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Vol. 20. TORONTO, MARCH 20, 1891. No. 6.

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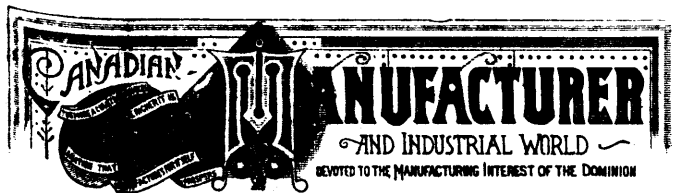
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PROTECTION WILL CAUSE THE DEATH OF FREE TRADE.

THAT protection encourages the successful establishment of manufacturing industries, and that free trade does not always offer such encouragement, is evident from facts that are continually presenting themselves. The *Textile Mercury*, of Manchester, Eng., enquires of certain English manufacturers why they allow the Continent to monopolize certain branches of the textile industries included under the heading of "the fancy trade." It says:

"The excuse that we are inferior to the French, Germans and Swiss in artistic skill, and that the latter therefore are better able to manufacture high-class goods, which may be looked upon as *articles de luxe*, is not sufficient, for it is known that some manufacturers in this country—quite as English as the rest—have made a success of the fancy trade, and that, too, in competition with the Continent, and handicapped by tariffs abroad and the absence of tariffs at home. The Swiss embroidery which one sees in the wholesale houses at this season, with a groundwork of fine silk net, is an article that brings large profits to the coffers of manufacturers in the little Republic, and one would fain see an attempt made, say in Nottingham, to establish the industry here. The fancy linen trade, which is largely in German hands, is another branch that does not receive a due amount of attention at home. The decoration of silk goods has, we believe, been conducted extensively by a Macclesfield manufacturer, and by that means cloth has been sold at prices which would not otherwise have been obtainable. And it must not be forgotten that even the Americans are paying closer attention to artistic work. The fact that Messrs. Kendall & Company, a well-known United States house, is now selling its printed draperies in the English market, is not, we admit, a matter that need create uneasiness; but the tendency on the part of American cotton manufacturers to enter more largely upon the production of fine cloths, with the view of securing for themselves a trade which is at present principally in European hands, shows that a forward movement on our own part is necessary. When it is stated that a certain shipper of high-class Lancashire goods

has seen his American trade dwindle from an annual total of £800,000 to £200,000, and that the retention of his present diminished connection is due solely to the exceptional ability he possesses as a manufacturer, it becomes obvious that inferior men can have no chance at all. By inferior men we mean men who go on from year to year producing inferior goods for market which can only be successfully cultivated by a steadfast adherence to the recommendations of Mr. Swire-Smith and others. We hope to see the day when it shall no longer be said that twenty-five per cent. of the stock in the wholesale drapery houses of the United Kingdom is of foreign manufacture. Such a change cannot be accomplished unless there be a radical alteration in the aims of a large section of English manufacturers."

The *Mercury* is not an advocate of tariff protection to British manufacturing industries, nor has it ever declared in favor of fair trade, but, as will be seen, it points out how protection abroad and the absence of protection at home has handicapped British manufacturers to such an extent that they do not even attempt to produce certain lines of goods wherein large profits occur to foreigners, and that twenty-five per cent. of the stock in the wholesale drapery houses of Great Britain is of foreign manufacture. France, Germany and Switzerland have high tariffs, and yet these countries are able to flood the British market, where there is no tariff, with a class of goods that the *Mercury* says should be made in Britain, but is not. There is no material that enters into the manufacture of embroidery in Switzerland that does not have free entry into Britain; and the machinery and appliances that are used in that manufacture can be made quite as good as in the little Republic, if not as cheap. Why, then, if free trade is of such great benefit, and if protection is so objectionable, Nottingham, so celebrated for its lace products, does not take up this fancy branch of the trade and thereby exclude Swiss laces from the British market? So, too, as regards the fancy linen trade which the *Mercury* asserts is so largely in the hands of German manufacturers. Germany is a producer of the material of which linen is made, but this material is produced under the influences of protection. Britain, too, is a producer of such material, but this is produced under the influences of free trade. Yet we observe that British manufacturers decline to engage in the production of such fancy linen goods as the German manufacturers are adept in, and that twenty five per cent. of such goods carried by British warehousemen is of German manufacture.

Some might say that this successful competition of France, Germany and Switzerland in the British market occurred from the fact that labor is cheaper in those countries than in Britain. But this argument cannot hold good as regards the United States, for it is well known that the wages of operatives there are higher than in Britain. This being the fact, it is important to British manufacturers to learn how it is that Messrs. Kendall & Company, a well-known American house, are making a success of selling American-made draperies in the English market. The argument that explains the presence of French, German and Swiss goods in the British market works the other way when applied to the presence of American goods there. How is it that a certain shipper of high-class Lancashire goods has seen his American trade dwindle from an annual total of £800,000 to £200,000, while American goods are flooding the British market? We are told that

the retention of this very small fraction of American trade by the Lancashire manufacturer is due solely to his exceptional ability as a manufacturer, the obvious inference being that British manufacturers who do not possess such exceptional ability will not be able to stand up against American competition in the British market, to say nothing of the fearful loss of the American market. According to free trade logic, Britain, having free trade should be able to exclude from her markets the manufactured products of France, Germany, Switzerland and the United States; and the inability to do so is attributed to cheaper labor in these countries, except in the latter. But the United States has a much higher tariff than either the other countries named, and labor there is better paid than even in Britain. Then how and why is it that American fabrics of a certain description are driving similar British fabrics out of the British market? Protection does it.

Protection does it in this way. We know that before protection prevailed in the United States manufacturing industries were not in a flourishing condition there. Consumers looked to Britain for almost every manufactured article they required; and under the depression of the circumstance American manufacturers had little heart and little encouragement to attempt what they felt could not be a successful competition with their foreign rivals. This was in the days of Britain's supremacy a manufacturing nation. But when American protection became a fixed fact and an unalterable policy, the home market was placed in the virtual control of home enterprises, and then it was that competition among American manufacturers quickly reduced prices. In the struggle to survive the effects of this fierce competition American inventive ingenuity became excited and aroused, resulting in the invention of labor saving machinery and appliances that made it possible for the American workmen, employing American machinery, without toiling harder or more hours than was required of British workmen, to turn out much larger quantities of goods; and it is safe to assert that to protection is due in very large part the extraordinary talent that American mechanics have shown in inventing and utilizing labor saving devices. British, French, German, Swiss and other foreign manufacturers were quick to observe the effects of this remarkable ingenuity on the part of American mechanics. They understood, of course, that if they hoped to compete with America in the manufacture of merchandise

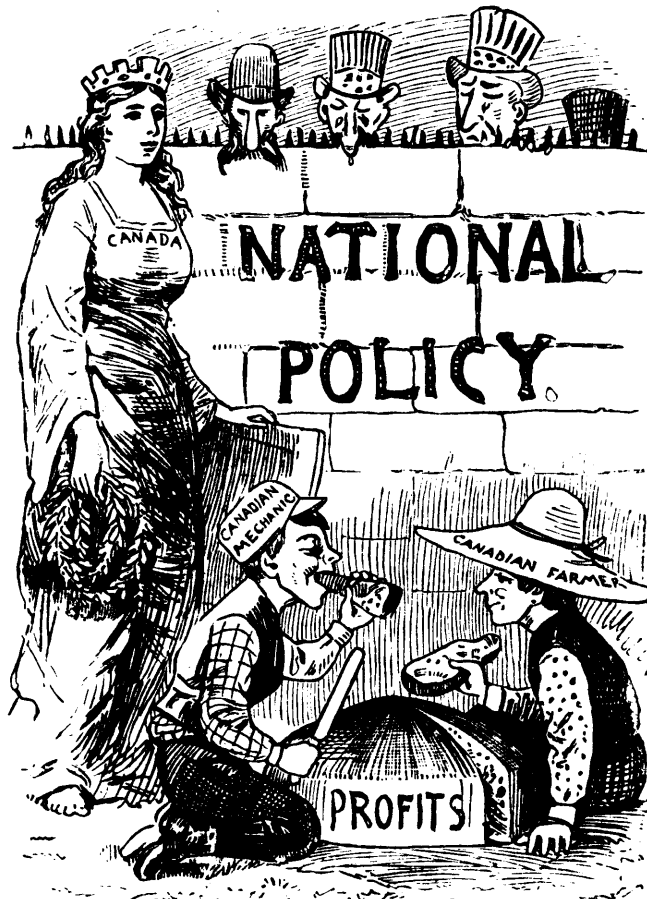
they must cheapen the cost of production. But how was this cheapening to be reached? The Americans had accomplished it by inventing quick-acting labor saving machinery; but here these foreigners faced a difficulty they could not possibly surmount—they were seemingly incapable of exercising such inventive talent as had characterized their American rivals; and the only other way open for them to cheapen production was to cheapen labor. And this is the secret, and herein lies the explanation of the great question that is now agitating Britain. France, Germany and Switzerland are in a large measure shut out of the American market by the American

tariff, but Britain offers a compensating field for them, and they are availing themselves of it, thanks to the fiscal policy of the country which advocates free trade with all the world. France, Germany and Switzerland can do what Britain cannot do—they can depress the wages of their laboring classes to a point where the prolongation of life is barely possible, and under this depression they can fill the British market with their manufactured products. Britain cannot do this—she cannot depress the wages of her working classes to a point where the products of their labor can, because of their cheapness shut out the products of the Continental States. And alas for the consistency of the free-trade theory, the only thing left for Britain to do is to adopt protection.

Mr. Cobden and his adherents evidently thought that Britain, because of the great start she had in the successful establishment of industrial pursuits over all the rest of the world, would be able to continue that supremacy, the idea

being that all other nations would of necessity be producers of raw materials only which would be manufactured in England and returned to the consumers. As long as this situation prevailed free trade was a most excellent thing for Britain and British manufacturers. Of course she would impose no obstacles to the free admission of raw materials, and she desired that all other nations should oppose no obstacles to the free admission into their ports of British manufactured goods. But the whirligig of time brings some remarkable changes. Britain finds that other nations can manufacture cheaper than she can; that they do not have so much raw materials to send to her, nor do they desire so much of her manufactured goods; and she also finds that these nations are flooding her markets with their manufactured products.

Alas for Free Trade! Protection will be the death of it.



CANADA'S NATIONAL POLICY PIE:—THE BOYS WILL HAVE IT.

EXPLODED TRADE THEORIES.

ONE of the happiest results of the late warmly contested election has been the complete exposure of many of the pet theories on which the agitators for unrestricted reciprocity have relied for the support of their policy.

They maintained that the whole Dominion was suffering from severe depression in all branches of business, and in proof of their contention asserted that the foreign commerce of Canada has shown little or any increase since the adoption of the National Policy. Without admitting that the extent of foreign trade forms in itself any clear or reliable indication of national prosperity, the argument has led to the investigation of the facts, and to a comparison of the position here and in the United States.

In the latter country, in 1880-81, the exports, foreign and domestic, were of the value of.....	\$902,377,346	
Imports.....	642,664,628	
Total exports and imports.....		\$1,545,041,974
In 1889-90 the exports, foreign and domestic, were of the value of.....	\$857,828,684	
Imports.....	789,310,409	
Total exports and imports.....		\$1,647,139,093
Increase in 10 years (6.61 per cent.).....		102,097,119
The Trade and Navigation Returns for the Dominion of Canada show:		
In 1880-81 the exports, foreign and domestic, were of the value of.....	\$98,085,804	
Imports.....	105,330,840	
Total exports and imports.....		\$203,621,663
In 1889-90 the exports, foreign and domestic, were of the value of.....	\$96,749,149	
Imports.....	121,858,241	
Total exports and imports.....		\$218,607,390
Increase in 10 years (7.36 per cent.).....		\$14,985,727

Accepting their argument for what it is worth, it shows that there has been greater national progress and prosperity in Canada than in the United States during the last ten years. In 1889-90 the foreign commerce of the United States amounted to \$25.73 per capita; in the Dominion of Canada to \$43.72 per capita, allowing sixty four millions and five millions of population, respectively.

Another pet theory of the agitators is, that the policy of protection to Canadian manufacturers has impoverished the farmers and producers by compelling them to pay exorbitant prices for all goods manufactured in the Dominion. They claim that the goods purchased cost just so much more than like goods if imported from abroad, as the amount of duty levied amounts to. To remedy this, they propose to exclude from Canada all foreign goods except those which are produced in that one country where the customs duties are the highest in the world, and which goods, according to their own argument, must be the dearest that can be found anywhere.

The free trade press in England and in Canada assail the policy of protection on the ground that it disables the country in which it is maintained from producing manufactured goods at prices which can enable it to export them to foreign countries.

Both of these theories are completely upset by the stern logic of facts.

With respect of the dearness of manufactured goods under the operation of protection in Canada, the almost unanimous testimony of all dealers is to the effect that, quality considered, the great bulk of them have been not only greatly reduced in price during the last ten years, but are now produced at prices

which compare favorably with those of similar character in outside markets. The incorrectness of this too frequent attack upon Canadian goods is established by the inconsistent statements of the accusers themselves, who, in forgetfulness of their contentions on this point, are found insisting that protection has created so much home competition that even with the cheap raw products and labor in Canada, the goods manufactured are frequently sold at such prices as yield no profit to the manufacturer, and, in many instances, at a loss.

With respect of the theory that a protected country cannot manufacture for export in competition with free trade countries, because of the higher prices paid for raw material and labor, and which theory appears to afford considerable comfort to the apostles of free trade in England as an offset to the operations of the McKinley tariff, it looks very reasonable; but here again the facts are opposed to it, and facts are stubborn things.

In the United States the exports of the products of agriculture in 1880-81 were \$730,394,943; in 1889-90, \$629,785,917, the decrease being about 14 per cent. The exports of manufactures in 1880-81 were \$89,219,380; in 1889-90, \$151,131,297, the increase being about 70 per cent. In order to encourage the manufacture of articles for export, the United States Government allows a drawback on imported merchandise manufactured and exported. In the year ending June 30, 1890, this drawback amounted to \$2,771,225. The purchases of manufactured goods by Canada from the United States during the year 1888-89, completely upset the two theories as to the high prices and incapacity for export in protected countries. In that year Canada purchased from the United States manufactured goods of a value a little over \$17,000,000. With the same tariff on goods from there as from Great Britain, Canada bought about fifty articles of the value of about \$5,400,000 from the United States, as compared with about \$1,250,000 from England for same kinds of merchandise. All the merchandise in this list was of manufactured goods, which were subject to American customs duty of 45 per cent or upwards. A large proportion of these articles were manufactures of iron and steel, brass, copper and other metals, glass, etc., which Canada a few years ago imported almost exclusively from Great Britain, but now finds that she can procure to better advantage from the United States. Another list of articles imported from these two countries shows a value of \$3,760,000 from United States, as compared with \$1,255,000 from Great Britain; and on these articles the American tariff ranged from 35 per cent. upwards, but under 45 per cent.

In all of these articles in the two lists the effect of protection has been to reduce the cost and to increase the export, being in direct opposition to the superficial theories of the doctrinaires of the free trade professors. The Trade and Navigation Returns for the year ending June 30, 1890, will be carefully analysed with the view of obtaining further information and additional illustrations on these important subjects.

It is astonishing to find that those of our politicians who are loudest in their praises of American enterprise and prosperity, and most despondent in their views of Canadian prospects, are the strongest opponents of the system of protection here, which, by their own showing, has been productive of so much advantage there. The imports into the United States for

1888-89, actually entered for consumption, amounted to \$741,431,398, or for a population of sixty-four millions, \$11.59 per capita; in same year the imports into Canada, entered for consumption amounted to \$109,673,447, or for a population of five millions, \$21.94. If the former country is really progressing so much faster than the latter, as is so stiffly maintained, the logical and the natural conclusion would be that Canada should strenuously endeavor to produce from its own resources and by its own labor a still larger proportion of those articles which it now consumes.

THE CAUSES OF BUSINESS FAILURES.

"BRADSTREETS' record of business failures for several years past shows that to every seventy persons in the United States and Canada, there is one strictly commercial or industrial establishment, without taking into account enterprises too insignificant to be entitled to a report, and the thousands of purely speculative financial enterprises. The number of commercial or industrial establishments given is 1,063,000, based on data obtained from 72,637 cities and towns in both countries, and is likely to be at least approximately correct. Out of this number, in 1890, 12,299 failed, or 115 in every 10,000. Of these failures 10,673 represented liabilities of less than \$20,000, and they are thus classified with respect to the causes which led to disaster:

CAUSE.	No.	LIABILITIES.
Incompetence.....	2,085	\$21,545,326
Lack of experience.....	611	3,562,065
Lack of capital.....	4,052	45,809,192
Unwise granting of credits.....	502	7,204,055
Failures of others.....	257	20,790,648
Personal extravagance.....	242	2,626,381
Neglect of business.....	300	2,411,502
Competition.....	246	2,194,554
Disaster.....	1,358	42,650,814
Speculation.....	604	19,616,481
Fraud.....	416	6,612,069
Total.....	10,673	\$175,032,834

These figures are very suggestive. They show that four out of every five failures were the faults of the persons managing the business. The very obvious inference from the facts given is that the purchasing and consuming powers of the people of Canada and the United States are not equal to the productive powers of those engaged in commercial and industrial enterprises; and as the protective tariffs of the two countries interfere with the export of surplus products to foreign countries, a degree of stagnation prevails which creates havoc in the business communities of the country. How far protection is responsible for this state of affairs, and how far it would be remedied by freer trade are questions that intelligent men should be able to work out for themselves."—*Montreal Herald*.

In our issue of February 20th the substance of these facts was given, the discussion thereon being from the standpoint that reciprocity was no remedy for financial failure. The question was discussed from that standpoint because at that time the *Herald* and other anti-protection papers were favoring unrestricted reciprocity with the United States as a remedy for the business failures occurring in Canada, and were publishing lists of names of unsuccessful Canadian manufacturers whose only hope for their business, as they said, lay in unrestricted reciprocity. Of course the inclination at all times is, in the presence of disaster, to avoid if possible the attachment of any blame to one's shoulders; and it was not strange that

these unsuccessful manufacturers should have thus endeavored to spare themselves by blaming the fiscal policy of the country.

But now comes the *Herald* abandoning the cry for unrestricted reciprocity as the only means of salvation, and putting the blame for business failures upon protective tariffs. It claims that "the consuming powers of the people of Canada and the United States are not equal to the productive powers of those engaged in commercial and industrial enterprises; and as the protective tariffs of the two countries interfere with the export of surplus products to foreign countries, a degree of stagnation prevails which creates havoc in the business communities of the country." This tergiversation of the *Herald* is quite remarkable. A month ago it was declaring that the congestion it said was prevailing in manufacturing industries in Canada could only be relieved by unrestricted reciprocity with the United States; but now it says that the protective tariff of the United States is chargeable with the congestion prevailing in that country, and points to free trade to both that country and this as the panacea for business failures.

An analysis of the table quoted from the *Herald* throws considerable light on the question, and also confutes the *Herald's* argument. The table shows that there were 10,673 failures, and that eleven causes led to these failures. Now it is manifestly unfair to argue that a protective tariff should be charged with these failures, or any portion of them, when the recorded causes indicate differently. If the failure of a concern is caused by any thing which might have been avoided by the party interested, no outside party or thing should be charged therewith. If the failure is caused by any person or thing over which the party interested has no control, if it can be shown that this outside influence is identical with, or closely connected with the tariff, then it would be admissible to charge the tariff with the disaster. What does the table show? It shows that of the eleven recorded causes of failures, eight of them were assuredly chargeable to the unfortunate investors, and that they had none to blame but themselves for their disaster. The avoidable causes were incompetence, lack of experience, lack of capital, unwise granting of credits, personal extravagance, neglect of business, speculation and fraud. These avoidable causes led to 8,812 failures involving \$109,396,818 of liabilities; and we challenge the *Herald* to point out how the policy of protection, or the tariff, could in any way be made to share or assume the blame. On the other hand, what we may call unavoidable causes, viz, failures of others, competition and disaster, these three led to but 1861 failures involving but \$65,626,016 of liabilities; and we again challenge the *Herald* to show how either of these can be charged to protection or the tariff. To enable it to do so it will have to analyze the causes that led to the failures of others and show what influence the tariff had in producing them; to show that competition in trade which caused 246 failures was the direct effect of the tariff, and that disaster, which may mean the destruction by fire, storm or flood, means that protection did it. Unless it can satisfactorily show these things its argument goes for nothing.

How unjust and ridiculous then, for the *Herald* to argue that protection or the tariff has any thing whatever to do with these failures. Unwise investments are not peculiar and exclusive to countries where protection prevails. A man with some

money at his command is quite as likely to invest it in a free trade country as in a protected country; and a wild and reckless desire for gain is quite as likely to induce a man to invest in a lottery as in an honorable enterprise. But the question of free trade or protection does not usually enter into the calculations of such men.

PROTECTION DID IT.

A CHART has been published showing at a glance the market prices in Chicago of bar iron, sheet iron, cut nails, wire nails and barb wire, for ten years, from January 1881, to December 1890. The chart was made for the commercial information contained therein only, but at the same time it impresses us as being one of the strongest and most striking object lessons in politics, proving the great advantage of protection in stimulating competition, and thereby reducing prices to the lowest possible level. Bar iron, in January 1881, was quoted at 2.4 cents per pound, the price being depressed to 2.3 cents in May and June of that year, rallying and advancing to 2.9 cents in October, which price was substantially maintained until June 1882; and it is to be noticed that that price at that time has never been equalled since. Early in July 1882, the price began to recede, and in December of that year, and in January 1883, the price was 2.5 cents. During 1883 the price tended downward all the time, and at the close of the year and at the beginning of 1884 the price was 1.8 cents. From that time on there were some fluctuations in price. At the beginning of the years 1885 and 1886 it was 1.55 cents, and in August of this latter year it reached the lowest recorded notch—1.5 cents, rallying to 2.1 in January 1887, and steadily receding during that year, closing at 1.8 cents. January 1889 recorded the price at 1.7 cents. In January 1889 the record shows 1.95 cents, and a year later 1.7 cents.

The diagram shows that sheet iron was 4.2 cents per pound in January 1881, but in October of that year the price advanced to 5 cents, which figure was substantially maintained until December of the following year; and this price was the maximum attained by the article during the decade. In January 1883 the price was 4.8 cents, and by steady decreases and without any recoveries whatever, January 1884 recorded the price at 3.4 cents. During that month the price still further receded to 3.15 cents; and January 1885 recorded it at 2.9 cents. It was at that figure—2.9 cents—at the close of 1886, in July 1887 and in July 1888. In January 1889 it was 3.05 cents, in January 1890 it was 3.3 cents, and at the close of that year it was 3.05 cents.

The fluctuations in the price of cut nails were remarkable. In January 1881 the price was recorded at 2.9 cents; a year later it was 3.4 cents, and in October 1882 the maximum of the decade was reached—4 cents. This high price did not hold long, and the break that then began showed but very little rallying until 2 cents was reached in June 1885. In that month a reaction set in, which elevated the price to 3.25 cents in November of that year; but before the close of the following month, and at the beginning of 1886, the price was down to 2.5 cents. A year later, in January 1887, the price was 2.3 cents; in January 1888 it was 2.075 cents; in January 1889 it was 1.925 cents, which was elevated to

2.525 cents at the close of the year, becoming again depressed to 1.775 cents in December 1890, the close of the decade.

Quotations of price of barb wire do not appear on the chart until September 1883, when it is recorded at 5.2 cents. Within a month the price was reduced to 5 cents, but in July 1884 it began to break, until within six months, in January 1885 it reached 3.25 cents. In January 1886 it had recovered to 4 cents, again receding to 3.1 cents at the end of the year; and the same price prevailed a year later. At the close of 1888 the price was 2.75 cents; the lowest recorded price, 2.65 cents, was in June, July and August, 1889; and the close of the decade, with December 1890, recorded the price of barb wire at 2.7 cents per pound.

Wire nails became a quotable commodity in September 1886, when the price of the article was 3.5 cents per pound. It held this price in January of the following year—1887; but in January 1888 the price had receded to 2.7 cents, and in December of that year it was 2.4 cents. In the latter part of 1889 the price was advanced, the closing quotation of the year being 3 cents; while a year later, and at the close of the decade, the price was 3.275 cents.

The highest price of bar iron was in 1881-82, when it commanded 2.9 cents per pound, the price at the close of the decade being 1.7 cents. Sheet iron was also at its highest in 1881-82, when it brought 5 cents per pound, but at the close of the decade the standard price was 3.05 cents. The maximum price of cut nails—4 cents per pound—was in 1882 and at the close of the decade it was only 1.775 cents. Barb wire was first quoted in 1883 at 5.2 cents per pound, but the market price was only 2.7 cents at the close of 1890. In 1887, soon after wire nails became a merchantable commodity, the ruling price was 3.65 cents, but the close of 1890 saw the price reduced to 2.275 cents. During the period from 1881 to 1890 the American tariff on the articles herein alluded to was as follows:— On bar iron, \$17.92 per long ton, or .8 cents per pound; sheet iron, \$22.40 per long ton, or 1 cent per pound; cut nails, 1½ cents per pound; wire nails, 4 cents per pound; barb wire, \$13.44 per long ton, or .6 cents per pound. These duties were high enough to encourage brisk competition in the manufacture of these articles in the United States, but not high enough to entirely exclude all foreign competition.

UNEMPLOYED PROFESSIONAL MEN.

If the condition of the clerical profession in the United States is as bad as represented by the *New York Churchman*, that country would be a good place for unemployed clergymen to keep away from. That journal says that over fifteen per cent. of all the Episcopal clergymen in the United States are unemployed, and that one of the chief causes of this most serious condition is the "unwise importunities that have induced many young men who might have adorned the Church as laymen to enter the ministry, which they never could adorn without the only call which ought to have determined their resolve." The *Churchman* discusses this extraordinary condition of affairs from the standpoint that "the Church is either making more ministers than she can employ, or that she is making a great many ministers whom she neither can nor ought to employ." The Archdeacon of New York, we are told,

in pity for the young men whose false hopes he found himself compelled continually to disappoint, felt himself obliged to publicly notify the unemployed that no places could be found for them; and the *Churchman* suggests that "before ordaining any man to the ministry it might be a good thing to ensure independence by requiring him to have some other profession or some honest handicraft;" and that "such a requirement would secure a better chance of self-independence for the unemployed clergy who have no private fortune to depend on."

What is said regarding the Episcopal clergy of the United States may with equal truth and force be said of other denominations, both in that country and in Canada also; and the application may be made not only to the clerical profession, but to the medical and legal professions also. In truth, these professions are the refuge of a large class of incompetent and useless men who are too lazy and too puffed up with vain conceit to ever do an honest day's work, depending upon the *eclat* that surrounds professional life to supply the dupes who are to support them in refined and elegant ease. And when the pinching of want is felt they discover that they are ignorant as to how to earn honest bread. They are too proud to beg on the public highways, but not to dead-beat their ways, many of them, by imposing upon the credulous and sympathetic.

There is too much glamor surrounding the professions which professional men find to their interest to maintain. They seek to impress upon the common mind an importance that is usually overestimated; knowing that if this glamor is dispelled and their importance measured according to its true worth and intrinsic merit, a much larger percentage of them who are now unemployed would be forced to earn their bread by honest toil. This glamor is a relic of the barbarism of the dark ages which is perpetuated in language and hieroglyphics that calls for *sy. sim. et aq. quantum suf.*, and for which the poor patient has to pay the druggist an extortionate price when he gets only sweetened water. It is a reflection upon the integrity of the honorable members of the profession when they encourage such glamor and delusions. Admitting the necessity in the community of some clergymen, physicians and lawyers, it goes without the saying that the community is overstocked with such professionals, and that they, like other non-producing classes, have to be supported by contributions forced from the public. As the *Churchman* states it, "the Church is either making more ministers than she can employ, or is making ministers whom she ought not to employ." Why, in the name of Christianity, should the Church delude young men into entering a profession where there is a moral certainty they cannot find employment; and why, in the name of common honesty, should she make clergymen of men whom she knows can never be a credit to the profession and whom she never intends to be allowed to occupy her best pulpits? Such a procedure is simply scandalous. So, too, as regards the production of physicians. Good physicians are always in demand. Their services are required in all communities, and they are always loved and respected; but why should the faculties of colleges use the strongest inducements to obtain students when they know that but very few of them will ever become eminent in their profession, and that a large majority can but become spongers for their subsistence. One may save himself much annoyance by staying away from a church

when the minister talks much about things of which he is ignorant; but in an emergency, when the first to be found so-called physician is called in, it is a different and more important matter. There are too many physicians, and the facilities and inducements for producing them are too easily available for the public good. So, too, with the legal fraternity, many of whom are harpies who prey and subsist upon victims who should never be drawn within the meshes of the law. In considering this great overproduction of professionals, one is forced to the conclusion that if many of these people had sought the occupations most adapted to their capacities, there would be more drivers of street cars than there now are, more scavengers on the streets, and more young men following the plow in the back townships. There certainly would be less lack of nice-looking young men with cockades on their hats and other badges of servility about them, driving gentlemen's horses and doing stable work.

Discussing this lack of employment of professional men, the *Toronto Globe* says:

"To those of us who look at the problem presented by the *Churchman* and at the advice given from the standpoint of the economist, it becomes evident that the clergy are but beginning to feel, what in almost all other classes has been felt for many a long year, the terrible pressure of the problem of the unemployed. They stand at every factory door, they wait in the lobbies of every counting house, and now they crowd around the altar in the Church of God. The practical effect will not be in teaching other professions or trades to clergymen, for in all trades and professions there is overcrowding as keen and disappointment as bitter as in their own. Rather will the problem of the unemployed among the clergy spur them on, as a class, to take a more active part in movements for social reform, for a more equal distribution of wealth, and for the abolition of the trust and the combine, the protective tariff and all that tends towards the impoverishment of the many for the benefit of the few."

These unemployed clergymen, physicians and lawyers may wait in the lobbies of the counting houses, and may crowd the altar, the bar and the dissecting room, in the futile endeavor to obtain so-called "respectable" employment. If they go as professionals they might also stand at factory doors vainly asking for situations; but we deny that they would be unsuccessful there if they had devoted as much time, energy and intelligent application in learning and mastering trades as they had in their professions. There is always a good demand in the trades for bright, intelligent, enterprising men who know their business. But, alas! there are too many visionaries like the *Globe* who depreciate the education of young men to be first-class mechanics and master workmen; teaching them to look upon professions as the most worthy and desirable aim of those who desire to shine as "respectable" lights of society. A good blacksmith is of more value to the country than a score of clerical students who have devoted years of their lives to the study of theology, but who can never hope to be even shepherds without flocks; but who might have earned honest bread by swinging a sledge hammer. A good machinist, capable to grind a valve seat or fit a key is worth a regiment of professional lawyers; and a miller who knows how to convert wheat into flour, or a farmer who knows how to cultivate the wheat, is worth more than all the incipient sawbones turned out of the medical colleges, and licensed to kill or cure.

as the fates may determine. But it is from these unsuccessful and unnecessary professionals the *Globe* hopes to muster recruits in its quixotic forays against protection.

RECIPROCITY.

Now that the elections are over and that the country has decided that Sir John's Government must look after Canada's interests in any negotiations that may be had with the United States looking to reciprocity in trade between the two countries, public interest is keenly alive to learn what may be the probable outcome in that direction. It is more than likely that whatever negotiations may be had, Sir Charles Tupper will be one of the Canadian commissioners, and any expressions from him at this time on that subject are interesting. A few days ago, having been questioned on the subject, Sir Charles said:

"I am very sanguine that reciprocal trade arrangements on a broad and liberal basis between Canada and the United States will very soon be made, embracing all such articles, whether the product of the forest or the farm, as can be arranged to the mutual advantage of both countries. My confidence in that arises from the fact that Mr. Blaine was known to be strongly opposed to the McKinley Tariff Act, and he has sought to relieve that measure of the natural consequences which must flow from it by proposals for reciprocal arrangements with other countries. So far from refusing to make anything but treaties of Unrestricted Reciprocity, the treaty he has made with Brazil simply embraces the articles that both countries agreed upon could be exchanged to the mutual benefit of each, either free or at a reduced rate of duty, leaving many other articles at the existing rates of duty. The treaty that Mr. Blaine has made with Newfoundland is precisely of the same character, and embraces the same principles exactly as would be included in a treaty that Canada would be prepared to make with the United States. As Canada affords an infinitely better basis of supplies for the fishermen of the United States than Newfoundland, there is no reason why Mr. Blaine should not embrace the opportunity of ridding the McKinley bill of its worst features by a broad and liberal trade arrangement with Canada. He is undoubtedly a very eminent and able statesman, and following, as he no doubt has, the discussion of the issues between the two parties in this country, has learned that the statement that the Liberal Conservative Government and party had been unfriendly to the United States is not only entirely devoid of foundation, but the very reverse of the truth. Mr. Blaine has only to consult the Canadian *Hansard* to see that, so far from the Liberal party being more friendly to the United States than the Conservative party, the discussions in the Canadian House of Commons and an examination of the files of the newspapers of the Reform party will prove that when Sir John Macdonald, in connection with Her Majesty's other plenipotentiary, in 1871 made a treaty between Canada and the United States, he was violently denounced by the Liberal party on the floor of the House of Commons, and by the press of the Liberal party, for having basely surrendered, as they said, the most important and valuable rights of Canadians, in his desire to obtain the friendship of the United States. Again, when Lord Sackville, Mr. Chamberlain and myself negotiated the treaty of Washington in 1888, I was subjected to the same treatment by the Liberal party and press, who denounced me as having been guilty of surrendering enormous rights, privileges and advantages that belonged to the people of Canada for the purpose of promoting a feeling of friendly intercourse with the United States. Under these circumstances Mr. Blaine, finding how entirely he has been misled as to the real

position of the two parties in this country, will, I have no doubt, be prepared to give the most friendly consideration to the wishes of the Government of Canada to have freer and more friendly trade relations between the Dominion and the United States. I shall be greatly surprised if Mr. Blaine does not crown his best efforts as a public man by accomplishing a settlement of all the questions of friction between the United States and Canada on terms that will be mutually beneficial and honorable to both countries."

MUGWUMPERY.

THE National Policy has given rise to abuses which must be abolished if it is to be continued. The pledges made to the people at the time of its introduction must be fulfilled and those manufacturers who have been sufficiently protected must be made to feel that they are not to look for Government protection beyond what the people consider a reasonable degree. The time has come when protection must not shut out English manufactures merely because about half a score or less of workmen may possibly be employed in some particular manufacture, as is the case in many manufactures now taxed with high duties.—*The Shareholder*.

These reflections are very vague. It is quite easy to charge abuses to the N.P. and then insist that they must be abolished, while the abuses are not specified nor the way in which they are to be remedied pointed out. It is also easy to speak of unfulfilled pledges made to the people, but what those pledges were is not mentioned. Why not specify? And why a covert threat to "those manufacturers who have been sufficiently protected," and who "must be made to feel that they are not to look for Government protection beyond what the people consider a reasonable degree?" The manufacturers who have been "sufficiently protected" are not asking for more protection—they do not desire any more—and that which they have been given to them by the representatives of the people to what they considered a "reasonable degree." Under the present regime protection is the fixed policy of the Government, and why does *The Shareholder* threaten the manufacturers that it will be withdrawn from them? Under protection the manufacturing industries of Canada have grown to such proportions that almost all articles of imperative necessity are now made in Canada, and under the fierce fires of competition are sold at as cheap or cheaper prices than before protection brought the industries into being: and an inspection of the returns will show that much the larger portion of imports of English manufactures into Canada are of an expensive character intended chiefly for the use of the wealthy who can afford to pay the duties imposed upon them. The vaguest sort of vagueness in the reflection that there are now many English manufactures taxed with high duties merely because a half score or less of workmen in Canada are employed in the production of similar goods. Why not specify? It is mean to stab in the dark. If *The Shareholder* has knowledge of any such incongruity existing it should mention the facts. Mugwumperry is an excrescence of American politics that we would dislike to see introduced into Canada.

THE CANADIAN MANUFACTURER,
\$1.00 PER YEAR.

SOUTHERN JUSTICE AND CHIVALRY.

THE world is raising its hands in holy horror at the deliberate murder of a number of Italians in New Orleans just as though such murders are not of frequent occurrence in that part of the country. About the only difference between these frequent murders and the butchering of the Italians is that the usual victims are Americans, the American Government for that reason being unable to interfere in behalf of its own citizens and see that the murderers are punished, while in the case of the Italians, being foreigners, the American Government is held responsible by the Italian Government, and will make such reparation as is possible. This is an anomalous and most remarkable condition. Under the peculiar "rights" of the States, the American Government can take no notice of any unlawful proceedings unless they are violations of United States laws; and it is no violation of any law of the United States for murderers in New Orleans to shoot people to death. And even in the case of the Italians, unless the murderers are brought to justice by the courts and laws of the State of Louisiana, they will forever go whipped of justice, for they cannot be reached by any law or court of the United States, or any other State. The United States cannot promise Italy that of the murderers shall be punished, because no such promise could be kept; and although Italy should send a fleet of her ironclads to the Mississippi to demand it, they will never be surrendered. The only redress Italy can obtain is a money indemnity, and this can only be had from the United States Government. Neither the City of New Orleans nor the State of Louisiana will ever pay a dollar of indemnity, nor could they ever be made to do so.

Unusual interest centres around this event not because the atrocity of it, but because the victims were foreigners, and their murder precipitates an international imbroglio wherein the American Government will have to pay the damages without being able to even demand that the murderers be brought to trial. This murdering of obnoxious persons in the South goes on constantly; and as long as the victims are negroes, and the murderers Democrats, no notice is taken of the events. It is barely possible that some of the murderer's may be indicted in the courts, but it is safe to say that no jury in the State of Louisiana would convict them of murder. Usually when a negro offends a Democrat there, and his body forthwith becomes loaded with buckshot, if an inquest is held it is to render the verdict "died by unknown cause," or "by unknown hands," and that is the end of the matter. It is no violation of good morals or any shock to the respectability of society there to kill a negro, or a white man either if he is a Republican and attempts to meddle in politics. From the days when a bullying, cowardly Representative from South Carolina clubbed down and battered almost to death a Senator from Massachusetts in the very capitol of the United States, the dominant Democratic party of the South have almost deified their murderers and assassins when their victims were their political opponents. Americans who love justice and hate violence have tried time and again to throw safeguards around human life in the South. They argue that to be an American citizen implies that the American Government should have power and authority to protect that citizen in the enjoyment of life and property in any and all parts of the country, but this the

Democrats have always strenuously and successfully resisted on the ground that such power and authority dwelt entirely with the individual States, and any attempt on the part of the United States Government to interfere in this direction would be an interference with the sacred rights of the States. All efforts to secure immunity from mob law and assassination in the South by the interference of the American Government are denounced as waving the bloody shirt and a stirring up of strife for political purposes, and thoughtless people have come to accept this view of it. And now we see the chivalric Democrats of New Orleans, pure white-souled saints that they are, deliberately murdering helpless men whom their own courts had declared innocent of the crime with which they had been charged, and it is threatened that even the jury who acquitted them are also to be massacred. Justice does not abide where Southern Democrats hold sway.

EDITORIAL NOTES

THE N. P. is all right.

"ALTE liebe rostel nicht."

THE old flag, the old leader, the old policy.

THE N.P. suits Canada quite well, thank you.

IMPOSE an export duty upon nickel ore and matte.

THE Dominion Parliament has been called to assemble in Ottawa for the despatch of business on Wednesday, April 29th.

IN compliance with a request made by the *Toronto Globe*, we publish in another page a beautiful picture for its contemplation.

HE who would be free himself must strike a blow by advocating an export duty upon nickel ore and matte. Impose the duty.

M. LEON SAY, of the French Chamber of Deputies, declares "no free traders now exist in France, and there is no prospect of the adoption in France of free trade principles."

Grip says "Direct taxation is a bogey with which to frighten simpletons" According to this theory the people of every civilized nation in the world except those of Great Britain and *Grip* are fools.

WITH a blare of trumpets that gave forth no uncertain sound, the advocates, friends and defenders of the N.P. on March 5th marched triumphantly from Halifax to Vancouver, carrying all before them. 'Twas a glorious occasion.

THE Imperial Bank of Canada, whose head offices are at Toronto, inform us that a branch of their bank has been established in the town of Prince Albert, N.W.T. The Imperial is one of the most substantial and reliable banking institutions in Canada.

"If you are run over by a hearse it is almost a sure sign there will be a funeral in your family."—*Outing*.

On the 5th inst., the unrestricted reciprocity hearse, ran over and badly mutilated the Grit party of Canada, and now the mourners go about the streets.

At the request of the *Toronto Globe* we publish a beautiful allegorical picture in which Canada, represented as a beautiful and lovely woman, is delighted at the enjoyment her sons are deriving from the National Policy pie she has prepared for them. She keeps a supply of this pie constantly on hand.

In consequence of the Hungarian Government conceding exemption from taxation for a number of years to foreign capitalists who will invest in industrial establishments in that country, two large woolen mills are to be erected at Budapesth. The leaven of protection is doing its work in Hungary.

It may be freely confessed that Caesar was not the kind of a man to be chosen for superintendent of a Sunday school, neither was Euclid; but the square of the hypotenuse in a right-angled triangle is equal to the two other sides for all that; and it is equally evident that as a general who knows how to circumvent the enemies of protection and maintain the integrity of the N. P., Sir John takes the cake.

The Country Fire Brigades' Board, Melbourne, Victoria, Australia, will expend a large sum of money for the equipment of fire companies in that place, and Mr. William Strathmore Judd, Secretary of the Board, is asking for descriptive catalogues and price lists of fire department apparatus and supplies of all kinds. Canadian manufacturers of such goods should govern themselves according to this information.

READERS will please observe our beautiful allegorical picture in another page. Our special artist has done himself proud in producing so pleasant and instructive a cartoon. Canada, God bless her, more beautiful than ever, is beholding with benignant eyes and gratified expression of countenance her young men enjoying the fruits of her National Policy. They are eating their N.P. cake. As long as the N.P. lasts the cake will last.

"The benefits of the McKinley law are again seen in the establishment by a New York syndicate, with a capital of \$4,000,000, of a large smelting works in San Luis Potosi, Mex., for the reduction of silver-bearing lead ore. This work was done in the United States until the ore was barred out by the McKinley tariff."—*Indianapolis Sentinel*.

And by the same sign Canada can force American capitalists to establish immense works in this country for the manufacture of nickel steel by the imposition of an export duty upon nickel ore and matte. Impose the duty.

The United States Government require the use of vast quantities of nickel in the construction of armor plates for their war vessels. Their country cannot produce the article, and they have to look to Canada for it. With their characteristic selfishness they maintain a high duty upon refined

nickel, but admit the ore and matte free. This is calculated to shut Canada out of any benefit that might accrue to her by manufacturing refined nickel. Canada has the opportunity of thwarting this selfish scheme by imposing an export duty upon nickel ore and matte. Doing this would make her master of the situation, and it would be in full accord with the N.P. Impose the duty.

"If the matter of reciprocity was left to the vote of the reading people of Canada it is safe to say that three-fourths of the number would favor closer commercial relations with the United States. Editor Cassidey, of the *CANADIAN MANUFACTURER*, won't admit this now, probably, but he will have to acknowledge it some of these fine days."—*Farm Machinery*.

This is one time when "Eli" failed to "git thar." All of the voters in Canada are "reading people" and many of them prefer the *CANADIAN MANUFACTURER* for Sunday reading to any other literature, therefore they understand that unrestricted reciprocity is not what they want. The Dominion election of March 5th instant, should force "Eli" to acknowledge the "offness" of his guess.

"WITH our protective tariff," said Mr. Chute, an American, "the Scotchmen can't compete with us in this country; they can't afford to pay the heavy duty on finished goods." He went on to say that of the 40,000 hands in the jute mills of Dundee, 17,000 belonged to families whose home was a single room.—*Monetary Times*.

This means that if it were not for the N. P. this country would be flooded with foreign goods made with labor with which we could not possibly compete as regards cheapness. The working classes of Canada, who are thrifty and well to-do as compared with those in Dundee, will hesitate long before they will consent to be reduced to the emergency of belonging to families whose homes are a single room, as is the case with 17,000 hands who are employed in the jute mills of Dundee.

"THE restrictionist organs object to the statement that "our present tariff is a backwater which keeps back the stream of progress." There is not a wage earner in London who has not been taught the truthfulness of this statement by dire experience. High taxation is an effectual bar to prosperity."—*London Advertiser*.

The wage-earners in every city and considerable town in Canada with the exception of London and the city of Quebec differ widely from the *Advertiser*, as was shown at the late election. There is no city or town in Canada that does not show a higher condition of prosperity than London and Quebec; and if these cities desire to keep up with the procession of Canada's rapidly advancing prosperity and greatness, they must abandon and reject the advice of such pessimists as the *Advertiser* and give hearty support to the N.P.

"WHAT is a tariff? It is a tax—a tax levied by the General Government upon commodities that the laboring man as well as others use. It is a tax that takes hold of everything, from the crown of your head to the soles of your feet; that taxes your hat, your coat, your vest, your breeches, your boots, your shirt, each and every implement which you use in your mechanical, mining, fishing, lumbering and agricultural operations. And now to tell me that to take the laboring man and tax him from the top of his head to the soles of his feet, and to tax

him on everything that he uses in his trade, and to tax him heavily, is to benefit him, seems to me to be nothing but absurdity."—*Hon. Oliver Mowat.*

You don't say so. Pray tell us now, Ollie, dear, how would it be with direct taxation? The laboring man of Canada seemed to think differently from Mr. Mowat on March 5th. The "absurdity" is with Hon. Oliver.

"THE January *American* speaks of Canada's consumption of carpets as moderate, the size of the Dominion considered. For all that, however, Canada is one of the best foreign customers this country possesses, and it has bought more carpets from us last month, than France, Germany and Belgium combined. That is to say, five millions of people in the Dominion spent more money on British carpets than the eighty-five millions or so included in the populations of the countries named."—*American Carpet and Upholstery Trade.*

That is to say, during the year 1890 Canada imported from the United States 66,424 yards of carpeting valued at \$17,159, while the importations from Great Britain aggregated 2,700,972 yards, valued at \$1,124,567. The total importation of carpets into Canada last year amounted to 2,776,791 yards valued at \$1,147,416, of which the United States furnished to the extent of 1½ per cent. only. That is to say, of all the money spent by Canada last year for foreign carpets, out of every 100 cents only 1½ cents went for American carpet.

"PEOPLE imagine that Canada is what she was twenty years ago, a big lumber country with some large wheat fields in the cleared tract. But Canada has made proportionately as much progress as ourselves during the last two decades, and the factories that dot the most populous provinces are competing actively with our own. Nor are our northern neighbors backward in their desire to find a foreign market for their goods. They propose to establish commercial agencies in Mexico, Buenos Ayres, Rio de Janeiro and other South American cities. A steamship connection is also contemplated, and this, in connection with the Australian service, will insure a transportation by means of which the introduction of raw materials from countries such as we have mentioned will be allowed in bond for export."—*New York Australasian.*

Our esteemed contemporary should have qualified its first noun by prefixing the adjective pronoun "some." Some people may imagine that Canada is what she was twenty years ago, but the perspicacity of the *Australasian* has discovered an important fact that it has done well to bring to the attention of its readers. But most of these have probably discovered this fact long ago from the advertising cards of Canadian manufacturers so liberally displayed in its columns. Canada is a lively and progressive element in the economy of American civilization.

IN one of *Æsop's* fables a story is told of a frog that wanted to expand itself to the size of an ox. It was a conceited idea on the part of froggie, but the frog's conceit of its importance was small in comparison with that of *The Manufacturer*, of Philadelphia. Hear it:—

"No amount of effort will serve to compensate Canada in other quarters for obstruction of her trade with this country. The McKinley bill intensified this longing, because it made the Canadian situation actually desperate; and now we find even the Tories compelled to concede something to the demand for reciprocity in order to maintain their hold on power. In this condition of things we are asked to give the Canadians

outright free trade with us; to surrender control of our own tariff and of our Customs houses. We have reached a point where Canada must have better trade with us or suffer vast harm. To give to her now all the benefits that would come from annexation would be to postpone annexation indefinitely. To make the granting of free trade privileges conditional upon joining her lot with ours will be to hasten annexation. The destiny of Canada is to be absorbed in this Union, and no American ought to consent to any arrangement which will defer its fulfilment."

This is a bad case of Anglophobia. A fly blister is recommended.

A DEVICE for the magnetic separation of low grade iron ores has been invented and patented in the United States and Canada, and works are now being erected at Coe Hill, Ontario, where this device is to be put into practical operation, concentrating the ores found in that vicinity. We are informed by Mr. S. J. Ritchie, who is interested in the enterprise, that nearly all the necessary machinery for these works has been made, and that operations will be commenced at an early day. The device is described as being a rotary magnetic separator, and a plant recently erected at Dover, New Jersey has handled as much as seventy tons a day, taking ore containing only from 20 to 40 per cent. of metallic iron and producing a concentrate containing 67 per cent. of iron, thus putting the product almost on a par with the richest ores of the Lake Superior mines. Perhaps the most important feature in the device is the removal of phosphorus. The presence of phosphorus in ores makes them unfit for the Bessemer process. The machine under consideration removed all the phosphorus except a trace, so that the concentrates were equal to the best Swedish ores for Bessemer use. The importance of this on the iron industries may be epitomized in the remark that "what the devil is to religion, phosphorus is to iron."

THE *Toronto Globe* calls attention to the remarks recently made by Prof. Shaw at the South Lanark Farmers' Institute, which, it says, deserves the attention of farmers all over the Province. Prof. Shaw is satisfied that the era of growing grain for selling is gone, and that the hope of the farmers for the future lies in stock and stock products. With proper attention to this matter he believes that the value of our live stock could be increased from \$100,000,000 to \$200,000,000, and the export of live stock from the Dominion could be increased to \$70,000,000. This journal has frequently called attention to the large and rapidly increasing trade of Canada with Great Britain in stock and stock products, and of the superior advantages we have over the United States in this direction; and we have also frequently shown the impossibility of Canada ever successfully contending with India and Russia in growing wheat for the British market. Australia and South America may be able to send refrigerated dressed meats to Britain much cheaper than we can do, but Canada possesses natural advantages in the shipment of live cattle to that country that can never be equalled by Australia, South America or even the United States; and it is these advantages that should make us wealthy. These advantages now make Canadian cattle worth from \$8 to \$10 per head more in the British market than American cattle.

"THE charge that unrestricted reciprocity would prove detrimental to Canada's best interests inasmuch as it might tend to diminish the importation of English manufactured goods to the Dominion, is fully met by the Hon. Mr. Laurier, leader of the Canadian opposition. He denies that it is "veiled treason" and would make direct taxation in Canada an inevitable result. On the contrary, he shows that the producing power of Canada is vastly in excess of the consuming power; and that as a consequence new markets must be found abroad, and that the United States with her population of 65,000,000 people of kindred origin make of the neighboring nation Canada's best market."—*Farm Machinery*.

Just so. Carpets for instance. Canada has free wool. There are quite a number of carpet factories in Canada, but they cannot supply the home demand, and last year Canada imported 2,776,791 yards of carpet valued at \$1,147,416. The Canadian duty on carpeting is 25 per cent. and the American duty 50 per cent. The American duty on wool is 12 cents per pound. The imports of American carpet into Canada last year were only 1½ per cent. of the whole. Under unrestricted reciprocity the Canadian duty would be advanced to the American level, and instead of paying 25 per cent. on the 2,700,972 yards imported from Britain last year, we would have to pay 50 per cent., or else buy high-price American carpet. It would be a nice soft snap for American carpet manufacturers to sell Canada at least 3,000,000 yards of carpeting where they now sell us only 66,000 yards. Declined with thanks.

SPECIAL ADVERTISEMENTS.

Advertisements will be accepted for this location at the rate of two cents a word for the first insertion, and one cent for each subsequent insertion. Subscription \$1.

FOR SALE, in Kent County, Michigan. The Buchanan Mill property consisting of a first class lumbering mill the extensive water power in connection with it, including the entire power furnished by the river, with real estate on both sides of sixteen acres, situate one mile from Main Street of Lowell, a rich farming country surrounding an excellent location for paper mill, furniture factory, woolen mill and the many uses that require power. Also a splendid home and farm of 87½ acres with buildings, fruit, evergreens, etc. For further information call at the premises of JAS. R. BUCHANAN, Lowell, Michigan.

A RISING TOWN.—The Town of West Toronto Junction possesses exceptional residential and business advantages, and promises to speedily become the chief manufacturing centre of the Dominion. This town has the following railways, viz: Grand Trunk Main line (Carlton West Station); Northern Division of the Grand Trunk (Davenport Station); The Toronto, Grey and Bruce, and Credit Valley, and Ontario and Quebec Divisions of C.P.R., and Belt Line Railway (now in progress). The town offers to large manufacturers free sites, water at cost and exemption from taxation. Any information regarding the same will be given upon application to ROBT. J. LEIGH, Town Clerk, or D. W. CLENDENAN, Mayor.

WEST TORONTO JUNCTION'S ENTERPRISES—The ten large factories which have located at West Toronto Junction during the past three years are all doing large trades. The "Barnum

Iron and Wire Works," the "Toronto Rolling Mills and Forging Company," and others about to locate will swell the paying industries of the town and augment its population. A large number of fine residences and business blocks have added to its appearance and to its facilities for supplying the peoples' wants. A perfect fire alarm system, (the "Gaynor") and an efficient system of water works, both now in operation, with sewers, electric lights, and improved streets now contemplated, will add to the protection and the comfort of the people and their houses. Free sites, free water, and exemption from taxes are inducements offered to first-class manufacturers, and it is now acknowledged by all that Toronto's western suburb, with its great continental railway connections, is destined to be among the most prosperous cities of Canada. Dr. Carleton is Chairman of the Factory Committee.

THE battle between Prof. Huxley and the defenders of theology is still going on. The *Popular Science Monthly* for April will have an essay by the Duke of Argyll, entitled, "Professor Huxley on the War-Path," in which the professor is charged with treating theological questions inconsistently with his treatment of scientific subjects.

Good Housekeeping has for its frontispiece in the March number an illustrated poem entitled "Sugaring Off," which is almost as enjoyable as a visit to the sugar-camp itself; there are special papers on the preparation of fish and oysters, one regarding Easter eggs, and several poems appropriate to the Lenten season. "At Flood Time" is a beautiful story by Mary Clark Huntington, and there are the usual articles, serial and otherwise, touching all departments of the home life. Clark W. Bryan & Co., publishers, Springfield, Mass.

WITH its issue for March 15, *The Mechanical News*, of New York, began its twenty-first year. With that issue, also, it appeared in a new form—that of a quarto of thirty-two pages, with an attractive cover. This change will be recognized as a desirable improvement; and it is, moreover, in accordance with the prevailing tendency of late years among journals of every class. In its new form *The Mechanical News* will be more convenient for preservation, and will be more than ever deserving of such care in its inviting exterior, as well as in the quality of its contents.

D. LOTHROP & Co's magazines are unlike clothes in this respect: they will fit each member of the family, from babyhood to old age. If you take *Babyland* for the first born, it will be ready for the second before the first has grown to understand *Little Men and Women*, etc. It is a remarkable fact, that any growing family can take all of Lothrop's magazines and each will not conflict with the other. If the efforts of this firm were properly understood by those who desire to educate a family of children, their presses would be taxed to their utmost capacity. Write to D. Lothrop & Co., Boston, Mass., and tell them the age of your child and they will fit it with a magazine for from 50 cents to \$2.40 per year; finely illustrated.

THE *March Wide Awake* bristles with good things, from Margaret Sidney's inimitable "Pepper Serial" to Miss Poulsson's "Scandinavian Witch Story;" from Hon. John D. Long's article on "Our Government," with its page portrait of Hamilton, to Mrs. Wm. Claffin's letter on the "Behavior of Young People to their Elders and Superiors;" from Oscar Fay Adams' illustrated "visit to Winchester College to hear the boys sing the famous old commencement song, "Dulce Domum," to Mrs. Ormsbee's graphic account of "How Grandmother's Spoons Were Made;" from articles by the learned men of the Smithsonian Institution to the four sparkling pages of original anecdote known as the "Men and Things" pages; these and many other stories, poems, pictures and articles give a wide range of first-class family reading. *Wide Awake* is \$2.40 a year. D. Lothrop Company, publishers, Boston.

FROM the Trades Publishing Company, Philadelphia, we have received Kendrick's fifth annual Directory of the carpet and upholstery industries for 1891. This work contains the old and new tariff on carpet and upholstery goods, alphabetically arranged, the names and addresses of the leading jobbers and retailers of carpets and upholstery goods in the United States, and has been carefully edited at the office of the *American Carpet and Upholstery Trade*, Philadelphia. The tables of carpet and upholstery manufacturers

are of special value, disclosing at a glance the strength of the two industries in the several states and towns. The number of looms engaged on Brussels, tapestry, Wilton, velvet and ingrain carpets is given in detail, while the definition and description of various carpet fabrics supplies information much in demand and difficult to obtain. This Directory is the recognized authority on the subjects treated on, and the price (\$1.00 per copy), almost nominal, the labor expended considered.

THE *Illustrated American* for the week ending March 14th opens with a timely article on the political situation in Canada and the opposing leaders, which will be read with interest in view of the spirited canvass just ended. The patriotism of American women is treated of in connection with an account of several organizations formed by women recently to keep alive the memory of events in American history. Some unique and charming sketches made at the dog show in New York by Arthur Jule Goodman are given, together with descriptive text, and equally odd is an account of a visit to a Chinese theatre. The question who will be the next Pope is discussed with the aid of portraits of the most prominent Cardinals, and the usual features of this news magazine go to make up an uncommonly attractive number. The frontispiece is a portrait of Hon. Charles Foster, the new secretary of the United States Treasury.

Outing for March is one of the strongest numbers ever published. Lovers of the dog will find that, as if anticipating the acquisition by an American of the world-famed St. Bernard, Sir Bevidere, it contains a St. Bernard article with his portrait by Moore, a perfect gem of draughtsmanship, to say nothing of the seven other champions which adorn it. Canoeists will enjoy the chatty episodic manner in which C. Bowyer Vaux tells his "Tales by the Winter Camp Fire." Yachtsmen will peruse with singular profit the first chapter of Capt. Roosevelt Schuyler's "Evolution in Yacht Building;" athletics, with equal zeal, the instruction which Prof. Austin imparts in "A Bout With the Gloves," and National Guardsmen the attractive article, "How Old England Trains Her Red Coats." The cyclist and naturalist will find fresh fields of enterprise open to him in following the tracks of *Outing's* special representative through the Azores with rod, gun and camera, whilst in "Landscape Photography" Ellersie Wallace pours fourth from the fund of his experience hints and directions of the greatest value. Turning from these varied sports, pastimes and recreations, not for getting "Association Football," which finds a champion in P. H. Roberts, the March *Outing* concludes Edgar Fawcett's remarkable novelette, "The Pink Sun," and contains a charming pastoral romance, "Gert," alone worth the price of the magazine.

A GREAT many people have lately been swindled by so-called prize competitions, the only object of which was to deceive the public and realize money for the promoters. Mushroom journals have sprung up and offered wonderful inducements to subscribers, who, on taking the cunningly laid bait, found both the journal and the prize worthless. The publishers of the *Dominion Illustrated* have learned that doubts are expressed regarding the genuineness of the offers they have made in connection with their prize competition. To set all doubts at rest they now announce that any dissatisfied prize-winner in their competition may exchange a prize for the cash value at which it is rated in their published list. Their only object in offering prizes has been to secure a larger permanent circulation, and to this end their journal has also been greatly enlarged and improved. The nature of the prize competition makes it a beneficial literary exercise for all, apart altogether from the question of prizes. A journal with a well-established reputation, and which is constantly aiming to improve its literary and illustrative contents is not of the sort that breaks faith with subscribers. The response to their generous offer has already been most gratifying. On receipt of 12 cents in stamps the publishers (The Sabiston Lithographing and Publishing Co., Montreal) will forward to any address a sample copy of the journal with terms, full particulars, etc.

NEARLY everybody has read in the daily papers of the terrible Spring Hill colliery disaster, and nearly everyone has shuddered in the reading. While the papers have given us a keen insight into the terrible scenes that have taken place around that colliery mouth, it has remained for the *Dominion Illustrated* to portray the awful calamity in a manner that cannot fail to touch even the stoutest heart. From its pages the people of Canada will be able to gaze on many of the sad scenes that have taken place in that little mining town of Nova Scotia. There are several illustrations of the morgue, always surrounded by an inquisitive crowd, and the illustrations go still further and take us inside that grim building, and show us bodies lying there awaiting identification. The cemetery is illustrated several times, and there are pathetic views of a number of the simple funerals. Views of Spring Hill and the mine en-

trance comprise the remainder of the series, which will do more for the relief fund than anything that could be written or said. The remainder of the illustrations are excellent, and comprise a full-page portrait of Chief Louis, of the Micmac tribe; Bonsecours Church, known to us so well; repairing the steamer St. Lawrence on Sorel; a view of the Duke of Wellington's regiment, now quartered at Halifax; the Bonsecours market fire, and several others. The letterpress is, as usual, excellent, containing much that is interesting.

The charming personality of the Princess of Wales in public has won her hosts of warm friends, but in *The Ladies' Home Journal* for March Lady Elizabeth Hilary, her almost constant attendant and a very intimate friend, gives us a glimpse at the Princess in her private life—a sweet woman and a sterling wife and mother, worthy of all the admiration which is bestowed upon her. The article is richly illustrated, and will attract as wide attention as will Mrs. P. T. Barnum's discussion, "Moths of Modern Marriages," which appears in the same number. It is to be regretted that Mrs. Barnum has not written more, as this, her first published article, shows a singular power and grace. Quite interesting in their way are the delightful portrait sketch of Mrs. Gladstone, by a bright American girl who recently spent a day with her, and the excellent articles by Mrs. Jenness-Miller and Miss Hooper on "Dressmaking as a Profession." Mrs. A. D. T. Whitney's brilliant serial, "A Golden Gossip;" Mary E. Wilkins' story, "A Rustic Comedy," illustrated by Kemble; suggestive articles by Rose Terry Cooke and Miss Le Garde on "Self-Support and Gymnastics for Girls;" George W. Cable's second paper on "Teaching the Bible," and crisp contributions from Anna Katharine Green, Marshall P. Wilder and Hezekiah Butterworth are some of the salient features of a number which has not a weak spot anywhere. Issued at \$1.00 a year by the Curtis Publishing Company, 433 and 435 Arch St., Philadelphia, Pa.

CUSTOMS DECISIONS.

THE following decisions have been made by the Board of Customs since the revision of the tariff by Parliament, in force on and after March 28, 1890:

Artists' color boxes, japanned, 35 per cent.; Apricots, green, 20 per cent.

Bone dice, 20 per cent.; Bone counters, 20 per cent.; Birch extract, \$2 gal and 30 per cent.; Beads, composition and vegetable ivory, in bulk, 40 per cent.; Boxwood rules, 35 per cent.; Brass hair pins, 30 per cent.; Blotters, printed but not illustrated, 35 per cent.; Buttons, collar and sleeve, made of rubber, 5c. gross and 20 per cent.; Buttons, collar, gold, gold plate, brass, pearl and bone, 25 per cent.; Buttons, cuff, gold and gold plate, 25 per cent.; Buttons, shoe, made of papier mache or composition, 5c. gross and 20 per cent.; Bead necklets, gold and silver, 35 per cent.; Beads, prayer, strung permanently on wire, etc., 35 per cent.; Bead necklets, glass, 35 per cent.; Beads and shell bracelets combined, 35 per cent.; Butter and cheese triers, 35 per cent.; Bath tubs, copper, fitted up in frame or stand of wood, 35 per cent.; Bone meal fertilizer, 20 per cent.; Brass tubes, tinned, 30 per cent.

Curd knives, 35 per cent.; Carpenters' rules, 35 per cent.; Castile soap in cakes, not perfumed, 2c. per pound; Canvas shoes, 25 per cent.; Cinchona bark, powdered, 20 per cent.

Extract of hemlock bark, 20 per cent.; Electroliers, if not capable of being used for any other purpose than electric lights, 25 per cent.; Electric meters, 25 per cent.

Fish pumace, 20 per cent.

Gun tools, such as reloading sets, etc., 35 per cent.; Gum, chicle or sappato gum, 20 per cent.; Green baize, 20c. per pound and 20 per cent.; Galvanized iron sinks, 35 per cent.; Galvanized boilers 35 per cent.

Hay knives, unfinished, \$2 per dozen and 20 per cent.

Iron shelf brackets, 30 per cent.; Iron drums, containing caustic soda (sec. 8 Tariff Act), 20 per cent.; Insurance blanks, circulars, etc., not illustrated, 35 per cent.; Insurance blanks, circulars, etc., if illustrated 6c. per pound and 20 per cent.; India rubber water beds, 35 per cent.

Machine bits, when imported separately from machine, 35 per cent.; Mince meat, 1½c. per pound and 35 per cent.; Mushroom spawn, 20 per cent.; Middlings, a low grade flour, 75 cents per barrel.

Nubian enamel or baking Japan varnish, 20c. per gallon and 25 per cent.; Nectarines, green, 20 per cent.

Potted and specially prepared meats, 3c. per pound; Pick eyes or moulds, 1½c. per pound, but not less than 35 per cent.; Platinum

primers or electric fuses, 35 per cent.; Photographic dry plate emulsion, 20 per cent.
 Rubber balls, ornamented, 25 per cent.; Rhubarb roots, powdered, 20 per cent.
 Sheet rubber, soft, 25 per cent.; Scythe stones 30 per cent.
 Transfer pictures or ornaments, 6c. per pound and 20 per cent.; Toilet paper, 25 per cent.; Tallow stearine, 3c. per pound; Turmeric, ground, free.
 Vises, 35 per cent.
 Wooden mallets, 35 per cent.; Whip lashes, 50c. per dozen and 30 per cent.; Whip stocks or handles with leather loop on end, 50c. per dozen and 30 per cent.; Wood doorknobs, plain, unmounted, 25 per cent.; Wheat screenings, 15c. per bushel; Woods' medical and surgical monographs, 15 per cent.

CANADIAN WOOL GROWERS AND PROTECTION

DURING the recent political campaign Mr. Henry J. Bird, of Bracebridge, Ont., a large manufacturer of woolen goods, wrote a letter giving his views as to how the N.P. benefited the Canadian wool grower, and showing the relative prices of wool before and since the adoption of our present system of protection, from which we take the following:—

First, I call your attention to the fact that in recent years the production of wool in the Australasian and South African Colonies has developed to such an enormous degree that the price bid at the London Colonial Wool Sales virtually regulates the price of all wools the world over except in so far as modified by local tariffs and requirements. These sales take place quarterly, lasting four to six weeks and are frequented by buyers from all the principal European and American wool manufacturing centres. In 1885 the wool sold amounted to ninety million dollars, of which sixty million dollars' worth was re-exported. How insignificant then in comparison with these figures is the amount that Canada puts on the market or the variation in price we could effect.

Now, I find by the trade tables compiled under the direction of Sir R. W. Rawson that the average price of these Colonial wools has been steadily decreasing for the past twenty-seven years, his exact figures given in pence and decimals of a penny for the alternate years as follows:

DATE.	AVERAGE PER POUND.
1864.....	18.02
1866.....	17.59
1868.....	14.36
1870.....	14.42
1872.....	14.51
1874.....	14.71
1876.....	14.54
1878.....	13.90
1880.....	13.66
1882.....	12.27
1884.....	12.09
1885.....	10.05
1886.....	9.08

Now, the Australians have recently been at great expense in getting the most improved breeds of fine wool sheep so as to enable them to supplant the fine wools in the European Continental Market; and yet, notwithstanding this great improvement in the intrinsic value of their wools the price in 1886, the last year of which I have got any statistics, is only just over the half of what it was in 1864.

So wool has gone down everywhere, and we cannot help it; but still it lays within our means to mitigate this fall to a certain extent and we will see which of our Canadian parties have been doing this.

As I am writing for Muskoka and Parry Sound farmers, I will remind them of the prices I have paid them during the nineteen years I have been privileged to receive their ever-increasing patronage; and to avoid error will confine myself to cash prices except when I make special mention.

I came here in 1872 when Sir John A. Macdonald was in power, and that year I paid the highest price I have ever given for wool. That year I bargained with Mrs. Shaw for her wool at 42 cents cash or 44 cents trade and bought Mrs. Thos. Fitzmaurice's at 45 cents trade; but as I could not get much in Muskoka I bought from Messrs. Graham & Lount, of Barrie, at 50 cents fleece and 45 cents broken.

The very next year Alex. Mackenzie having come into power, the six lean years commenced, and wool took such a sudden and extreme fall, far in excess of the gradual outside fall, that I bought wool at 27 cents. And in the following years kept lowering as shown in the following list of average cash prices:—

1874—26 cents to 28 cents bought of J. Hallam, Toronto, at 28 cents and 35 cents.

1875—26 cents to 28 cents bought of J. Hallam, Toronto, at 25 cents and 30 cents.

1876—20 cents to 25 cents bought of Bingham, Orillia, at 20 cents.

1878—20 cents to 27 cents bought of Ogle, Orillia, at 22 cents and 25 cents.

1879—17 cents to 18 cents.

1880—24 cents to 28 cents W. H. Spencer 25 cents; Leadley, Toronto, 24 cents, 27 cents, 31 cents.

1881—22 cents to 24 cents.

1882—18 cents to 24 cents mostly 21 cents.

1883—17 cents to 20 cents " 20 "

1884—17 cents to 24 cents " 20 "

This is, I think, proof absolute that while the general decline in the price of wool is universal the drop in Canadian took place almost entirely during Grit administration and has been altogether checked by the influence of our National Policy, although the English market went down over 34 per cent. or about 9½ cents per lb. between 1878 and 1886. Also, that in spite of this continued fall in the English market our National Policy actually raised the price for some years, for the low price reached in 1879 was before the trade policy of Sir John had time to act upon our commercial market, and I am even now paying fully as much as I did in 1879, for this past season I paid 24 cents cash for good lots and never less than 18 cents for ordinary broken wool.

The improvement in combing machinery which now enables them to work on much finer and shorter wool than formerly, has also tended to force our Canadian wools out of the fine worsted market; and the recent fashions for soft finished goods in preference to hard finished has also militated against the use of long wools.

So that all things considered I think our farmers have much reason to be thankful that our N. P. has enabled Canadian manufacturers to use so large a quantity of wool and to give the price that we have paid which most certainly we could not have done under Free Trade.

As regards the profits we are alleged to have made, I can safely assert that while I do a very much larger trade and pay a higher rate of wages under Sir John's reign than under Hon. Alex. Mackenzie's, I do not make as much per lb of wool worked; nor do I even expect to make as much per working hour.

THE NEW TEXTILE SUBSTITUTE.

THE utilization of pine tree leaves for the manufacture of bagging, matting, etc., has become an industry of recognized importance, and in North Carolina a company has for some time been in operation for thus producing matting and bagging, with a capacity of 2,000 yards, the material being in every respect equal to jute, as well as cheaper. The process appears to be a simple one. The leaves of the long-leaf pine are gathered in a mass, and, on being weighed, are thrown into a large vat, where they are boiled in alkali at a low temperature for about twelve hours; then, after being thoroughly soaked in the same vats, they are taken by a continuous automatic process through the rubbing, wringing, carding, drying, recarding, drawing, roving, winding and weighing machines, in the latter of which the substance becomes an excellent article of bagging, and, after going through a calendering apparatus, is ready for use and the market. After leaving the wringer the process of manufacture is very nearly identical with that of cotton goods. As a material for upholstering purposes and for carpet lining it is found well adapted. It appears that for every foot of pine timber there is one pound of green leaves; nor is the tree at all injured by this treatment. Though capable of being worked up successfully into the other fabrics above named. The principal use of the leaves thus far has been for the manufacture of bagging.—*Boston Journal of Commerce.*

In an interview in Detroit a few days ago, C. H. Brotherton, of Port Arthur, a leading Canadian capitalist, known recently in connection with the development of the Sudbury nickel mining district, said that it is only a matter of two or three years, at the outside, when iron ore will be shipped from the Ontario district near Port Arthur. "Together with several others I have 2,000 acres of land located for iron," says he, "and we are this winter surveying 10,000 acres more. The Canadian Government requires us to make our own surveys, and pay \$2 an acre besides, but it gives an absolute title. Mr. Van Hise, State geologist of Wisconsin, Mr. Pumphelly, of Providence, R.I., and Mr. Smyth, a Michigan geologist, have also just purchased 10,000 acres all for iron."

Manufacturing.

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. Subscription \$1.

THE carriage factory of Messrs. Fralick Bros., at Picton, Ont., was destroyed by fire March 4th.

THE furniture factory of Messrs. Hess Bros., at Listowel, Ont., was destroyed by fire March 8th.

THE manufacture of Martini rifle ammunition is to be begun at the Dominion cartridge factory at the city of Quebec.

THE McLaren Lumber Mills at Ottawa, which were recently destroyed by fire, are to be rebuilt the coming season.

MR. WM. H. HUTCHINS is about erecting a three-storey brick machine shop on Ontario Street, Toronto, at a cost of \$2,000.

THE spool factory of the Spool and Excelsior Company, Newcastle, N.B., was destroyed by fire, March 4th, loss about \$5,000.

MESSRS. PATTERSON & CORBIN, St. Catharines, Ont., have been voted a bonus of \$9,000 by that town to induce them to erect their proposed large street car factory there.

THE Ottawa Powder Company, Buckingham, Que., is being incorporated with a capital stock of \$25,000, and will manufacture gun and blasting powder, fuses, detonators, etc.

MESSRS. GRAHAM, HORNE & CO., Vermillion Bay, N.W.T., have been offered a bonus of \$8,000 by Fort William, N.W.T., to remove their saw mill from the former to the latter place.

THE McLaren Lumber Company, of British Columbia, have begun the erection of another large saw mill at Barnet, that Province. It will be as large as the one already in operation there.

THE Toronto Drop Forge Company, Toronto, is being incorporated with a capital stock of \$40,000, to manufacture iron, steel and copper forgings, architectural and other iron work. Head office, West Toronto Junction.

MESSRS. LEQUIME & GOODING are erecting a saw mill at Okanagan Mission, B.C. The mill, the machinery for which is now on its way from Ontario, will have a twenty-five horse-power engine, a thirty horse-power boiler and a planer, butting saw and shingle mill attached.

THE Essex Brass & Iron Company, of London, Ont., has been incorporated with a capital stock of \$30,000, for the purpose of carrying on a general brass and iron foundry business, including the manufacture of all kinds of brass, iron and other metal goods, electrical and other machines and appliances.

THE Deseronto Navigation Company, Deseronto, Ont., will build a fine side-wheel passenger steamer to ply on the route between Picton and Trenton, Ont. She will be 160 feet long, 22 feet wide and 9 feet deep, will have accommodations for 800 passengers, and will have a guaranteed speed of 18 miles per hour.

It is reported that Mr. Clarence DeBeck, lately of the Brunette mills, New Westminster, B.C., has completed arrangements for starting a large saw mill concern on the northwestern coast of the mainland. The mill will have a cutting capacity of 100,000 feet per day, and will be a modern concern in every respect.

An order has been given by the Windsor, Walkerville & Amherstburg Street Railway Company to an iron concern in Johnstown, Pa., for 225 tons of rails and ten cars, with electrical machinery for operating the latter. It is expected that the cars will be running as far down Detroit river as Brighton Beach by June 1st.

THE large band saws used in Messrs. Stetson & Cutler's Pleasant Point mill and in Messrs. A. Cushing & Co's mill give splendid satisfaction. They saw the lumber smoother than other saws, make less saw-dust and save a board or two in almost every good sized log, or about 1,000 feet of lumber in every 8,000 sawn.—*St. John, N.B. Gazette.*

THERE is situated at Niagara Falls, Ont., the T. Martin & Bro. Manufacturing Company with a capital stock of \$350,000. They have erected a large brick mill 50x150 employing fifty hands and are increasing this number. They claim to be the only firm in the Dominion weaving suspender braces, garter webs, braids, cords,

etc. The N.P. is to blame for the establishment of this solid concern.

A TEST was made of the new electric street railway in Fort Rouge, Winnipeg's southern suburb, last week, and everything worked admirably. It was voted a great improvement over the horse cars now in use in the city. This is said to be the first Edison electric railway system put in operation in Canada, and the car used for the test was the first car of the kind built in Canada. Winnipeg still leads.—*Winnipeg Commercial.*

ARRANGEMENTS have been made between the Canadian Pacific Railway and the Furness Line for the shipment of Ottawa lumber over the C.P.R., and thence to Great Britain by the Furness Line steamers. This lumber was formerly shipped from Portland, Me., and Boston, and the fact that such an arrangement has been made goes to show that Canadian freight going to Portland, Me., and Boston, can be handled to advantage at St. John in winter.

THE Dominion Leather Board Company, of Montreal, have purchased the property and water power at Sault au Recollet, near Montreal, formerly owned by Messrs. McNeven & Co., which consists of saw mill, grist mill and the well-known paper mills of the Sault au Recollet Paper Company, and are making extensive alterations there, and will move their leather board and friction board mill there. They will continue to manufacture roofing, sheathing and lining felts in the paper mill.

THE Dominion Suspender Company, of Niagara Falls, Ont., have just come out victorious on a patent arbitration case over their "Hercules brace." A firm in the United States attempted to get a similar brace patented, but the Government arbitrator decided that the Dominion Suspender Company were the first and original inventors of this valuable patent. The Americans thought they were the first to get out a new article, but they found this brace had been on the market in Canada a year before.

MR. JAMES HOUGH, JR., the artistic printer and bookbinder, Guelph, Ont., has sent us an elegant pocket souvenir containing specimens of the work done by him. These specimens illustrate the character of the fine job work he is prepared to turn out on short notice, and the variety of them indicates that Mr. Hough is fully acquainted with his business and has all necessary facilities for doing it. His establishment is very large and is equipped with everything that could be desired in executing the very best job work. He will take pleasure in answering all enquiries.

THE new sewer pipe machinery bought for the Victoria Pottery and Terra Cotta Company was tested yesterday afternoon. After considerable examination the pipe was found to be superior to any before manufactured. The company are building large additions to their already well equipped establishment. Four new boilers have been purchased, and, besides the old engines which are in use, a new 100-horse-power engine is in operation. Pan mills have been ordered from Akron, Ohio, and three or four more burning kilns are to be built. More drying buildings are projected, and it is expected that all the above work will be completed within the next thirty days.—*Victoria, B.C., Colonist.*

MESSRS. A. HARRIS, SONS & CO., Brantford, Ont., have sent us their 1891 illustrated catalogue descriptive of their labor-saving harvesting machinery manufactured by them, comprising cord-binding harvesters, mowing machines, horse rakes, self-delivery rakes, etc. All the various machines manufactured by this company are finely illustrated so that the construction and operation of them is made perfectly intelligible; and appropriate reading matter describes the advantages of their use and the improvements that have been made in them from time to time since they were first introduced. The company maintain branch warehouses and agencies in every important town in Canada from Nova Scotia to British Columbia, also in Great Britain, Europe, Australia, New Zealand and South America.

THE new tobacco factory of Messrs. George E. Tuckett & Sons, Hamilton, is claimed to be the finest, largest and best arranged in Canada, and the full equal of any in the United States. It is of brick, with red stone trimmings, four stories and basement, with two extensions for engine-house and bonded warehouse. The building is 200 feet long by 75 feet wide, and the extensions are 40x60. It is substantially built, special pains having been taken to make it as near fire-proof as possible, as well as comfortable and healthy for the employees. The factory is connected with the tobacco warehouse by a tunnel 150 feet long. The casing room, which is 200x75 feet, had not a pillar in it. The rolling room has tables for 300 stemmers and rollers. The second story is used for drying and packing, and the first for packing and shipping. The offices are finished in black ash. The basement is used for cutting and packing. There are two elevators, and the stairs are iron with stone landings.

THE Dodge Wood Split Pulley Co. inform us that they have lately completed an improvement in the form of a small "split" pulley, and that they can now supply to power users and the trade in general their patent wedge split pulley, in any size to within one inch of diameter of shafting. A perfect small split pulley of any size, as small as three inches in diameter and any width of face, can now be had from stock as in the case with their regular stock pulleys. This will be considered a great advantage by power users throughout the Dominion. A special price list has been issued for this pulley, and will be cheerfully mailed on application. This company inform us that they are kept constantly busy filling orders for their belt and rope pulleys which are now very generally introduced from coast to coast. They invite investigation, and a trial from manufacturers wanting pulleys and who have not yet tried the "Dodge" patent.

THE Cant Bros. Company, of Galt, Ont., have just brought out a new double rip and cut-off saw which is especially designed for cutting to accurate uniform lengths all kinds of material used in furniture and cabinet factories. It has two table frames, each four feet long, which can be rapidly adjusted to suit any length of material from eight inches up to six feet six inches long; after which the operator can cut off both ends of the material at one operation absolutely square. The tables, which are of iron, remain level, but the arbors carrying the saws can be raised or lowered by means of a hand wheel. The machine has a sliding cross-cut gauge which can be readily adjusted for different lengths, and which can be instantly removed or replaced. One table frame has a ripping gauge which can be levelled to varying angles. No sliding carriages are necessary, as the arrangement of the gauges is such that one operator can work with a ripping saw and the other can cut both ends of the material at once any length from twenty-two inches to five feet.

THAT many industries must start up in the vicinity of Fredericton within a short period there can be no doubt. The facilities are here, and the energy; all that is wanted is the capital. This must come, for where there is a good chance for a profitable investment it is soon taken. The Maine company, that lately purchased the 55,000 acres of land on the Keswick and tributaries intend in the near future to erect a large pulp mill with the best machinery at the North Forks of Keswick, called Corn Ridge stream, about two miles from Zealand station, on the northern division of the C. P. R. in New Brunswick. The whole country is heavily wooded with all the hard woods, and the land is most carefully guarded, not a stick even for a handspike being allowed to be cut, and no one is permitted to tap the maples for sugar sap. There is talk also that this company will erect saw mills at Cardigan station on the same railroad for the manufacture of all kinds of small hardwood goods, such as fruit boxes, brushes, broom handles, lasts, furniture and many other things. These factories must employ a great amount of labor, and will be a benefit to this city, as the trade must flow in this direction. These are but the forerunners of others yet to come.—Fredericton, N. B., *Gleaner*.

MESSRS. J. L. GOODHUE & CO., manufacturers of leather belting, Danville, Que., have sent us an interesting pamphlet having reference to the belting manufactured by them, and containing a large amount of valuable information incident to the use of belts for the transmission of power. The firm informs us that they have one of the largest and best equipped tanneries in the Dominion, where they tan all the leather used in making their belting. They use only closely selected heavy steer hides. Their leather is pure bark tanned, no acids or chemicals being used. They claim to have the largest and most completely equipped belt factory in Canada; they employ the best known methods of stretching the leather before it is made up, and for all the belts ten inches wide and over the leather is cut and stretched from centre of hide and into the proper width for each belt. A page of the pamphlet is devoted to giving a comparison of rubber, gutta percha and canvas with leather, the facts being exceedingly interesting to consumers. Other interesting matter refers to the merits of hemlock and oak-tanned leather, lace leather, the grades of belting the firm make, telegraph cipher code, suggestions regarding the use of leather belting, etc., also a large number of testimonials from belt users all over Canada regarding the excellence of the belts supplied them by Messrs. Goodhue & Co.

A new system of ventilating railway carriages was exemplified on the Quebec express from Moncton, reaching St. John Wednesday morning. One of the coaches was fitted with the apparatus recently invented by Major Sam Hughes, of the *Victoria Warder*, Lindsay, Ont. The trial trip was witnessed by Messrs. D. White, master car builder; J. H. Wran, foreman of the fitting departments; A.

Bruce, auditor, and others, including Major Hughes and several passengers. The passengers, as well as officials and the inventor, were greatly pleased with the effect, although the apparatus is not constructed exactly as desired or as directed. The plan is as follows: Air enters the car from above through a trumpet-shaped funnel and opens over water in a tank, there depositing dust and cinders; thence it passes into the car; in winter, around coils of heated pipe in the top of the tank, and in summer time around ice. It is distributed along each side of the ceiling in pipes, each having a continuous slot opening. No draught or inconvenience is experienced. The vitiated air is drawn off by separate apparatus on the induction plan. A further great advantage is that by a neat device air in any desired quantity enters the car when standing by the apparatus used to exhaust when in motion. The trial trip was most satisfactory, all that was claimed by Mr. Hughes being accomplished with the additional advantage that scarcely any warmth was required from the ordinary heating apparatus. Indeed, steam had to be shut off almost entirely, though in the other cars the full supply was required, and even then it did not prevent the windows from frosting. In other coaches, too, the snow, as usual, sifted under the doors and around the windows. In the trial car none came in. On the contrary, it was all melted under the doors, a proof that the pressure was outwards, not inwards. In addition to furnishing pure fresh air, and extracting the vitiated atmosphere without opening the doors or windows, the invention will, during winter months, effect a great saving in heating power. The air coming in warmed does not require further heating. The verdict of passengers and officials was that the system seemed perfect. The simplicity of the apparatus is a marked feature of its construction and operation. A pail or two of water poured into the tank when necessary is all the attention required. It may be fitted to any car at any time, and is self-operating. Major Hughes has also invented a means of effectively supplying both upper and lower berths in sleeping cars with pure air, tempered to suit the season. A plan for the proper ventilation of the great Intercolonial railway blacksmith and iron working shops where the smoke is oftentimes very dense, has also been submitted by the same gentleman, and meets with approval from officers and others interested.—St. John, N. B., *Sun*.

PLASMATIC METALLIC LATHING.

THE Metallic Roofing Company of Canada, 84-90 Yonge Street, Toronto, have sent us an illustrated circular having reference to the Hayes patent plasmatic metallic lathing manufactured by them, from which we learn the following facts:—

The "Hayes" system of lathing is composed of sheets of iron or steel, over the surface of which, at near intervals, are openings 5-16 by $\frac{3}{4}$ of an inch, produced by a process of puncturing. The flanges around the openings are pressed forward and curled backwards, forming lips and hooks which clinch or hold the mortar to the surface of the sheets, while at the base of each opening is formed a matrix into which the mortar is pressed and by which perfect dovetailed clinches or bonds are obtained. The process imparts to the sheets an undulated surface, giving additional strength thereto. The mortar or plastering material is spread over the surface of the sheets embedding the lips and hooks and filling the matrix, thereby permitting a degree of coalescence, which insures most perfect and substantial work, without sagging or deflection, and imparting a most surprising solidity and firmness, that of a stone-like character. Ribs are also introduced at intervals over the surface of the sheets. The rigidity is not equalled in any other known method of hollow wall or ceiling construction.

No cracking or falling away of the surface of wall or ceiling can occur, neither can it be removed in any other manner but by the mechanical operation of picking it off by particles.

There is an entire freedom from expansion or contraction or any organic action which will disrupt, strain, or in any manner injure the bond. A plain plate of iron when subjected to great heat will become distorted; but a perforated or punctured plate is that assumption of form which cannot in itself be destroyed or affected by fire or water, separately or combined, no matter how fierce the action may be.

This lathing is extensively used in the heating trade for covering pipe chases, hot air flues, and for purposes where great variation of temperature exists. Steam boilers and steam pipes have been most successfully jacketed, and when subjected to critical examination both in a cold and a heated condition have proved under every circumstance to be very satisfactory, thus setting at rest any question as to the organic action of expansion or contraction.

THE DETROIT RIVER TUNNEL.

THE Detroit tunnel project has received a set-back for the time being. The question of bridging or tunneling the Detroit river was passed upon by a board of Government engineers over a year ago in favor of the tunnel, and subsequently a bill was passed by the House authorizing the Detroit company to construct the tunnel. The tunnel was to have been built by a hydraulic ram system said to be greatly superior to the methods employed at the St. Clair tunnel, in that the ram burrowed through the earth like a mole, the cylindrical plates being drawn out like the sections of a portable cup, leaving the tunnel complete as it advanced. The invention received the approval of the Government engineers. The company was organized with Luther Beecher of Detroit at its head, and was to be commenced as soon as the bill authorizing it passed the Senate. The bill was hung up in the Senate Commerce Committee by Senator McMillen, who, although earnestly favoring the tunnel, was unwilling that the prosecution of such an important work should depend on the whim of Beecher. Beecher is a millionaire, but decidedly erratic, not to use a stronger term. One of the largest hotels in Detroit, which he owns, is standing idle, and he will neither sell, rent or occupy it. Senator McMillen declared that as long as Luther Beecher was connected with the company the resolution should not be passed. Thereupon Henry McCheever, the attorney for the company, went to Detroit and induced D. M. Ferry, the seed man, and other prominent business men to go in and eliminate Beecher. He returned to Washington last week in high feather, expecting McMillen to withdraw his opposition, but the Michigan Senator received telegrams from Ferry and the other gentlemen interested saying that Beecher refused to take a back seat and that they had dropped the whole thing. This knocked the bottom out of McCheever's scheme, and McMillen put his foot down on the resolution, and says he will keep it there. The Detroit river ought not to be spanned with a bridge. Each succeeding season of navigation fully proves the righteous judgment formed by the U. S. A. Engineers regarding the requirements of commerce at large, and while the tunnel project may be delayed, its accomplishment is a certainty in the future. The increasing cross river traffic is already becoming a source of great danger to the general tonnage of the lakes, and a commodious tunnel will soon become an imperative necessity for the best interests of commerce.—*Marine Review.*

AN IMPORTANT CANADIAN INDUSTRY.

THE Gutta Percha and Rubber Manufacturing Company of Toronto, of which Mr. H. D. Warren is president, is one of the most important manufacturing concerns in Canada, and its existence most strongly emphasizes the benefit the N. P. has been to the country. In answer to enquiries Mr. Warren states that his company began the manufacture of their specialties in this city in 1884 as a branch of an American company bearing the same name, and that its prosperity was so great that the interests were divided, Mr. Warren assuming the management of the Toronto concern in 1887.

He says that since that time, under the National Policy, they have increased the volume of their business threefold, and that last year they paid out in wages for manufacturing in Toronto over \$52,000. When the concern started in 1887 there was not a rubber coat of any description made in Canada. The tariff then was 35 per cent. on these goods. The American common rubber coat laid down in Toronto in those days cost the wholesaler at least \$2.25. This company in 1887 started to sell their coats at \$2.14 and manufactured them in Toronto. To-day they are selling the same coat to the trade at less than \$1.50. This is the coat used by farmers and mechanics. Three years ago there was not a coat of this kind made in Canada, whereas now there are at least three firms in the business and importation has practically ceased.

The customer formerly had to pay from \$4.50 to \$6.00 for this article, and to-day he can purchase the same article at retail for \$1.75. That is to say, that the customer to-day buys at fifty cents less than formerly the wholesaler paid, and at least \$3 less than he bought for when Hon. Alexander Mackenzie was in power. Last year the firm did more business than in any previous year, and during January and February of this year more business than in any two months of any previous year. Considering these facts, Mr. Warren asks why should he, as a manufacturer, desire a change in the trade policy? The following are some of his reasons why he desires to see the National Policy continue. His business has increased to such an extent that he desires to enlarge his manufacturing premises, the plans of which have been already drawn.

This means new plant, new buildings and an increase in the number of employees. Should unrestricted reciprocity have been adopted he would have closed his Toronto factory and stop paying over \$52,000 per year here for labor. He would have to remove his factory to New York or Chicago for the reason, as he says, that the American people will not buy Canadian manufactured goods. There is a large surplus of rubber manufactured goods of poor quality in the United States at present waiting for a chance to flood Canada. These goods the manufacturers would not dare to offer on the American market, and would simply make a dumping ground of the Dominion.

When asked if the Canadian manufacturers would not in time be able to compete with those of the United States, Mr. Warren answered that manufacturers in the United States go in for specialties, whereas in Canada all kinds of goods are manufactured by the existing firms. Before these firms could establish a trade in the United States they would be crushed out by the combines across the border. The Canadian customer to-day is purchasing his rubber wants at a less cost than the American and getting a better quality of goods. If the tariff is made to conform with that of the United States their goods will flood us out, and in a short time the prices will raise to the level of those in the United States.

THE LARGEST LOCOMOTIVE ENGINES IN THE WORLD.

THE Grand Trunk Railway are having built four locomotives for use in the St. Clair tunnel which will be the largest machines of the kind in the world. One of them was finished a few days ago, which is referred to in a Philadelphia paper as follows:—

A monster locomotive, the heaviest ever built in America, stood on the Reading railroad tracks at Pennsylvania Avenue and Fifteenth Street yesterday afternoon. Early this week it will be shipped to the St. Clair tunnel company for which the Baldwin locomotive works have built four of the same kind.

The monster of steel had steam up and had been tested. It looked as if, when once started, nothing could stop it on its way. This huge locomotive is the heaviest ever turned out by the Baldwin locomotive works; the heaviest ever built in America, and, so far as known by the company that built it, the heaviest single locomotive built in the world. Each of the four locomotives is expected and guaranteed by the builders to haul a load of 760 gross tons of cars and lading up a grade of 106 to the mile. This is equivalent to a train of twenty-five or thirty loaded freight cars.

The St. Clair tunnel company, for which the locomotives have been built, controls the line of railroad running through the tunnel under the St. Clair river. It is near the junction of the St. Clair river with Lake Huron, and connects the town of Port Sarnia, Ontario and Port Huron, Mich. The line of railroad which runs through the tunnel is the connection of the Grand Trunk railway of Canada with its line in Michigan. The tunnel is 6,000 feet long, and the approaches are 1,950 and 2,500 feet respectively, making a total length of over two miles. These approaches have a grade of 106 feet to the mile, and a very heavy locomotive is required to haul heavy trains through the tunnel and up the grade of the approaches.

The locomotives are of the class known as tank locomotives, and have no tender. The tanks are on both sides of the boiler, and their capacity is 2,000 gallons. The space for the fuel, which is anthracite coal, is on the footboard. There are five pairs of driving wheels, which are the only wheels, and they are 50 inches in diameter. The wheel base is 18 feet 3 inches. The cylinders are 22 inches in diameter, and have a stroke of 28 inches. The boiler is of steel, 5-8ths of an inch thick, and is 6 feet 2 inches in diameter. There are 280 flues, 2½ inches in diameter, and 13 feet 6 inches long. The fire box is 11 feet long and 3½ feet wide.

The cab is placed on top of the boiler and midway between its ends. There are two sand boxes, one on the front of the boiler and one on the back, so that sand can be placed on the rails whether the locomotive is running forward or backward. There is a powerful air brake which operates on each driving wheel. There are headlights and steps at both ends, like those of a shifting engine. The locomotive will run on 100-pound rails. The number of the one completed is 598, and the consecutive construct on number given by the builder, 11, 86. In working order the weight is 195,000.

No. 598 will reach her destination this week, and the others will follow in a few days. In its completed state the engine is too heavy for some of the bridges it will have to cross en route, so the cab, the tanks, side rods and other parts will have to be taken off and shipped separately.

THE EARLY IRON INDUSTRY OF CANADA.

It is probably among the things not generally known that the iron industry of Canada, although of very inconsiderable extent, and, judging from present appearances, not likely soon to assume very large proportions, is in reality one of the oldest on the American Continent. So early as 1737 a blast furnace was built in the Province of Quebec at St. Maurice, some eight miles from Three Rivers, which was still in blast some fifteen years ago. This furnace was 30 feet high, and had a 7-foot bosh. The daily production averaged 4 tons, of which 10 per cent. was white and 10 per cent. mottled iron. It was, of course, a charcoal furnace, and smelted a bog ore found in the neighborhood, which yielded in the furnace from 33 to 35 per cent. of iron. In 1874 the cost of the ore at the furnace was stated to be \$2.50 per ton, and the Trenton limestone used as a flux was stated to cost 93 cents a ton, while the charcoal used cost 6 cents per bushel, the quantity required to the ton of pig iron being 180 bushels. At this rate the fuel would cost 45s. and the ore about 30s. per ton of iron produced, so that the reputation of this part of the Dominion could hardly be associated with cheap iron.

For a considerable time this furnace appears to have been almost, if not quite, the only representative of the blast-furnace industry of Canada, and it produced a high quality of iron, which was used in Montreal for car-wheel and other special purposes, the price varying from \$40 to \$50 per ton. Other small charcoal furnaces were established and worked at different dates at L'Islet, Batiscan, and Rivière aux Vaches, in Yamaska county, and, in 1874, the Canadian Titanic Iron Company erected and put in blast two furnaces, each 40 feet in height by 14 feet bosh, near Bay St. Paul, for the purpose of smelting the titanic ore of that locality. This plant was, however, equally unable to produce cheap pig iron, using from 190 to 237 bushels of charcoal per ton of pig iron produced, and often in winter running up to 400 bushels, which would mean an expenditure for fuel alone of £5 sterling per ton of iron produced. The average production of iron was about 5 tons per twenty-four hours, or 35 tons per week. It is interesting to compare this result with the product of 500 or 600 tons per week now sometimes obtained from charcoal furnaces in the United States. Other charcoal furnaces were established somewhat earlier than those just described at Hull, in the Province of Quebec, and at Woodstock, in the Province of New Brunswick, the latter being a hot-blast furnace, of which the waste gases were utilized to heat the blast and generate steam, so that the consumption of charcoal was reduced to 126 bushels per ton of iron produced.

Excepting the furnaces named the only blast furnaces hitherto built in the Dominion have been erected in the Province of Nova Scotia. The first furnace erected here was built probably half a century ago, near the Albion mines, Pictou county, but various circumstances led in course of time to its abandonment. The Londonderry Furnace, built in 1853, was constructed to smelt the limonite ores of the locality with charcoal as fuel, the ore yielding rather over 50 per cent. of iron. The cost of production at Londonderry appears to have been much under that of several of the other furnaces alluded to, the whole cost being given as \$20 50, and the yearly product varying from 1,150 to 2,200 tons, but it was only possible to use the iron for special purposes, and the Canadian market continued to be supplied for all ordinary purposes from England. During the last twenty years a coke furnace has been erected at New Glasgow, Nova Scotia, but up to the present time not more than 25,000 to 26,000 tons of pig iron, or less than one-third the production of a modern American furnace, are annually produced in the Dominion.—*London Colliery Guardian.*

ELECTRIC LIGHTING IN BRITISH COLUMBIA.

The National Electric Tramway and Lighting Company of Victoria, B.C., is an enterprising concern. As our readers have been advised heretofore, this company have been operating their electric street railway for some time, but recently they installed a lighting plant for municipal and commercial lighting, which they put into successful operation a few days ago. The *Colonist* describes this plant as follows:

The electric plant consist of two A 35 Thomson-Houston alternating current composite filled dynamos of 650 lights capacity each, and two small continuous dynamos of about five horse power each, these last two being used to excite the field magnets on the larger machines. The dynamos are driven from a counter shaft, Schiesens perforated belts being used. These belts embody several novel features, and are the first used in British Columbia. The counter

shafting is driven by a 130 horse power Corliss-type engine, made by the Albion Iron Works. The shafting is also equipped with a Hill friction coupling, thus rendering the engine used to operate the tramway available for the operation of lights, should emergency require it. This management renders a "shut down" almost impossible. The switch board is a handsome piece of red wood, which shows off to advantage the polished black marble switches and other instruments used for controlling and measuring the current. All the most improved devices have been used on this branch—double, full double, throw switches, which make it possible to throw all the lights on to one machine by a single movement, lightning arresters, ground detectors, which will show where the "trouble" is located, and the usual complement of amperé meters, volt meters, rheostats, fuse blocks, etc. The line construction is of the best; no trouble or expense has been spared to render the lines strong, durable, and as little of an eye-sore to the public as possible. Wire of high insulating qualities has been used, and poles erected of sufficient height to carry the wire over all telephone, telegraph and other wires, thus culminating the danger from falling telephone and other wires. All branch lines are equipped with "junction boxes," so that, in case of trouble, any branch may be cut off and the trouble repaired without interfering with the general service. This will be found advantageous in event of a fire in the vicinity of the lines, as it will be but a moment's work to render the wires in that particular locality harmless.

The potential used on the "mains" is 1,000 volts. This, although dangerous, is a lower potential than is carried by the arc light wires.

Before entering the houses the 1,000 volts, or "primary current," passes through a "transformer," or "converter," in which the voltage of the primary current is reduced to fifty-two volts, so that the "secondary current," which enters the houses, is reduced to less than one half of the potential of the present system of house lighting.

The transferers are placed on poles outside of buildings, in places inaccessible to the public, so that the danger from the high potential used is very slight. Great care has been taken with the interior wiring, the best grades of wire being used; also porcelain switches, rosettes and fuse boxes. The use of porcelain in the above places materially reduces the fire risk. All installations are made in strict compliance with rules issued by the Board of Fire Underwriters.

Among the latest and most improved devices used in this installation is the Thomson recording Watt meter and the Thomson alternating arc lamp.

The former is an instrument of considerable ingenuity of design and great excellence of workmanship, which records the exact quantity of electricity that flows through it. These are placed in the houses or stores, and each consumer is charged with only the quantity of electricity actually used by him, thus enabling the consumer to exercise any desired degree of economy in the use of the light.

The lamp used is manufactured by the Thomson-Houston Electric Company, under the Sawyer Mann patents. This lamp gives a soft white light very agreeable to the eyes. They also have a long life, and are free from the blackening from use, so marked in other systems. A most valuable feature of this lamp is a half twist given to the carbon filament, insuring a more even distribution of light than with the straight filament.

E. LEONARD & SONS

LONDON, CANADA.

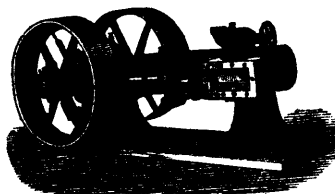
ENGINES for Electric Dynamos, Street Railway Service,

AND FOR ALL OTHER PURPOSES.

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Leonard-Ball Automatic

Cut-off 10 to 100 H.P. plain and compound and condensing 40 to 150 H.P. have the preference all over Canada.



STEEL BOILERS, all sizes up to 150 H. P.

Excellent facilities for prompt shipment.

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Manufacturers of all kinds of MACHINE OILERS.

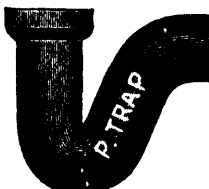
THE ONTARIO BOLT CO. (Ltd.)

SWANSEA, NEAR TORONTO.

MANUFACTURERS OF

Bridge Rods, Gib Plates, Straps, Braces and Bolts, Drift Bolts, Washers, Prisms and Roof Rods, Bolts, Braces, Straps, Bolt Ends and Blank Bolts, Drop Forgings, Carriage Hardware Including Clips, Steps, Stump Joints, Offsets, Stay Ends, Herbrand Fifth Wheels, Sleigh Braces, Couplings, Body Loops, Threshing Machine Teeth, Pitman Irons, and all kinds of Special Work. Machine Bolts, all sizes, Coach Screws and Skein Bolts, Whiffletree Bolts, Best Elevator Bolts, Best Plough Bolts, all kinds, The Prize Tire Bolt, Best Shaft and Step Bolts, Best Eccentric Head, and Spring Bolts, Best Norway Shackle Bolts, Railway Track Bolts and Spikes, Rivets, Best Bridge and Boiler and Black Iron, Wire Nails and Pressed Spikes, Nuts, Hot Pressed, Forged and Cold Pressed, Carriage Bolts, Superb, Eclipse, Sleigh Shoe and Prize. all sizes, Howell's Patent Iron Wheels.

A. E. CARPENTER, Pres. J. H. NEW, Vice-Pres. HENRY NEW, Sec.-Treas.



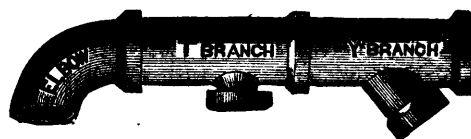
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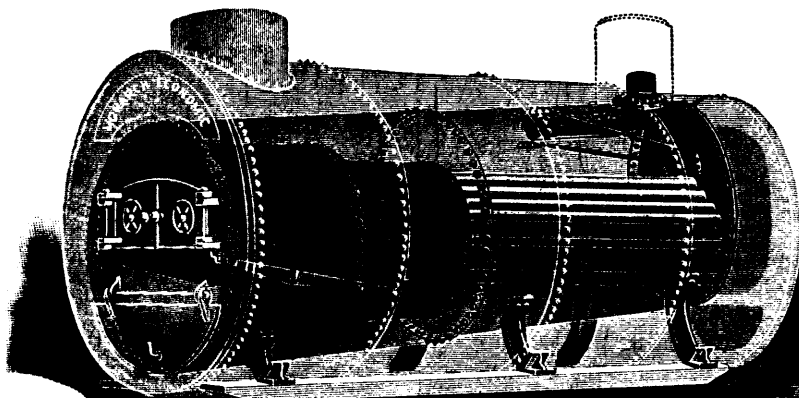
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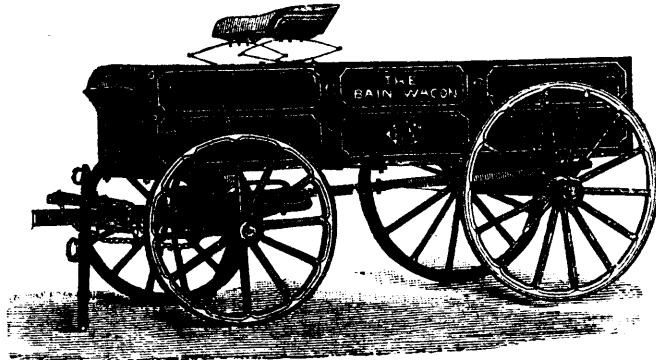
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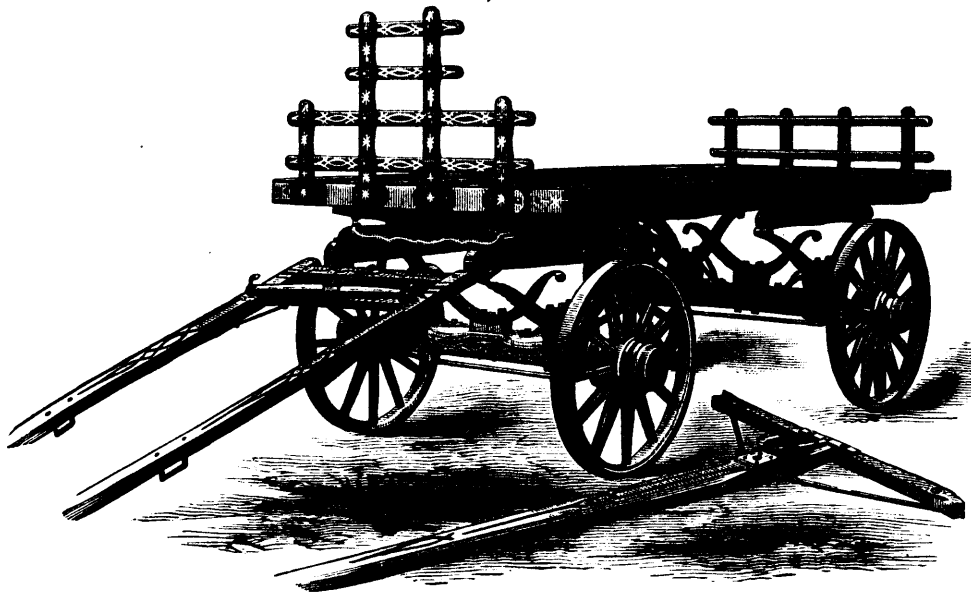
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For the Year Ending December 31, 1890.

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RECEIPTS IN 1890.	
Premiums.....	\$161,166 82
Interest and rents.....	10,241 61
Total receipts.....	\$171,408 48
DISBURSEMENTS IN 1890.	
Death claims.....	\$44,046 18
Cash for surrenders.....	1,148 00
Annuity.....	420 00
Total payments to policy-holders.....	\$46,214 18
Commission, medical fees, salaries and other expenses of management.....	\$70,603 14
Re-insurances.....	11,600 56
Total disbursements.....	\$82,203 70
Total Assets.....	\$128,417 8
ASSETS JAN 1, 1881.	
Dominion Government Bonds.....	\$53,000 00
Mortgages on Real Estate.....	159,242 84
Stocks and Debentures.....	24,150 00
Life Interests and Reversions.....	4,500 00
Office Furniture.....	4,500 00
Bills Receivable.....	10,235 01
Due from Agents.....	5,874 60
Premiums Outstanding.....	51,907 63
Interest Due and Accrued.....	3,654 82
Cash on hand and in Bank.....	28,907 54
Total Assets.....	\$345,972 44
LIABILITIES.	
Reserve Fund.....	\$215,231 00
Contingent Fund to cover sundry outstanding expenses.....	2,606 02
Total Liabilities.....	\$217,837 02
Surplus on Policy holders account.....	\$128,135 42
Number of Policies issued in 1890.....	1,647
Insuring.....	\$2,398,650
Number of Policies in force Dec. 31, 1890.....	4,007
Insuring.....	\$6,830,525

These results surpass those of any other Canadian Company in the first seven years of its existence.

GED. GOODERHAM, }
WM. BELL, } Vice-Presidents.
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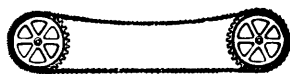
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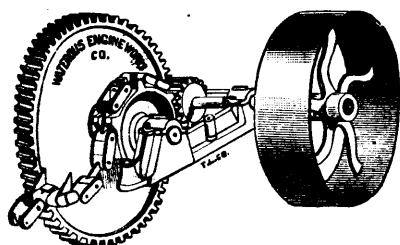
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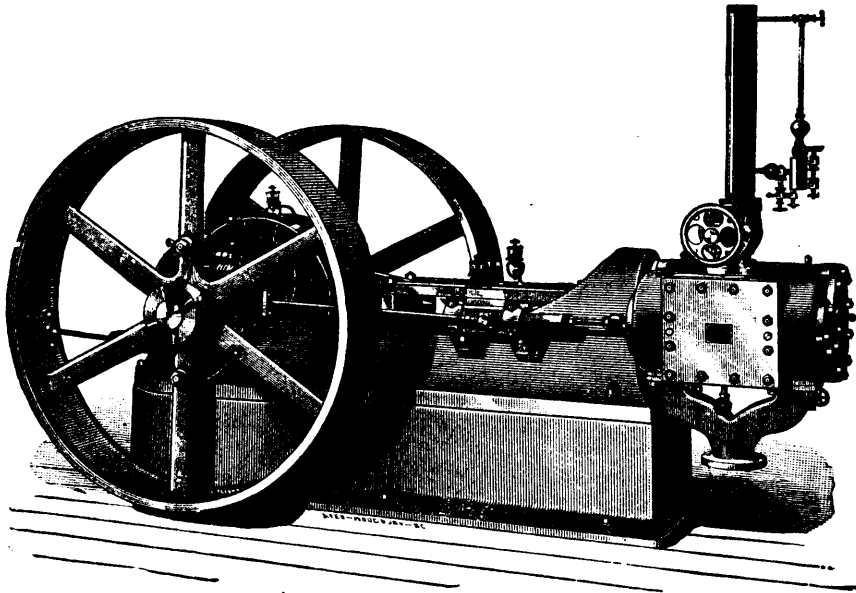
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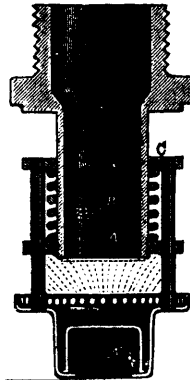
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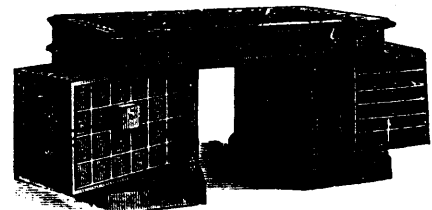
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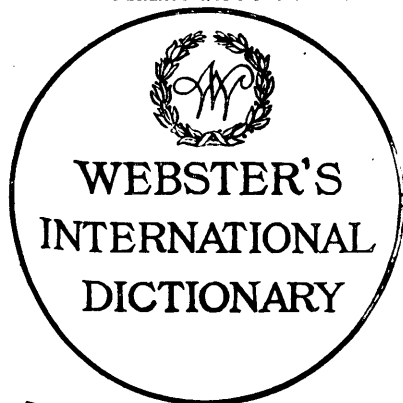
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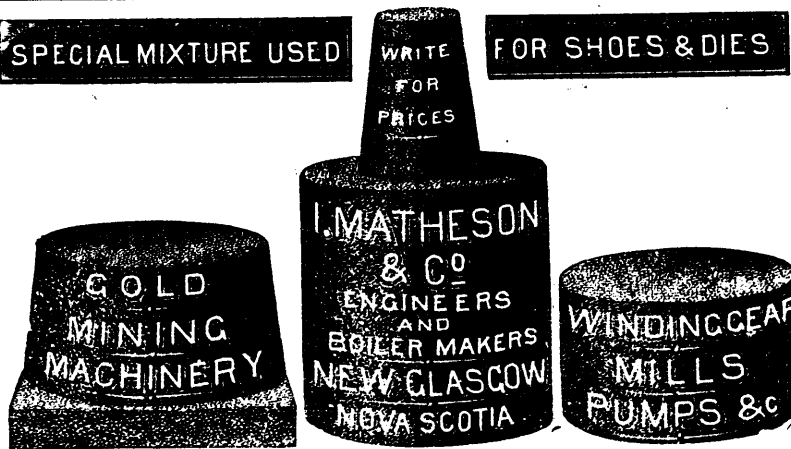
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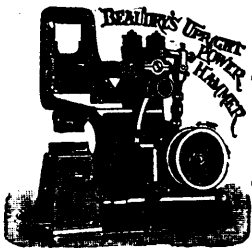
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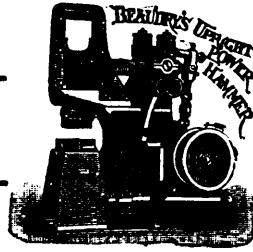
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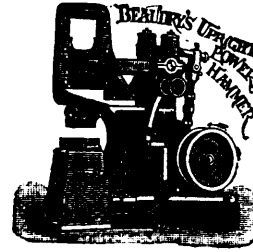
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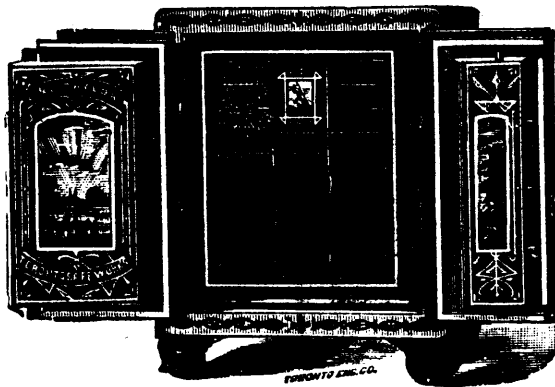


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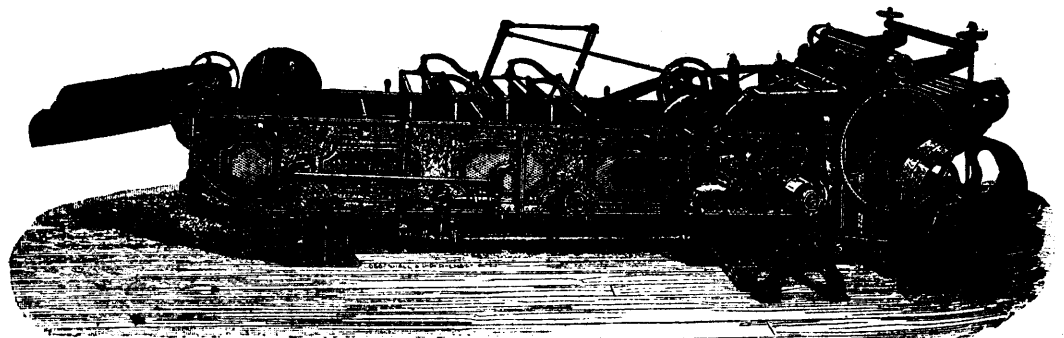
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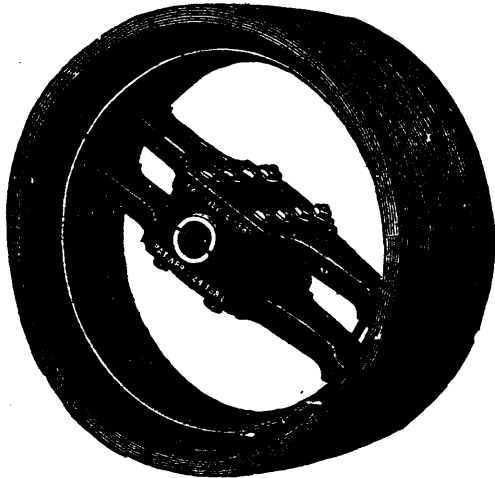
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Best Belt Surface, Lightest, Strongest, Best Balanced, and Most Convenient Pulley in the World.

EVERY PULLEY A SPLIT PULLEY.

The hole in every pulley can be readily bushed to fit any sized shaft. Bushings furnished with each pulley. Guaranteed to give from

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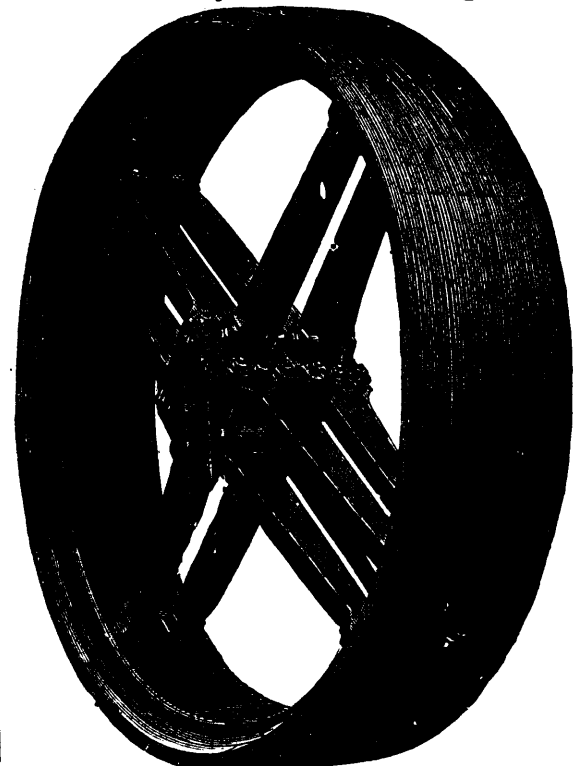
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70 PER CENT. LIGHTER THAN CAST IRON
And 50 per cent. Lighter than Wrought Iron or Steel Pulleys.



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DEAR SIRS,—In reply to your favor asking how we like your split pulley, we would say : We are very much pleased with them. We are using about seventy of them, from 25 in. face by 48 in. diam. down to 9 in. diam., every one of which is giving satisfaction. We don't have to take down our shafting to change a pulley or put on a new one. We are not troubled with set-screws breaking or slipping ; for these and various other reasons we prefer your pulley to any other we know of.
Yours truly,
FIRSTBROOK BROS.
Toronto Packing Case Factory and Planing Mill.

To THE DODGE WOOD SPLIT PULLEY CO., 81 ADELAIDE STREET W., CITY. TORONTO, Dec. 6th, 1886.
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We remain, yours truly,
MCDONALD, KEMP & CO.

To DODGE WOOD SPLIT PULLEY CO., TORONTO. Dec. 10th 1886.
GENTLEMEN,—We have given the Wood Split Pulley a thorough test in our works, and we are well pleased with their working, and can recommend them to our customers and others requiring pulleys.
Yours truly,
JOHN DOTY ENGINE CO.
F. W. Doty.

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According to the best scientific authority it costs one horse power to keep in motion one ton of metal or weight ; thus for every unnecessary 2,000 pounds weight on your line shaft, cost you one horse power. To maintain a horse power cost fr. m \$25 to \$125 per year. Any manufacturer who will take the pains to investigate the unnecessary weight by Heavy Iron Pulleys, too tight belts, etc., will be surprised to find the enormous waste of power consumed in this manner. **60,000 Dodge Patent Wood Split Pulleys now in use.** Our capacity being now equal to 100 Pulleys per day, we shall hereafter keep in stock for immediate shipment all sizes.

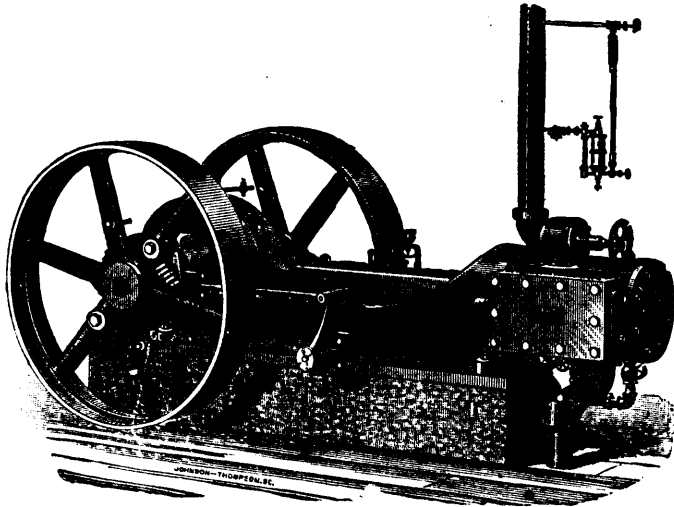
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THE DODGE WOOD SPLIT PULLEY CO., TORONTO.

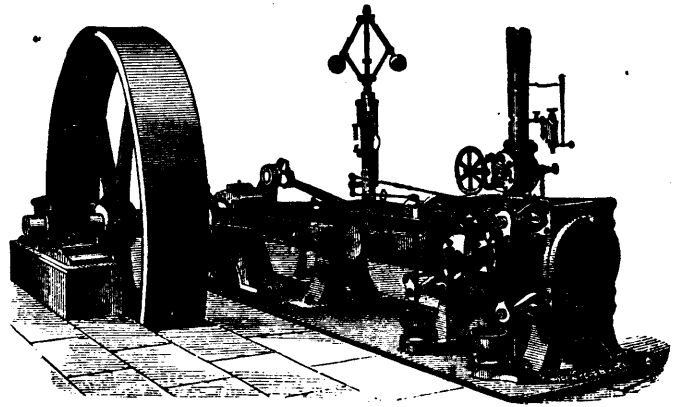
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GENERAL OFFICES.—
83 King Street West, City.

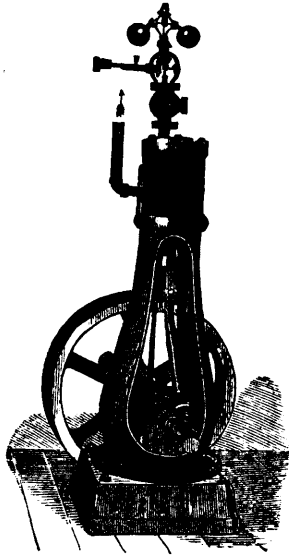
TAKE NOTICE:—Our List of Prices for the DODGE PATENT WOOD SPLIT PULLEYS is for ALL SPLIT-PULLEYS.
We beg you will note this fact when comparing our List with others which are for SOLID RIM, and NOT for Pulleys in HALVES.



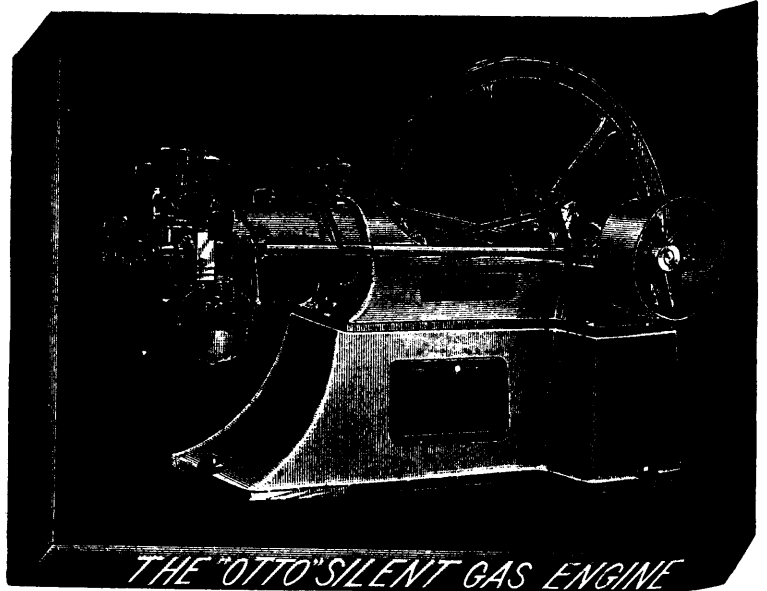
Armstrong & Sims Electric Light Engines.



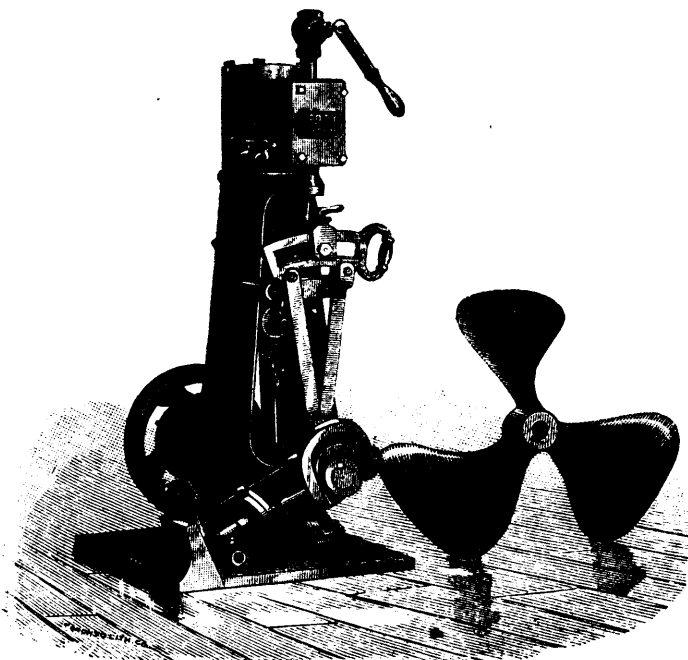
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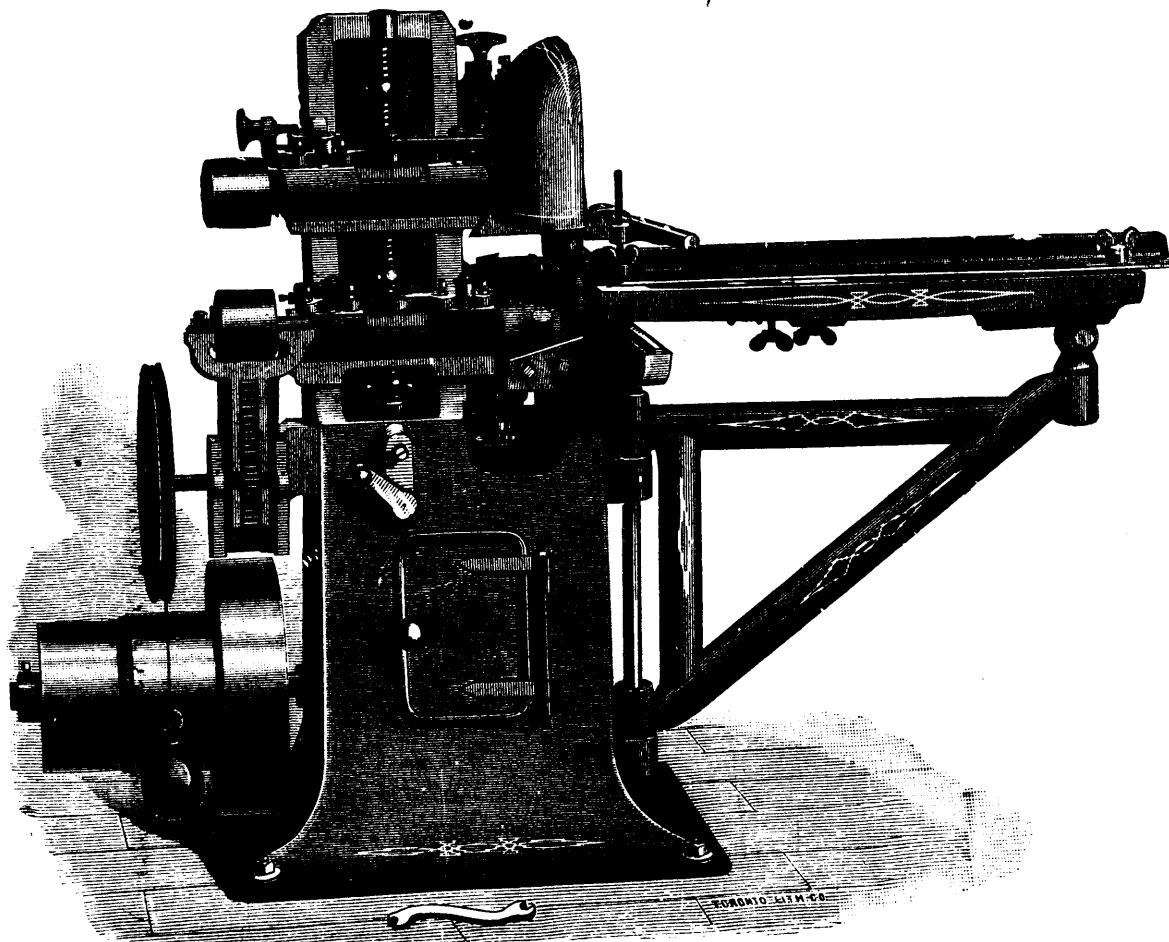
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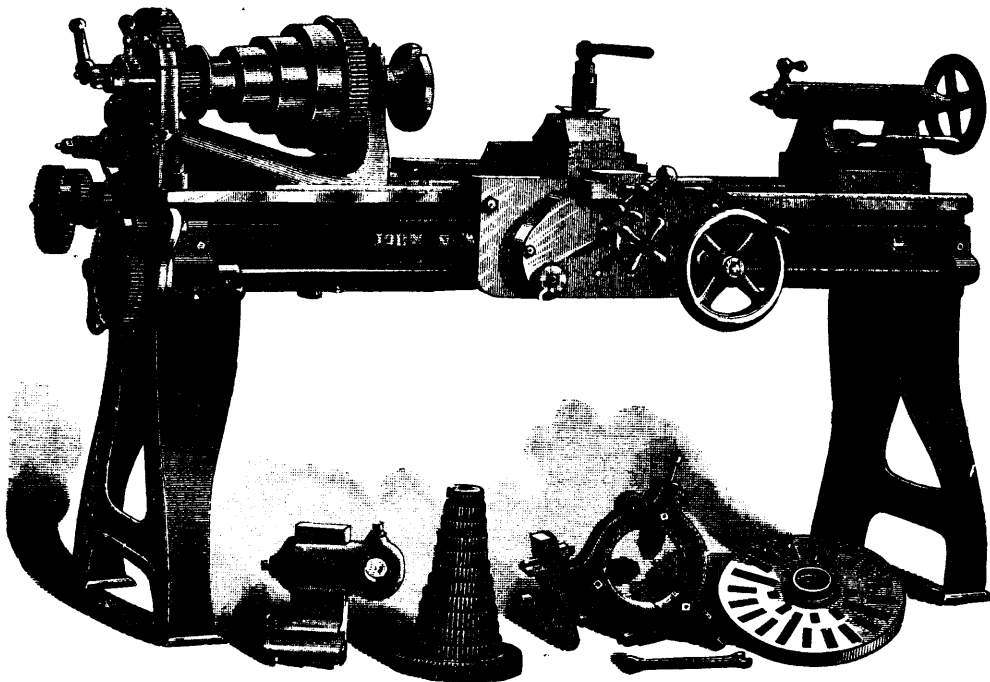
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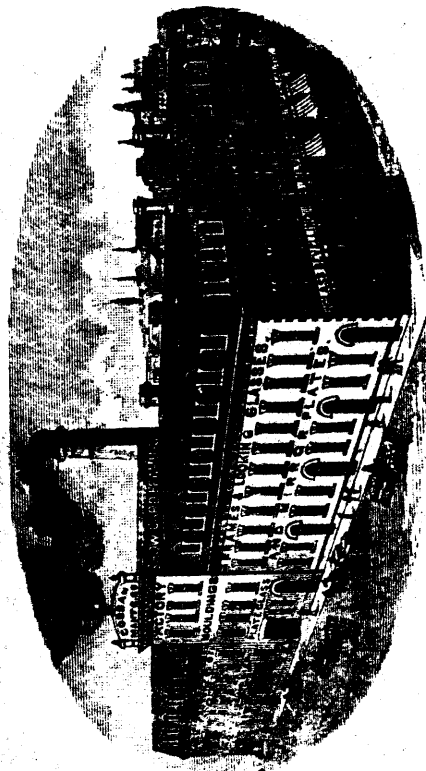
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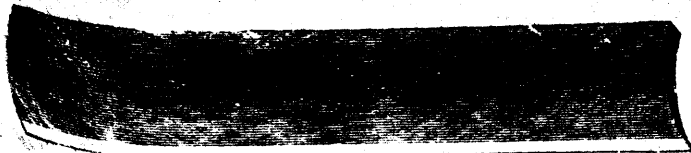
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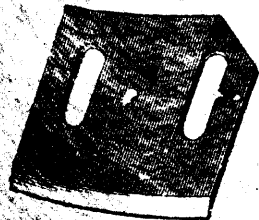
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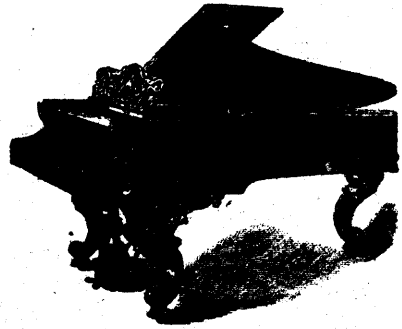
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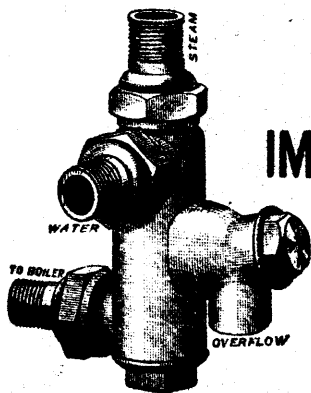
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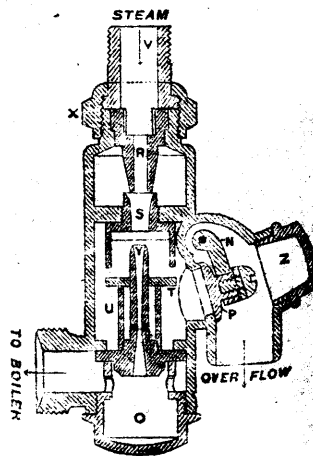
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