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THE CANADIAN MANUFACTURER

DEVOTED TO THE MANUFACTURING & MINING INDUSTRIES OF THE DOMINION.

INDUSTRIAL WORLD.

Vol. 13.

TORONTO, OCTOBER 21, 1887.

No. 8.

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VOL. XIII.

TORONTO, ONT., OCTOBER 21, 1887.

No. 8.

A GOOD BUSINESS OPENING—FIRE INSURANCE.

THE CANADIAN MANUFACTURER has several times of late made reference to the fact that the manufacture of vapor stoves is a very large, thriving, and profitable industry in the United States, and expressed surprise that Canadian energy and capital had not long before this embarked in the same enterprise in the Dominion. We are in receipt of a letter from one of the largest and most reliable manufacturing companies in Ontario in which we are informed that that concern a few years ago had made all necessary arrangements to manufacture vapor stoves, but such great prejudice against their use was discovered to exist on the part of the fire insurance companies as to compel the abandonment of the scheme until such time as the insurance companies had modified their views and relinquished their objections. The companies in which the manufacturing concern here alluded had effected their fire insurance notified our informant that they would cancel all policies wherever vapor stoves might be used. Our correspondent states that his attention had been directed to the convenience and utility of these stoves, having seen them and investigated their merits in the United States, and that he had bought one for use in his own family, but was compelled to abandon its use under the demand of the insurance people.

This is indeed an anomalous condition of affairs. An industry that would give occupation to large capital and employment to hundreds of skilled workmen and artisans, and the products of which would conduce to the economy, welfare and comfort of every family in Canada which might use them, absolutely suppressed and choked out of life by the anaconda constrictions of insurance companies. The Czar of Russia nor any other tyrant could be more despotic, and serious questions for the consideration of Canadian manufacturers, for capitalists seeking profitable investment, and for the insurance companies themselves are "Shall this condition continue; and what is the remedy for it?"

The insurance companies urge that capital is proverbially timid; that it is quickly withdrawn from business on the appearance of anything that will make its investment extra hazardous, and that the use of vapor stoves creates such a condition. These companies very willingly take risks on property where gas and coal oil are used for illuminating and culinary purposes; where gunpowder even, and other explosives are stored; where cigars and pipes are smoked, and where many other things are done and permitted that are quite as dangerous in their character as are vapor stoves. But they comprehend that the disposition of the general public is such that these things are considered indispensable to comfort, and that if the insurance companies are not inclined to accept

risks in which these are included, the would be insurers will become their own underwriters, in which events there would be no business for them. It is not denied that gasoline is very inflammable and more or less dangerous where carelessly handled, but it is no more dangerous than coal oil, and statistics show that in the United States within a certain specified time, out of all the thirty-six known causes of fires occurring, those arising from ignitions or explosions of gasoline were fewest in number save about a dozen. In other words there were only about a dozen causes of fires less dangerous than gasoline, while there were two dozen causes more dangerous. Of course the "conservatism" of capital as invested in insurance companies would naturally lead to their interdicting the use of gasoline and vapor stoves where they have the power to enforce their tyranny. They would do the same no doubt as regards friction matches and many other appliances of domestic comfort if they could, and it remains to be seen if these people cannot be brought to their senses in Canada regarding the matter as they have been in the United States.

[This matter will be further discussed in another issue of this journal. EDITOR.]

THE PROPOSED LAW REGARDING SMOKE CONSUMPTION.

A FEW weeks ago a move was quietly inaugurated in this city looking to the suppression of the so-called "smoke nuisance" by a by-law of the city council. A petition was formulated setting forth that the smoke constantly being emitted from the chimneys of the industrial establishments of Toronto, and the soot, dirt and discomfort incident thereto, was unbearable, and that, being unnecessary, ought to be abated as a nuisance. This petition, which was very numerously signed, was presented to the city council, who, after hearing considerable volunteer ex-parte testimony regarding the matter, referred it to an appropriate committee with instructions to investigate and report.

The first that the parties most interested, to wit, the local manufacturers and large consumers of coal fuel knew of the matter was through the city daily papers the next day when reporting the proceedings of the council the previous night. This development occasioned a called meeting of the Toronto members of the Canadian Manufacturers' Association, at which a committee was appointed to confer with the committee of the city council with a view to prevent any hasty or injurious legislation. One or more conference meetings have been held by these committees, and although the council committee have not yet reported, it is not at all probable that they will re-

commend, or the city council enact, any law, that will operate to the injury of the manufacturers, and through them to the injury of the best interests of the city.

How to abate the nuisance of smoke arising from the combustion of smoke-producing fuel in cities, particularly where there are a multitude of extensive manufacturing establishments as in Toronto, is not a new question. It attracts public and special attention wherever the nuisance exists; and it will be a happy day whenever an effective and practical method of preventing it is discovered. London, the capital of the British Empire, where is amassed more wealth than at any other place on the globe, suffers more from the smoke nuisance than any other city, and has for many years. There are many cities where more smoke-producing fuel is consumed for manufacturing purposes than in London, but that which is thus consumed there, together with the emissions from the innumerable habitations of the people, together with certain peculiar conditions of the atmosphere almost always observable, produce conditions which the ablest scientists of the world have tried in vain to correct. Untold wealth has been unstintedly spent in endeavors to cure or greatly modify the evil, but even now it is of frequent occurrence that even during the hours of supposed daylight artificial illumination is indispensable in residences and places of business, and any profusion of gas and electric lights is not capable of lighting the streets sufficiently to make travel over them safe or comfortable. With all its wealth and prestige the great city of London is not able to dispel the smoke nuisance that almost constantly covers it like a black pall; and it is not probable that that city will ever be rid of its incubus until the consumption of smoke producing fuel within its limits is entirely abandoned. If no smoke-producing fuel is used there can be no smoke nuisance.

What is true of London as regards the smoke nuisance is also true to some extent regarding hundreds of other cities, towns, and manufacturing centres both in Europe and America, Toronto included. Until the utilization there of natural gas as fuel, Pittsburgh, Pennsylvania, the largest and most important iron manufacturing centre in the United States, was known as the "Smoky City;" and while the general complaint there was that nothing could be kept free of defilement from the soot and smoke; and while numberless inventors came forward with their so-called smoke consuming apparatus, striving for the great wealth that would certainly accrue to them if their inventions should prove a perfect success, the smoke nuisance there was never abated except in proportion to the relinquishment made of smoke producing fuel. We are not aware that the inventor or manufacturer of any smoke consuming apparatus ever became a millionaire.

"What can't be cured must be endured." We are all agreed that the smoke and soot from industrial establishments in cities are a great drawback to personal comfort. So are fogs and the east wind. There is no possible way known by which these latter can be avoided, and the former cannot be remedied except through the abandonment of smoke-producing fuel and the closing of factories, foundries and other industrial establishments in which such fuel is necessary in the generation of steam. Country graveyards are never troubled with the smoke nuisance.

THE GALLED JADE WINCES.

Our readers will remember that a few months ago the Toronto *Globe* lent itself to a persistent effort to have the Toronto Board of Trade commit itself to the political heresy of Commercial Union. A meeting of the Board was called to discuss the question, the evident scheme being to have a series of resolutions favoring Commercial Union passed. As the advocates of that measure might and should have known, the views of a large majority of the members were against the measure, and strong anti-Commercial Union resolutions were passed. Chagrined at this, and not being willing to accept the declared expression of the Board, another meeting of the Board was engineered, at which the defeat of the Commercial Union movement was even more crushing, as far as the Toronto Board of Trade was concerned.

No other effort since then has proven successful in getting the Board to re-consider its previous verdict, but the loyal stand of that body has rankled in the bosoms of the annexationists ever since, and now the *Globe* finds an opportunity to vent its spleen by trying to cast odium upon such men as Mr. Ince, the president of the Board, and Mr. Wills, the secretary. It shows that Mr. Ince is also president, and Mr. Wills secretary of the Toronto Grocers' Guild, an association of wholesale merchants whose object is to protect the interests of their trade. The *Globe* expresses indignation that these gentlemen are parties to what it is pleased to call an "iniquitous conspiracy," known as the "sugar combination." It says it is glad that there is no official connection between the Grocers' Guild and the Board of Trade, though its whole effort is to cast odium upon the latter through the connection of Mr. Ince and Mr. Wills with both associations. It says that the dual positions of these gentlemen is wholly incompatible, and that as long as they are connected with both organizations "it will be difficult to convince the public that there is not an underground connection between the two bodies," and that "the Board of Trade cannot afford to lie under the suspicion." It declares very emphatically that "the Board is, from its very nature and composition, anything but friendly to workmen," yet "no trades union ever resorted to methods more tyrannical than those of the grocers, to whom Mr. Ince and Mr. Wills acted as tools." This language is about as insulting to these gentlemen and to all the members of the Grocers' Guild as the English language admits of; and the intention to create hatred towards them on the part of workmen is apparent. It speaks of what Mr. Ince and Mr. Wills have done as members of the Grocers' Guild as being "abominable," and "very much more offensive and indefensible than those acts which now bring Irishmen within the walls of gaols."

It goes without the saying that Mr. Ince and Mr. Wills are both honorable gentlemen, else they could never have been chosen to occupy the positions that they hold in both the Board of Trade and the Grocers' Guild; but the Toronto Board of Trade has twice sat down very heavily and emphatically upon the *Globe's* Commercial Union scheme, and the members of the Grocers' Guild are pretty much of the same way of thinking; and the venomous spleen of the *Globe* finds most convenient expression by denouncing the gentlemen alluded to.

The *Globe's* language is disgraceful in the extreme, and should not be tolerated.

HOW LOCAL PAPERS MAY BECOME MORE VALUABLE.

WE respectfully call the attention of our esteemed contemporaries, the local newspapers of Canada, to an article in another page, reproduced from the *Iron Trade Review*, anent giving full and definite information in regard of such new industrial enterprises occurring in their respective neighborhoods as may come under their observation. Of course all these papers are desirous of benefiting their towns, and no more effective method could be adopted than by giving concise information regarding any improvements, either proposed, actually under way, or completed. Trade journals, such as the CANADIAN MANUFACTURER, scrutinize their exchanges very closely for all such information, the rule of this paper being to immediately reproduce the same, and we are assured very frequently by our friends that they always read our pages of manufacturing items with great care and interest, and that the information thus obtained frequently leads to business, satisfactory and beneficial to all concerned. The rationale of this is obvious. Neither manufacturers nor dealers have time to make critical search through the pages of a large number of newspapers to find any items of information that may be useful to them, and as a general thing they do not take such papers. On the other hand, they receive many trade papers, especially those that may be devoted to their special branches of trade, and these they scan very closely, both for just such items as are here alluded to, and also for such advertisements as may relate to their business, and the value to them of these trade papers depends largely upon the exactness and conciseness with which manufacturing items are displayed, and the grouping of them together and separation of them from other matter. Almost all general newspapers always contain one or more items of the sort indicated, even those published in small towns and away from main lines of travel, and when such items are displayed along with a great many similar ones, in a widely read trade journal, attention is called to them, and the importance of the town made more fully known. We beg that our contemporaries will bear these facts in mind and govern themselves accordingly.

CANADA'S DESTINY.

THE *Hamilton Times* says:

"Canada needs no protective tariff to prevent the importation of goods such as can be economically produced in Canada. . . . A protective tariff is designed to divert labor from profitable to unprofitable employments. Its general effect is to make the community, as a whole, poorer, though some individuals in the community may be made richer."

This is sophistry. Applying the argument to the United States we all know that there are many articles manufactured there "economically" but which require a protective tariff to prevent the importation of similar goods. We mention iron and steel and the manufactures thereof, textile fabrics of all sorts, and many other things. The manufacture of these lines of goods affords "profitable" employment to labor, and it would be an exceedingly "unprofitable" transaction to transfer the labor thus employed to employment in industries that are not specially protected, as, for instance, agricultural pursuits. To thus change the employment of

labor would certainly "make the community, as a whole, poorer" and it is equally certain that no individual in the community could possibly be made anything else than poorer also.

This argument cannot be successfully assailed. The United States is to-day the richest and most prosperous nation of the earth, and its great and impetuous spring forward in this direction dates back to the inauguration of the present Morrill tariff, instituted specially for war purposes, and under which, with some modifications, that country now prospers. Any student of history knows that up to the time that the United States adopted a protective tariff the industries of that country above alluded to were in a wretchedly depressed condition, and that nearly all the goods in those lines consumed there were manufactured in and imported from Great Britain. To-day the United States are independent of the whole world so far as any thing that the rest of the world may produce being essential to the welfare and prosperity of the American people.

The facts as regard the United States apply with equal force to Canada. Here we have all the essential elements necessary to place us on the road to similar prosperity and greatness, and if the present policy of protection is not interfered with, Canada will certainly carve out for herself an equally proud destiny.

PETROLEUM FUEL.

PETROLEUM as fuel for generating steam in large manufacturing establishments is fast coming into general use in the United States, the advantages claimed for it being that it is cheaper than coal, that it requires less space in storing and labor in handling, that there is no ashes to be removed and disposed of, and that there is no smoke resulting from its use. The *Iron Trade Review* has been investigating the matter quite exhaustively of late, and has received reports from a large number of manufacturers who are using petroleum fuel, the testimony of some of whom we reproduce.

"Oil fuel has increased our production 20 per cent., and at considerably less cost than coal."—B. C. Fautot, Lima, O., Paper Mills.

"I use less than two barrels of oil to do the work for which a ton of coal was required."—Sidney McCloud, Calumet Iron and Steel Works, Chicago.

"Although situated in the coal region, we have entirely abandoned the use of coal for burning our brick. Have used oil four years and wouldn't think of abandoning it for coal."—Lehigh, Pa., Fire Brick Co.

"In using oil, we get steam enough from one boiler now, while when burning coal we had to use two. We don't need a fireman, have no coal to heave and no ashes to cart away."—Peter Schneider, Cincinnati Brewing Co., Cincinnati, O.

"We regard the use of crude oil as fuel for electric light stations a complete success."—W. A. Scott, Champion Electric Light Co., Cleveland, O.

"We have fitted all our furnaces to burn oil as we find that it gives us much better results and a large saving in expense."—The National Carbon Co., Cleveland, O.

"We are so well pleased all around with oil fuel that we could not be induced to discontinue its use."—A. Hess, Cincinnati Spring Works, Cincinnati, O.

"We have put in tanks, pumps, pipes, etc., in a permanent manner. Oil, we are convinced, is the fuel for our business for the future."—Alexander De Lano, Detroit, Mich., Steel and Spring Works.

"In the making of brick the use of oil as fuel means a saving in the cost of fuel of 15 per cent.; in the cost of labor of 40

per cent., and a considerable increase in the value of the product."—P. L. Sword & Son, Cleveland, O.

"We are having the most satisfactory results from the use of oil in every respect and shall certainly make a saving of from 25 to 30 per cent., at a low estimate"—E. Bement & Son, Agricultural Works, Lansing, Mich.

"We have been using oil fuel in our mill since June, starting under one boiler, but now firing under three; and also in four of our sheet mill furnaces. We now have finished and in use a five-hundred barrel storage tank, and are piping our works for a more extended introduction of the oil. We find there is quite a saving in use of oil over coal under the boilers; while in the furnace the percentage is much greater, showing conclusively not only the economy of oil over coal for our use, but producing a much better product of both iron and steel."—Britton Iron & Steel Co., Cleveland, O.

The *Chicago Journal of Commerce* says:—"Petroleum is now used to generate steam in boilers used to run steam threshing machines. The danger from sparks in the use of wood and coal in the vicinity of great quantities of combustible matter is very great. The petroleum fires give forth no sparks, and will, therefore, much reduce the risk of burning at threshing time."

Russia, too, is making great strides in the same direction. The wonderful gushing oil wells of Baku are producing more petroleum than can be taken care of, and torrents of the article are flowing to waste. All, or nearly all the locomotives on the railroads in Eastern Russia are adapted to using petroleum fuel; all the steam transports employed in freighting burn petroleum fuel exclusively, and even the immense iron clad war ships of the Russian navy in those waters carry stores of petroleum fuel instead of coal, and generate their steam by that means.

The general use of petroleum as fuel wherever the article can be had as cheaply as coal is only a matter of short time.

PRISON LABOR.

At the opening of the Fall Assizes for the County of Brant, at Brantford, a few days ago, before the Hon. Justice Armour, in addressing the Grand Jury his Lordship, speaking of the management of prisons, said that he thought there was altogether too much sentiment nowadays in the treatment of prisoners. He said:—

"Prisons have now got to be anything but places of punishment. Take the penitentiary. The inmates, when they do work, work only eight hours per day; and they are comfortably housed and more comfortably fed than some of the men who are called upon to pay the taxes for their support. Formerly the labor was contracted for, but now it is impossible almost to give the prisoners anything to do. The cry of prison labor has been raised, and a stop has been put to the manufacture of shoes and clothes, and objection is even made to the convicts quarrying stone. The taxpayers, too, have to put their hands in their pockets and supply them with tobacco, and it surprised him that the luxury of whiskey was not also accorded them. In the county gaol, likewise, there was no work for the prisoners, and this state of things would continue year after year until the taxpayers put a stop to it."

His Lordship is no doubt a most excellent judge of law, but the people are the judges of the expediency of allowing prison labor, and goods manufactured by convicts in penitentiaries, to be brought into competition with free labor and goods manufactured by free men. And it is not only their privilege thus to judge, but they have judged and decided against it. Penitentiaries are a necessary evil in the land and the people have to

bear the expense of them, even as they have to bear the expense of salaries to judges, and all the other expenses of government. Men are not confined in prison for whatever labor they may be able to perform, but for punishment for crime. and while it is to be deplored that there is so much crime being committed, necessitating the incarceration of the criminals, it does not follow that such criminals shall be used as a means to depreciate the value of the labor of free and honest workmen; deprive them of work through the competition of prison labor, and force them, through stress of poverty, to become criminals themselves, merely that penitentiaries may be self-supporting.

The problem of the employment of prison labor has not yet been satisfactorily solved, but there appears to be a field open to such labor in the construction of certain sorts of public works such as making roads and highways, digging canals, etc., which might otherwise not be built, and which would not necessarily bring such labor into competition with that of free men. Convicts might be made to manufacture the boots, shoes, clothing, etc., that are necessary for their comfort and health, and they might quarry stone for the construction or extension of their own prisons. If a judicious system of rewards for good behavior of convicts includes occasional rations of tobacco, we do not see why the article should not be furnished them, even if "the taxpayers have to put their hands into their pockets" to pay for it, as his Lordship observes; and the whiskey, too, should be forthcoming, not as a luxury, but in cases of necessity and by the prescription of prison physicians.

His Lordship may rest assured that public sentiment is against the employment of convict labor in the way indicated by his Lordship's charge to the Brant Grand Jury.

NO BONUSING BUSINESS.

A NEW YORK firm of carriage builders, desiring to extend their trade in Canada, have applied to the authorities of Brantford, Ont., to grant them a bonus of \$20,000, and other favors in the way of exemptions from taxation, water privileges, etc., for a long term of years, conditioned upon their establishing extensive works in that place. There is a disposition on the part of the authorities to grant the demands, but the local carriage and waggon manufacturers are opposed to the concession, chiefly, we are informed, on the ground that it would interfere with their business. This should be but a secondary consideration, for if there is a sufficiently large demand in Canada to warrant the establishment of such a concern as proposes to go into business in Brantford, the opposition of those who may be engaged in the same line of business there might naturally be expected, but should not prevent the enterprise. But the proposed grant should be antagonized on the broad ground that if the concern asking it have not got sufficient capital to establish and carry on their business without such help, or if there is not a sufficiently wide and lucrative market in Canada to support such an enterprise, in addition to those already in existence, they had better remain where they are. It is the height of folly to encourage the establishment of pauper industrial enterprises in Canada, and we hope that the day is past when municipal governments, in disregard of the rights of others, make grants of money and valuable privileges as inducements to paupers to start factories and mills within their corporate limits. If our Yankee friends, or anybody else, desire to engage in manufacturing enterprises in Canada, let them first provide themselves with the necessary capital. Nothing has a worse effect upon trade generally than business failures, and municipal authorities have no more right to guarantee a manufacturer against failure than a grocer or a Chinese laundry.

◇ THE ◇
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FIFTEEN thousand immigrants have arrived in Winnipeg this year up to date.

AMERICAN anarchists and their Canadian confreres make a painful mistake in supposing that the constituted authorities can be scared into weakness or "clemency" in dealing with the condemned Chicago bomb throwers. The wide mouthed blatherskites will find that their bulldozing programme will not have the effect they anticipate. The murderers will be hung.

CIRCULARS from the Department of State at Washington have been sent to all United States consuls in Canada asking for certified returns according to the sworn statements made before them, of the exports of all merchandise at each Canadian port to the United States during the last three years. It is supposed that the Yankee Government desires the information with a view to more intelligently considering the question of closer commercial relations between the two countries.

THERE are big crops this year in Manitoba. The yield in many places has been thirty-five bushels to the acre, while the average will be about thirty bushels. Figuring on an acreage of 432,134 acres, the yield will be 12,099,864 bushels, leaving 10,000,000 bushels available for export. The barley crop averages thirty-five bushels on an acreage of 56,110 acres, or about 2,000,000 bushels. The oat crop will reach 5,000,000 bushels. Twelve thousand acres of flax have been harvested, giving a net yield of 180,000 bushels. The potato crop is 2,850,000 bushels, giving 1,000,000 bushels for export.

A NAVAL reserve for the United States by a selection from the merchant marine of that country, is earnestly favored by officers of the navy. The idea is to have Congress pay annual bounties to the owner of any steam vessel in the coasting or foreign trade, provided such vessel is constructed according to the requirements of the Navy Department, or that may be found suitable for being converted into an armed auxiliary cruiser. Such ships must at all times be at the disposal of the Government, and liable to be transferred to the control of the naval authorities for naval service, with or without crews, whenever it is considered necessary.

UNITED States Minister Denby, writing from China to the Department of State, says that one of the chief impediments to the opening of new branches of trade with the Chinese is the ignorance of the American manufacturers and producers of the

needs and tastes of these people. He cites hardware as an example, saying that the Chinese hardware, though cheap, is very inferior, and that if the manufacturers knew the tastes of the people they could produce articles far superior in quality and at competing prices. This is a suggestion that Canadian manufacturers should heed. The newly-established line of steamers from Vancouver to China and Japan opens up a new and valuable field for the sale of Canadian manufactures, which should be quickly and intelligently occupied.

WE are informed that the town of Newburgh, Ont., recently devastated by fire, is being rapidly rebuilt. There are now more than a dozen new buildings in course of erection, and many transactions are being had in vacant sites, the owners designing extensive improvements early next spring. Taxes for this year have been struck at two per cent. A recent editorial in this journal regarding Newburgh has been widely read, and it is more than probable that some parties contemplating engaging in manufacturing enterprises in Canada, will gravitate to that town in consequence thereof. It would give us great pleasure to chronicle from time to time the efforts that may be made to lift the manufacturing enterprises of this plucky town from the ashes in which it suddenly found itself a few weeks ago.

A CABLEGRAM from London, speaking of the Imperial subsidy to the Pacific steamship line of the Canadian Pacific Railroad Company says.

"The negotiations carried on throughout the year have thus unexpectedly been brought to a successful issue. Three months ago, at the close of the Colonial conference, despite the representations of Sir Alexander Campbell and Mr. Sandford Fleming, there seemed to be no hope of obtaining a subsidy. Mr. Goschen was understood not to favor the project and the feeling aroused by the new Canadian duties was considered prejudicial. Despite the favorable opinion expressed by the press generally, the negotiations were practically abandoned. The question has since been brought before the government again and representations made through Sir Charles Tupper. The decision was finally come to by the cabinet to grant a subsidy of £15,000 sterling yearly, with £15,000 from Canada for a monthly service.

During the first nine months of the present year the amount of capital invested in new factories in the several Southern States of the United States aggregated \$212,150,000 against less than \$81,000,000 during the corresponding period of the previous year. During the same period this year some 2,600 different new companies were organized for manufacturing purposes, against 1,175 companies last year. The enterprises alluded to as having been begun this year include 26 iron furnaces, 56 miscellaneous iron works,—rolling mills, etc.,; 80 machine shops and foundries; 444 mines and quarries; 98 flour mills; 59 cotton mills; 41 furniture factories; 32 carriage and wagon factories; and 17 agricultural implement works. The Southern States have the natural advantages of coal, iron and timber, and under the protective tariff of the United States they are developing their resources to a wonderful extent.

A FEW days ago in London several hundred of the poor, homeless unemployed human beings who have been sleeping at night in the public squares and parks of that city during the

past summer, paraded through some of the principal streets demanding "Work or Bread." There is a great deal of desolation and suffering among the laboring classes in Great Britain, and their condition is becoming more desperate as cold weather comes on. There is a widespread depression in business, and thousands of men, women and young people who have heretofore found employment in the factories and other industrial establishments, are now out of work, and have neither food nor shelter and scant and insufficient clothing. The chief barrier standing between the condition in which these people are and the working classes in Canada is the protective tariff. Here all find constant work at remunerative wages, while there work is not to be had at any price.

THE first year in which attention was seriously paid to the production of petroleum in California was in 1879, when 568,000 gallons were produced. In 1883 the production was 6,000,000 gallons, and in 1886 nearly 11,000,000 gallons, that State now ranking third among the petroleum producing states. Ohio, however, has developed a craze in the direction of oil production and natural gas. A few months ago where the town of Cygnet now stands there was nothing but a poor, barren farm. Oil was discovered on the place, and now there are already a dozen oil tanks built there of 35,000 barrel capacity each, and quite as many more of similar size are about being constructed. The original well, which was flowing 250 barrels a day, was recently shot with a "go devil," when the oil burst forth in a mighty volume, and its capacity increased to 8,000 barrels a day. This well is keeping up its reputation for being the greatest gusher in the world, and at the rate it is flowing now all the 35,000-barrel tanks at Cygnet will soon be filled from the "oil volcano."

A gentleman who recently returned from a trip along the border of the Ontario Peninsula, says that the smuggling which goes on from Detroit and other places into Canada is really laughable. It seems to be acted upon as a principle even by those who claim to be honest, that it is no wrong to cheat the Government. Ladies smuggle in articles of the strangest kind—clocks, boots, dishes, rolls of cloth and many other things concealing them in their skirts. It is not an unusual thing for ladies to possess a bag made and used only for smuggling. It is arranged to be hung from the waist, and as it stretches down to within a few inches of the bottom of the skirt, it will contain a week's provisions or a whole season's millinery.—*Toronto Globe.*

WE emphatically protest against this implied outrageous slander upon Canadian women, and the distortion of the generally accepted definition of the word "lady." Can it be possible that Mr. Wiman, Mr. Butterworth, the *Globe* and other annexationists have adopted this method of employing their female friends on the other side to engage in systematically defrauding the Canadian Customs by such practices, thereby hoping to effect their object?

THE United States Government have been officially advised of the appointment of Sir Charles Tupper as one of the British Fishery Commissioners, the commission now consisting of Mr. Joseph Chamberlain, Sir Lionel Sackville West, the British Minister to the United States, and Sir Charles Tupper, of Canada, who will represent British interests, and Mr. Thomas F.

Bayard, the American Secretary of State, Mr. Putnam and Mr. Angell. It is stated in Washington that the approaching negotiations will be confined entirely to the fisheries question, and that that of Commercial Union will not be discussed at all. The appointment of Sir Charles as a representative of Canadian interests in the negotiations is regarded with general approbation throughout the Dominion, regardless of political prejudice. It is believed that the Minister of Justice, the Hon. John S. D. Thompson, will accompany Sir Charles to Washington and present the Dominion case before the commission. Mr. H. T. Bergne, of the British Foreign Office, who acted as Secretary of the Halifax Commission, will again hold that position at the approaching conference.

The Toronto *Globe* ascertains from the records of recent sales that the price of Ontario timber lands is on the advance. A square mile that was sold for \$160 in 1881 has since been withdrawn at \$539. The *Globe* thinks that Commercial Union would still further advance prices. Mr. Mowat can hardly be blind to the fact that these values belong by right to the people of Ontario, and not to speculators. If a lumberman can afford to pay such a price to a speculator for the right to cut, he can afford to pay the same price to the Provincial Government. There is an easy way of diverting the "boodle" into the Provincial treasury, and Mr. Mowat should promptly adopt it. Mr. Mercier has set the example in Quebec.—*Hamilton Times*.

This is the testimony and the opinion of two of the bitterest Grit papers, but it shows that although we are "hopeless and helpless" the value of Canadian timber lands is steadily and rapidly advancing. A few years ago in 1881—recovering from the depression caused by the previous ill effects of a low tariff, Ontario timber lands, as shown by the *Globe*, were worth only \$160 for 640 acres, but now no such lands can be had for less than about one dollar per acre. Keep your hands off the tariff, gentlemen, if you please, and let the procession proceed.

The crop yield in Canada this year, particularly, in Manitoba and other parts of the North-West, is unusually large, and complaints are made in some quarters that the railroads are not doing all that they should do in moving the grain to market. This, however, is denied, the railroads claiming that they have sufficient facilities to handle all the business that may offer. We hope this is the case, but loud complaints come from the United States that more freight cars are wanted and are not to be had. Shippers complain that they cannot get their freight moved promptly. The volume of merchandise to be moved is greatly in excess of what it was last year. Large additions have been made during the past year to the equipment of nearly every important railroad in the country, but still there is not enough rolling stock to meet current demands. Car building factories are and have been hard driven with orders, and probably in no year in the history of the country have so many cars been built as in the past twelve months, yet the increase in traffic has been greater than the increase in facilities for handling it.

The distressing news comes wafted to us across the waters that ladies of some of the aristocratic families in London are actually taking to trade. In some instances these ladies are wives of landlords who are not in receipt of their rents, and are consequently reduced to poverty, the wives and daughters seeking to earn their living by engaging in plebeian occupations.

One lady has opened a shop for the sale of decorative house work; another has opened a dressmaking establishment; another sells cloaks and mantles while her husband keeps the books of the concern; a lady of a Duke's family has a shop for the sale of robes and dresses; the sister of a Lord sells bonnets and hats, and two sisters, daughters of a well known general in the army, are engaged in selling children's clothing. There is more hope for the prosperity and welfare of the country when we see this class of the community rise above the conventionalities of "society" and engage in honest and honorable occupations, and thus contribute their mite to the general good, than if they had stood upon their "dignity," as but too many of them do, and attempt displays that their impoverished circumstances do not honorably admit of.

The Toronto *Globe* informs its readers that "Guelph is excited over the frightful operations in that community of a pair of whiskey detectives," that "the most violent abuse of the informer is no adequate justification of the law breaker," and that "all that is required to drive the informer into some other business is to get the liquor dealer out of the business which the law has declared shall not be carried on." This is wisdom and good advice in solid chunks. But it was but very recently that the *Globe* was even more excited over the operations of the detectives who hauled a number of importers before the Montreal courts, charged with undervaluation of invoices and attempts to defraud the revenue. It didn't stint itself in its violent abuse of the informer, and it was exceedingly pains taking to justify the law breakers, excusing them on the ground that there should be no such laws to violate. It expressed strong desires to "drive the informer into some other business," but it didn't counsel that the law breakers should cease from practices "which the law has declared shall not be carried on." The *Globe* runs with the Prohibitionist hares in Ontario and with the undervaluation hounds in Montreal.

MR. H. J. PETTIFER, secretary of the London, England, Workmen's Association, who recently made a visit to the United States, in an article describing the results of his visit published in *Fair Trade*, of London, says:

"I have once more returned home from the United States, this being my third visit, and I must confess that if I had been there on my own responsibility, and with my own money, I should have stayed there altogether, for it seems to me that we have a very long and uphill fight before we shall be able to attain such alterations in our fiscal policy as will place the working people of this country in the advantageous position of their fellow toilers across the Atlantic—in fact, I have come to the conclusion that there are only two courses left open to the laboring classes of Great Britain. One is to get protection at home, and the other is to go to some English-speaking country where they have got protection. In other words, if the mountain will not come to Mahomet, Mahomet must go to the mountain."

Mr. Pettifer visited the United States in the interests of British workmen, seeking to discover the causes of the depression of trade in that country, and the remedy therefor, and his conclusion is that "protection" is the panacea.

The so-called inter-provincial conference, consisting of the premiers and other officials of the several provinces composing the Dominion of Canada, about assembling in Montreal, will,

it is said, sit with closed doors. It was to this conference that Sir John A. Macdonald, was invited, but which invitation he quite emphatically declined. Advocates of the move say that it will probably prove to be the first authoritative if not official step towards the formal assertion of "Provincial Rights;" and that progress in that direction is necessary and inevitable. It is not a rope of sand that binds these provinces into the great and glorious Dominion of Canada, and whatever "rights" the provinces may possess that certain dissatisfied and disgruntled ones may happen to imagine they are not enjoying, may be obtained under the Dominion Government, but never by outside pressure or extra judicial provincial acts. But a few years ago the Southern States of the American Union imagined that they had grievances which were not being redressed within the Union, and attempted to go out and set up an independent Confederacy. It would be well for Canadians who might be tempted into disloyal acts to bear in mind the result of the late war of the rebellion in the United States.

THE Hawaiian Government has concluded that Chinese immigration into the kingdom should be further restricted, and will, it is said, adopt stringent measures with this object in view.

A NUMBER of moneyed gentlemen of Halifax, N.S., recently held a meeting in that city for the purpose of forming a company with a capital of \$50,000, to build a yacht to compete for the America cup in 1888. It is proposed that the new yacht, if built, will be designed, constructed and owned in Nova Scotia.

THE Canadian Pacific Railway Company are making arrangements on their eastern division for the transportation of grain from the Canadian North-West and Manitoba as well as from Chicago to Halifax and New York. The company expect to be able to handle about nine million bushels of western grain this season.

THE schooner *Gatelle*, the first of the line of vessels for the West Indies, under the auspices of the St. John (N.B.) Forwarding and Trade Promoting Company, is announced to sail from that port about the first of November. It is understood that quite a number of shippers and manufacturers are arranging to send goods by this vessel.

MR. ROWEN, C.E., has discovered what is thought to be a forest of petrified trees on the Storrington side of the Rideau Canal. The columns are among sandstone, and while the latter splits horizontally the former split perpendicularly, thus proving the contention that a forest has been discovered. The discovery will create a sensation among the geologists.

THE new Niagara Central Railroad from Suspension Bridge to Thorold, Ont., has been opened, and the first passenger train run over the road. A construction train was run over the road first for the purpose of testing it, and everything was found satisfactory. The start was made from the new Central station, across the Cantilever Bridge, at Suspension Bridge. The Michigan Central Road furnished the cars.

GOLDWIN SMITH alleges that the Commercial Union agitation is sweeping the country. A female domestic might run a broom across a room and claim that it had been swept; but her claim might not prove satisfactory to her mistress. Mr. Smith, who seems to imagine that he has received a mission to reorganize not only Canada but half the civilized world, is in the habit of indulging in what the rhetoricians call hyperbole. *Ottawa Citizen*.

HAPPENING to want a place to strike a parlor match to light a gas stove, says a writer in the *Chicago Journal of Commerce*, I struck the match upon the top of the stove over the gas. The gas ignited, but the match did not. I laid the match aside, and as the gas-burner was wanted I used the same match until I had lighted it twenty-three times, and the match is apparently as good as ever. Cannot some one invent an improved lighter from this suggestion?

AN inventive Yankee genius has shown what may be done in an emergency. He grinds together cornstalks and coarse prairie grass, and moistens them with water. When this compound has been reduced to a pulp he presses it into blocks twelve inches long and four inches thick. When these are thoroughly dried they burn readily,

give out greater heat, and last twice as long as the same amount of soft coal. He claims that this fuel can be prepared at a cost of \$2 a ton.

It is stated elsewhere in this paper that it was in contemplation to remove the works of the Ontario Rolling Mills Company from Hamilton to Toronto. Since the item was put in print, Mr. C. S. Wilcox, treasurer of the company, is reported as saying that the works will not be removed to Toronto. The plant of the London Steel Mills was bought by the company and inducements have been offered to have a branch established in Toronto rather than in London. It is not probable that anything will be done till next spring.

AS things now stand in the United States the labor element has developed into the following named political parties: (1) the United Labor party; (2) the Union Labor party; (3) the Progressive Labor party; and (4) the Labor Political Reform party. Mr. George and Father McGlynn are supposed to be incorporated into some one of these parties, but we cannot tell which. The socialists, and the anarchists, and the nihilists are all there somewhere. Possibly the list may be enlarged before next election day.

SOME time ago the Southern Pacific Railroad decided to make a trial on its ferry steamers of petroleum as a fuel. It changed the furnaces of the freight transfer "Thoroughfare" and of the "Piedmont" to admit of its use. After trying for about three months, the cost being carefully computed, it was decided to make another trial of coal, with a view to deciding finally which to use permanently. The oil has won the day, and will be the future fuel. When time allows, the furnaces of all the other steamers will also be changed.

MR. E. H. WALKER, for many years statistician of the New York Produce Exchange, has joined the editorial staff of *Broadstreet's*, the well-known commercial and financial newspaper published in New York, to which he will give his exclusive services. Mr. Walker is one of the best informed men in the country on the statistics of grain, flour, provisions, live stock and kindred lines. He is the author of the only complete records of this kind in the country, and the inventor of the "visible" grain supply statement. With his aid, in addition to the original work in that direction which *Broadstreet's* has done and has projected, that journal must become indispensable to all interested in those subjects.

WHEN the last voyage of the Beaver Line SS. *Lake Huron* to Montreal was nearing an end, the passengers held a meeting and drew up an address to the captain, which expressed their thanks and satisfaction at the pleasant voyage from Liverpool. The address then continued: "Everything has been done for our comfort, and the courtesy and good feeling displayed by everyone on board has been most marked, the captain, doctor and stewards having done all in their power to make the voyage a pleasant one. Wishing access to the Beaver Line, and all on board a pleasant and safe passage home, we subscribe our signatures." Then followed the signature of every passenger on board, sixty-eight in all.

THE Nautical Society of Hamburg, Germany, have offered a prize of 500 marks for the best essay on the subject of calming the sea by the use of oil. An exhaustive description of experiments of the effect of oil made up to the present time is required, also a criticism of the arrangements used so far, and especially complete directions for its use by large steamers and sailing vessels, as well as small vessels, pilot, fishing and life saving boats, besides directions for the use of oil at sea and near the coast. The essays are to be written in English or German, and sent to the president of the Nautical Society, director of the Navigation School, Capt. F. E. Mathisen, Hamburg. Competition is not limited by nationality.

SOME stir has been created in England by the address of Mr. Adamson, the new President of the British Iron and Steel Institute, at the annual meeting of that body held recently at Manchester. Mr. Adamson took occasion, in the course of his address, to advocate the imposition of taxation on imports of foreign manufactures. He said that under existing conditions the local or home manufacturer was oppressed, but that if imported iron and steel were made to pay their share toward carrying on the Government the British and foreign manufacturer would be more nearly on a par. This expression of opinion is of no little interest, coming as it does from a British manufacturer, and a man of the prominence attaching to the presidency of the British Iron and Steel Institute.

SIR GEORGE STEPHEN, President of the Canadian Pacific Railway Company, will, it is stated, leave for England early in November to arrange for the building of three powerful steamers to run on the Pacific Ocean between Vancouver, China and Japan. The steamers will be about four thousand tons burden, capable of steaming eighteen miles an hour, the usual speed being fifteen. They will be of the highest of Lloyd's classification, and will be constructed

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under the supervision of the Admiralty, as under the terms of the Imperial subsidy the British Government has the right of pre-emption in the time of war. It is believed that they will be laid down upon the same plans as the two new White Star Line steamers, which are to meet the wishes of the Admiralty contractors, with their boilers under water and propelled by twin screws.

Some idea of the extent to which mechanical ingenuity and efficiency have advanced may be had from the following statement: "It is now possible to construct a complete sewing machine in a minute, or sixty in one hour; a reaper every fifteen minutes, or less; 300 watches in a day, complete in all their appointments. More important than this, even, is the fact that it is possible to construct a locomotive in a day. From the plan of the draughtsman to the execution of them by the workmen, every wheel, lever, valve and rod may be constructed from the metal to the engine intact. Every rivet may be driven in the boiler, every tube in the tube sheets, and, from the smoke stack to the ash pan, a locomotive may be turned out in a working day, completely equipped, ready to do the work of 100 horses.—*Boston Journal of Commerce.*

A TELEGRAM from Detroit, Mich., says that great excitement prevails at Crystal Falls, in the northern part of that State, over the discovery of a new iron range, with a continuous vein of ore two miles in length, which is now being opened. The first ore found on this new range was at the Lee Peck mine, and it is said to be of a soft, greasy texture, in color rather bluish, and is of the highest grade of non-Bessemer ore—an article that will be much sought for when it finds its way to the markets. The vein seems to run in a northeast and southwest direction. Several test-pits have been sunk and each one shows up the same fine quality of ore. Mining circles are all at fever heat over the new range and the exceedingly bright prospects for a big boom before another year passes. All lands adjoining this latest find are being optioned as fast as possible, and exploratory work is being pushed vigorously.

It should not be forgotten that this proposition also implies a complete surrender by the Dominion Parliament to the American Congress of all control over the principal source of the Dominion's revenue—the tariff. Whatever it may please the American Congress to do regarding the tariff, that the Dominion Government must forthwith accept. Our Congress would have even more power over the Dominion tariff under this arrangement than it would in the event of political union, because the people of the Dominion would have neither vote nor voice in Washington under the proposed Commercial Union, while they would have both under political union. Not only would our Congress prescribe and change at pleasure all the tariff taxes enacted from the people of Canada, but our executive officers and our courts would make all the rulings and decisions affecting rates for the Dominion as well as for the United States.—*Chicago Times.*

It is understood that the Parisian syndicate, which is said to include the Rothschilds, have renewed their propositions to the Dominion Government relative to the establishment of smelting works in the Lower Provinces, the development of the mining resources, and the construction of railways in the mining regions of Nova Scotia. Representatives of the organization recently held a conference in London, Eng., but as the scheme is very elaborate in detail, nothing was done, the Canadian Ministers agreeing to submit the proposition to the Cabinet on their return to the Dominion. The capitalists, among other things, are desirous of going into rail manufacturing, expressing a desire to secure co-operation with the Canadian Pacific, Grand Trunk and other Canadian railways, rather than be considered an opposition enterprise. It is understood that the syndicate has been formally notified that the Government will not consider any proposition for the purchase of the Intercolonial Railway until the completion of the Short Line Railway.

A CORRESPONDENT of the *Globe*, W. Dryden, jr., in a letter on Commercial Union, says:—"Give the [Canadian] farmer 10 cents a bushel more for his barley and there will be such a stimulus given to the production of barley that in place of sending \$5,000,000 of barley to the United States we will send \$10,000,000. Give the farmer 20 per cent. more for every horse sent to the United States, and in place of \$2,000,000 worth of horses we will send annually across the line \$5,000,000." From whence is the Canadian farmer to get his ten cents a bushel more for his barley and twenty per cent. more on every horse? Evidently Mr. Dryden expects him to pocket the duty now paid to the United States Government on those articles. If the Canadian farmer is to pocket the duty, the American purchaser will have to pay just as much as he does now for Canadian barley and horses. What inducement then will there be for him to double his purchases of these things? And unless he be willing to

buy, how can the Canadian farmer sell? These are questions which Mr. Dryden should take into his most serious consideration. *Kingston Chronicle and News.*

A COMPARATIVE statement of Canadian exports and imports, and the duties collected thereon, compiled from the monthly statement published by the Department of Customs, with the addition of British Columbian statistics, which were not included therein, shows a most gratifying state of affairs for the fiscal year ending the 30th of June last. We find that the total value of goods exported in that year amounted to \$89,515,811, against \$85,251,314 for the previous year, or an increase of \$4,264,497. The imports are placed at \$112,424,561, or an increase of \$8,467,675 on the previous year's operations, giving the lie direct to those chronic grumblers on the Opposition press who declare that the trade of the country is in a languishing condition. Of this amount \$105,639,428 were entered for consumption, showing an increase of over \$6,036,734 for the fiscal year of 1886-7, while the duty collected reached \$22,469,706, an excess of \$3,021,582, as compared with the previous twelve months. It will thus be seen that the volume of business has increased in the direction indicated by over twelve and a half millions of dollars. This increment is significant, and illustrates how fully the National Policy has met the requirements of the people.

SOME of the Reform papers express dreadful disgust at the appointment of Mr. Thomas Cowan as postmaster of Galt. This seems to us very unreasonable, for next to the appointment of a Reformer by Sir John, we should think nothing would please them so well as the retirement from political life of such a promising man and able speaker as Mr. Cowan. We are sure, at all events, that such are their inner feelings, but the habit of finding fault is so strong that they must humor it, which they know they can do safely, since Sir John is not likely to change the appointment. Therefore, though they are glad Tom Cowan is shelved, they will still find fault. The *Woodstock Sentinel-Review*, however, is reasonable. It says that "from a party standpoint Mr. Cowan deserves his reward. He is a man of ability and will fill the office of postmaster well. While Reformers have never admired Tom's methods as a stump speaker and politician, many of them have always had a warm side towards him personally. With us they will congratulate him on his appointment, and wish him long life and prosperity as postmaster of Galt. No selection the Government could have made would give more general satisfaction."—*Stratford Herald.*

THE severe competition in recent years in every branch of industry has set innumerable keen wits to work, with the result of many startling improvements in various trades, but there are few which compare in importance with the "simultaneous" process of color printing, which promises to entirely revolutionize some classes of calico and velvet and velveteen printing, and also the printing of advertisements in colors. We need only to allude to a new machine shown at the Manchester Exhibition, by which ten colors can be printed at once, which is a great stride forward. The novel character of the "simultaneous" process will be at once understood when we mention that by it, if required, 1,000 shades could be printed off at one impression. Instead of using engraved rollers, as in ordinary calico printing, or stones, as in the case of colored advertisements, the designs or pictures are "built up" in a case in solid colors, specially prepared, somewhat after the style of mosaic work, a portion is then cut or sliced off about an inch in thickness, and this wrapped round a cylinder, and the composition has only to be kept moist and any number of impressions can be printed off on calico, velvet, or velveteen, the colors being thoroughly "fast."—*Manchester (Eng.) Examiner.*

MR. HANNAY, of Glasgow, is the inventor of a new light, which bids fair to compete, as an out-of-door illuminant, with electricity. It is produced by the consumption of a most intimate mixture of air and minutely divided oil particles. Lucigen, as the new illuminant is called, is already extensively used in large engineering works, and for lighting large open spaces, for which it is especially adapted. All that is required for the Lucigen light is a barrel of crude oil and a compressed-air engine, which transforms the oil particles into spray, and as the disintegration of the two elements is secured, a continuous bright flame is the result. Three lamps on the terrace in front of the Crystal Palace at Sydenham, lit up the whole grounds, and the oil consumed did not cost more than four cents per hour. Such is the immense volume and diffusive power of the flame that small print can be read a quarter of a mile away from one lamp. Two of the lamps having been extinguished, this was actually proved by Mr. Augustus Harris, manager of Drury Lane Theatre, who was able to read down an avenue at over 530 yards from the lamp. The utility of Lucigen for out-door purposes may be gauged by its victories. Besides being used for lighting many large engineering works, and such places as the Armstrong and

Whitworth factories, it is employed in several railway stations in England; it has supplanted the electric light at the Forth Bridge Works; it is being set up along the whole length of the Suez Canal; it is in use in the maize fields in Egypt, and was employed in the recent mobilization of the French troops. The energetic Boulanger found out the advantage of it for disembarking horses and carrying on other military operations at night; and the French military authorities are now getting lighting apparatus which will enable them to carry out the mobilization of the whole army without interruption. The plant for an installation is portable, and the small air compressor may be worked by hand. Though Lucigen is too powerful a light for using indoors, the Town Council of Glasgow is introducing it into the streets. In this case the flame should be protected by a globe. Mr. Hannay says that a town could be lighted with the waste products of its own gasworks. The oil can, however, be imported into England for a penny a gallon, and the supply is said to be inexhaustible. — *Ottawa Citizen*.

LOCAL INDUSTRIAL ITEMS.

We wish we could impress upon local papers the importance not only of recording all new industrial enterprises, but also of giving definite information in regard thereto. This would not only make the item more valuable to the parties immediately concerned, but it would add a hundred-fold to its interest in the eyes of outsiders. For instance, what can be made of the following, clipped from an exchange the past week:—

"Parties from a distance are negotiating for a lot, preparatory to the building of a large roller process mill here."

A very little diligence on the part of the reporter might have elicited the following facts of real value:—

"Mr. George H. Smith, of Smithtown, O., representing a \$50,000 syndicate, is negotiating for a lot preparatory to building a roller process mill in Millville. The mill will be 50x75 in dimensions, five stories high, and will be run by an 8x12 engine. The machinery and motive power have not yet been purchased."

Here is a definite statement on behalf of the new company (even if not yet organized); it gives the name and address of the principal projector; it furnishes a fair idea of the extent of the proposed enterprise, and it affords data on which the boilermaker, the brick-maker, the contractor, the engine manufacturer, the steamfitter, the mill machine furnisher, the safe manufacturer, etc., can base an immediate letter of inquiry, and ought to result in favorable business arrangements all around. Copied into a trade paper, it immediately reaches the very parties who furnish such appliances, and is better than a six months' "ad" inviting proposals. Wide-awake concerns do not need to be invited to make proposals with a fairly definite item promptly before them.

And this leads us to a final point. Because the editor, or a few friends, or a whole town knows about a new enterprise is no reason why reference to it should be withheld, or the project ignored, until the plant is completed and the concern is ready to begin operations. The valuable feature of the news should be, and is, the announcement, at the earliest moment consistent with the interests of the new company, of its intention to go ahead. This done, inquiries will not be out of date, coming in long after the contracts have been let. The local papers are doing a good work for the social, moral and educational work of their communities, now let them pay a little more intelligent attention to their industrial interests. *Iron Trade Review*.

OATMEAL MILLERS' ASSOCIATION.

The first regular meeting since its organization some months ago of the Oatmeal Millers' Association, convened in this city October 12, and was in session two days. The following members were in attendance:—

J. M. Archibald, Brockville; E. Edmunds, Lynn Valley; J. Ireland, Wroxeter; A. Leith, Nileston; Thos. Martin, Mount Forest; H. S. Moore, Norwich; J. D. Moore, St. Mary's; H. Martin, Guelph; James Muirhead, London; R. Thomson, Woodstock; James McIntosh, Toronto; W. Scott, Ottawa; D. R. Ross, Embro; C. Russell, Uxbridge; D. Speers, Galt; A. Grant, Ingersoll; E. D. Tilson, Tilsonburg; W. Thomson, Mitchell; J. Wilson, Jr., Fergus; J. Wright, Owen Sound; N. Boswell, Wyoming; D. Clark, Ayr; J. Clegg, Wingham; J. Knott, Palmerston; Mrs. Melnis, Ingersoll.

The election of officers resulted as follows.—President, William Scott; Vice-President, Thomas Martin; Treasurer, J. D. Moore.

The reports received show that the oat crop is not turning out well. Millers are not receiving many oats, and many of those coming in are very light in weight, and not turning out the usual quan-

tity of oatmeal to the bushel. The Canadian demand for oatmeal at present is low, and it is expected that sales will be increased with cooler weather. There is very little demand for meal from Great Britain on account of the very heavy stocks of meal on hand; but correspondents report that stocks are now decreasing, and that an increased demand may be expected later on. Should this take place meal may advance slightly, but the large number of mills now waiting the advance will soon check it.

A lengthy discussion took place in regard to the best means of increasing the sale and consumption of oatmeal in Canada, and it was finally decided that each miller should use every legitimate means for pushing the sale of meal by means of agents and advertising.

The combination prices of oatmeal were agreed upon as follows:—Standard, \$1.25; granulated, \$1.50; roller meal, \$1.75; rolled oats, \$5.00.

The different grades of meal and improved machinery now required for cleaning oats and finishing oatmeal is a source of much anxiety to the millers, as the same quality and grades of meal used a few years ago are now unsaleable, and oatmeal mills, like flour mills, must be all made over and thousands of dollars expended on new kilns and machinery. The great call in Ontario now is for roller meal and for roller oats, and in making the latter grade there is great waste in grading and shelling the oats, and therefore a very much higher price must be had for this grade of meal. The standard meal still goes to the Provinces and Britain.

CANADA'S NATIONAL POLICY.

(To the Editor of the CANADIAN MANUFACTURER.)

SEVERAL years' experience in commission business in England has taught me that competition continually grows keener. There Free Trade has made it most difficult for the capitalist, or any one else, save the consumer, to profit by commerce.

Here you are supported, as I think wisely, by a National Policy, and, speaking generally, your manufacturers are prospering; not, however, as they might.

The weak arguments and shifty character of the *Globe* and *Mail*, induced me to offer some remarks against "Commercial Union" to the *World*. I now venture a few suggestions to your readers.

Has not the time arrived for your merchants to take action towards a moderate federation? Surely Canada has everything to gain in this direction. To prevent annexation by the States, England and the sister colonies would look favorably at some well-defined proposal by which a mutual preference, perhaps slight, be exchanged with our brethren,—not only in tariff, but in postal and patent arrangements. Of course, each colony must retain her freedom as now. The whole of Her Majesty's subjects would profit by such an arrangement and be bound together more closely than ever. Can you not suggest some step being taken to raise this question whilst we have protection? Let us try and arm ourselves and make the most of the advantage, as our neighbors in the States have done.

To me it appears that Canada's National Policy is defensive, but not sufficiently enterprising. The United States are alive and active all the time. Look at the way they are counting trade with Australasia, China and Japan. Their tact and skill does them credit. I am told Canada has equal resources, but not the men. Surely this is not so. You have the C.P.R. and its splendid connections through to these very centres. The Mother Country has subsidized this route, and Canada has the first chance to reap the benefit. But what is she doing?

Early next year a very important Centennial Exhibition is to be opened in Melbourne to last six months. Your competitors have been making preparations for some time, and yet, as far as I can learn, nothing has been done in Canada. Surely some of your associated merchants would like to be represented there. Will the C.P.R. offer special terms and inducements for a representative to be sent out to that exhibition, whose whole business would be to care for and develop Canadian exchange and commerce? He could pay a visit to Yokohama, Hong Kong, Sydney and Wellington, New Zealand, en-route, spending six months at the Melbourne Exhibition. As I understand, space and motive power there are free to exhibitors. It might also be advisable for him to take in Mexico on his way back.

Surely this would be a profitable investment for many of your readers. Can you not put this suggestion before them and solicit their views at an early date.

I can probably introduce one firm who would be pleased to cooperate.

No doubt such an expedition would be highly remunerative.

YOUNG CANADIAN.

Manufacturing.

THE CANADIAN MANUFACTURER.

Send \$2.00 and receive it twice a month, postage paid, for one year.

MESSRS. McLACHLIN BROS., Arnprior, Ont., are refitting their grist mills with the roller system.

THE Woodstock, N.B., wood working factories are crowded with orders and are working extra time.

CANADIAN investors are said to have recently purchased a tract of 134,000 acres of North Carolina pine lands.

THE Ogilvie elevator at Brandon, Man., has been increased in capacity from 4,000 to 8,000 bushels per day.

THE towns of Thorold and Woodstock, Ont., are asking for tenders for lighting their streets with electric light.

MR. JOHN MILLS, Merrickville, Ont., has recently made considerable enlargement of his cabinet factory at that place.

THE Keewatin Lumbering and Manufacturing Company has increased its capital stock from \$160,000 to \$500,000.

THE Ontario Car Company, Cobourg, Ont., have contracted to build 100 freight cars for the Intercolonial Railroad.

It is said that Mr. P. Kyle, Merrickville, Ont., will form a stock company for the purpose of enlarging his malleable iron works at that place.

MESSRS. JAMES HARRIS & Co., St. John, N.B., have been awarded a contract for the construction of 400 freight cars for the Intercolonial Railroad.

DURING the last fiscal year the Cumberland Coal and Railway Company, of New Brunswick, carried nearly fourteen million feet of lumber over their line.

DIRECT telephonic communication has been established between Montreal and Ottawa, a distance of 120 miles. The line was built in 35 days and cost \$18,000.

THE Canada Paper Company propose cutting some 25,000 cords of wood the coming winter for grinding into paper pulp at their pulp mills at Windsor Mills, Que.

MR. WM. PARTIDGE, late of Toronto, has bought out the book bindery and paper box factory of Mr. F. Pohl, Windsor, Ont., and will carry on the business there.

A LATE steamer from San Francisco for China took out 200 tons of mining machinery and six skilled American miners to aid in the mineral development of that country.

THE Geo. F. Blake Manufacturing Company, Boston, Mass., have just sold to Messrs. Moore & McGarvin, trunk manufacturers, Acton, Ont., one of their first-class steam pumps.

THE Peterborough (Ont.) Lock Manufacturing Company have the foundations for the 60x50 foot addition to their works laid, and the building will be pushed to completion without delay.

MR. PETER McLAREN will build a saw mill at Macleod, Alberta. The machinery for the mill has been shipped. The mill will be supplied with logs from the foothills of the mountains.

It is proposed in St. Thomas to form a local joint stock company with a paid-up capital of \$75,000 to purchase the old Cochran machine shops and turn them into locomotive building works.

A LARGE scythe-factory has been established at Wilna, Russia, which is to supply the whole of that country with scythes. Hitherto most of the scythes used in the country have been imported.

MESSRS. JAMES PENDER & Co., St. John, N.B., were awarded the first order of merit at the South Australia Jubilee Exhibition, held in Adelaide last month, for their display of horse shoe nails.

AT the South Australia Jubilee Exhibition, held last month at Adelaide, Messrs. J. & J. Taylor, of Toronto, were awarded the first order of merit for their display of burglar and fire-proof safes.

A COMPANY has been formed at Pembroke, Ont., for the purpose of establishing waterworks there which will probably cost about \$50,000. Mr. Thomas White, M.P., is president of the company.

MR. J. P. NORTON, of St. Thomas, Ont., has perfected a dynamo with which he claims electric light can be furnished as cheaply as gas. A company is being formed for the manufacture of the light.

It is understood that Mr. P. P. Cope, of Norwood, Ont., is about selling his foundry to a Toronto firm. If the transfer takes place the new firm will manufacture threshing machines, reapers, mowers, etc.

A 10,000-POUND steel armor plate was recently made in a Pittsburgh, Pa., steel mill for a United States warship. It was 19 feet long, 6 feet wide, and 2 inches thick, and is said to be the heaviest ever rolled.

THE Gutta Percha and Rubber Manufacturing Company, of Toronto, have just occupied their new four story show-rooms and warehouse at 43 Yonge street, this city, where they will be pleased to see their friends.

MESSRS. J. E. LANCASTER & Co., 57 Bay street, Toronto, desire to secure the services of a first-class designer for a tweed mill. A good and competent man can obtain a lucrative position by application as above indicated.

MR. J. L. CUTLER, a large shingle and short lumber manufacturer in Bangor, Me., was in St. John, N.B., recently, looking up a site for a mill. It is understood that an offer has been made to purchase the Stetson mill in Carleton.

MESSRS. GEORGE FLEMING & SONS, St. John, N.B., have two locomotives in their shops almost completed, and which will soon be ready for shipment. One of these is for the Central and the other for the Joggins railroad.

THE Royal Soap Manufacturing Co., Winnipeg, Man., now have their toilet soap boxes manufactured in that city. These were formerly imported from Chicago. Some very handsome boxes are used for the finer brands of soap.

MR. WM. STEVENSON, proprietor of the brush factory at Napanee, Ont., on account of ill health, will close his works and sojourn abroad during the winter. A good business opportunity is here offered for an enterprising successor.

A GENTLEMAN was in town on Saturday with a view to establishing saw works here. — *Peterboro' Review*. Why not be more definite? Pray give the name of the gentleman, and the probable size and value of the proposed establishment.

THE Black Diamond Coal Company of Westville, N.S., has been incorporated with a capital of \$100,000 to open and work coal mines in the county of Pictou, also to build and operate railways and carry on the business of mining and shipping coal.

MR. C. A. DOULL is building a new furniture factory at Sackville, N.B. The size of the main building is 50x30 feet, three and a half stories high. Mr. Doull has purchased for his factory a new thirty five horse-power Waterous engine, with steel boiler.

THE new furniture factory of the Lindsay-Sheldon Furniture Company at Peterboro', Ont., is rapidly approaching completion. It covers an area of 80x10 feet, and is four stories high. It is located close to the river and adjoins the railroad track.

OPPOSITION to the well-known silk firm of Belding, Paul & Co., is threatened by the Nantucket Silk Company, of Nantucket, Mass., which intends starting a branch factory at St. Johns, Que., for the manufacture of sewing and twisted silks. — *Montreal Star*.

THE Victoria Brick and Tile Drain Manufacturing Company, of Montreal, with \$50,000 capital will apply for incorporation, and engage in the business indicated by the name. The works will be on the Papineau road on the line of the C.P.R., near Montreal.

THE Fensom Elevator Works, 34-38 Duke street, Toronto, manufacturers of folding and extension iron and steel gates and guards for banks, vaults, elevators, etc., are preparing a new illustrated catalogue which they will have ready for distribution in a few days.

MESSRS. ORR, HARVEY & Co., Hamilton, Ont., manufacturers of boots and shoes, will remove their works to Toronto in December. They have leased an extensive and suitable building for their business on Front street, which is now being made ready for their occupancy.

THE superintendent of the Kingston (Ont.) Locomotive Works is negotiating with the Intercolonial Railway for the building of ten locomotives. If the contract is received, four hundred men, double the number now at work, will be employed and an engine turned out every week.

THE Canada Oatmeal Milling Company has been incorporated with a capital of \$30,000. The incorporators are Messrs. Henry Moore, of Norwich, James Muirhead, of London, Thomas Martin, of Mount Forest, Edwin D. Tilsen, of Tilsenburg, and James D. Moore, of St. Mary's, Ont.

MR. BERTRAM, the new proprietor of the Dundas axe factory, assumed possession this week, and has been busy taking stock ever since coming to town. He and Mr. Hourigan, the manager, have gone to Saginaw, Mich., to purchase machinery and secure a number of hands.—*Dundas Standard*.

MESSRS. BROWNLEY & Co. have succeeded to the business of Messrs. Harris, Allan & Co., brass founders, St. John, N.B. The concern do all kinds of brass work. Mr. Brownley is the inventor of an improved roller bush for sheaves, and also of a patent lubricator for which great merit is claimed.

SHIPBUILDING timber is said to be very scarce in the San Francisco market. Owing to the high price of Oregon pine, yellow fir is being imported from British Columbia. Shipbuilders speak of it, says the *San Francisco Examiner*, as "a splendid substitute, being straight as an arrow and not a knot in it."

THE city authorities of Vancouver, B.C., have passed a by-law granting a bonus of \$25,000 for the establishment of smelting works in that city. Why don't the Vancouver papers, in giving such items of news give the names of the parties or company who propose erecting the smelting works. Pray be more definite.

THE Canada Lumber Company, whose extensive lumber mills are at Carleton Place, Ont., have decided to remove their works to Ottawa, where it is said they can cut their logs at less cost and ship their lumber to better advantage. During the working season about 300 hands are employed in and about these mills.

CITY ENGINEER RUTTAN, of Winnipeg, in reporting to the city council on the question of procuring water power at that city sufficient for manufacturing purposes, recommends cutting a canal between Lake Manitoba and the River Assiniboine. The total cost of the improvements recommended is about \$700,000.

MR. THOMAS O'NEILL, Paris, Ont., is running his flouring mill on what is said to be an entirely new roller system, the invention of Mr. D. R. O'Neill, of that town. The process differs materially from all other systems, the quality of flour produced being finer and the quantity greater than by the ordinary roller process.

THE Courtland Carriage Co. of Courtland, N. Y., has been granted a bonus of \$20,000 and certain valuable privileges by the city authorities of Brantford, Ont., as an inducement to establish a branch of their works in that place. We are informed that the new works will be known as the Brantford Carriage Works Company.

THE people of Trenton, Ont., are elated over the prospective starting of smelting works in that town. Mr. Peter McLaren is to give \$200,000 to the enterprise, if the town gives \$50,000 for the same purpose. A resolution of the council was passed, unanimously accepting the proposal, subject to the approval of the ratepayers.

THE John Abell Engine and Machine Works, of Toronto, have secured the right to manufacture the Reliance safety water column, the patents of which are owned by the Reliance Gauge Co., Cleveland, and will supply the steam users of the Dominion on the same liberal terms adopted by the American manufacturers of these safeguards.

THE Deseronto correspondent of the *Napanee Beaver* says that "Messrs. Roach, Mitchell and Bick are making out plans for the new shingle mill"; but the information is too vague to be of much value. Do the gentlemen named own the proposed new mill, or are they architects who are making plans for others? If so, whose mill will it be?

THE American Watch Case Company, 57 Adelaide street west, Toronto, manufacturers of watch cases, was awarded a gold medal at the Dominion Industrial Exhibition, recently held in this city. This company show their appreciation of what was said about them in a late issue of this journal by embodying our entire article in an advertisement.

THE W. F. Cochrane Roller Mills Supply Company, of Hamilton, Ont., has been incorporated with a capital stock of \$150,000. Messrs. W. F. Cochrane, of Washington, D.C., Joseph Simpson, Chas. Riordon, and H. Fuller, of Toronto, and John W. Nesbitt, of Hamilton, as incorporators. The headquarters of the company will be at Hamilton.

MESSRS. ISAAC SIMPSON & Co., Brantford, Ont., manufacturers of carriages, wagons, sleighs, etc., now have, according to the *Courier*, one of the largest, finest and most thoroughly equipped factories in Canada, the rapidly increasing business of the concern having caused them to recently make very extensive additions to their previously large works.

THE Alberta Lumber Company, Calgary, Alberta, are about erecting a lumber mill in the Red Deer country, about 100 miles north of Calgary. The mill, which will be ready for operations early next spring, will have capacity to cut 50,000 feet of lumber per day. The Alberta and Athabasca Railway is projected to extend through the district in which this mill will be.

MESSRS. M. BRENNAN & SONS, lumber merchants and saw and planing mill proprietors, are building a new saw mill on their timber limit, Huntsville, Ont. This mill will have a capacity of about 75,000 feet per day and will be the largest of their three mills. The mill building is now up, and the two 75-horse-power boilers and the 150-horse-power steam engine are in position.

THE Canada Paper Company have removed their Toronto office and warerooms from No. 11 to No. 13 Front street west, in which place they have greatly enlarged facilities for the transaction of their business. This company have been subjected to some unavoidable delays in the completion of their new paper mills, but they expect to have them in full operation in a few days.

THE large knitting mills of Mr. J. Ellis, at Port Dover, Ont., were totally destroyed by fire on Oct. 13th inst. The fire commenced in the picking room on the fifth story, and on account of the inflammable nature of the material, gained such headway that it was impossible to remove any part of the machinery. A small quantity of manufactured goods in the first story was removed.

RECENT substantial improvements in Galt, Ont., include a \$1,000 addition to the saw works of Messrs. Shurly & Dietrich; \$500 addition to factory of Victoria Wheel Company; \$10,000 machine shop for Goldie & McCulloch; \$1,500 carpenter shop addition to McGregor, Gourlay & Co.'s machine works; and a \$1,000 sash and door factory in connection with Geo. Hespeler's saw mill.

THE steamer *Pasadena*, fitted to use petroleum for fuel, is about to leave San Francisco for Humbolt Bay, in the lumber trade. Fourteen thousand gallons of crude oil will be stored in her tanks. The petroleum will be fed to the furnaces in combination with steam by means of a spraying attachment. The smoke given off is not perceptible. The experiment is watched with much interest.

A CAR of anthracite coal from the Banff mines arrived at Vancouver a few days ago, consigned to the Naval Department, Esquimalt. The naval authorities have decided to give this coal a trial, and if the test is satisfactory it is probable the company will receive a large order. One hundred carloads of anthracite coal from these mines are lying at Port Moody awaiting transshipment to San Francisco.

GUS WRIGHT started for San Francisco on Monday morning, going overland. It is understood that his visit is in connection with the formation of a company to establish smelting works at Vancouver, which city offers a large bonus for that object. Negotiations have already taken place between the Illecillewaet company and San Francisco capitalists, and a favorable result is confidently anticipated.—*Victoria Times*.

A VEIN of natural gas has been struck on the farm of Mr. Angus Courtney, near Courtwright, Ont. When struck the pressure of the escaping gas threw sand and gravel from the well to the height of fifty feet, covering the ground for acres around with the debris. The sound of the escaping gas can be heard for a great distance, sounding like rolling thunder. Courtwright is a small town in the vicinity of London, Ont.

MESSRS. GEO. F. HAWORTH & Co., Toronto, are pushing work on their leather belt factory, alluded to in our last issue, and expect to have it ready for operation early in December. This factory is located in the four-story brick building at 11 Jordan street, lately occupied by the Grant Lithographing Company. It is being equipped with the best and most efficient machinery, and will be conducted by experienced men.

THE largest leather belt ever made in New England or set running here reached this city this week, from the factory of Mr. Samuel Kidder. The dimensions of the belt are 120 feet long and four feet wide. It is three-ply, weighs 1,500 pounds, and employed in its manufacture 100 hides. The belt will be exhibited at the Mechanics' Exhibition by Mr. Kidder, until the Boston Cordage Company, for which it was made, requires it.—*Manufacturers' Gazette, Boston, Mass.*

THE steamer to be built by the Hudson Bay Company at Arthabasca, Alberta Territory, the coming winter, is to be 114 feet kee and 26 feet beam—a stern-wheeler—the cylinder of the engine being 12 by 42 inches. This steamer will supply the missing link in the chain of steamboat communication reaching from Winnipeg to the Arctic Ocean, all owned and operated either directly or indirectly by the Hudson Bay Company, and will completely establish the northern trade by the Edmonton route.

THE Georgian Bay Lumber Company, of Ottawa, of which Mr. J. K. Dodge is manager, will cut two hundred thousand feet of square timber on their Wahnapitao limit, which will be taken to Quebec by way of Georgian Bay and the lakes. Besides these they propose taking out ten million feet of logs, which will be sawed in the mills which are scattered around the bay. Messrs. Timmins & Gorman will take out a hundred thousand feet of square timber, which will also be taken to Quebec via the same route.

THERE is a boom in the shipbuilding yards of Lunenburg, N.S., no less than six fishing schooners being in course of construction. Six others will be built during the winter, which dozen vessels will be a desirable addition to the fishing fleet of that port. The people of Lunenburg county are almost wholly of German descent, and nearly the whole population is engaged in the deep sea fishery. The vessels are models of adaptability for the business, and are said to be stronger than American craft of like class.

THE Machinery Supply Association, of Montreal, are placing the shafting and machinery in the new works of Messrs. Clapperton, in that city. This is a Scotch thread manufacturing concern who are establishing a branch of their works in Montreal for the purpose of spooling their threads. Their premises are a building 110 by 44 feet, and the spooling machines and quite a number of expert Scotch operatives have been brought over. Messrs. D. Ross & Co., Montreal, are the Canadian agents of Messrs. Clapperton.

MESSRS. MERCIER, McSHANE, SHEPSON, and a large party of citizens of Quebec, went to Chaudiere last week to lay the corner stone of the new iron bridge over the Chaudiere river, which separates the counties of Levis and Lotbiniere. In the course of a speech Premier Mercier declared this was the inauguration of the Local Government's iron bridge policy, alluding to the grant last session of \$25,000 towards iron bridges in the Province. He said that if the experiment was successful he would ask a vote of \$200,000 for the same purpose next session.

A FIRE broke out in the sawdust and shavings bin of the Massey Manufacturing Company's works in this city last Saturday afternoon, which, had it not been for the fire appliances of the company, might have proved a serious matter. As it was, however, although the first reel was on the ground in about three minutes after the alarm sounded, the flames were already under control. The damage was confined to the close vicinity of the spot where it originated, and will not exceed \$1,500. The shops were working again before the firemen had got their hose rolled up.

ST. JOHNS is determined that if it does not obtain manufactures it will not be for want of trying. Mr. Richard Smardon, of Montreal, was in the town the other day, inspecting the site of a proposed factory, and Mayor Arpin is in correspondence with a house in Dusseldorf, Germany, which proposes to establish a branch in Canada.—*Montreal Gazette*. As clear as mud. What sort of a factory does Mr. Smardon want to establish in St. Johns; and what sort of a "branch" does the Dusseldorf, Germany, house want to establish in Montreal? Why is this vagueness thus?

MR. RUSSELL MASON, of Newcastle, Ont., has invented a push-button alarm which is described as working automatically and without the aid of electricity, and there is no spring to be wound up. The invention has been patented in Canada and the United States, and Mr. Mason proposes to embark in the manufacture of the article himself in Newcastle at an early day. A number of these alarms are now in use in dwellings and offices in Newcastle, and they are spoken of as being quite ornamental, while the mechanism of them is so simple that their derangement is almost impossible.

AS iron bridge was erected a few days ago, eight miles from Charlottetown, P.E.I., across Curtis' creek. The arrangements were so complete that it was put up between the departure of the morning and the arrival of the early afternoon train. The total length of the structure is 78 feet, and it has three iron girders, each 26 feet, supported at the centres by iron piers. The structure is made entirely from old iron rails and double-chord plates 9½ inches. Each girder weighs about six tons, and the weight of the whole structure is about 22 tons, and contains upwards of 6,000 rivets.

THE Ontario Rolling Mills Company, of Hamilton, are contemplating removing their works to Toronto, where ten acres of land have been promised, with communication by water and two lines of railroads. This company also operate the American Nail Works, which adjoin the rolling mill premises, the entire establishment, it is said, being the property of the Grand Trunk Railroad Company, but which are leased to the Ontario Rolling Mills Company. This proposed change of location from Hamilton to Toronto is the out come of the recent meeting held in this city and the establishment of rolling mills here.

WHY don't the New Westminster, B.C., *Columbian* be more definite and mention the name of the company operating the new woolen mills in that city? Regarding the mill it says. During the past week the mill has been manufacturing flannel, and over one thousand yards have been turned out. A small quantity was washed and finished yesterday, and will be sent up to the Provincial Exhibition at Chilliwack. Before the end of the week it is expected the first batch of goods from the mill will be ready for the market, and we hope to see many of our citizens appearing in a complete suit of British Columbia cloth.

MR. E. E. HORTON, of Ottawa, has perfected a new typewriter at which he has been working for several years, and is organizing a company for the manufacture of the article, both in Canada and the United States. One great advantage claimed for the Horton typewriter is, that the movement of the letter is downward, striking directly on the paper, so that the operator can see what is being written as the work progresses. In the old machine the movement is under the paper, which necessitates lifting in the event of correction being made. Mr. Horton is an old newspaper man, and is also one of the Ontario Supreme Court reporters.

MESSRS. J. & J. TAYLOR, Toronto, manufacturers of fire and burglar proof safes, have in their shops a number of safes made by themselves which were in the Gravenhurst, Ont., fire a few weeks ago. They present the singular spectacle of being warped and twisted until they are entirely past repair, while the woodwork on the inside is in as good condition as when first put in. The books, papers, valuables, etc., contained in these safes were taken out, after having undergone the fiery ordeal, perfect, intact and unharmed. We learn that Messrs. Taylor have already sold eight new safes to parties in Gravenhurst, with many other sales in sight.

THE proprietors of the Dusseldorf, Germany, tube works are about to erect a mill in Canada, probably in Montreal, to supply the Canadian market with their goods, which already have a large sale here. The new tariff on iron has caused this step to be taken and is another evidence of the good results attending the policy of protection. A site for the works has not yet been selected, but a suitable location is being sought. A large number of hands will be given employment in the mill. Mr. G. Lomer, jr., the representative of the company in Canada, goes to Germany in a couple of weeks to confer with the principals on the subject and complete arrangements for the erection of the works.

THE jewelry factory of Messrs. P. W. Ellis & Co., Toronto, is fully illustrated and described in a recent issue of the *New York Jeweler's Weekly*, very excellent portraits of the three gentlemen composing the firm, and short sketches of their lives being also given. The illustrations include a view of the Front street end of the firm's salesroom and general offices, the Wellington street salesroom, a bird's-eye view of the factory, and views of the medal stamping room, engine room, watch repairing department, and factory office. The portraits are of Messrs. P. W. Ellis, M. C. Ellis and R. Y. Ellis. The premises described comprise four floors, covering an area of more than 12,000 square feet.

THE Canadian Pacific Railway is now receiving its supply coal, on the eastern end at Sorel, Que. It comes from Sydney, Cape Breton, by water. Before it has been transhipped from Montreal to Sorel, thus causing great delay and expense to the company, but the harbor having been deepened to a depth of twenty-five feet, in the future all the coal will be delivered at that place. The Canadian Pacific Railway have entered into a contract with the mining company for a delivery of 45,000 tons of coal for the season of 1888. On account of unloading their coal at Sorel the company will make a saving of about one dollar per ton.

"A POINTER. The *Era* contains all the local news up to the close of the week in a brief and readable form. * * Mr. Knight is pushing forward the building of his new factory as fast as possible. The factory and engine room will be 30x90 feet and 8 feet high, of solid stone, with an iron roof. The new mill will be nearly the same size."—*Northwest (Ont.) Era*. We submit to our valued contemporary that while this local news is in a brief it is not in a satisfactory form. Perhaps the reporter may possess the information, but those interested in such news can't learn from the paragraph who Mr. Knight is, nor to what purposes his factory is to be put. Pray be more explicit.

MESSRS. HUDNAN & Co., the extensive lumbermen of the Chaudiere, are making arrangements for the construction of a new circular saw mill, which will utilize a part of their unused water power in the rear of their office, in Ottawa, and next to the works of the Chaudiere Electric Light Company. The new mill will be

used entirely for sawing dimension timber, and will be 150 feet in length by 74 in breadth. The building will be of wood, and will have sufficient capacity to saw all the dimension timber the firm will be able to turn out. The firm have a gang of men engaged in preparing the timbers for the new structure, and the foundation for the new mill was started during the past month.

THE Halifax, N.S., *Recorder* says that a meeting of the creditors of the Steel Company of Canada had been held in that city to receive a report concerning a provisional arrangement made by A. S. McClelland, the liquidator of the company, for a transfer of said company's estate to the Londonderry Iron Company. The intention is to sell out the mine, and thus settle up the business at once. The company with whom the proposed bargain is to be effected is a strong one of English and Canadian capitalists, A. T. Patterson, of Montreal, being one of the promoters. The meeting was entirely preliminary and for the benefit of local creditors. The meeting of creditors to settle the matter is announced to be held in London, on November 2nd.

THE Peter Hamilton Agricultural Works are to be considerably enlarged. The amount of work done in the machine shop demands larger space, and in order to accomplish this the adjoining blacksmith shop is to be "annexed." The blacksmith shop will be thrown back to the moulding shop and a new moulding shop will be built. The foundations are now laid and the work will be carried on at once. The new building will have a fourteen foot wall, and is 62x40. Another building is to be erected just south of the new moulding shop, to be used as a pattern and store-house. It will be 31x40. When the new buildings are finished the Hamilton works will have nearly as much frontage on Water street as they have on George street. —*Peterboro' Review*.

THERE were no fewer than seventy-one different exhibits of agricultural implements and machinery, shown by as many different manufacturers, at the recent Agricultural and Mechanical Fair at St. Louis. This display was made in a collection of costly pavilions of elegant design and of very large and commodious proportions, and occupied a space six hundred feet wide and nearly a mile long. All these buildings are approached by wide and easy steps, the floors being almost uniformly about four feet above the ground. The pavilions are built in a most substantial manner, the proprietors vying with each other in lavish displays of elegance and ornamentation. The exhibitors were from every part of the country, and the exhibits included every imaginable implement and machine by which farming is made easy.

THE Peterborough Lock Manufacturing Company, Peterborough, Ont., are in receipt of the following letter from George F. Vaughan, of Sydney, New South Wales, Australia: "Gents, — Will you be good enough to quote us your bottom prices for mineral rim knob lock furniture, similar to that of the Russell & Erwin Manufacturing Company, of New Britain, Conn., No. 410, in mineral color, also white and black? We are probably the largest buyers of that furniture in the world, and should probably order 1,000 sets for a sample, if your prices are right." The Lock Company are in communication with the Canadian Pacific Railroad Company as to freight rates over their lines from Peterborough to Sydney, and are confident of securing the order, which may be the forerunner of a large trade in that direction.

MR. FRANK H. BELDING, junior member of the well-known silk manufacturers, Belding Brothers & Co., died in New York city, September 18th, of Bright's disease of the kidneys. Mr Belding was born forty years ago in Michigan, where his father was a large and wealthy land owner. When the father died, the sons, H. A., A. N., D. W. and Frank H. Belding, established the silk mills at Rockville, Conn., and afterward extended the same to Northampton, Conn. Their business has since steadily grown, so that to-day they have, besides their New York salesrooms at 455 Broadway, offices in Boston, Cincinnati, Chicago, St. Louis, Philadelphia, San Francisco, and Montreal, Canada. Much of this success was due to the energy and integrity of the deceased, and his presence will be greatly missed in the business, as well as by a large circle of friends. The body was sent to Beldingtown, Michigan, where the funeral took place.

A FEW years ago there was little if any lumber sawed quartered, or with the grain. Now not only oak but many other woods are being sawed more and more in that manner. Any consumer of lumber will tell you that it is far the better way to manufacture. We now have oak, poplar, gum and sycamore in larger quantities thus sawed. It costs more to saw quartered stock than plain, but it is much more valuable. The waste is considerable. Take a 24-inch 12 foot log, clear and straight, and 75 per cent. of it will make

good quartered firsts and seconds if properly managed. Probably no wood except oak has so grown in popularity as quartered poplar. It is used plump inch, six inch and up wide, and immense quantities are now used by piano manufacturers. There is a scarcity of it, and any one who finds plain poplar dull and hard to sell should quarter-saw his stock. The *North-Western Lumberman* says it is worth from \$2 to \$5 a thousand more.

THE St. Catharines Street Railway Company have opened their six miles of road run by electricity, and it has proved a perfect success in every particular. The system adopted is known as the Van-depoole, and it is claimed that this is the best equipped electric railroad in America. The electricity is generated by water power at lock 12, Welland canal, with 160 horse-power dynamo, and conducted by overhead copper wires, connecting with the cars by means of small wheels which run along on the wires and thence through a flexible conductor. The cars are each equipped with a 15-horse-power motor, weighing about 1,600 pounds, placed on the front platform. The company expect to have twelve motor cars on inside of two weeks. The time of traveling between St. Catharines and Thorold has been reduced twenty minutes. The cars are under perfect control, being stopped and started without any jerking motion, and going around curves of forty degrees and up grades of seven per cent. without difficulty.

THE people of Trenton are elated over the prospective starting of smelting works in that town. Peter McLaren, who is a stockholder in the Central Ontario Railway, will give a bonus to the enterprise to the amount of \$200,000, providing the town gives \$50,000 for the same purpose. A resolution of the Council was passed unanimously accepting the proposal, subject, of course, to the approval of the ratepayers. If there is any point in Canada where smelting works ought to pay, that point is Trenton. The iron mines are close by, and connected with the town by rail. The limestone is on the spot. Communication by water is easy with Oswego, Charlotte, and Buffalo, whence coal is shipped. Vessels can carry ore going south and coal on the back trip. We do not commit ourselves to the opinion that iron smelting will pay at Trenton, even with these natural advantages and the very liberal bonuses promised, but we repeat that there is little use trying the experiment elsewhere if it fails at Trenton. —*Hamilton Times*.

THE prospect for Ottawa securing the mills of the Canada Lumber Company, of Carleton Place, does not appear certain after all. There will be a change in the location of the big establishment, but the advantages of half-a-dozen sites have not yet been fully considered. The firm have come to the conclusion that the sawing capacity of their mills will have to be increased. This cannot be done at Carleton Place, where the water power is not sufficient for their requirements, and then better shipping facilities can be secured elsewhere. Mississippi, which is west of Carleton Place, Point Claire, sixteen miles above Montreal, and Ste Anne's, a few miles further up, are available locations which have been brought to the attention of the company. No decision has been reached regarding the use of steam or water power. According to present indications the mills, wherever they are located, will be running next spring. About three hundred men are employed now at Carleton Place, and work is kept up night and day. Exemption from taxation was not as great a consideration of the company as the attainment of the best shipping facilities.

A NUMBER of the lumbermen of the Upper Ottawa, amongst others Messrs Timmins & Gorman, who hold limits bordering on the Georgian Bay, are not going to ship their winter cut by rail to Quebec. They purpose utilizing the water route by way of Georgian Bay and Lake Huron for reaching the market. Although this is not a new departure for timber cut in that region, it is a new departure for Upper Ottawa lumbermen, who invariably preferred following the course of the Ottawa river to the place of sale. Many of the streams in the Lake Nipissing and Georgian Bay district which flow south have great capacities for driving, such as the Whanapitac and Spanish rivers, and the lumbermen propose to utilize these as a cheaper and handier route for their lumber than by the old channel of either the C.P.R. or the Ottawa river. Michigan lumbermen who hold limits in that locality have used these waterways for years and always have a good head of water, and now some of the Canadian lumbermen intend to follow their example. It is said there will be a great deal more square timber business done next season than last. —*Ottawa Journal*.

THE shipments of coal from Cape Breton for the nine months ending with September will not much, if any, exceed the shipments for the same period of last year. While one or two of the collieries have increased their shipments, others have fallen behind. At the Reserve mines there has been a heavy falling off. The management

seek to lay the blame of this on the short strike of the workmen, which occurred in the early part of the season, but that is scarcely a sufficient reason. Sydney mines are barely holding their own. Freight is scarce, it is said. Only one vessel in five weeks could be secured to carry from Sydney to Quebec. The output of the Little Glace Bay mines is in excess of last year by fully one half. The shipments last year were a little over 30,000; this year 65,000 tons, it is expected, will be reached. Bridgeport mines are doing fairly, but their shipments will not exceed those of last year much, if any. The second place this year will evidently be taken by Gowrie mines, which is doing a very brisk trade, and which is pressing Sydney mines very hard for first place. *Stellarion (C.B.) Journal.*

AMONG the recipients of medals and diplomas awarded at the recent Toronto Exhibition we notice the names of some of our friends who were awarded gold medals, to wit: Messrs. J. & J. Taylor, Toronto, for fire and burglar proof safes and safe locks; N. L. Piper & Son, Toronto, for railroad semaphore signals and lamps; American Watch Case Company, Toronto, for gold and silver watch cases; Acme Silver Company and Toronto Silver Plate Company, both of Toronto, for silver-plated ware; and Messrs. Elliott & Co., Toronto, for general excellence of exhibit of chemical manufactures. Silver medals were awarded to Mr. John Patten, Pittsburgh, Pa., for fire escape; James Morrison, Toronto, for chemical fire engine; Nova Scotia Steel Company, New Glasgow, N.S., for steel products, ingots, etc.; Messrs. Booth & Son, copper-smiths, Toronto, for display of plumbers' supplies, etc.; Messrs. Louis Brethaupt & Co., Berlin, Ont., leather; Messrs. Moore & McGarvin, Acton, Ont., and Messrs. H. E. Clark & Co., Toronto, trunks, satchels and valises; American Rattan Company, Toronto, rattan furniture; Messrs. Samuel May & Co., Toronto, billiard tables; Messrs. W. Stahlshmidt & Co., Preston, Ont., office furniture; Barber & Ellis Company, Toronto, bookbinding and stationery; Messrs. M. J. Hynes & Bro., Toronto, terra cotta ornaments; Morse Soap Company, Toronto, toilet soaps; Mr. W. H. Bantfield, Toronto, presses, dies, etc., for sheet metal workers; and C. M. Green, Toronto, for brass urns, carriage lamps, etc.

The new buildings of the Canada Screw Company, at Hamilton, Ont., are strikingly different from most structures erected for manufacturing purposes. The main buildings are long, low and broad two story brick structures, covered with a heavily timbered and planked roof. The windows are arranged in couples with mullions in centre, giving an area of glass equal to nearly two-thirds of the total wall surface, very effectively lighting the interior at all points. The ground floor is macadamized and concreted to a solid consistency, capable of supporting extreme weights in every part, thus obviating the customary special foundations for individual machines. The main staircase is also constructed of solid concrete. The second floor is constructed to carry 1,000 pounds to the square foot without deflection - an important consideration too often neglected in order to economize on first cost. The steam plant is of the high pressure non-condensing compound type. The works are fitted with automatic sprinkler heads, connected to the city mains and to a powerful auxiliary pump with independent reservoir, making the fire risk, in the opinion of the underwriters, very nearly free of hazard. The plant is of the best and latest mill practice adapted to a special product and at considerable outlay. Some years since the American Screw Company (the largest manufacturers of the kind in the world) under threatened removal of the duties on screws in the United States, without reduction on their raw material, recognizing the favorable disposition of the Canadian Government, and the possible removal of their industry from the United States, bought the property of the Canada Screw Company, of Dundas, (that company having been unable to compete successfully with their foreign rivals) and transferred a portion of their equipment from Providence, R.I., to Dundas, adding from time to time such additional branches of manufacture as the Dominion required, until the adoption of the new duties, together with free raw material (an advantage denied industry in the United States, but demanded by growing public opinion) has encouraged the Canada Screw Company to properly equip its new works for successful competition with foreign manufacturers in their markets; and notwithstanding the high tariff of the United States this company will have such advantages from free raw material, economy of manufacture and proximity to the western markets of the United States, as to enable them to supply even that market with their screws. There is a large amount of foreign capital invested in these works, and all the advantages of home manufacture is secured, while the price of the product has steadily declined owing to the company's competition, until it is now very much less than when it began operations. This company will introduce the new process of rolling the thread on the screws under the

Canada patent of the Harvey process now controlled by the American Screw Company, the English patent for which is said to have been purchased for a large sum by the Nettlefolds, of Birmingham, England. They will also have the right to use the American company's recent improvements on this rolling process, etc.

THE Servis Railroad Tie Plate Company of Canada will manufacture their celebrated Servis tie plate both in Moncton and New Glasgow, N.B. The peculiarity of this article consists of a plate about three inches in width and eight in length, with the edges of the longer side turned over about an inch and sharpened. Two holes are punched at the proper distance apart for the spikes. This plate is laid on the tie, its sharpened edges driven into the wood parallel to the grain, the rail is laid upon it and spiked down by spikes driven through the holes in the plate. The advantages claimed for this patent and proved by thorough tests are that the portion of the tie where the strain really comes is by this plate perfectly protected from the weather, the weight is evenly distributed over the entire surface of the plate, and the pressure per square inch on the timber proportionately diminished. The plates have a perfect hold on the timber and no grinding takes place between them and the wood, but all between the plate and the rail. This enables soft wood like cedar to be used for ties, costing on an average about one fourth as much as hardwood ties, such as oak or locust, for the heavy rolling stock now being used. Then, again, on curves the two spikes of the outer rail are tied together, thus giving more than twice the resistance to the pressure and preventing spreading of the rails. Of late years the tendency has been to increase the number of ties to the mile to keep pace with the increased weight of rolling stock. The "Servis tie plate" obviates this necessity, as the crushing weight is spread over a large area on each tie, and therefore fewer ties can be used. It is said that 2,000 ties to the mile with these plates have more surface of timber under strain than 2,600 without plates. They have given great satisfaction wherever used. Mr. Turner, chief engineer of the Fitchburg railroad, in response to inquiries from Hon. Mr. Pope in regard to these plates, said they greatly reduced the cost of maintenance of track. He tried them on a few miles and was so convinced of the saving effected that he ordered them for the railway from the American makers of the plate. They cost him four cents a pound, two pounds to the plate, and he said that he considered they were well worth the outlay. The Manhattan Elevated Railroad Company, New York, gave them a trial, and Mr. Robert Black, road master of that line, declared that even if they cost fifteen hundred dollars a mile he would unhesitatingly use them if building a road, the extra expense being more than compensated for by economy in ties and prevention of accident. The company can turn them out at a cost of three and three quarter cents per pound, which, allowing 2,600 ties to the mile, would only add about \$400 to the cost of the road per mile, and this would be amply repaid by the saving effected by their use, not to mention the safety and security rendered to life and property. In consequence of the reports received from the experts mentioned above, and others, the Dominion Government has ordered 100 miles to be laid with these plates as a preliminary test. This hundred miles contract was completed some days ago, the work being done by the Nova Scotia Steel Works at New Glasgow, which employed machinery especially erected for the purpose. Mr. Graham Fraser, of the Nova Scotia Steel Works, New Glasgow, N.B., is manager of the new company. In addition to the United States and Canada, patents for the plate have been taken out in the United Kingdom, Belgium, France, Germany and Russia.

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The following firms are already represented in the Permanent Exhibition. Their manufactures have a deservedly high reputation, and are recommended to the notice of intending purchasers of any of the respective lines in the following list. Prices, terms, discounts, etc., may be obtained from the several firms direct, or from Messrs. Nicholls & Howland, Permanent Exhibition of Manufactures:

- Armstrong, J. B., Manufacturing Co., Guelph, Carriage Materials.
 Armstrong, J. A. & Co., Guelph, Ont., Carpets.
 Automatic Refrigerator Co., Ottawa, Ont., Hanrahan's Patent Automatic Refrigerators.
 Barnum, The Wire and Iron Works, Windsor, Ont., Wire Goods of all descriptions, Railing, Creating, Fencing, etc., etc.
 Barber & Ellis Co., The, Toronto, Ont., Manufacturing and Wholesale Stationers, Account Books, Office Sundries, etc.
 Bertram, John & Sons, Dundas, Ont., Iron and Wood Working Machinery.
 Blake, George F., Manufacturing Co., Boston, Mass., Steam Power Pumping Machinery.
 Boeckh, Charles & Sons, Toronto, Ont., Brooms, Brushes, Woodenware, etc.
 Breithaup & Co., Berlin, Ont., Leather.
 Brush, George, Eagle Foundry, Montreal, P. Q., Blake Stone Crusher.
 Bostwick, George F., Manufacturer in Canada of Amberg's Cabinet Letter Files.
 Baines, Geo. W., Montreal, National Water Purifier.
 Batten, John, Pittsburg, Pa., Automatic Fire Escape.
 Clare Bros. & Co., Preston, Ont., Stoves and Furnaces.
 Cowan & Co., Galt, Ont., Wood Working Machinery, Engines and Boilers.
 Creelman Bros., Georgetown, Ont., World's Star Knitting Machinery.
 Crompton Corset Co., Toronto and Berlin, Ont., Corsets.
 Canadian Harness Co., Toronto, Harness and Saddlery.
 Ching, J. Lionel & Co., Sydney, N.S.W., "Dugoug" Oil and Ointment, and "Dugoug" Ivory Tusks and Hilds.
 Duperow Bros. & Co., Toronto, Varnishes, Japans, etc.
 Daley, F. F. & Co., Hamilton, Ont., Extracts, Essences, Blacking, and Grocers' Sundries.
 Dominion Baby Carriage Co., London, Ont., Baby Carriages and Rattan Furniture.
 Donald Produce Co., Norwich, Ont., Evaporated Fruits.
 Doty Engine Co., Toronto, Ont., Engines, Boilers, etc.
 Dominion Barb Wire Co., Montreal, P. Q. (C. A. DeLisle Western representative), Barb Wire, Plain Wires and Wire Rope.
 Dorecourt Twine Mills, Toronto, Ont., Twines and Cordage.
 Dominion Starch Works, Walkerville, Ont., Corn Starch and Laundry Starch.
 Dominion Show Case Co., Toronto, Show Cases.
 Ellis & Keighley, Toronto, Ont., Coffees, Spices.
 Elliot & Co., Toronto, Ont., Manufacturing and Wholesale Chemists and Druggists.
 Ellis, P. W. & Co., Toronto, Ont., Manufacturing and Wholesale Jewellers.
 Fenwick & Selater, Montreal, Que., Files and Mill Supplies.
 Finch, W. S. Toronto, Wood Filler and Preserver.
 Gate City Stone Filter Co., New York, Water Filters.
 Giltes, John & Co., Carleton Place, Ont., "Shipman's" Coal Oil Engines and Steam Launches.
 Globe Tobacco Co., Windsor, Ont., and Detroit, Mich., Tobaccos.
 Goodhue & Co., Danville, Que., Leather Belting and Lace Leather.
 Grand & Toy, Toronto, Ont., Tucker Automatic Letter and Document Files.
 Grand River Knitting Mills, Co., Paris, Ont., Smyrna Rugs and Knit Goods.
 Grape Sugar Refining Co., Walkerville, Ont., Syrups and Glucose.
 Gray, Wm. & Sons, Chatham, Ont., Carriages and Sleighs.
 Gillett, E. W., Toronto and Chicago, Yeast and Baking Powder.
 Gardner, W. R., Montreal (successor to H. H. Warren), Manufacturer of every description of Hammers.
 Hudson Bros. (Limited), Sydney, N.S.W., Australian Timber and Cabinet Woods.
 Hamilton Industrial Works Co., Hamilton, Ont., Wringers, Mangles, etc.
 Hart Emery Wheel Co., Hamilton, Ont., Emery Wheels and Emery Wheel Machinery.
 Hay, Peter, Galt, Ont., Machine Knives.
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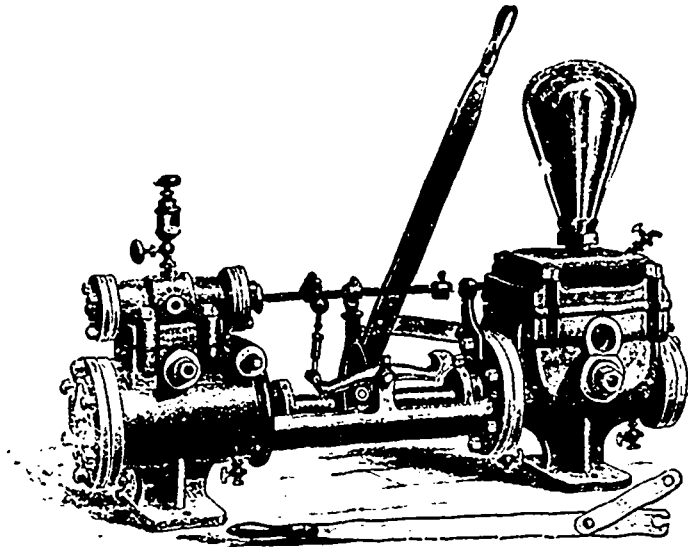
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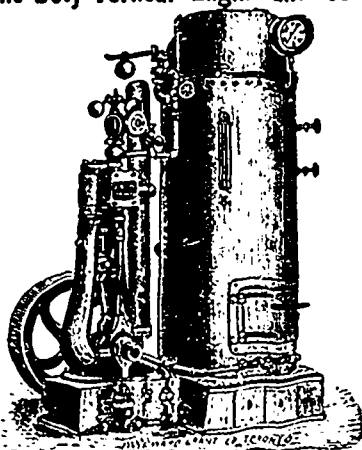
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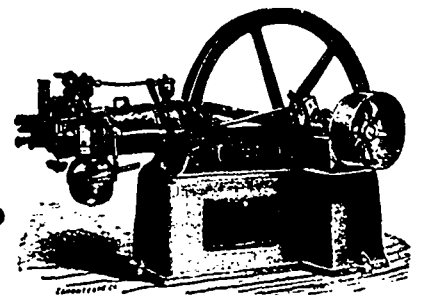
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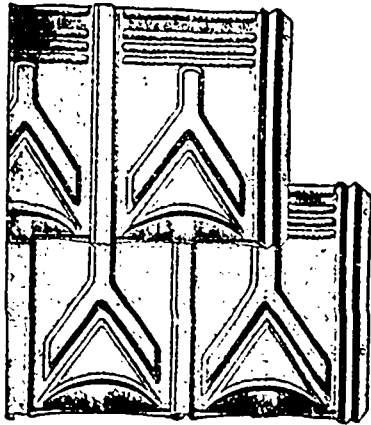
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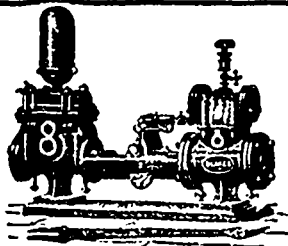
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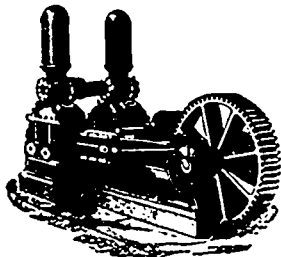
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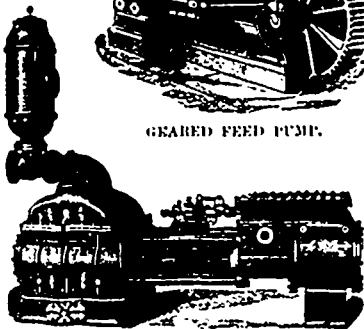
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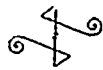
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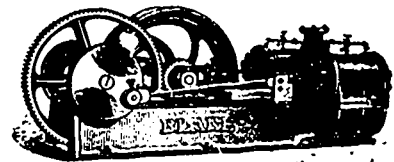
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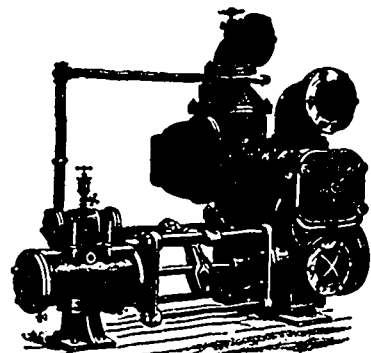
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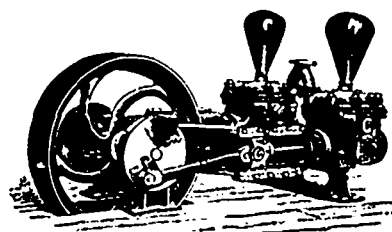
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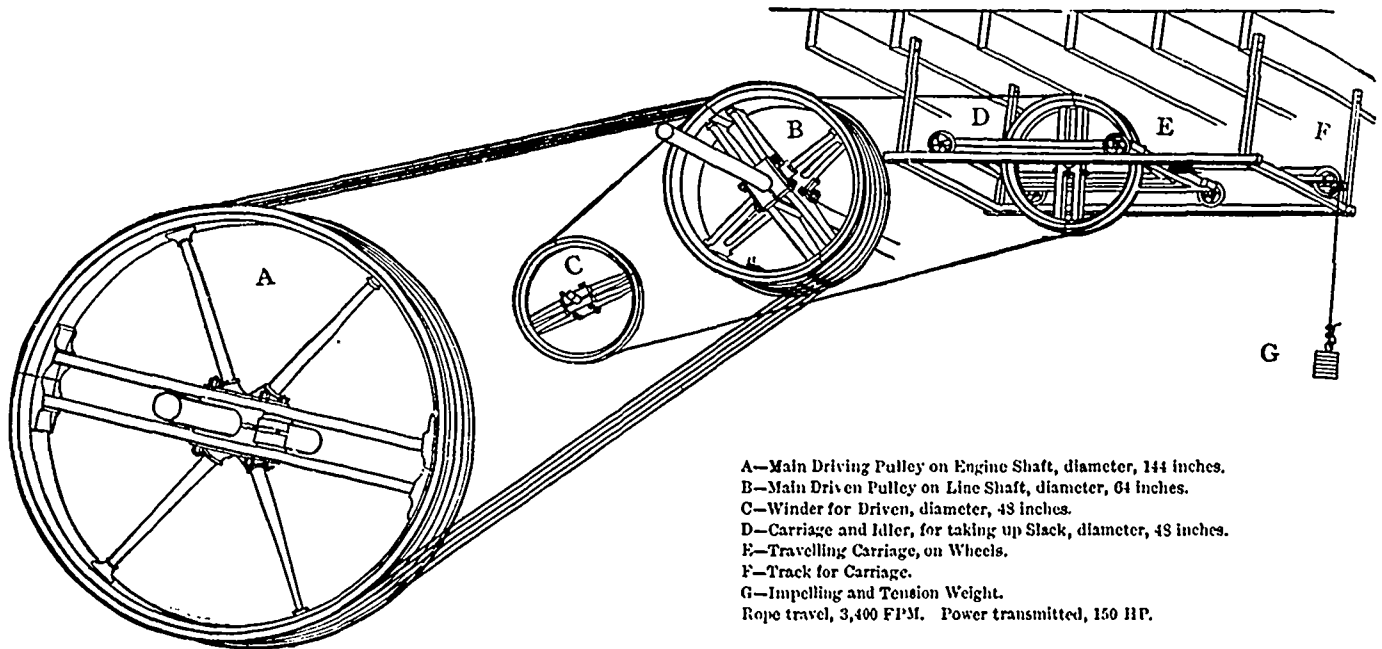
BELT PUMP.

THE TRANSMISSION OF POWER BY ROPES AND THE DODGE PATENT WOOD PULLEYS.

The great advantage of Wood over Iron as a material for belt pulleys (or drums) to transmit power economically, has induced the DODGE WOOD SPLIT PULLEY CO., of Toronto, to introduce grooved hard wood pulleys for the special purpose of transmitting power by ropes (manilla tallow laid), and in this connection Mr. Dodge has taken out Canadian Letters Patent for a system of applying the ropes, adjusting the pulleys, and taking up slack, that is giving the most unqualified satisfaction.

This system of transmitting power by ropes is cheaper and superior to belts in many cases, such as where the driven shaft is at right angles with the driver, also where the drive is perpendicular, particularly when it is quarter twist and perpendicular; also where the driver and driven are close together; also for long drives, such as across a street, or a stream, etc. For transmitting power from an engine to the line shaft this

WITH OUR SYSTEM OF MANILLA ROPE TRANSMISSION is overcome the objection to Wire Rope (because of crystallizing) and gearing, (because of loss of friction) and shafting (because of the liability to get out of alignment, hence loss of power by friction), and a separate engine plant (because of its great expense); on the contrary, with the Manilla Rope System, under the Dodge patents, the power is transmitted with the same efficiency as though the shafts were close together, there being no loss of power by excessive tension, or bad alignment, but simply the friction of the journals to overcome at the carriers, which have a strain of weight of the rope to carry.



A—Main Driving Pulley on Engine Shaft, diameter, 144 inches.
 B—Main Driven Pulley on Line Shaft, diameter, 64 inches.
 C—Winder for Driven, diameter, 48 inches.
 D—Carriage and Idler, for taking up Slack, diameter, 48 inches.
 E—Travelling Carriage, on Wheels.
 F—Track for Carriage.
 G—Impelling and Tension Weight.
 Rope travel, 3,400 FPM. Power transmitted, 150 HP.

The illustration, as shown above, is one of peculiar construction, and represents an engine transmission of power by a manilla rope, under the Dodge system of patents, and is shown as in actual use at the works of the Dodge Mfg. Co., at Mishawaka, Ind.

The system herewith illustrated and described is one of great interest to all consumers of power. Inasmuch as it takes the place of expensive gearing and broad belts, the advantages to be thus derived may be thus summarized:

To transmit the same power with a rope *versus* a like power with a wide belt, first, requires much narrower faced pulleys; consequently, much less expensive; 2nd, the interest on the money invested in a belt will more than supply the rope, saying nothing about the wear and tear; 3rd, better power, from the fact that all sliding of the belt is overcome, and the rope gear becomes as positive as the cog gear.

The transmission consists of a series of wood split pulleys, and ordinary manilla rope (tallow laid).

The engine used is an automatic, and the size of the cylinder is 18x40, making 90 RPM, and transmits 150 HP., the driver, A, and driven, B, have each several grooves, in which are wound the ropes, the number of wraps being used, as in previous cases, to gain surface in contact, for adhesion of the rope. The winder, C, in this case, is simply used to convey the rope to the slack carriage, to prevent obstruction. This, together with the carriage pulley, D, are each single grooved. The

device for taking care of the slack, and giving the proper tension to the rope, is shown at E, with the impelling weight at G. The slack side of the rope is paid directly from the driver to the carriage, E, which, it will be seen, takes in and pays out slack as it occurs, and acts also for a tension on the rope. The weight at G may be increased or decreased with the power.

This apparatus was erected and started December 2, 1884, and has been running constantly since, with same splice, and transmitting an average of 150 HP.

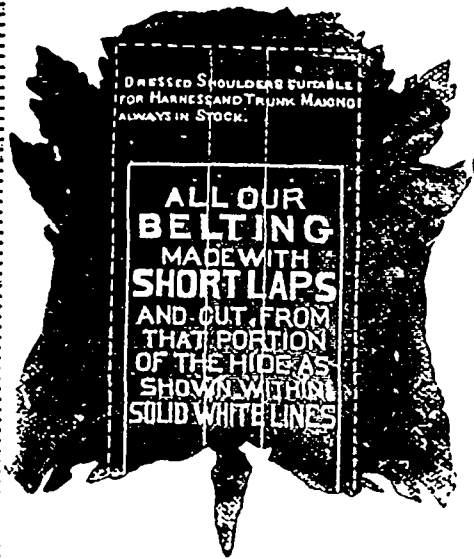
The rope shows no signs of wear, and looks as though it would last for years to come.

The rope is an ordinary one-inch diameter manilla, and travels at a velocity of 3,420 FPM.

We make the following summary:

Velocity of rope, 3,420 FPM. Transmits, as above, 150 HP. (indicated). The tension on the rope is, therefore, $\frac{3300 \times 150}{3300} = 1,408 + 106$ pounds (one-half the weight in the weight-box) = 1,608 pounds; which is the strain on the rope. There being five pulling wraps of rope, hence the strain would be divided five times = $\frac{1,608}{5} = 321$ lbs. strain on the rope; it being estimated as safe to use 10 per cent. of the breaking strain of the rope.

[The breaking strain of a one-inch manilla rope is 9,000 pounds.]—*Power and Transmission Journal.*



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When plans, specifications and other documents are prepared, due notice will be given. Contractors will then have an opportunity of examining them and be furnished with blank forms of tender, etc.

By order,
A. P. BRADLEY,
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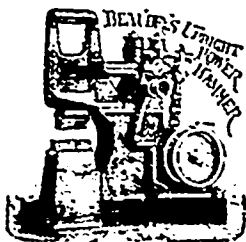
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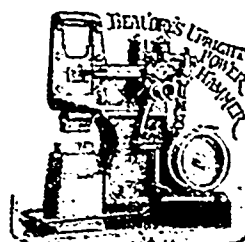


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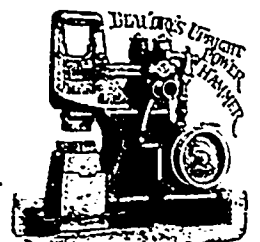
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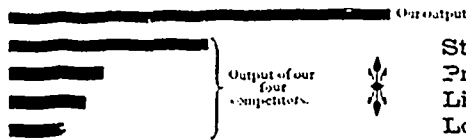
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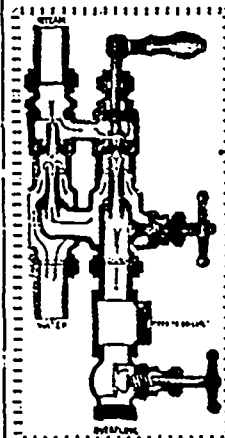
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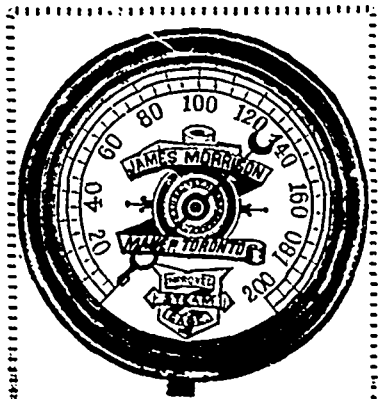
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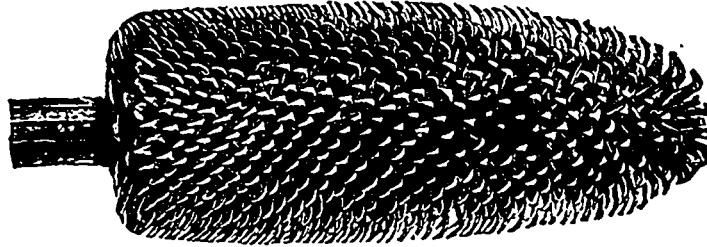
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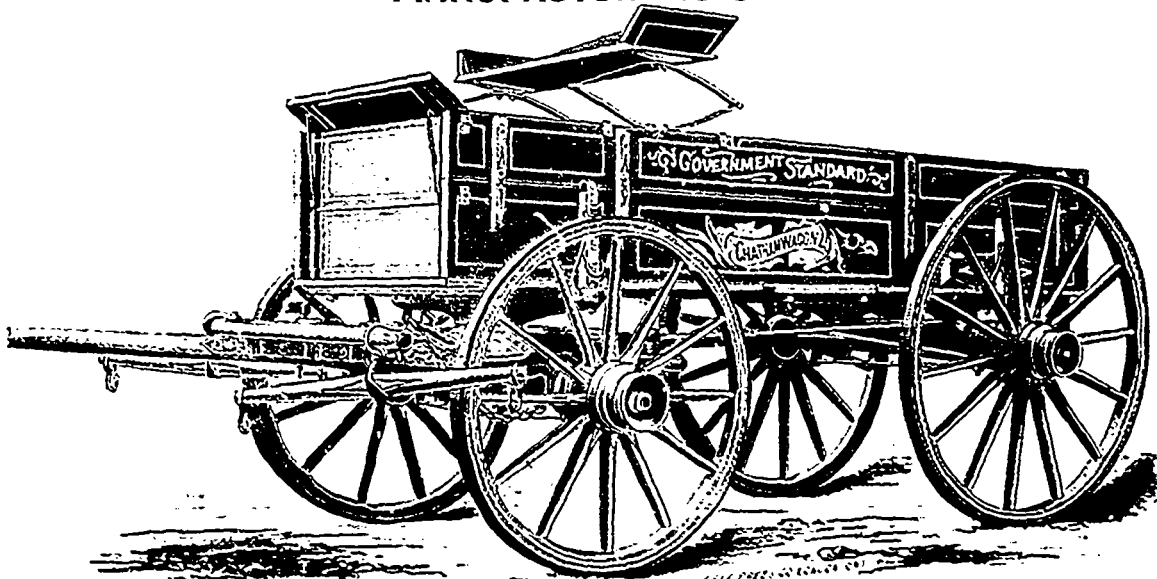
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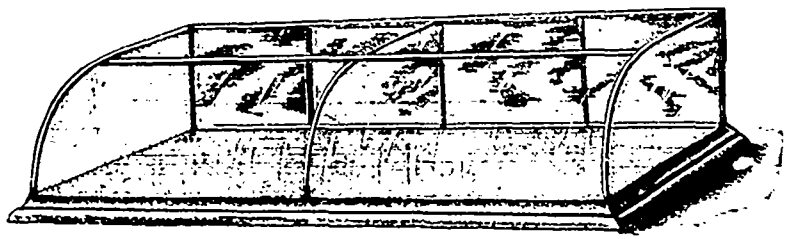
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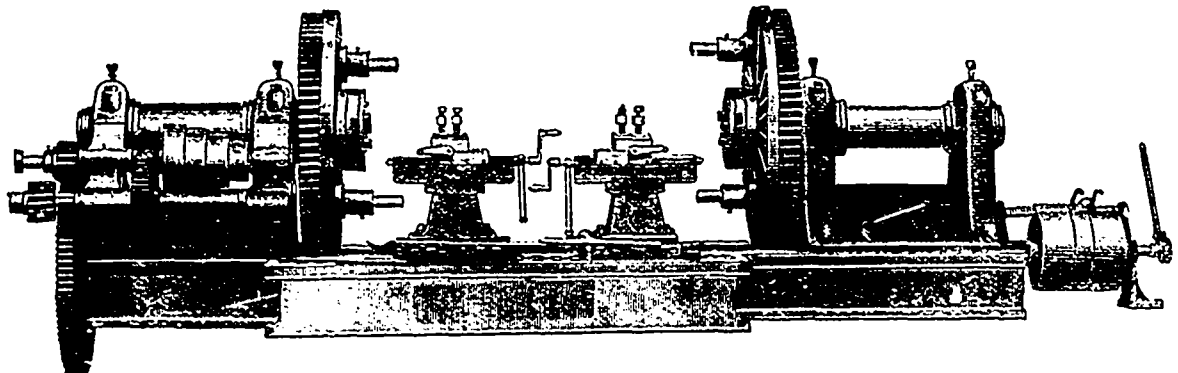
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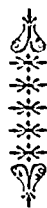
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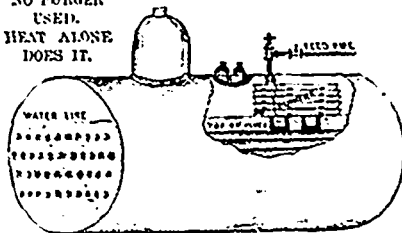
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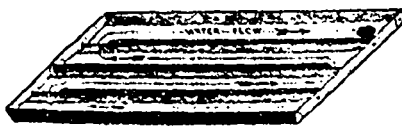
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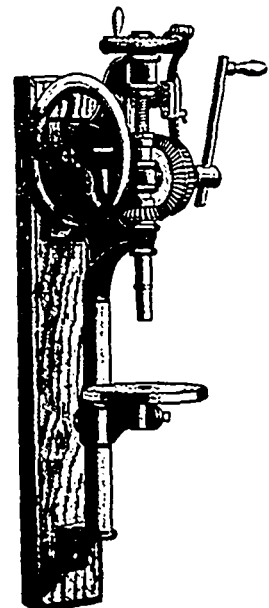
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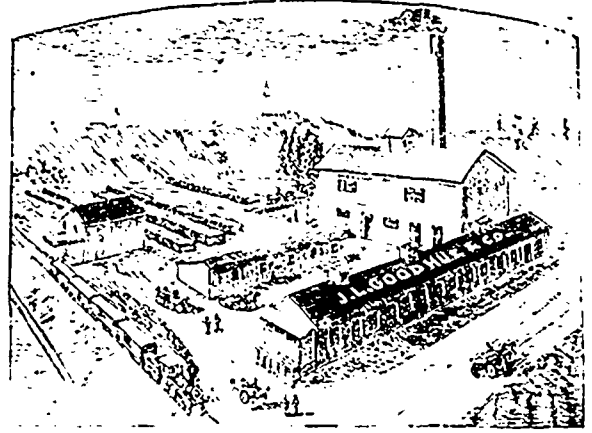
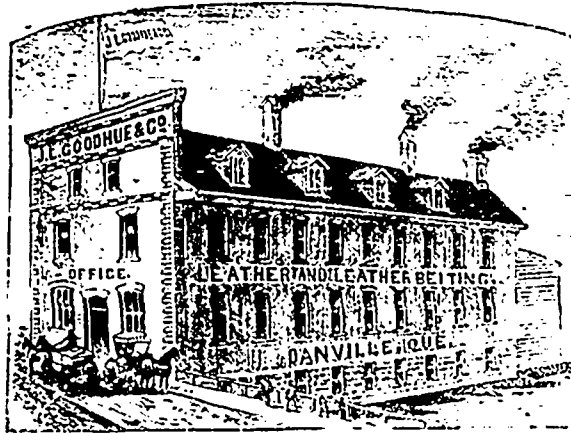
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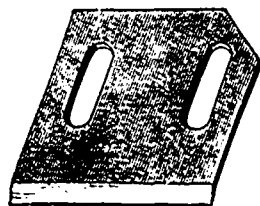


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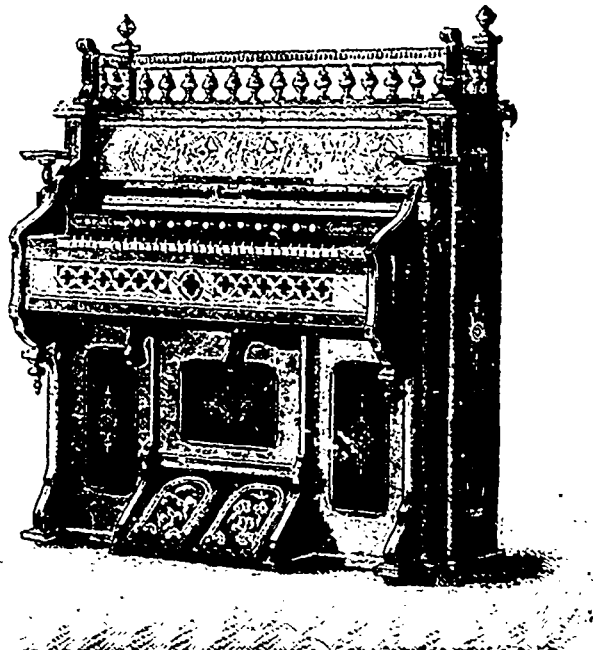
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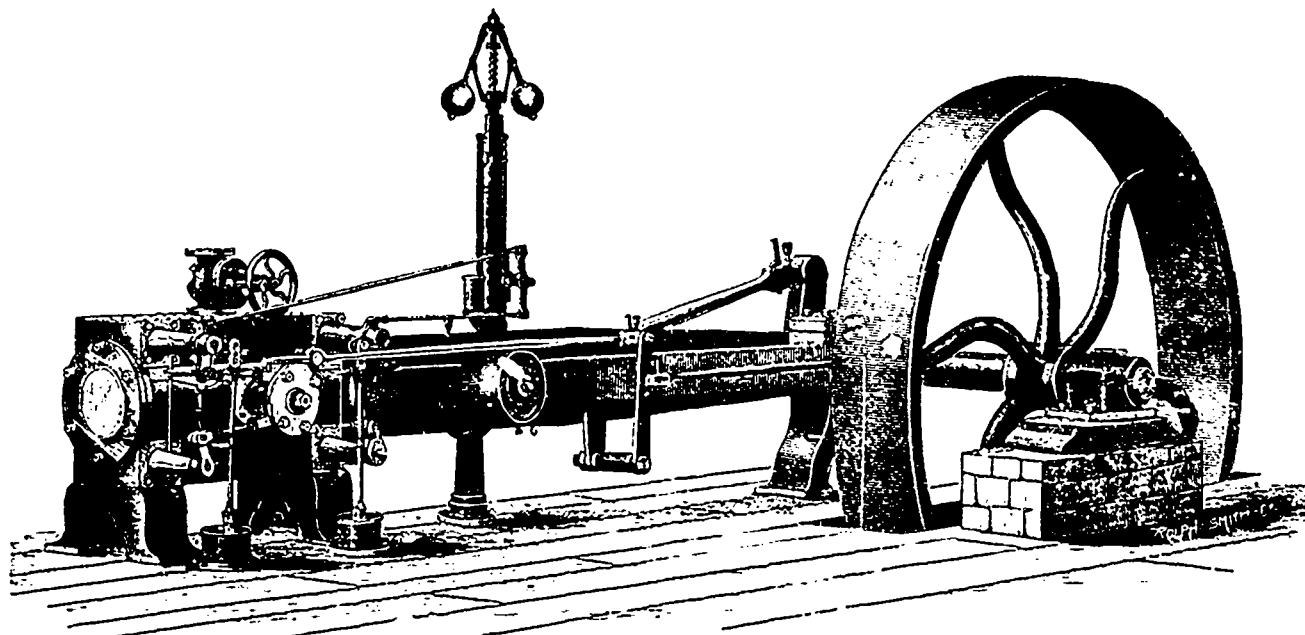
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3d—**No parts of the regulating medium enter the steam chest** and it is entirely out of sight of the engineer, and subject to the corrosive action of steam and the oil used for lubricating the valves and piston.

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7th—**Having four Valves** either can be adjusted independently of the other with the greatest ease.

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FROM LIVERPOOL:	
*Thanemore	Wednesday, Oct. 5
Lake Winnipeg	" " 12
Lake Superior	Friday, " 21
Lake Ontario	" " 28
Lake Huron	Wednesday, Nov. 2
FROM MONTREAL:	
Lake Superior	Wednesday, Oct. 5
Lake Ontario	Tuesday, " 11
Lake Huron	" " 18
*Thanemore	Saturday, " 22
Lake Winnipeg	" " 29
Lake Superior	Tuesday, Nov. 8
Lake Ontario	" " 15
Lake Huron	Saturday, Nov. 19

*SS. Thanemore does not carry passengers.

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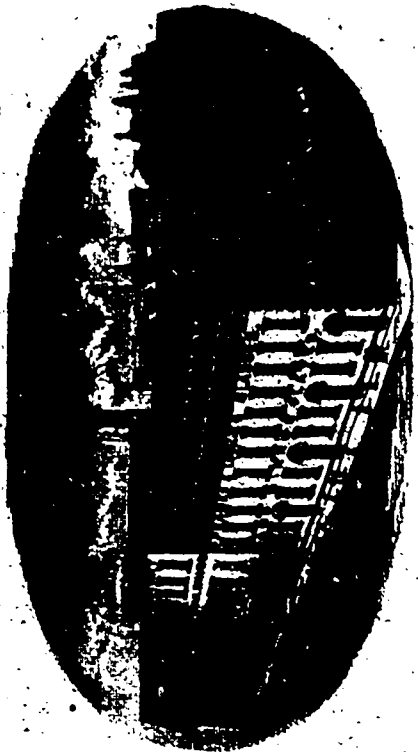
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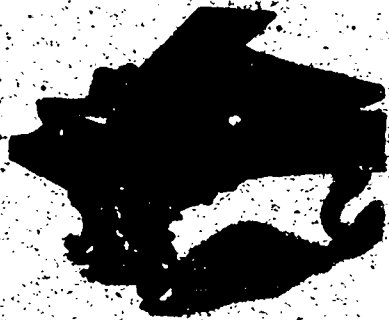
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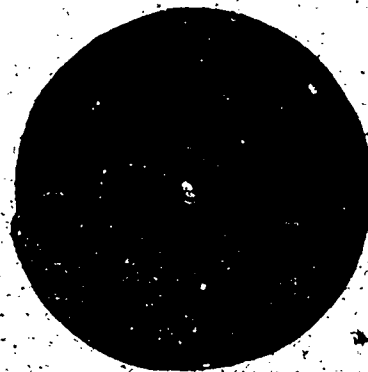
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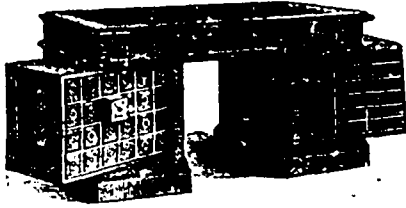
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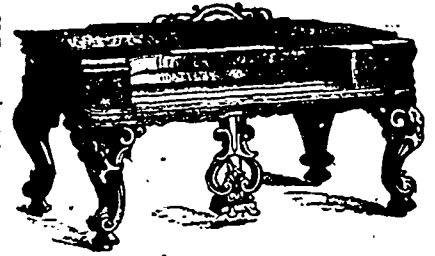


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