

THE CANADIAN MANUFACTURER

DEVOTED TO THE MANUFACTURING & MINING INDUSTRIES, OF THE DOMINION. AND INDUSTRIAL WORLD.

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TORONTO, MARCH 16, 1888.

No. 6.

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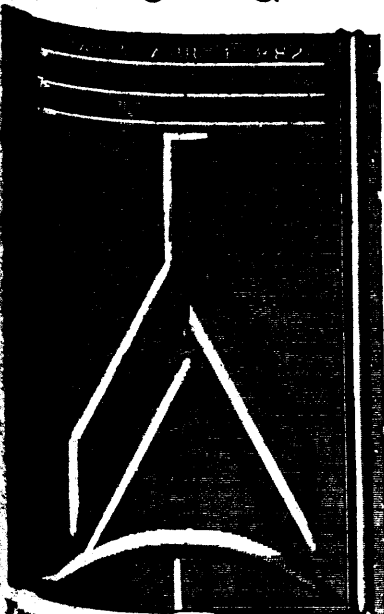
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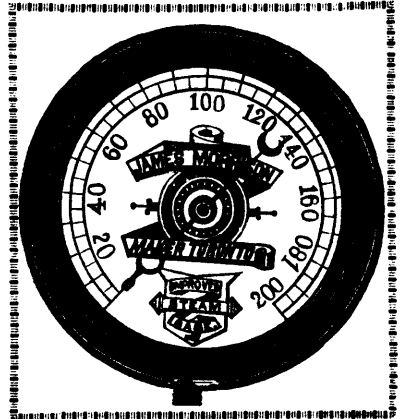
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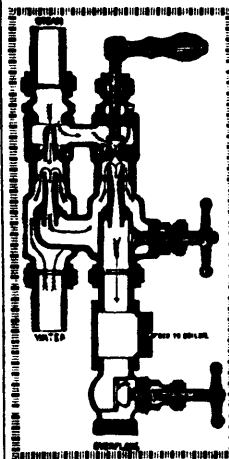


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Any association of manufacturers who may desire to hold meetings for organization or other purposes, are invited to avail themselves of the meeting room adjoining the office of the CANADIAN MANUFACTURER.

MR FREDERIC NICHOLLS is Secretary of
The Canadian Manufacturers' Association,
The Woolen Manufacturers' Association, and
The Tanners' Association.

His Office is at the Publication Office of
THE CANADIAN MANUFACTURER,
6 Wellington Street West, Toronto.

THE TRADES UNION "COMBINE."

The *Mail* notices the fact that "Mr. Frederic Nicholls, the Secretary of the Canadian Manufacturers' Association, has written to Mr. Clarke Wallace (chairman of the Parliamentary Committee on Combines), suggesting that his committee should enquire into trades unions as well as into combines," and suggests that "if Mr. Nicholls would stop to think he could not fail to perceive that there is no parallel whatever between the two cases." We can furnish a fact as an argument to show that there is a parallel between the sins charged against such "combines" as Mr. Wallace's committee was appointed to investigate, and that other "combine," known as the trades union; though we cannot supply the *Mail* with the necessary intelligence to comprehend it. If the *Mail* will refer to some of the recent issues of the *Hamilton Spectator* it will observe that just previous to the first visit of the Royal Labor Commission to that city it contained accounts of the labor troubles then existing there, in which the Bricklayers' Union had ordered a strike on several important city works then in course of construction, because a non-union bricklayer, named Buscombe, was found at work building a sewer for the city. The affair was a dirty case of conspiracy and oppression on the part of the "combine," known as the Bricklayers' Union, to drive this poor man away from his job, the conspirators going so far as to appear before the city council and insolently "demand" the discharge of the man as the only terms on which work would be resumed on the city buildings. The facts of the case were published in the *Spectator* from time to time as they occurred. Later, and while the

Commission were actually in session in Hamilton, the *Spectator* published an item in which it was related that a poor woman, named Mrs. Farr, who had fallen upon the ice and broken her arm, totally incapacitating her from doing any work whatever, was the wife of an old man, a bricklayer, who had been debarred work when work was plentiful, because he was not a union man. Mrs. Farr, meantime, had been the mainstay and support of the family through scrubbing and similar menial work; and the family, according to the *Spectator*, was in "sad distress."

Does the *Mail* see the point? The Labor Commission was appointed "to enquire into all subjects connected with labor and its relation to capital;" and for the purpose of giving a better idea what subjects were considered pertinent to these enquiries, a circular issued by the Commission enumerated "conspiracies" and "labor combinations" among others. Here, then, were at least two cases in point where a labor organization, or "combine," wickedly conspired to wrong and injure a whole community, to wit, the city of Hamilton and the people thereof, and certain individuals of that community, to wit, the men Buscombe and Farr and their families. The *Mail* says, "A trades union may fix the price of labor at any figure it likes." True; and the Bricklayers' Union of Hamilton had fixed the price of labor for all bricklayers working in that city, and the city authorities were willingly paying the prices demanded, so the trouble was not there; but it arose from the fact that non-union bricklayers were at work. Time and again we have called attention to the facts here alluded to; and we have requested the Labor Commission to investigate them. One of the Commissioners, Mr. Freed, is editor of the *Spectator*, and a resident of Hamilton, and this journal appealed to him to bring the matter to the attention of the committee, but it is neglected both by him and it.

Certainly, in the interests of all employers of labor, of labor itself, as represented by non-union men, and of the community at large, such things ought to be investigated. The Buscombe and Farr incidents are but two of hundreds that have occurred, and specimens of what is occurring continually, and it cannot be charged by those who seek to shield the outrageous oppression and tyranny of labor unions, that they are isolated cases.

The manufacturers, as large employers of labor, are interested in the investigation of this matter. They do not deny the right of labor to organize and to act in its organized capacity in any lawful manner. But when trades unions "demand" the discharge of workmen simply because they are non-union men, and jeopardize and depreciate valuable interests—frequently destroying them—because non-union men are given employment, it is high time the matter was ventilated.

WITHDRAW THE BONUSING PRIVILEGE.

It was ill-timed and injudicious legislation that conferred upon municipalities the privilege to grant bonuses, exemption from taxation or any special privileges to manufacturing industries, as inducements to have them located in any such municipality. The privilege has been "worked" to a most ridiculous and unreasonable extent, and the system has become so obnoxious and objectionable as to loudly and urgently demand abatement. This journal, we believe, was the first in

Canada to call special attention to this matter, and to take a decided stand in opposition to the system; and having started the motion, we are pleased to observe that our views are being endorsed in many directions. Not only are the newspapers generally denouncing the bonusing system, but many municipalities that have been more or less injuriously affected by it are taking active measures of different sorts against it, and a bill has been introduced into the Ontario Legislature to withdraw the privilege entirely from all municipalities.

As we have often shown, the bonusing system is a most pernicious one. It fails to bring any permanent and commensurate benefit to the community granting such favors, and it cannot but work unfairly and unjustly to any who may be engaged in similar business to that which may be bonused. It is desirable, of course, that manufacturing establishments should be multiplied in the land, but it does not indicate a healthy condition of affairs when the effort is made to have the tall chimneys appear in places where they cannot be made to retain their perpendicularity perpetually, nor where they spring up like Jonah's gourds, which withered away when brought to face the glowing sunlight of fierce competition. As desirable as it may be, too, to multiply manufacturing establishments throughout the country, none such should ever be built unless they have that financial backing that affords reasonable guarantee against the dangers that always beset all business enterprises. The mere fact that a bonus of a few thousand dollars may be had of a town does not imply that that town is a proper place in which to start a certain enterprise, or that such an enterprise is demanded by the wants of the community. Given these things: a desire on the part of some person or persons to embark in some certain manufacturing enterprise; a liberal bonus of money and long exemption from taxation by a town desirous of having such an industry; a large outlay of money in erecting suitable buildings and in supplying them with machinery, and a large number of employes brought to work in such establishment; and if all the requirements of a successful conduct of such business are not observed; if the trade of the country does not demand such products as it is proposed to manufacture there; or if the market is already fully supplied, disastrous failure is the inevitable sequence of the transaction. Good money has been wasted; buildings and machinery for which there is no use have been erected; working people who had hoped to make their homes within the shadow of the factory walls scattered; and the smokeless tall chimneys stand as grim sentinels over the grave of stupendous folly.

Those who desire to engage in new manufacturing enterprises should be well assured beforehand that their location is well chosen; that there is a reasonable demand, present or prospective, for their proposed products; that they are prepared to manufacture at a minimum cost, and that they have capital enough to establish and carry on the business without appearing as suppliant paupers, asking donations to assist them; and if this last named condition does not exist, the scheme had better be abandoned. Better never to have a factory in the country than to build and then abandon them.

There are those, however, who think they can answer affirmatively all these requirements for the successful establishment of industrial enterprises, yet who, with an unbounded

and insatiable greed for gain, force the granting of bonuses in their favor whenever opportunity offers; and recent occurrences of this character are fresh in the minds of many. An illustration of the evils of this bonusing system exists in a certain Canadian city, where a cash bonus of \$20,000 and long exemption from taxation was voted to a large and wealthy concern, already in business elsewhere, as an inducement to establish branch works there. There are about a dozen concerns there manufacturing the same line of goods, but these have never been bonused; and although they are poor as compared with their wealthy rival, they are compelled not only to pay taxes on their own business to help support the municipality, but are also compelled to submit to further taxation to enable the city to pay the \$20,000 to their rich rivals in business who have to pay no taxes. The injustice of such transactions is simply infamous.

THE LOCOMOTIVE ENGINEER'S STRIKE.

THE strike of the engineers and firemen on the Chicago, Burlington and Quincy Railroad, presents some features that are perhaps not entirely familiar to many of our readers. For years this road has observed a system of classification of engineers by which the older and more experienced men, holding the more responsible positions, were paid higher wages for their services than the less experienced ones, a feature in the system being that men driving locomotives on main lines where the greatest care and precaution was necessary, were paid more than equally skilful men doing less important work. Locomotive engineers, as a class, are generally recruited from the firemen. When a fireman has been on an engine for a certain length of time, and has displayed his aptness and ability to take charge of an engine, he is advanced to the position of engineer and assigned to the least dangerous and responsible work; and as his ability as an engineer increases, he is advanced accordingly, the advancement bringing to him pay according to the service he is called upon to perform. Until now this system has never been antagonized by the Brotherhood, and the present strike is because the railroad people in question decline to abandon it on the demand of the Brotherhood, who insist that no matter what service the engineer performs, he shall be paid according to the highest rate paid to any men of his class. As against this innovation Chief Arthur is on record as having said:—"We don't accept a man as a member of the Brotherhood till he has been an engineer for a year. Now, why should we ask the railroad companies to pay that man full pay as an engineer as soon as he is promoted, when we say, by refusing to accept him into the Brotherhood, that he is incompetent—that he is still on trial as an engineer?"

The Brotherhood of Locomotive Engineers, like most all other associations embracing large numbers of men, contains two elements—a conservative element, which has heretofore for some time been represented most ably by Mr. Arthur, and a discontented, radical element, who were restive under the restraints of the conservatives. At the last annual convention of the Brotherhood the radical element did not succeed in deposing Mr. Arthur; but, controlling the convention, fettered him in such a way as to render him powerless to act as he had theretofore done in using his own discretion and judgment in

pacifying incipient strifes and averting threatened strikes. Several requests that Mr. Arthur made of the convention, whereby he might be the better enabled to conserve the interests of the order, were refused. Among these he wanted an assistant of his own choice to take charge of the necessary office work, and it was only by the casting vote of Mr. Arthur himself, as chairman of the convention, that one of the most objectionable of the chiefs of the radical element was not forced upon him to fill the position. Before the meeting of this convention, when any trouble arose between the railroads and their engineers, the grievance committee of the road concerned were ordered to look into it, and efforts were made to arrange with the management. If the committee failed to do so Mr. Arthur was sent for, and he was the sole judge as to whether the case was such that the brotherhood should interfere. This gave him important conservative power. At the last convention this rule was altered, and Mr. Arthur was made a voter along with the grievance committee from the road interested, having no larger power than any member of that committee. He had to consult with the grievance committee as to whether the subject at issue was a sufficient cause for a strike, and if the majority of them said it was he had no veto power, and could not say it was not. This change was a great modification and curtailment of the authority of Chief Arthur; for he could no longer forbid or prevent a strike, and he was bound to abide by the decision of the majority of the grievance committee of the road where trouble existed, and at the same time he was bound to exercise his authority as Chief of the Brotherhood in sustaining any strike that the committee might decide to make. He was obliged to either do this or resign his position as Chief.

Of late engineers have complained that it was difficult for a discharged man to get reinstated on any road where the system of advancement as prevails on the Chicago, Burlington and Quincy is observed; and there is a growing feeling of dislike among them at the idea that when one of their number is dropped from employment the chance of reinstatement is very slim, and that the event indicates the promotion to the throttle of a fireman. They say that a newly-made engineer cannot possibly be as valuable as an old hand; and they think that the classification system, which embraces the advancement of fireman, would become inoperative to a greater or less extent, as far as such advancement is concerned, if all engineers were paid according to their grade regardless of the special service they performed. This feeling has increased rapidly since the last convention of the Brotherhood, and now that Chief Arthur is virtually nothing more than a figure-head, and unable to control this radical element, a strike has been precipitated.

The Knights of Labor, now that the engineers' strike is fairly on, laying aside their chronic antipathy and hatred of corporations, particularly of the railroads, are in glee over their opportunity of revenging themselves on the Brotherhood because of past offences, and are supplying the railroads on which the trouble exists with engineers in place of the strikers. But disorganization exists on these roads nevertheless, and traffic generally is impeded and obstructed. If the final outcome should be the crushing defeat of the Brotherhood, as at present managed, and its re-organization under such conservative influences as

characterized it when Mr. Arthur was its true head, it will be well for the engineers. But in the meantime the whole community suffers.

INTER-AMERICAN TRADE.

THE people of the United States are rousing themselves to the importance of extending and amplifying their trade with the South American States, and the people of Canada will watch their efforts with great interest, for whatever is or may become possible for them in this direction may become to greater or less extent possible for us. Working in this direction the American Shipping League, at its recent convention in New Orleans, adopted resolutions advocating before Congress the passage of a bill giving a small bonus for a certain length of time to American vessels engaged in foreign trade, as France and Germany do. The argument was advanced before the League that with an annual appropriation of, say, \$3,000,000 expended in this manner, the effect would be to resurrect and rebuild the American merchant marine, and that the investment would prove a very profitable one to the whole country. The United States is now paying \$150,000,000 a year to foreign countries, mainly to England, to do its international carrying trade. There are comparatively very few American ships employed in the South American trade, and England, with its regularly established lines to that continent, virtually monopolizes the trade; even a large portion of American manufactures destined for South America being carried there in British ships from British ports. It is safe to say, therefore, that the lack of American ships costs the United States \$150,000,000 a year in freights paid to British vessels, and \$350,000,000 in trade with South American countries which they ought to have and would have if they had the vessels.

Viewed in this light, the *New Orleans Times-Democrat* says, "The matter is not one for the ship owners alone, but for manufacturers and farmers also. The Western farmer who cannot ship his flour to Brazil or the Argentine Republic, because there are no vessels in which to ship it; the Eastern manufacturer who sees Chili depending on England for those very manufactured articles in which this country excels, because the English have the ships and the trade, are equally affected by the decadence of American shipping, to which is largely due the loss of trade with certain countries and the overproduction at home."

The Shipping League seeks a remedy for the present evils and suggests the tonnage act as the best remedy. It has been tried by France and Germany, and we have the authority of those countries, as well as the Boards of Trade of England, that it has largely succeeded. The British Government, indeed, with its postal subsidies, tried practically the same system, until its shipping was on a solid basis, when a bonus of any kind became no longer necessary. No other satisfactory mode of dealing with the problem has been suggested. The American merchant marine, once all-powerful on the ocean, was almost totally ruined by the war. When peace came, it found vessels of a new style and build in use. Against England, already mistress of the seas, with the finest shipyards in the world, backed with illimitable capital, American competition is difficult and almost impracticable, unless some aid is

given to rebuild the industry, just as aid has been given it in Great Britain and every other country when the need was great and absolute.

It is a mere question of economics, whether the investment of \$3,000,000 a year would return a greater profit in freeing the United States from its obligations to other nations, in the matter of transporting its products, in extending its trade and commerce and preventing overproduction.

TEACHERS AND THEIR PAY.

WE recently called attention to the exceedingly small salaries paid to school teachers in Ontario. We showed that while teachers are required to be of undoubted good moral character, well educated and fairly well dressed, they were paid salaries ridiculously small and entirely inadequate to support them in a becoming manner. Indeed there are many coachmen and footmen attached to gentlemen's household establishments in this city who are paid more liberally than most of the male teachers in this Province are paid for instructing the growing generation of children; and there are many ladies' maids who receive more bountiful rewards for their services than Ontario female teachers. Considering the value of the food, shelter, etc., enjoyed by the average cooks and house girls, added to their wages, and it will be seen that even these are better paid than most of our school teachers. At a meeting of the Hamilton Board of Education, held last week, a large delegation of female teachers of that city appeared and pressed their claims for larger salaries, and in the petition which they presented, it was stated that out of the 117 positions in the schools there, there was but one to which a \$500 salary was attached, and but thirteen positions commanding salaries ranging between \$400 and \$500, while nearly one-half of the teachers receive only \$325 or less, twenty-five of them receiving only \$250 per year. A teacher, there, must necessarily work from ten to twelve or fifteen years before she can expect to receive a salary of \$400. These teachers suggested the adoption of the following schedule on the basis of length of service:—For first and second years of service, \$300 per year; third and fourth years, \$350 per year; fourth and fifth years, \$400 per year; sixth and seventh years, \$450 per year; eighth to twelfth years, \$500 per year; from twelfth to fifteenth year, \$550 per year; and from fifteenth to twentieth year of service, \$600 per year.

This is a sad showing, but bad as it is, it is not as bad as the situation is in New Brunswick, as shown by the recently issued annual report of the schools in that Province. To illustrate we tabulate the average salaries paid there, which is as follows:

	Male.	Female.
First class.....	\$521.30	\$324.40
Second class.....	307.92	226.87
Third class.....	231.00	187.57

It should be remembered that while first-class male teachers are paid an average of \$521 per year, there are not many first-class teachers employed, and probably one-half or more of the total number are rated in the third, or lowest class, where the female teachers are paid only \$187 per year. It is stated that the average cost per pupil for the year, including the pupils of superior and grammar schools, was only \$6.04.

This state of affairs is simply disgraceful, and ought not to continue. The laborer is worthy of his hire, and there is no valid reason why school teachers in Canada should not be paid according to their worth, and with a liberality similar to what other similarly skilled services are paid. When manufacturing concerns go into the market and engage their labor upon terms most favorable to themselves, the cry is frequently raised that the poor are oppressed because they are poor and cannot help themselves, notwithstanding the fact that the products of their factories must be sold in competition with untold quantities of similar products in the open market. The charge is made that the grinding down of the poor is done for the enrichment of the employer; and it really looks as if this was the actuating principle upon which school teachers in this country are employed. But the schools in which these teachers exercise their skill are supported by the public, and there is no competition in operating public schools, therefore, although there may be a hundred or a thousand applicants for every vacancy that may occur in the list of teachers, there is no reason why school trustees should bear the market and set applicants to bidding downward as to their remuneration, bestowing the favor (?) upon the unfortunate persons who place the lowest value upon their services. On the contrary, there should be paid salaries sufficiently high to command the services of the best class of teachers, and competitive examinations should always decide to which of these should be awarded the situations. The fact that Hamilton teachers modestly propose to serve twenty of the best years of their lives as such before being made the recipients of the munificent salary of \$600 per year; and that New Brunswick teachers are only paid the pitiful sum of \$187 per year for their services, should cause such a protest to go up as would bring about a radical change in the system of paying Canadian school teachers.

EDITORIAL NOTES.

IN addition to the cash bonuses that Stratford, Ont., has given away to impecunious perapetetic manufacturers, \$90,000 worth of property in that town occupied by these manufacturers, is exempted from taxation. The bonusing system is an outrage upon honest taxpayers.

THE Buffalo, N.Y., International Fair Association proposes, as we are informed by the secretary, Mr. C. W. Robinson, to hold a grand international fair in that city next fall for Canadian and American exhibits. Ground will soon be broken for what is claimed will be the largest and handsomest exposition building in America.

THERE is no American trade journal that comes to our exchange table that possesses more interest than *Farm Machinery*, of St. Louis, of which Mr. C. K. Reifsnider is editor. It enjoys a remarkably fine and large advertising patronage, indicating both financial prosperity and wholesome appreciation, and its literary contents is intensely practical.

THE Yankees are coming, Aha! Aha! Brantford recently voted a New York concern \$20,000 as an inducement to come, and now a Pennsylvanian concern want to be coaxed to go

to Oshawa to make slate pencils if a similar inducement is offered. It is a cold day when the Yankees are left when Canadian dollars are laying around loose and silly municipal authorities have the voting of them away.

FROM January 1 to March 5 last, the Industrial League, of Philadelphia, distributed from the office of the American Iron and Steel Association, 366,413 tariff tracts, at a cost of \$2,638.36 for printing. American Protectionists are wide awake to the necessity of protection. Protection against the assaults of the Free Traders, and they are spending their money with great liberality to do it.

THE St. Stephen, N.B., *Courier* quotes a recent article printed in the *Mail*, anent border smuggling, and says that as far as that section is concerned there is proportionately less smuggling done there than in many towns farther removed from the border. The merchants there, it says, "handle very few American goods, the manufactures of Canada being in many instances most profitable to handle and better suited to the market."

THE Methodist Book and Publishing House, Toronto, inform us that they are now publishing "Robertson's Lectures," and hope to have the book issued within a few days. To the readers of the *Mail* who are treated so frequently to long Goldwin Smith lectures on Commercial Union, this new book will certainly bring much relief. There is nothing like turning from an exceedingly dull and threadbare subject to light literature, such as "Robertson's Lectures."

DURING the months of January and February last, the city of London, Ont., remitted more than \$1,000 in taxes on the plea of charity. It is said that the claims for this "charity" were not very worthy, but the people of that city should remember that the pensioners upon their bounty are not as greedy as they are in some other places, Brantford, for instance, where \$20,000 was recently voted to one pauperized concern said to be worth a million, to induce them to settle there.

IN 1878 the quantity of raw cotton brought into Canada to be manufactured was 7,243,413 lbs., while last year the importation reached 39,971,070 lbs., more than 300 per cent. increase. Nine years ago Canada imported for manufacture within the country 6,230,084 pounds of wool, and last year there was brought in nearly double that quantity—12,038,693 pounds. On the other hand the value of blankets of foreign manufacture imported in 1878, was \$201,292, and in 1887 only \$72,304, while the importation of flannels was \$330,400, and \$224,193 respectively in these periods.

MR. BIRLEY, manager of the Dominion Paper Box Company, of Toronto, interviewed the Government a few days ago with the object of having a duty placed on a composition used in the manufacture of paper boxes. This composition is made of strawboard with a thin covering of patent paper pulp. As there is no provision in the tariff this article is entered as

manufactured paper at thirty-five per cent. *ad valorem*, while strawboard, of which it is nearly all composed, is entered at \$8 per ton specific. This article is largely used by paper box manufacturers in Canada, and Mr. Birley asks that a special and proportionate duty be fixed for it.

STATEMENTS have been made in some of the Toronto papers to the effect that most of the girls employed in the factories in this city do not earn more than an average of three dollars a week, and that out of this they have to pay a dollar and a half a week for board. No doubt this is so, but competition in trade seems to prevent the payment of higher wages; and the discussion of the matter has developed the fact that there is a large and steady demand for house servants; that most of these factory girls could earn more money than they now do in such service, and could have more comfortable homes, be better fed and better off in every way, if they would seek their living in that direction.

Oesterreich's Wollen und Leinen Industrie (Austria's Woolen and Linen Industry), Reichenberg, Bohemia, in its issue of February 15th, publishes a translation of an article taken from this journal regarding the transmission of power by ropes and the Dodge patent separable or split wood pulleys, manufactured by the Dodge Wood Split Pulley Company, of Toronto. This system of transmitting power is attracting much attention in all the manufacturing centres in Europe, and our Austrian contemporary is wisely explaining the advantages of it, as recently explained in our pages. The Dodge Wood Split Pulley Company inform us that they are in receipt of many enquiries from foreign countries regarding their system.

AT a recent meeting in New York, Mayor Hewitt of that city, speaking of the existing labor troubles on certain Western railroads, said:—

"What was the rule of the tyrants of old compared with the despotic claims made in this country to-day that it shall be in the power and name of one man—call him Powderly or call him Arthur—to paralyze the industry of the United States? Was there ever in the history of man a despot who laid claim to any such power as that? At any time in the history of the races has it ever appeared that a conclave of ten or a dozen delegates should be sitting in a room, as they are to-night, to determine whether the bread and fuel shall be withheld from those who are willing to work for the support of themselves and their families?"

MAYOR ABRAM S. HEWETT, of New York City, denounces the trust investigating committee of the United States Senate. He says "trusts are nothing but aggregations of capital and business enterprises by means of which the cost of production is lessened, and consequently articles of consumption are cheapened." Mayor Hewett is the owner of a very large rolling mill and iron making establishment in New Jersey, and which he offered to the Knights of Labor to operate, conditioned that they guarantee him six per cent. on the capital invested. This was more money than the works had ever yielded under Mr. Hewett's management, and the disinterestedness of his magnanimous offer is apparent. Perhaps he would like to sell his iron works to some "pool" of iron manufacturers.

MONTREAL papers tell of how the fire department of that city determined to make its wooden extension ladders thoroughly fire-proof. A lot of so-called fire-proof paint was imported from the United States and laid on to the ladders without stint. About the time the work was finished a newspaper man happened along, and, in experimenting with the paint, discovered that it was quite as inflammable as coal oil, and wood coated with it took fire and burned readily when a lighted match was applied to it. There are manufacturers in Montreal who make paint that is really "fire-proof," but, of course, the Montreal fire department could not believe that any good thing could come out of Nazareth. Canada produces in abundance all the ingredients necessary in the manufacture of the very best qualities of fire-proof paint.

ALLUSION is made elsewhere in these pages to the application made by a prominent manufacturing concern in this city, who desired the authorities to grant them exemption from taxation for ten years on a new malleable iron works which they proposed erecting here. The publicity given the matter elicited a letter from another manufacturer, who happens to be the owner of a malleable iron works, in which he says:—"I have been in business ten years and have never had one dollar of exemption from taxes or received any favor from the corporation since I started business. I have built up my business against the keenest of competition, and used only native help and capital." It would be manifestly unjust to this manufacturer who has built up a good business with his own capital, by his own energy, and without any "bonus" whatever, to handicap him in the market by exempting a competitor from taxation.

CANADIAN cordage manufacturers, and Canadian farmers also, will be interested in the following which we credit to *Farm Machinery*, St. Louis:—

The Binder Twine Association is a strong one, and quite likely to hold prices right through the season. It began by a combination of four Eastern manufacturers, who "cornered" all the manilla and sisal in the country, and that to arrive as fast as imported, and set a price on it which no manufacturer could pay and undersell them. As fast as small manufacturers were "convinced," they became members of the Trust, and were taken in out of the cold. Of course, so long as each member is compelled, for want of other supply, to buy of the Trust, and must account for it product, on which it pays a dividend when its percentage is exceeded, and gets one when less than its percentage is made, there is no chance nor reason for cutting prices. Nearly all manufacturers have taken a hand, and the very nature of the compact indicates that it will hold at least for this season.

THE Fire Insurance Exchange of Toronto, as will be seen by the report of the officers to the annual meeting held in this city a few days ago, is in a most flourishing and satisfactory condition. While the total revenue of the company during the year covered by the report was \$31,259; and while the net amount of risks in force amounted to \$1,140,000, the losses amounted to only \$649, a balance of over \$21,000 being carried over to profit and loss account. The report lays stress upon the value of careful selection and systematic inspection of risks, these being features of this company's working. Also upon the compulsory provision, by insurers, of

adequate appliances on their premises for extinguishing fires. These are all good features, and where rigidly insisted upon, have an unquestionable effect in lessening the fire waste. The gentlemen directing the company, and the executive officers, are of the most reliable and conservative business men of the country, and possess the entire confidence of the community.

THE public generally in the United States are aroused and indignant at the efforts of the Brotherhood of Locomotive Engineers to obstruct traffic on certain Western railroads. The strike on the South-western system of the Gould roads two years ago, when that scamp Martin Irons proved himself to be a bigger man than Mr. Powderly, is fresh in memory, and the people are heartily tired of such doings. Regarding the existing trouble the *New York Indicator* says:—

"The public have submitted tamely to the most outrageous attacks made upon their rights, until it is not surprising that labor demagogues should assert their right to decide whether 60,000,000 people shall be allowed to receive their food supply, their coal, or their clothing. We have seen the prices of articles of food advanced in the past week because of the threat of one man that he would stop the operation of every railroad in this country. And we have seen a Congress stoop to appoint a committee to mediate between such a man and the railroad he is trying to ruin."

THE recent meeting of the Canadian Manufacturers Association, held in this city, the proceedings of which were published *in extenso* in this journal at the time, excited a great deal of interest in the United States, emphasizing as it did, the growing importance of Canada as a manufacturing and self-sustaining country, and the disfavor in which Commercial Union is viewed by Canadian manufacturers. The *Cleveland, Ohio, Iron Trade Review*, speaking of the meeting, says:—"No more vigorous or intelligent body exists in Canada than the Canadian Manufacturers Association." It reproduced copious extracts from the address of Mr. Thomas Cowan, the retiring president, and says that "equally interesting figures were given by the efficient secretary, Mr. Frederic Nicholls." We accept the assurance of our contemporary that "the manufacturers of the United States are quite as averse to political or Commercial Union" as Canadian manufacturers are, "whatever the vapors of misled theorists."

THE Ottawa correspondent of the *Globe*, speaking of the letter of Mr. Frederic Nicholls, secretary of the Canadian Manufacturer's Association, to Mr. Clark Wallace, chairman of the Parliamentary Committee on Combinations, in which it was suggested that the scope of the inquiries being made by the committee should be enlarged so as to embrace labor organizations, says, "Mr. Nichols forgets that men are not forced into labor organizations." The young man should go to school. He should know by this time that no laboring man can obtain employment unless he is a member of a labor organization; and that frequently the whole body of union men are called out on strike for no other reason than because some non-union man was at work. If the Ottawa newspaper reporters should happen to form themselves into an organization similar to those which Mr. Nicholls wants to have investigated, the sapient representative of the *Globe* would quickly discover the fact that he would either have to join or lose his situation.

A HUNGARIAN miner has been found in Pennsylvania, says the Binghamton *Leader*, who lives on two cents a day. He was brought over and put in the place of an American miner by a mine-owner of Pennsylvania, who once in four years tells his men that war taxes must be maintained unless American labor is to be brought into competition with the "pauper labor" of Europe.—*Hamilton Times*. In a recent lecture by Mr. R. W. Raymond, secretary of the American Institute of Mining Engineers, he makes the statement that a detailed analysis of the pay-rolls of the Lehigh Coal Company for the eighteen months from January 1st, 1886, to June 30th, 1887, shows that every miner, good, bad or indifferent, skilled or unskilled, working by contract for the company during that period, averaged \$2.72 for every day worked. Professor Raymond is competent and reliable authority, and if the Hungarian miner alluded to by the *Times* has learned the art of living on two cents a day, he is probably laying up at the rate of \$2.70 a day from his wages. But is not two cents a day rather cheap living?

THE *Hamilton Times* says that unskilled labor in North Carolina is worth only sixty-five cents a day; that North Carolina "enjoys" a protective tariff, and wants to know why the remuneration of labor is so low in that portion of a "protected" country. Answer:—Unskilled labor in North Carolina is worth more than sixty-five cents a day; North Carolina practised a system of human slavery until Abraham Lincoln destroyed it, that discouraged any and all industries except those in which slave labor was engaged, and the Bourbon element in that State—the old slave-owners—don't seem to have yet heard that slavery has been abolished, and therefore there is no encouragement there for those who would engage in manufacturing enterprises. When the Free Trade Bourbons die out, and the aggressiveness of "Protection" captures the State, things will become changed, and North Carolina will take her proper place beside such wealthy and flourishing States as Alabama, Tennessee, West Virginia and Kentucky, where manufacturing industries abound, and where all kinds of labor is paid a fair reward for its success.

THE new water-works system of Newmarket, Ont., has recently been put into operation, and is working satisfactorily. The *Era*, speaking of the event, says:—"The underwriters have been notified that our system of water-works is now in perfect running order, and as soon as they set the day a public exhibition and test will be made, when Newmarket will show the world that she has one of the most complete systems of fire protection in Canada, composed of two independent pumps with enormous capacity, and nearly 5,000 feet of mains, coupled with an electric fire-alarm, four well-drilled hose companies, with a command of 2,150 feet of hose, and also an excellent hook and ladder company supplied with almost every modern appliance and convenience." The authorities of this enterprising town have shown great wisdom in thus providing against fires, that terrible foe that has almost swept so many Canadian towns from existence. In these days of improved pumping machinery, when any town can obtain an efficient water service at comparatively small cost, which is more than compensated by the saving on insurance on public and private

property, it is passing strange that all towns do not do just what Newmarket has done in this particular.

The female teachers of the Hamilton public schools have petitioned the school board for a change in the system of grading salaries. * * The minimum salary is \$250 a year. * * What they want is to be paid according to length of service. * * No doubt this is the fairer system. But it can hardly be introduced in Hamilton at present. It would enormously increase the annual expenditure. The salaries of many teachers would be raised at once fifty and even seventy-five per cent., and in some cases even more. It would not be advisable to lay such a burden suddenly on the taxpayers, especially at such a time as this, when it is absolutely necessary to expend about \$70,000 in providing additional school accommodation. * * We do not value sufficiently the services which are rendered by the teachers in our public schools. They are, as a class, a highly intelligent and refined body of young ladies.—*Hamilton Spectator*.

SURE enough. This "highly intelligent and refined body of young ladies" are supposed to become satisfied with the injustice done them through swallowing the *Spectator's* taffy. It would be awful to increase the salaries of these teachers at this time, when \$70,000 school houses are to be built in Hamilton, although the teachers starve in the meantime. "It would not be advisable," you know. But then these girls are not voters.

At a meeting of the Executive Committee of the Toronto City Council, held last week, a petition was read from one of the largest manufacturing concerns in Canada, doing business in this city, proposing to establish an additional industry in Toronto which would give employment to a hundred or more hands, on condition that the proposed works be exempted, in whole or in part, from taxation for ten years. It was explained that there was but one similar works in Canada; that there was a large and growing demand for such goods, and that most of the supply was brought from abroad. Aldermen Carlyle and Johnson thought it was the duty of the city council to encourage the introduction of new industries. If the Local Improvement Act, as it at present existed, continued in operation—and they hoped it would—the effect would be to encourage the introduction of manufacturing enterprises into the city. Men who helped to build up the city should have special advantages afforded them. Aldermen Dodds and Gillespie opposed the application. The principle of granting exemption from taxation was wrong and very dangerous. Should this application be granted, and, a few months hence another concern, desirous of engaging in the same line of business, should also apply for similar exemption, would the application be granted? If the precedent was set it would have to be observed, and where would it end? Toronto, said Alderman Dodds, should have long since got beyond the point of giving bonuses or exemptions to persons who were consulting their own best interests in establishing industries in this city. The principle was a bad one, and dangerous as affecting trade and wholesome competition. How, he asked, could a company, not exempt from the ordinary taxation, compete with another company in the same line of trade which enjoyed exemption? It tended to create monopoly, and as such should be discountenanced. We see how this bonusing business works in other places in the Dominion, where they give

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bonuses to companies on condition that they establish industries and undertake to employ a specified number of hands—which they seldom do. These companies sometimes succeed, and sometimes change to other quarters, enticed by fresh bonuses. It is time that Toronto got out of this species of backstaring. The natural advantages which the city affords will attract manufacturers, and if it is to their advantage to come here, exemption from taxation won't keep them away. The application was referred to a sub committee.

The charges at Buffalo for discharging vessels are \$5.75 per 1,000 bushels, while \$1.50 pays the bill in all Canadian ports. This is not calculated to send grain down the Erie. The only wonder is that Montreal has not already supplanted New York.—*American Miller.*

The *Detroit Tribune* thinks it lucky that Free Trade is not the rule at present, as if it were not for the 20 cents duty on wheat the 2,000 carloads now lying blockaded on the Canada Pacific, between Winnipeg and Port Arthur, could be unloaded at our mills at a much lower price than our Western farmers could afford to sell their grain for, and in fact would lower the price of wheat in every wheat-growing state in the Union.

Some of our exchanges come tightly rolled in the shape of iron rods, and it requires more expertness and hard work to open them than it does to open an oyster, besides consuming far more time, patience and good nature. We do not know what the subscribers for these papers think about it, but as for us we always wish they (the papers) were in Halifax, or in some place far, far away. The persons who mail these papers were "cut out" for cigar-makers, and they should drop their present occupation at once and go to rolling the odorous "toby."—*American Manufacturer.*

The Dominion Board of Customs rendered the following decisions during the month of February:—Blacksmiths' bellows, 25 per cent.; bottle-washing machines, 30 per cent.; colored glazed paper, 35 per cent.; cotton tape printed for labels, 15c. per lb. and 25 per cent.; decorated tin plate in sheets, 25 per cent.; Elliott milk guage, a manufacture of iron, 15 per cent.; fire clay gas logs, 20 per cent.; gum senegal, free; gloy paste, one cent per lb.; lace collars, 30 per cent.; locks, made entirely of brass, 30 per cent.; Rough on Rata, 20 per cent.; rubber lap rugs, 35 per cent.; terra cotta panels, mouldings and cornices, 35 per cent.; type writing machines, 30 per cent.; window shade rollers, finished, but without the shade, 35 per cent.; the cloth shade dutiable at 5 cents per square yard and 15 per cent.; porous earthenware, known as terra cotta lumber, brickwood, cellular, pottery and holdstern or woodstone intended for making buildings fire-proof, 35 per cent.

THE LOBSTER TRADE.

THERE are between 350 and 375 lobster canning factories in operation in the Lower Provinces of the Dominion. The fishery officials estimate the actual investment in these factories at \$670,000. This investment is probably increased to \$1,000,000 by the cost of seines, traps, smacks, wharves, etc. Of the total number of factories 115 are in Prince Edward Island and 151 in New Brunswick, the rest being in Nova Scotia. Two years ago the production of these factories was officially stated as follows:—

Province.	Lbs.	Value.
Nova Scotia.....	6,805,000	\$1,000,000
New Brunswick.....	5,236,000	785,000
Prince Edward Island...	4,390,000	526,000
Total.....	16,431,000	\$2,311,000

It is estimated that the production of these lobster factories in 1887 was 225,000 cases, of which 75,000 cases were put up on the South Atlantic coast and 150,000 on the New Brunswick, Prince Edward Island and Nova Scotia shores of the Gulf of St. Lawrence. There are 48 one-pound cans in a case. It takes from three to twelve lobsters to fill a can, according to the locality in which they are taken. The average value of a case is \$5.50—or \$1,337,500 for the year's pack. Of the total production, 150,000 cases were exported from the port of Halifax.

Americans own and operate some fifty lobster factories in the Lower Provinces. Indeed, Maine men were the pioneers of the industry in Nova Scotia. The production of these factories last year was 60,000 cases, valued at \$340,000, the bulk of which was shipped to the United States.

The lobster season last year was from the 26th April to the 1st of August. The legal size of a lobster is 9½ inches. A very large proportion of those caught are undoubtedly under this size. Probably fifty per cent. of these are canned; the other fifty per cent. being returned to the sea. The pack at a factory runs from 500 to 2,000 cases during the three months—the production depending upon the locality. The fish are packed in cans by girls. One thousand boxes of tin are used in packing 9,000 cases of lobsters. A factory packing 1,000 cases would give employment to from twelve to twenty hands. It is estimated that between \$500,000 and \$600,000 are distributed for wages of fishermen and other laborers in connection with the factories during the season.

Newfoundland has about 2,000 miles of coast line, upon many portions of which the lobster fishing is said to be excellent. The fish are of superior quality, and the factories can be run much more cheaply and profitably in Newfoundland than in any part of the Maritime Provinces.

THE SONG OF THE SHIRK.

WITH fingers that never knew toil,
 With nose-tip swollen and red,
 A delegate sat in his easy chair,
 Eating the laborer's bread;
 "Strike—strike—strike!"
 Nor dare return to your work!"
 And still with his swaggering, insolent air,
 He sang the "Song of the Shirk."

"Strike—strike—strike!"
 Till the children are crying for bread!
 Strike—strike—strike!"
 Till the roof is torn from your head!"
 It is, Oh! to have a king,
 And dwell away over the sea,
 Where knights and bosses are still unknown,
 If this is liberty!

Shirk—shirk—shirk!
 The duty we owe to man;
 Shirk—shirk—shirk—
 As only a delegate can!
 Fine and assessment and due,
 Due and assessment and fine,
 Such is the stuff on which delegates live,
 And swagger and drink and dine!

"Strike—strike—strike!"
 The delegate passed this way!
 "Strike—strike—strike!"
 He orders, you must obey!
 And ask not the reason why,
 Nor murmur against their decree,
 For none must work when they say "No!"
 In this country of the free!

Oh! men with children dear,
 Oh! men with daughters and wives,
 It is not the rich you are starving out,
 But your hungry childrens' lives!
 Strike—strike—strike!"
 To please your masters still,
 Ye are slaves to a band of plundering knaves,
 Who will bleed you as long as ye will!

Shirk—shirk—shirk!
 The duty you owe to man,
 Shirk—shirk—shirk—
 As only a delegate can!
 It is strange that laborers choose
 As champions of their cause,
 Men who never were known to use
 Anything save their jaws!

MR. W. P. SAYWARD, Victoria, B.C., has recently made considerable additions and improvements to his lumber mills. The main building has been added to 50x42 feet, the entire area now being 170x42 feet. New and improved machinery has also been added, included in which are a compensating balance gang saw, gang edger, automatic filing machine and swedging machine. The capacity of the mill is now 30,000 feet of lumber per day.

Manufacturing.

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

MESSEES. BRUNETTE & BROS., Hereford, Que., will build a steam sawmill this spring.

MR. C. O. SWANSON, Waterville, Que., will establish a furniture factory at that place.

MR. A. H. BRINTNELL, Orono, Ont., is building a buggy which is to be propelled by steam.

MR. JAMES SHEARER, Montreal, lost his sawmill by fire, Feb. 26th. Loss, about \$14,000.

A COMPANY is being formed at Welland, Ont., to bore for natural gas, and the work will be pushed immediately.

THE woolen mills of **Messrs. Irving & Lewis**, at Vienna, Ont., were destroyed by fire March 13th. Loss about \$2,000.

A VESSEL has recently sailed from Moodyville, B.C., for Tientsin, China, with a cargo consisting of 423,532 feet of lumber.

MR. S. S. CLUTTON, Aylmer, Ont., is enjoying a large and increasing business in his custom woolen factory at that place.

THE Dominion Fire Escape Company, Smith's Falls, Ont., will be incorporated for the purpose of manufacturing fire escapes.

THE Gibson Cotton Factory at Marysville, N.B., is being supplied with a large number of new looms brought from England.

SHINGLE machines in the Gibson shingle mill at Marysville, Mo., saw at the rate of 19,250 shingles each in nine and a half hours.

THE Essex Centre Carriage Works, Essex Centre, Ont., is a new concern just engaging in lines of business indicated by the name.

MESSEES. DAVID HENDERSON and **J. L. Ainslee**, Tilbury East, near Port Alma, Ont., are about erecting a new stave and heading mill.

MR. WM. RUSSELL, Guelph, Ont., manufacturer of lawn mowers, etc., has recently shipped 100 lawn mowers to Brussels, Belgium, on order.

MR. GEORGE BUTCHART, of Port Moody, B.C., is making arrangements for the erection of a large steam lumber mill at or near that place.

MESSEES. WILLIAM NORTH & SON, Whitehall Road, Leeds, England, teazle packers, have been awarded a gold medal at the Saltair, Eng., Exhibition.

MESSEES. R. & G. STRICKLAND, Lakefield, Ont., are erecting a factory building for the manufacture of fine flannels, and will employ about sixty hands.

MESSEES. WICKETT, PALMER & BEST, Aylmer Ont., operate the largest furniture factory in that place. They employ an average of about thirty hands.

THE Ammonia Company of Toronto, is a new manufacturing concern recently incorporated with \$40,000 capital stock, with headquarters at Toronto.

THE Bryan Manufacturing Company, Toronto, will be incorporated with \$30,000 capital stock, for the sale of hardware specialties, builders' supplies, etc.

MR. JOHN ACKLAND'S flouring mills at Delaware, Ont., were destroyed by fire, Feb. 24th. The mill cost \$20,000, and was one of the finest in the country.

MESSEES. KNOWLES BROS., millers, Port Colborne, Ont., will let part of their premises to Mr. Broad, of Buffalo, N.Y., who will start an edge tool factory.

MR. J. W. CUYKENDALL, of Hamilton, Ont., canner of fruits, vegetables, etc., will establish an extensive branch canning establishment in St. Thomas, Ont.

A NATURAL gas spring has developed itself in Thunder Bay, coming up through the ice about fifty feet from shore, opposite to the Northern Hotel, Port Arthur.

THE Yarmouth Woolen Mill Company, Yarmouth, N.S., manufactured \$10,000 worth of tweeds last year, which article is in great favor in the Maritime Provinces.

THE Anglo-Scottish Asbestos Co., Black Lake, Que., are erecting a large mill building into which they will introduce suitable machinery for manipulating asbestos rock.

MESSEES. RHODES, CURRY & Co., Amherst, N.S., are manufacturing a large lot of cherry and ash doors to fill an order for Newfoundland, and a lot of mahogany doors for London, Eng.

MESSEES. WM. BELL & Co., Guelph, Ont., manufacturers of organs, pianos, etc., made a shipment of fifty-eight of their excellent organs a few days ago to Yokohama, Japan, via Vancouver, B.C.

MR. C. SWALE, Warton, Ont., will build a cheese factory with capacity to manufacture the milk of 900 to 1,000 cows. There will be two buildings erected—one 42x40 feet, and the other 60x28 feet.

MR. J. H. STILL, proprietor of the handle factory at Tilbury, Ont., is running his factory day and night, getting out a special order for Glasgow, Scotland, consisting of broom and pick handles, etc.

THE Dominion Marble Company is about being formed in Halifax, N.S., for the purpose of purchasing and developing the very valuable marble deposits at Mount Marble, West Bay, Cape Breton, N.S.

MR. C. RECKIN, Warton, Ont., has purchased the furniture factory in that place which has been idle for a year past, and is introducing new machinery, and will manufacture furniture on an extensive scale.

MESSEES. THOMAS TOBIN & Co., Sorel, Que., have disposed of their right to manufacture their patent seamless boots and shoes to a Montreal concern, who will engage extensively in the manufacture of such goods.

THE Boston Asbestos Company, Black Lake, Que., have employed fifteen men all winter in their asbestos mines, and have taken out more asbestos per day than in summer. Their average is $1\frac{1}{2}$ tons per day.

THE estate of the Steel Company of Canada, Londonderry, N.S., has been transferred to the Londonderry Iron Company of that place, by whom the business heretofore carried on by the Steel Company will be continued.

MESSEES. G. A. GRIER & Co., the big lumber firm of Ottawa, have sold their concern, limits, mills, etc., to Messrs. Pierce & Co., of London, Eng., the price named being in the vicinity of a million and a quarter of dollars.

MESSEES. J. E. MCGARVIN & Co., late Moore & McGarvin, Acton, Ont., manufacturers of trunks, satchels, etc., are operating their factory to its full capacity, being well stocked with orders. They employ about thirty hands.

MESSEES. DICK, RIDOUT & Co., Toronto, proprietors of the Toronto Bag Works, call attention in our advertising pages to the jute and cotton bags for all purposes manufactured by them. They also make bag printing a specialty.

MR. W. H. LAW, of the Central Iron Bridge Works, Peterboro', Ont., has received the contract from the counties of Simcoe and Ontario for an iron-bridge over the Narrows, near Orillia. He has five other similar contracts on hand.

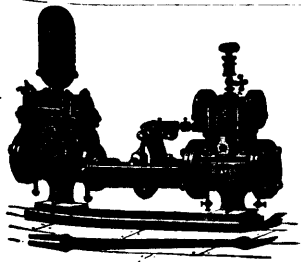
MESSEES. STEWART & Co., St. Stephen, N.B., manufacturers of candy, confectionery, etc., will erect a new building on the site of their recently destroyed works which will be arranged with special reference to the requirements of their business.

THE St. Croix Cotton Mills, of Milltown, N.B., have installed a 100-arc light plant of the Thomson-Houston system, manufactured by the Royal Electric Company, of Montreal, Que. It has proved a great success and is giving entire satisfaction.

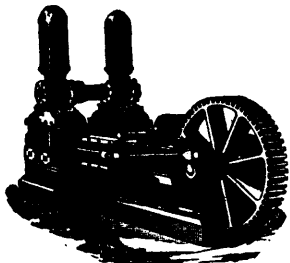
MR. F. H. SLEEPER, late of Coaticook, Que., is starting a new machine shop at Waterville, Que., which will be furnished with first class machinery and appliances throughout. He will manufacture a patent lifting jack which is now in large demand.

MESSEES. MONTGOMERIE & MCGINNIS, St. Johns, Que., have commenced the manufacture of felt goods, included in which are felt

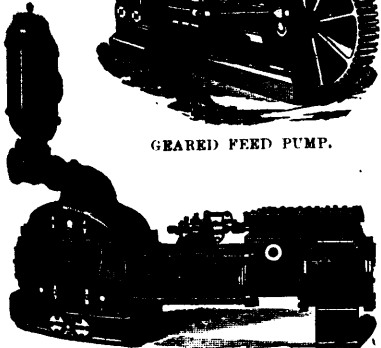
Geo. F. Blake Manufacturing Co.,



BOILER FEED PUMP.



GEARED FEED PUMP.



DUPLEX COMPOUND ENGINE

BUILDERS OF

SINGLE AND DUPLEX
Steam and Power

Pumping Machinery

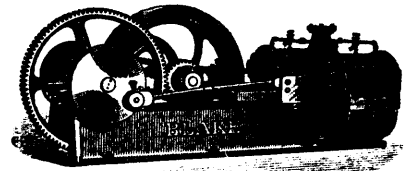


BOSTON,
111 FEDERAL STREET.

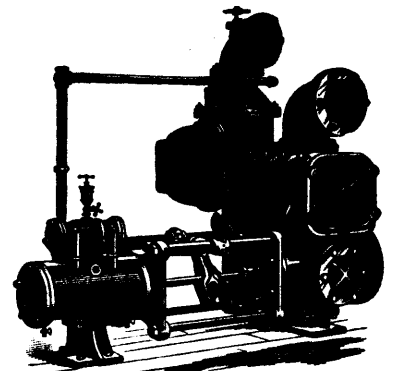
* **NEW YORK,**
95 & 97 LIBERTY STREET.

SEND FOR ILLUSTRATED CATALOGUE.

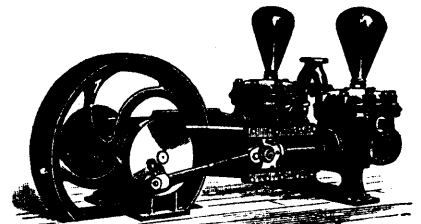
These goods may be seen at the Permanent Exhibition, 63 to 69 Front Street West, Toronto.



AIR COMPRESSOR.



AIR PUMP AND CONDENSOR.



BELT PUMP

boots and felt mitts. This is said to be the only factory in the province of Quebec manufacturing these lines of goods.

Messrs. KING BROS., Whitby, Ont., are engaging in the manufacture of leather shoe laces in connection with their extensive tannery. Special machinery is being imported from England, and a large number of additional hands will be given employment.

Messrs GELINAS & FRERE, Montreal, manufacturers of patent snow shovels, whose works were recently destroyed by fire, have been voted a bonus of \$5,000 by the town of Three Rivers, Quebec, as an inducement to remove to that place. They will accept.

THE McDiarmid Manufacturing Co., Aylmer, Ont., late McDiarmid & Price, manufacturers of hubs, spokes, and bent goods for carriages, wagons and agricultural implements, are running their works to their fullest capacity, employing about thirty hands.

THE A. S. Whiting Manufacturing Company, Cedar Dale, Ont., manufacturers of agricultural implements, are already sending out large quantities of goods to the different provinces. Their shipments this year will greatly exceed those of any previous year.

A NATURAL gas company has been formed and incorporated at Whitby, Ont., which will at once drill down 4,000 feet, if necessary. It is claimed that the geological formation there is the same as at Findlay, Ohio, where natural gas is found in such vast quantities.

THE Sorel Shoe Manufacturing Company, Sorel, Que., have acquired a suitable building in that town and equipped it with all necessary machinery, and have commenced operations. They are promised a \$15,000 bonus by the municipality on certain conditions.

THE Chatham Manufacturing Company, Chatham, Ont., are getting out a new Chatham two-horse steel twine binder, which has been pronounced by competent judges to be the best machine in the market. Dealers in agricultural implements should bear this fact in mind.

Messrs. R. SMARDON & SON, of Montreal, manufacturers of boots and shoes, have been voted a bonus of \$35,000 and exemption from taxes for ten years by the municipality of Three Rivers, Quebec, as an inducement to remove their factories to that place. They will accept.

Messrs. H. MILIKIN & SON, Chatham, Ont., manufacturers of a folding clothes bar, have contracted with Messrs. Snider, Selkirk & Co., Leamington, Ont., to furnish them with \$20,000 worth of seasoned lumber during the coming season for the purposes of their business.

THE New York Dyewood, Extract and Chemical Company, 55 Beekman Street, New York City, are calling attention of manufacturers and the trade generally, through our advertising pages, to the solid and liquid extracts of logwood, fustic and hypernic, manufactured by them.

PORT COLBORNE, Ont., is anticipating a manufacturing boom. It is rumored that certain Hamilton capitalists who are interested in the manufacture of glass in that city contemplate starting glass works at Port Colborne, utilizing the natural gas found there so abundantly as fuel.

MR. J. H. RUSSELL, St. John, N.B., inventor of the Russel snow plow, is meeting with great success with it. Messrs. J. Harris & Co., of that city, have already built some fourteen of these plows, which are in use on Canadian railroads, and which are doing all that has been claimed for them.

THE Martin Manufacturing Co., Whitby, Ont., who recently removed their saddlery hardware works from Toronto, have begun operations, and are full of orders. They have complied with the terms by which that town is to loan them \$10,000, and are to receive the money immediately.

MR. J. W. POWER, Orono, Ont., is applying for a patent for an invention of an arrangement which will enable merchants to tell at a glance how many yards of cloth, etc., remain in a web or roll of goods. It consists of a strip of paper marked in yards and sections, to be rolled with each web.

MR. W. H. FROST, Smith Falls, Ont., denies the statement that there is but one malleable iron works in Canada. Regarding his own works he says that he is now producing sixty tons of malleable iron goods per month, and expects to double that quantity by additions to his works this season.

THE Ontario Fancy Leather Goods Company, Hamilton, Ont., under the management of Mr. Frank Zarder, a skilful and artistic

MACHINERY FOR SALE.

JOSEPH HALL, MACHINE WORKS, OSHAWA.

Circular Saw Tables, Wood Turning Lathes,
Mortising Machines, Car Mortising Machine,
Wood Benches, Wood Shapers, Large Surface and
General Purpose Wood Planing Machines,
Graining Machines, Tenoning Machine,
Sand Belt Machine, Swing Sawing Machine,
Testing Machines for Threshing Machines,
Horizontal Boring Machines,
Upright Boring Machines, Facing Machine,
Iron Turning Lathes,
Iron Column Drilling Machines, Iron Punching Machine
Punching and Shearing Machine,
Key Seat Cutting Machines,
Cutting and Shearing Machines,
22 Spindle Gang Drilling Machine, Power Shears,
Large Iron Shaper, English Make, Milling Machine,
Schlenker Patent BOLT CUTTING MACHINE,
No. 6 Northey Steam Pump,
Large Heavy Tumbling Barrels, Steam Heater, 51x72 in.,
Bradley Cushioned Trip Hammer,
Iron Boring Lathe, Foundry 3-Legged Drop, 35 Feet High,
1100 Pound Drop, 37-inch Gear Wheel,
Steel Boiler, 68x168 inches,
Horizontal Engine, Cylinder 18x36,
Turret Head, Brown & Sharpe, Mill Screw Machine,
Lefel Water Wheels, Portable Engines,
Fairbanks' Platform Scales, Steam Pipe and Fittings,
Fire Extinguishers,
Sand Blast for Sharpening or Cleaning Files,
Belting, Shaftings, Hangers, Pulleys, Couplings,
Wrought Iron Heater for Glue and Wood, Circular Saws.

JOSEPH HALL, Machine Works, Oshawa.

JOHN LIVINGSTONE, Trustee.

MACHINE BRUSHES

All kinds, Made to Order.

Highest Quality of Work Guaranteed.

Send full particulars of Dimensions and Quality when ordering.

OLD ROLLERS OR BLOCKS RE-FILLED
WITH SPECIAL CARE.

CHAS. BOECKH & SONS,

MANUFACTURERS.

Office and Warerooms:

Factory:

80 YORK STREET. | 142 to 150 Adelaide St. West
TORONTO, CANADA.

Toronto Bag Works

JUTE & BAGS COTTON

MANUFACTURED FOR ALL PURPOSES.

BAG PRINTING A SPECIALTY.

DICK, RIDOUT & CO., Props.
TORONTO.

workman, is a new addition to Canadian manufacturing industries. They will manufacture albums, fancy leather and plush goods, dressing cases, and similar novelties.

THE Atlas Woolen Company, Whitby, Ont., having complied with all the conditions of the by-law of the town granting them a bonus of \$5,000, have had that amount of money paid over to them. The company's mills have been running for some time, and employing a large number of hands.

Cooks in this country are usually pleased when they have two good legs to stand on, although many cooks in Toronto are equipped with as many as four legs. But Messrs. A. Robb & Sons, Amherst, N.S., are manufacturing a fine style of cook stoves with five legs, which they call the "Niagara."

MESSRS. GEO. F. HAWORTH & Co., Toronto, manufacturers of leather belting, make use of their advertising space in these pages to announce to users of belting an important fact regarding the discounts they offer from their price list, which affects the net cost of belting made by them from Canadian tanned leather.

MR. WM. STEVENSON, Petrolia, Ont., is building the marine boiler to go into the new passenger steamer *Windsor Castle*, now being built at Windsor, Ont., to ply between that port and Pelee Island. He is also building two boilers for the steamer *Frances Smith*, which will run from Collingwood to Sault Ste. Marie.

MR. JAMES SLATER, London, Ont., intends converting his extensive malthouse into an oatmeal mill, his intention being, it is said, to break up the "combine." The Oatmeal Millers' Association have thus far succeeded in closing up seventeen mills in the country and are trying to arrange terms with a number of others.

MESSRS. LEITCH BROS., Oak Lake, Man., have arranged to rebuild their flouring mill, recently destroyed by fire. The new mill will be much larger than the old one, equipped with roller process machinery, and will have capacity to turn out 250 barrels of flour per day. They expect to have it completed by August next.

THE Montreal Woolen Co., Montreal, have been making some extensive improvements in their mills at St. Gabriel's Locks, in

which is included three sets cards, two pair mules, and twenty-two looms, all of which was imported from England. The new addition to their buildings is a 140x60 foot factory three stories high.

MESSRS. S. & H. BURBRIDGE, Ottawa, extensive manufacturers of saddlery, harness, etc., have recently received a quantity of oak-tanned harness leather manufactured by Mr. James Rousseau, Westminster, B.C., with which they are so well pleased that they have offered to take all such leather Mr. Rousseau can make during the year.

MESSRS. DAVID HAMBLETON & SON, Lachute, Que., manufacturers of bobbins, spools, etc., inform us that they are now making preparations to considerably enlarge their works as soon as the frost is out of the ground, when they will build a new factory 250x30 feet, two stories high, which will be equipped with both steam and water power.

THE Port Hope *Guide* is bragging about a new 10-horse Doty vertical engine which it has just introduced as motive power to run its presses. It says that it is one of the most complete engines ever seen, and runs like clockwork, without noise or friction. The John Doty Engine Company, Toronto, know how to build just that sort of steam engines.

THE American Cigarette Company, Montreal, whose factory was recently totally destroyed by fire, have taken possession of their new buildings, and are busy on large orders for the popular "Sweet Caporal" cigarettes. This concern is the Canadian branch of Messrs. Kinney Bros., New York, and is meeting with great success since its opening in Canada.

PORT COLBORNE, Ont., is likely to have a "boom" by reason of the discovery of natural gas. Messrs. Beech, of New Glasgow, N.S., Mr. Horne, of Scranton, Pa., and Mr. Broad, of Buffalo, have been in the village within the past few days looking for manufacturing sites. The two first named are glass manufacturers, and the latter is interested in edge tools.

MESSRS. CHAS. E. SCAMMELL & Co. have sent us a sample of coal slack, pressed together in a ten-pound lump and stuck with a composition of tar. The coal came from the mines in Cape Breton, and

WHAT OUR CUSTOMERS THINK OF THE BEAUDRY UPRIGHT CUSHIONED POWER HAMMER.

Office of FROTHINGHAM & WORKMAN, Iron Merchants,

MONTREAL, February 3rd, 1888.

MESSRS. MILLER BROS. & MITCHELL.

GENTLEMEN,—Your enquiry of the 30th ult. as to my opinion of the BEAUDRY UPRIGHT POWER HAMMER, 125 lbs. Head, purchased from you about a year ago, to hand. Would say, it has given perfect satisfaction, and during my experience I have seen nothing to equal it for our work.

Yours truly,

JOSEPH DUNN,

Manager St. Paul Shovel Works.

Can be seen at Permanent Exhibition of Manufactures in Toronto.

MILLER BROS. & MITCHELL, Sole Makers for Canada, MONTREAL.

burns very freely in an open grate or large stove, and is entirely free from dust or dirt. Messrs. Scammell & Co. have a small supply of it.—*St. John's, N.B., Globe.*

The Joseph Hall Machine Works, Oshawa, Ont., of which Mr. John Livingstone is trustee, are offering for sale a quantity of wood and iron working machinery, boilers, engines, belting, shafting, etc., a catalogue of which will be found in our advertising pages. Those who may be in want of any such machinery would do well to communicate with Mr. Livingstone.

VALLEYFIELD council has passed a by-law which will be submitted to the people for approval, to grant Mr. Outram, file manufacturer, of Montreal, a bonus of \$5,000 and three years' exemption from taxes, to establish his works in Valleyfield. Mr. Outram guarantees to employ fifty men; his monthly pay roll to be not less than \$1,000.—*Covansville (Que.) Observer.*

MESSRS. E. H. BARNES & Co., of New York, will establish a box and hook factory in Ottawa. They have secured a suitable location on which is a steam sawmill, to which they will make extensive additions. The works throughout will be fitted with the Dodge system of wood pulleys and rope transmission of power, furnished by the Dodge Split Wood Pulley Company of this city.

MESSRS. MOIR, SON & Co., Halifax, N.S., manufacturers of bread, confectionery, dessicated cocoanut, etc., have largely extended their premises and now manufacture the paper boxes in which their goods are packed. They also own and operate a sawmill and box factory where all the wooden boxes used in their business are made, besides a large surplus sold to other manufacturers.

The regular annual meeting of the shareholders of William Parks & Son (limited), St. John, N.B., was held in that city Feb. 21. The reports showed that the profits of the business of the concern during 1887 were over \$30,000. The old board of directors was re-elected as follows:—John H. Parks, C. W. Weldon, M.P., Thomas McAvery, Hon. Wm. Pugsley and E. B. Ketchum.

MESSRS. R. E. & J. C. JAMIESON, Ottawa, are erecting a new biscuit factory, which will be of brick, three stories high, and equipped with all the latest styles of machinery used in the business. The foundations are now being laid, and the firm expect to have the factory in running order by the end of September next. This new industry will give employment to about sixty hands.

The W. F. Cochrane Roller Mill Supply Company, of Hamilton, have been granted exemption from local taxation on their works at Dundas, Ont., for ten years. This is one method of bonusing impetuous Yankee manufacturers, practised by some Canadian towns. This concern is abundantly able to pay whatever taxes there may be assessed against it, but the desire is to have others do so for them.

A FURNITURE factory or a paper-mill would run a prosperous race here from the word Go. There is unlimited water power at the Canada Lumber Company's place where steam is the only adequate motor, and we think a favorable contract could easily be secured by an enterprising firm. There are wood and water everywhere, and shipping facilities cannot be excelled.—*Carleton Place (Ont.) Central Canadian.*

MESSRS WILLIAMS, GREENE & ROME, Toronto, manufacturers of shirts, collars, etc., will add another story to their immense factory in Berlin, Ont., as soon as the weather permits, which, when finished, will increase the capacity of the factory to at least 500 hands. The amount paid out by this firm at present in wages reaches nearly \$4,000 every two weeks; and the list of goods turned out embraces about 300 varieties.

MESSRS. BUTTERFIELD & Co., Rock Island, Que., manufacturers of pipe taps, reamers, and other machinists' supplies generally, invite those interested to send to them for their catalogue in which will be found illustrations and descriptions of the tools, etc., made by them. They make special mention of pipe stocks and dies, tongs, cutters, vises and labor-saving tools for blacksmiths, carriage makers, machinists and gas fitters.

MR. G. J. SEABURY, porous plaster manufacturer, of New York City, had an interview with the Minister of Customs a few days ago relative to certain changes desired in the tariff so as to enable him to establish a branch factory for the manufacture of porous plasters in Canada. If the changes asked for are secured, the proposed establishment will be located in Montreal and will give employment to thirty or forty hands.

At the recent meeting of the Western Canned Goods Packers' Association, held in St. Louis, Mo., Mr. W. Boulter, of Picton, Ont., president of the Canadian Packers' Association, on invitation, made a somewhat lengthy and exceedingly interesting address, which we regret we cannot reproduce here. He gave an account of the canning-industry of Canada for many years past, and how it had been built up under our National Policy.

MESSRS. S. R. FOSTER & SON, St. John, N.B., employ about fifty hands, all told, are working on full time, and have been all winter. They manufacture something over 20,000 kegs of nails and spikes per year, besides many tons of tacks, brads, shoe nails, etc. This business is an old established one, and the demand on them year in and year out remains about the same. The outlook for spring trade appears bright, and a good trade is anticipated.

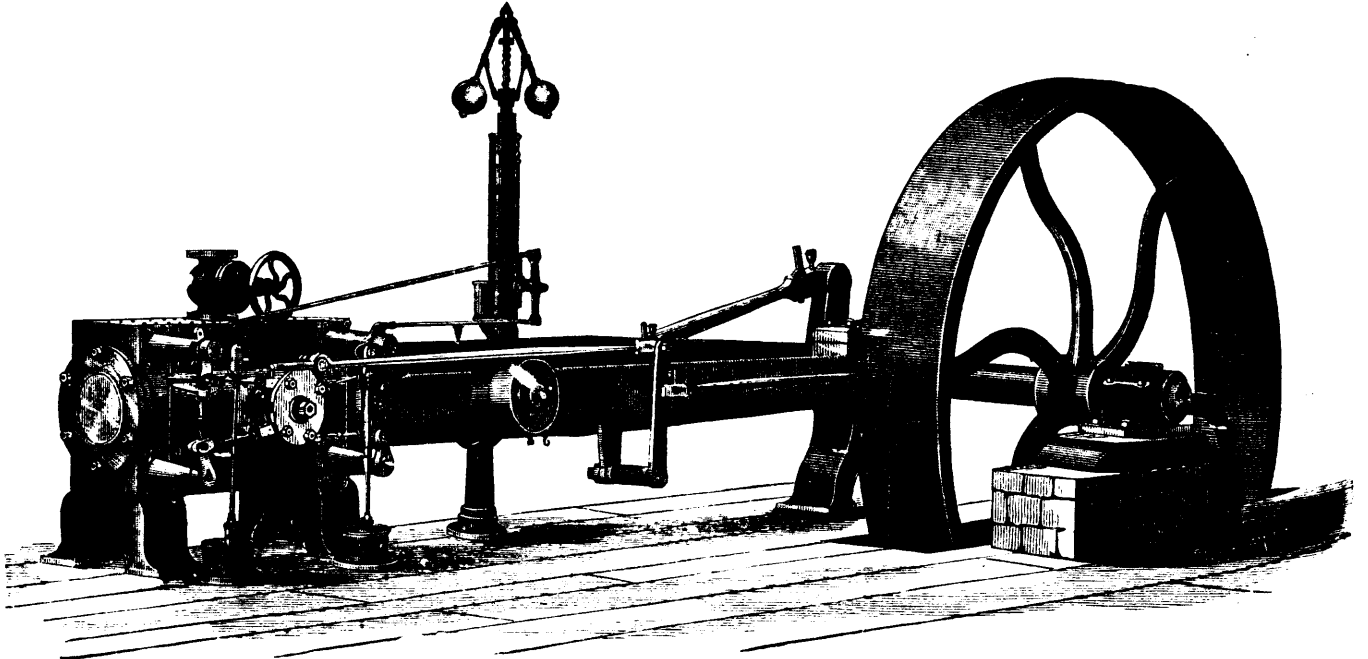
At the recent annual meeting of the shareholders of the Cornwall Manufacturing Company, held in Montreal, the reports showed only one bad debt of \$250 for the year, and no goods in stock unsold. The following gentlemen were elected directors:—Andrew Allan, president; Sir George Stephen, Bart, vice-president; John Turnbull, managing director; J. Jackson Rae, W. M. Ramsay, Hon. D. McInnes, and Sir Donald A. Smith.

MR. JAMES ALLEN, Newmarket, Ont., manufacturer of agricultural implements, manufactured during the past winter about double the quantity of plows, cultivators, etc., for the trade of the coming season that he usually produces. He has a rapidly-growing trade, many enquiries coming from Manitoba, and he is about making a large shipment to Winnipeg, to fill orders. It is probable that Mr. Allen's works will be considerably enlarged in the near future.

MESSRS. A. A. ALLAN & Co., Toronto, manufacturers of hats, etc., have removed from their old quarters on Wellington Street, and occupy the new and spacious brick building at 31 Bay Street. This

THE GALT FOUNDRY,

Engine and Machine Works.



THE HARRIS-CORLISS STEAM ENGINE

Is the most perfect Cut-off Engine made. For Economy of Fuel, Regulating of Speed, Accessibility of all its Parts, it has many Imitators, but no Equals, and is Unsurpassed.

While many Engines of the same class have been invented, built, tried and abandoned, the Harris-Corliss has steadily gained in public favor, and is now

Without a Successful Rival.

PLEASE NOTICE SOME OF THE ADVANTAGES OF THE HARRIS-CORLISS ENGINE:

- 1st—**The Steam is admitted at Boiler pressure** to the piston by the main valve and is cut off at the same point, the load determining through the regulator, when the supply of steam shall be cut off. This is the only Engine that thus admits steam at full boiler pressure.
- 2nd—**The success of the Harris-Corliss Engine** lies in the simplicity and precise action of the governing elements; **the Governor is an independent mechanism**, with no extraneous load, and free to instantly respond to all variations in the angular velocity of rotating parts.
- 3rd—**No parts of the regulating medium enter the steam chest** and thereby be out of sight of the engineer, and subject to the corrosive action of steam and the oil used for lubricating the valves and piston.
- 4th—**Regularity of Speed** under varying loads of steam pressure
- 5th—**Recessed Valve Seats** which avoid the liability of wearing shoulders on them
- 6th—**Stop Motion on Regulator** of Engine which effectually stops the Engine whenever the regulator by any means fails to perform its work, thus preventing the Engine from running away.
- 7th—**Having four Valves** either can be adjusted independently of the other with the greatest ease
- 8th—**The increased amount** of power it develops.

We would draw special attention to **our new and improved Adjustable Pillow Block**, which is pronounced by all practical men who have seen it to be the very best in Canada.

COWAN & CO.,

Galt, Ont., Canada.

Manufacturers of Engines, Boilers and Wood-Working Machinery—all kinds, new Patterns, highly finished.

building is 118 x 33 feet, and contains six flats. The basement is devoted to the shipping department and the storing of stock; the main floor contains the offices, showrooms, etc., and the upper floors embrace the manufacturing department, giving employment to some sixty hands.

Messrs. DOBSON & BRODIE, Montreal, are the inventors and manufacturers of a smoke-consuming attachment to boiler furnaces by which it is claimed at least 75 per cent. of the smoke generated in the combustion of fuel is consumed. They show quite an array of testimonials from parties in and near Montreal who have the apparatus in use, and who speak very flatteringly in its favor. A more extended reference to this matter will be found in another place in this journal.

Mr. J. W. BAILEY, of Cartwright, Ont., has invented a machine for catching and killing potato bugs. It resembles a wheelbarrow somewhat, with a fan on each side of it, and is propelled in the same way. It is wheeled between two rows of plants, from which the bugs sweep the bugs against a centre-board, on striking which they fall between two rapidly revolving rollers and are crushed to a pulp. The motive power is obtained from the wheel. It is easily worked and works effectively.

Messrs. A. ROBB & SONS, Amherst, N.S., inform us that having made proper preparation, they are now engaged in the manufacture of a system of hot-water heating for residences, halls, stores, churches, school houses, etc., for which they claim great advantages. Their system is being received with much favor in the Maritime Provinces, as is evidenced in the large number that they have been putting up of late. They are also introducing a hot air wood-burning furnace which is giving much satisfaction.

THE HOCHELAGA COTTON COMPANY, Montreal, whose extensive mills are at Hochelaga, near that city, are filling an order for 3,000 bales of their cotton goods for parties in China. The filling of this order will extend over the space of five months, and will prevent the necessity of the mills being shut down during that time. The first consignment of these goods was to have been shipped via the Canadian Pacific Railroad this week, via Vancouver, B.C., from whence it will go by next steamer leaving that port for China.

THE LONGFORD LUMBER COMPANY, Longford Mills, Ont., who have extensive lumber mills at that place under the management of Mr. Wm. Thompson, will immediately erect a large establishment to be devoted to the manufacture of woodenware, such as tubs, pails, etc. The building and plant are estimated to cost \$40,000, and from the beginning about thirty-five or forty hands will be employed. At a special meeting of the town council the company was granted exemption from taxation on the land and buildings for a term of ten years.

Messrs. A. L. GRINDROD & Co., Sherbrooke, Que., are manufacturers of cloth, tweed, flannel, yarn, etc. Their factory comprises a four story building, 60 x 40 feet, and in this the various operations of washing, scouring, dyeing, drying, picking, carding, spinning, weaving and fulling are carried on. There is also a three story building, 60 x 24 feet, containing offices, sorting and storing rooms, and a two story building, 40 x 30 feet, used as a dye house and for finishing. They give employment to about thirty-five hands.

Messrs. DAVID HAMBLETON & SON, Lachute, Que., manufacturers of bobbins, spools, shuttles, etc., recently had the misfortune of having their drying kilns destroyed by fire, together with about \$600 worth of bobbin wood. We are informed by the firm that the delay to their operations was only temporary. They have quite a number of large orders in hand from many of the leading cotton and woolen mills in various parts of the country for bobbins, spools, etc., and are operating their works day and night to execute the same.

Messrs. MARSHALL & NAIRN, Aylmer, Ont., operate what is claimed to be the most extensive canning factory in Canada. They give employment to from fifty to one hundred hands during the year, in putting up all kinds of fruit, vegetables and meats. For some years they have shipped heavily to the North-West, and to the Hudson Bay Company, but, owing to the high quality of their products, a demand has been created for these goods in Great Britain, to which country the firm have recently been making some large shipments.

Mr. JOHN R. BOOTH, Ottawa, who operates one of the most extensive sawmill plants in that section, is making large additions to his works, in which is included band saw machinery for sawing the largest logs that are taken into his mill, manufactured specially for

him by Messrs. Edward P. Allis & Co., Milwaukee, Wis. There will also be introduced four rope transmissions of power with suitable pulleys, manufactured for him by the Dodge Split Wood Pulley Company, Toronto, the transmission being of 100, 75, 50 and 25-horse power respectively.

THE Cortland Wagon Company, Cortland, N.Y., who were recently voted a \$20,000 bonus by the town of Brantford, Ont., as an inducement to establish a branch of their wagon works there, promise to commence the construction of the necessary buildings as soon as the frost is out of the ground, so that they can lay the foundations. Mr. Hugh Duffy, vice-president of the company, states in a letter to their Brantford representative, that he is now working on the plans, and that as soon as work can be done it will be pushed to completion as rapidly as possible.

THE new steel steamer "Rosedale," being built at Sunderland, Eng., for Toronto parties, is 180 feet long, 35 feet beam and 21 feet hold. Her engines are 650-horse power, and are of the newest style, being triple expansion engines with cylinders 17 in., 27 in. and 40 in. respectively. She is fitted with steam steering gear, and there are steam winches at all the hatches for handling cargo with despatch. She has two masts and is rigged with a suit of fore and aft canvas. One important feature is her cellular double bottom, which is used for water ballast. She will be used for freighting purposes.

Messrs. MILLER BROS. & MITCHELL, Montreal, manufacturers of the celebrated Beaudry upright cushioned power hammer, call attention in their advertising space in these pages to what some of their customers think of this hammer. Mr. Jos. Dunn, manager of St. Paul Shovel Works, testifies that the Beaudry hammer, purchased from Messrs. Miller Bros. & Mitchell about a year ago, had given perfect satisfaction, and that during his experience he had never seen anything to equal it for the work it was required to perform. This hammer can be seen at the Permanent Exhibition of Manufactures in this city.

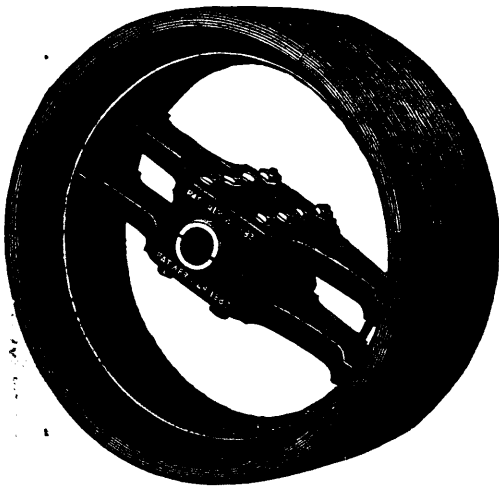
NEARLY as much lumber will be cut this season by St. Croix operatives as during last winter. Messrs. F. H. Todd & Sons will cut about two-thirds as much as last year, they having a large stock of logs remaining over. The operations of Messrs. J. Murchie & Sons will include about 14,000,000 feet; those of Gates & Wentworth, about 10,000,000 feet. Messrs. C. F. Todd & Sons' cut will be about the same as last year; Messrs. H. F. Eaton & Sons will cut about 18,000,000 feet. The total cut will be about 55,000,000 feet as against 60,000,000 last year. The winter, thus far, has been a fairly good one for logging operations.—*St. Andrew's, N.B., Bay Pilot.*

THE Massey Manufacturing Company, Toronto, one of the largest concerns in Canada manufacturing agricultural implements, have proposed to the Toronto city authorities that they will build an extensive malleable iron works in this city which will give employment to from one hundred to two hundred hands, on condition that the works be exempted from taxation for ten years. They claim that there is but one malleable iron works in Canada. The Massey Manufacturing Company is a wealthy concern and abundantly able to carry out any scheme they may engage in. They now give employment to about 500 hands at their agricultural implement works.

THE Ottawa valley phosphates, the development of which is destined to become an important factor in the growth and prosperity of that district, were the subject of a paper read a few days ago by Dr. Bell, of the geographical survey, at the semi-annual meeting of the American Institute of Mining Engineers at Boston. It is believed that the Canadian phosphates, especially those of the lower grade, will eventually be extensively exported to the New England States and there used to enrich the impoverished soil, sufficient of the phosphate becoming dissolved in the course of the season to supply the wants of most of the crops. It is considered likely that Dr. Bell's paper will result in a demand for phosphates in a new quarter.

DURING the past year two woolen mills have been started at Hudson, Que., one owned by Mr. John McNaughton, miller, and the other by Mr. J. J. Hodgson, sawmill owner. Each has one set of manufacturing and one set of custom cards, and each manufacture tweeds, etoffes, blankets, etc. A curious coincidence in the erection of these mills was that the proprietors had each decided to build a woolen mill without knowing that the other contemplated the same thing, and the machinery for both was in before each knew what his neighbour was doing. Otherwise there would have been but one mill there, though both are now doing well. The coincidence is rather remarkable for a small village, and would seem to

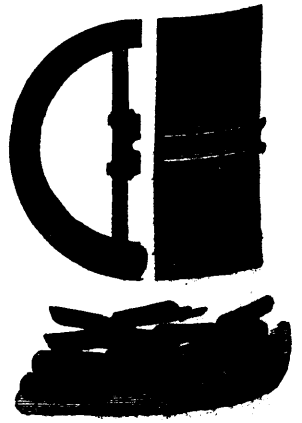
Dodge Patent Wood Separable or Split Pulleys.



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

With our Patent Bushing System

Every pulley will fit 22 different sizes of shafting, and guaranteed to give from 30 to 60 per cent. more power from same belt and like tension than any iron or steel pulley. Every pulley a split pulley, 70 per cent. lighter than cast iron, and 50 per cent. lighter than wrought iron or steel. Strong enough for any power required. Made in any size from nine inches to sixteen feet diameter.



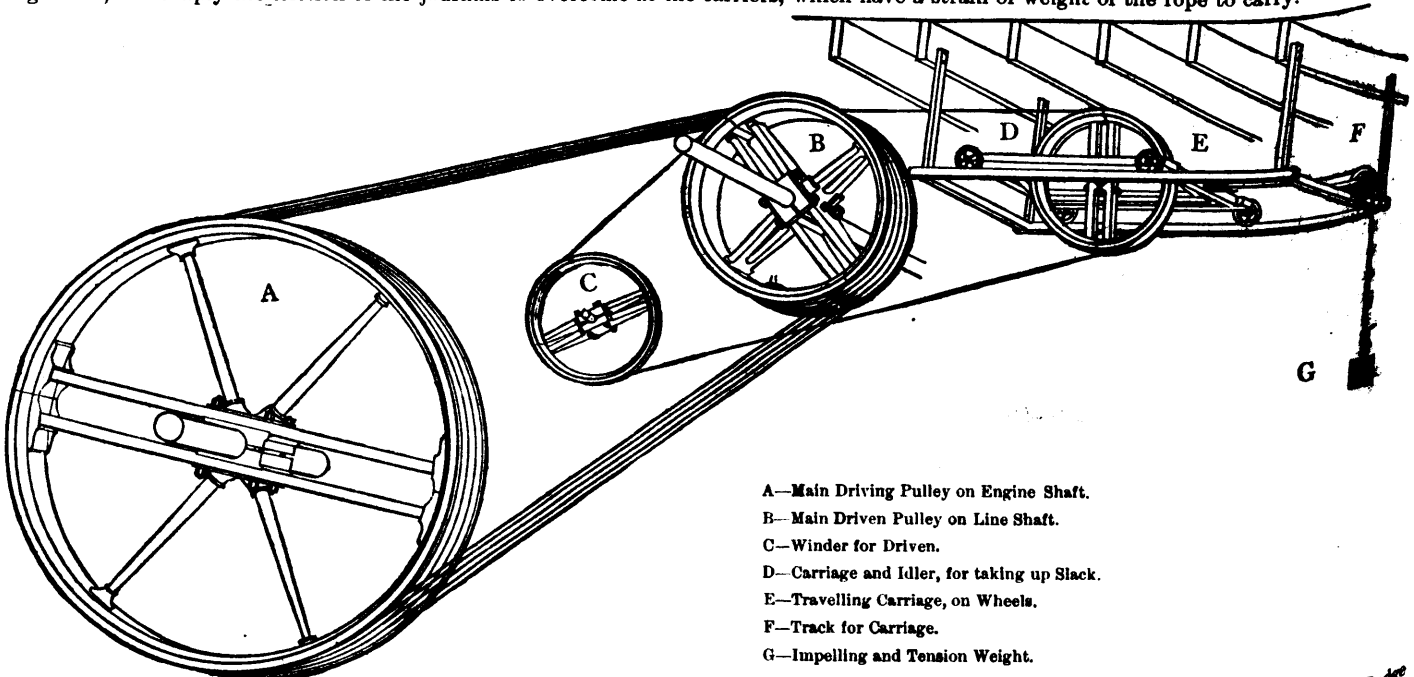
THE TRANSMISSION OF POWER BY ROPES AND THE DODGE PATENT WOOD PULLEYS.

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 hardwood 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 system is unequalled; steady all the time, not like a heavy belt, which is always more or less flapping, jerking and stretching, then slipping and losing power. It is safe to say that an engine hitched up by the Dodge Rope System will do 25 per cent. more work on the same consumption of fuel than the same engine would do with a belt. We have put up a number of the Dodge Patent Rope transmissions during the past year, all of which are in most successful and satisfactory operation, as certified by the testimonials published in our catalogue of well-known manufacturers who have them in use.

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.
 B—Main Driven Pulley on Line Shaft.
 C—Winder for Driven.
 D—Carriage and Idler, for taking up Slack.
 E—Travelling Carriage, on Wheels.
 F—Track for Carriage.
 G—Impelling and Tension Weight.

The illustration, as shown above, is one of peculiar construction, and represents an engine transmitting its power to the line shafting by the Dodge Patent System of manilla ropes and grooved hardwood pulleys. Transmissions similar to the above are now in use at the works of the following well-known manufacturers in Toronto:—

A. R. Clark & Co., Leather and Glove Manufacturers, 50 H.P.; T. Tushingham & Son, Builders, 35 H.P.; J. R. Black, Carriage Works, 60 H.P.; Barber & Ellis Co., Stationers, 8 drives, 87 H.P.; Jas. Lochrie, Rope Manufacturer, 60 H.P.; J. P. Wagner & Co., Show Case and Keyboard Manufacturers, 50 H.P.; J. Taylor, Morse Soap Works, 60 H.P.; Joseph Simpson, Knitting Mills, 80 H.P.; and numerous others whose testimonials can be seen in our catalogue. Parties who are in want of anything in this line, or who are interested in the efficient and economical transmission of power, are cordially invited to call at our works and see the ropes and wood pulleys in operation, as we are driving our whole factory by this system. Send for Price List, Catalogue and Cypher Code, for ordering by telegraph, to

THE DODGE WOOD SPLIT PULLEY CO., 89 ADELAIDE ST. W., TORONTO.

show that Hudson is a place unusually free from gossip.—*Journal of Fabrics.*

Messrs. GEORGE GALE & SONS, Waterville, Que., manufacturers of spring beds, etc., have abandoned their old factory buildings and taken possession of their new premises in that place, heretofore described in these pages. The firm have recently opened an extensive supply depot for their goods in Leeds, England. Mr. A. Gale, of the firm, will make a tour of the world this coming summer, to extend still further the business, visiting Melbourne, Australia, the Argentine Republic, and other prosperous states. At present about one-third of their output, viz., 5,000 spring beds, are shipped to Great Britain, the Dominion and foreign countries taking the rest. About 2,000 wool and cheaper spring mattresses are also made, and they make 5,000 new iron bedsteads annually.

Mr. J. E. BEAUCHEMIN, of Sorel, Que., has patented in Canada and the United States, a very peculiar and compact steam engine. It is four cylinder, and the cylinders are at the end of four arms. The steam enters through a shaft, and the whole engine is boxed in, and looks like a fan blower. He claims for it great power and a saving of from 50 to 70 per cent. in fuel for the power given. For an engine occupying a space of 35x13 inches he claims fifty horse power. He says there is friction in no place about it but at the main shaft. It is noiseless and runs so still and smooth that a small one running all the machinery in his shop, weighing only 500 lbs., does not require to be bolted down. Many mechanical and scientific men have examined it and all speak in high terms of it.—*Covington Observer.*

THE Madawaska Improvement Company of Ottawa, recently formed by the lumbermen of the Ottawa District, has been incorporated. The officers are:—President, J. R. Booth; secretary-treasurer, G. B. Green; directors, E. B. Eddy, W. G. Perley, M.P., E. H. Bronson, M.P.P., C. McLaughlin, W. B. Dickson, G. B. Pattee and R. H. Block. The object of the company is to get possession of all the works and improvements on the Madawaska river, improve them and then continue the works by erecting a series of dams, slides, booms, etc., all along the course of the river as far up as timber is taken out, thus enabling the lumbering firms by paying a fee or toll to the company for allowing the logs to pass through their works, to get out their entire drive with very few men and without danger of having the logs hung up as they are some years in thousands.

Mr. W. H. LAW, of the Central Iron Bridge Works, Peterborough, Ont., is taxed to his utmost to keep up with the orders. He has been awarded the contract for the erection of a swing bridge, with masonry, over the narrows near Orillia, from the counties of Simcoe and Ontario. He also has contracts for a bridge of two spans, with iron piers for the township of Euphemia, Lambton county; two spans for Wingham, Huron county; two spans for Warsaw; two for Allendale, and one at the Locks, in Peterborough county. New machinery is now on the way from England, and as soon as it is placed in position much more work can be turned out. A hydraulic riveting machine is the latest addition to the works, and all rivetting is done by it instead of by hand. A machine for sawing iron and steel bars cold, recently placed in these works, is said to be the only one of the kind on the continent. It cuts through iron bars eight inches thick and twenty-four inches wide.

Mr. HARRY SEMPLE, some time since an employe of the Hamilton Glass Works, Hamilton, Ont., has invented a machine which, it is claimed will create quite a revolution in the manufacture of glass bottles. According to the ordinary process, all bottles are finished by hand and with hand tools; that is to say, the rim around the mouth, and even the mouth itself, are not made in the moulds, but the bottles are first heated in the glory holes, and the neck, mouth and rim finished by hand. A test of the Semple invention was made a few days ago, in a bottle works in Ohio, in which it was shown that, the machine being operated by steam, and with everything in proper condition, it will keep up with three blowers, and that, with a boy worth \$5 per week, it can do one-third more work than a man at \$35 per week. It is the intention of Mr. Semple to organize a company to manufacture bottles, using this machine for finishing, which will effect a saving of about thirty per cent. in the cost of manufacture.

Messrs. STEVENS & Co., proprietors of the Moncton Knitting Works, Moncton, N.B., are manufacturers of all kinds of seamless hosiery. Regarding this concern the *Halifax Critic* says:—Some time back the firm purchased the plant and machinery of W. C. Archibald & Co., also all the machinery of the defunct Moncton Company, and have ample plant and machinery to employ 140 hands. The competition with the upper provinces knitting mills is so keen, that goods have to be sold for small profits, but the supe-

riority of the article turned out at Moncton is forcing it everywhere. They have also another great advantage in low rent, cheap management and small expense, and are more than able to hold their own. Cotton hosiery yarn is purchased by the works from Messrs. W. Parks & Son, who, they report, make a first class article. The domestic wool yarns which are largely used, are purchased mostly in New Brunswick and Nova Scotia, while the finer yarn is procured from the Quebec Worsted Company.

Messrs. W. E. SANDFORD & Co., Hamilton, Ont., wholesale manufacturers of clothing, have sent Mr. George Hamilton, of that concern, to visit Japan in the interests of their business. Mr. Hamilton left Vancouver, B.C., on the last trans-Pacific steamer for Yokohama, taking with him a very large outfit of samples of manufactured clothing, principally Canadian tweeds of light weight and great variety of patterns. After Yokohama he will proceed to Tokio, the capital, and during his stay of over two months will visit Hioga, Ozaka, Nagasaki, and all the cities of any importance in the kingdom. Letters of introduction to the British consul and members of the Japanese Government have been furnished Mr. Hamilton, which will facilitate his mission very much. Orders received will have to be shipped from here in July to meet the fall trade of that country. In about four months from date Mr. Hamilton expects to be back; and now that the people of that country are rapidly adopting European customs, including clothing, it is quite probable he will bring home enough orders to form a nucleus of a trade which may grow to gigantic dimensions in the near future.

SMOKE AS FUEL.

In these days steam users and manufacturers are compelled to practice economy in every direction. Nothing can be considered too insignificant to be passed over, if it makes an appreciable saving in the working expenses of any establishment. The coal bill of the manufacturer is always a heavy item, and one which it is his constant endeavour to reduce as low as possible. A well-made steam engine and a good internally flued boiler are necessary for the economical production of power. But there are many minor matters connected with engines and boilers which have a considerable effect on their economical working, and which are apt to be overlooked. A great deal can be done in the boilers to burn the coal to advantage, and an important point to this end is the proper regulation of the air supply, to effect a ready and thorough combination with the products of combustion in the furnace. Any economy in fuel materially lessens the cost of manufacture. One of the most useful devices, which has been invented to this end, is the smoke consumer of Messrs. Dobson & Brodie, Montreal, who are busily engaged attaching it to the boilers of the larger public works in that city. The mechanical superintendents and principals of the C.P.R. works, Canadian Rubber Works, and the City Waterworks speak in terms of the highest praise of its thorough genuineness, and there is no doubt that manufacturers will readily adopt it. It is applicable to all horizontal boilers, and no alteration is made on boiler or furnace props, the whole apparatus, which is very simple, being placed at rear of the bridge, capturing and igniting the bituminous gases as they are given off the fuel, thus, of course, augmenting and equalizing the heat in the fire chamber, and increasing the draft. Its adaptability to marine boilers is also claimed, and steamboat owners would do well to do away with the nuisances of smoke and soot which have ever tended to mar the pleasure of summer travelling.

[ADVERTISEMENT.]

WASTE OF POWER.

BELOW are some figures by a New England cotton mill engineer of high reputation and large experience, showing the power it takes in average modern mills to drive the shafting alone.

Mill No.	Whole Load.		Per Cent. of Whole.
	H. P.	Shatting Alone. H. P.	
1	190	51	25.6
2	472	111.5	23.6
3	486	134	27.5
4	677	190	28.1
5	750	174.6	22.7
6	235	84.8	36.1
7	670	262.9	39.2
8	677	182	26.8

These may be taken as a fair showing of the power that is required in many of the best (not worst) mills and factories to drive shafting. It will be seen that the percentage is large—from 22 per cent. upwards.

It is unreasonable to think that all that power is consumed by a legitimate amount of friction of bearings and belts. It is out of all

reason, and there is no cause for such a loss of power but tight belts and heavy slippery iron pulleys.

According to the best scientific authority it costs one-horse power to keep in motion one ton of metal or weight; thus every unnecessary 2000 pounds weight on the line shaft, cost one-horse power. To maintain a horse power costs from \$25 to \$125 per year. Any manufacturer who will take the pains to investigate the unnecessary weight by heavy iron pulleys, too tight belts, etc., will be surprised to find the enormous waste of power caused in this manner—to say nothing about the loss resulting from the shortened life of the entire equipment. The use of the Dodge wood separable pulleys avoids this great loss of power. They are 70 per cent. lighter than iron and are in more perfect balance than is possible for any iron pulleys to be made. As a material for pulleys wood is better than iron from the fact that it holds a belt much better. Most good mechanics are aware of this fact, but it may not be generally known how great is the difference, and for the benefit of our readers we give the result of two tests made and published by two of the most eminent mechanical authorities:—

Portion of Circumference embraced by Belt.	Rel. value of leather belt.		Portion of Circumference embraced by Belt.	Rel. value of leather belt.	
	On Wooden Pulleys.	On Iron Pulleys.		On Wooden Pulleys.	On Iron Pulleys.
.20	1.80	1.42	.20	1.90	1.40
.30	2.43	1.69	.30	2.40	1.70
.40	3.26	2.02	.40	3.30	2.00
.50	4.38	2.41	.50	4.40	2.40
.60	5.88	2.87	.60	5.90	2.90
.70	7.90	3.43	.70	7.90	3.40

Morin. — Appleton's Encyclopedia of Mechanical Arts. Haswell. — Engineers' and Mechanics' Pocket Book.

A Dodge patent wood pulley is better than iron, from the fact that it can be made very much lighter, and thus save weight on the line shaft and bearings, thereby saving in expense from a saving in friction.

The advantages of the separable pulley are very apparent. By its use the necessity of taking down shafting already up for the purpose of putting on additional pulleys when needed, or to be changed, is avoided, thus saving time, trouble and expense, while their first cost is much less than any other pulley made not having these advantages.

The compression fastening, whether used with keys in iron centre or compression alone, keeps the pulley always in balance, as the compression on the shaft and key is always towards the centre.

The most perfect balanced iron pulley fastened with set-screws or key, is invariably out of balance by being thrown from the centre. This fact is obvious to all mechanics.

The advantages of the Dodge mode of fastening over any other are: It is the only absolutely true fastening for a pulley. A pulley once properly balanced cannot be thrown out of balance in securing with this fastening. A pulley fastened with key or set-screw in the ordinary way, cannot be screwed without lifting the pulley from the shaft at that point where the key or set-screw is placed, thus throwing the pulley out of balance.

Manufacturers should carefully avoid any pulley with a set-screw fastening for shaft; also a key, unless the pulley is compressed on it. The Dodge patent bushing system is a great convenience to manufacturers and also to agents who carry pulleys in stock, as with the aid of the patent bushings every pulley will fit 22 different sizes of shaft.

Haswell, the acknowledged authority, and most quoted by American mechanics, summarizes thus:—The ratio of friction to pressure for leather belts, when worn over wooden pulleys is 47, over turned cast iron pulleys, 24, thus showing the average advantage of a wood pulley over iron to be 50 per cent.

While on the subject of transmitting power effectually and economically we would respectfully draw the attention of all interested to the system of grooved hardwood pulleys manilla rope as advertised by the Dodge Wood Split Pulley Co., on another page of this paper. The transmission of power by ropes is not new, but the Dodge patent system of adjusting the pulleys applying the ropes, taking care of the slack and stretch is new and most effectual, and is giving the best of satisfaction, as certified by the testimonials of numerous well known manufacturers who are using this method of transmission.

Illustrated catalogues of belt pulleys and the rope transmission system will be furnished on application to the Dodge Wood Split Pulley Co., 81 to 89 Adelaide Street West, Toronto.—Canadian Lumberman.

FIRE INSURANCE EXCHANGE.

The annual meeting of the above company was held at its offices, No. 24 Church Street, Toronto, on Wednesday, the 27th February. The president, Mr. Frederic Wyld, being in England, the vice-president occupied the chair, the manager, Mr. Hugh Scott, acting as secretary.

On motion of the vice-president, Mr. W. H. Howland, seconded by Mr. Wm. Elliot, the report of the directors to the members and shareholders, and the financial statements were read.

REPORT.

Your directors beg to submit the first general statement of the business of the company up to 31st December 1887.

The total revenue of the company amounted to \$31,259.67; and after deducting all expenses, including claims for loss and damage by fire, the balance remaining to carry forward to profit and loss was \$22,658.30, in which account you will find we have written off one-half of the total preliminary expenses. The number of policies in force at the close of the year was 287, covering, after deducting re-insurance, the sum of \$1,140,559.

When it is taken into consideration that the total fire claims up to the close of the year amounted to only \$649.63, it will, we think, be admitted that the objects aimed at have been attained, namely—satisfactory results rather than a large volume of business. Such results demonstrate the value of the system of inspection and selection, combined with the enforcement of protection, by having proper appliances for extinguishing fires in the hazards assumed.

In view of the general fire underwriting experience of the past year there are just grounds for congratulation on the results accomplished by this company as set forth in the statements before you.

We beg to submit for your consideration the expediency of declaring a bonus to continuing members payable on the renewal of policies, out of the surplus, after providing for the necessary re-insurance reserve. The retiring directors this year are:—V. Cronyn, James Scott, H. N. Bate, Thos. Walmsley and C. Riordan.

All of which is respectfully submitted.

HUGH SCOTT, *Man. and Sec.*
W. H. HOWLAND, *Vice-President.*

THE FIRE INSURANCE EXCHANGE, MUTUAL AND GUARANTEE.
REVENUE ACCOUNT FOR THE YEAR ENDING 31ST DECEMBER, 1887.

Dr.		
To premium income.....	\$31,023 32	
“ Interest.....	236 35	
		\$31,259 67
Cr.		
By re-insurance.....	\$ 3,161 48	
“ Cancelled policies.....	1,446 51	4,607 99
“ Government license, salaries, auditors' fees and rent.....	2,731 44	
“ Stationery, printing, advertising, postage and telegrams.....	612 31	3,343 75
“ Claims—fire losses.....		649 63
“ Balance carried to profit and loss.....		22,658 30
		\$31,259 67

PROFIT AND LOSS ACCOUNT.

Dr.		
To balance from revenue account, 1887.....	\$22,658 30	
“ One-half preliminary expenses written off.....	1,000 00	
		\$23,658 30
Cr.		
By preliminary expenses.....	\$2,000 00	
“ Office furniture account.....	31 57	2,031 57
“ Balance.....		21,626 73
		\$23,658 30

ASSETS—SECURITY TO POLICY-HOLDERS.

Guarantee capital deposited with the Ontario Government.....		\$200,000 00
Undertakings in force.....	\$10,333 00	
Debentures.....	5,000 00	
Standard Bank deposit.....	5,134 12	
Debtors' and creditors' balance.....	159 61	20,626 73
Assets available to pay losses.....		\$220,626 73

Ratio of assets to amount at risk over 19 per cent.

AUDITOR'S REPORT.

To the President and Directors of the Fire Insurance Exchange:—

GENTLEMEN,—I hereby certify that I have audited the books and examined the vouchers and securities of the company for the year ending 31st December, 1887, and find the same correct, carefully kept and properly set forth in the above statements.

DOUGLAS SUTTON.
Auditor.

Toronto, Feb. 17, 1888.

The Vice-President moved, and Mr. William Elliot seconded the adoption of the report, which was carried, and after authorizing the directors to pass a by-law declaring a bonus to continuing members, and passing the usual votes of thanks, the meeting adjourned.

DIRECTORS, 1888.

Fred'k Wyld, President; W. H. Howland, Vice-President; W. B. Hamilton, Toronto; A. T. Wood, Hamilton; S. F. McKinnon, Toronto; V. Cronyn, London; J. F. Eby, Toronto; J. Muckleston, Kingston; James Scott, Toronto; Andrew Darling, Toronto; H. N. Bate, Ottawa; J. L. Spink, Toronto; R. W. Elliott, Toronto. With Scott & Walmsley as underwriters.

Maw & McFarlane

DUNDAS, ONT.

IRON FOUNDERS, ENGINEERS AND MACHINISTS,

MANUFACTURERS OF

Drop Hammers,

LIFTERS, DIE SINKERS AND PRESSES.

CORRESPONDENCE SOLICITED.

TORONTO LITHOGRAPHING CO.
Globe Building, Toronto

MAKE A SPECIALTY OF

Fine Color Work

CHROMO ADVERTISING
CARDS and NOVELTIES

also do a Superior Class of Wood Engraving

The Canadian Manufacturer

REACHES NEARLY EVERY INDUSTRIAL AND MANUFACTURING ESTABLISHMENT IN CANADA: AND IS THE BEST ADVERTISING MEDIUM OF COMMUNICATION BETWEEN THE BUYER AND THE SELLER

Subscription Price \$2 a year.
Advertising Rates Sent on Application.

THE CANADIAN MANUFACTURER PUBLISHING CO., TORONTO

The BARBER & ELLIS CO.

ACCOUNT BOOKS

IN GREAT VARIETY.

Special Patterns for Manufacturers, Banks, Insurance Companies and County Offices, made to order.

Paper and Work Guaranteed to Give Satisfaction.

PAPER BOXES

Of Every Description, made to order.

NOS. 43, 45, 47, 49 BAY STREET,

TORONTO, ONTARIO.

THE WELLINGTON MILLS LONDON

GENUINE EMERY

Oakey's Flexible Twilled Emery Cloth.
Oakey's Flint Paper and Glass Paper.
Oakey's Emery Paper, Black Lead, &c., &c.

PRIZE MEDAL AND HIGHEST AWARD, PHILADELPHIA, 1876.
For Superiority of Quality, Skilful Manufacture, Sharpness, Durability, and Uniformity of Grain.

Manufacturers: JOHN OAKEY & SONS, Wellington Mills, WESTMINSTER BRIDGE ROAD, LONDON, ENGLAND.

Enquiries should be addressed to
JOHN FORMAN, 467, ST. PAUL ST., MONTREAL.

BELDING, PAUL & CO. SILK MANUFACTURERS MONTREAL.

ORGANZINES, TRAMS, SPUN SILK YARNS,

And all Threads for Manufacturing Purposes made to order.

Correspondence Solicited.

TO USERS OF LEATHER BELTING

SOME PERTINENT SUGGESTIONS.

FIRST { We tan our own Leather especially for Belting.
 We have increased our trade threefold during the last few years.
 We sell our Belting according to a list that is 25% to 30% lower than the American list, which some sell by in Canada.

BUT { We have heard some consumers who are N.P. manufacturers say that they cannot get good Belting made in Canada.

NOW { **WE HAVE CUSTOMERS** { To whom we have sold 3,000 to 40,000 Dollars worth of Belting.
 AMONG THE { One firm alone buying from us last year to the amount of \$10,000 for their Mill.
BEST MILLS IN CANADA.

CAN YOU { **HARMONIZE THESE FACTS WITH** { 1st. That our PRICES are RIGHT?
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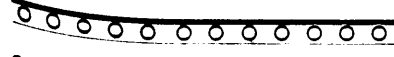
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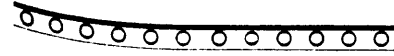
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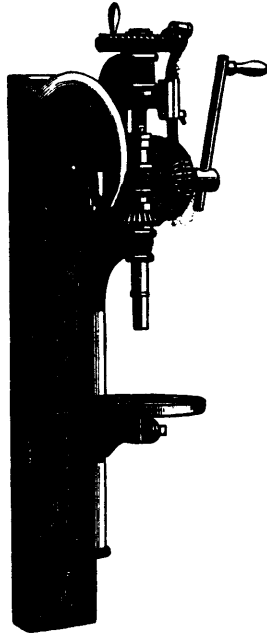
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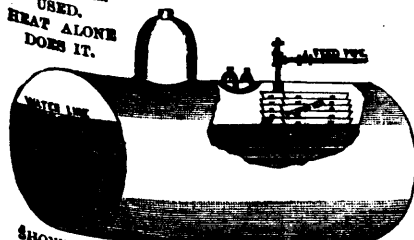
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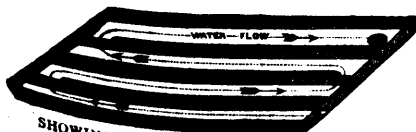
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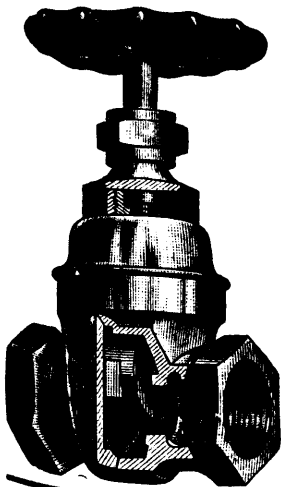
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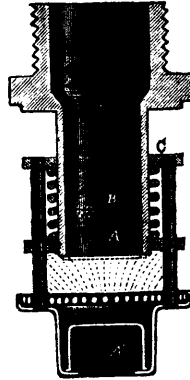
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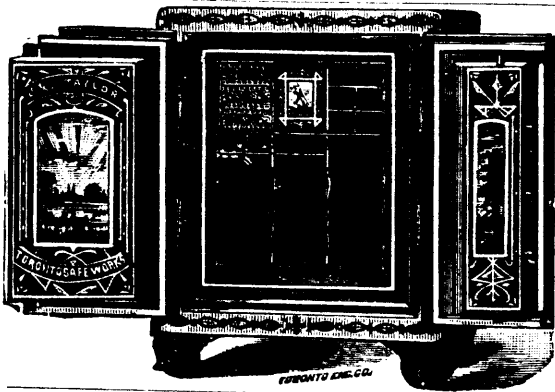
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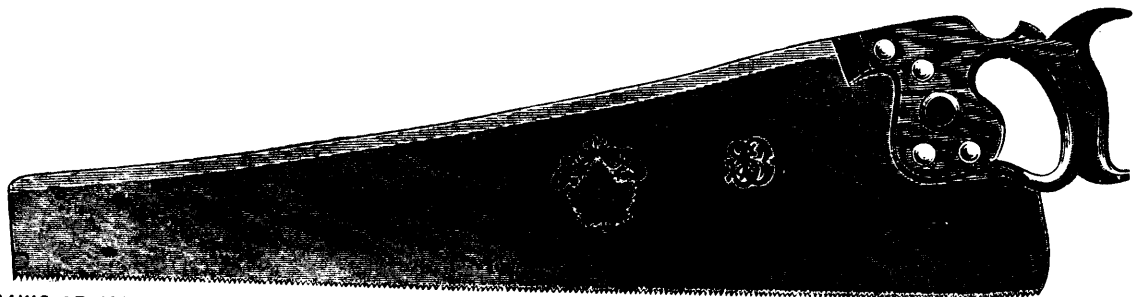
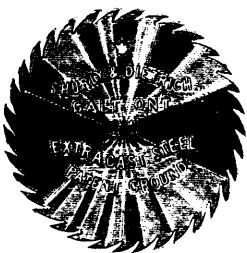
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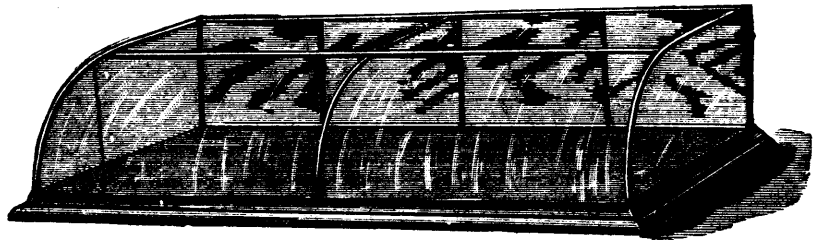
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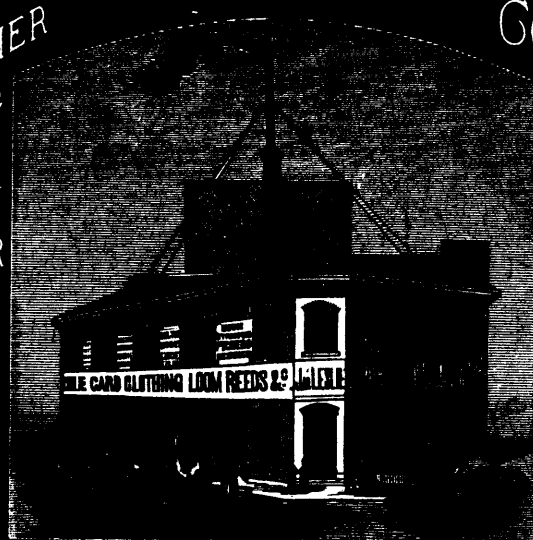
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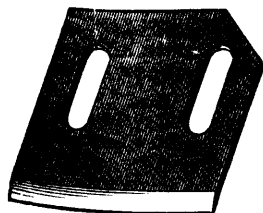
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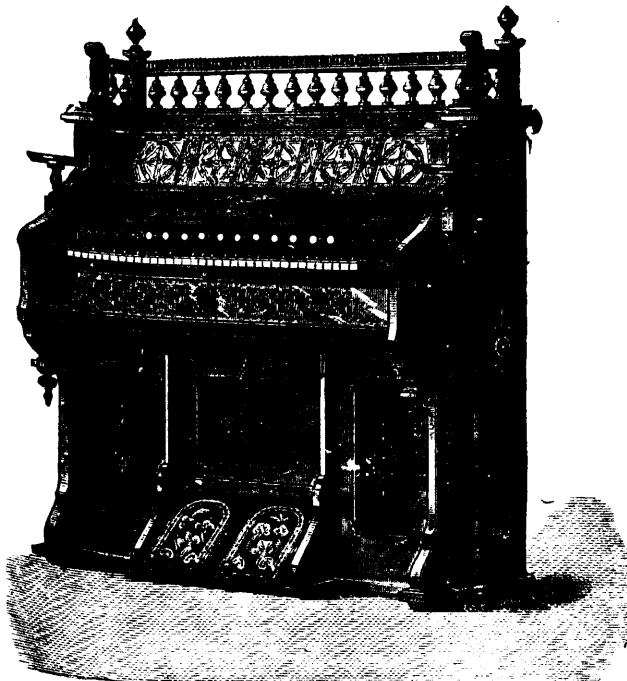
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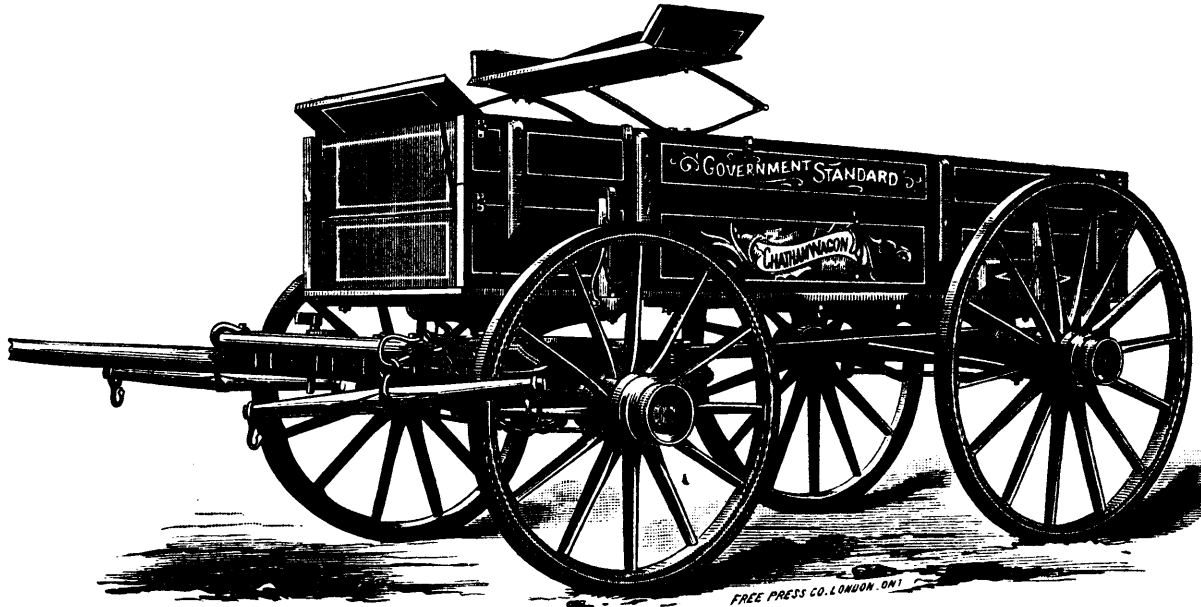
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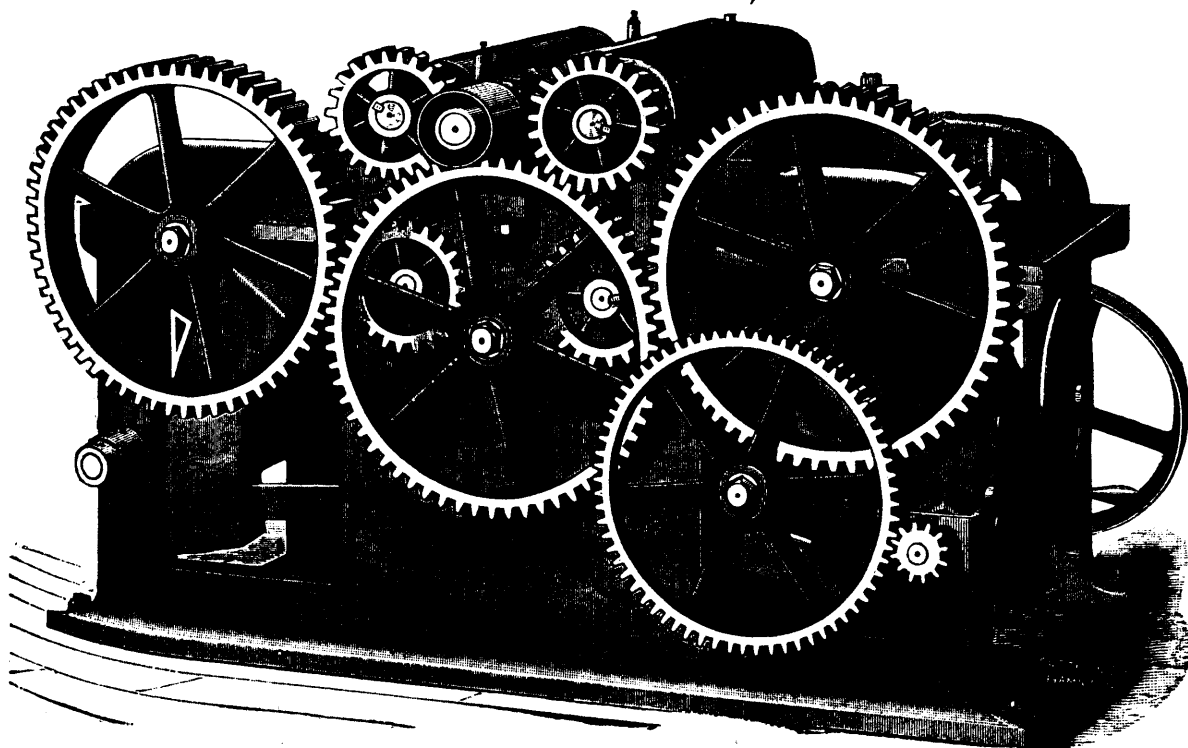
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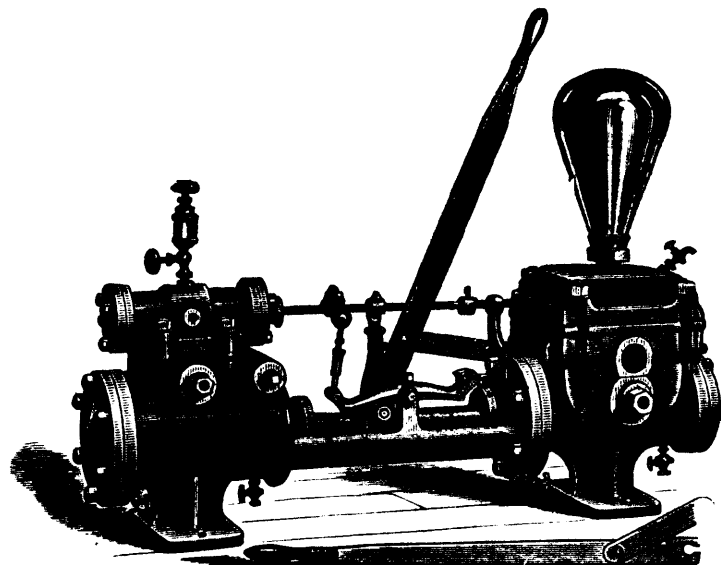
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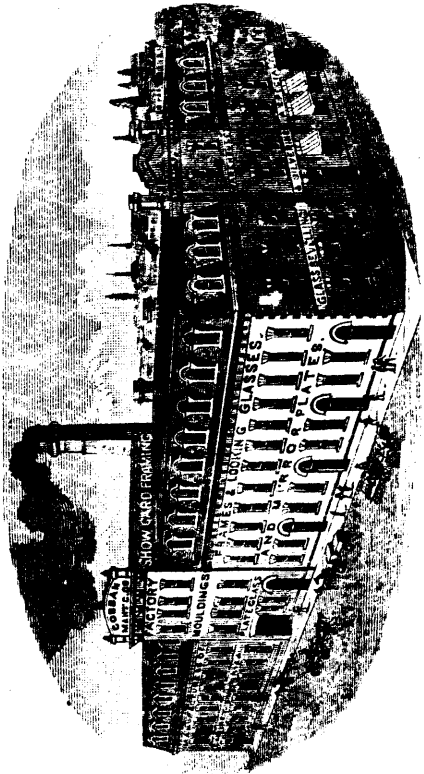
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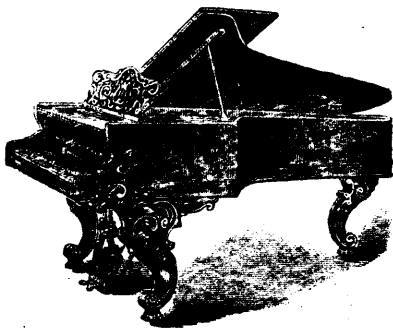
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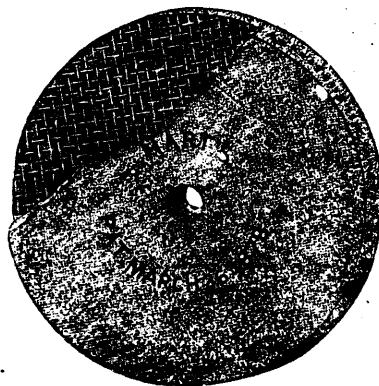
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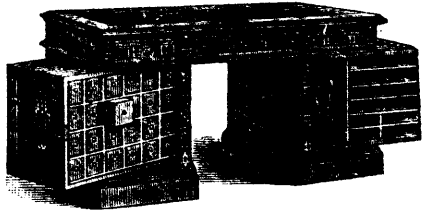
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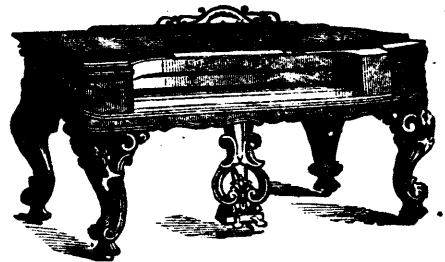
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