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VOL. 5.

PETERBOROUGH, ONT., JANUARY 1, 1885.

NO. 1.

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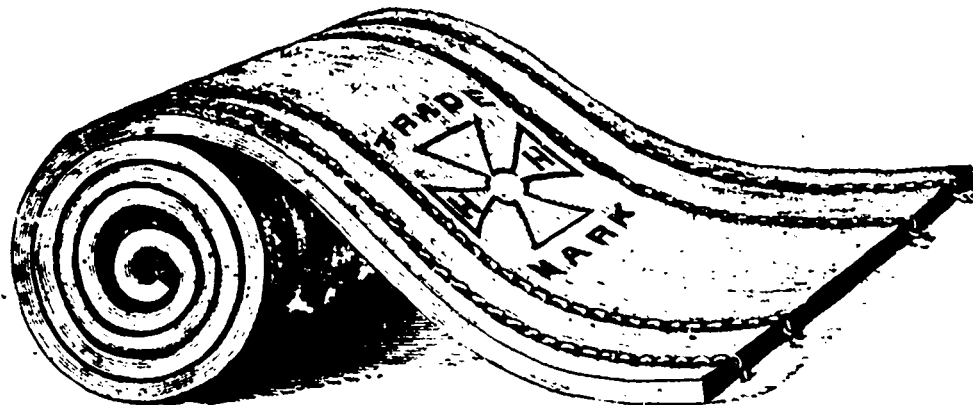
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Foreman City Floor Mills.



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PETERBOROUGH, ONT., JANUARY 1, 1885.

NO. 1.

THE APPLICATION OF SCIENTIFIC & PRACTICAL ARBORICULTURE TO CANADA.

PAPER BY PROF. BROWN, OF THE GUELPH AGRICULTURAL COLLEGE.

Is there any country whatever that has made an eminent agricultural history and does not now complain of want of trees?

Advanced nations are not discussing the worth or worthlessness of trees in their rural economy; they are considering how best to secure the fullness of the value thereof in all their bearings. In doing this much serious consideration is necessary. It would be very unwise for any country to rush into extensive tree planting without a clear idea as to how the work should be begun, carried out and maintained. It is my purpose briefly in this paper to show what Canada can do in the scientific and practical application of arboriculture, and before handling the subject as a forester, allow me to submit some general views.

Canadian forestry will have no place in all its scientific and practical value until one of two things be accomplished: One is the conviction on the part of her farmers of the necessity of conserving and replanting, therefore, their education up to this; and the other is the power by Government to resume parts of the country for conserving and replanting. Both will be difficult. The former would be the slower but eventually the most thorough because of self-interest; the latter would be more immediate and possibly less efficient, practically, though scientifically better applied. No large number of various interests could be so well arranged as by a company, and therefore Government, as a company, will have to become foresters in all the many details of the profession.

Much of our indifference in this subject arises from the common idea that the planter cannot himself personally hope to receive all the benefits from the conservation of the present trees, and particularly from replanting. American returns, to the American, must be smart, strong, and undoubted; the idea of permanency in the long after years does not concern us so much as now. In Europe it takes a shape that may never be realized here, because of one thing—that one thing is large proprietary, the possessing within one man's power all the area and class of soil suitable to profitable production on a large scale, so that even that one man can employ officers and men in such number as make profits certain. Cultivated Canada meantime is so sub-divided as to preclude all idea of sufficient massing of woods to receive equal results with Europe,—but the day may come, and meantime progress must be made otherwise.

I believe it is the experience of the world,

that more difficulty, in various forms, is found in reclothing with trees where trees grow before, than it is to plant, not replant, a country for the first time. There is not only the practical fact of succession of cropping in its scientific and natural bearings, as similarly realized for example in the products of the field, but the more serious one of the indifference of those who cut the first crop. Most of us think of trees as means of shelter, under several forms. We like shelter for buildings, shade for ourselves, shelter and shade for animals in the field, and shelter for farm crops. These alone would make up a large value in any district where required, and would justify all the cost and subsequent attendance. Yet we have another aspect of the question that takes an equally strong place in our regard: Climate is not alone a matter of great outside causes, but one intimately related to local influences, among which trees are pre-eminent. We have no time to show how temperature, rainfall, moisture, and evaporation are directly influenced by a small or large surface of trees, and how, therefore, water is largely in the hands of trees for local distribution. This second duty of forestry as a science and practice would even seem to swallow up the previous question, and is consequently inducement alone to its prosecution on our part. Were neither of these sufficient, however, to convince, the third great reason for tree cultivation will surely convert even the most American amongst us. It is no matter of doubt, under average conditions, in any country, that tree culture is more profitable as a crop than its own agriculture, year by year. This position is not open to question, but clear and marked in all experience where age has given time for proof. The area of trees in Canada is not an unknown thing in the older districts, and it is not true that it is poorly wooded in comparison with other countries. The United States can show twenty-five, and Canada nearly fifty per cent. of the cultivated districts as still under trees. This is possibly larger than any other continent, if we except the northern part of Europe, where agriculture is necessarily at a discount, and where forest is practically untouched. The cause of our discontent then is not want of forest per nation but its regular distribution to subserve all the needs of the nation.

The existing condition of our forests is the very first consideration in this enquiry. Outside of the lumbering interest, which of itself is simply a taking without system, there is no enclosing, preserving, caretaking, or conserving in any sense except the right of individual ownership, some of whom do act the forester, but nationally there is nothing recognized. The average "bush" of North America is a beautiful sight and yet a sad one. The artist must revel in its variety of form and foliage, but the fighting for place, the smothering and

rotting for want of light and air can only be estimated by those who are scientifically and practically foresters. I do not mean that our forests in every case should be managed similarly to those in Europe, because much of our best timber requires very different conditions, but similar principles ought to guide our management.

There are really no figures to give as to the extent of Canadian forest, either as to gross area or special kinds of timber. The small map, recently issued by Dr. Bell, of our geological survey, gives a good idea of the northern limits of the principal trees, but, of course, it cannot help in either of the particulars named. As the country, with the exception of prairie, was originally all forest and as we have cleared about 25,000,000 of acres for agricultural purposes, it may be said that the whole country is still under trees with these exceptions. What the extent is to a million acres nobody knows, nor do a million acres one way or the other affect our subject.

We have four distinct fields of operation in the future of Canadian forestry. 1st. The untimbered lands such as prairie. 2nd. The older cleared portions. 3rd. The recent forest settlements, and 4th the untouched forest. Each of these will require different methods as to conserving, clearing and replanting, although all will be subject to one grand system of operations. To submit details now would be unnecessary when the object is to impress principles.

But yet another aspect of the question is the requisite proportions of tree surface to that under farm crops. What should it be? This is just one of the things that we do not know and that we are not likely ever to know as a point for general practical guidance. When I had the honor of addressing the British Science Association, at Dundee, in 1867, and at Norwich, in 1868, upon the claims of arboriculture as a science they knew little upon this point in a country possessing greater physical distinctions than Canada. The conditions are so various as affected by climate, altitude, latitude, aspect, soil, sea or lake neighborhood and vegetation, that no possible number of observations in any length of time could say how much for one district or so much for another. However, men do come to realize through science and practice—practice especially—that a farm or district needs the protection in certain places, and thus a country could easily be reclothed to the extent required for such shelter, if not for regulation of climate and other considerations, to which we will soon refer. The point then of immediate shelter is within everybody's knowledge, and needs no scientific guidance, and I may here say no governmental spurring. But the greater field of climate as an unknown one practically in this relation, is more a national problem, and still very much a scientific inquiry, and what it will

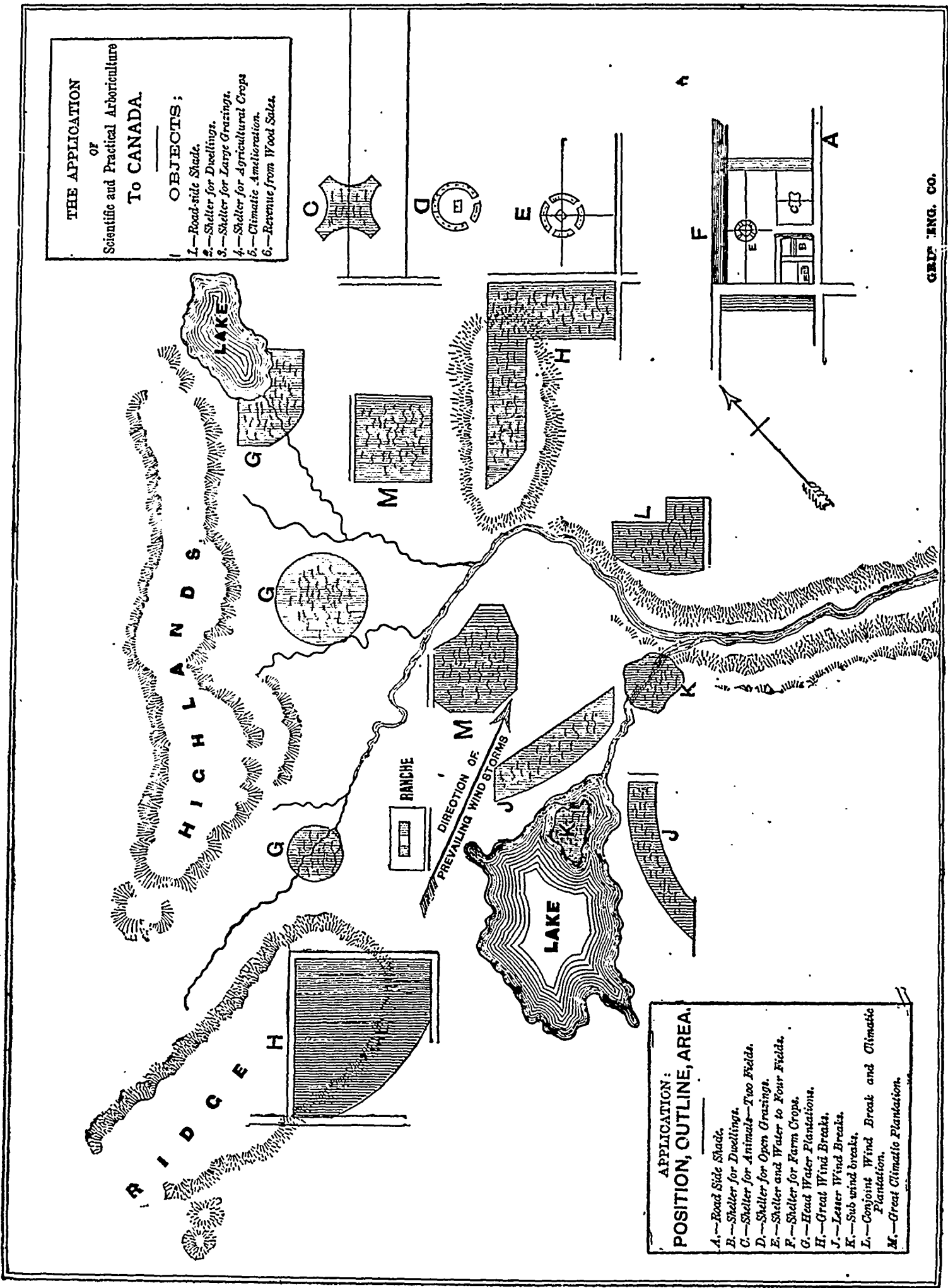
have to say in regard to the proportion of trees to farm crops no one can tell. Of course if men disregard everything but the direct profits from trees as a crop upon land, another century may actually find some countries going back to the days of too many leaves and too little arable. Viewing trees in all their relations I am of opinion that upon an average of conditions in Canada, one fourth of the surface should be covered by them, and as this is just one half of what we have at present all over the forest districts, there rests the apparent inconsistency of wanting to conserve and replant all the while that we possess double what is required. This brings out the fact that it is the irregular distribution of tree surface in our case which gives trouble, that some parts have more than required, and others have been overcleared.

As the subject grows upon our attention, we are next concerned with what parts of the country should be conserved or replanted, and in this part of the study it is obvious that our views cannot be confined to single farms or even special sections. Referring as we must to the great overruling influences, as previously indicated, we have to deal with geographical features that may embrace thousands of acres that have to be subserved with one or more massing of trees. Just where to conserve or replant, how much on the spot or spots, so as to gather and dispense all the virtues that trees are known to possess, is the great problem of the future. To say that we should only replant our less valuable soils is nonsense, though apparently sensible enough from an agricultural standpoint; that high lands should be conserved or reclothed as against lower parts is largely true, though not generally applicable, and that conserving and replanting must go hand in hand and take place anywhere as found best through experience, is correct in every sense.

Following this view of the subject there is naturally that of suitability of certain kinds of trees for special purposes. We have soils and climates wherewith to do almost anything in tree life from the pine of the far north, which luxuriates in an apparently bare rock cleft, to the walnut of the south, that must send its carotry root several feet into a rich soil. The preparation of the soil, methods of planting, including fencing, draining, knowledge of enemies and friends in nature, and all the management throughout, in order to attain the highest results are not for our time on this occasion.

In connection with this branch of the subject, however, allow me to present to the Association some copies of a list of trees which I use in teaching at our College, and classified similarly to those in Loudon's work

And now for the more special purpose of these notes, and in order to place myself properly with the Association, it is fair, as a matter of business, to note that what I am advancing is founded on British experience, beginning in



THE APPLICATION OF Scientific and Practical Arboriculture To CANADA.

OBJECTS;

- 1.—Road-side Shade.
- 2.—Shelter for Dwellings.
- 3.—Shelter for Large Grazings.
- 4.—Shelter for Agricultural Crops.
- 5.—Climatic Amelioration.
- 6.—Revenue from Wood Sales.

APPLICATION: POSITION, OUTLINE, AREA.

- A.—Road Side Shade.
- B.—Shelter for Dwellings.
- C.—Shelter for Animals—Two Fields.
- D.—Shelter for Open Grazings.
- E.—Shelter and Water to Four Fields.
- F.—Shelter for Farm Crops.
- G.—Head Water Plantations.
- H.—Great Wind Breaks.
- J.—Lesser Wind Breaks.
- K.—Sub wind breaks.
- L.—Conjoint Wind Break and Climatic Plantation.
- M.—Great Climatic Plantation.

DIAGRAM TO ILLUSTRATE PROF. BROWN'S PAPER ON ARBORICULTURE.

GEOR. ENG. CO.

1854 and ending 1870, during which time I had the immediate control of the formation, the planting, and subsequent management of something like twenty one millions of trees, principally on the Seafield estates, in Banff and Invernesshire, and the Invercauld estates in Aberdeenshire.

In order to success anywhere there must be put in operation, upon a system, such a combination of the scientific and practical knowledge that at present exists as shall most likely bring about the fullest realization of tree value. That system is universal in its application, however small or large the scale, or however varied the conditions. Whether we pull down or rebuild, or make entirely new, the system will apply, and as it is by entirely new work that any system is best exhibited I will ask you to go with me to the Prairie. The subject then is almost an entirely treeless one, with an undulating, but generally uniform level surface, an occasional ridge, a lake, a river, cutting deep through the unshaded land, and bounded on the north-west by high lands as I have outlined on the map. Here, men need never hope to gather wealth of agriculture in all its branches without the help of trees. I think there exists nowhere in the world an example of *universal farming* reliability unattended by trees. I see no great future for Manitoba and our Northwest unless extensive systematic forestry precedes. The sooner our Government realizes this the better. All methods of farming, railway and water communication, minerals, natural grazing, or any other form of good things will never "make" a country without trees. We are not theorising in this. *A peopled agricultural country is an impossibility without trees.*

In our treeless region, therefore, experience has made us acquainted with a variety of wants that can be subserved by trees, and science points to more. Together then they make up a bill that may be thus summarised :

1. Roadside shade.
2. Shelter for dwellings.
3. Shelter for cultivated farm crops.
4. Shelter for open natural grazings.
5. Shelter for enclosed grazings.
6. Head water conservation.
7. Wind breaks.
8. Climatic amelioration.

Either of these would of course serve more purposes than that implied by its name, but a full illustration of the system requires a form for each.

Now this map professes to show all these: from the single shade tree up to the great climatic plantation, the area or district embraced and the size of each of the classes would be subject to requirements, from one acre to as much as 1,000 acres each; the system or principle is not affected by size, but, position and form, or outline, are prime factors.

Size would be regulated by the particular physical features of the district and the object in view; form by prevailing winds as well as the particular object and partly by physical features.

In our prairie example on the map we have a farm of 160 acres made up as follows :

Timber	30 acres
Cultivated	125 "
Orchard, garden, buildings, roads..	5 "
Total	160 "

The fields and roads lie northwest and southeast, and therefore also northeast and southeast. By preference the buildings are situated on the southern angle of the farm at a junction of a concession and a side road. In the first place the roads are lined with sycamore trees, which serve as shade to animals in some of the fields as well. Then the dwelling house and orchard while open to the southeast, south, and southwest, are shaded by ornamental standards and lined on the north and northwest by trees. This tree line may be called the 2nd sub-wind break of the farm. The barns with two small fields or paddocks, are also open to the south and protected from the colder winds by a narrow belt of timber in positions similar to the others. The six other fields are, in the first instance, sheltered by a broad belt all around from the east, via north, to the west, capable of breaking and mellowing the whole farm for cropping. But, for live stock, under

such circumstances, and with twenty acre fields it is necessary to provide other shade and shelter. This is best supplied by what I have proved in actual practice both in Scotland and Canada. I know of no better form and position of a shade and shelter clump of trees than that illustrated in Fig. C., and the position of which is also shown in our farm example. It serves two fields, and from whatever direction the wind comes, or the sunshines, the animals can find a retreat in either field. You cannot shoot a straight line across this clump and not find a safe corner.

Then, in the adaptation of one form of shelter to four fields (Fig. E) is neat and serviceable, and when supplied with water in the centre is a very valuable acquisition to pastures. In the case of extensive open grazings, the circular belt (Fig. D) is also best for various reasons. It resists and breaks wind storms better than other outlines; it is less liable to damage by cattle or wind, is more compact and affords more outside shelter. There should be two passages not far apart and facing south as much as possible; one passage is not enough with a large number of cattle going and coming, and provision is necessary for a stack of hay in the centre.

These are what may be called the purely agricultural divisions of arboriculture, and are definite and practical enough, upon which little difference of opinion is likely to arise. In what remains of my subject there may be not only difference of opinion in regard to details, but considerable difficulty in satisfying that anything more is needed than what has already been sketched. It will be said: As each farm has its proper amount of shade, shelter, fuel supply, and even wood revenue otherwise, what more does the country require?

I have not seen in any work on rural economy that it is as much the duty of nations to administer their arboriculture as their laws of health. Then while everyone acknowledges that without the proper measure of trees there cannot exist the proper health, political economy, science, agriculture and all society, is equally interested in this question, and as I have already indicated its national aspect, it is only necessary to point out how more than the immediate farmer's work is required.

Over a great plain, such as our prairie, where storms rage unchecked, where rains come and go irregularly and uneconomized in any form, and where sunshine is unmelting, it is necessary to establish agents for the purpose of subserving these and other climatic purposes. Assuming that all the country were planted to the extent already shown for immediate farm use, there exists nothing in particular spots,—no plantations exactly placed to conserve head water streams, no great and small wind breaks, and no great climatic plantations,—the agents respectively.

On the map these are shown in position, proper outline and extent. *Position* is regulated by elevation and neighborhood of other physical conditions, such as water surface, and high land; *outline* is regulated by direction of prevailing winds, conformation of surface, and partly by public roads, while the *extent* is directed by the indefinitely known influence that a certain body of trees possess over climate; climate being understood as distribution of rainfall, evaporation, natural drainage, and temperature.

I am aware that we cannot reason on this from any clear or precise experience, and are driven to draw conclusions from actual facts, and there seems to be no doubt that it requires a certain massing and kinds of trees to ameliorate climate, narrow strips and clumps being insufficient, or incapable of doing so.

Head water plantations, as implied in the name, must surround, or be in the immediate neighborhood of, sources of streams, and have an outline to nurse them, with area consistent to the importance of the source. The circular form is good and applicable to the two springs at G., or it may be oval as illustrated at the mouth of the valley, and would also take the position and area of that at the small lake.

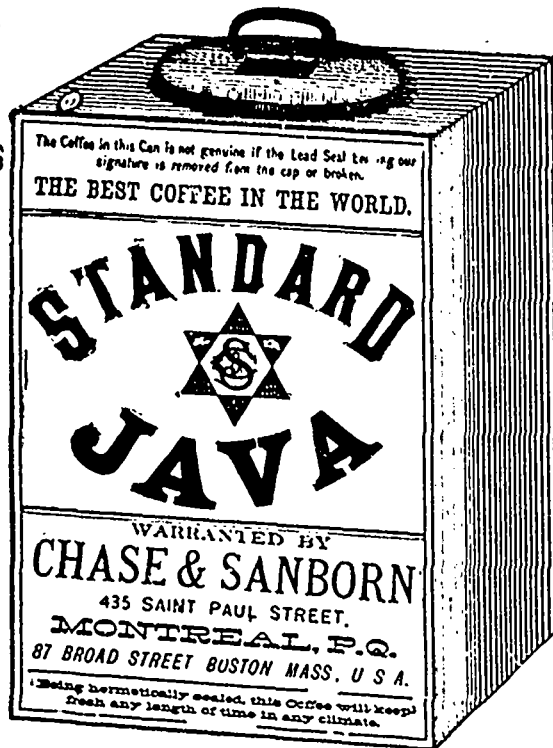
Great wind breaks being meant to fend the smaller plantations as well as particular districts, have to be carefully outlined, of very considerable extent, and must command an exact position.

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In the example of H. on the ridge, which is designed to break the storms from the adjoining ranch, several points are noticeable: The land occupied by the plantation is within one block, or range of roads, and therefore does not encroach; it occupies also part of a ridge that generally is less valuable for agricultural purposes, it is formed to cut or feather the storms that prevail in the district—south west by west—a point in forestry of very great importance indeed; it is massive or in sufficient body to resist and break, and it is so situated main force of the storms. It may be remarked that it would be better to extend the plantation eastward upon the point of the ridge, this I have avoided in order to make the example more difficult.

The other great wind break is of a different form, while serving a similar purpose. It parallels with the public roads, makes no awkward corners for cultivation of adjoining land, faces prevailing winds with the exception of southeast end, and will protect a large area of country.

Lesser wind breaks, as at J., are placed where, either by the form of the country on the prevailing wind side, or where a larger break is difficult to establish. The example on the east of the large lake exhibits both. Position here is very important and it will be observed that outline and area are arranged to receive the storms across the lake, break them, and yet yield to them.

Sub wind breaks are easily arranged and can take various forms and sizes to suit conditions as at K.

Another kind of plantation, as already referred to, is that which I call climatic,—the objects of which have been explained. Their position in a country among others is not so easily reasoned, either scientifically or practically. Area is obviously of more consequence than form, because it requires a great field of leaves to do what leaves are said to do in climatic amelioration. M. with eight sides, and the other with four, are designed as concentrated masses adapted to Canada, and of course in their case, more than other plantations, the cost of establishment would be less per acre, and

would also better meet the item of revenue. L. is an example of a conjoint-wind break and climatic plantation.

Canadian forestry, whatever its future, will never realize all it should unless hand in hand with science.

ESTIMATE OF FINANCIAL POSITION OF A MIXED PLANTATION OF 100 ACRES IN CANADA.

(Manitoba and the Northwest particularly.)

REVENUE.	
1st Thinning when 16 years old, 3,000 poles, 20 ft long at 30c.....	\$ 90
2nd Thinning at 18 years; 8,000 trees, at 5c.	400
3rd Thinning at 25 years; 15,000 trees, 12 inches diameter at base, 40 feet, at 30c.	4,500
4th Thinning at 35 years; 25,000 trees, 20 inches diameter; 50 feet, at 50c.....	12,500
5th Thinning, at 40 years; 30,000 trees, 22 inches diameter.....	22,500
6th Thinning, at 45 years; 21,000 trees, 25 inches diameter, at \$1.00.....	21,000
7th Thinning at 50 years; 18,000 trees, at \$1.10.....	19,800
Gross Revenue.....	\$ 80,000
10,000 trees felled, leaving 20,000 trees, or 200 per acre as permanent crop.	
EXPENDITURE.	
1,000 rods of fence, at 75 cents.....	\$ 750
Drainage of portions.....	250
150,000 trees, 1 year seedling, 1 year transplanted, at 1c.....	1,500
Planting same.....	575
Freight on trees.....	150
Original cost.....	\$ 3,225
Per acre.—\$32.	
Replanting failures for three years, 5,000 trees	100
General attendance, up-keep of fence, &c., for 15 years.....	300
Gross cost.....	\$ 3,625
Per acre until revenue begins—\$36.	
Cost of thinning and hauling to road.....	\$ 15,100
General superintendence and incidentals for 35 years.....	8,500
Gross expenditure.....	\$ 20,225
Balance being clear revenue.....	\$ 60,650
	\$ 80,790

No allowance is made for interest on outlay and rent of land, on the one hand, nor for interest on revenue, and value of grazing for 25 years, on the other hand. Neither is credit given for climatic amelioration, not for value of permanent crop.

THE TIMBER TRADE.

A despatch from Quebec dated Dec. 12th says:—Messrs. J. Bell, Forsythe & Co. have just issued their trade circular for 1884. It shows that the arrivals of ocean steamships during the year 1884 were 240, representing tonnage of 427,834 tons, a decrease of 29 compared with previous year; of sailing vessels from sea in 1884, 499, compared with 672 vessels last year. These figures indicate that the with reference to the ranch as to shelter from the timber and deal trade of this port for the past season has been much more limited in volume than usual. A great falling off is also noted both in supply and export. The clearance last season were 350; in 1883 the returns gave 437 vessels. Notwithstanding this greatly reduced export, we can discern no improvement in the British markets. No revival has taken place in shipbuilding which takes so much Canadian timber. The trade between Canada and South America is increasing. The shipments in 1884 amounted to about 37,000,000 feet b. m. from the St. Lawrence. The stock of white pine and waney board on hand is slightly over the average of the last five years. The quantity of square timber measured is unusually light, comprising as it does some rafts now wintering on the Ottawa. Shipments have been exceptionally small and the stock wintering is rather over the average of the past years. Apart from some 12 to 14 rafts manufactured during the winter of 1883 and 1884, and which have been held back on the Ottawa, there will be but a small supply to come from that quarter next season, as the winter's production, according to the last estimates, will not exceed a half million feet altogether, including a proportion of waney boards, quite sufficient, however, for all requirements, and the manufacturers are acting very prudently in curtailing their operations to such an extent. There has been a decrease in shipments at this port while Montreal has increased. Owners refuse to charter their vessels to Quebec on account of certain bylaws of the Quebec Ship Laborers Society.

THE LUMBER INDUSTRY OF MAINE.

There was the time when Bangor and the Penobscot Valley, and in fact all Eastern Maine, depended on the lumber business as the almost only source of revenue. During the last ten years there has, however, been a great change. The people have turned their attention more to tilling the soil, and our industries have become more diversified. This has been a change, we believe, for the better; for the best interests of this part of Maine. Still the fact remains that the lumber business is the one great industry of 'way down east, and it is a matter of general concern to know whether the business is on the decline or increase.

In a general way it may be said that it is impossible, without giving one's entire attention to the matter for days, to arrive at more than a rough estimate of what is to be done in the lumber business the coming season.

The amount of business done in the woods the coming winter is, undoubtedly, to exceed that of last year. Last season something like 100,000,000 feet of logs came to this market. Next season, if it is favorable for "driving," more than that will come to our booms. That is to say, in general terms, more logs are to be cut and hauled this than last winter. It will, upon the whole, not cost so much to get logs to the landings this year as it did last season. Provisions, with the exception of pork and one or two other articles, are not so high and wages are a little lower. Teams can be hired for about the same as last year. The wages of men upon an average are about \$15 per month.

The past season has not been a favorable one for those who have manufactured logs on the Penobscot. The first of the season logs sold at fair prices. The prices some think were not natural, and some contend were caused by parties who tried to bull the market. Manufactured lumber has not sold at prices that were very profitable. One gentleman informs the *Commercial* that this has been the dullast season he has known in the lumber trade.

Everyone in the business seems to think there

is a bright outlook for the coming season, and large preparations have been made for cutting timber.

In speaking of the amount of timber which was brought into the markets last season we do not include the vast amount of small stuff which comes to this city by rail.

The stock on hand at the mills at the present time is about 27,500,000 feet. The amount of logs sold not is about 2,500,000. By the last we mean the number of feet unsold at the booms.

In giving, as we do below, estimates of the amount of logs to be cut the coming season it should be remembered that it is only in the rough. Some firms may be estimated too low others too high. Many of the small firms are not considered at all. There are many causes which prevent a correct estimate of the business to be done in cutting lumber to be arrived at. On account of heavy snow or from the fact that he has not had so good a chance for cutting as he supposed, one man instead of getting to market 3,000,000 feet, as he originally planned, may not get more than 2,000,000; or perhaps a firm may haul more than originally planned. So that figures which are given are in one sense simply a matter of conjecture.

On the west branch of the Penobscot the coming winter Con. Murphy will employ 80 men and 20 horses, and will haul 3,000,000 feet; Rod Sutherland will employ 40 men and 12 horses and will haul 1,600,000 feet; Gilbert Davis will employ 25 men and 8 horses and will haul 8,000,000 feet; H. H. Perkins will employ 45 men and 10 horses and will haul 1,500,000 feet; N. G. Gould & Co. will employ 60 men and 15 horses and haul 1,500,000 feet; Spencer & Smith will employ 40 men and 11 horses and haul 1,400,000; John Lora will probably haul 1,500,000; Morrison & Hunting 5,000,000, Samuel White 1,200,000, and James F. Kimball 600,000 feet. In addition to the above, smaller firms will probably 2,000,000 feet more. Tracey & Co. of Calais, intend to haul 15,000,000 feet on the Wassataquoik for E. H. Todd, of St. Stej. hens.

On the east branch of the Penobscot there will be as much or more lumber hauled than last winter. Among the large operators will be Perry, Rivers, E. W. Loveland, the Lawlar Brothers, J. P. Reed, Hersey & Son, and others.

Stratton, Engel & Gilman will employ 18 horses and 70 men, and will haul 3,000,000 feet, which will come out of the Piscataquis. Among others who will cut from 1,000,000 to 3,000,000 feet, which will come out of the Piscataquis, are Atwell & McLeod, E. D. Quimby, William Peters, Zeke Chase and Samuel Hodson.

On the Mattawamkeag there will probably be more logs cut than for several years. The largest concern is Ring & Webster, of Orono. They will probably cut from 10,000,000 to 12,000,000. Here as in other places it is impossible to make a summary which will be reliable. Among the operators on Mattawamkeag and tributaries are: E. W. Robinson who will employ 6 horses and 24 men, and cut 500,000 feet; R. A. Crocker, 4 horses and 16 men, 300,000; J. F. Webster, 8 horses and 35 men, 800,000; G. F. Stratton, 4 horses and 16 men, 300,000. Other small operators on the Mattawamkeag and tributaries will probably cut 3,000,000.

On the Passadumkeag waters there will, among others, be the following operations: Isaac Page with 8 horses and 32 men will haul 800,000 feet; C. C. McDonald, 10 horses and 40 men, 800,000; F. M. Cunningham, 1,000,000; N. Emery, 500,000; Foster & Tybotts, 700,000; C. L. Hathaway, 500,000; other small operations, 500,000.—*Bangor Commercial*.

HOT AIR ENGINES.

We are of opinion that hot air engines are of no use for driving wood-working machinery. In other establishments, where very small power is required, they are useful, as they can be worked with economy without skilled labor, and without danger of explosion. In hot-air engines of the latest construction the principle of working is as follows:—Atmospheric air is in the first place forced by an air pump into a retort or generator in which a fire has been

previously lighted, the fuel used being coke or charcoal. The fire being well alight, the generator is hermetically sealed by means of doors. No chimney is used, in fact the use of such when the engine is working would be fatal, as it is necessary that the pressure to be afterwards utilized in the working cylinder should be retained within the generator. A thick fire-brick lining in the generator leaves an annular space between it and the outer casing. The air from the feed-pump is divided into two streams, one entering this annular space, whence it descends beneath the grato-bars and passes through the fuel, the other entering into the space or chamber above the fire. That passing through the fire gives up its oxygen and effects the combustion of the fuel, forming first carbonic acid, and subsequently carbonic oxide; that entering the chamber above the fire meets with the carbonic oxide and nitrogen and creates an intense heat. This heat tends to expand the air, but having no room to do so it becomes compressed; the pressure thus formed is the force used to effect the motion of the engine. The governor determines whether more or less air shall pass through the fire or into the space above; consequently according to the position of the governor the pressure of the air is regulated, and the fuel is consumed in direct proportion to the work being done by the engine.—*Timber Trades Journal*.

THE CRAZE FOR WOOD CARVING.

Chatting lately with one of the most talented wood carvers in this country, says a reporter of New York city daily, I learned something of the whimsicalities of fashionable New York, and how close Fifth avenue stands to workshop benches. This city, in fact all the country, went wild three or four years ago over carved woodwork. Plans for the Vanderbilt mansion gave an impetus to the mania. All the rich houses that followed the Vanderbilts within a year or so went quite as largely into carving. Walls, ceilings, door panels, everything everywhere was cut up into ambitious figures, copying nature and old art work. From Italy, from Switzerland and from France and Germany carvers of high rank were brought over here, found plenty of employment and high pay. Practically a new trade sprang up in New York forthwith. Three or four firms grew rich quickly. Cost was not considered by up-town fashionables competing one with another for distinction in their bric-a-brac homes. So ran the wave along to a year or two ago, when of a sudden it began to recede. Architects who may out orthodoxy for millionaire builders set themselves against this fashion, and houses that have gone up lately, or rather houses that have been planned within the past 12 months, look to decoration of a much milder type, almost plain and Quakerish by contrast. Wherefore there are sighs in carving establishments, and lots of men, American as well as foreign suddenly find themselves without employment for their talents, and little hope for brighter days in the near future. Furniture houses that have been making goods to order, employing the most skilled carvers and securing the fanciest of prices, have wheeled squarely around, said good-bye to their imported artists, and gone into the manufacture of goods for the trade.

The Trade in Wooden Shoes.

A factory has just been opened at Danbury, Conn., for the manufacture of wooden shoes. The proprietor is a German, and for some time has supplied the brewers in New York with wooden shoes for their employes, and the demand has become so extensive as to require much greater facilities and the aid of steam power. The shoes have the improved curved round toe of the old Dutch style and are heel-less. They are made wholly of the wood of the butternut tree, and while impervious to water are also very light. They have been introduced into all the hat shops for the protection of the feet of operatives from the wet floors while at the same time they are very easy and rest the feet.

Six of the voyageurs who went from Canada to Egypt have died since leaving this country, five having been drowned in the waters of the Nile.

RESULTS OF FOREST FIRES.

An exchange, speaking of the peculiarly destructive nature of forest fires, thinks few people realize how serious a calamity these fires have become. Already in the most thickly settled parts of the country good working wood is becoming scarce and high, although there is often a glut of inferior grades, and therefore very low prices for them. The correspondents of the lumber journals report from almost all quarters that the demand for really good materials is generally in excess of the supply. The only hope for the future lies in economy of what we have, and in whatever will encourage those owning young timber to keep it and prune it and thin it out so as to bring it on to fill up the gap. But forest fires destroy an amazing amount of the precious mature stock—how much no one knows—but it is said by experts that the amount destroyed probably equals the amount cut. Now, we know that the sawed stuff (to say nothing of fuel and charcoal, ties, telegraph, and hoop poles, etc.) reaches an annual value of over \$230,000,000 at the mills, so that, counting other forest products besides sawed stuff thus destroyed, it is, no doubt, within reason to say this waste, largely needless, is not less than \$300,000,000 a year. But this is not all, and very likely it is not the worst. Such fires burn up a great amount of young growth and of seed, and in some cases even the soil itself is roasted to death, so that for a long time afterward it will not bear anything of value.

THE PROSPECTS.

The *Northwestern Lumberman* says:—The tone of some of the letters which come to this office is not cheerful. More than one saw mill man has had a hard road to travel for the past two years, and some of them profess to see nothing better in store for them in the immediate future. Good luck comes in at our doors uninvited, sometimes, but usually the lot of a man is bettered by an endeavor on his part to better it. Concerted action on part of the mill men to reduce the output of lumber would result in the greatest good to the trade, and such conduct persevered in would make the lumber business in the Northwest profitable from the time there were only moderate stocks on the markets until the last pine trees, commercially speaking, were felled. Why then should there be such haste displayed by the owners of pine timber to get rid of it in a time of depression? This is a question to which no good business man can give a reasonable answer. It has been estimated that the coal mines of Pennsylvania would furnish coal for the civilized world for a thousand years, yet when the markets are overstocked with coal, and the mining industry does not pay a reasonable profit the operators suspend work. The supply of white pine is not good a thousand years, but for twenty, say. What a short time twenty years is—only a the quarter of the number that the healthy man, whose habits are proper ought to live. Where, then, is the sense of such a rush to deplete the pine? The young or middle aged man can have no better property than these same forests, and the old man could leave no better earthly inheritance to his children than pine trees. We believe that timber owners are considering it in this light more than they did a few years ago. The spirit of conservatism is growing. The talk of the Saginaw valley manufacturers of forming a monstrous syndicate means something, although such a syndicate may not be formed. Every resolution of the operator this winter to reduce his log cut will bear fruit, although such resolutions will often be smashed to splinters. It is plain that the lumbermen are reaching the point of realization. They are beginning to understand that every foot of lumber that is sold at a loss means so much that might have been profitably marketed had their business been well managed.

"Delays are Dangerous."

If you are pale, emaciated, have a hacking cough, with night-sweats, spitting of blood and shortness of breath, you have no time to lose. Do not hesitate too long—till you are past cure for, taken in its early stages, consumption can be cured by the use of Dr. Pierce's Golden Medical Discovery, as thousands can testify. Sold by druggists.

Northwest Coal.

St. PAUL, Dec 18.—A fine seam of coal has been found at Crowfoot Crossing 800 miles west of Winnipeg, on the Canadian Pacific Railway. It is 14 feet thick, 150 feet below the surface and is anthracite of good quality.

Burglary in Montreal.

Another extensive burglary occurred on Thursday morning in Montreal, a Jeweler's store within a stone's throw of police headquarters being entered, the safe blown open, and ten thousand dollars' worth of jewellery and eight thousand dollars in cheques carried off.

\$70,000 in Ashes.

Dec. 17.—The tin stamping factory of Thomas Davidson & Co. was totally destroyed by fire this evening. The factory, which was a three-story building, was valued at about \$30,000, machinery \$27,000 and stock \$13,000. Insurance \$30,000. Among the companies interested are the Commercial Union, British American, Royal and Western. The fire throws 125 men out of work.

A Powerful Shot.

SANDY HOOK, Dec. 18.—A shot weighing 152 pounds was fired from the Haskell multi-charge gun this morning with 110 pounds of powder. The velocity of the shot was 1,801 feet per second; elevation 8 1/2 degrees: the range, 6,514 yards; the muzzle energy of the shot, 3,422 foot tons. This is the most powerful shot yet fired from this gun, and much exceeds that of any gun in the world of the same calibre.

A Big Mail Robbery.

The mail that left Kamloops for Victoria was robbed between the point of departure and delivery of everything valuable. The sum total of the robbery amounts to \$9,000. Two registered letters containing \$4,000 in cash. The balance was in checks and money orders. The chief remitter was the post office department in money orders, which amounted to about \$3,000. The postmaster of Kamloops, Mr. Vonn, has \$500, and the estate of T. Spellman \$4,000, mostly in checks, reference to which will be found in the advertising columns.—Victoria (B. C.) Colonist.

East of the Andes, and intersected by many great rivers, is probably the greatest and most valuable forest on the globe, and almost untouched by the axe. Mr. Thompson, who held the position of Consul at Brazil for some time stated in a lecture on his return, that in travelling on the Amazon he saw sandalwood trees that here would each be worth £1,000, yet of whose value the natives seemed unconscious or indifferent.

The saw log cut on the Bonnechere River will be much larger this year than for past years. Messrs. McLachlin Brothers intend cutting largely on their limit recently purchased from Barnett & McKay.

Catarrh—A New Treatment.

Perhaps the most extraordinary success that has been achieved in modern science has been attained by the Dixon treatment for Catarrh. Out of 2,000 patients treated during the past six months, fully ninety per cent. have been cured of this stubborn malady. This is none the less startling when it is remembered that not five per cent. of the patients presenting themselves to the regular practitioner are benefited, while the patent medicines and other advertised cures never record a cure at all. Starting with the claim now generally believed by the most scientific men that the disease is due to the presence of living parasites in the tissues, Mr Dixon at once adapted his cure to their extermination; this accomplished the Catarrh is practically cured, and the permanency is unquestioned, as cures effected by him four years ago are cures still. No one else has ever attempted to cure Catarrh in this manner, and no other treatment has ever cured Catarrh. The application of the remedy is simple and can be done at home, and the present season of the year is the most favorable for a speedy and permanent cure, the majority of cases being cured at one treatment. Sufferers should correspond with Messrs. A. H. DIXON & SON, 300 King street west, Toronto, Canada, and enclose a stamp for their treatise on Catarrh.—Montreal Star. 1912.

"Yes; I shall break the engagement," said she folding her arms and looking defiant; "it is really too much trouble to comply with him; he is as stiff as a post, and talks as if he had a mouthful of mud. Besides, the way he looks and speaks is disgusting." Don't break the engagement for that; tell him to take Dr. Hago's Catarrh Remedy. It will cure him completely. "Well, I'll tell him. I do hate to break it off, for in all other respects he's quite too charming." Of course, it cured his catarrh.

Man's Organism

is the most complex work of the Creator, and when this complicated structure, so exquisitely wrought, is disturbed by disease, the most efficient aid should be sought from the most skilled physician—for the human body is too precious to be neglected. It becomes the question, then: "What physician shall be employed?"

DR. OSCAR JOHANNESKY, of the University of Berlin, Germany, has made a lifelong study of ailments of the Nervous and Genito-Urinary System.

HIS REMEDIES CURE

Any Debility or Derangement of the Nervous System, including Spermatorrhoea, Gonorrhoea, Syphilis, Stricture, Impotence, etc., etc.

BECAUSE you may have been cheated and fooled by quacks, who claim to cure this class of disorders, do not hesitate to give Dr. JOHANNESKY'S method a fair trial before your case becomes chronic and incurable.

FREE

A valuable treatise, explaining of Dr. JOHANNESKY'S system, will be sent by mail, post paid and securely sealed from observation, to any sufferer addressing his sole authorized agent for the United States and Canada.

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Complicated symptoms treated from Dr. JOHANNESKY'S Special Prescription, under advice of a duly qualified consulting physician.

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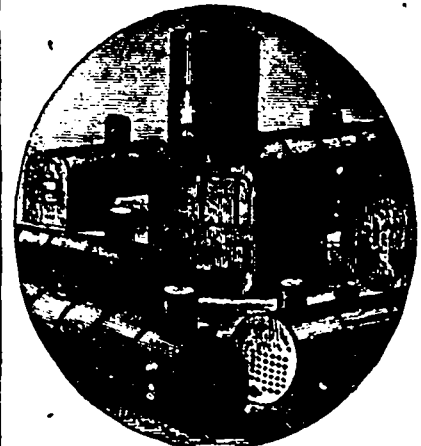
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EPPS'S COCOA
BREAKFAST.
"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately flavored beverage which may save us many heavy doctors' bills. It is by the judicious use of such a" up until that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle miasmas are floating around us ready to attack wherever there is a weak point. We may escape many a fatal ailment by keeping ourselves well fortified with pure blood and a properly nourished frame."—Civil Service Ga. etc.
Made simply with boiling water or milk. Sold only in packets by Grocers, labelled thus:
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DEVOTED TO THE LUMBER AND TIMBER INTERESTS OF THE DOMINION.

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Advertisements intended for insertion in any particular issue should reach the office of publication at least four clear days before the day of publication, to insure insertion.

All communications, orders and remittances should be addressed and made payable to THE PETERBOROUGH REVIEW PRINTING AND PUBLISHING COMPANY (LIMITED), Peterborough, Ont.

Communications intended for insertion in the CANADIAN LUMBERMAN, must be accompanied by the name of the writer, not necessarily for publication, but as a guarantee of good faith. Communications to insure insertion (if accepted) in the following number, should be in the hands of the publishers a week before the date of the next issue.

The CANADIAN LUMBERMAN is filed at the Office of Messrs. SAMUEL DEACON & CO., 154 Leadenhall Street, London, England, who also receive advertisements and subscriptions for this paper.

PETERBOROUGH, Ont., JAN. 1, 1885.

KID CARROLL'S planing mill, at Thornbury, Ont., was burned December 3rd; loss, \$2,500.

Messrs. Campbell & Co., lumber merchants of Lachute, near Montreal, have assigned, with liabilities of \$60,000, and assets of \$50,000.

FOUR thousand feet of lumber is already on the ground for the crib work of the breakwater at Fort William.

P. NESTOR is constructing a boom of large capacity on Rainy river, Rat Portage district, Ont., for W. J. MacCauley.

PARTIES returning from the woods at Bay City, Mich., report that hands in the camps are receiving \$7 a month.

C. B. FIKLD will put 25,000,000 feet of logs into Houghton Lake, Mich., and M. Loughray will put in four million over the same logging railroad.

A WESTON & SON lost 500,000 feet of lumber, December 2nd, from the barge Wells, while on its way from their mills at Waikwa bay, Mich., to Tonawanda, N. Y.

THE boiler in Plummer's planing mill at Jackson, Mich., blew up December 19th, instantly killing Albert Kroyport, a mill hand, and severely injuring six others.

WAGES of men in the woods of the Chippewa, Wis., district show a diminution in favor of married men, single men receiving from \$12 to \$15 a month, and married men from \$15 to \$20.

THE tie trade is lively at Pound, Wis., on the line of the Milwaukee & Northern railroad, on account of the demand coming from the railroad company.

SPLINTED shingle belts are being delivered at West Branch, Ogemaw county, Mich., for \$1.25 per cord. Five cents a piece for posts is paid by the railroad company.

A NUMBER of lumber shanties are in operation along the Kaministiquia, and men for the bush are in demand at Port Arthur.—Winnipeg Times.

A DESPATCH from St. Johnsbury, Vt., on Dec. 22nd says:—A foot of snow fell yesterday. This will start the lumber business and give many idle men employment.

A LOCAL authority estimates that the shrinkage of values has caused a loss to Muskegon lumbermen this year of over \$500,000, and wages to wage workers of \$200,000.

COMPLAINTS of there being too much snow in the woods are scarce so far this year. In some swamps, however, the water had not frozen over deep enough before the snow fell, and it makes work difficult.

THE Hon. Perry Hannah, of Traverse City, Mich., gives it as his opinion that the input of logs this season throughout Michigan will be but about 50 per cent of that of last year. He says that the supply of men in the Traverse region is greatly in excess of the demand, though a small army is employed in getting out rock elm timber for shipbuilding purposes, there being abundance of this timber in that part of Michigan.

AMONGST other work which is being carried on in the Wm. Hamilton Manufacturing Co's foundry, Peterborough, is a boiler of stupendous size, for the steamer Maganetawan, owned by the Georgian Bay Lumber Company. The boiler has been in course of construction for some time and is now assuming a natural form. The construction of the boiler is under the superintendence of the foreman of the boiler making department, Mr. Richard Reeves, a man of thorough practical knowledge and high reputation. It is nine feet in diameter, consequently twenty eight feet in circumference. It is twelve feet long and made throughout of the finest dolzel steel. It has 147 smoke tubes and when completed will stand a pressure of 100 pounds to the square inch. This monster boiler is one of the largest of the kind ever turned out of any shop in Ontario, and is larger than any other turned out of this foundry. Its total weight, when completed, will be twenty-two thousand pounds.

FORESTRY IN SOUTH AUSTRALIA.

Professor Brown, of the Ontario Experimental Farm, sends us the following notes on "Forestry in South Australia," where his brother is Government Conservator:

The Forest Department has been in existence for eight years, during which time there have been 150,366 acres enclosed or reserved, and dedicated to forest purposes. Of this extent not more than 30 per cent is under indigenous timber. The total revenue from grazing rents, timber licenses to cut, etc., since establishment, amounts to \$223,550. Against this is a total sum of \$233,615 expended upon the reserve during the same period; showing that although the works executed by the department have been of a reproductive and permanent character they have only cost the Government an actual cash disbursement of \$10,000. Some 744,000 trees have been planted and are doing well; over 500,000 indigenous saplings in the open forest have been pruned and otherwise trained into the line of your timber trees. Some 100,000 young trees have come up and been established in the enclosures set apart for the reservation of the forests by natural regeneration, so that the department has to be credited with the fact of having added no less than 344,000 trees to the property of the country. From trees raised in the nurseries and given away gratuitously to corporations, district councils, farmers, and others, it is estimated that not less than 200,000 have succeeded. There are six fully equipped nurseries belonging to the department which are capable of raising 1,000,000 young trees annually.

Rupture Cured Permanently or no pay. Our new and sure cure method of treating ruptures, without the knife, enables us to guarantee a cure. Trusses can be thrown away at last. Send two letter stamps for references, pamphlet and terms. World's Dispensary Medical Association, Buffalo, N. Y.

LIST OF PATENTS.

The following list of patents upon improvements in wood-working machinery, granted by the United States Patent office, Dec. 9, 1884, is specially reported to the CANADIAN LUMBERMAN by Franklyn H. Hough, solicitor of American and foreign patents, No. 617 Seventh St., Washington, D. C.:

- 308,982.—Clutch, friction—W. D. Brock, Milwaukee, Wis.
- 308,924.—Lathe—R. L. Peabody, Waltham, Mass.
- 309,103.—Log loader—F. F. Schofield, Ascona, Mich.
- 309,036.—Saw mill, portable—A. J. Huber, Columbus Grove, Ohio.
- 308,893.—Saw swage—D. B. Hanson, St. Louis, Mo.
- 309,021.—Timber, machine for framing—W. J. Bloy, Silver King, Arizona, Tex.
- 309,313.—Auger handle—W. A. Peck, Rowe, Mass.
- 309,288.—Chuck lathe—G. Birkman, New York, N. Y.
- 309,206.—Chuck lathe—A. E. Cushman, Hartford, Conn.
- 309,338.—Saw handle—H. W. Hawkin, jr., Brooklyn, N. Y.
- 309,448.—Saw, pruning—H. G. Emons, Ogden, New York.
- 309,341.—Stave dressing machine—G. J. Fritz, St. Louis, Mo.

PATENTS ISSUED DEC. 16.

- 309,578.—Poles, machine for bending carriage—A. G. Snyder, Piqua, Ohio.
- 309,550.—Saw—J. Ledward, Westerly, R. I.
- 309,646.—Saw—J. L. Purple, Oswego, N. Y.
- 309,763.—Saw filing machine—D. Chambers, Quebec, Canada.
- 309,533 & 309,534.—Saw tooth swage—J. E. Emerson, Beaver Falls, Pa.

LIVERPOOL.

The Timber Trades Journal of Dec. 13th says:—The statistics published as customary at the end of the month are given at the end of this communication, and, as the termination of the import season is virtually over, although it is not accepted by the trade as actually closed until the close of January next, it will be of some interest to those whose business leads them to the study of the figures, which are an indispensable guide to the probable future course of the market.

The total consumption during the past month shows a very great reduction as compared with that of November last year, and these figures speak with greater force of the general and widespread depression of trade in this district than any verbal report could do.

The diminution in the consumption of Quebec square and waney board pine is very noticeable, and goes to prove in some degree how steadily it is being thrust out of the market by the better qualities of hewn and sawn pitch pine timber, such as is used for ordinary building and joinery purposes. At the same time we must not lose sight of the fact that this wood in common with nearly all others has failed to

meet with the usual amount of attention, notwithstanding the low prices at which it is selling; for in spite of the low rates of freight the prices now current for the coming season's arrivals are such as to leave no margin of profit for those engaged in the business.

Spruce deals are heavy in stock, but there is still a fair demand, so that, large as the quantity may appear, there is every probability of an advance being made even upon that shown at the last public sales here, and this probability is strengthened by the fact that towards the close of the season a considerable amount of anxiety to secure cargoes for outports was displayed by those who a few weeks ago were cool or indifferent for any proposals for business. Birch timber is very light in stock, and it would now seem that those who bought in this market recently, although at a considerable advance upon previous rates, exercised sound judgment, as there is, from advices abroad, no great quantity available for future supply.

BOARD OF TRADE RETURNS.

The following are the returns issued by the Board of Trade, for the month of Nov. 1884, and first 11 months of the year:

MONTH ENDED 30TH NOV. 1884.

	Quantity.	Value.
Timber (Hewn).	Loads.	£.
Russia	11,108	15,705
Sweden and Norway	40,761	59,601
Germany	16,817	40,934
United States	3,825	19,406
British India	1,602	21,258
British North America	19,185	80,671
Other Countries	31,199	31,658
Total	124,537	269,161

Timber (Sawn or Split, Planed or Dressed).

Russia	80,939	153,057
Sweden and Norway	135,475	290,421
British North America	69,462	171,567
Other Countries	7,609	27,355
Total	293,545	647,400

Staves, (all sizes)

Staves, (all sizes)	11,166	59,541
Mahogany (tons)	4,018	33,057
Total of Hewn and Sawn	418,102	961,561

ELEVEN MONTHS ENDED 30TH NOV. 1884.

Timber (Hewn).		
Russia	226,071	419,572
Sweden and Norway	682,327	860,192
Germany	101,947	239,937
United States	154,732	576,719
British India	35,353	512,063
British North America	222,505	971,957
Other Countries	329,094	509,939
Total	1,872,069	4,499,134

Timber (Sawn or Split, Planed or Dressed).

Russia	1,075,247	2,300,006
Sweden and Norway	1,551,533	3,311,568
British North America	945,571	2,240,829
Other Countries	348,005	1,068,023
Total	3,919,356	8,919,323

Staves (all sizes)

Staves (all sizes)	127,795	509,963
Mahogany (tons)	56,473	509,503
Total of Hewn and Sawn	5,787,445	13,413,402

THE Gainoville, Ga., match factory is paying about 30 per cent on its investment, and turning out 5,000,000 matches a day.

LIVERPOOL STOCKS.

We take from the Timber Trades Journal the following Comparative Table showing Stock of Timber and Deals in Liverpool on Dec. 1st, 1883 and 1884, and also the Consumption for the month of Nov. 1883 and 1884:—

	Stock, Dec. 1st, 1882.	Stock, Dec. 1st, 1883.	Consumption for the month of Nov. 1884.	Consumption for the month of Nov. 1883.
Quebec Square Pine	315,000 ft.	464,000 ft.	114,000 ft.	241,000 ft.
Waney Board	425,000 "	402,000 "	8,000 "	43,000 "
St. John Pine	25,000 "	46,000 "	12,000 "	8,000 "
Other Ports Pine	76,000 "	94,000 "	3,000 "	31,000 "
Red Pine	57,000 "	47,000 "	46,000 "	50,000 "
Pitch Pine, hewn	502,000 "	568,000 "	127,000 "	201,000 "
Sawn	305,000 "	68,000 "	4,000 "	28,000 "
Planks	51,000 "	116,000 "	40,000 "	7,000 "
Antic, &c., Fir	60,000 "	120,000 "	7,000 "	15,000 "
Sweden and Norway Fir	63,000 "	324,000 "	32,000 "	63,000 "
Oak, Canadian and American	277,000 "	173,000 "	71,000 "	71,000 "
Planks	177,000 "	21,000 "	0,000 "	0,000 "
Baltic	2,000 "	17,000 "	16,000 "	15,000 "
Elm	22,000 "	28,000 "	3,000 "	1,000 "
Ash	41,000 "	121,000 "	36,000 "	80,000 "
Birch	64,000 "	37,000 "	26,000 "	2,000 "
East India Teak	33,000 "	112,000 "	3,000 "	14,000 "
Greenheart	77,000 "	23,942 stds.	6,727 stds.	3,012 stds.
N. B. & N. S. Spruce Deals	27,574 stds.	7,240 "	3,756 "	4,003 "
Quebec Pine & Spruce Deals	1,020 "	5,204 "	779 "	1,003 "
Baltic Red Deals, &c.	7,553 "	5,205 "	89 "	23 "
Baltic Boards	3,896 "	263 "	764 "	303 "
prepared Flooring	61 "	3,000 "		
	9,950 "			

ST. CATHARINES SAW WORKS!



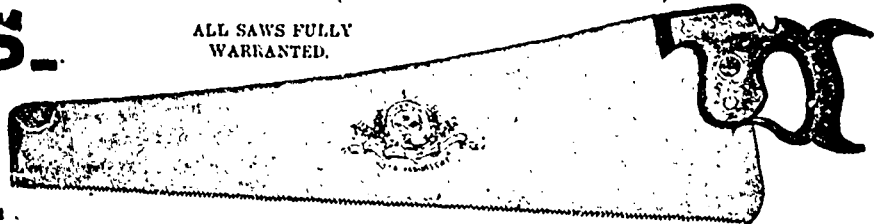
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 ANTWERP IN 1835—LONDON IN 1856.

IT IS THE INTENTION to have a Canadian representation at the INTERNATIONAL EXHIBITION at Antwerp, commencing in M., 1835, and also at the COLONIAL and INDIAN EXHIBITION in London in 1886.

The Government will defray the cost of freight in conveying Canadian Exhibits to Antwerp, and from Antwerp to London, and also of returning them to Canada in the event of their not being sold.

All Exhibits for Antwerp should be ready for shipment not later than the first week in March next.

These Exhibitions, it is believed, will afford favorable opportunity for making known the natural capabilities, and manufacturing and industrial progress of the Dominion.

Circulars and forms containing more particular information may be obtained by letter (post free) addressed to the Department of Agriculture, Ottawa.

By order,
 JOHN LOWE,
 Secy., Dept. of Agric.

Department of Agriculture,
 Ottawa, December 19th, 1884.

G1153-621

Johnston's Fluid Beef



The nourishing, palatable and warm giving qualities of Johnston's Fluid Beef has caused this invaluable preparation to become a favorite and fashionable beverage for the winter season. It is now obtainable on draught at the leading hotels and restaurants throughout the Dominion.

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SAW MILL —AND— TIMBER LIMITS FOR SALE.

In the matter of Authier Frere & Co., Danville, Q. The undersigned offer for private sale on favorable terms the following properties:

1. Saw mill at Danville, in complete running order, with all the necessary machinery for manufacturing lumber, shingles, clapboards, lath, etc. Also about 850 arpents of woodland, well set with spruce, hemlock, hardwood, etc. The timber limits attached to this mill cover a space of three miles square, and will furnish 50,000 logs annually during 20 years. The mill is driven by water power, and the supply of water is ample during the driest season.

2. A land in 12th Range Durham, comprising about 116 acres.

3. Two lots of land in the village of Durham, with a store, blacksmith shop and other buildings thereon erected.

4. A lot of land in the village of Durham 60x100, with a wooden house thereon erected.

5. A farm in the Township of Acton, being the east half of lot 11 in the third range, containing 160 acres, with house and other buildings thereon erected.

Further information given on application to

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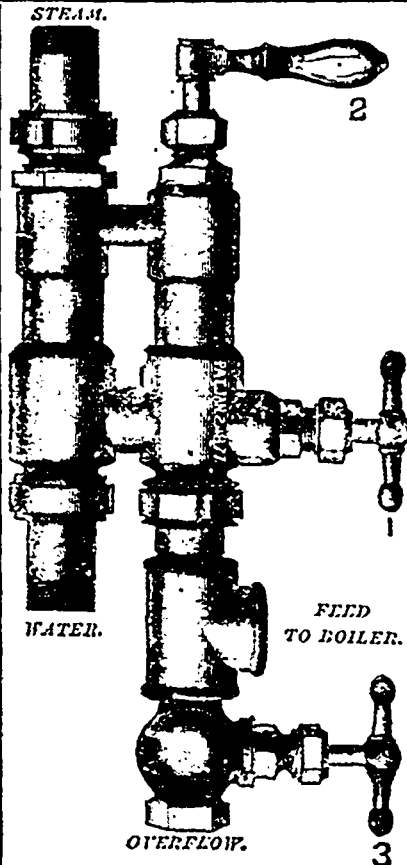
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THE Cooks' Favorite! BAKING POWDER.

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At Ottawa Exhibition, 1884. It is the most economic and the best in use. Perfectly Pure.

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Best Feed er known for Stationery, Marine or Locomotive Boilers.

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All sizes lift water 25 feet.
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Which took every honor awarded at the Centennial Exhibition.

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FOREST GROWTH IN DIFFERENT SECTIONS.

A considerable portion of the great West is out scantily supplied with forest trees, and during the last few years the demand for railroad ties and structures for bridges, for dwellings and public buildings, also for export, so that the timber has diminished nearly or quite twenty-five per cent. Montana has good timber lands, but she is not producing more than enough for home demand.

Many of the Western States have not timber and lumber enough for their own needs and are obliged to import a large portion of the lumber consumed.

The Indian Territory has a moderate amount of forest, but the railroads are fast consuming it.

The gigantic forests of California have been so recklessly wasted that she now imports lumber and even fire wood.

In the prairie States, liberal premiums have been offered for tree planting by the State; and the National Government, by its Timber Culture Act, has sought to promote the cultivation of forest trees. Many railroad companies, which own large tracts, have sought to encourage tree-culture. These efforts have led to the planting of many millions of trees, but many die the first and second year, and the whole number planted in several years bears but a small proportion to the annual destruction of the forests.

The forest growths differ very materially in different sections. In Minnesota and Dakota pine is pre-eminent, but a few of the harder woods are scattered through the forests. In Montana we find pine, black walnut, maple and some oak. Oregon and Washington are remarkable in the western part for their gigantic firs, as well as pine, spruce, red cedar and sequoias. From these the forests of Alaska and British Columbia, the Pacific Coast will no doubt draw its supplies for years to come. The forests of Arkansas, Eastern and Middle Texas, are largely composed of hardwoods; here we find several species of oak, one an evergreen, though not the genuine live oak; in Northern Arkansas the tulip tree or yellow poplar, the sweet, sour, and black gum, cypress and the osage orange.

The mountains of Arizona, Colorado, and New Mexico, are generally covered to the snow line with evergreen forests, mostly pine, but not of as gigantic size as are found on the Pacific coast.

The forests of California are for the most part wholly unlike those of regions east of the Rocky Mountains. The *Sequoia gigantea* has attained in some instances a height of 450 feet, and very few, when their growth was attained, are less than 325 feet. The tallest now standing is said to be 376 feet in height. Their circumference is as remarkable as their height, ranging from 100 to 120 feet. The sugar pine and the Douglas spruce both attain a height of 250 to 300 feet, with a circumference of 40 to 45 feet.

Many other trees unknown to the East thrive there, some of them semi-tropical, and 100 feet or more in height.

The trees raised from the seed under the timber culture and other acts have been almost entirely of the rapidly growing kinds, such as the cottonwood, locust, osage orange, vine, maple, white maple, etc. Few of these have much value for timber, but most of them are good for fuel and make rather durable railroad ties.—*Southern Lumberman*.

A DESTROYER IN THE SPRUCE FORESTS OF MAINE.

According to accounts of observations published in the third Bulletin of the Entomological Division of the Department of Agriculture, the ravages of the spruce bud worm (*Tortrix fumiferana*) have been extensive and destructive in the coast forests of Maine west of the Penobscot river. The damage appears to have reached only a few miles inland from the coast, but the belt in which it has prevailed is marked by extensive masses of dead woods. The trees are attacked in the terminal buds, which are eaten away, and when that is done the case is hopeless. The fatal character of the attack is owing to the fact that the spruce puts forth but few

buds, and those mostly at the end of the twigs, and when these are destroyed it has nothing on which to sustain the season's life. The attack is made in June, when the growth is most lively, and just at the time when the check upon it can produce the most serious results. The larches are also attacked by a saw fly, but with results such as are not necessarily fatal as in the case of the spruce. They are more liberally provided with buds, some of which may escape and afford a living provision of foliage. The larch, moreover, sheds its leaves in the fall, and is in foliage before its enemies attack it. Hence, while the spruce and fir succumb to the first season's assaults, the larch can endure two years of them.—*Science Monthly*.

SAWDUST PAPER.

Paper made of sawdust is among the latest achievements in wood pulp and paper making inventions. The Rutland (Vt.) *Herald* comes to us printed on paper made exclusively of sawdust. It is a product of a roller pulp machine invented by G. H. Pond, of Glens Falls, N. Y. There is no grinding in the process; the material is pressed into pulp by iron rollers working inside of an iron cylinder. It is bleached by a new process devised by the same inventor. In his machine, shavings, chips, sawdust and refuse of saw mills generally, as well as bagasse, the refuse of sugar cane, are converted into pulp, which the maker claims to be superior to the pulp of wood and rags. It does seem to be, in one respect, it possesses the important advantage of being strong-tough. The tensile strength per square inch is proved to be about double that of paper used by most newspapers, which bears a breaking strain of only about eight pounds in the tester, while this marks seventeen to the square inch. It is, however, rather hard, harsh, "rattly."—*Hartford, Conn., Times*.

THE FORESTRY QUESTION AGAIN.

Since the recent agitation of the forestry question has called attention to the injury to our enormous reserves of timber resulting from the zeal of lumbermen to cut down trees wherever they could conveniently get at them, efforts have been made to show that the necessity for protecting our forests had been much exaggerated, but the most recent statistics indicate that unless some decisive action is taken in regard to the preservation of the trees, not many years will elapse ere we shall have neither forests nor rain. The estimated area of the United States is 2,306,000,000 acres, of which 380,000,000 acres are said to be in forest, thus making about 16 per cent. while Europe has 28 per cent. more than this country. This showing is unexpectedly great for Europe and discouragingly small for America, but some encouragement is found in the fact that the people are annually taking more interest in the subject, and the plains of the northwest are to a greater extent than ever before being dotted with groups of shade and lumber trees. As the area of tree planting advances westward the rainfall goes with it, and very soon there will be no "Great American Desert," such as was laid down in the maps of 20 years ago.—*N. Y. Shipping List*.

RUNNING MACHINE SHOPS PROFITABLY.

The economy of spending money is nowhere better illustrated than in machine shops. The gradual decline of many machine shops, says a contemporary, can be traced directly to a reluctance to invest in any modern tools and appliances at a time when the money was at hand for the purpose; or perhaps it would be better to say, to a lack of some definite plan for the systematical renewal of tools as they become obsolete. The actual rather than the economical life of machine tools is considered. A machine may last fifty years, when from any economic consideration it ought not to last more than ten. The trouble with a good many machine shops to-day is, that they are trying to get along with tools that were hardly up to the times twenty years ago. These, in competition with modern tools, throw away the chances of success in the beginning. Nothing is nearer the impossible than running a machine shop profitably in com-

petition with other shops provided with tools upon which ten per cent. more work can be done, yet ten per cent. difference in the efficiency of machine tools is more than common. The longer the attempt at competition is persevered in under these conditions, the less money there will generally be with which to put the shop on a competing basis.

There is in too many machine shops a good deal of the look of general decay, evidencing an affection for old tools as old friends. Unless tools are replaced systematically as new ideas are embodied in their construction, they are generally never replaced; and unless provision is made at the beginning for this, it is seldom done. The job soon becomes too formidable for serious contemplation.

Often an old shop that has not kept pace with times in the way of tools tries a new superintendent and foreman, but these new men find their antiquated surroundings too much for their skill and best intentions. It is coming as competition in the machine business becomes more and more potent, which it is sure to continue to do, to be useless to try to keep up in the race by the methods of even a few years ago. Skilled superintendents, foremen and workmen cannot do it without modern tools. It may be a pity to consign old tools to the cupola, but it is often the best place for them. The trouble is not in putting them there,—where they will do the most good,—but in not putting them there soon enough.—*Boston Journal of Commerce*.

NEW ORLEANS EXPOSITION.

NEW ORLEANS, Dec. 16.—The day of the inauguration ceremonies of the World's Exposition opened bright and cheerfully, and thousands of people made preparations early in the morning for the long expected event. Public and private buildings along the principal streets were decorated. Along the street car routes visitors from the north were astonished to find hundreds of orange trees bending beneath ripe fruit, and to see the bloom of roses and the rich verdure of kitchen and flower gardens. At eleven o'clock Gen. McEnery, of Louisiana, and Major-General Glinn, commander of the State militia, with his staff, the mayor of New Orleans, members of the State Legislature, the foreign consuls, and guests assembled at the St. Charles hotel, whence the procession, escorted by a battalion of the Washington artillery, the Continental Guards in the garb of a century ago, and the Crescent Rifles, was formed. The procession, headed by the celebrated Mexican band, passed through the crowded streets to the river, where a steamer was in waiting to convey the official guests and their escort to the grounds. The various complexions of the members of the Mexican band, ranging from almost colourless white to dusky Indian colour, and equally varied character of their oddly shaped instruments, attracted much attention, while their unique musical selections elicited repeated applause. The French man-of-war *Bourette*, lying in mid-stream, saluted the steamer on her approach, and then, hoisting her anchor, steamed up the river in her company. As the boats approached the wharf at the exposition grounds the Washington artillery fired a salute of one hundred guns. The guests proceeded to the spacious building, where the inauguration ceremonies were carried out in the programme, the machinery being set in motion by the President, who was in Washington, by the aid of electricity.

It is estimated that Messrs. Bronson & Weston's cut of lumber this year at their Ottawa mills will be about 60,000,000 feet.

Advice to Mothers.

Are you disturbed at night and broken of your rest by a sick child suffering and crying with pain and cutting teeth? If so, send at once and get a bottle of Mrs. Winslow's Soothing Syrup for children teething. Its value is incalculable. It will relieve the poor little sufferer immediately. Depend upon it, mothers, there is no mistake about it. It cures drowsy and diarrhoea, regulates the stomach and bowels, cures wind, colic, softens the gums, reduces inflammation, and gives tone and energy to the whole system. Mrs. Winslow's Soothing Syrup for children teething is pleasant to the taste, and is the prescription of one of the oldest and best female nurses and physicians in the United States, and is for sale by all druggists throughout the world. Price 25 cents a bottle.

A CATASTROPHE.

MONTREAL, Dec. 19.—On Wednesday last, between two and three p.m., St. Hyacinthe was again the scene of a very sad catastrophe. Last spring, at the breaking of the river, large icebergs were seen floating down the Yamaska at a rapid rate until they met with the huge dam which barricades the river to supply water power to the various manufactories lining the river banks. For a few hours the accumulated ice afforded the spectators a very curious aspect, until finally the pressure became so powerful that the dam gave way to the mighty waters. In addition to this two iron bridges were swept down the rapids. Last May a contract was signed by a Toronto firm for the erection of a new bridge, and since that time the work was carried on very satisfactorily. Last Wednesday 150 feet was swept from off its piers and hurled down the rapids, along with 21 workmen, by a hurricane. Immediately the sad accident was telephoned the city over, and in a few minutes hundreds were lining the shores. All were rescued, two lifeless, two others whose recovery is very doubtful, and 17 hopeful of recovery, as their injuries are not grave.

RAISING TREES FOR CUTTINGS.

A few varieties of forest trees, notably the poplars and willows, are very easy grown from cuttings of the wood, and are commonly propagated in this way. The new wood is used for this purpose—that is, the wood of the previous season's growth. It should be cut in November or December, before any extreme cold weather occurs, and during mild weather when there is no frost in the wood.

Keep fresh by putting it away in sand, in the cellar, and work up into cuttings during stormy weather in the winter. They are made by simply cutting the wood with a saw knife into sections of about eight inches in length; then pack them away in the sand or earth in shallow boxes so that the upper ends will be exposed to the air. Keep in this way until spring, when the callus forms on the lower end, and they will start more quickly into growth than if cut in the spring, just before setting them in them in the ground.

In planting them out it is important that the lower ends should have the earth packed tightly against them, and to do this successfully it is necessary, if planting them in the nursery, to open a trench by stake and line, or, if in the forest, to throw out a spadeful of earth to each place where the cuttings are to be inserted. They are to be set deep enough so as to cover up the terminal bud.—*Exchange*.

Cheap Paper.

The demand for cheap paper for newspapers is likely to be met. The Rutland *Herald* is printed on paper made out of sawdust according to a process invented by G. H. Pond, of Glens Falls, New York. This sawdust paper is said to be stronger and firmer than wood pulp paper, but somewhat inferior in color. This defect will, it is said, be remedied with the perfection of the process. The new paper being made out of material quite worthless and bleached without the use of expensive chemicals, will be much cheaper than that now used by newspapers.—*London Free Press*.

Kennebec Boom Business.

The *Mining and Industrial Journal*, of Bangor, Me., gives the following:—About 620,000 logs have passed through Hollowell boom this season, the largest number with the exception of 1880, ever driven in one year on the Kennebec. The logs were distributed about as follows: Bradstreet Lumber Company, about 125,000; H. W. Jovett & Co., 80,000; J. M. Haines, Wiscasset, 75,000; M. G. Shaw, Bath, 75,000; Lawrence Brothers, 80,000; Milliken & Son, Hollowell, 25,000; J. Gray & Son, 25,000; Closson & Co., 18,000; Foster & Son, Richmond, 25,000; Messrs. Fogg, Bowdoinham, 24,000; Varney, Bath, 8,000; Burrill, Fairfield, 30,000. The above are Gardner firms, except as otherwise specified. The logs were all cut on Dead, Moose and Roach rivers, and on the east branch of the Kennebec.

Chips.

EMPIRE LUMBER COMPANY succeeds Geo. W. Slade & Co., at Mankato, Minn.

ABOUT 35,000,000 feet of logs will be cut on Cedar river, Mich., this winter.

THERE are in stock at Bayfield, Wis., it is reported, 3,850,000 feet of merchantable lumber.

LONGBERRY Brothers will put 3,000,000 feet of logs into Houghton Lake, Mich., this winter.

CHARLES WOODS has three million feet of logs skidded at his camp on the Au Sable, Michigan.

A MAN at Flint, Mich., has advertised for 750 men to work on levees and make ties in the state of Mississippi.

GEORGE DICK, of Dick & Banning's mill Keowatin, Ont., had his arm caught in a wheel and badly crushed.

WM. CONNATAN, a skidder in Crepin, Murphy & Son's camp on White river was killed by a falling tree Dec. 4th.

THE Longford Lumber Company are building a church at Longford, Ont., for their employees and other residents.

MR. WALKER has put a new thirty horse power engine into his steam saw mill at Coulson, Ont., and is preparing for a big season's work.

MR. COON is rebuilding his saw mill recently burned near Rush Point post office, Belmont township, this county.

THE papers at Orange, Texas, and vicinity are enthusiastic over the loading of a vessel at Sabine Pass with lumber for a foreign market.

HANNAH, LAY & Co. have 6,000,000 feet of lumber at Long Lake mill to be hauled on sleighs this winter to Traverse City, for shipment.

ONE of Thompson Smith's camps, from Cheboygan, Mich., has been broken up, and his total force working in the woods has been decreased about 200 men.

THE cut of the North Wisconsin Lumber Company, at Hayward, Wis., this year was 37,000,000 feet of lumber, besides other products.

NINE hundred buildings have been erected at Port Arthur, Ont., during the past season. The Government is building a breakwater there to cost \$250,000.

THE Marinette Lumber Company has four camps on the Michigamme river, near Republic, Mich., where will be put in about 13,500,000 feet of logs.

THE product of the mills on the Narragausus river, Mo., for the past season, amounted to 9,650,000 feet of long lumber, 400,000 lath, 600,000 staves and 400,000 shingles.

THE lumber yard of E. F. Hallack & Co., Denver, Colorado, was partially destroyed by fire December 7th, together with a stable and four mules. The loss is estimated at \$30,000; fully insured.

SENATOR DOLPH, of Oregon, has introduced a bill into the United States senate to forbid the dumping of obstructive refuse into navigable streams, and among other things saw mill refuse is specially mentioned.

THE logging output on the Narragausus, Maine, this season, is better than it was last year. J. W. Coffin & Co. will put in 3,500,000 feet, 1,000,000 more than last year, and G. R. Campbell & Co. will cut 6,000,000 feet. C. L. Nickols expects to put in a million feet.

RECENTLY Crandall Roblin, employed by the Calcasieu Lumber Company at Lake Charles, La., on their logging railroad, was struck by a log, which caused his death in half an hour. Mr. Roblin was originally from Canada, and lately from Saginaw and Bay City, Mich.

ON Dec. 12th John Hunter was killed in his father's saw mill at Hale's Bridge, Otonabee township, in this county. He was caught in a belt and was whirled about the shaft until not a bone in his body was left unbroken, and the belt had to be cut in several pieces before his mangled remains could be released.

A MAN in the employ of Charles Sedgwick, at Orting, W. T., was cutting a cedar tree, when it fell towards the house, on the roof of which Mr. Sedgwick was at work repairing a flue. Mrs. Sedgwick ran forward to alarm her husband, when the tree struck her and killed her instantly.

MR. PETER McLAREN, of Perth, talks of building a large steam saw mill at or near Calabogie Lake, next season.

THERE is quite a boom in the lumber trade in the back country. Gilmour & Co. propose taking out some 200,000 pieces. The principal part of their operation will be performed by contractors and jobbers.—Belleville Intelligencer.

TWO rafts of small square timber were sold at Calabogie Lake, delivered on board Kingston and Pembroke cars, at 16 cents per foot this fall. They were rafted again at Kingston, and used to float a raft of oak to Quebec.—Ottawa Citizen.

MR. J. S. SULLIVAN, contractor, of Pembroke, leaves for the Kippawa on Monday next, where he will get out in the next four years 200,000 logs. He contracted with Mr. O. Latour, lumberman, to supply him with 50,000 logs a year. Mr. Sullivan takes with him \$30,000 worth of plant—only sufficient for one year's work.

THERE are many oak trees of very great age in Hatfield Park, Herts. One of these, called the Lion Oak, is 34 feet in circumference; another has a diameter of over 33 feet. Queen Elizabeth's oak takes its name from the circumference of the death of her sister, Queen Mary, having been communicated to the Princess Elizabeth whilst she was sitting reading under the shade of its branches.

“Woman and Her Diseases” is the title of an interesting illustrated treatise (86 pages) sent, postpaid, for three letter stamps Address World's Dispensary Medical Association, Buffalo, N. Y.

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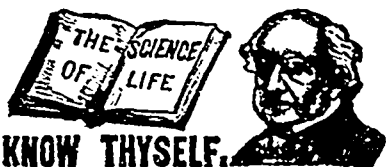
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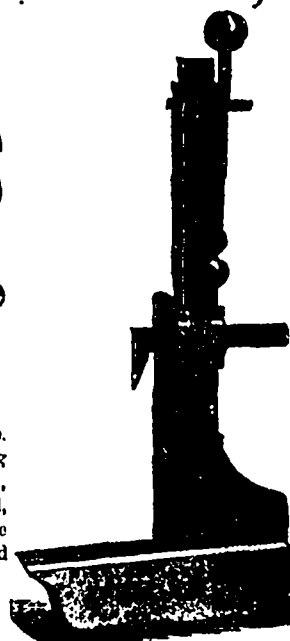
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Market Reports.

MONTREAL.

From Our Own Correspondent.

DEC. 21.—The weather for the past two weeks has been very cold accompanied with a good deal of snow which has made good country roads and has been favorable for lumber operations. There is no change to note in the way of business which is, as usual at this season, very quiet. Many lumbermen are still taking stock; prices are now as low as they will be and as there will not likely be as many logs made this winter as usual, the prospects for the future, even if the demand in the United States is not any better than it was during the past year, are very fair. The lumbermen on the Ottawa who manufacture for the United States trade will not make as many logs, but as the deal business in England was very good this year and apparently appears good for the future, those manufacturers who make deals will no doubt get their usual quantity of logs. The building trade in Montreal will be very good during the coming year, it is said many dwelling houses comparatively will be erected as there are not many vacant houses of a desirable size in the city. We quote prices ex yard as follows:—

Table listing lumber prices in Montreal, including Pine, Spruce, Hemlock, Ash, Oak, Walnut, Cherry, Butternut, Birch, Hard Maple, Lath, and Shingles.

LIVERPOOL MARKETS.

Our latest lumber advices from Liverpool state that the imports for the month of November were unusually small being only 202,000 feet of all kinds of timber, against 1,093,000 feet for the same month last year, and 419,000 feet the previous year, and of all kinds of deals and boards 5,173 standards against 14,232 standards for same month last year. The consumption has been fully up to expectations, but stocks hold are still heavy. Private sales of Halifax spruce deals are reported at from £5 11s. 3d. to £5 12s. 6d. per standard ex quay, Miramichi pine timber at from 12½d. to 13d. per foot ex quay, spruce deals from Dorchester and P. you were offered at auction, but a quantity withdrawn, the prices realized were for 3x11 £6 12s. 6d., 3x9 £5 15s., to £6, 3x7 £3 7s. 6d. to £5 10s. per standard.

TORONTO.

From Our Own Correspondent.

DEC. 24.—All the retail yards are quiet and most of the lumber arriving by rail during the last two weeks did not find a market, and had to be piled in the railroad yards waiting for customers. This will not, however, continue. Arrivals by rail during the winter promises to be light, most of the large mill yards being nearly cleaned out. There is quite sufficient lumber of most kinds piled in the various rail road and retail yards to meet all demands likely to be made on the dealers here during the entire winter. The amount left on the docks, however, is considerably less than last year, but will doubtless accumulate considerably during the winter months. Figures for carload lots have ruled lower during the last two weeks on account of push sales to avoid unloading along side cars.

The total receipts for the season fall short of the previous year as anticipated, still the showing is fully up to expectations. The full receipts are as follows:—Pine lumber all grades 101,500,000 feet, as against 152,000,000 for 1883, showing a decrease of 51,500,000 feet. The shipments from the docks is 38,000,000 feet as against 52,000,000 for 1883, a decrease of 14,000,000 feet. The total quantity of shingles received for 1884 6,500,000, 1883 8,000,000, increase 1,500,000, a considerable portion of this increase has however been forwarded on to other points by transshipment or otherwise. Laths

received for 1884, 8,000,000 pieces, as against 10,000,000 pieces for 1883, decrease 2,000,000 pieces. Receipts of hardwood 1884 is 750,000 feet, as against 1,000,000 feet for 1883, showing a decrease of 250,000 feet. The quantity of basswood coming to hand has been about 1,400,000 feet, and of cedar posts, chiefly used for block paving purposes, 3,000 cords. The consumption for our city and suburbs during the present season, presuming the stocks on hand to be about the same as at this period last year, would be about 63,500,000 feet, showing a decrease on our home market of 16,500,000 feet, although it does not necessarily follow that a less amount in dollars and cents has been expended in building operations, but a better class of buildings have been erected and the difference expended in bricks and mortar, neither does it follow that less stocks have been cut at the mills, it shows, however, that a portion of such stocks have sought other outlets.

Now as to the profits from the season's operations. It is patent to all who have taken the trouble to watch the state of lumber market that in four seasons out of five the mill men who dispose of their stocks early fare the best, and the dealers who purchase such early cuts have had in most as many cases to fight against a falling market during the remainder of the season. Our middle men as a rule are much too eager for the fray and start in too early in the season before the market shapes itself, and so have to work hard the entire year, and come out at the end with little but scars. So to follow Artemus Ward and give double advice, I would say to the mill man sell as early as possible, and to the middleman don't be in a hurry. To sum the whole matter up the manufacturer has had much the better end of the pole this season, and the wholesale men will come out with small profits for their season's work, and there are but few men engaged in business who deserve better things, openhearted and generous to a fault, men of large minds, yet harassed by bad debts and designing debtors, working hard and making others and not themselves wealthy, such is the business life, as a rule, of the wholesale lumber dealer.

Table listing prices for Mill cut boards and scantling, Shipping cull boards, Scantling and joist, up to 16 ft., and other lumber products.

Table listing prices for 1½-inch flooring, 1½-inch rough, 1½-inch dressed, 1½-inch undressed, 1½-inch dressed, 1½-inch undressed, Beaded Sheeting, Clapboarding, XXX sawn shingles, and Sawm Lath.

WINNIPEG.

The Commercial of Dec. 23rd says:—Dealers in this line, like the bears, have hunted for winter quarters. Those who are not in the woods with gangs have no business to keep them moving, as sales of lumber during the past week have not been heard of. The trade is practically asleep for the balance of the winter.

CHICAGO.

AT THE YARDS.

The Northwestern Lumberman of Dec. 27th, says:—Never, perhaps, in the history of the Chicago lumber trade, at least since it became one of magnitude, was it as quiet as now. A depressed season has been succeeded by an unusually cold and stormy December, which has corked up business and driven the stopper in, almost. There is a remnant of business remaining, but as a general thing the district is silent as the yard of a custom saw mill in the country. Nearly all the hands who make the yards lively in the busy season have been laid off for the time being. A few men are retain-

ed to attend to what little business there is doing, and these potter around appearing to be mostly engaged in killing time. A few cars are kept standing on the switches for a show, and once in a while one is loaded; but the "pulls" are few and far between, and the trains are lob tailed. Even the great concerns, like those at the west end of the district, and the manufacturers' yards, are doing very little. One stupendous concern is reported to have shipped but one car load during the week past. If it were not for the local box-worker's demand and the little that is coming from the builders for inside finishing purposes, the yards might about as well shut up shop and their owners go to New Orleans for a month. Though business at the yards is so nearly stagnated, the merchants are looking at the situation with fortitude, and are mostly smothering complaint. In fact, they appear to have expected an unusually quiet time this winter during the latter part of this month, and next.

Just at present the danger of cutting prices is avoided by the fact that few bills are going about for bids. What little trade there is comes through mail orders for small lots to patch up assortments, and without the agency of traveling men or the enticement of circular letters and ingeniously contrived lists. All these persuasive means have, for the time, been largely abated. Country merchants are taking account of stock, and it would be useless to ply them with special inducements to buy lumber, even if there were not other reasons why they should refuse to stock up. All things seem to conspire together to stop the movement of lumber until after New Year's, if no longer.

Receipts of lumber, shingles, etc., from Jan. 1st to Dec 24th as reported from the Lumberman's Exchange:—

Table showing receipts of lumber and shingles from Jan 1st to Dec 24th, 1884, and 1883, including decrease and lake receipts.

Table showing stock on hand for Dec 1st, 1884, 1883, and 1882, including lumber & timber, shingles, lath, pickets, and cedar posts.

OSWEGO, N.Y.

From Our Own Correspondent

No change in quotations and very little doing. The stock held here is very much in excess of any former season.

Table listing prices for Three uppers, Picking, Cutting up, Fine Common, Common, Culls, Mill run lots, Sidings, selected, 1 in, 1½ in, Mill run, 1x10, 13 to 16 ft., Selected, Shippers, Mill run 14x10, Selected, Shippers, Mill run, 1 & 1½ in, strips, Selected, Culls, 1x7 selected for clapboards, Shingles, XXX, 18 in. pine, Cedar, Lath, No 1, No 2.

TONAWANDA.

CARGO LOTS—MICHIGAN INSPECTION.

Table listing prices for Three uppers, Common, and Culls.

BOSTON.

The Journal of Commerce of Dec. 27th says: Business is naturally contracted and slow, partly from the clearing of accounts for the year and in part because the cold and wintry weather has

brought outside building operations to a standstill. The general tone is quiet and steady for desirable grades of lumber, both soft and hard.

CANADA PINE.

Table listing prices for Canada Pine products: select, Dressed, Shelving, Dressed, 1st and 2nd, Dressed Shippers, Dressed Box, and Sheathing, 1st quality.

ALBANY.

Quotations at the yards are as follows:—

Table listing prices for Albany lumber products: Pine, clear, Pine, fourths, Pine, select, Pine, good box, Pine, common box, Pine, 10-in. plank, each, Pine, 10-in. plank, culls, each, Pine boards, 10-in., Pine, 10-in. boards, culls, Pine, 10-in. boards, 16 ft., Pine, 12-in. boards, 16 ft., Pine, 12-in. boards, 18 ft., Pine, 1½ in. siding, select, Pine, 1½ in. siding, common, Spruce, boards, each, Spruce, plank, 1½ in., each, Spruce, plank, 2½ in., each, Spruce, wall strips, each, Hemlock, boards, each, Hemlock, joist, 4x6, each, Hemlock, joist, 2½ x 4, each, Hemlock, wall strips, 2x4, each, Black walnut, book, Black walnut, 1 inch, Black walnut, 2 inch, Scaymore, 1-inch, White wood, 1-inch and thicker, White wood, 1-inch, Ash, good, Ash, second quality, Cherry, good, Cherry, common, Oak, good, Oak, second quality, Basswood, Hickory, Maple, Canada, Maple, American, per M, Chestnut, Shingles, shaved, pine, 2nd quality, extra, sawed, pine, clear, cedar, mixed, cedar, XXX, hemlock, Lath, hemlock, Lath, spruce.

BUFFALO.

We quote cargo lots:— Uppers, Common, Culls.

LONDON.

The Timber Trades Journal of Dec. 13th says:—Things on Wednesday at the "Baltic" were not very lively, though there was by no means a bad attendance of the trade. Still, the disposition to accumulate stock so close to the end of the year, when books have to be balanced, can hardly be a very lively one. Hence we were not surprised to see things somewhat weaker than a fortnight ago. The few unreserved parcels of deals probably sold about as well as at the previous sale, but flooring was hardly so well sustained, and there was a decided drop in the one inch stuff submitted; matchlinings, perhaps, were better favored, but plain-edged stuff certainly went unsatisfactorily.

TYNE.

The Timber Trades Journal of Dec. 13th says:—There are very few items in the arrivals of timber calling for any special comment during the last seven days—one cargo from Quebec, one cargo from Danzig, and amongst miscellaneous arrivals a parcel of American doors and laths, per steamer direct from New York. There are none from the Baltic, and with the exception of perhaps a straggling cargo still to come forward it is scarcely likely that the present season will see any more. If not, so much the better, as the stocks on hand, though not large, will certainly be ample for the winter and spring requirements, even if somewhat improved upon by the present. In best redwood deals there is a scarcity, but the consumption being only small no inconvenience need be felt. So far there is no improvement to notice in shipbuilding trade, and the demand for goods used in that trade remains very feeble. In yellow pine log timber this is principally felt, and stocks are much too heavy for the prospect.

Yellow pine deals have moved away very rapidly and are held at firm rates, from \$16 to \$16 10s. per standard being current prices for 2nds.

During the last month pitch pine timber has increased a little in price, and still shows an upward tendency. The weather being favorable there is still a good deal of housebuilding going forward, and several contracts are being rapidly pushed forward.

EXPLOSION IN A PLANING MILL.

DETROIT, Dec. 20.—Last evening the boiler in C. H. Plummer's planing mill, at Jackson, Mich., exploded, blowing the entire structure into fragments. At the time ten men were engaged about the place, six of whom were either killed or wounded. Albert Koypert, teamster, was instantly killed, his head being nearly covered from his body, which was badly mangled. He was from Three Rivers, and 21 years old. Geo. Vanbrunt, a painter, aged 43, was scalded about the body and hurt about the head, and was also struck on the side but not dangerously. Fred. Vanbrunt, son of George, had his right leg broken, the left badly burned, and hurt about the head and shoulders. His wounds are dangerous. Fred. Miller, aged 35, was struck on the head, and a sliver the size of a cigar was forced into his skull just above the temple. He will probably die. Charles Davonport was wound up in the belts, which had to be cut to release him. His left arm was broken, but he sustained no serious injury. N. B. Breckenridge was hurt about the head and side, but not seriously. A flue was driven through the side of a house thirty rods away. George Pangburn and Will Nell were up stairs with Fred Miller, but escaped unhurt. The force of the explosion shook the entire city, rattling doors and windows two miles from the scene. Bricks were hurled through the sides of houses forty rods away. Charley Palmer was walking the street 150 rods distant, and was struck in the face by part of a brick and knocked down. Not a stick of the mill was left in its original shape. Wm. Armstrong, assistant superintendent of the Cleveland mine at Ishpeming, Mich., while assisting the workmen, was struck on the back by a falling piece of rock and instantly killed. He was a young man, 23 years old, and very highly esteemed.

WINTER CARE OF WORK HORSES.

For a winter diet there is nothing better or cheaper than corn fodder, with a ration of grain, generally oats, varying according to circumstances. For many years I have never fed hay to horses during the winter until the corn fodder was entirely gone. Horses are very fond of corn fodder, and thrive upon it better than on hay; it has no tendency to produce trouble with the wind, as hay is liable to do if fed in excess, as it frequently is. The fodder is slightly constipating, but this should be remedied by a ration of wet bran now and then. Corn stalks furnish both food and bedding. The simplest way of feeding them is to stand a bundle in the manger, and the horse will eat it down closely, the hard butts of the stalks being left. The horse seems to know, what many farmers do not seem to be able to learn, that corn butts are of little value as food. At the next feed throw the butts under the horse, and he will require no other litter and keep cleaner on this bed than on straw. The manure is difficult to take out, but if it accumulates for a few days the stalks will be broken and easier to remove. The actual cost of feeding horses, of course, varies widely in accordance with the locality; near the large cities, with high-priced pasture land, hay, and grain, of course, are much higher than in more remote districts, so that an estimate expressed in figures would not be of any value for the locality for which it was made. The course of feeding above laid down, is as well adapted as any to the circumstances of the ordinary farmer. The stable should be well ventilated, cool, not cold; and draughts avoided if possible. The feet of horses, not at work, should be carefully examined every few days, at least twice a week. The ordinary diseases of the stable, "through" and "scratches," can be prevented in most, I was about to say in all cases. Should any disease become established, consult a competent veterinary surgeon at once.—Stock Breeder.

How to Preserve Posts.

A writer in the *Western Rural* furnishes the following information regarding the preservation of posts for fences, etc.: "I discovered many years ago that wood can be made to last longer than iron in the ground, but thought the process so simple and inexpensive that it was not worth while to make any stir about it. I would as soon have polar or ash as any other kind of timber for posts. I have taken out basswood posts, after having been set seven years, that were sound as when put in the ground. Time and weather seem to have had no effect on them. The posts can be prepared for less than two cents. Take up, polish with linseed oil and stir in pulverized charcoal to the consistency of paint. Put a coat of this over the timber, and there is not a man that will live long enough to see it rotten."

"A Perfect Flood of Sunshine"

Will fill the heart of every suffering woman who will only persist in the use of Dr. Pierce's Favorite Prescription. It will cure the most excruciating periodical pains, and relieve you of all irregularities and give healthy action. It will positively cure internal inflammation and ulceration, misplacement and all kinds of disorders. Price reduced to one dollar. By druggists.

BLODGETT & BYRNE, of Muskegon, Mich., will not join the curtailing movement, but will run five camps, and put in about 25,000,000 feet of logs on the Muskegon over their railroad.

Consumption.

Notwithstanding the great number who yearly succumb to this fatal and terrible disease, which is daily winding its fatal coils around thousands who are unconscious of its deadly presence, Dr. Pierce's Golden Medical Discovery will cleanse the blood of scrofulous impurities and cure tubercular consumption (which is only scrofulous disease of the lungs). Send three letter stamps and get Dr. Pierce's complete treatise on consumption and kindred affections with numerous testimonials of cures. Address: World's Dispensary Medical Association, Buffalo N. Y.



50 Per Cent. Reduction

ON OLD CATALOGUE PRICES.
 Gent's 14k. Gold Watch reduced to \$25.
 Ladies' 14k. Gold Watch reduced to \$20.
 Gent's Key Wind Jewel, Cut Expansion Balance, in Solid 3oz Coin Silver Case. Hunting or Open Face reduced to \$8.
 Gent's Patent Lever, Jewelled, Cut Expansion Balance, Solid Coin Silver Cases, reduced to \$7.
 Men's size, Heavy, Useful, Cheap Watches, Hunting Case, Key Wind, White Metal Silvered, \$4.50; Yellow Metal, Gilded, \$4.50.
 Nickle, Stem Wind, Open Face, \$4.50.
 Sent by Mail. Prepaid; Safe Delivery guaranteed.

CHAS. STARK,

52 Church Street, Toronto, Near King
 Importer, Wholesale and Retail Dealer in every description of Fire Arms, Gold and Silver Watches, Gold and Silver Jewellery, Diamonds, Silverware, etc.
 Send address for our 120-page Catalogue, containing over 800 illustrations of all the latest and most elegant designs.

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CIRCULAR, GANG, SHINGLE, CONCAVE GROOVING,

TOP, DRAG, CROSS-CUT AND BILLET WEB, PIT,

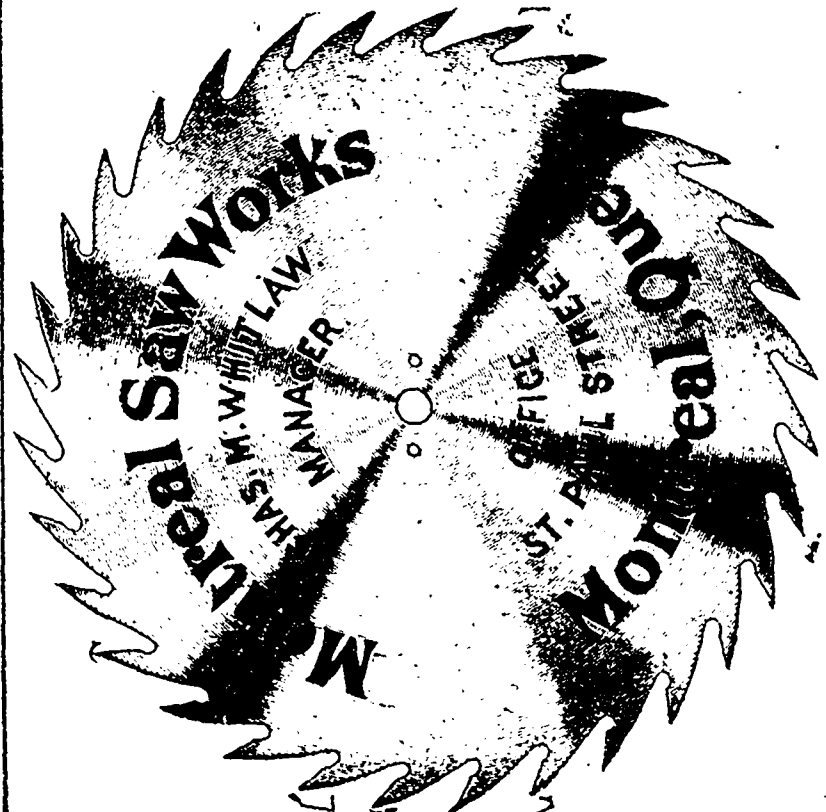
ICE, AND ONE MAN CROSS-CUT SAWS,

— AND DEALERS IN —

BAND SAWS, BARREL AND HEADING SAWS, EMERY

WHEELS, GUMMERS AND CUTTERS FILES,

RUBBER & LEATHER BELTING, SWAGES, SAW SETS.



Catalogues and Price Lists furnished on application.

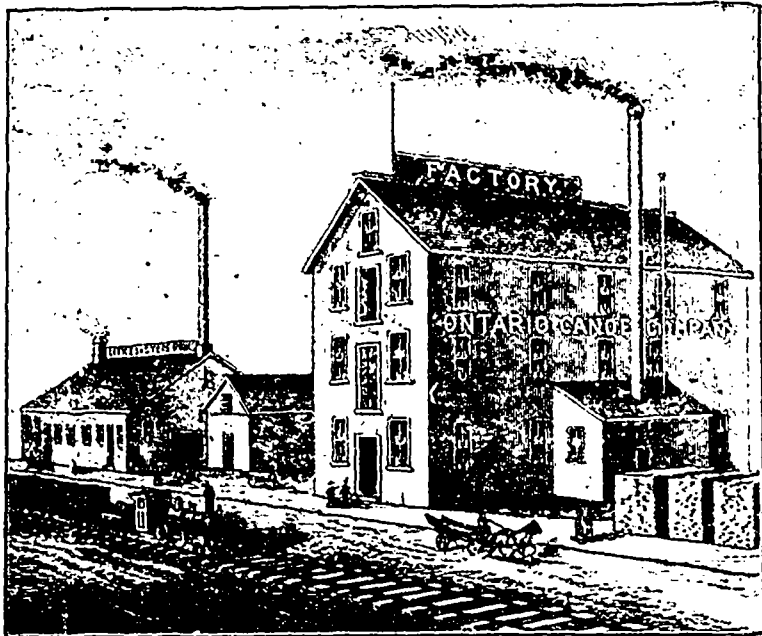
The Ontario Canoe Co., Limited

PETERBOROUGH, ONTARIO,

Manufacturers of all kinds of PLEASURE, FISHING and HUNTING

CANOEES

Patent Cedar Rib Canoes, Patent Longitudinal Rib Canoes, Basswood Canoes, Folding Canoes, Paddles, Oars, Tents, and all Canoe Fittings.



Gold Medal, London Fisheries Exhibition, 1883.

J. Z. ROGERS,

Send cent Stamp for Illustrated Catalogue. President and Managing Director Canoes for Lumbermen, designed to carry any amount of goods and chattels and strongly built, made to order on short notice.

A GOLD MEDAL awarded at the Ottawa Exhibition, 1884, for Fine Display

—OF—
LEATHER Belting.



SILVER MEDAL at Montreal, 1884

SILVER MEDAL at St. John, N.B., 1883.

Silver Medal, Montreal, 1882.

Factory and Warerooms:—2518, 2520 and 2522, Notre Dame Street.

MONTREAL, QUE.

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Tarred Felt, Roofing Pitch, Sheathing and Building Papers, Carpet and Rosined Waterproof Paper, Ready Roofing, &c. All orders promptly attended to at LOW PRICES.

H. WILLIAMS,
4 Adelaide Street East, Toronto

THE INTERNATIONAL TENT & AWNING CO.

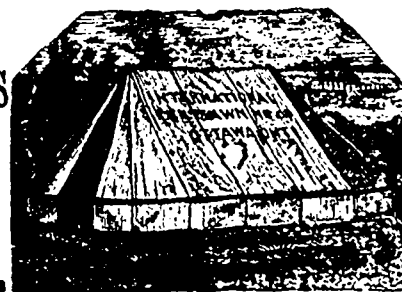
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MANUFACTURERS OF

LUMBERMEN'S TENTS

The Cheapest and Best in the Market!

32 First Prizes
AND
6 MEDALS.



AT HAL FAX AND TORONTO, 1883.

Tents, Flags, Tarpaulins, Waterproof Goods, Camp Furniture, etc., etc.

Estimates for Circus Tents, Range Marquees, Hand-made Sails, etc., furnished on application. Liberal Discount to Large Buyers.

PORTABLE CANVAS BOATS MADE TO ORDER

Send for CATALOGUE

AND PRICE LIST.



Camp Furniture!

SEE OUR NOVELTIES

At Toronto, Ont., and St. John, N.B., we made the best Display of Tents ever shown in Canada—and we never substitute an article inferior to sample in filling orders.

We control "THE LATOUR PAT." for Camp Furniture, the best on earth. The only Gold Medal ever given for this class of goods was awarded to the Latour Camp Furniture at Toronto in 1882.

SAIL-MAKING.

We have secured the services of the best practical sail-maker in Canada. Orders in this line will receive prompt and satisfactory attention, as is usual with all orders entrusted to us.

Agency for the WILDERMUTH BED SPRING, the best in the Market.

A. G. FORGIE, MANAGER,

International Tent & Awning Co.,

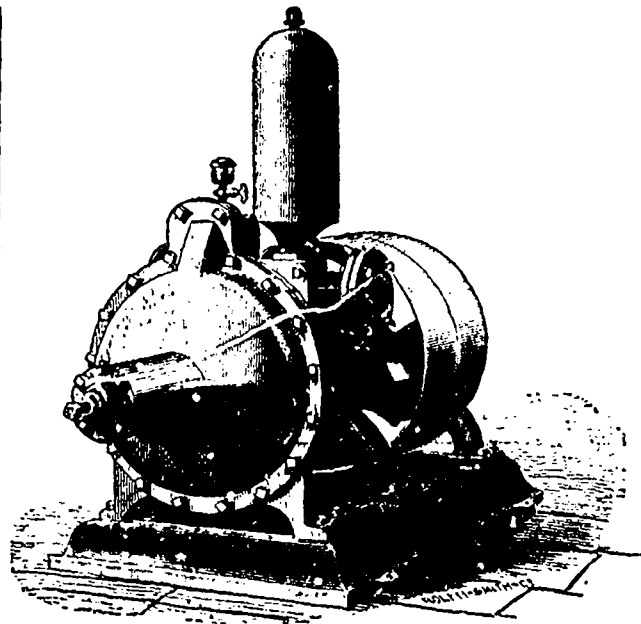
184 SPARKS STREET, OTTAWA.

Central Iron Works

SIMCOE STREET

PETERBOROUGH, Ontario.

WM. H. LAW, PROP'R.



PROTECTION FROM FIRE

An Improved Rotary Piston Force Pump.

No.	Diameter of Pipes.		No. of Revolutions.	Capacity per minute at table speed.	Price.
	Suction.	Discharge.			
2	2½ in.	2 inch.	250	125	\$100
3	4 "	3 "	250	250	150
4	5 "	4 "	250	400	225

SEND FOR CIRCULAR.

MANUFACTURER OF

Engines, Boilers, Pumps, Saw Mill Machinery

STEAMBOAT PROPELLERS AND ENGINES.

CASITINGS

For Architectural Works. &c.

IRON ROOFING AND BRIDGES,
AND ENGINEERING WORK IN GENERAL.

Why do You Suffer when you May be Cured by Electricity?

Without loss of time or great expense. Ten or Twenty Dollars spent in ELECTRIC BELTS will do you more good than a hundred expended any other way.

CRYING BABIES.—Babies cry because they suffer. Their little gums are inflamed, and their bodies are more or less feverish. If you will tie around their necks one of NORMAN'S ELECTRIC TEETHING NECKLACES you will see a wonderful change for the better, their sufferings cease, and their general health improves. Ask for Norman's, and take no other, and you will be pleased. Price 50c.

FEVER AND AGUE.—Do not throw away money on worthless remedies, when NORMAN'S ELECTRIC BELTS will cure you. Use one and you will find immediate benefit. Every one is guaranteed.

LUMBAGO.—Those who suffer from this disease will find a friend in NORMAN'S ELECTRIC BELTS when all other remedies fail. Ask your druggist for it, and take no other. Guaranteed.

CONSTIPATION AND BILIOUSNESS and all disorders of the Stomach and Liver are corrected by using NORMAN'S ELECTRIC BELTS. Try one and be convinced. Guaranteed.

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WEAKNESS and Lassitude yield to the influence of NORMAN'S ELECTRIC BELTS when all other remedies fail. Try one and you will suffer no longer. Every belt guaranteed.

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RHEUMATISM cannot remain long with any one who uses NORMAN'S ELECTRIC BELTS, and Neuralgia is driven away like smoke before the wind. Give one a trial. Every belt guaranteed.

NERVOUSNESS may be entirely cured in a short time by using one of NORMAN'S ELECTRIC BELTS, without any fear of injury. Try one and be convinced. Guaranteed.

TESTIMONIALS—A few Sample Testimonials that speak for Themselves.

MR. A. NORMAN,
DEAR SIR,—I am happy to inform you that the Appliances I got from your Chicago agent have had a most marvellous effect upon my patient who suffered from Sclatja. He could get very little relief from medicine. Shortly after he got your belts he was able to get out of bed, and is now on a visit to his Canadian friends. Send me some more circulars.
Yours truly,
DR. D. McLACHLAN.

WALLATA, D.T., December 17th, 1883.

A. NORMAN, Esq.,
DEAR SIR,—I have experienced considerable benefit from your Appliances. I feel stronger and better every way.
Yours truly,
R. E. HALLIBURTON.

OTTAWA, September 3rd, 1883.

MR. NORMAN,
DEAR SIR,—I have been wearing your Electric Insoles for about six months, and have been greatly benefited by them. I recommend them to all who suffer from Rheumatism.
Yours truly,
MRS. J. GUTHRIE.

PERTH, ONT., June, 1883.

A. NORMAN, Esq.,
DEAR SIR,—Soon after I commenced to use your Electric Appliances they opened my bowels, cured my cough and cold, relieved my head, and considerably relieved my catarrh in consequence. The discharges from my head and chest are now easy, and I feel altogether better. My digestion has improved, my stomach is less sour and windy, and I am less troubled with lascivious and vivid dreams. I had previously tried almost all the advertised patent medicines without deriving any good.
Yours truly,
J. GREEN.

PETERBOROUGH, October 15th, 1884.

CURATIVE BATHS: Electric, Vapor, Sulphur, and Hot and Cold Baths.

Baths have been admitted in all ages by every school of medicine, to be one of the best means of curing ailments, maladies and diseases. The Electric Bath is the latest and best discovery in this line. Come and try them. Consultation free. Circular on application.

A. NORMAN, Proprietor, 4 Queen Street East, Toronto.

NORTHEY & CO'S STEAM PUMPS, TORONTO, ONT.

Pumps for Fire Protection a Specialty.

SAVE INSURANCE.

Our Combined Boiler Feed and Fire Pumps are a NECESSITY IN EVERY WELL ORDERED STEAM MILL or FACTORY.

Cheap.

Cheaper than any Pump built.

Our Independent AIR PUMPS and Condensers will effect a saving of 30 to 50 per cent. when applied to high pressure Engines.

Simple.

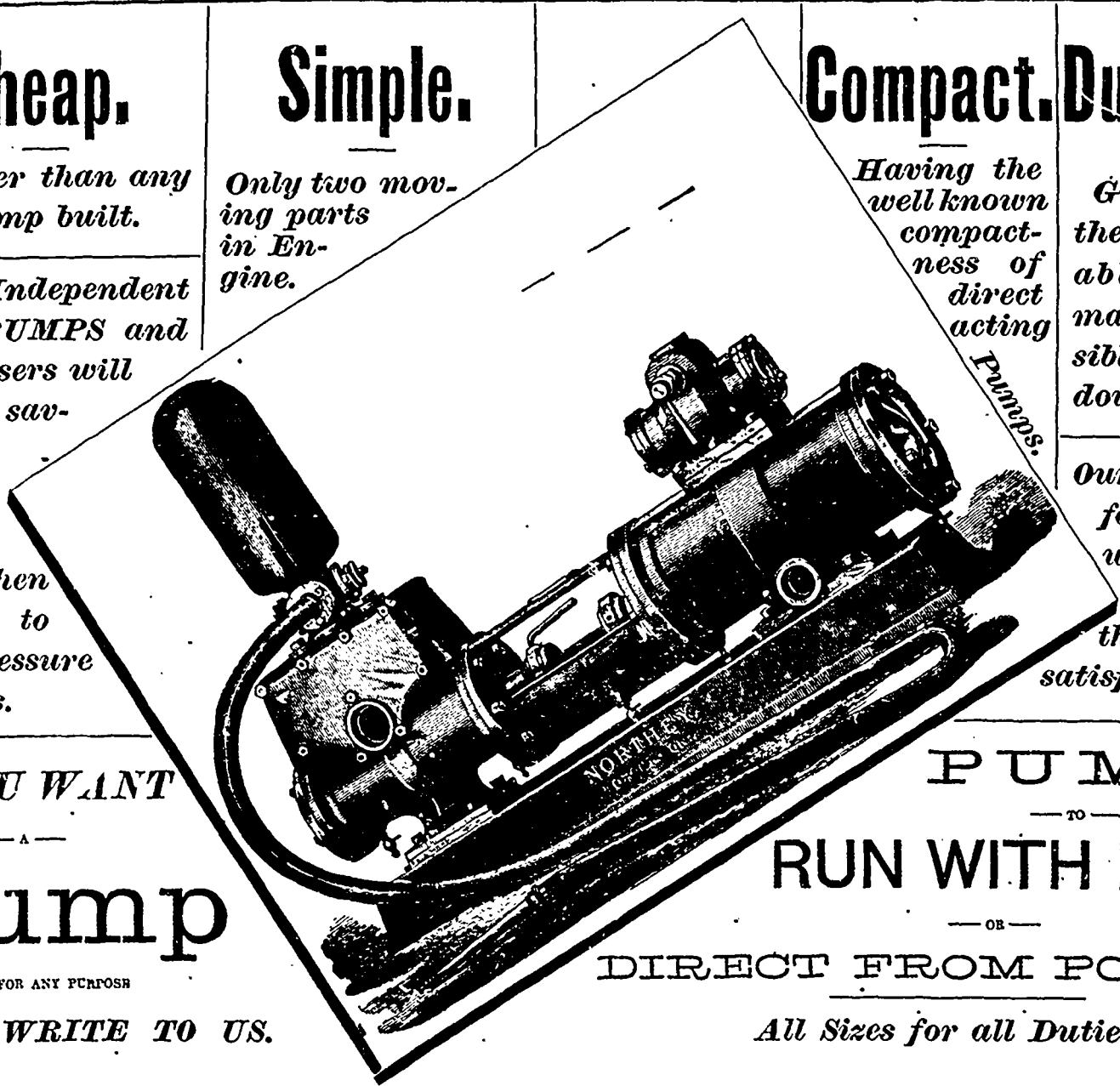
Only two moving parts in Engine.

Compact. Durable.

Having the well known compactness of direct acting Pumps.

Guaranteed the most durable Pump made; impossible to break down.

Our PUMPS for general water supply give the greatest satisfaction.



IF YOU WANT
—A—
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FOR ANY PURPOSE

WRITE TO US.

PUMPS
—TO—
RUN WITH BELT

—OR—
DIRECT FROM POWER

All Sizes for all Duties.

Our make of Pump is specially adapted to Mills in out of the way places, as they can be absolutely relied on, and occasion no vexatious stoppages for repairs.

WE INVITE CORRESPONDENCE ON ANY POINT CONNECTED WITH PUMPS.

SEND FOR CIRCULAR AND STATE YOUR REQUIREMENTS.

NORTHEY & COMPANY,

Corner FRONT & PARLIAMENT STS.,

TORONTO, ONT.



Something New in Leather Belting

To Mill Owners, Lumbermen, Manufacturers
USE ONLY



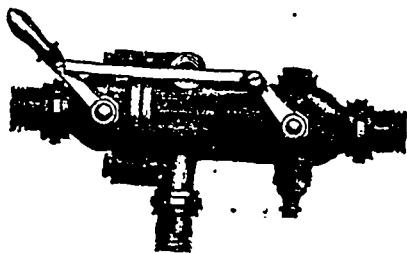
Dixon's Patent Lap Joint Star Rivet Leather Belting

To be had only from
F. E. DIXON & Co., 70 King Street East, Toronto
Send for Circulars and Price Lists.

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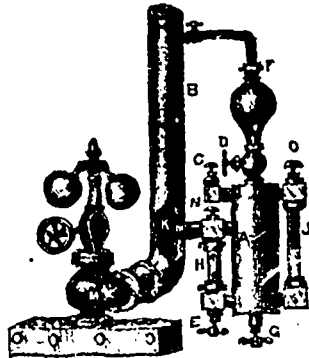
Montreal Brass Works,
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THE KORTING INJECTOR
Acknowledged to be the Best Boiler Feeder in the World.



Will lift 20 feet, and take water at 150 degrees. Only one handle to start and stop. No valve to regulate. CHEAPER than any other Injector in the market. Also, PATENT EJECTORS to conveyng Water or Liquids. CIRCULARS ON APPLICATION

The Continuous Feed Lubricator
Saves 50 per Cent in Oil.



The TRADE

Will always find a Large Stock of

All Canadian Woollen and Cotton Goods,

SHANTY BLANKETS

—AND—

HORSE BLANKETS

At LOWEST MILL PRICE, at

JNO. MACDONALD & CO'S

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Send Sample Order our **LINED SHAPED HORSE RUG**, a Specialty, highly recommended for wear and warmth.

National Manufacturing Co.

160 Sparks Street,
OTTAWA, ONT.

STILL RETAINS THE LEAD

Have been awarded every Medal ever offered at Exhibitions in Canada for our Lines of Goods, notwithstanding the misleading advertisements of unscrupulous firms claiming awards, medals, &c., which they have never received. See letter from H. J. HILL, Esq., Secretary Toronto Industrial Exhibition Association, below. This year at Toronto, Montreal and Ottawa Exhibitions, we have been awarded

10—MEDALS—10

—FOR—

TENTS, MARQUEES,

And CAMP FURNITURE.



Lumbermen, Contractors and Surveyors

And other large buyers, offered Special Inducements.

New Illustrated and Descriptive Catalogue mailed on application.



OUR LINES OF

Tents, Flags, Tarpaulins and
Camp Furniture, Shanty and
Horse Blankets

Are without Doubt the BEST and
CHEAPEST in the Market.

National Manufacturing Co. 160 Sparks St. Ottawa
P. O. BOX 345.

OFFICE OF THE INDUSTRIAL EXHIBITION ASSOCIATION,
TORONTO, MARCH 10, 1884.

The National Manufacturing Co'y, Ottawa:

GENTLEMEN,—In reply to your enquiry, I beg to say that the highest awards made at the Industrial Exhibition for the years 1881, 1882, and 1883, for Tents, Marquees and Flags, were to your Company, being a Silver Medal for each year. Last year, 1883, was the first in which a medal was specially offered for Camp Furniture and Equipages, and it was awarded to the National Manufacturing Co'y, of Ottawa.

I am, your respectfully,

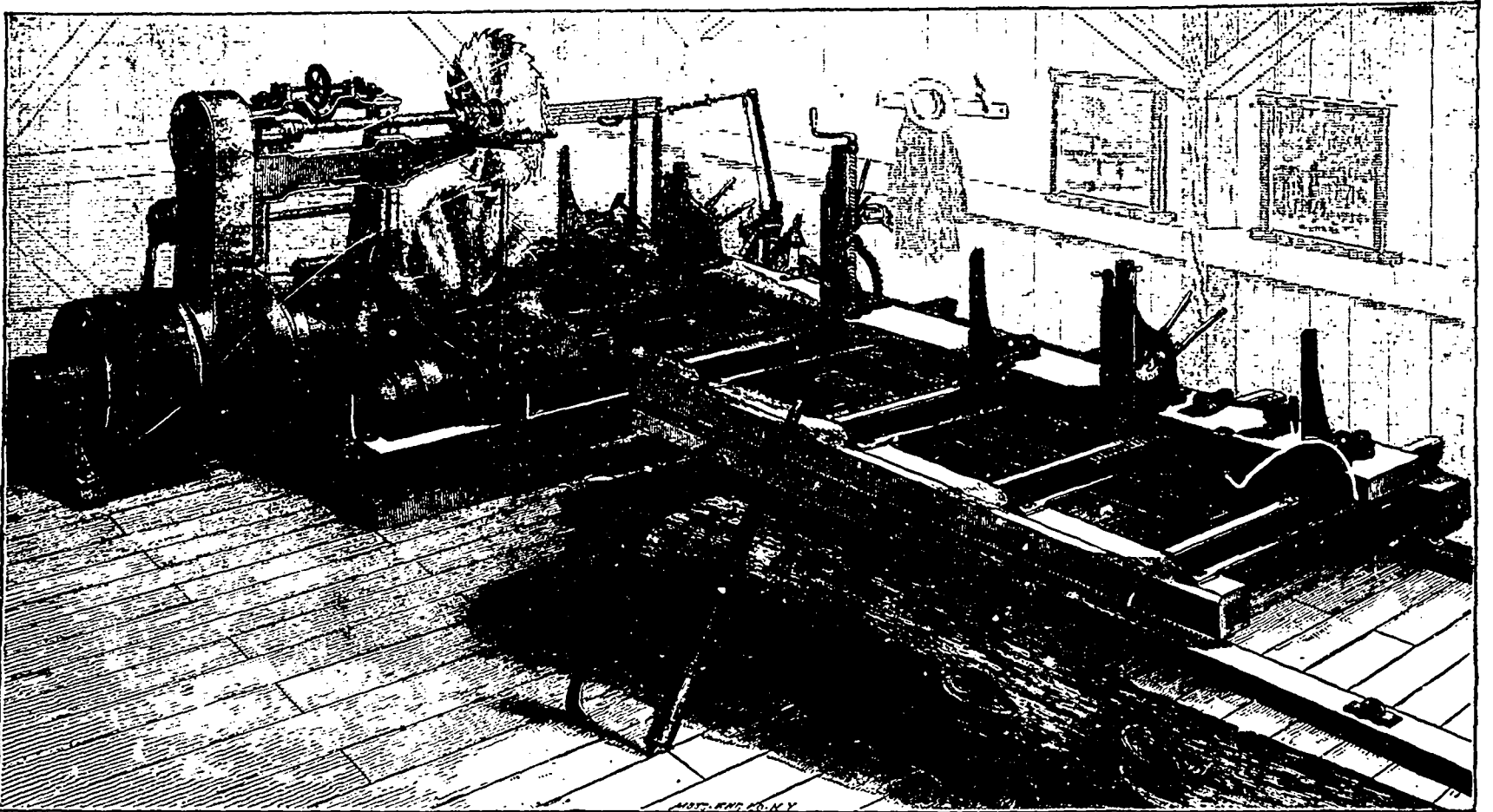
H. J. HILL, Manager and Secretary

THE LANE MANUFACTURING COMPANY!

MONTPELIER, VERMONT,

MANUFACTURERS OF LANE'S CELEBRATED

CIRCULAR - SAW - MILLS



Circular Saw Mills,
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Double and Single Traveling Bed
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Bed Timber Planers,

Clapboard Machines,
Clapboard Planers,
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Mill Supplies, Etc., Etc.

FOR DESCRIPTIVE CIRCULARS AND PRICE LISTS, ADDRESS:

LANE MANUFACTURING CO'Y, MONTPELIER, VT.

The William Hamilton Manufacturing Co'y

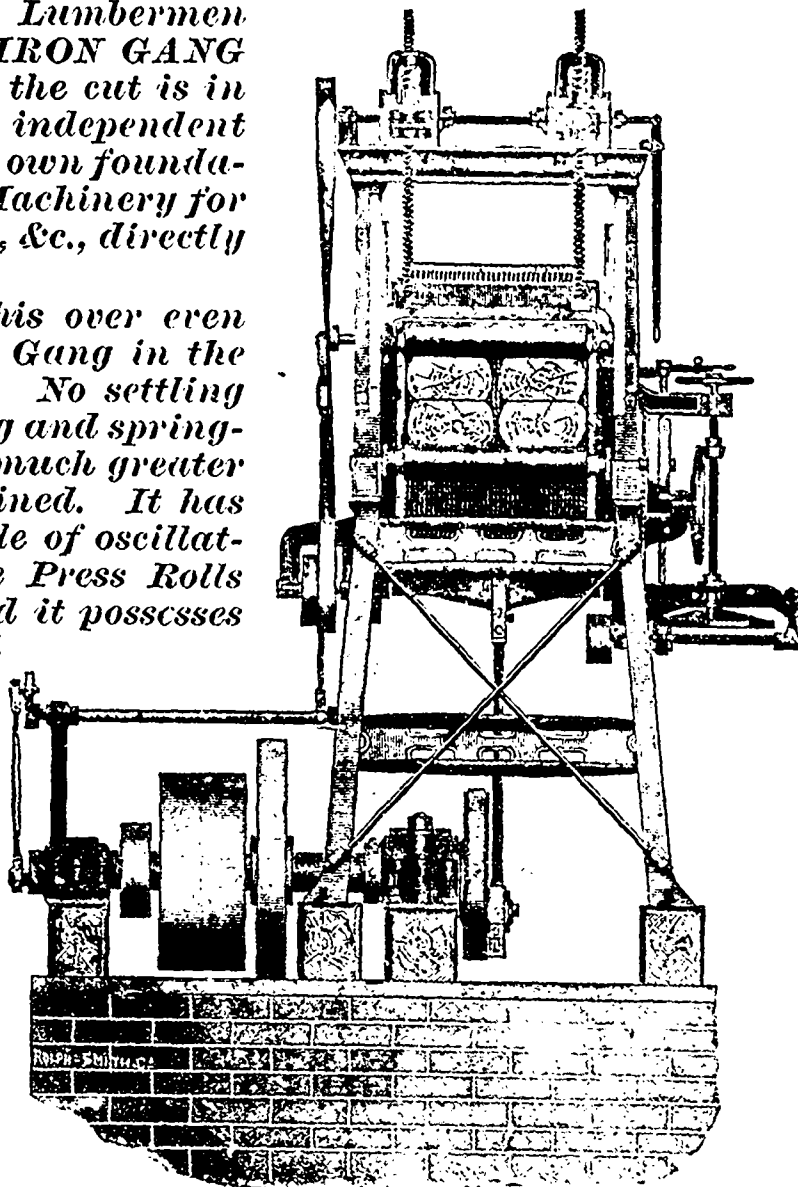
MANUFACTURERS OF (LIMITED,)

Saw Mills and General Machinery

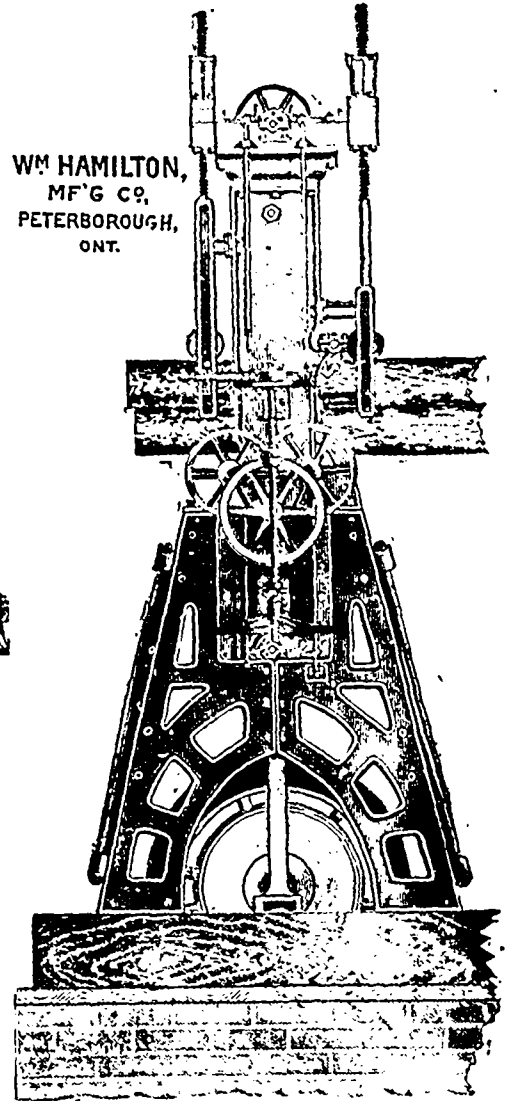
PETERBOROUGH, - ONTARIO.

We introduce to the Lumbermen of Canada, our New IRON GANG which will be seen by the cut is in itself a complete and independent Machine, resting on its own foundations, having all the Machinery for operating, feeding, &c., &c., directly attached.

The advantage of this over even a well built ordinary Gang in the mill frame is evident. No settling out of line, no yielding and springing of timber, while a much greater working speed is obtained. It has the most improved style of oscillating motion, it has the Press Rolls operated by power, and it possesses generally all the good features of best American Gangs, with heavier frame work, and heavier shafting, all with a view to rapid, steady & correct working. A good look at one of these massive machines satisfies the sawmill man that they are in every way capable of continuously performing heavy duty throughout the season.



WM HAMILTON,
MF'G CO,
PETERBOROUGH,
ONT.



We make these GANGS one of our Specialties, and manufacture different sizes.

The Wm. Hamilton Manufacturing Company, Limited, Peterborough,

GENTS.—We are doing big work with the Mill. We recently cut 122 thousand feet of inch Lumber in one day, with the Gang and Largo Circular, without any crowding whatever. We are making a steady average of from 90 to 100 thousand feet per day. I cannot say what amount the Gang is really capable of cutting, as we have not yet been able to stock it to run it at its full capacity. I can, conscientiously recommend the Gang as the best built in Canada.

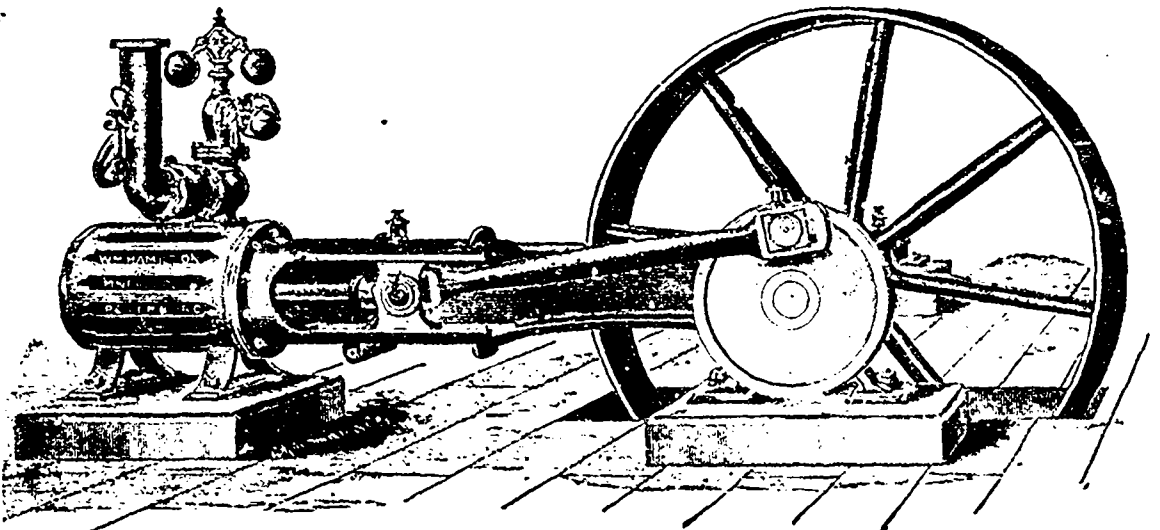
I remain, yours truly,

(Signed) WM. THOMPSON, Mill Manager for COOK BROS.

SERPENT RIVER, September 28, 1884.

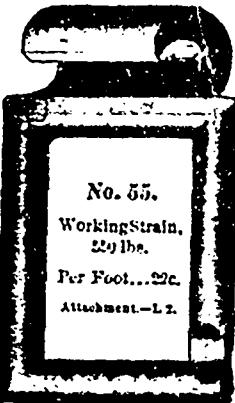
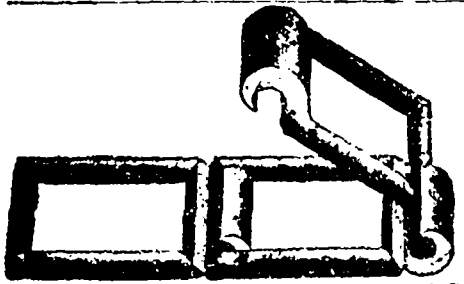
Also, ENGINES and BOILERS.

This cut represents our SAW MILL ENGINE, of which we make the following our Standard sizes, 12x16, 16x20, 18x24, 20x24, and 24x30, built Strong and Substantial for Heavy Work. The Piston Rod, Cross-head Pin, and Wrist Pin, are made heavy and of the best steel; the Connecting Rod has solid ends and is tightened up by screw and wedge, avoiding all danger of keys getting out; the Slide Valve has a simple balance valve, requiring no attention from the Engineer, as it is self-adjusting. The Engine Shaft and Fly Wheel made very heavy. Belt Pulleys put on when required in place of Fly Wheel, and all regulated by the Judson Governor.



EWART'S PATENT LINK BELTING

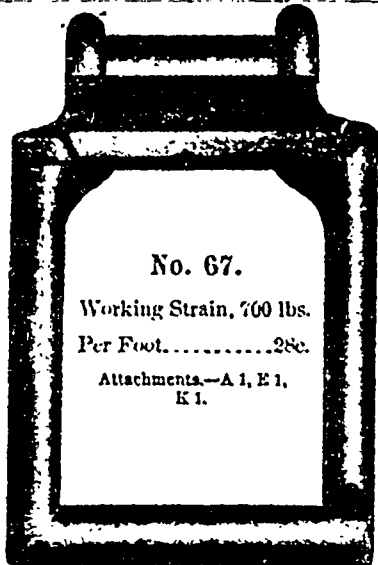
For CONVEYING, ELEVATING and TRANSFERRING every Product of a Saw Mill, into, through and out of the mill.



K² SLAT CONVEYOR ATTACHMENT.

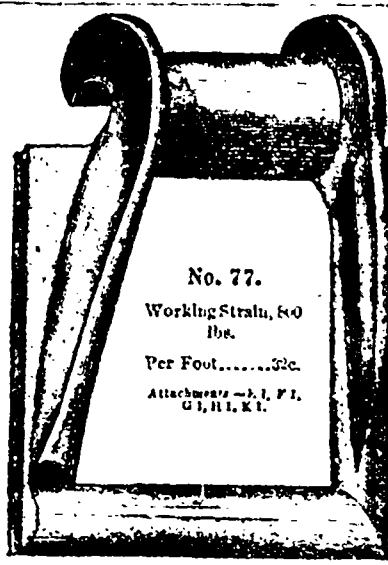
F² SLAT CONVEYOR ATTACHMENT.

No. 45-18 cents per foot and 55 used for light Sawdust Conveyors.



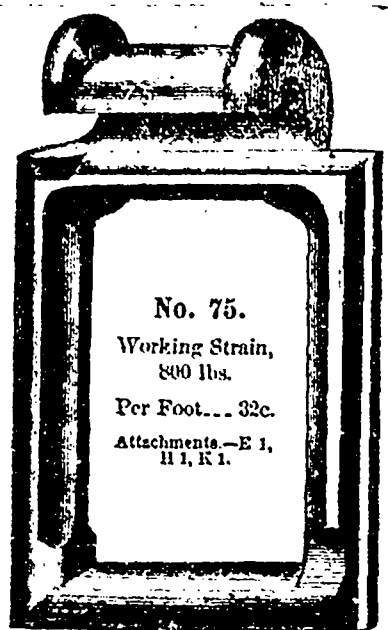
No. 67.
Working Strain, 700 lbs.
Per Foot.....28c.
Attachments.—A 1, E 1, K 1.

No. 67—MEDIUM SAWDUST CONVEYOR CHAIN.



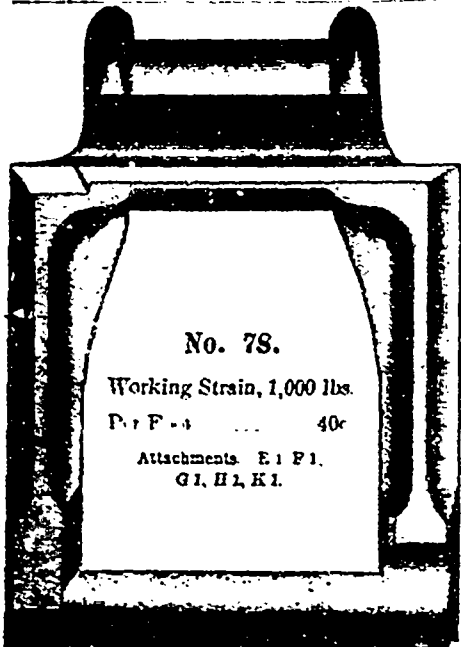
No. 77.
Working Strain, 600 lbs.
Per Foot.....32c.
Attachments.—E 1, F 1, G 1, H 1, K 1.

No. 77—CONVEYOR AND LIVE ROLL CHAIN.



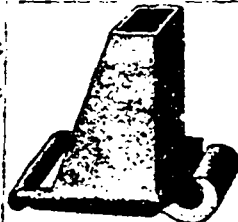
No. 75.
Working Strain, 800 lbs.
Per Foot... 32c.
Attachments.—E 1, H 1, K 1.

No. 75—LIVE ROLL AND DOUBLE STRAND, ELEVATORS.

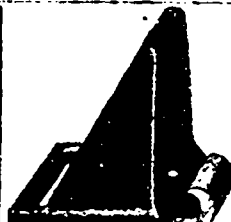


No. 78.
Working Strain, 1,000 lbs.
Per Foot... 40c.
Attachments E 1 F 1, G 1, H 1, K 1.

No. 78 & 88—HEAVY TRANSFER AND LIVE ROLL CHAIN.

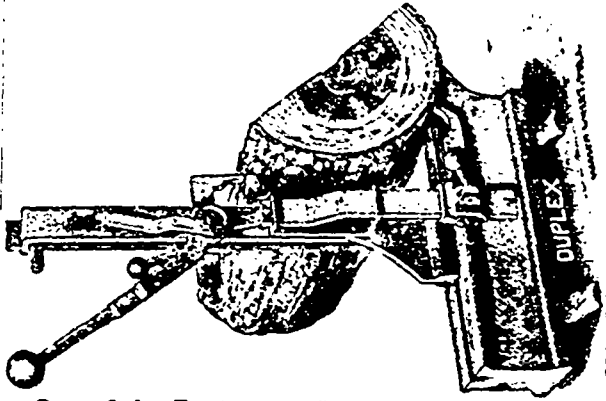


H¹ TRANSFER ATTACHMENT



H¹ TIE & POLE LOADING ATTACHMENT.

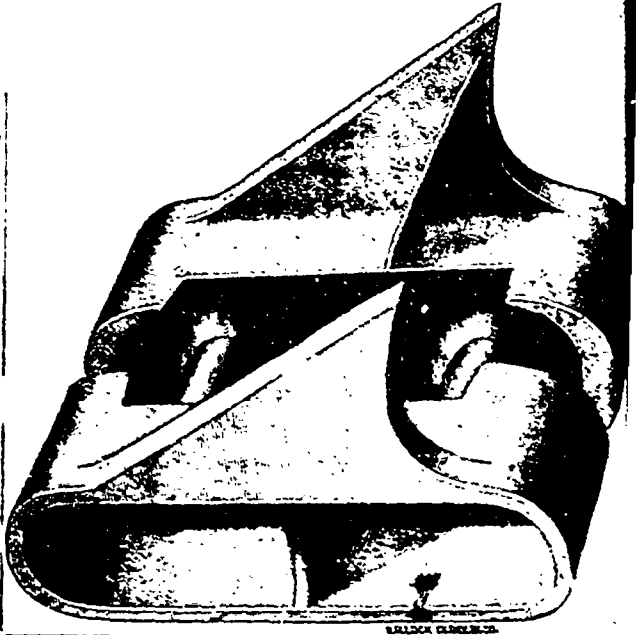
KNIGHT'S PATENT SAW MILL DOG.



One of the Best Log and Board Dogs made.

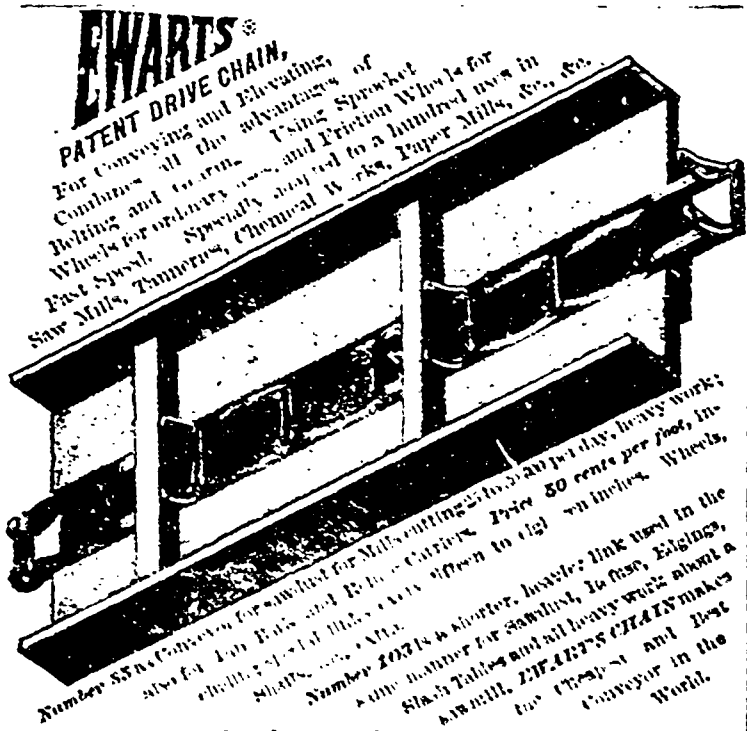
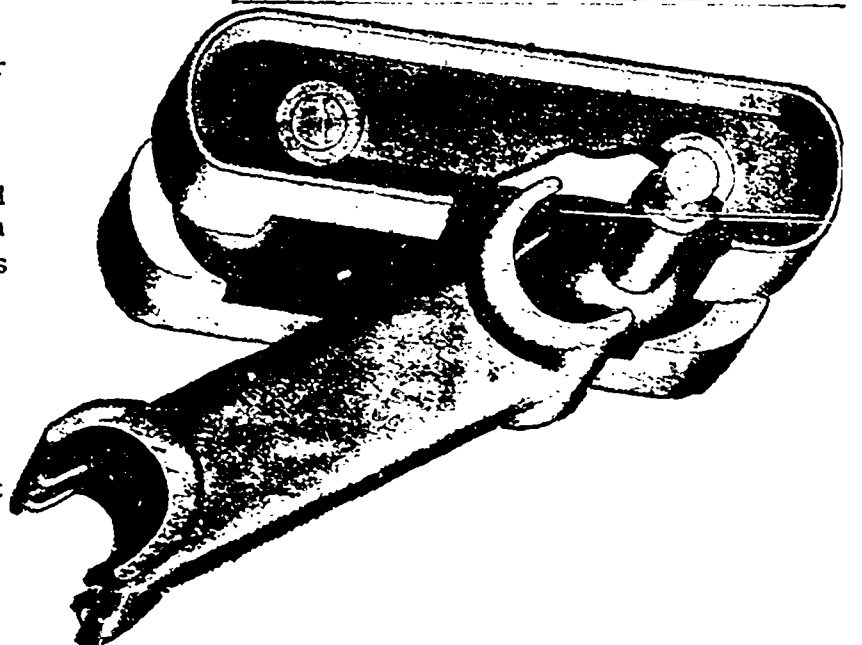
GIANT CHAIN for Log Haulups

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