports; for it is not to be observed that respectable importers lend any countenance to the disreputable fight Hardware is constantly waging upon the Government. It seems to be oblivious to the fact that, whether our tariff laws are framed in the best interests of Canada or not, we are in honor bound to abide by them, and to aid the Government in the enforcement of them. And the incident, too, illustrates the fact that has time and again been urged, that the system of levying ad valorem duties where it is possible to levy specific duties is productive of much evil, and inflicts great wrong and injustice not only upon the Government, in the collection of the revenue, but also upon honest importers, who desire to abide by the laws as they stand, and upon the manufacturers who have been guaranteed certain protection to their industries. The law provides that when imports of merchandise are rated for duty ad valorem, the value shall be that which prevails in the markets of the country from which the merchandise is imported. Thus if in United States markets where axes are made the value to the trade—the price at which they are sold to the trade for consumption in that country, is say ten dollars per dozen, although the Canadian importer may have purchased them at five dollars per dozen—the duty must be imposed at the rate of ten dollars. It is immaterial what price the importer may have paid for his axes, but the duty is levied upon what such axes are worth in the open markets of the country from which they are exported. It will readily be seen that great injustice would follow under any system where the valuation for duty was fixed at whatever cost price the invoice of the importer might show as having been paid for the article in the country of production. His goods may have been purchased at a forced sale where the general market value was much higher than that shown in the invoice. Or the goods might be of the surplus stock of some manufacturer who would rather raise money to meet pressing obligations by sacrificing them to be exported, than to force them upon his home market at a lower price than that at which they had been selling. Or by collusion between the manufacturer and the purchaser for export the price might be shown to be greatly less in the invoice than that actually paid, thus done for the purpose of defrauding the customs of the country to which they were to be exported. Or by a fraudulent, fictitious marking of the goods by which it might be made to appear that an inferior article, of small value, was a first-class article of much greater value. Any of these circumstances might prevail, and in any of them great injustice to the Government would be the inevitable result, as well as to honest importers who would not resort to such methods, and also to the consumers.

The makers of the tariff laws foresaw these possible conditions and guarded against them by requiring, as we have shown, that the value for duty of all goods rated ad

valorem should be established upon the basis of just what such goods were worth in the markets of the country where produced; and it was to discover just what axes, scythes and other articles that were being imported into Canada were worth in the country of production that the Controller of Customs sent an expert to the United States. Was there anything wrong or unreasonable in this? Could any one be wronged in this? But Hardware, the so-called conservator of the Canadian hardware trade, and of the interests of both Canadian importers and manufacturers, endeavors to make it appear that the Government are a very bad lot because it seeks not only to save itself from the result of the fraudulent practices of dishonest importers, but also to save the manufacturers and honest importers at the same time.

Hardware had better come down from its unenviable perch. It is not creditable to it to pose as an opponent of a fair and equitable enforcement of the law. It is not reputable for it to ask that a demoralizing system be introduced whereby a premium might be placed upon the persistent and rascally undervaluation of imports.

#### *THE LOWERED STANDARD OF JOURNALISM.*

The Toronto Mail and Empire a few days ago had a leading editorial in which was discussed the lowered standard of morals observable at this time. It tells us that those who read the daily papers can but note the remarkable frequency of crimes; that the terrible murders of the past few years of home-grown criminals, the burglaries, thefts, breaches of the peace and violations of social obligations are so numerous as to deprive us of all reason for boasting that this country, in a less degree at least than elsewhere, did not disregard the laws of God and man—that congratulations under this head would be flattery. And it becomes absolutely pathetic in enquiring the cause. In fact it raises its head high up and, adjusting its long distance telescope to its eagle eyes, gazes towards the far-off horizon in search of evil that it might find close at home, even in its own sanctuary. It tells us how criminologists attribute crime to a variety of causes, each tending to its own particular end, which is really quite startling news; how that heredity is a potent influence which operates in what are called the criminal classes, which is also very valuable information, and that unless we have already created a criminal class our wave of wickedness is not the result of inheritance. It tells us, too, that depressed trade has much to do with the prevailing wickedness, although our depression has not been severe. It says that, speaking generally, the offences have come from covetousness and selfishness, weak morals, and a want of appreciation of the duties of man to his neighbor. "Who is responsible" it asks, "for the conditions we are experiencing?" The churches do their duty; the State is equally industrious in its own peculiar way; the Sunday School work is done well, and in the Public schools we have installments of religious teaching. Where then is the fault?

With a modesty most truly refreshing our worthy contemporary, neither for itself nor for the daily papers generally, makes any reference to the influence either for good

or ill of such publications upon the community, particularly upon the young, the uneducated, or those unto whose vile and debased tastes it panders. Do the daily papers feel any responsibility whatever for the columns of improper matter that they deem necessary to spread before their readers every day? If they do not feel any responsibility they should not pose as they constantly do as the conservators of the public morals. They make complaint that murders, burglaries, thefts, breaches of trust and violations of social obligations are painfully prevalent, but it is really a God-send, in their estimation, when crime is committed, and the more heinous the offense, and the more disgusting and awful the details, the more acceptable the event is to them in that it gives them the opportunity to dish up the disgusting and pernicious stuff with inflated and startling head lines, and to publish column after column of particulars that should never be recounted except perhaps in a court room, from which all but interested parties should be excluded.

Toronto has been and is a great sufferer, morally, from this class of journalism, as exhibited in the papers. Where the pay to sensational writers is measured by the greatest space that can be consumed in sensational reports and write ups, it is no wonder that fancy waits not for facts. The publishers know that a prurient longing is entertained for the most objectionable and demoralizing statements that can be imagined in connection with crime or shortcomings, and therefore when opportunity offers no home or fireside is too sacred, no fair name and fame too valuable and precious to deter the hyenas and vultures of the daily press from dragging in the mire all that their possessors hold dear, so long as a sensational item can be obtained. Even within the past year Toronto has suffered most excruciatingly from this cause, and still the daily papers ask fool questions as to why crime and wrong doing is so prevalent in our midst, when on the slightest pretext that offers itself they are teaching how crime and wrong-doing may be committed. They complain, editorially, that the standard of morality has been lowered, but they lose no opportunity of dragging it in the filth and mire. They should reform.

#### *HAS THE NATIONAL POLICY MADE YOU RICH?*

—Toronto Globe.

The Pittsburgh Gazette yesterday announced an increase in the wages of several thousand mechanics and laborers employed in the great iron and steel works at Bethlehem, in this State. This is one of the protected industries, and if our information is correct the increase is under the Wilson Tariff law.—Pittsburgh, Pa., Post.

The Globe asks working men if they are benefitted by protection; the Pittsburgh Gazette announces an increase in wages to workingmen, and the Post of that city, volunteers the information that if the laborers employed in the Bethlehem works were given an increase in wages it is under the Wilson tariff law.

It should be remembered that the wages of workingmen in the United States were much higher under the McKinley tariff than they have ever been since the Wilson law displaced it, and it should also be remembered that the collapse of wages in that country began when it was

known that Mr. Cleveland and his free trade Democratic party had acceded to power. Like that of our own Mr. Laurier, the cry of that party was for "free trade as they have it in Great Britain," and as soon as it was known that that party would have the making of a new tariff, to be formed on that line, confidence became shaken and an industrial and financial panic set in from which the country has not yet recovered. If Mr. Wilson had been permitted to have his way undoubtedly the new law that bears his name would have been much more drastic in its provisions, and disastrous in its effects than has been the case. But there were those who opposed his extreme, so-called reform measures, and succeeded in preserving some measure of protection in some of the great industries of the country, included in which was that of iron and steel. The Democratic free traders had always taught, as the *Globe* does, that free trade was necessary to benefit the workingman, and that the constant tendency of protection was to make the rich richer and the poor poorer, but it is a noticeable fact that those industries that exhibit the greatest recuperation from the effects of the panic, and in which the working man is enjoying an increase of pay, are those in which, in the Wilson tariff, the principle of protection was to some extent recognized.

Did the overthrow of McKinleyism make the workingman in the United States rich? Speaking at Bradford, a most important English manufacturing centre, in May last, Lord Salisbury, the now Prime Minister, said that the principal cause of the recent comparative prosperity of that town was "the relaxation of the vigor of the American tariff, which cast so deep a shadow over English trade some years ago. \* \* \* The great evil we have to dread undoubtedly is the use of that wall of tariff prohibition which we have seen in so many countries, and for which, perhaps, our liberal principles have given not a just but a plausible invitation and excuse. We must not shut our eyes to the fact that this tendency is increasing in the councils of most nations; tariffs are becoming more severe, the effort to restrict the markets of each country to the workers of that country is becoming more general, and the reports of the Foreign Office state with almost painful identity and reiteration that in one country after another the effect of the fiscal legislation has been to diminish the amount of British commerce and the outlets for British industry."

The *Globe* will no doubt readily concede that the enforcement of McKinleyism in the United States had a most disastrous effect upon the British workman, and surely it will not refuse to concede that, on the other hand, the American workman was correspondingly benefitted. Lord Salisbury in effect says so. The nation that manufactures for itself prospers; and the *Globe* should bear in mind that the object of McKinleyism was, not to pull down the industrial greatness of Great Britain, nor to injure the British workman, but to build up the industrial greatness of the United States and to benefit the American workman. The Prime Minister of the British Kingdom recognizes the fact that the tendency towards tariff protection is increasing in most nations, restricting the markets of each country to the workmen of that country, and to diminish British commerce and the outlets for British industry. Why not?

### TARIFF PROTECTION TO THE PRODUCERS OF "RAW" MATERIALS.

In 1824, pending the debate on the Tariff bill, Mr. Van Rensselaer, of New York, as chairman of the House Committee on Agriculture, made a report from that committee pursuant to instructions of the House, as to whether it—"would be to the interests of the agriculturists to increase the duties then in force on articles of foreign growth and manufacture." The report was short, but its salient points, concisely stated, were as follows:—

1. Whatever increases the consumption of its products, whether home or abroad, necessarily advances the interests of agriculture.

2. He who cultivates the soil looks to a market for his surplus products, the home market being at all times preferred to the foreign when the reward is equal, the home market being less precarious, more permanent and certain and beyond the reach of foreign hostility.

3. It favored an increase of duties on many foreign articles to promote agricultural prosperity. Manufacturers would open up a new market and a new demand would be created for domestic raw material.

4. If the manufactured articles then consumed by our people could all be made at home from the raw material furnished by ourselves, the value of our lands would be increased and agricultural profits augmented.

5. The extension of domestic manufactures depending on the production of such raw materials as can be found in this country must increase the demand of those materials and, of course, secure a new and ready market.

6. As to the articles of foreign growth to which an increase of duty should apply, in order to promote the prosperity of our agriculture the duty should embrace every "raw material" found or procured with ease, cheapness and abundance in the United States.

7. An increase of duty would not decrease the sale of our surplus products abroad, because those nations purchase from motives of self interest or necessity and not from favor.

8. As to the amount of duty which should be imposed, it should be sufficient to secure the exclusive and constant demand of our raw material, competent to build up and protect those manufacturing establishments at present in the country, and which, with a reasonable encouragement, will present a constant demand for those raw materials.

The policy of the United States towards agricultural products, says the American Economist, has always been protective, not that protection which may or may not accidentally follow in the wake of "a tariff for revenue only," but we have endeavored to encourage, foster and support the products of farm and plantation by tariff laws which should be adequately and positively protective. The modern idea of free raw material has no just application to the productions of our own soil that are or can be grown here in reasonable quantity by our farmers.

Free raw material might have a more alluring sound to the average manufacturer if he could have with it, as an accompaniment, a good, stiff duty on the fabrics he makes from such free raw material, and a promise that such a tariff on his goods would be maintained, but he knows that

the hook baited with free raw material conceals the barb of free trade in his manufactured products, and he should honorably and wisely refuse to even nibble at the bait.

He knows that a policy which would give protection to him on the basis of free raw material would have no consideration for the farmer and that it could not stand. He knows that while the protection desired by all classes toward established industries need not be radical, it must be adequate and not accidental; and it must be broad enough to include all sections of our country and the varied products thereof, regard being had for the kind of product, climate and soil and any obstacles to be overcome.

#### BRITISH EMPIRE LEAGUE.

At a conference, attended by a number of prominent Canadians, held in London on July 20th, 1894, the Right Hon. Sir John Lubbock, Bart., M. P., in the chair, it was unanimously resolved that an association be established with the object of maintaining and strengthening the connection between the United Kingdom and the outlying portions of the Empire, by the discussion and promotion of questions of common interest, more particularly those relating to trade arrangements and mutual defence. In pursuance of this resolution a further meeting was held at the House of Commons on May 30th, 1895, the Right Hon. Sir John Lubbock, Bart., M. P., in the chair, when it was determined to constitute the proposed association on the following lines:—

(1) The association to be called "The British Empire League."

(2) The following to be among the principal objects of the league:—

(a) To promote trade between the United Kingdom, the Colonies, and India, and to advocate the holding of periodical meetings of representatives from all parts of the Empire, for the discussion of matters of general commercial interest, and the consideration of the best means of expanding the national trade.

(b) To consider how far it may be possible to modify any laws or treaties which impede freedom of action in the making of reciprocal trade arrangements between the United Kingdom and the Colonies, or between any two or more British Colonies or possessions.

(c) To promote closer intercourse between the different portions of the Empire, by the establishment of cheaper and, where required, more direct steam and telegraphic communication, preference being given to routes not traversing foreign territory.

(d) To develop the principles on which all parts of the Empire may best share in its general defence; endeavoring to bring into harmony public opinion at home and in the Colonies on this subject, and to devise a more perfect co-operation of the military and naval forces of the Empire with a special view to the due protection of the trade routes.

(e) To assimilate, as far as local circumstances permit, the laws relating to copyright, patents, legitimacy, and bankruptcy, throughout the Empire.

(3) It shall be an essential principle of the league that the existing rights of Local Parliaments, as regards local affairs, shall be scrupulously respected.

(4) The league shall use every constitutional means to bring about the objects for which it is established, and shall invite the support of men of all shades of political opinion throughout the Empire.

(5) The league shall advocate the establishment of periodical conferences to deal with such questions as may appear ripe for consideration, on the lines of the London Conference of 1887, and the Ottawa Conference of 1894.

The Duke of Devonshire is the president and Mr. C. Freeman Murray secretary of the League, the offices of which are at the London Chamber of Commerce, Botolph house, Eastcheap, London.

#### NEWFOUNDLAND'S NEW TARIFF.

The new tariff recently come into force in Newfoundland contains a number of changes which may prove interesting to our readers. The principal items upon which duties are levied are as follows:—

Calves, sheep and pigs, 60 cents each; horses and mares, \$6 each; bacon, hams, tongues, smoked beef and sausages, \$2.65 per hundredweight; beef, pigs' heads, pigs' tongues, feet and hocks, salted and cured, \$1.05 per 200 lbs.

Butter and compounds representing butter, \$3 per hundredweight; cheese, the same.

Cigars, 20 per cent. ad valorem and \$9 per thousand; cigarettes, 30 per cent. ad valorem and \$3 per thousand.

Confectionery, \$7 per hundredweight.

Flour, 25 cents per barrel.

Fruit, dried, except apples, 3 cents per pound.

Hay, \$1.80 per ton.

Indian corn, 6 cents per bushel; Indian meal, 25 cents per barrel.

Lumber one inch thick, and so in proportion for greater thickness, \$3.50 per 1,000; grooved, tongued or planed \$5 per thousand.

Fresh meat and poultry, 1½ cents per lb.

Oats, 7 cents per bushel.

Oatmeal, 30 cents per barrel.

Kerosene oil, 6 cents per gallon.

Pork, \$1.50 per bbl.

Salt, 20 cents per ton.

Shingles and laths, 60 cents per thousand.

Spirits, brandy, and others not specially provided for, \$3.20 per gallon; all spirits above 43 per cent. over proof \$3.20 per gallon; whiskey \$2.60 per gallon; gin, \$2.30 per gallon; rum \$2 per gallon; cordials, shrub and other spirits, sweetened or mixed, \$2.20 per gallon.

Sugars, cut loaf and cube, \$5 per hundredweight; bastard crystallized and granulated, \$4 per hundredweight; unrefined, brown and straw, \$3.50 per hundredweight.

Tobacco, manufactured, including leaf stripped or partly manufactured, 5 per cent. ad valorem and 30 cents per lb.; leaf and stems, 30 cents per lb.; stems for snuff, 60 cents per hundredweight.

Vegetables, cabbages, \$2 per hundred; potatoes, 5 cents per bushel; turnips, parsnips, carrots and beets, 10 cents per bushel.

Vinegar, 15 cents per gallon.

Wines, champagne, \$4.20 per gallon; claret, 55 cents per gallon; hock, Burgundy and light Rhenish wines, \$1 per gallon; port and Madeira, \$1.65 per gallon; sherry and

Manzanilla, 12½ per cent. ad valorem and \$1 per gallon; all other wines, 15 per cent. ad valorem and \$1.10 per gallon.

Anchors, chains, bookbinders' tools, brick, cement, fishing tackle, hoop iron, bars, bolts, sheets and plates, machinery and parts of machinery, nails, oakum, resin, turpentine, plaster, poultry (alive), saws, sewing machines, sheet tin, block tin, steam engines, worsted and woolen yarns, 10 per cent. ad valorem.

Bran, barley, malt, rice, 12½ per cent. ad valorem.

Oxen, cows and bulls, 20 per cent. ad valorem.

Manufactures of wood, 35 per cent. ad valorem.

Ready-made clothing 35 per cent. ad valorem.

Goods, wares and merchandise not enumerated described or charged with duty and not exempt, 30 per cent. ad valorem.

**SMELTING BONUS.**

In the House of Commons a few days ago, sitting as the Committee on Ways and Means, the following resolution was considered and favorably reported :—

That it is expedient to provide for the payment of a sum not to exceed \$150,000 in five years to encourage silver lead smelting in Canada, the payment for each ton of ore smelted not to exceed fifty cents.

Mr. Foster explained the object to be to encourage and extend the silver lead smelting industry in Canada. The particular region in which the industry bids fair to be developed was British Columbia. The proposal was that \$150,000 should be appropriated to extend over a period of five years, that for the first year not more than one-fifth of that sum should be paid out, that the maximum for each ton of ore smelted should be 50 cents; that if more than sufficient were smelted at the rate of 50 cents a ton to make \$30,000, the maximum that could be paid out, the rate per ton would be made by dividing the number of tons that were smelted into the \$30,000. If during the first year the \$30,000 were not absorbed the surplus would be carried over to succeeding years, but at no time could more than 50 cents a ton be paid. The purpose of the Government was to give an impetus to the smelting industry in British Columbia particularly. It was not thought that it would be necessary to continue the bonus for any lengthened period. The main idea was to get the industry started. Any smelter to receive the advantage of the bounty must begin operations by July 1, 1896.

Because of the experimental character of the proposition, because mining is the principal industry of British Columbia, and because of the fact that it did not involve any great outlay of money, Mr. Laurier offered no opposition. He was not, however, as hopeful as the Minister as to the results. But he would be glad to know of an improvement in the silver market, and that the Minister's hopes had been realized.

**EDITORIAL NOTES.**

Two reports of recent trials of the comparative value of pipe coverings are before us. The reports differ somewhat in their methods and conclusions, but agree upon the point that pipe coverings pay a good dividend upon their cost of application. In one of the tests made at Stevens Institute it was found "that the amount of steam saved by covering pipes with a good average covering will in about one year's time amount in money value to the original cost of putting on the covering;" the other test, made at the works of the Solvay Process Company, contains a table giving the cost of the covering applied,

and the estimated saving of eleven different kinds of covering. In no case is the saving for the first year less than three times the cost of the covering, and in one case more than ten times as much.—Power.

John Charlton, a leading owner of Canadian vessels on the lakes, has taken up with Hon. John Costigan, Canadian Minister of Marine, the question of the Dominion Government adopting raft towing regulations for the lakes similar to those proposed in the last Congress by the Lake Carriers' Association, recommended by the war department and adopted by the House of Representatives, but which were killed in committee of the Senate. Mr. Charlton tells the Canadian Minister of Marine that these regulations are now law in the United States. Unfortunately this is not the case as yet, but favorable action upon them by the Dominion Parliament would undoubtedly hurry their adoption by our own congress.—Cleveland, O., Marine Review.

A. M. Clarke, American agent for Guiterrig & Navarro, importers and exporters, at Buenos Ayres, was in Grand Rapids recently, seeking to induce furniture-makers to ship goods to the Argentine Republic. Clarke says that he has contracted with eight firms to handle their goods, but declined to give names. He says one difficulty here is that styles change so often. Mr. Clarke's statement regarding carpet sweepers sounds mythical. He says that they bring \$9 a piece in gold in Buenos Ayres, and that they can be laid down there for \$2.50. He also stated that there was a fat job waiting some chair house in putting up rich seats for the Imperial Theatre, now nearly done at Buenos Ayres.—American Carpet & Upholstery Trade.

Why don't Canadian manufacturers reach out for a share of the trade of the Argentine Republic?

The American Iron and Steel Association has compiled the following figures, showing the advance in iron and steel since March 1. The increase in the cost of raw material and labor is given as the reason for the increase in price :—

Prices per Gross Ton.	March 1.	July 1.
Old iron T rails, at Philadelphia.....	\$11.75	\$14.50
No. 1 anthracite foundry pig iron, at Philadelphia .....	12.00	14.00
Gray forge pig iron, at Philadelphia.....	10.50	12.00
Gray forge pig iron, lake ore, at Pittsburg.	8.95	10.75
Bessemer pig iron, at Pittsburg.....	10.15	13.00
Steel rails, at mills, at Pennsylvania.....	22.00	24.00
Steel billets, at mills, at Pittsburg.....	15.00	20.00
Best refined bar iron from store, at Philadelphia .....	28.00	33.60

The trade returns for the twelve months ending June 30, 1895, show that the decrease in our imports and exports was not nearly as great as might be expected during the late depression. For the twelve months of the year the total entered for consumption was \$105,557,092, and the duty collected \$17,880,623, as compared with \$112,931,801 entered for consumption and \$19,378,106 duty collected in the same period last year. The total exports for the twelve months were \$110,765,103, as against \$114,488,713, a decrease of \$3,723,610, of which \$924,448 is in the produce of Canada and \$2,799,562 the produce of



other countries. The following shows the trade of 1893-4, as compared by items with the trade of 1894-5:

Name of Produce.	1893-4.	1894-5.
Produce of mine.....	\$ 5,584,291	\$ 6,992,802
Produce of fisheries.....	11,305,890	10,798,665
Produce of forest.....	26,201,716	23,977,636
Animals and other produce...	31,905,909	34,712,237
Agricultural products.....	17,643,722	15,671,689
Manufactures.....	7,743,060	7,639,614
Miscellaneous.....	151,210	153,814
Coin and bullion.....	310,719	246,010
Totals.....	\$101,116,517	\$100,192,407

More goods are sold to Canada by the United States than by England. The value of the imports from Great Britain for the last fiscal year was \$3,411,000, while those from the United States were valued at \$4,656,000. The Canadian does not buy American goods in preference to English because he is fond of us, but because he thinks we make a better article. He has discovered that we are especially good at farm implements. Here are the importations for the same year of some of them:

	From Great Britain.	From the United States.
Farm implements, binders, etc....	\$16,500	\$226,000
Axes and other tools.....	63,000	330,000
Plow and other plates.....	7,000	26,000

—The American Exporter.

A new invention, which promises to become indispensable in the manufacture of steel, has been tested at the Homestead Steel Works and proved successful. The test consists of a new plan which manager Schwab and Chief Electrician Hinkey has evolved for reheating molten metal that has become chilled before being poured into the moulds, causing delay and loss. It largely consists in forcing an electric current into the mass by which an intense heat is generated. The steel was set to bubbling, and the heat was so intense that the workmen's eyes seriously suffered. The results of the experiment promise to become indispensable in the manufacture of steel.

In our issue of July 19, under Captains of Industry, was an item which stated that the Stafford furniture factory at Arnprior, Ont., was destroyed by fire July 3. We are in receipt of the following note from Messrs. Stafford and Rudd, Arnprior:—

CANADIAN MANUFACTURER, Toronto: Gentlemen,—We are flooded with letters owing to your having reported our factory as having been burned. The report is not true. We had our store shed burned on July 3; but it did not touch our factory. We must ask you to correct this report as soon as possible.

The item as published in this journal was contained in just fifteen words—less than two lines. We regret having stated that the factory was burned when it was only a store shed, but this was an inadvertence. The incident shows, however, that builders of engines, boilers, machinery, belting, electrical appliances, oils, etc., read this journal. If this were not so Messrs. Stafford and Rudd would not have been "flooded" with letters.

Notwithstanding the enlargement of the Carriage Building at the Industrial Exhibition grounds to provide accom-

modation for bicycles it has been found that owing to the very large number of entries the space at present available is entirely inadequate. The bicycle exhibit is assuming an international character, and a number of foreign firms will be represented. Moreover, the increased space will all be needed for the extra number of carriage exhibitors who will be there. It is necessary therefore to provide for the bicycles elsewhere, and the suggestion has been made that the centre portion of the basement of the Grand Stand should be utilized for this purpose. If this were done space to the extent of 17,000 square feet would be secured for the thirty odd bicycle firms desiring representation. Should this plan be adopted it will necessitate the construction of a new entrance to the Grand Stand, but there is no other building on the grounds available, all others being taken up for other purposes.

Respectfully submitted to Sir Mackenzie Bowell for consideration: "You can fool all the people sometimes, you can fool some people all the time, but you can't fool all the people all the time.—Montreal Herald.

Revised and respectfully submitted to the Montreal Herald for its consideration: "You can fool some of the people sometimes, but you succeed most admirably in making a fool of yourself all the time."—M.B.

The New York Morning Journal has sent to Toronto a very engaging representative in Mr. W. B. Northrop, whose intention is to write up an illustrated article on this city to be published in that influential daily. Our manufacturers, merchants and public-spirited men may do a good turn for the city in giving Mr. Northrop information. The Board of Trade council are so well satisfied with his representations that they have given him a letter of endorsement and recommendation.—Monetary Times.

Write up articles in influential daily papers, such as those proposed by the New York Journal, where our manufacturers are financially struck for the write up of their business at so much per line, savors very strongly of the methods of the Toronto daily papers during Fair time, when our public-spirited manufacturers and their exhibits are entirely ignored unless they submit to the extortions of those public-spirited papers. These cormorants of the daily press, like the horse leech's daughter, are unceasing in their cry for more.

A telegram from Winnipeg, Man., states that a project is on foot for the starting of a beet root sugar industry at Edmonton on a large scale, the person interested being none other than Claus Spreckles, the sugar king of the Pacific Coast. He already has a beet sugar farm and factory in California, but believes that a more northern climate with fertile soil would be more favorable to the growth of the beets and to increasing the quantity of sugar in them.

Being interviewed recently on the subject of bicycles, Mr. Edison said:—"I believe that it is a matter of only a few years at most before hundreds of miles of special bicycle roads will be built with single line trolley wires overhead; especially in the mountains. Riders will have motors on their wheels which can receive current from the wires by trolleys so that quick spins may be taken. This would open up a new field of pleasure and usefulness to the de-

votes of the wheel. The system of driving tricycles by storage batteries and electric motors will undoubtedly be in use in a short time. Storage batteries have not yet been devised that would be light enough and small enough to be carried on bicycles, but I believe that batteries powerful enough to send a tricycle 20 or 25 miles and return, on good roads, could be made to weigh not over 60 pounds. A motor weighing 20 pounds would probably be sufficiently large to attain with this size battery a fair speed on a level road. A few years will probably see the system applied to trucking goods in city streets."

The London Chamber of Commerce Journal says:—"The Reichstag has voted the maintenance of the existing export bounties on sugar after July 1 until July 31, 1897. In the course of the debates the Secretary of the Treasury pointed out that this action was necessary because of the depression in the sugar trade, which affects, in a large measure, the interests of agriculture, and chiefly because of the export bounties in France. The export bounties in France were in 1893-94 5.85 marks, in Austria 1.92 marks, and in this country 1.25 marks. At present the abolition of the export bounties would kill the German sugar export. The interests of agriculture are closely connected with this question. The sugar establishments produce but 12 per cent. of the beets they use; 33½ per cent. are produced by the shareholders of the sugar companies, and 54½ per cent. are produced on agricultural estates. At present one centner beets bring but 70 pfennig, which leaves no profit. The argument that some sugar companies pay very well is inadmissible, for they are exceptions. About eighty companies have paid no dividend at all during recent years."

Hiram S. Maxim, of Maxim quick-firing gun fame, in a recent letter which appears in an English contemporary, illustrates the disastrous effects which frequently arise from injudicious strikes on the part of operatives for an advance of wages at a time when they apparently have their employers at a disadvantage. Sometimes necessity requires an acquiescence in such demands, even at a loss to the employer, but occasionally, as in the case related by Mr. Maxim, it not only brings ruin to the workman but seriously affects the prosperity of the town in which he lives. The case in question is the closing of the Swaisland mills, at Crayford, Kent. Mr. Maxim writes: "At Crayford, where we have a factory, a certain concern used to have a specialty in a kind of printed linen goods which closely resembled woven woolens. This was largely sold to Mexico, Cuba and South America. They practically had a monopoly of this business, but the men were constantly striking. No sooner would a large order be obtained than all the men would strike for higher pay. The chairman of the company told me that he had taken a large contract at a very small margin of profit, but no sooner had the men learned that he had received this order than they all struck for higher pay, and he found that if he acceded to their demands he would lose money on the contract. He therefore went to France, and found a firm there who did the work for him. Upon delivering the goods to his customers they wrote him that the work was beautifully done, being much neater and cleaner than anything they had ever seen before

and they hoped that all future orders that they might give would be equally well done. When his men came to their senses, and were willing to go to work again, he found it was quite impossible to produce anything that would be at all equal to that which had been done in France. Finally, the French printers found out the English process, and at the present moment they have got the whole of the work, the English factory at Crayford has been closed, and the men are out of employment."

The Ontario factory act, as amended and improved during the recent session of the Legislature, has been published by the Ontario Government and should have a wide circulation. There are a number of entirely new clauses. The first of these is designed to make more stringent the obligation upon employers to provide sufficient sanitary arrangements, the new act providing that where two or more persons occupy the same room or premises to carry on a business which employs in the aggregate six or more persons, each of the employers shall be responsible for the sanitary arrangements of the place. The next additional clause provides that except in the business of canning or desiccating fruits no boy or girl under fourteen shall be employed in any factory. New precautions against accidents are found in section fifteen, a clause being inserted ordering the most secure guarding possible of dangerous parts of mill gearing machinery, flumes, doors, bridges, etc., while considerable latitude in ordering precautions is given to the inspectors. More stringent fire escape provisions are made, a rope being ordered for every window in a factory above the ground floor. Other clauses direct that the inspectors must be notified of explosions and injuries within 24 hours under penalty of a fine of \$30. The appointment of a female factory inspector is authorized, and an extra clause added to make prosecutions more effective. These are the chief amendments to the act, which was previously a valuable charter of the rights of the workers and it should be in the hands of all interested in the matter.

Judge Townsend, sitting in the United States Circuit Court at New York, has rendered a decision in the case of Murphy et al. vs. The United States, holding that worsteds are not included under the head of wool under the tariff act of 1894. It appeared that on August 30 last the appellants imported a lot of worsted dress goods, claiming that they were dutiable at 50 per cent. ad valorem under the tariff act of that month. It was admitted that the goods were made from the fleece of the sheep and in that sense a product of wool. The duty of 12c a square yard and 50 per cent. ad valorem under the tariff act of October, 1890, was charged and was sustained by the Board of General Appraisers, but Judge Townsend reversed the action of the board, saying: "Earlier tariff acts recognized wool and worsted as different materials. The courts have repeatedly enforced this distinction. In view of the failure of Congress to make any distinction between the various classes of the articles scheduled, and in the absence of positive evidence of intention to include said articles within the provisions of the paragraph in question, it would violate the principles of construction and interpre-

tation to extend the language of said paragraph so as to include 'worsted dress goods.'—Bradstreets.

It is not at all unlikely that Canada will soon become really famous as a gold-producing country. Evidence collected from many sources goes to show that the country traversed by the Canadian Pacific Railway abounds in mines, both large in extent and uncommonly rich in precious ore. The best proof of the value of the mines of the Rainy River district is the fact that some of them have lately changed hands at very large figures, the purchase money in many instances reaching several hundred thousand dollars. The district has already attracted many capitalists, including principally Americans and Europeans. Out in British Columbia it is beyond dispute that immense quantities of gold lie buried in the rocks. Some mines already in operation are paying handsome dividends every month, and it is only a question of a short time when many others will be opened in various parts of the province. It looks as if Canada will witness a veritable gold fever during the current year. Several English companies, with large capital, have been organized to work British Columbian mines, and capitalists in Paris have also got on to the fact that British Columbia is the coming gold country. It is said that British Columbia has not only three times as much gold-producing rock as California, but the ore of its mines is of a much richer character than any ever taken from California. So far it looks as if foreigners were going to profit more than Canadians from the gold-discoveries out west, but a good many wealthy Canadians are interested,

and we may be sure that some of them will not come out at the wrong end of the horn. In any event, the development of the mines is bound to do a great deal of good to this country in the way of affording employment to those who work the mines, in making a demand for agricultural products, and in making the name of Canada as famous as California throughout the world.—Toronto World.

Frank R. Stockton, the author of *The Lady, or the Tiger?* contributes under the title of *Love Before Breakfast*, one of the most delightful love stories to the *August Ladies' Home Journal*. Dr. Parkhurst writes of *The Training of a Child*, giving advice which cannot fail to be of value to parents everywhere. Ethel Mackenzie McKenna writes of *The Author of "Alice in Wonderland."* Tom Moore's *First Sweetheart*, who lies buried in an unknown grave in Greenwood Cemetery is touchingly written of; *American Girls as Violinists*, are written of by Frederic Reddall, sketches and portraits of the most famous of them being given; in *The Woman Who Most Influenced Me*, Edgar Wilson Nye ("Bill Nye") writes of the two women who most influenced him; Miss Parloa writes from abroad of *Methods of French Cooking*. This number goes out in a cover presenting Albert Lynch's famous panel of Spring, which won for him the Salon prize in 1893. The Curtis Publishing Company, Philadelphia.

For seven years Scribner's Magazine has had the habit of publishing a midsummer Fiction Number, in which have appeared some of the most notable short stories that have been written by American authors. The present (August) issue is no exception to this remarkably successful record. Any number of the magazine would be notable with an array of contributors which includes Anthony Hope, H. C. Bunner, Hopkinson Smith, Richard Harding Davis, Octave Thanet, Noah Brooks, George Meredith, George I. Putnam and Theodore Roosevelt. The number contains seven short stories, six of them illustrated by artists of the first rank, including W. H. Hyde, Reinhart, C. Y. Turner, Orson Lowell and others.

Outing for August presents a delightful blending of good fiction and breezy sketches, of sport, travel and adventure. Many fine illustrations complete the attractions of an excellent holiday number. The contents are as follows: In a Field of Buckwheat, by Jean Porter Rudd; The Wheel of Time, by Florence Guertin; Deep Sea Fishing off Santa Barbara, by Henley C. Booth; Lenz's World Tour

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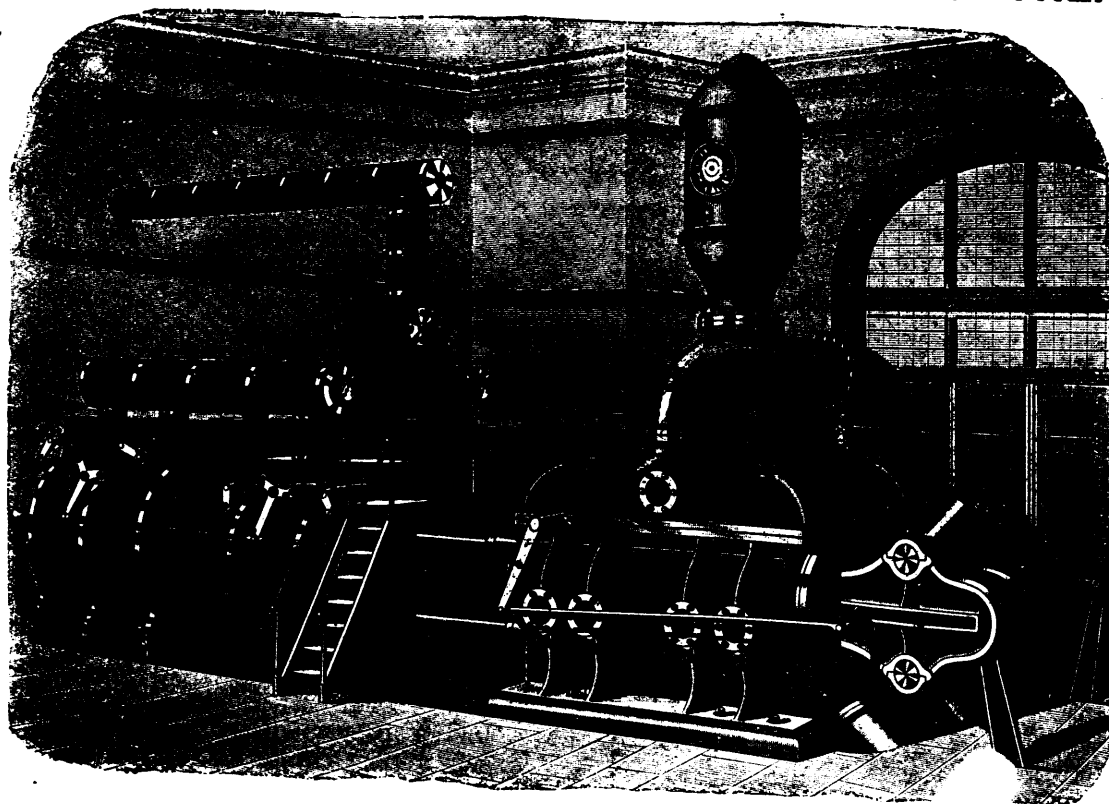


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Awheel; Nan's Deerhunt, by Georgia Roberts; A Day with the Black Bass, by Francis J. Lynde; Cycling in The White Mountains, by Percy C. Stuart; The Madame's Bass, by A. C. Hurlburt; The Cup Champions of 1895, by R. B. Burchard; Polo in the West, by J. B. MacMahan; Two Idlers in Camp, by Helen Church; Army Signaling, by Major H. A. Giddings; After Antelope in Wyoming, by Oscar K. Davis; Happy-Go-Lucky Beach, by C. Rice, and the usual editorials, poems, records, etc.

**Canadian Asbestos.**

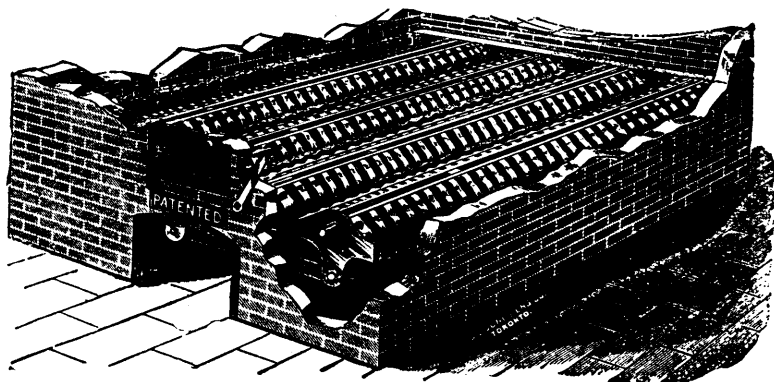
A new consignment of Asbestos is shortly expected from Canada, and will be an interesting addition to the exhibits in the Canadian Section.

The chief asbestos mines of Canada are situated in the Eastern township of Quebec in Megantic County, near Thetford and Black Lake. The only mine of any importance outside this district is one at Danville in Richmond County. The industry was started about seventeen years ago, and was then a very small and unimportant feature of the country's mining. The production in 1880 amounted to but 380 tons, valued at 24,700 dollars, while in 1890 it had reached 9,860 tons with a value of 1,260,240 dollars. The industry has some-

what declined since 1890, when the production had reached its maximum.

The mineral occurs in serpentine masses which are intruded through the stratified rocks of the districts above mentioned. These consist of slates of various colors, with occasional conglomerates and sandstones, with which diorites are frequently associated. The asbestos is usually extracted by opening large pits or quarries where the veins are sufficiently plentiful, and taking out the fibrous mineral from the mass of rock by means of cobbing-hammers and hand-picking. Breaking and dressing by machinery is also practised to a limited extent. The mining-plant generally is simple; it consists of derricks situated round the pits for hoisting purposes, and of machine drills, worked by compressed air or steam. Tramways laid along the bottom of the quarries are employed for moving the mined material. The grades of mineral vary with the practice of different mines, but are mostly classed according to the length of the fibre into firsts, seconds, and thirds, the latter comprising the shorter fibre. Some mines make other special grades, such as fibreised, paper stock, etc. As an approximate rule it may be assumed that any fibre over half an inch in length would be classed as first; any below that, and yet clean fibre, as second, and the short refuse fibre

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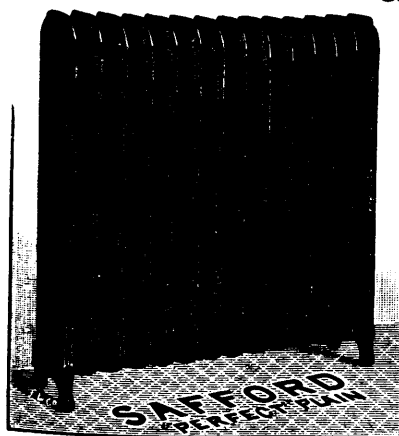
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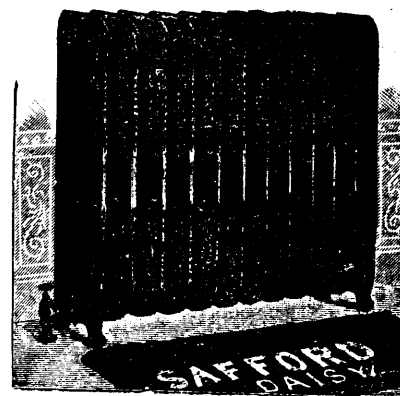


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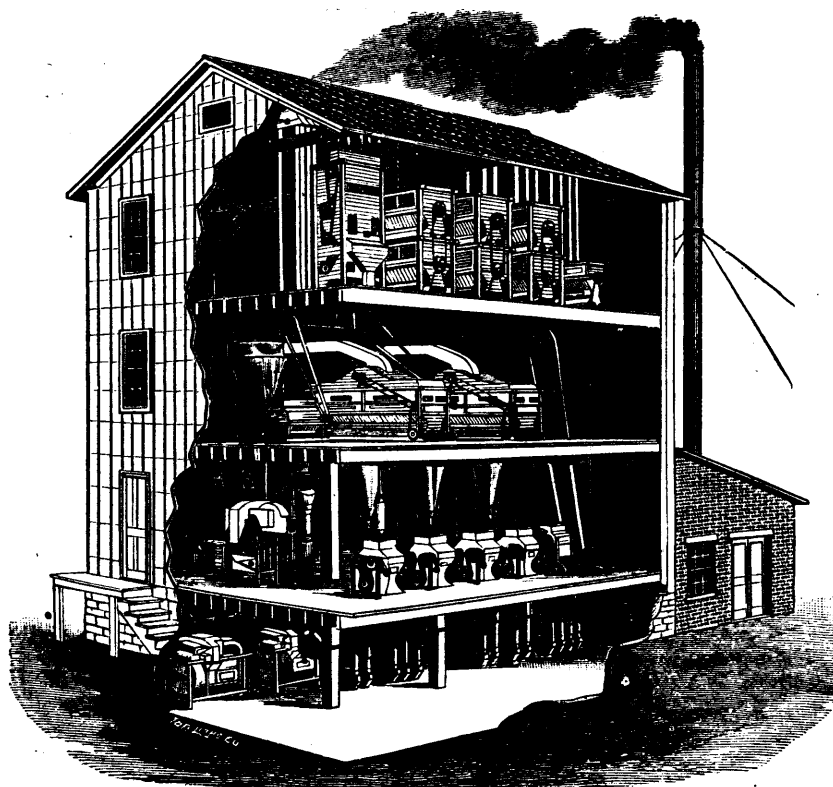
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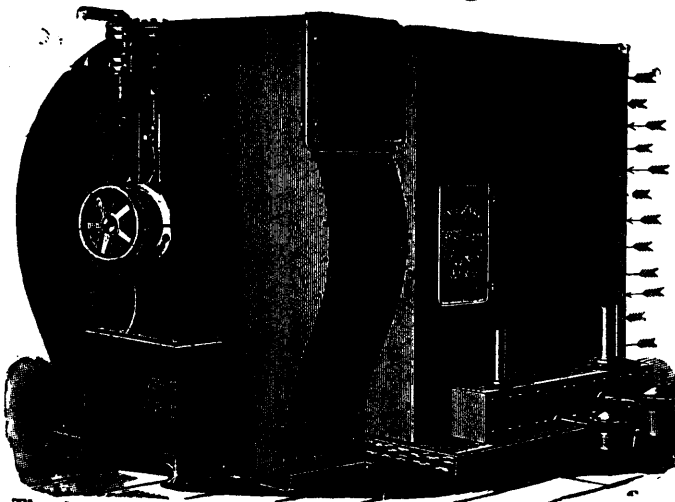
with intermixture of rock grains as thirds. Asbestos is applied in various ways as a heat-proof material. The longer fibres are woven and used for covering boilers and steam-pipes, and for piston packings, the soapy or greasy nature of the Canadian mineral rendering it specially applicable to the latter purpose. Fire-proof ropes and drop scenes for theatres are also made from it. The shorter fibre can be used for making asbestos millboard and paper, the former of which is used in architecture as a fire-proof material, and the latter as a filtering medium for acid liquids.

The specimens sent from Canada to the Imperial Institute are from the mines of the Danville Slate and Asbestos Company, Danville, from the Anglo-Canadian Asbestos Company, and from the United Asbestos Company, Black Lake. The Curator of the Canadian Section will be glad to give any information as to the prices of different qualities of the mineral.—Imperial Institute Journal.

### An Unique Invention.

Two Boston inventors have secured a patent for a process of making glass veneers which have many peculiar properties. This invention relates primarily to the production of ornamental glass which may be either semi-transparent or opaque, and is made to represent highly-polished wood of any description. It is intended to be applicable for veneering wherever required and is particularly adapted for vestibule and other doors, the exterior of the glass having the appearance of highly polished wood, while in the interior of the house it will appear semi-transparent. In carrying the invention into practice, a sheet of ground or plain glass is taken of any desired size and clouded the same on one side with a liquid dye of the proper color to represent any desired wood, which dye is applied by means of a sponge for delineating the grain of the wood so as to appear upon the surface of the glass. The shading is softened by means of a badger brush. Photographers' varnish is then caused to flow on the glass, and leaves the grain clear and fast without the necessity of using any gelatinous substance, which would render it liable to crack and spoil the effect. To complete the operation the glass is then slightly heated, and the various shades of dye required for the particular wood to be represented are caused to flow over it by means of a syringe. The glass is heated in order to prevent the shadings from merging into each other. The whole is then made semi-transparent by applying another coat of photographers' varnish, so as to prevent the dyes from being effaced, while the exterior surface presents the appearance of a highly-polished solid wood finish.

## Buffalo Lumber Dry Kilns



The Largest Drier in America is equipped with a "BUFFALO" Hot Blast Apparatus.

THE OWNERS ARE ENTHUSIASTIC

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

Send for Catalogue.

**BUFFALO FORGE CO., Buffalo, N.Y., U.S.A.**

SOLD IN

TORONTO, ONT., BY H. W. PETRIE.

BRANTFORD, ONT., BY CANADIAN MACHINERY & SUPPLY CO.

MONTREAL, QUE., BY CANADA MACHINERY AGENCY.

CHICAGO STORE, 22 and 24 WEST RANDOLPH STREET.

## CAPTAINS OF INDUSTRY.

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

The Booth lumber mills at Burlington, Ont., are to be rebuilt.

G. and S. Lavatt, saw mill, have removed from Three Forks, B.C. to Sandon, B.C.

A. Clegg's furniture factory, Peterboro', Ont., was damaged by fire a few days ago, to the extent of about \$200.

The Ontario Peat Fuel Co. have put in at the works at Welland, Ont., a 100 h. p. boiler which they had made at the Abell Co.'s works.

The West Wheel Co., Yarker, Ont., are applying for incorporation with a capital stock of \$25,000 to manufacture wheels for carriages, waggons, etc.

A car started on a long trip a few days ago from the Abell Works of this city, bearing a saw mill boiler and engine for Henry Clemes, Three Forks, B. C.

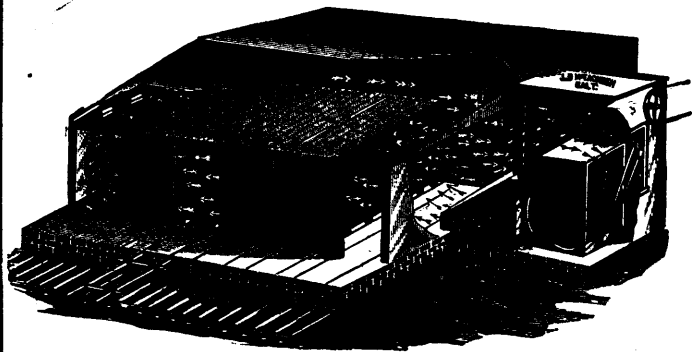
The Irving Umbrella Co., Toronto, are applying for incorporation with a capital stock of \$25,000 to acquire the umbrella business of Irving & Co., and to manufacture parasols, umbrellas, walking sticks, etc.

The Hudson's Bay Co.'s flour mill to be erected at Prince Albert, Sask., will be a much larger structure than the former one and will be built of brick. It is to be equipped with the most improved machinery.

John Campbell of St. Thomas, Ont., has thoroughly overhauled his flour mill. He has put in a complete new outfit of the latest and most improved machinery and the capacity of the mill will be 600 bbls. daily. The work was done by the Stratford, Ont., Mill Bldg. Co., and is said to be first class in every detail. The power is given by a new 200 h.p. Wheeler compound engine, and the boilers are furnished by the Goldie and McCulloch Co., Galt, Ont.

## McEachren's System of Drying, Heating and Ventilating

Under Recent Patents.



CHEAP AND EFFECTIVE.

Highly approved of by practical men.

The following is a specimen of letters received from customers:

Ottawa, April 1, 1895.

J. D. McEachren, Esq., Galt, Ont.

Dear Sir,—Replying to your enquiry regarding Dry-Kiln purchased from you last summer, we beg to state that our lumber is stained hard wood, principally birch, which is put through a chemical process thereby rendering seasoning a very difficult operation. We tried to have it dried in the several styles of kilns used by factories in this district, all of which failed to take the moisture out of the core of the wood. In August last we put in one of your kilns with a capacity of 10 cars, or 30,000 feet and since that time have seasoned most satisfactorily about 200,000 feet. The boards come out free from checks and warps and we are now thoroughly convinced that it is the only dry-kiln in the market which fills the bill both as to efficiency and economy.

Yours truly,

MCRÆ BROS. & CO.

For particulars address

**MCEACHREN HEATING AND VENTILATING CO.,**

GALT, - - - ONTARIO.

# Incandescent Lamps - - -

## Swan and Ediswan,

MANUFACTURED BY THE

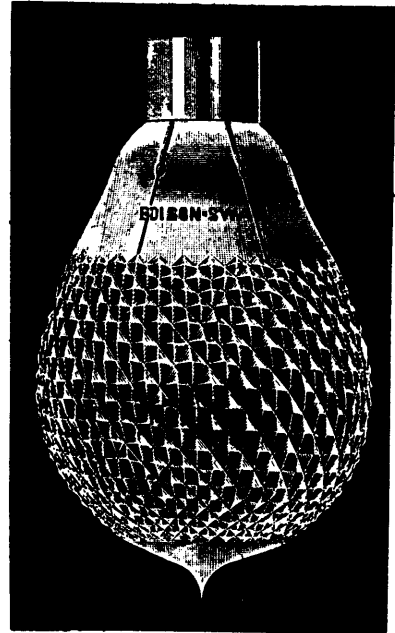
## EDISON and SWAN

## United Electric Light Co.

RUBBER COVERED WIRE,  
WEATHER-PROOF WIRE,  
MAGNET WIRE.

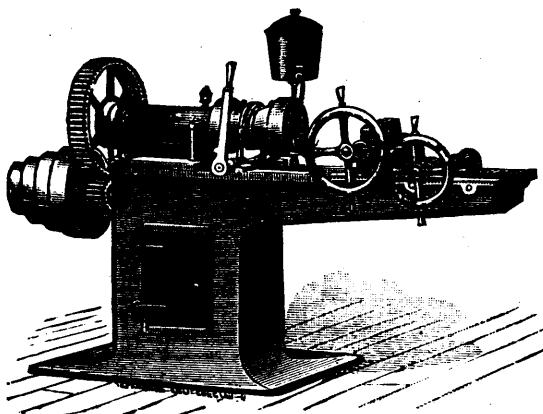
Electrical Supplies of Every Description.

# JOHN FORMAN, 650 CRAIG STREET, MONTREAL.



# CANADA TOOL WORKS,

## Dundas, JOHN BERTRAM & SONS, Ontario.



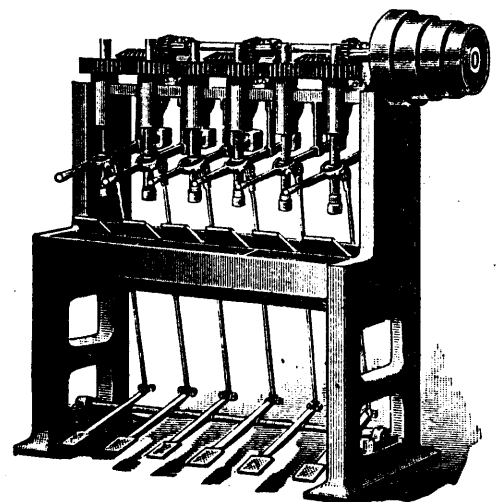
Bolt Cutters, double or single, to cut all sizes of threads from  $\frac{1}{4}$  to 6 inches; also to tap nuts. This Acme Machine has no equal.

We are Manufacturing Agents for Canada.

OUR MACHINE SHOP EQUIPMENTS are the largest in Canada. Special Tools for Electric Street Railways, Bicycle Factories and Agricultural Works.

Correspondence Solicited

Acme Nut Tappers with 4 or 6 spindles, suitable for all classes of work and to tap square or hex nuts from  $\frac{3}{8}$  to  $1\frac{1}{2}$  inches diameter.





Mr. J. C. Anderson will erect a sawmill at San Juan, B.C.  
 The Riordan company, Merritt, Ont., intend enlarging their machine shop.  
 J. W. Linton has leased the Brantford, Ont., furniture factory and will shortly re-open it.

The John Abell Co. are supplying J. B. Kelly, Blythe, Ont., with one of the new Easton Arc Dynamos.

Syer, Richardson & Co., of St. Catharines, Ont., have completed arrangements for the location of their carpet factory in Port Hope, Ont.

The James Shearer Co., Montreal, are applying for incorporation with a capital stock of \$200,000 to manufacture sashes, doors, blinds, mouldings, etc.

The roasting capacity at the Slocan, B.C., smelter not being great enough more furnaces have been ordered from the British Columbia Iron Works, Vancouver, B.C. The Skyline will ship 25 tons of ore per day to the smelter.

Messrs. Ness, McLaren & Bate, sales agents in Montreal for the Easton system of electrical machinery, manufactured by the John Abell Engine & Machine Works Co., Toronto, have placed one of the new motors with one of their customers, and it is filling the bill well.

The Kingston Chemical Fire Engine Co. has introduced a fire engine which marks a distinct advance in the art of fire extinguishing. The great possibilities of a chemical engine have long been fully recognized, but they have not been realized owing to difficulties which, up to a recent date, had not been overcome. One of them was the unhandiness of the chemical engines, they were too heavy to be got quickly on the scene, and the great value of those machines is in the earlier stages of a fire, so they too often turned up too late to be of much use. The new engines of the Kingston company can be run at full speed by a horse, and can instantly be brought into action with deadly effect on the fire. By an ingenious arrangement a continuous stream can be kept playing on the flames, this being a great improvement, and enabling splendid work to be done. The company is also making a combination of engine and hook and ladder waggon, also a hose waggon with engine, which are very fine specimens of workmanship. The machines are easily handled, always ready in any temperature, need no special skill to work, and the prices are reasonable. Every municipality in the Dominion ought to have a Kingston Chemical Engine.—Trade Review.

.....THE.....

# Goldie & McCulloch Co.,

Limited,

Galt, Ontario,

MANUFACTURERS OF

**STEAM ENGINES,  
 BOILERS,  
 WATER WHEELS,**

Steam Engines, Boilers.  
 Water Wheels, Flouring and Saw Mill Machinery, Wood Working Machinery, Wool Machinery.

Fire and Burglar-Proof Safes, Vault Doors.

Wood Rim Split Pulleys, Friction Pulleys, Friction Clutch, Couplings, etc.

**“Dumfries - Foundry,”**

Galt, Ontario, Canada.

L. V. Ludwig's vinegar and pickle works, London, Ont., were destroyed by fire July 29; loss about \$10,000.

The Copp, Clark Co., Toronto are having a fine new boiler made for their building at the Abell Engine & Machine Works.

The Empire Tobacco Co., Montreal, are now getting out the plans for their new factory, which will be erected at Granby, Que.

Mr. Allen George, of Walton, Ont., has had a 30 h. p. engine and boiler put in by the John Abell Engine & Machine Works Co., of Toronto.

The Canonto Mica and Mineral Mining Co., Peterboro', Ont., are applying for incorporation with a capital stock of \$22,000 to refine gold, silver, etc.

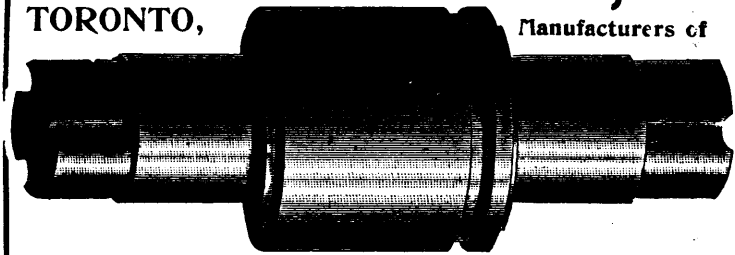
Messrs. Rhodes, Curry & Co., Amherst, N.S., have received a contract from the Halifax Electric Street Railway for 14 street cars and the erection of a \$20,000 car house for the same company.

The Tillson Co., Tilsonburg, Ont., are applying for incorporation with a capital stock of \$200,000 to manufacture flour, oatmeal, etc.; to operate a saw mill, planing mill, sash and door factory, barrel and stove factory, and cooper shop, etc.; to take over the mills and factories owned by E. D. Tillson, that place. The company will also manufacture bricks, tiles, pipes, terra cotta, etc.

## WM. & J. G. GREEY,

TORONTO,

Manufacturers of



### SUPERIOR CHILLED ROLLS.

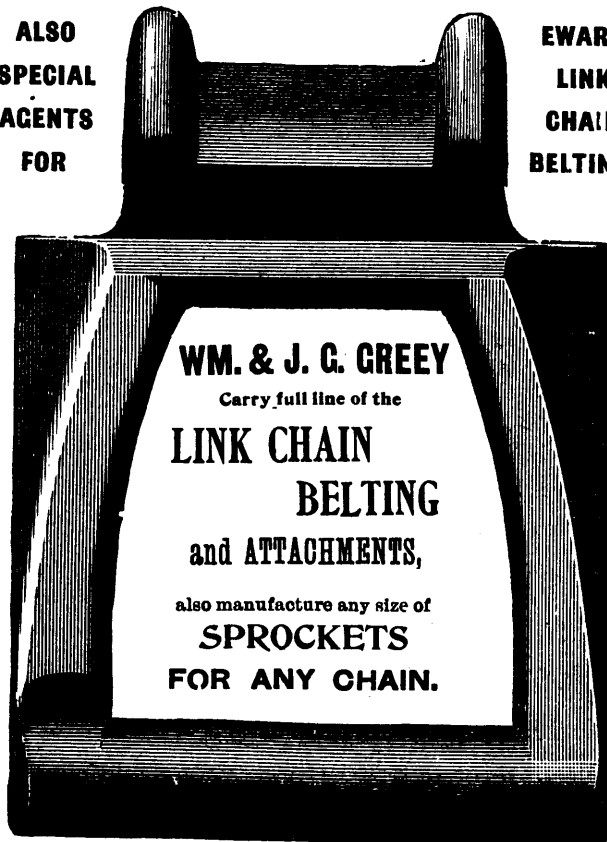
FOR ALL PURPOSES.

Perfect Surface, Deep Chill, Hard, Tough, Durable, Guaranteed Free From Flaw.

Have the Largest and Most Complete Plant for Grinding and Corrugating Rolls in Canada.

ALSO  
 SPECIAL  
 AGENTS  
 FOR

EWART  
 LINK  
 CHAIN  
 BELTING.



WM. & J. G. GREEY

Carry full line of the

**LINK CHAIN  
 BELTING**

and ATTACHMENTS,

also manufacture any size of

**SPROCKETS  
 FOR ANY CHAIN.**

# The Packard Lamp.

WE are prepared to furnish you with the best LAMP in this market, the "PACKARD," at extremely low prices, and can prove our claims.

## THE PACKARD TRANSFORMER.

It is impossible to burn out one of our Converters; and in efficiency and regulation they far excel all others.

WRITE US FOR QUOTATIONS.

# The Packard Electric Co'y, Ltd.

ST. CATHARINES, ONTARIO.

## 1895.

THE LATEST INVENTION IN COAL SAVING APPLIANCES.

# “MICA”

The well-known **Electrical Insulator** successfully adapted as an Insulator of **Steam** heat. **Enormous saving of fuel guaranteed** by the use of **Mica** boiler and steam pipe covering

**Patented 1894 and 1895.**

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

..... SOLE MANUFACTURERS .....

# The Mica Boiler Covering Co. Ltd.,

2 BAY STREET, TORONTO.

The new flax mill at Wallaceburg, Ont., is being pushed to completion.

John Philp, Grand Valley, Ont., has purchased a John Abell 60 h. p. saw-mill engine.

The Cork Company of Canada, Toronto, has been incorporated with a capital of \$150,000.

The Forkasch Fertilizing Co.'s works, Toronto Junction, Ont., were destroyed by fire July 23; loss about \$10,000.

J. Randall, Meaford, Ont., will start another woolen mill at Manitowaning, Ont., and will also operate the Meaford mill.

The Sherbrooke Gas and Water Company, Que., are putting in electric machines to supply power to manufacturers and others.

The Oliver Typewriter Co., Toronto, has been incorporated with a capital stock of \$50,000 to manufacture typewriters, office supplies, etc.

The Ottawa Novelty Co., Ottawa, are applying for incorporation with a capital stock of \$10,000 to manufacture lamps, electroliers, lamp brackets, etc.

The enlargement of the St. Croix cotton mill at Milltown, N.B., consists of a dyehouse 62 x 60 ft., two stories high. About \$10,000 will be expended for new machinery.

The Waterous Engine Works Co., Brantford, Ont., have received the contract for the machinery, boilers, fittings, etc., for the new elevator now in course of erection at Winnipeg, Man.

Mr. Cherry's mill at Preston, Ont., is nearing completion. The machinery, which is being supplied by the Goldie & McCulloch Co., is being put in, and it is expected the mill will be in running order by 1st Sept.

Dow & Curry are placing new machinery in their oatmeal mill at Pilot Mound, Man., and are making other improvements. The new warehouse, now in course of erection, will have capacity for storing about 12,000 bushels of oats.

The town of Granby, Que., has voted a bonus of \$25,000 to the Empire Tobacco Co. as an inducement to remove their works from Montreal to Granby. Work will be commenced on the buildings and it is expected the company will be in operation by Nov. 1.

The magnificent World's Fair Compound Traction Engine built by Mr. John Abell for the Chicago Exposition in 1893, and which was displayed at the Toronto Industrial last autumn, has been delighting the eyes of the Manitoba farmers at the Winnipeg July Exhibition. There was nothing to equal this engine at Chicago.

The Rowe organ factory, Aylmer, Ont., is to be rebuilt.

John McAdam's lumber mill at Mackawick, N.B., was destroyed by fire July 13; loss about \$5,000.

The Brunette saw mills, New Westminster, B.C., which were recently destroyed by fire, will be rebuilt.

Toronto Junction is putting in an Easton Arc Dynamo, built by the John Abell Engine & Machine Works Co.

La Compagnie de Cigars de L'Epiphanie, (L'Epiphanie Cigar Co.) Montreal, has been incorporated with a capital stock of \$10,000.

The Atlas Canning Co., Vancouver, B.C., has been incorporated with a capital stock of \$25,000 to carry on a general canning business, etc.

The John Abell Engine & Machine Works Co. are putting in the machinery for a new roller mill for Mr. W. B. Browne, the well-known Sincoc, Ont., miller.

Col. F.M. Pope, Robinson, Bury, Que., has placed a Leonard engine in his saw mill, and is rushing business. He has a large stock of logs to cut out this season.

Mr. W.E. Channel has taken over the one set woolen mill at St. Catharines, Ont., formerly run by Messrs. S. Taylor & Sons, and is now operating on hosiery, etc.

The Wood, Cargill Co., Armstrong, B.C., has been incorporated with a capital stock of \$125,000 to take over the milling business of E.C. Cargill & Co., at that place.

The Trenton Light, Heat and Power Co., Trenton, Ont., are applying for incorporation with a capital stock of \$50,000 to supply light, heat and power to that place.

Iron ore has been found in large quantities at Lavaltrie, Que., and samples are now being examined and tested by the owners, who expect shortly to open and operate quite an extensive plant.

Messrs. J.O. Gilbert & Son, Bishop's Crossing, Que., have added a large planing, matching, and moulding machine, made by MacGregor, Gourlay & Co., Galt, Ont., to their steam, saw and dressing mill, and are making other improvements.

It is now said that the subscribers of the Old Dominion Copper Company will probably receive back their money and forty thousand shares in the new organization. There will be offered for subscription sixty thousand shares, at \$25 per share; forty thousand shares to provide the \$1,000,000 paid to original subscribers, and twenty thousand shares to provide \$500,000 working capital.—Montreal Star.

## .. IMPORTANT .. TO LIGHTING STATIONS.

OUR NEW . . . .

### ALTERNATING CURRENT INDICATORS

Are now ready. Before purchasing elsewhere send for our New Catalogue, which contains the prices and description of the above instruments, and also a list and prices of other new instruments of our manufacture.

WHITNEY

### ELECTRICAL INSTRUMENT CO.

Sherbrooke, P.Q., Canada.

Penacook, N.H., U. S.

.. AGENTS ..

Henry F. Kellogg, General Selling Agent.

BOSTON, MASS., W. S. Hill.

BALTIMORE, M.D., The Poole Electric Co.

CHICAGO, ILL., Electric Appliance Co.

CINCINNATI, O., Nowotny Electric Co.

HALIFAX, N.S., John Starr, Son & Co. Ltd.

NEW YORK CITY, Geo. L. Colgate, 136 Liberty Street.

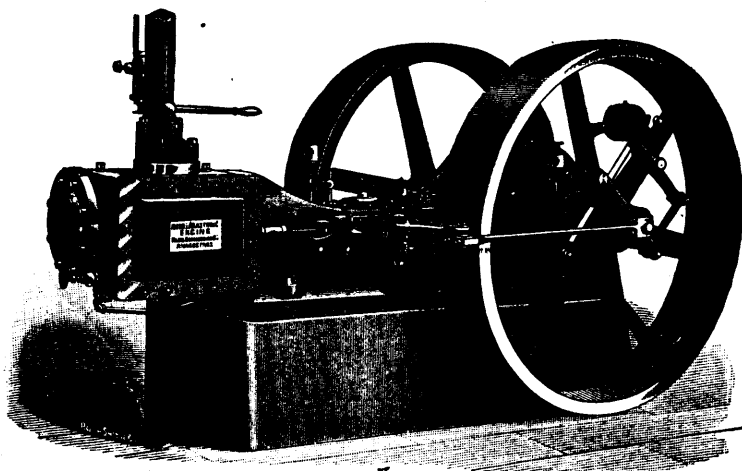
SAN FRANCISCO, CAL., California Electrical Works.

TORONTO, ONT., Toronto Electrical Works.

## Robb==Armstrong

### = = Automatic Engines

SIMPLE, TANDEM AND CROSS COMPOUND.



The following sizes ready for immediate delivery :

10, 15, 20, 30, 60, 80, 100, 125, 150 and 175 H.P.

Robb Engineering Co., Ltd., Amherst, N. S.

AGENTS:

The Canada Machinery Agency, 321 St. James Street, Montreal,  
Wm. McKay, Seaforth, Ont., Travelling.

# LAURIE ENGINE CO. St. Catherine Street East, MONTREAL, ENGINEERS AND CONTRACTORS

## COMPLETE MOTIVE PLANTS, ETC.

### IMPROVED CORLISS ENGINES

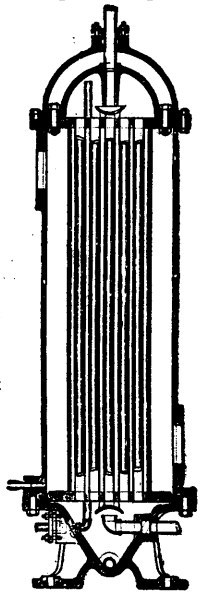
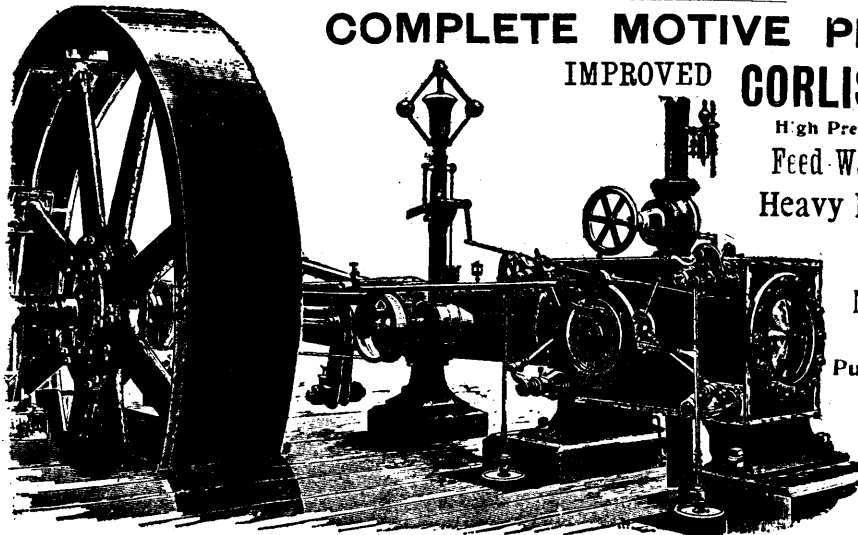
High Pressure, Condensing and Compound Feed Water Heaters and Purifiers, Heavy Fly-Wheels a Specialty.

Sole Agents in Prov. of Quebec for **NORTHEY CO. Ltd.**

Manufacturers of all kinds of Pumps, Condensers and Hydraulic Machinery.

Sole Agents in Canada for the **HOLLY GRAVITY**

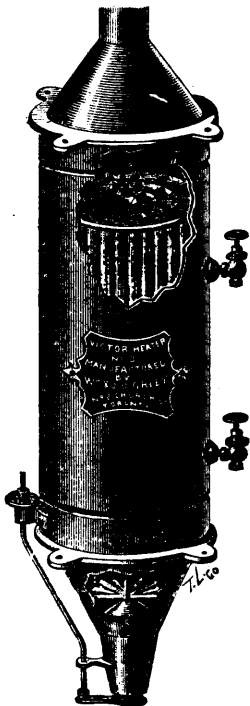
**RETURN SYSTEM.**



WM. & J. G. GREEY, TORONTO, ONTARIO.

Manufacture THE VICTOR WHEAT HEATER,

The benefits secured are WHITER FLOUR, UNIFORM GRADES, CLEANER OFFALS, BROADER BRAN.



**Thompson & Co.** SHERBROOKE, QUE.

—Manufacturers of—

## BOBBINS & SPOOLS

every description for

## Woolen, Cotton & Rope Mills

Extra Facilities for supplying New Mills and filling large orders.

WRITE US.

# STEAM TRAPS

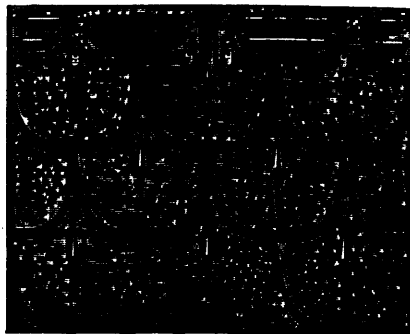
Pipe Machines  
Buffing and Polishing Lathes  
Strapping Machines  
Shafting Hangers.

## G. T. PENDRITH

MANUFACTURER,

73 to 81 Adelaide Street West, TORONTO.

**METAL ROOFING.**  
Those contemplating building the coming season would do well to send for our catalogue. Cheaper a wooden shingle. Will last a lifetime.



Guaranteed to be Water, Wind, Storm, Fire, and Lightning Proof.  
**THE PEDLAR METAL ROOFING CO.**  
Office and Works, - OSHAWA, ONTARIO.  
In answering please mention this paper.

## BARGAINS IN MACHINERY NEW & SECOND-HAND

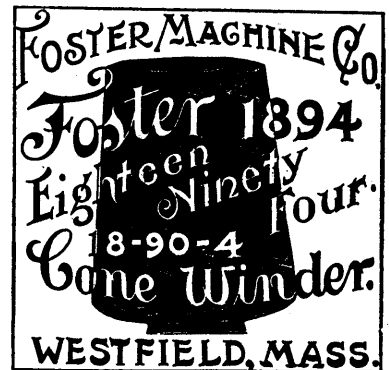
Will be sold cheap before removal, several Corliss Engines of the best make and in first-class condition, from 250 to 350 h.p. I can furnish with these engines heavy fly wheels or band wheels.

Also to close up an estate the following new Automatic Engines will be sold cheap, strictly high grade, one 20"x36", one 12"x20", and one 12"x18".

Also in stock a Double 23"x60" Corliss Engine; 16"x36" and 12"x36" Corliss Engines; 16"x32" and 10"x16" Buckeye Engines; 12"x12" Bal', 12"x15", and 9"x12" Beck, 9"x12" Trenton, 9"x9" New York Safety Automatic Engines.

Large stock of Slide Valve Engines, Boilers, Pumps, Feed Water Heaters, Centrifugal Pumps, Hoisting and Marine Engines, Lathes, Planers, Shapers, Drill Presses, Milling Machines and Steam Hammers, and Wood-working Machinery; 500 and 600 Light Dynamoes, 1 to 60 h.p. Motors.

FRANK TOOMEY,  
131 NORTH THIRD STREET,  
WAREHOUSES,  
159 AND 161 CANAL STREET,  
976 982 BEACH STREET  
PHILADELPHIA.



ADVERTISE IN THE **Canadian Manufacturer.**

The E. B. Eddy Co., Hull, Que., will erect another pulp mill.

The Georgian Bay Foundry and Machine Shop, Collingwood, Ont., was destroyed by fire July 14.

W. T. Petrie's saw and flour mills, Holstein, Ont., were destroyed by fire July 18; loss about \$15,000.

The Canadian General Electric Co. are asking for tenders for the erection of a car shop 330x60 ft. at their works at Peterboro', Ont.

Mr. W. H. A. Lozier, Cleveland, O., has purchased the Barnum Iron Works factory at Toronto Junction, Ont., and will manufacture bicycles on a large scale, giving employment to about 300 hands.

Messrs. Dudley & Burns, printers, Toronto, have a fine motor for running their machinery. It is one of the Easton machines, and was built by the John Abell Engine & Machine Works Co. It displaced a heavy gas engine.

The Rat Portage, Ont., News says that the Rat Portage Reduction Works and all the plant and mineral lands of the Black Jack Mining Company have been purchased by English and French capitalists. It is contemplated to thoroughly equip the works with new and improved machinery of the latest pattern, having regard to the different ores that are to be treated. It is contemplated to have the plant in working order within 60 days.

One of the features of the Winnipeg Industrial Exhibition this week is something new in the stove line. This is a stove built specially for burning our native lignite coal. The stove was invented at St. Paul, Minnesota, after a great deal of experimenting to find a grate suitable to burn Dakota lignite, which is similar to the lignite coal we have in this country, though perhaps not as good. A practical exhibition is given as to what the stove will do, and with a very small quantity of this coal it makes a tremendous fire. The manufacturers claim that by using this stove as much heat can be had from a ton of common lignite, as can be secured from the best anthracite coal. The novel feature of this lignite burner is a sort of double grate, which catches the slack of the coal and allows it to become thoroughly consumed. Heretofore the great trouble in burning our soft coals has been the waste. In burning the coal slacks and falls through the grate into the ash pan, and about half the good coal is lost in this way. By this new grate this waste of fuel is overcome and lignite coal thus becomes vastly more valuable. The grate has been patented in Canada and will be placed on the market here, probably by Merrick, Anderson & Co. One of the Grand Jewel stoves handled by the latter firm has been fitted with these grates, and was on exhibition at the fair grounds, where it did equally as well as in the St. Paul Stove.—Winnipeg Commercial.

The Pratte Piano Co., Huntingdon, Ont., will place a new engine in their works, and will make other improvements.

The Shippey Manufacturing Co., Benton Harbour, Mich., will establish a branch factory at St. Thomas, Ont., for the manufacture of odourless glue.

The William Hamilton Manufacturing Co., Peterboro', Ont., have received an order from contractor Onderdonk of the Trent Valley canal, for four large upright boilers.

Messrs. Menzies, Turner & Co., Toronto, manufacturers of window shades, have equipped 20 of the new street railway cars with a new cloth waterproof blind manufactured by them.

The contract for the new steam plant for the town of Collingwood, Ont., for driving their electric light plant, has been awarded to the John Abell Engine & Machine Works Co., Toronto.

A despatch from Apohaqui, N.B., states that the grist mill of S. A. McAuley, the door and sash factory of C. A. Jones and the portable mill belonging to Matthew & Boulter, at Millstream, near that place, have been destroyed by fire. The mill and factory will be rebuilt at once.

The following description of the large saw mill of the St. Anthony Lumber Co., at Whitney on the O. A. & P. S. Ry., is taken from the Eganville Star. The mill proper is a three-storey gable roof building 207 feet long by 80 feet wide, with a shingle and lath mill attachment 48 feet by 50 feet, and sorting shed 270 by 32 feet. It is built of heavy oak and pine, put together in such a manner that its strength is superior to any test to which it may be put. The capacity for sawing will be about 250,000 feet per day, supplied by three band saws, and one gang saw, with edging, butting and trimming saws, sufficient for the requirements. The shingle and lath mill is replete with every contrivance in the way of improved machinery calculated to get the best possible value out of the material used. The engine and boiler house, built separately from the main building, is 72 feet by 81 feet, and is fire-proof, being constructed of stone, brick and iron throughout. Motive power for running the mill is supplied by a Corliss engine of 700 horse power. The main shaft is 17 inches thick, with a fly wheel 24 feet in diameter, 52 inch face and weighing 20 tons. The main driving belt is 48 inches in width. Steam is obtained from eight boilers, with dimensions of 5 feet by 20 feet. Sawdust belts carrying a continuous supply of sawdust to the furnace will furnish necessary fuel, and the balance of the sawdust and other waste material will be disposed of by means of a burner. This burner is constructed of iron plates  $\frac{3}{8}$  inch thick, and lined inside with a brick wall 18 inches thick, the top being covered with a heavy netting. It is 85 feet in height and 30 feet in diameter.

## MILLERS, READ

The following letter from A. Moyer & Co., Palmerston, Ont. Our mills all start up the same way. No vexations and expensive delays. A few \$100 SAVED in the cost of putting in your mill is easily SPENT by sending out poor flour to your critical customers when starting up, injuring a reputation that will take months to re-establish.

Stratford Mill Building Co.,  
Stratford, Ont.

Palmerston, Ont., June 16th, 1895.

Dear Sirs,—After running and thoroughly testing the 100 barrel mill that you re-modelled for me, I take pleasure in stating that you have completed the contract to my entire satisfaction. The quality of flour and yield is even better than I expected, or your guarantee called for. The mill started off without a hitch, and the flour proved satisfactory from the start, and not a spout or a piece of cloth had to be changed. I shall be pleased to show anyone who is interested in modern milling our mill. Hoping that you will meet with the success you deserve, we are,

Yours truly, A. MOYER & CO.

**The STRATFORD MILL BUILDING CO. Ltd., STRATFORD, ONT.**

Captain Foster, Smith's Falls, Ont., is about to start a broom and whisk factory in that town.

A valuable iron deposit has been discovered on the property of Mr. John George near Bishop's Crossing, Que., township of Dudswell, on the Quebec Central Railway line, about 25 miles from the city of Sherbrooke, Que., and is being opened up by American capitalists. There is also a good showing of gold near Dudswell center which is being worked.

Mr. A.H. Britnell Toronto, is now preparing for exhibition the model of an electric plant invented by himself, which he claims is destined to revolutionize the system of electric propulsion. Mr. Britnell claims that by his system the snow problem will be solved. No trolley poles, overhead wires or brakes will be needed. In fact no motors would be used. It would be impossible for the cars to leave the track; the cars, if necessary, could be stopped instantaneously, and Mr. Britnell also claims that not half the power now required would be necessary to do the same amount of work. Mr. Britnell in exhibiting his invention placed a board on top of the model so that himself and another man could get upon it, and with only two amperes of current applied the little machine was able to travel around the room without any apparent difficulty. Messrs. Fetherstonhaugh & Co., patent solicitors, are applying for letters patent, and as soon as they are secured Mr. Britnell says he will be prepared to put his invention before the public.

The Ottawa, Can., Electric Co. has proved itself one of the most progressive lighting companies on this continent. The fact that in a city with a population of but 40,000, it runs 50,000 lights, speaks volumes, and we question whether any other city in the world can approach such figures. But even more interesting is an item in president Ahearn's last report, just presented, showing an income of \$421 from heaters. We have not struck this item in any similar balance sheet before, and make its acquaintance with a great deal of pleasure. The expenses, per contra, charged against heaters, are only \$12, from which we infer that the service must be quite profitable. It is true that \$421 is not a large proportion of the \$147,000 received for all services, including incandescents, arcs and inotors, but it is a decided beginning and is much larger than the motor account once was with some incandescent companies or the incandescent account with many large arc companies. The Ottawa example of more than 1 lamp per head of population, and of \$421 revenue from heaters at an incidental outlay of only \$12 is a mighty good one to copy.—Electrical Engineer.

The splendid boiler at the Island Park electric light station was built by the John Abell Engine & Machine Co.

Noah Cober of Moorefield, Ont., has just put in an Abell 40 h.p. engine and boiler.

The Nanaimo, B.C., Electric Light, Power and Heating Company, have purchased the Nanaimo Electric Light Works from Joseph Hunter, for about \$55,000.

The Laurie Engine Co., Montreal, have lately added considerable new machinery to their works, including an 84-inch break lathe, a large iron planer, and a large slotting machine which were built especially for them by John Bertram & Sons, Dundas, Ont.

At a recent meeting in Toronto of the Astronomical and Physical Society, Mr. A. E. Meredith, LL.D., read some notes upon the chemistry of steel making, as illustrated in the recently discovered "Doherty Process," now in operation at Sarnia, where he had an opportunity of investigating it. Iron masters and authorities in chemical science regard this as an epoch making discovery, and the methods employed as being as much superior to the Bessemer system as the latter was to the methods in common use when it was given to the world in 1856 and 1857. In the Bessemer system, two distinct and separate processes are necessary to convert the pig-iron into steel. The first is to melt the iron in a furnace, and when melted, air and steam are forced into the molten mass of metal in order to burn out the carbon, sulphur, and other impurities in the iron. The second step is to pour this molten mass, now converted into malleable iron, into another furnace, called the converter, where it is mixed with a certain proportion of fused carbonized iron containing manganese in the form of ferro-manganese, and converted into steel. By the Doherty process, on the other hand, the steel is produced by a single furnace, and more cheaply than malleable iron by the old method. A pipe containing air meets a pipe containing steam (regulated by a cock), just before they enter the furnace; the result is that hydrogen gas is set free, which in combustion gives out an intense heat, fusing the metal very rapidly, at the rate of about one ton in fifteen minutes. By the intensity of the heat also, the impurities, or mineral poisons, as they are called, the manganese, phosphorus, and sulphur are burned out. The molten mass, freed from all these impurities, is poured out in a white stream at the rate of 40lbs. in 12 seconds. The metal when poured into the ladles throws up innumerable jets of flame, caused by the burning of the carbon, and must be allowed to cool for some seconds before being poured into the moulds. Dr. Meredith stated that the inventor of the process claims that the steel so produced is harder and more ductile, and in other respects superior to that produced in the ordinary way, while it is very much cheaper, as the quantity of fuel used is only one-tenth of that required in the old method.

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Best Oak Tanned Belting and Lace Leather

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EIDERDOWN FLANNEL, Etc.

Selling Agents: DONALD FRASER, MONTREAL: E. H. WALSH & Co., TORONTO

Messrs. Wm. McDonnell & Son's saw mills, Killaloe, Ont., were destroyed by fire a few days ago.

**Steady Voltage for Turbine Driven Railway Generators—The Ahearn Method.**

The serious difficulties experienced in the operation of the water driven plant of the Ottawa Electric Railway were for the most part overcome excepting with reference to the absolute steadiness of voltage, which it was desired should ultimately equal that of a steam driven plant. The speeding up incident to a sudden withdrawal of work on the line was always necessarily followed by increased speed of dynamos and e.m.f., and conversely frequent sudden demands for more power resulted in a "chuck" upon the armatures, more or less violent. This also reduced the strength of fields and largely contributed to the slowing up effect by neutralizing the momentum of the driving machinery, which might otherwise carry the armature over these frequent light demands if the strength of field remained constant.

During the past winter, Mr. T. Ahearn, Managing Director of the Ottawa Electric Railway and a member of the well known Canadian electrical firm of Ahearn & Soper, who built and are the principal owners of the plant at Ottawa, decided that an independently driven water wheel to operate an independent 600 volt dynamo, the current from which would be employed exclusively for the purpose of exciting the fields of his company's three street railway generators, would remove a multitude of variations of e. m. f. incident to self-excited

water-driven dynamos. The necessary work to accomplish this result was completed in the latter part of January last, since which time the plant has been operated with great success upon this plan, and has greatly exceeded expectations.

An ammeter is included in each dynamo field circuit, and placed upon each dynamo is a small double throw switch, so that in the event of an accident to the exciting dynamo or its driving wheel, the several dynamos could be self-excited by throwing the switch on each dynamo, which would connect the armature of each with its own field.

The three Westinghouse generators at Ottawa are, one of 700 h.p. and two of 400 h.p., the total exciting current required for all three being less than twenty amperes.

Among the many advantages of this system are the following:—Steadiness of voltage, removal of the danger of burning out fields by abnormal armature speed, relief to the driving machinery, removal of fields from the line circuit preventing any possible damage to them by lighting or other cause, the prevention of damage to commutators formerly caused by short circuits upon the line throwing open the circuit breakers and short circuiting the current across the commutator. These troubles are now entirely absent. Considerable time is also saved in throwing in dynamos, which is now done without delay after the circuit breakers are reset. This formerly required a very considerable time in synchronizing fields.

The splendid success which has attended the operation of this water plant in Canada should commend it to the serious consideration

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An old saying which indicates the feelings of those who buy our

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Will You Join Their Ranks? . . . .

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All communications promptly attended to.

References } **Menzie, Turner & Company, Toronto.**  
                  } **Dom. Suspender Co., Niagara Falls, Ont.**

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Made with our Patent Process Seamless Tube, including

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- Suction Hose Galvanized Smooth Bore,
- Suction Hose Hard Rubber,
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of the owners of water power plants in America, which are already numerous and will always be increasing in number. And there is no doubt that some of those interested, who may attend the coming convention of the Street Railway Association at Montreal in October next will visit Ottawa to inspect personally this valuable means of removing defects and annoyances incident to the operation of electric railways by water power. Ottawa is but 3½ hours by rail from Montreal and in addition to its being the Capital of the Dominion is a city of 50,000 live people, who boast of having an incandescent lighting installation of one lamp for each head of population, and an electric railway of thirty miles of track operating forty cars daily, which in the matter of service and equipment is unsurpassed. Ottawa is recognized as electrically of the first importance and also enjoys the proud distinction of having first solved the snow problem, demonstrating that an uninterrupted electric street railway service could be successfully maintained throughout a Canadian winter.—The Electrical Engineer.

**The Burton Liquid Electric Forge.**

In the last issue of this journal allusion was made to the fact that the Canadian Electric Forging and Smelting Co., of Toronto, were applying for incorporation, and were about prepared to go actively into business in this city. The company is being organized to acquire the right for the Dominion of Canada for the process of electric heating of metals and the smelting of ores from Mr. George D. Burton, of Boston, Mass. The invention relates to the heating of metals by contact with a conductive liquid or solution which serves to convey the electric current to the metal, and to form an arc around the same. It is claimed for the process that it possesses four essential features of success—simplicity, portability, utility and economy. In its economy feature it saves time, labor, fuel and money.

In heating metals by this process the metal to be heated is subjected to a stream, jet or spray of conductive liquid and simultaneously to the action of an electric current, the medium conveying the electricity to or from the metal. The apparatus necessary to the proper handling of the process is comparatively inexpensive, and for ordinary forging or heating can be leased at a very nominal price to small shops so as to bring the use of the process within the means and reach of the humblest worker in the arts, and at the same time bring it into almost universal practice. The apparatus employed is so simple in construction and easy of operation that no practical experience is required in its use, nor knowledge of electricity by the operator; and the entire expense, exclusive of electric current, will not exceed five cents per day for each forge. By its use blacksmith-

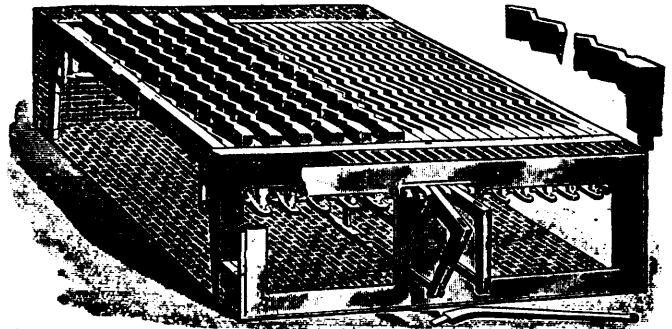
ing is reduced to a fine art. It is so clean, compact and absolutely harmless in every way as to be operated successfully in an office, which, as a matter of fact, is the case already. All the danger, smoke, noxious fumes, dirt, waste and delay of the coal forge can be gotten rid of wherever the electric current is obtainable. The forge is always ready for use, and requires no special or expensive electrical devices in its work. With it a uniform heat can be obtained with great accuracy; neither is there any trouble experienced in securing the higher temperatures, while it possesses the special merit of being able to heat simultaneously various kinds of metals. The variety of uses to which it can be put is almost limitless, wherever heat is required for the purpose of handling metals.

The apparatus for the application of this process to commercial uses consists of a receptacle or tank of some suitable insulating material; in this is placed the liquid. A plate of lead or other suitable metal is placed in the box and forms an anode, being connected with the positive pole of a direct current generator or other suitable source of current having a pressure of from 120 to 500 volts, and a capacity from six amperes upwards.

The size of the piece heated governs the amount of current consumed, and acts as a natural regulator, no other regulation being

**THE VOLCANIC PATENT SHAKING GRATE**

MANUFACTURED BY **The Gurney Foundry Co., Ltd., TORONTO**



TORONTO SOAP COMPANY, June 3, 1895.

The Gurney Foundry Co., Ltd., Toronto: Gentlemen,—We have had a set of the Improved Volcanic Shaking Grate for three weeks under one boiler and is working splendid. With my practical experience of over 20 years, it is as follows:

1st. Its small fire place. It takes less fuel to cover furnace and the large amount of heat derived from it. The economy which its large area admits. The air is taken in from one end to the other of the grate without any breaking in the air space, which, I find, adds greatly to the fire keeping even over the entire surface. The grate works splendid when shaking and no coal goes in the ash pit. There is another saving. I see there is very little smoke comes out of the stack. Over 75 per cent. of smoke is consumed in the furnace. This is due to plenty of air passing through the grates, which forms a combustion. This also is a big saving on fuel. Our old furnace was 4½x2½. Yours is 3x2½. I find that I have over three feet more air space in yours than in the old. I could only boil one kettle and keep my water feeding in boiler with the old furnace and I had to fire heavy then. I now boil the kettle, run re-melter and engine, and keep my feed water going at the same time with half labor in firing. I am satisfied that we are saving over twenty-five to thirty per cent. There is no grate in the market to-day to equal it for economy. I have run four days without cleaning tubes and find there is no more soot in tubes than in one day's run with old furnace.

I remain, yours respectfully,

J. McCLAY, Mech. Engineer.

W. A. Bradshaw & Co., Proprietors.

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**VALVES and - Pipe : : Fittings**

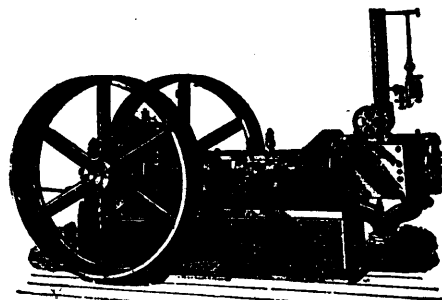
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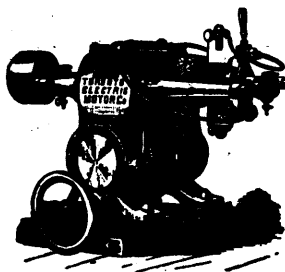
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Perfect Regulation and Highest Economy.  
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**ANY VOLTAGE.**

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**107 and 109 Adelaide Street West, TORONTO, ONT.**

required. The importance of this fact can scarcely be appreciated unless one has seen the large, expensive and complicated regulating devices employed in other methods. The tank may also be made of metal and form a pole, the work-holder for the metal to be heated, being, in this case, supported independently of the tank. The metal to be heated is held in contact with the solution, and as it touches it, it is immediately surrounded with a luminous envelope or arc, which quickly heats it to the temperature required, the heating taking but a few seconds or minutes according to the size of the piece. In tempering and hardening tools, the tool can be heated and cooled right in the same bath.

There are a number of operations involving the heating and working of metals, which form a part of the daily work of every factory and shop, which heretofore could not be accomplished electrically. Among these operations may be mentioned the making and tempering of tools, the heating of soldering irons, riveting, welding, brazing, annealing, the bending and forging of metals for any purpose and the general uses to which the blacksmith's forge is put.

This invention also relates to the smelting of metallic ores and the separation of the different metals in ores from each other and from their matrix.

The immense mineral deposits of iron, gold, silver, copper, nickel,

lead, tin, platinum and aluminum in Canada, stretching from the Yukon River to Cape Breton, and from Lake Ontario to the Arctic Ocean, and having in close proximity to them immense water powers which can be harnessed to furnish the electric current, reveal tremendous possibilities in the application of this invention in this department of practical mechanical science.

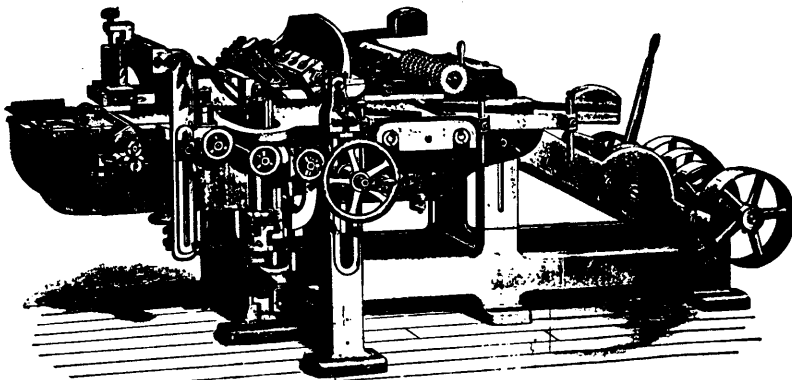
**Elastic Metallic Rod Packing.**

The accompanying illustration is of the elastic metallic rod packing, manufactured by the Dominion Metallic Packing Company, Hamilton, Ont.

It is described as being as easily applied as rubber packing, and it consists of metallic rings of peculiar section. These rings are pressed gently against the rod at all points by elastic rings, fitting into grooves (when formed) on the back of the metallic ones. All the rings are laid so as to break joints, and by reference to the illustration it will be seen that steam or water cannot break through from one ring to another, because each joint is covered by a flat surface on the next ring.

The makers claim that this is a most important point in making the packing so successful wherever applied. The grooves in the face of

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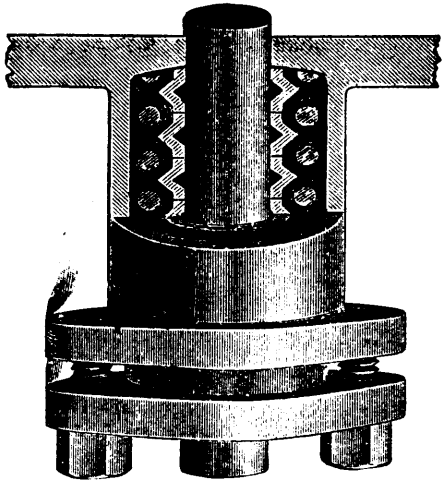
For Prize Lists, Entry Forms and all information address,

**J. J. Withrow,**  
President.

**H. J. Hill,**  
Manager, Toronto

the metallic rings serve two purposes. They make an efficient water packing, and also help to lubricate the rod, thus still more reducing the friction between the rod and the packing. They also are the means of decreasing the inside diameter rings to compensate for wear in the face of the packing.

The elastic packing, protected by the metal rings from the direct action of heat, is found to keep its elasticity remarkably well, and it



produces in the simplest manner just what is wanted, an even, moderate pressure upon the metallic rings on the rod, and also provides for lateral motion of the same.

Some of the merits claimed for this packing are :--There is no extra expense necessary for special stuffing box or gland. No ground joints are required. No springs. It may be used in any stuffing box, and it requires no changes of any kind. It may be put in the stuffing box without disconnecting the rod. The piston rod may be pulled out and returned to its place without disturbing the packing. It can be applied more quickly than fibrous packing. Being elastic it keeps the pressure even on the rod at every point of the stroke; and it cannot wear the rod. Compared with fibrous packing, at least fifty per cent. of the wear caused by friction is avoided. The rod cannot become heated because of the water intervening in the grooves in the face of the packing.

This packing is used to great advantage on steam and ammonia pumps, stationary and marine engines, steam hammers and air compressors.

This packing is being used by the Incandescent Light Company, Toronto; Canada Colored Cotton Company, Hamilton Cotton Company, Hamilton Street Railway Company, Hamilton Water Works, and many other large concerns in Canada.

For further information apply to the Dominion Metallic Packing Co., Hamilton, Ont.

**CANADIAN PATENTS.**

The following patents have been issued from the Canadian Patent Office, from May 1 to May 11, 1895.

Information regarding any of these patents may be had on application as follows :--

Fetherstonhaugh & Co., Bank of Commerce Building, Toronto.  
 Ridout & Maybee, 103 Bay street, Toronto.  
 A. Harvey, Central Chambers, Ottawa.

Copies of American patents corresponding to Canadian patents

**Are You Looking FOR ANY KIND OF MACHINERY?**

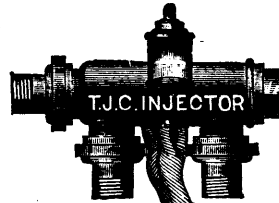
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the most economical boiler feeder in the world.

**20 per cent.**

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**NOT EXPENSIVE.**

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

**The T. J. C. Injector**

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

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

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No.	PRICE.	HORSE POWER.
7	\$ 7 00	4 to 8
10	7 00	8 to 16
15	10 50	16 to 40
20	15 00	47 to 72
25	22 50	72 to 120
35	30 00	120 to 220
45	45 00	220 to 300

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

- 48,800 Linotype machine, The Mergenthaler Linotype Co., New York, N.Y.
- 48,801 Wagon brake. K. Norman Buckler, Dalhousie West, and Thos. R. Kelly, Uniake, N.S.
- 48,802 Suspensory bandage, Jno. Teuscher, Sherwood, Ore.
- 48,803 Lock, The Cable Lock and Novelty Co., Pittsburg, Pa.
- 48,804 Bath tub, George Booth, Toronto.
- 48,805 Umbrella-stand and lock, Hy. A. Collins, and Jos. McManus, Toronto.
- 48,806 Self-levelling berth, The Briggs Ships Berth Co., Portland, Me.
- 48,807 Disc harrow, Marquis J. Todd, Buffalo, N.Y.
- 48,808 Motor, Leon Abbett, Hoboken, N.Y.
- 48,809 Trolley stand and pole, Lawrence C. Seelye, Fort Edward, and Geo. W. Burnham, Luzarne, N.Y.
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- 48,815 Wort cooler, Henry E. Dækebach, Cincinnati, O.
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- 48,820 Device for displaying and measuring goods, Hy. Minister, Zaleski, O.
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- 48,827 Computing scale, Drury J. Smith, jr., Dayton, O.
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- 48,829 Winding mechanism, Friedrich A. Richter, Rudolstadt, Germany.
- 48,830 Jar fastener, Robt. I. Patterson, Munice, Ind.
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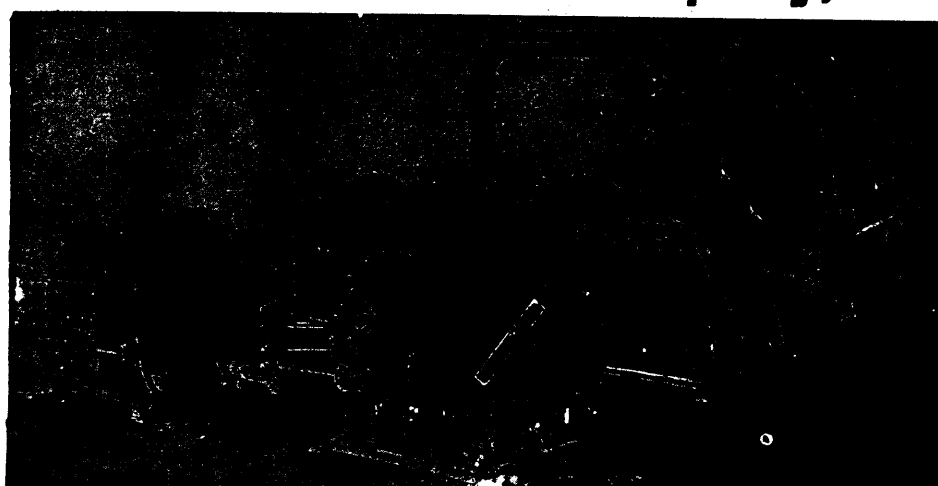
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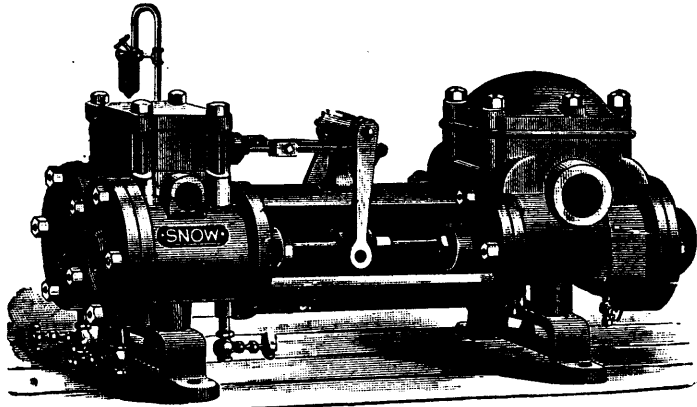
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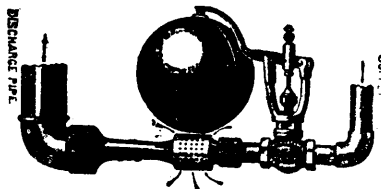
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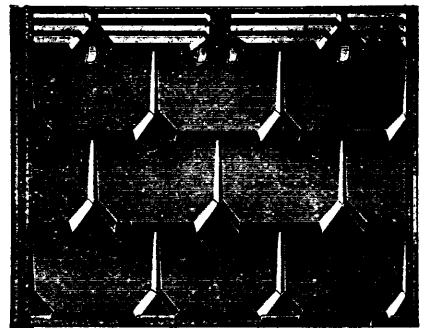
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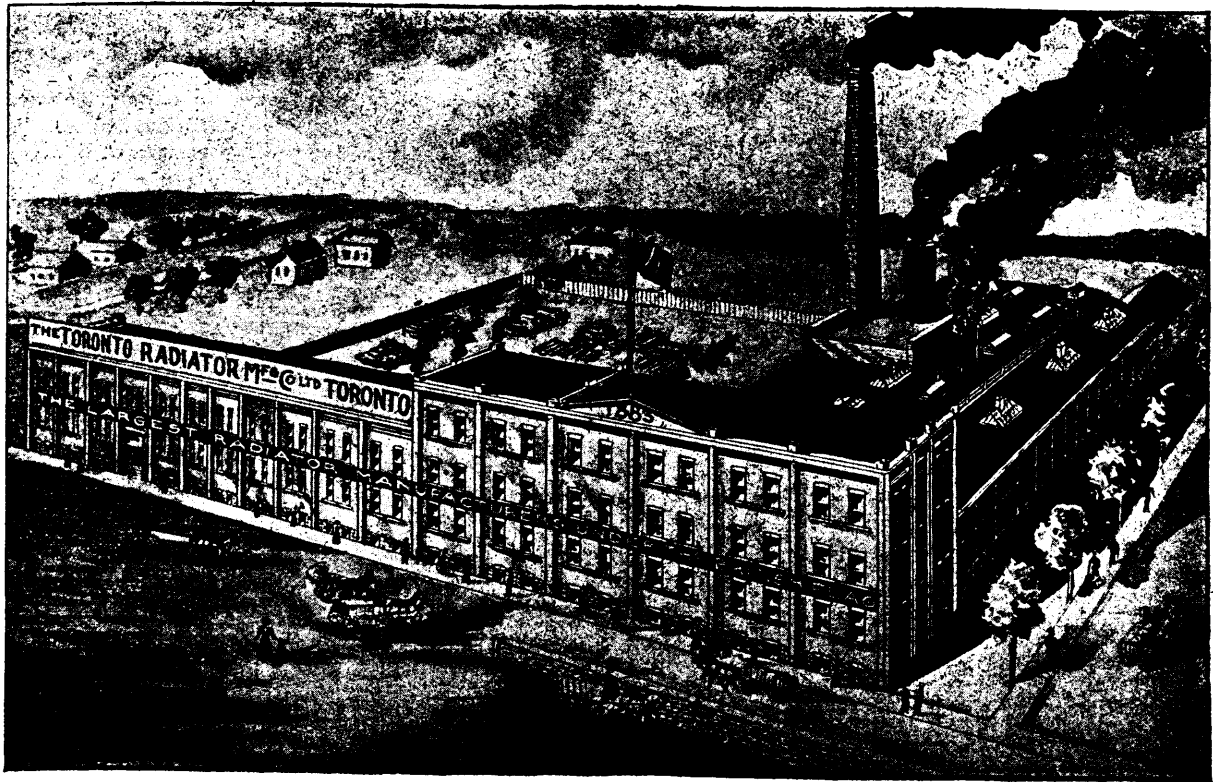
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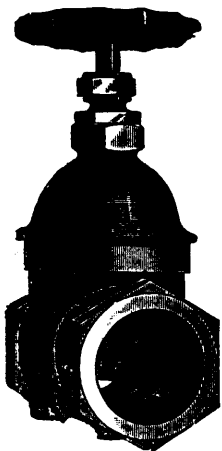
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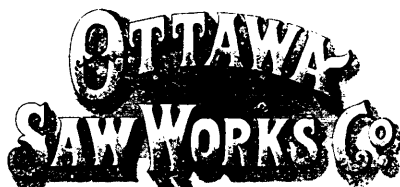
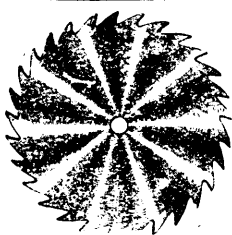
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1 3/8	1 3/8	5.01	"	3	2 7/8	22.59	"
1 1/2	1 1/2	5.94	"	3 1/4	3 1/8	26.60	"
1 3/4	1 11/16	7.46	"	3 1/2	3 1/4	30.94	"
2	1 7/8	9.83	4 cts.	4	4	42.33	5 cts.
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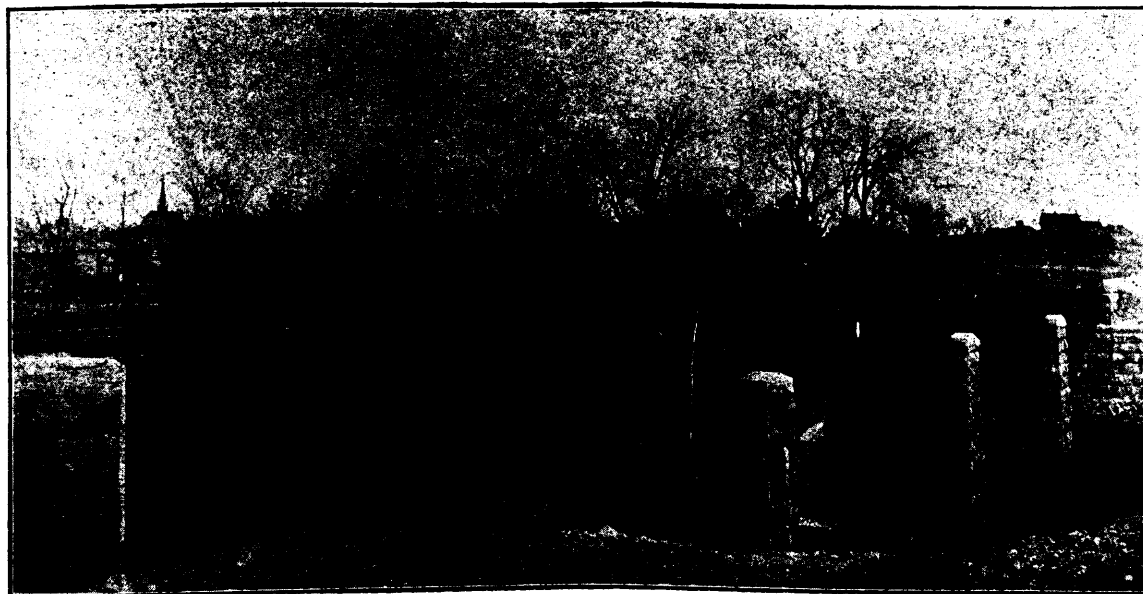
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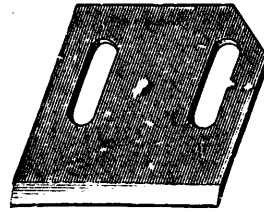
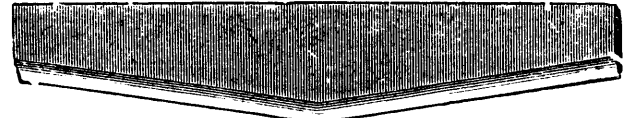
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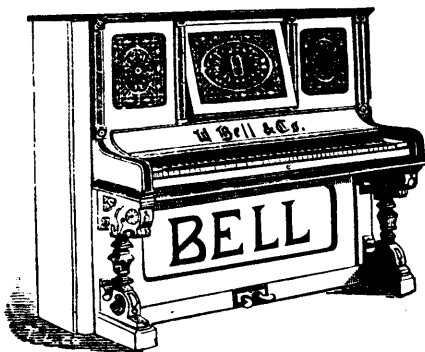
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Other Assets.....	58,939 88	89,359 40	
Total.....	\$293,592 53	\$821,220 88	Net Surplus.....
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