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THE CANADIAN LUMBERMAN

AND MILLERS' MANUFACTURERS AND MINERS' GAZETTE

PUBLISHED SEMI-MONTHLY.

The only Newspaper devoted to the Lumber and Timber Industries published in Canada

SUBSCRIPTION \$2.00 PER ANNUM

VOL. 6.

PETERBOROUGH, ONT., FEBRUARY 1, 1886.

NO. 3.

NEW YORK CITY.

The *Record and Guide* in its annual review of the lumber trade for the year 1885 says:—

The general lumber trade of this city has been conducted in a quiet, undemonstrative manner during the past year, and at no time did business develop into quick, snappish form. To a portion of the operators this absence of flurry and excitement has been a source of annoyance and complaint, as their ideas of trading are confined in the main to large sweeping sales and constant fluctuations on value as influenced by a speculative sentiment rather than by natural factors. Happily, however, with no chance to work the market, that class of trader has gradually disappeared, and the remnants from the more conservative portion and majority of those engaged in handling the various kinds of lumber are by no means as uncheerful as might have been expected. Rates have certainly been low and margins narrow throughout, and that very feature was unquestionably a strong attraction and material aid in drawing out and preserving a good consumptive demand. So that by careful nursing all good intentions of buyers in listening to and accepting fair bids, and refusing to take advantage of evident and only momentary necessities of customers, dealers have made a great many sales of all sized invoices that will probably fully equal in the aggregate that of 1884, and it is a question if there is not really an excess. The only comparative record that can be reached, is that of the export trade; and here we find an increase over the preceding year, notwithstanding constant and positive assertions during the season that the foreign trade was running behind. These claims, however, were due in a measure to the "cutting up" of the export business among a larger number of dealers, and the additional opportunities afforded shippers by offerings direct from interior points; and those who were most hurt by the change seemed to think that business was losing ground. A change in method should also be allowed for in calculating upon the volume of local consumption, as a great many small dealers as well as manufacturers and contractors have been added to those who purchase direct from the producers or pretty closely thereto, and this supply is rarely taken into consideration when the exhaustive capacity of our market is in question. No means are available permitting even a fair guess as to the proportions of leading grades of lumber used in comparison with former years; but as a simple matter of surmise, hardwoods have probably made a gain. Values have touched no lower points than in the preceding year, except in two or three instances; but were also without recovery on losses of 1884, and this has made a modification in the average of cost on first hand parcels of which consumers have reaped a fair share. For yard rates, however it has been a difficult matter to give

other than a nominal line of quotations, and make the range pretty wide at that; as the "go as you please" manner in which dealers conduct the business gives nearly every concern, great or small, some different notion of valuation, based on inspection, delivery, quantity, terms of credit and other minor influences on which there is an entire absence of uniform action. Failures have come to disturb a portion of the trade, but disasters have not been heavy or widespread, and the collections and settlements naturally due at about this period are progressing very well. The amount of stock on hand at the turn of the year is doubtful, owing to the uneven character of the accumulation. Some of the principal and generally far-sighted dealers seem to have simply taken about all the stock they could by any possible means find room for, partly on account of its comparative cheapness and partly in expectation of a coming good demand; while others fully with as much ability to purchase, and standing high in the matter of clear judgment, are carrying a smaller supply than usual—not because they consider the cost, but rather that they are uncertain and far from sanguine regarding the future. Taking fine and coarse together, however, we think there is a little more stuff in yard than a year ago, but less to fall back upon at near prime prices, such as Albany, etc.; and since the winter tariffs went into effect few, if any, rail offerings except at advanced figures. Without the development of any unexpected disturbing element the chances for spring trade are good in this city, and excellent in Brooklyn, and upon its own natural merits the market, as a whole, is no doubt in better form than one year ago.

WHITE PINES FOR LUMBER.

We have frequently referred to the desirability of appropriating many of the waste spots in the farming districts of New England and New York to the growth of white pine for lumber. No better disposition could be made of such spots. A correspondent of the *Western Patriot*, taking a similar view of this subject, proposes in a practical way that we take a good standard growth of pines, say 150 trees to an acre, averaging at the end of forty years 250 feet each, board measure, making in round numbers about 10,000 feet, thus averaging 1,000 feet of lumber for each acre each year and on the poorest land of the farm. The poorest land, he says, can be bought for \$6 an acre, which is, perhaps, a high price in some sections, but taken as a basis the interest and taxes for each acre would be about 32 cents per year; cost of ploughing, harrowing and sowing the seed about \$5 per acre; cost of three quarts of pine seed about; interest on this investment 28 cents per year for each acre, making 60 cents per year above first cost for each acre, with the exception of the rise of the taxes as the value

of the land increased, and if this be sent at an average of 15 cents more for each acre, we shall then have the extra cost for each year of each acre at 75 cents. So the thousand feet of lumber cost 75 cents on the stump, or, putting in the risk of fire at 10 cents and all other losses and liabilities at 15 cents, the total cost will then be \$1 per acre of 1,000 feet of pine lumber on the stump. But such price lumber in this section is worth \$4.50 per 1,000 feet on the stump, so that the grower may estimate a profit of \$3.50 for each acre each year above the income of four per cent on his investment. The acre on this basis gives an income each year of 20 per cent on the first investment. Even if the croaker is allowed to call this a trick of figures, it certainly contains sufficient suggestion to stimulate much thought upon the subject of growing pines on waste lands.

Ordinary human nature does not like to look ahead forty years, but in the nature of things those kinds of business which are new and peculiar, and in which the low venture, are generally apt to yield larger income.

About the seed. The cones of pine are not produced every year, and the grower must watch his chance and may have to climb the trees after the cones, for they must be gathered just before they open. Then spread them on a tight floor or old sail cloth until fairly dry, when they will open and a sharp rap will jar out the seed. If the trees come up too thick it would be well to thin them out, and, perhaps, to transplant a few on the vacant places or even on a new piece of land, though transplanting is a delicate piece of business. In eastern Massachusetts and Rhode Island most of the pine lumber is used for boxes and is usually sawed thin, from five-eighths of an inch to seven-eighths of an inch thick, rough-edged, and is bringing now at the box mill from \$9 to \$11 per 1,000 feet, costing from \$2 to \$2.50 per 1,000 feet for the saw bill. Many are the acres of wretched bush pasture and stretches of sand flats, and even scrub oak lands, where a growth of pine might be started up, using a little labor and common sense. — *Manufacturer's Gazette*.

AVERAGE ADJUSTMENT ON RAFTED TIMBER

The subjoined letter recently appeared in *Lloyd's Shipping Gazette*—

"Sir, — We beg to call the attention of your readers to the following facts. While a vessel was loading a cargo of pitch pine timber from rafts on a part of the Southern States of America, bad weather came on, and a quantity of the timber which had been secured along side, broke adrift. Part of this was subsequently recovered by the captain: at a cost to him of about £10, and the remainder was lost. More timber was sent alongside the vessel, and she was filled up and came on to her destination with a full cargo. It is the universal custom

at all North American timber ports, when vessels lose timber from alongside while loading, and it cannot be recovered, to supply them with more timber to fill up with, so that whether the timber lost from alongside be recovered or not the vessel has always a sufficient supply of cargo to complete loading, and thus a full freight is earned. The shipowner, as far as his freight is concerned, has, therefore, no interest whatever in recovering the lost timber, and under these circumstances the timber is recovered for, and only for, the benefit of owners of cargo or underwriters thereon. Hitherto both merchants and underwriters on cargo have accepted this mode of adjustment, but we have now before us the following opinion of a leading firm of London average adjusters: 'We are of opinion that the freight on the cargo so saved, after having broken adrift from the ship, should contribute to the said expenses of salvage.' We cannot but think that the view taken by those gentlemen is wrong, and wish to point out that the effect of that opinion, if brought into practice, would be to make owners of ships, or underwriters on freight, liable for a proportion of expenses incurred solely for the benefit of the cargo, and it would, on becoming better known, further have the effect of discouraging the recovery of timber lost from alongside; for, as we have clearly shown, though timber is lost, the vessel still gets a full cargo, and, consequently, loses no freight; but if the captain incurs expense in recovering timber, then according to the average adjuster's opinion just quoted, he or his owners must claim on the underwriters on freight for a portion of same; or, if the freight is not insured, then bear the loss themselves. The captain will not, under these circumstances, take any further trouble with timber that has gone adrift. In that case the underwriters on cargo would become the sufferers.

Yours, &c.,
ALFRED DONELL & Co.

Whitewood.

So far as Great Britain is concerned the demand for whitewood is principally, if not entirely, from Scotland, as buyers at the north-east ports profess themselves unable to pay the figures which can be obtained without difficulty from Scotch importers. The English firms, however, are quite willing to contract at a moderate advance on last year's rates, and they will doubtless augment their offers still further as soon as they become convinced that the reports received from the Scotch and German markets are reliable. We have already prepared our readers for an improvement in the prices of whitewood battens, and, so far, our prognostications have been realized, as an advance of fully 5s. per standard has been established without difficulty. We expect to find whitewood retain its firm tone throughout the season. — *Trades Journal*.

MONTREAL LUMBER TRADE.

Messrs. Henderson, McKenzie & Co., ship brokers, of Montreal, have favored the CANADA LUMBERMAN with an interesting statement showing the shipments of lumber made from Montreal during the past season. The details are minute, but the statement is so interesting to the trade that we give it in full.

TO THE UNITED KINGDOM.

The following is a statement of the deal and lumber shipments from the port of Montreal during the season of 1885:

Table with columns: Date, Vessel, Quo. Stds. Lists various ship arrivals from May to November, including vessels like Sarmatian, Polynesian, Carthagenian, etc.

Table with columns: Date, Vessel, Quo. Stds. Lists various ship arrivals from May to November, including vessels like BK Avlona, BK Scotia, SS Lake Huron, etc.

Table with columns: Date, Vessel, Quo. Stds. Lists various ship arrivals from May to November, including vessels like Lake Superior, Ashdene, Toronto, etc.

Quebec Standards..... 3,260,633.15

The monthly shipments were as follows:—

Table with columns: Month, Quo. Stds. Lists monthly shipment totals for May through November.

A total of 3,260,633 15 Quebec standards, or 89,067,407 feet. The total forwarded by steam was 3,064,809.27 stds. and by sail 195,823.43 stds.

The deal shipments to the United Kingdom were made by the following firms:—

Table with columns: Firm, Quo. Stds., Feet. Lists firms like R. R. Dobell & Co., John Burstall & Co., etc.

Total..... 3,404,453. 6

The following is a statement of the shipments from Montreal to the United Kingdom during the years mentioned:—

Table with columns: Year, Quo. Stds., Feet. Lists shipment totals for years 1880 through 1885.

FROM PIERREVILLE.

The following were the shipments during the season from Pierreville:—

Table with columns: Date, Vessel, Standards, Feet. Lists shipments from Pierreville for July, Sept, and Oct.

A total of 143,820,155 standards, or 3,955,050 feet board measure.

The following were the shipments from Pierreville to the United Kingdom for the years mentioned:—

Table with columns: Year, Quo. Stds., Feet. Lists shipment totals for years 1882 through 1885.

FROM THE ST. LAWRENCE TO THE PLATTE.

The following is a statement of the lumber shipments from Montreal to the River Platte during the season of 1885:—

Table with columns: Date, Vessel, Feet. Lists shipments to the River Platte for June, July, and Aug.

PHOSPHATES.

The total shipments of phosphates from Montreal have been as follows:—

Table with columns: Year, Tons. Lists shipment totals for years 1880 through 1885.

In this climate it is of the greatest importance that a Cough should be cured immediately, as delay is liable to bring on Pulmonic Complaints that will take considerable time and money to cure.

J. D. Tully, druggist, will gladly inform any one inquiring of him of the wonderful results of West's Cough Syrup. It is an unfailing cure for all throat and lung diseases, coughs, colds, hoarseness, influenza, consumption in its early stages, and whooping cough. Price 25c. per bottle.

Table with columns: Date, Vessel, Feet. Lists various ship arrivals from Oct. 6 to Nov. 3, including vessels like Minnie Carmichael, Mary I. Baker, etc.

Total..... 29,465,543

Equal to 982,383.21-65 Quebec standards.

From the lower St. Lawrence ports to the River Platte:—

Table with columns: Date, Vessel, Feet. Lists shipments to the River Platte for June, July, Sept, and Oct.

Total..... 4,916,000

Equal to 179,854.30-55 Quebec standards.

The quantity of pine shipped was 26,519,543 feet; spruce, 4,825,000 feet; total, 31,344,543.

Spars, 688, small towage, 526,828 pieces.

A shipment of 402,599 feet was made on the Aspogogan for the west coast of South America.

The following is a recapitulation:—

Table with columns: From, Feet. Lists recapitulation of shipments from Montreal and Lower St. Lawrence.

Total..... 31,747,142

For the years mentioned the shipments were:—

Table with columns: Year, Feet. Lists shipment totals for years 1880 through 1885.

RECAPITULATION.

The total shipments from Montreal Harbor and Pierreville to the United Kingdom, and from Montreal and lower St. Lawrence ports to the River Platte, west coast and Australia were:—

Table with columns: By, Quo. Stds., Feet. Lists recapitulation of shipments by steam, sail, and to the River Platte.

Total..... 4,558,894.43

or 125,269,613 feet board measure.

PHOSPHATES.

The total shipments of phosphates from Montreal have been as follows:—

Table with columns: Year, Tons. Lists shipment totals for years 1880 through 1885.

In this climate it is of the greatest importance that a Cough should be cured immediately, as delay is liable to bring on Pulmonic Complaints that will take considerable time and money to cure.

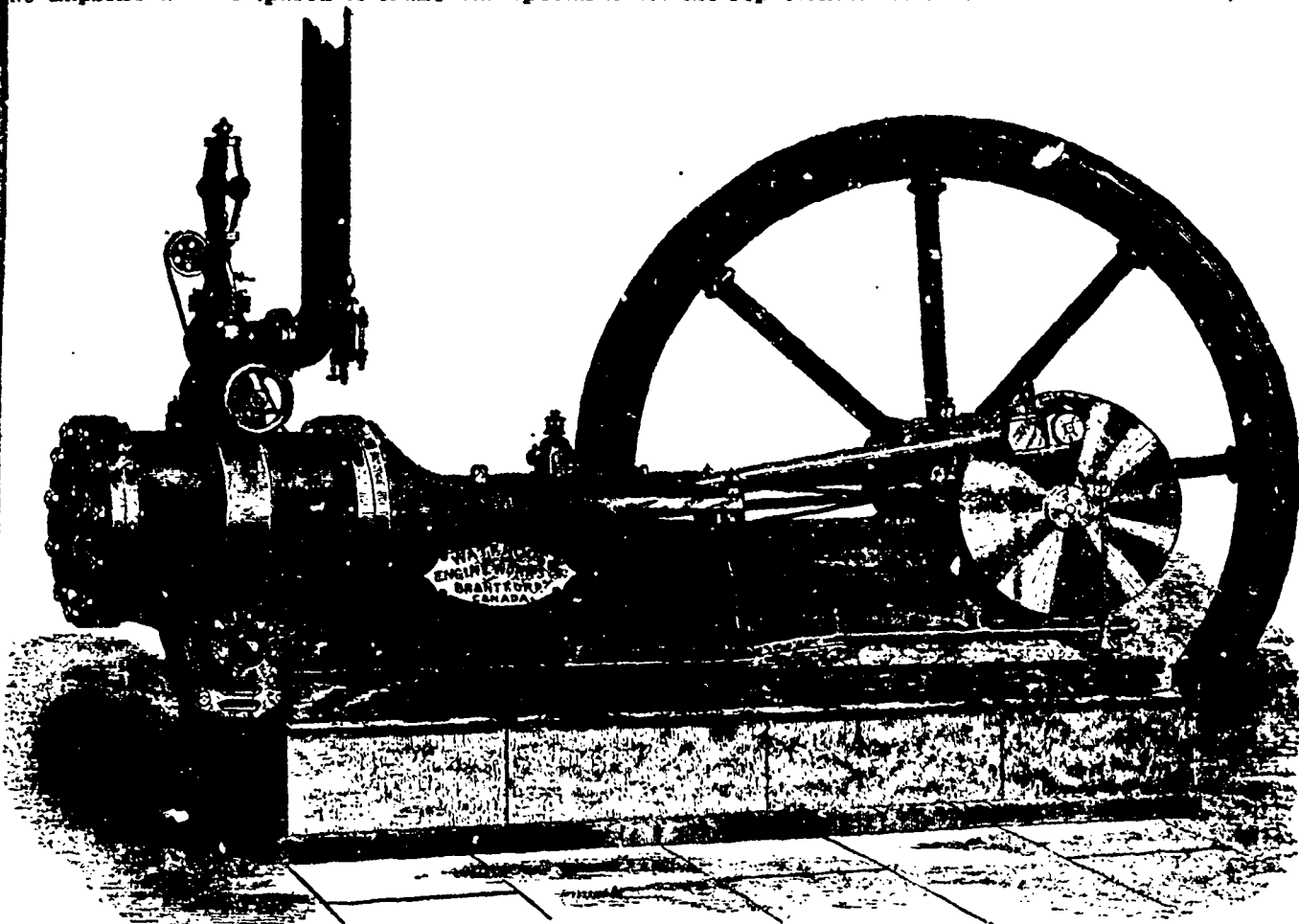
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LIVERPOOL STOCK

We take from the *Timber Trades Journal* the following comparative Table showing Stock of Timber and Deals in Liverpool on Dec. 31st 1884 and 1885, and also the Consumption for the month of Dec. 1884 and 1885:—

	Stock, Dec. 31st. 1884.	Stock, Dec. 31st. 1885.	Consumption for the month of Dec. 1884.	Consumption for the month of Dec. 1885.
Quebec Square Pine	300,000 ft.	228,000 ft.	60,000 ft.	70,000 ft.
Waney Board	378,000 "	580,000 "	4,000 "	8,000 "
St. John Pine	21,000 "	20,000 "	10,000 "	22,500 "
Other Ports Pine	60,000 "	62,000 "	3,000 "	10,000 "
Red Pine	61,000 "	20,000 "	41,500 "	89,000 "
Pitch Pine, hewn	521,000 "	290,000 "	21,000 "	81,000 "
Sawn	297,000 "	600,000 "	15,000 "	23,000 "
Planks	44,000 "	78,000 "	8,000 "	21,000 "
Dantzig, &c. Fir	51,000 "	64,000 "	3,000 "	10,000 "
Sweden and Norway Fir	69,000 "	55,000 "	3,000 "	10,000 "
Oak, Canadian and American	239,000 "	248,000 "	24,000 "	45,000 "
Planks	170,000 "	100,000 "	35,000 "	75,000 "
Baltic	9,000 "	6,000 "	0,000 "	0,000 "
Elm	5,000 "	35,000 "	7,000 "	10,000 "
Ash	40,000 "	22,000 "	1,000 "	4,000 "
Birch	70,000 "	144,000 "	58,000 "	20,000 "
East India Teak	13,000 "	171,000 "	22,000 "	1,000 "
Greenheart	60,000 "	129,000 "	11,000 "	0,000 "
N. B. N. S. Spruce Deals	25,207 stds	29,500 stds.	0,000 stds.	0,000 stds.
Pine	1,083 "	741 "	4,139 "	3,151 "
Quebec Pine & boards	5,281 "	6,038 "	1,030 "	1,570 "
Do. Spruce	570 "			
Baltic Red Deals, &c.	3,569 "	4,105 "	401 "	418 "
Baltic Boards	31 "	260 "	00 "	75 "
Prepared Flooring	2,087 "	1,357 "	682 "	495 "

AUGERS.

"Like many of our most useful inventions," said a prominent auger maker recently, "the principle of the auger now in use all over the world was discovered by accident. In 1680 Benjamin Paugh, an Englishman, while watching some school boys endeavoring to bore a hole in the ground with a piece of iron barrel hoop, noticed that after the hole had been sunk some distance into the earth and the flexible metal of their improvised boring tool had become heated, it twisted and carried the dirt up to the surface nicely, and he could not see why the same principle should not apply to wood. The invention of the auger was the result. The screw auger," he continued, "is an American invention, and was invented about 100 years ago by Thomas Garret, who lived in the vicinity of Oxford, in Chester County, this State, whose most of the black augers are still made."

"Most of the bright tools are made down east, but one of the principal manufactories is in this city. The old-fashioned pod auger is still used in Germany and England."

"The single screw auger is also an American invention, and was first discovered by accident by a Philadelphian. It is the only auger that can be used to any satisfaction in very hard woods, where the double-screw augers become clogged."

Although every one is perfectly familiar with this common-place tool, but comparatively few know the process of its manufacture. In making augers the iron which form the main or spiral part is welded into the steel of which the tip is made before forging. The bar is then put under hammers and forged into shape. It is then put into what is called a wringing machine and twisted up in a rough state into the spiral form, after which it is passed through crimpers, giving a uniformity of twist. The augers are next put through straighteners and revolved, making them perfectly straight, when they are ready for putting on the head, which is the most delicate operation in their manufacture and requires the work of a skilled artisan. They are then subjected to a grinding out process, which consists of putting them through two rubber wheels to rough polish the twist.

The setter-up then takes hold of them and lightens or fits the head; then the files file down and sharpen the heads, after which they pass through the hands of the polishers, where they are polished and hardened ready for market.—*Ex.*

THE NEW YEAR AND THE OLD.

From a business standpoint the year which has just ended was notable principally as a period of recovery. Since January, 1885, values have been slowly rising. In many instances the progress made appears but slight, and still nearly everywhere along the line the advance is sufficiently marked to be obvious to the most superficial observer, and in some industries the improvement is very noticeable. At the present moment it is safe to say that the outlook is decidedly encouraging. All the conditions essential for a prosperous year are now at hand. It is true that the silver coinage question is still

unsettled, but with this single exception the commercial and financial conditions now ruling are thoroughly satisfactory.

The improvement in the iron trade, regarded in business circles as an especially encouraging sign, has been followed by equally favorable changes in most of the other leading industries. The stock market is particularly active, and as regards the lumber trade the reports from every important centre of this industry are very satisfactory. In Maine the season closes with stocks well sold out at the mills, and every indication of a greatly increased demand with the opening of spring. In the Middle States the situation is on the whole quite as encouraging. In the South we find the mill-men, as a rule, fairly satisfied with the business of 1885, and confident of still better fortune in the present year. To those who are acquainted with the resources of the Southern States this confidence seems perfectly justifiable. From the great lumber regions of the Northwest, where the trade has been most depressed, the advices are all highly encouraging. A year ago the manufacturers were complaining that the increased production had not been followed by a demand to correspond, and that stocks of lumber were accumulating to an alarming extent. But during 1885 the production of lumber was greatly curtailed, while the demand through the year was much larger than was anticipated. The result has been a large reduction in the stock now at hand as compared with that available a year ago. This combined with the certainty of a heavy demand in the spring and the favorable business conditions generally prevailing, has infused a hopeful feeling through all branches of the lumber industry of the Northwest.

There is in these circumstances nothing to warrant any extravagant anticipations as regards the business of 1886, but judging from present appearances, noting the abundance of money, the firmness in the stock market, the rising tendency in the prices of raw materials and manufactured goods and the increasing demand for labor, it seems certain that 1886 will be, as regards the volume of business transacted and prices obtained, a great improvement on the year which has just expired.—*Saw Mill Gazette.*

FORCE, POWER, AND WORK.

There exists in the minds of very many engineers with whom we come in contact but a very vague conception of the meaning attached to these three little words. Not so much does the difficulty appear to be in getting at a general sense of meaning for the words, as to separate the general idea conveyed into its factors, and to discern clearly just what portion of this whole is meant by force, by power, and by work. Let us therefore consider each in their order, and study their composition and relation.

We all have a pretty good idea of what force is, but the difficulty appears to be to disconnect the idea of force with that of motion. We can easily appreciate the force of gravity when we see a weight falling to the earth, but it is more difficult to comprehend the force as still

existing, after the body has reached the ground, tending over to draw it nearer the earth's centre whenever its support shall be taken from under it. Force is exerted by the magnet as much in holding a nail against its pole as in moving it up there. When the nail was in motion, or the body was falling to the earth, there was power developed. Power is the product of force and space. If a magnet could lift a weight of one pound against the force of gravity through one foot, it would develop one foot pound of power. If the force of a cylinder full of steam can push a piston against 110 pounds through three feet, it will develop 330 foot pounds of power.

Now, what is the difference between power and work. Work takes account of the time in which power is exerted. If the engine mentioned was 48 inches in stroke it would have to make one revolution to move the load through three feet as above. Now suppose the engine to run 100 revolutions per minute we should have 110 pounds move through 300 feet in a minute, which would equal one horse power of work. If the engine runs at 50 revolutions per minute we should have only 150 feet per minute = 16,500 foot pounds per minute = one-half a horse power, and if it runs 200 revolutions per minute it would develop 66,000 foot pounds per minute = two horse power of work. Work is the consumption of power and the horse power, the measure of work is the measure of the rate of its consumption of power. It is evident, therefore, that a machine, the resistance which it requires a certain force to overcome, its resistance twice the number of times in a given time, and that it is not the pounds of force which a machine is capable of exerting which qualify its consumption of power unless we take into account the distance through which this force is exerted. For instance, a test of the power required by a certain shop was unsatisfactory to the man who owned the engine. He maintained that certain embossing presses consumed almost as much power in themselves as our instruments showed for the whole shop, and called our attention to the irresistible force with which the dies were pressed into their work. The press was a heavy one with a large fly wheel and a toggle joint with an enormous leverage. It was run at a moderate rate of speed and a man with a crank upon the fly wheel could easily have run the press at its usual rate and have exerted that enormous pressure upon the dies as many times a minute as when it was run by power. The force exerted was truly great, and would have measured a good many pounds, but the distance through which it was exerted, the depth of the impressions was a very small fraction of an inch smaller still of a foot, and when reduced to foot pounds of power amounted to but little, and this number of foot pounds was not repeated a sufficient number of times per minute to amount to much when reduced to horse power of work. It is surprising to see how much power is required by a small engine running at a high rate of speed. We have seen an emery wheel without work being ground upon it absorb a full one-third of the power required by a good-sized machine shop, while the variation in the load afforded by stopping and starting a large planer was comparatively slight.—*Boston Journal of Commerce.*

RAISING OAK TREES.

During the last few years large quantities of acorns have been taken from this country for the purpose of planting. White oak acorns are preferred, and they have been chiefly obtained in the State of Missouri. They are generally planted on sandy or broken land that is intended for pasturing sheep. In Great Britain sheep are accustomed to eat acorns, and it is considered profitable to raise them for sheep food. No variety of oak has received much attention at the hands of the planters of fruit trees. They state that that the trees make a very slow growth and for this reason they prefer to plant trees that grow rapidly and furnish fuel and timber in a shorter time. A foreign writer suggests that oak may be raised to excellent advantage in connection with other varieties of trees that grow rapidly. He admits that oaks grow slowly while they are young, but states that they increase in size rapidly when they are

fifteen or twenty years old. If care is exercised they may be cut down so as not to injure the young oaks. These trees being removed the young oaks will grow rapidly and completely occupy the ground. Oaks are easy to propagate, as the acorns can be obtained at small cost and are almost certain to germinate. Acorns are much easier to manage than large nuts like those produced on the hickory or pecan tree. They can be planted where it is desired to have them grow, or in nursery rows, from which the small trees may be taken up when they are at a suitable size to be transplanted. The wood is excellent for fuel, timber and post.—*New Orleans Times.*

ROOFS OF PAPER.

A roof pronounced superior to that of slate, because of its lightness and other advantages, is now made of any fibrous pulp. From this material tiles of any shape desired are formed by pressure under machinery, or any other method which may suggest itself. Pressed into the designs wished for the pulp tiles are partially dried previous to being subjected to a water-proof solution. Thoroughly impregnated with the preparation to resist moisture they are baked to harden in them the water-proof mixture. After the baking the tiles are treated to a mixture imparting an enameled surface; to this is added a coating of sand, whereby the pulp is rendered proof against the action of heat or flame. By the use of different colored sands a variety of tints may be imparted to the tiles, which, after the application of the enameling mixture and sands are baked a second time, after which they are ready for use. Besides the inherent lightness of pulp tiles, which obviate the necessity of a heavy frame to support a weighty roof, the pulp tile, being tough and not brittle like slate, is far less liable to be broken from blows, stones thrown upon them or human footsteps. Again, slaty tiles cannot be laid compactly together on a roof, on account of their brittleness, which prevents their being drawn tightly together by nails. Through the fibrous pulp nails may be driven as close home as in shingles, thereby bending them closely to the bed and together without any possibility of lateral movement, or being blown away in a high wind, as slates loosely fastened on roofs so frequently are. Nails penetrate the pulp tiles more easily than shingles, and lie closer together, being more elastic than wood.—*Boston Journal of Commerce.*

TEETH AND SPEED.

The kind of teeth and the speed of the saw should be determined by the hardness and grain of the wood, its greater or lesser freedom from moisture, from gummy or resinous matter, whether frozen or not, also its size. The harder and the smaller the more upright should be the teeth, and the less their velocity and rate of sawing. Pine, willow, and alder acquire large, acute and well-pitched teeth; oak, mahogany, and rosewood, need perpendicular teeth, close together; yellow and pitch pine and larch being gummy and resinous, require greases to clear the blade; California redwood cuts like eastern pine. It is generally concluded that for pine, spruce, and hemlock the teeth should be cut tangent to a circle half the saw's diameter. Cedar cuts best with a peg tooth of fine gauge, pitch and space. Mahogany, ash and English elm are best cut with the gullet or mill tooth, of small space and nearly upright pitch. For maple, oak, and all timber known as hardwood, swaged teeth answer. For hardwood in warm weather, Norway pine, and chestnut, teeth partly bent and partly swaged are often used. For water-soaked spruce and pine spring-set teeth are generally used.—*Timber Trades Journal.*

A SUMMARY of last year's lumber business in Minneapolis, as given by the *Pioneer-Press*, shows a decrease in the mill cut over the previous year of about 120,000,000 feet, a decrease in the boom scale of about 14,000,000 feet, a decrease in receipts of about 13,000,000 feet, and a decrease in shipments of about 8,000,000 feet. The figures for ten years past, however, show a large increase in business, and the reduction of last year was only an incident of the general depression prevailing everywhere.

Chips.

VASSAR, Mich., has a new company engaged in the manufacture of wood paving blocks.

THERE is a mill being built at Tower, Minn., which is surrounded by pine enough to last forty years if cut at the rate of 100,000 feet a day.

NEW YORK City imports of lumber from the British Provinces in 1885 amounted to 53,305,420 feet. Of shingles 1,050,000 were imported.

THE exports of lumber, exclusive of hardwoods, from the port of New York during 1885, amounted to 76,079,000 feet. The total value of the exports of wood and its product was \$7,001,343.

NEW HAMPSHIRE ships millions of fish barrel staves, made of sapling pine, to Michigan and other States bordering on the lakes. The resinous character of the wood commands it to the packers of fish for holding brine.

THE strength of the chestnutwood is to oak as 51 to 100. Cohesive force, according to Tredgold, is from 9,670 to 12,000; its specific gravity is .335 according to Tredgold, and .637 according to Rondelet; weight per cubic foot about 30.6 pounds.

THE amount of lumber inspected in Boston during 1885 was 98,493,000 feet compared with 93,741,000 in 1884, and 119,000,000 in 1882. Western and Canada pine are now inspected, and a large amount of yellow pine and spruce goes directly to the yards at the mill inspection.

ABOUT 6 o'clock on the morning of the 13th inst, the saw mill belonging to Mr. Geo. McGregor, lot 31, con. 10, township of Hamilton, Ont, was discovered to be on fire. The mill with all the machinery and a large quantity of lumber were totally destroyed. No insurance. The fire was without doubt the work of an incendiary.

MR. A. HOPKINS, of the Rathbun Company, has purchased the entire cut of the Hinchinbrooke saw mill. It will measure 130,000 feet, and consists of pine, hemlock, basswood, oak, and ash. Mr. Hopkins will also purchase all the ties and fence posts between Kingston and Renfrew.

THE Lethbridge, N. W. T., News says:—A party of men came down from the N. W. C. & N. Co.'s log camp in the mountains on Tuesday evening. They report that the largest drive ever made in this country will take place in the spring, and that the south fork of the Old Man's river will be full of logs for 15 miles. The logs are said to be best ever got out.

MESSRS. J. A. J. Craig & Co., of Montreal, Quebec, have just fitted out one of the most extensive furniture factories in Canada. Mr. Craig has been for years in this business, and is one of the few men who have grown rich in manufacturing furniture. About a year ago he was burned out, but has concluded to try it again.

THE amount of lumber cut by the saw mills on the line of the Grand Rapids & Indiana railroad in Michigan in 1885 is reported as 210,404,203 feet, of which there was 152,275,478 feet on hand. The amount of shingles manufactured was 244,248,000, of which 33,250,000 were reported on hand at the close of the season.

A COMMON method of grafting is to make a transverse section in the stock and a vertical slit above it, and the bud is pushed upwards into its position; this method, we believe, if carefully done, rarely fails. As the sap descends by the bark the bud thus placed above the transverse section receives abundance. There are numerous other methods.

A LEGAL case which came up at Toronto on Jan. 18th is thus reported:—*Re Rainy Lake Lumber Co.*—J. D. Edgar for the Toronto General Trust Company moved on petition under 45 Vic., cap 23, sec. 43, for possession of properties embraced in mortgages to the applicants. J. R. Roaf for the company. W. A. Foster, Q. C., for shareholders and contributors. Motion suspended for one month, the

MOUNTAIN MAHOGANY.

In Nevada there is a peculiar wood known as mountain mahogany. The tree does not grow large. A tree with a trunk a foot in diameter is much above the average. When dry the wood is about as hard as boxwood, and being of a very fine grain might no doubt be used for the same purpose. It is of a rich, red color, and very heavy. When well seasoned it would be a fine material for the wood-carver. In the early days it was used in making boxes for shafting, and in a few instances for shoes and dies in quartz battery. Used a fuel it creates intense heat. It burns with a blaze as long as ordinary wood would last, and then is found (almost unchanged in form) convert to a charcoal that lasts about twice as long as ordinary wood. For fuel it stands much higher than any other kind of wood; indeed, a cord of it always brings the same price as a ton of coal. The only objection to it as a fuel is that it creates such an intense heat as to burn out stoves more rapidly than coal, however bad.—*Exchange.*

Ancient Saw Mills.

More than 300 years ago an English historian gave the following description of a saw mill: "The saw mill is driven with an upright wheel, and the water that maketh it go is gathered whole into a narrow trough, which delivereth the same water to the wheel. This wheel has a piece of timber put to the axle tree end, like the handle of a brooch, and fastened to the end of a saw, which, being turned by the force of the water, hoisteth up and down the saw, that it continually eateth in, and the handle of the saw is kept in a rigall of wood from swerving. Also the timber lieth, as it were, upon a ladder, which is brought by little to the saw with another vice."

company to pay debenture holders within one month, if payment not made, order for possession to go. Costs out of estate.

Catarrh—A New Treatment.

Perhaps the most extraordinary that success 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 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, 305 King street west, Toronto, Canada, and enclose a stamp for their treatise on Catarrh.—*Montreal Star.* 19/12.

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The Best Article Ever Offered to the Trade.

I have much pleasure in drawing attention to my WROUGHT IRON COOKING STOVE, for Shanty, Hotel and Boarding House use. These stoves are made of Heavy Sheet Iron, the top and lining of the fire-box being of Heavy Cast Metal and all the connecting parts of substantial Wrought Iron Work. The dimensions of these Stoves are as follows:

SINGLE OVEN STOVE

Top surface contains six 10-inch holes, with ample room between, and one oven 20x22x19. Fire box takes 23-inch wood.

DOUBLE OVEN STOVE

The Double Oven has a top surface containing twelve 10-inch pot holes, with two ovens, each 23x21x19. One fire-box of suitable size for area to be heated. Below will be found Testimonials from some of the leading Lumbermen, who have used my Wrought Iron Cook Stoves since I commenced manufacturing them. They are the names of gentlemen who are well known and reliable, and will carry more weight than any recommendation of my own could do.

The Best Stove I have ever Used.

PETERBOROUGH, May 31, 1880.

ADAM HALL, Esq., Peterborough. Dear Sir,—I have used your Wrought Iron Cooking Stove in our lumbering operations since its introduction here, and have no hesitation in saying that I prefer it to any other. For durability, economy and efficiency, where a large number of men are employed, it is the best stove I have ever used. You can, with confidence, offer it to hotels, boarding houses and lumbermen.

Yours truly, THOS. GEO. HAZLITT.

The Stove for Lumbermen.

PETERBOROUGH, June 1st 1880.

ADAM HALL, Esq., Peterborough. My Dear Sir.—We have used your Wrought Iron Cooking Stove and find it is very satisfactory for lumber operations, especially so on drives. We can recommend it highly.

Yours truly, J. M. IRWIN.

In addition to the above I can refer you to the following lumber firms who use my Wrought Iron Range exclusively in their camps:—

- THE GEORGIAN BAY LUMBER CO.....Waubushene
- THE LONGFORD LUMBER CO.....Longford Mills
- MESSRS. GILMOUR & CO.....Trenton and Ottawa
- MESSRS. RATHBUN & CO.....Deseronto
- THE MUSKOKA LUMBER CO.....Gravenhurst

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All the necessary TINWARE and CUTLERY for Shanties Supplied at the Lowest Prices.

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

PETERBOROUGH, Ont., FEB. 1, 1886.

MICHIGAN parties have recently bought a single birth on the Spanish River for a consideration of \$120,000.

New buildings to the cost of \$2,300,000 were erected in Montreal, Ont., during the past year.

The Kingston & Pembroke Railway Company has purchased the car works at Kingston, Ont., for \$30,000.

Moses BALLAN, while chopping near Essex Centre, Ont., was instantly killed by a falling limb.

In some parts of northern Michigan cedar ties have advanced from 16 to 18 cents each, and posts from 5 to 6 cents.

A RELIABLE authority makes the statement that there will be six hundred miles of new railway completed in Missouri the present year.

ELZA RUST, of Saginaw, Mich., sold this week 30,000,000 feet of pine on Tobacco river to A. A. Brockway, of the same place for \$200,000.

The brig Adria, from St. John, N. B., for New York, with lumber, put into Vineyard Haven, January 13th, having lost part of her deck load in a heavy gale.

Gow & MAJO shipped 1,100 tons of sawdust from Muskegon to South Chicago last year for terra cotta manufacture. Next year they propose to ship 100 tons a week.

The boom in Muskegon river, above Newago, broke loose lately and 500,000 feet of logs went down the river. The logs belonged to the Newaygo Manufacturing Company, and will have to be sawed at Muskegon.

A big tree was recently cut at Moore & Tanner's camp on the Au Sable river. It was cut into a stick 108 feet long, which measured 27 inches at the top and contained 10,300 feet.

A YOUNG man named Addison, of Minton, had his thigh bone broken recently in one of the Parry Sound Lumbering Co.'s camps by a log rolling down from a skidway, over a sleigh, and striking him.

The Emery Lumber Company of Bay City have about 15,000,000 feet of logs skidded on one of the branches of French River. The timber is said to be of superior quality and will be taken to Tawas for manufacture.

Messrs Folsom & Arnold, of Bay City and Albany, are owners of very valuable timber on the Spanish river and have a saw mill at its mouth—the first mill there. Their cut the past season was about 12,000,000 feet, averaging about ten per cent. to uppers.

AMERICAN pitch pine appears to be as much a pet of the German revenue system as American log products. Besides a duty of 30 per cent levied upon the importation of American pitch pine, the railroads of Germany, which are under governmental control, make an almost prohibitory discrimination against it. If any part of a car load in pitch pine the whole load is classed as such.

As much as it has been predicted that walnut would be hustled aside by other woods, says the *Northwestern Lumberman*, it is still in the ring as vigorous as ever. Good walnut lumber finds ready sale in any of the leading markets, and buyers from both home and foreign markets are busy looking it up. Any other wood that grows will have more than it bargained for if it attempts to satisfactorily take its place.

SINCE the recent sale of newly offered berths by the Crown Land Department, says a Toronto report, there has been greater activity in Algoma timber sales than for years and the value of stumpage has considerably appreciated. Transactions in limits appear to be on the basis of from \$1 to \$2 per thousand feet for white pine. In some cases the Algoma birch is a very valuable item, but account is rarely taken of the Norway or spruce in fixing values.

MIRAMICHI.

J. B. SNOWBALL's wood trade circular for the year 1885 has been received. It states that the depression which existed during 1884, and which was supposed to have reached bottom, has continued through the year 1885, now closed. The advisability of the Provincial Government continuing its present policy in regard to the tax on the timber supply is questioned. It is pointed out that while in 1884 the tax represented only about 20 cents per thousand and superficial feet, it is now increased until the direct tax and land tax (the tax is levied in two forms) amount to \$1.40 per thousand superficial feet. The shipments from that port for the year show a falling off of 20 per cent from last year, and last year's was 27 per cent. less than the year 1883. The total shipments from the Province show a shortage of 12 per cent. There would have been a much greater reduction, says the circular, were it not for the excessive quantity of Nova Scotia goods shipped from St. John this season, which passed as St. John production. Nova Scotia shipments, however, show an increase of 5,277 St. Petersburg standards, the figures being 40,221 stds. in 1885 against 34,944 standards in 1884. The only ports in New Brunswick that show any increase are Sackville, Shediac and Cocagne, all ports bordering on Nova Scotia.

The stock being wintered is estimated at 17,000,000 superficial feet, against 26,000,000 last year and 40,000,000 in 1883. The amount of work being done in the forests is small, much less than for many years past, and this, with the very small stock being held over, will make next season's shipments show a still further reduction, which must continue as long as the present unremunerative prices prevail. The stock being wintered at St. John, and also

the new supply, are on a restricted scale, and consequently all are being held for improved prices.

The shipments for the past ten years from Miramichi, given in superficial feet, were as follows:—

Year	Sup. Ft.
1876	116,000,000
1877	160,000,000
1878	100,000,000
1879	114,000,000
1880	155,000,000
1881	128,000,000
1882	117,000,000
1883	149,000,000
1884	108,000,000
1885	87,000,000

The distribution of the shipments in 1885 was as follows:—To Great Britain, 47,239,692 sup. feet; Ireland, 24,984,638; France, 10,223,213; Australia, 1,634,672; Africa, 2,262,198; Italy, 1,005,715; total, 87,230,028.

The shipments from St. John to trans-Atlantic ports for the past 8 years were as follows:

Year	Sup. Ft. Deals	Birch	Pine
1878	188,168,610	7,989	2,493
1879	153,279,357	11,548	3,237
1880	215,485,000	16,035	2,441
1881	210,281,730	5,134	1,784
1882	201,413,717	7,576	3,332
1883	181,517,932	11,778	3,883
1884	164,829,825	14,006	3,836
1885	152,543,026	13,769	3,686

Dalhousie and Campbellton, in 1885, shipped 13,796,950 super. feet deals, scantling and ends and 5,267 tons timber; Richibucto and Buc-touche, 11,009,050 super. feet; Bathurst, 10,160,242 feet. 29 tons birch and 588,140 pieces palings; Shediac, 5,797,035 super feet; Caraquet, 2,231,787 super. feet, 56 tons timber and 111,000 pieces palings; Sackville, 7,117,000 super. feet.

The total lumber shipment of New Brunswick in 1885, compared with 1884, was as follows:

Year	No. of vessels	Tons	Sup. ft. deals, etc.	Tons timber
1884	595	390,185	333,191,893	291,747,333
1885	519	343,988	291,747,333	27,738

The shipments from Nova Scotia in 1885 were as follows:—No. of vessels, 172; tonnage, 92,087; sup. feet deals, etc., 79,647,765; birch timber, 8,389; palings, 13,346. The shipments of deals from Nova Scotia to trans-Atlantic ports in the years mentioned were:—

1882	85,752,000
1883	77,918,000
1884	69,159,000
1885	79,647,765

The shipments of deals, etc., given in superficial feet, from the Nova Scotia ports mentioned, were as follows:—Guysborough, 2,061,642; Shelbourne, 704,880; Pictou, 300,795; Yarmouth, 2,516,250; Paraboro, 31,383,000; Port Medway, 525,030; Margaret's Bay, 2,000,000; Amherst, 16,124,947; Halifax, 12,155,251; Ship Harbour, 1,600,000; Sheet Harbour, 6,000,000; Liscomb, 752,000; Bridgewater, 3,624,000.

THE PINE TREE OF KARASATE.

A few miles from Otsu, Japan, is Karasate, a little point of land running into the lake, where a Shinto temple has stood for centuries. The shrine is covered by the arms of a pine tree, whose trunk is more than four feet in circumference, and the branches, trained out on supports, cover over an acre of ground. Of all the wonders of this part of the world, this old pine tree of Karasate deserves a first mention, and one wanders amazed under the great canopy of long drawn out, interlading branches, and studies the intricate way in which the limbs of the sturdy old pine have been twisted, looped, tied and braided, as if they had been so many sticks of candy. The ends of the branches reach out over the water on either side, and a heavy stone wall on the lake front protects the venerable tree from ever being washed away by storms or floods. There is a tiny little box of a shrine up among the branches, and the pilgrims look strangely enough when they clap their hands loudly and stand with clasped palms, turning their faces up to the branches overhead.

All the small children in Karasate followed us about as we wandered under the guarded

branches of the pine tree, half of the small boys and girls carried a smaller brother or sister on their backs. One dear bright-eyed little rascal capered about most bewitchingly, and hardly left my elbow. When I sat down he sat down and kicked his sandalled feet against me. He leaned over and read the same page of the guide book with me; discovered my watch, held it in his hand to hear it ticking, and made himself at home in the most bewitching, half-timid and polite way. The other children, drawn up in a silent array before us, wondered no less at the foreigners themselves than at the favor or audacity of their young companion.

When we finally rose I picked up a few cones and the empty shell of a skin from which some locust had lately flown. A sweet shy little girl saw me doing it, and ran to gather more and present them with many bows, the head of her baby brother on her back bobbing and rolling around alarmingly as she did it. The present of a big copper cent made her bow more than ever, and in a second the whole troop of youngsters were off over the sand and up the tree hunting for cones and locust shell.—*St. Louis Globe-Democrat.*

LONDON TRADE OF 1885.

The annual circular of Simson & Mason, of London, says: Since the year 1881 the wood trade of the port of London has been most unsatisfactory, alike to shippers and importers. 1885 has closed, and resembles for the most part the previous years. All branches of industry throughout the country have continued depressed, and the wood trade has been in sympathy. Until there is a better tone in the general trade of this country it would appear that the wood trade is not likely to show much improvement. The recent fall-off in consumption is, in a large measure, due to the suspension of building operations in the metropolis and its suburbs; from this large and active source of consumption the demand has been for some months past gradually falling away. London has been overbuilt and requires some period of rest. Although there are no immediate signs of a better state of things, yet there is concurrent opinion that prices have seen their lowest and any change must be for the better. Money was made and lost during the spring of the year through a "war scare" which soon subsided, and this has been the only exception to the monotony of dullness which has characterized the past year. Freights have ruled exceedingly low from all ports, and some wood charters have been closed, perhaps, at a cheaper rate than ever previously known.

The total import amount to 806,000 tons, being a reduction of 40,000 tons on 1884, and 30,000 below the average of the last five years. The total consumption, as indicated by the deliveries from the Surrey Commercial and Millwall Docks in sawn and planed wood, has been 205,050 Petersburg standards, against 232,000 Petersburg standards in 1884 being a fall-off of 12 per cent. Compared with 1883, the fall-off is 13 per cent, with 1882 15 per cent, and with 1881 18 per cent. The fall-off as against last year equals about 500 Petersburg standards per week. Of hewn wood, excluding sleepers, the consumption, as indicated by the Surrey Commercial Dock deliveries, has been a fair average one, amounting to 69,000 loads against 68,000 in 1884.

WHY WILL YOU cough when Shiloh's Cure will give you immediate relief. Price 10 cts 50 cts, and \$1. For sale by Ormond & Walsh druggists, Peterborough.

DR. CARSON'S STOMACH BITTERS will cure the worst forms of Dyspepsia, Indigestion, and all bilious complaints. Large bottle, 50 cents. Go to your druggist and get a bottle.

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 dysentery 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.

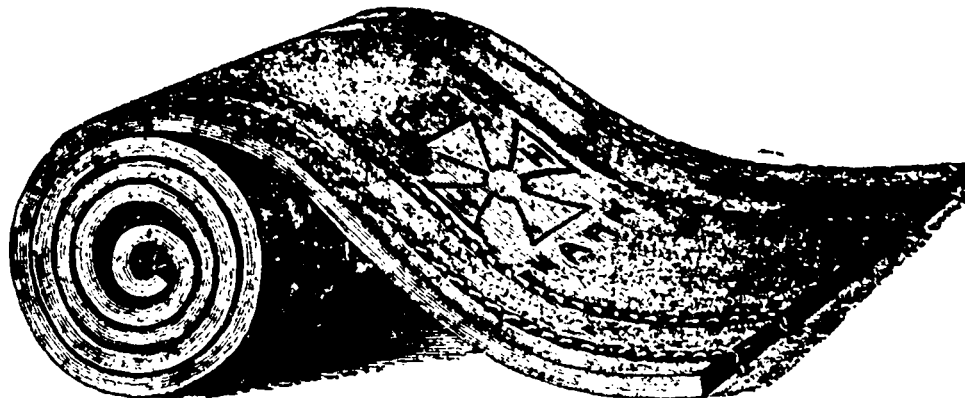
HARRIS, HEENAN & Co.

124 AND 126 QUEEN STREET,

MONTREAL.

Patent Stitched—Steam Power Pressure Stretched—Oak Tanned

TESTIMONIAL
 Isa. Goetz & Sons, City Mills,
 Nov. 13th, 1884.
 Harris, Heenan & Co.
 DEAR SIRS.—Your Patent Sewed Belt has been in use in our "City Mills" for some time. We are thoroughly convinced of its superiority over any belt. American or Canadian, we have used in an experience of over 25 years. It stretches so little and gives so little trouble, that compared with riveted belting it saves belt some double its price in time and money saved. We heartily recommend it to manufacturers as the cheapest and most satisfactory belt in the market.
 Yours respectfully,
 W. C. MARSHALL.



TESTIMONIAL
 Fack, Emery & Co., Canal Horse Shoes and Nail Works, Montreal, 14th Nov. 1884.
 Messrs. Harris, Heenan & Co., Montreal.
 I have pleasure in recommending the belting manufactured by Messrs. Harris, Heenan & Co. of this city. After thoroughly testing it, I find it greatly superior to any belting that has come under my notice and fully equal to all they claim for it, and certainly without an equal for cross or double belting.
 CHAS. B. ELLACOTT,
 Supr. H. S. & H. M. Dryd.

LEATHER BELTING!

*The Best, therefore the Cheapest, Belt in the market.
 Replaces, when used, all others.
 More Pliable and Durable, especially at the splices.
 Single equals medium double.*

*Stretches but little, always retains its original width.
 Superior for Cross or Double Belts.
 Runs straight and true, does not start at the laps.*

25 per cent Stronger, 33 1/2 More Lasting, and 12 1/2 Heavier, than any other Leather Belt

BOARD OF TRADE RETURNS.

The following are the returns issued by the Board of Trade, for the month of Dec. 1885, and also for the 12 months ending Dec., 1885:

MONTH ENDED 31st DEC., 1885.		
Quantity.	Value.	
Timber (Hewn).		
Russia	6,316	12,857
Sweden and Norway	24,683	44,286
Germany	9,977	29,270
United States	6,111	22,936
British India	5,196	71,351
British North America	10,925	45,696
Other Countries	23,705	36,727
Total	97,933	253,173
Timber (Sawn or Split, Planed or Dressed).		
Russia	32,060	67,408
Sweden and Norway	44,948	101,649
British North America	66,640	151,537
Other Countries	17,171	58,799
Total	160,719	369,393
Staves, (all sizes)	8,642	58,632
Mahogany (ton)	2,283	19,020
Total of Hewn and Sawn	257,752	622,473
TWELVE MONTHS ENDED DEC. 31st, 1885.		
Timber (Hewn).		
Russia	253,857	465,906
Sweden and Norway	540,217	758,826
Germany	289,555	693,247
United States	138,693	470,984
British India	42,568	676,724
British North America	265,264	1,108,529
Other Countries	409,587	557,760
Total	1,934,661	4,632,176
Timber (Sawn or Split, Planed or Dressed).		
Russia	1,188,380	2,651,123
Sweden and Norway	1,716,456	3,602,247
British North America	996,374	2,437,829
Other Countries	330,108	906,602
Total	4,230,318	9,587,801
Staves (all sizes)	124,374	588,971
Mahogany (tons)	58,889	486,193
Total of Hewn and Sawn	6,164,979	14,219,776

THE LUMBER TRADE.

QUEBEC, Jan. 27.—Information from the woods is to the effect that unusual activity prevails this winter in the pine lumbering districts of the province. The decline in the square timber trade is likely to become permanent from present indications, and the export trade in deals and dimension timber will probably increase in direct ratio to the decrease of the other. It is reported that the immense stock of sawn lumber at the Gatineau Mills' piling ground, Chelsea, has been disposed of for Spring delivery. The firm operating these mills, Messrs. Gilmour & Co. are exceptionally busy on the Gatineau River this winter and will probably drive over 200,000 logs next spring. The firm has lately acquired the limit so long held by Mr. Willis Russell of this city, and may perhaps cut some pine there this season. The Kapabourga limit, formerly the property of Messrs. Benton, Cennet & Co., has also been bought by the Messrs. Gilmour. Mr. J. MacLaren is also actively engaged on the Eagle, Ignace and Desert rivers, doing most of his business through jobbers. Messrs. Hamilton Bros. are doing rather more than usual on the Gatineau, and expect to drive from 80,000 to 90,000 logs of the finest quality and the largest size. They are busy as usual on the tributaries of the Grand or Ottawa river. All of this firm's timber will be cut at the Hawkesbury mills sixty miles below Ottawa on the Ontario side of the river, and for the future will be taken to the seaports for exportation by barge, this plan having been found to have many advantages over rafting, which involved several handlings of the lumber, as well as the scouring of each board by machinery. On the Black and Colcunge rivers, Messrs. Gillis and others are doing a large winter's work. The sale of the old Bronson business for \$600,000 circles, and some doubt is expressed as to whether the immense limits above the Boscatong on the Gatineau which cover 900 square miles of country, are included in the purchase. So far little is known of the intentions of the new firm, which includes Mr. Stewart, late of New Brunswick, and now of London, England, Mr. Bronson,

and some others not so well known to the trade. The Messrs. Greer Bros., of Montreal, have also purchased limits on the Gatineau, and will probably work them before long.

Horsford's Acid Phosphate

Very Salutatory in Prostration.
 Dr. P. P. Gilmartin, Detroit, Mich., says: "I have found it very satisfactory in its effects, notably in the prostration attendant upon alcoholism."

The discovery of the instantaneous process of taking photographs has been quickly followed in the medical world by a perfect and instantaneous remedy for all acute sores and pains, as Neuralgia, Toothache, Rheumatism, etc. This valuable remedy is called Fluid Lightning, and is sold at 25 cents a bottle by John McKee, druggist.



WELLAND CANAL.

NOTICE TO CONTRACTORS.

SEALED TENDERS, addressed to the undersigned and endorsed "Tender for Lock Gate Timber," will be received at this office until the arrival of the Eastern and Western Mails, on TUESDAY, the 9th day of FEBRUARY next, for the furnishing and delivering, on or before the 22nd day of June next, 1886, of Oak and Pine Timber, sawn to the dimensions required for increasing the height of the Lock Gates on the Welland Canal.
 The timber must be of the quality described and of the dimensions stated in a printed bill which will be supplied on application, personally or by letter, at this office, where forms of tender can also be obtained. No payment will be made on the timber until it has been delivered at the place required on the Canal, nor until it has been examined and approved by an officer detailed to that service.
 Contractors are requested to bear in mind that an accepted bank cheque for the sum of \$500 must accompany each tender, which shall be forfeited if the party tendering declines to enter into a contract for supplying the timber at the rates and on the terms stated in the offer submitted.
 The cheque thus sent in will be returned to the respective parties whose tenders are not accepted.
 This Department does not, however, bind itself to accept the lowest or any tender.
 By order,
 A. P. BRADLEY,
 Secretary.
 Department of Railways and Canals,
 Ottawa, 31st January, 1886.

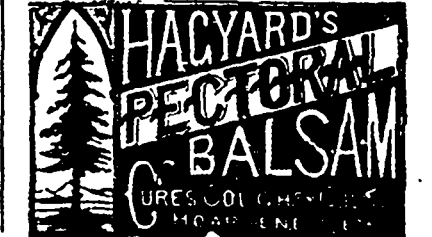
SNOW DRIFT BAKING POWDER

The Peoples' Favorite.



Health is Wealth
 DR. E. C. WARR'S NERVE AND BRAIN TREATMENT, guaranteed specific for Hysteria, Diminution, Convulsions, Fits, Nervous Neuralgia, Headache, Nervous Prostration caused by the use of alcohol or tobacco, Wakefulness, Mental Depression, Softening of the Brain resulting in Insanity and leading to misery, decay and death, Premature Old Age. One box will cure recent cases. Each box contains one month's treatment. One dollar a box, or six boxes for five dollars; sent by mail prepaid on receipt of price. We guarantee six boxes to cure any case. With each order received by us for six boxes, accompanied with five dollars, we will send the purchaser our written guarantee to refund the money if the treatment does not effect a cure. Guarantees issued only by J. D. TULLY, Druggist, Sole Agent for Peterborough.

A GIFT Send 10 cents postage, and we will mail you free a royal, valuable, sample box of goods that will put you in the way of making more money at once, than anything else in America. Both sexes of all ages can live at home and work in spare time, or all the time. Capital not required. We will start you. Immense pay for mere for those who start at once. BRITTON & Co., Portland, Maine.



SHILOH'S VITALIZER is what you need or Constipation, Loss of Appetite, Disinclination and all symptoms of Dyspepsia. Price 10 and 75 cents per bottle. For sale by Ormond & Walsh druggists, Peterborough.

CYLINDER LUBRICATION.

In former years it was the universal custom to lubricate the valves and cylinder of a steam engine with tallow by means of the old-fashioned cup with which every one is familiar. While tallow in either the crude or prepared state made a good lubricant for many kinds of work and machinery, it was very bad for steam valves or cylinders, not because it was a poor lubricant, for on the contrary it was as good as could be found in those days for the purpose; but the objection to it was the large percentage of acid it contained. Unless great care and frequent cleaning of parts were observed they were observed, they were liable to severe corrosion; the valve seats and cylinder would become so corroded or eaten into by the deposits of acids that they have to be re-bored and re-fitted; piston rods became spoiled and had to be replaced; piston springs deteriorated, and piston bolts would almost break in pieces at the slightest pressure of the wrench. Constant repairs on engines having duty to perform were the order of the day, incurring heavy expense and tedious delays. To overcome these serious objections and substitute a lubricant that would be as good for the intermediate steam chambers of the engine and obviate the objections to tallow was a problem the solving of which engaged the minds and attentions of chemists, oil manufacturers, engineers and mechanics alike.

The results of their efforts brought forth cylinder oils of various brands for the sole purpose of lubricating the internal parts of the engine containing steam. They also incidentally brought forth numberless sight feed oil cups of several qualities. These oil cups were a thing of beauty and joy forever. The engineer could take out his Waterbury watch and time the drops of oil to suit the duty of the engine, and the proprietor could figure to a nicety how much oil per day was used, and easily get at the cost per year. He did not have to run to the butcher's every once in a while, only to find that some old lady had bought the last lot of tallow; he found when he first started the sight feed cup that the oil men sent enough simple cans gratis to keep him in oil several months. The valve seats, cylinder springs, etc., would invariably present a smooth, even appearance upon examination and everything was lovely for a time. The problem of lubricating the steam engine was solved and consequently every one was happy. After a short time some observing engineers who utilized all their returns from steam heating coils and other sources, discovered that their boilers were not so clean as they had been previous to the use of oil. Careful investigation proved the fact that the cylinder oil returned through the heater with the water. This was all right if it either made steam or was otherwise harmless, but such was not the case. The deposits of oil gradually increased to an alarming quantity and proved detrimental to the boiler.

It did not seem to form a very hard scale, in fact, it was of a soft, mushy consistency. This it seemed disposed to have a great affinity for the ends of the flues, especially the back end, keeping the heat and water apart and causing the flues to leak and gradually harden. I have just seen a large tubular boiler that was built by a first class concern whose name is a guarantee of its quality, which was placed three years ago in charge of a good, careful engineer. That boiler is now receiving a new set of tubes. The ends next the back head were leaking and were so hard that when struck by a chisel it would fly like glass. I might add that the sediment around the tubes was considerably harder than anywhere else. The reason is obvious. The heater, which was of the plain tank style, was in about the same condition, and is being replaced by a new one of a kind that is guaranteed not only to heat but to deposit the sediment in the bottom and thence carry it out through the overflow. The total expense will not be less than five hundred dollars, a very large item to pay for this kind of experience. In connection with all this, a different brand of cylinder oil will be used, and if beneficial results follow it will be hard to determine whether they are caused by the change in heater or oil. A similar case occurred not long since at a large factory having one of the leading well known heaters that was intended to purify as

well as heat the return, etc. After four years run new flues had to be put in and a large, new heater with all necessary connections was introduced, causing an outlay of at least twelve hundred dollars, all on account of the cylinder oil.

In another factory having a thirty-horse boiler, where at least two thirds the supply used is rain water the boiler is washed out very carefully every two weeks, and about two quarts of crude petroleum placed therein, and so far, (one year's service), no trouble has occurred, the scale of film found on cleaning the boiler being very thin and light. In another case where a certain brand of oil was used, it was found that the piston moved hard, and the more oil it received the worse it became. Upon taking the cylinder head off, the cylinder was found to be coated with small, greasy, sticky pellets, from the size of a pin head upwards. The steam ports were clogged up with this interesting stuff that resembled greasy clay. After carefully wiping out, a different brand of oil was introduced that very quickly cleaned out the ports and loosened out the piston rings until they rattled about. This certainly showed a considerable difference in the two brands of oil. One would lubricate, and did not form the sticky pellets, and would allow the engine to work under much less pressure, while the other produced the opposite effect. As to the effect of the otherwise good oil on the boiler, I have not yet learned, but I presume it is much better.

These few incidents that have come under my recent observation have demonstrated the fact that either there are very good and very bad oils for cylinder lubrication, or that all of them have some foreign stuff used in their manufacture for clarifying, or that they have some radical defect that leaves us no better off than with the old oil and tallow cups. I am strongly inclined to the first theory, from the fact that I know of factories where a certain brand of oil was used constantly for a number of years, having the same kind of plant throughout, and using the same water from the city service, that upon repeated careful internal examination showed no deleterious effects. In view of all these facts, it is economy to buy any cylinder oil because its first cost is low? On the contrary, it is a strong illustration of the good old adage, "the best is the cheapest." No man running a steam plant can afford to use an inferior grade of cylinder oil, even if he gets it for nothing. He would have to receive a present of a great many barrels of the stuff to compensate for the expense of overhauling the whole plant every three years, to say nothing of the delay, loss of business, etc. Oil manufacturers may not like this kind of talk, but if it hits any of them hard I would suggest that the remedy of the difficulty is in their own hands. There is no doubt that there is a few leading brands that will stand the test and perform good service, but it is equally patent that a large number of brands are worthless for their intended purpose, and positively harmful and dangerous. No one about to purchase any oil for the purpose, having a heater taking the returns to the boiler, should order until satisfactory evidence has been given that it will not deposit scale in the boiler, and perhaps it would not be amiss to demand a clean cylinder and other parts of the engine as a result of using said oil. —M. E. Chanin, in *Lumber World*.

WOOD AND METAL RAILWAY SLEEPERS.

Differences of opinion exist among engineers as to the relative value of wood and iron railway sleepers. The common belief seems to be that both possess qualities that deserve consideration, and that while wood may be advisedly used in some localities, iron is better suited to others. It is mainly, however, a question of economy, and the cost of transit has to be taken into account in association with the price on the market and the relative durability of wood and iron. It is beyond doubt true that a partial feeling has recently found expression in favor of iron or steel in England, while in Germany, where timber is scarce, and the duty upon wood imported from abroad has been increased within the last twelve months, there is

probably good grounds for believing that metal sleepers, notwithstanding the fact they are said to cause a vibration in the carriages highly annoying to passengers, may come into very general use. On this important point the *Manchester Guardian* recently published some highly interesting particulars gathered from a recent report presented by Herr Bueck, the General Secretary of the German Ironmasters' Association, to the members of that body. This experienced engineer observes that he regrets to find that, according to certain appearances, wooden sleepers appear again to be coming into favor in Germany, because the several governments seem desirous of favoring forestry. Contrary to the recommendations of prominent engineers, beechwood sleepers have been laid down recently. Herr Bueck adversely criticises the disposition on the part of the Government to bestow special encouragement upon forestry in this way. The duties on timber imposed in 1879 have been raised this year, although the native growth is not sufficient to supply the requirements of Germany. According to a petition presented by the timber growers and merchants to the Reichstag on the occasion of the discussion on the timber duties, it appears that 2,000,000 sleepers were laid to the eastern part of the empire last year, and that of this quantity one-third were metal sleepers. The German forests could only supply 15,000 oak sleepers. Of the quantities submitted for tender during 1881-5, in the same part of the empire, German producers were only able to supply one 1,500 of oak, and 5.01 per cent. of pine. Should beechwood sleepers prove satisfactory, a sufficient supply may be obtained in the western part of the empire. But experiments with sleepers of this wood in France have not given satisfactory results. In favoring the employment of wooden sleepers, therefore, with a view to the encouragement of German forestry, the German Government are simply promoting foreign timber-growing industry rather than the native metallurgical industry.

It may be taken for granted that so far as England is concerned selection will be determined upon principles of economy. If it can be shown upon incontrovertible evidence that iron or steel sleepers are cheaper in the long run than wood, they will assuredly come into general use. On the other hand, should the contrary be established, timber will remain in vogue. Competition between the two interests involved will have a tendency to reduce the price of both wood and metal, and so far, rivalry will be attended with advantage to the community. They must, however, stand on their merits, and any attempt to foster a trade by protective measures will fail. It is proverbial that there is neither favoritism or friendship in business. Now that the relative qualities of wood and metal are in course of being tested we believe that it will be found that the conditions under which timber sleepers can be obtained in England are of a nature to justify the expectation that they will still remain in use. —*Timber*.

OAK STAVES FOR EXPORT.

The manufacture of oak staves for export is quite an important industry, and there is a considerable amount of capital employed in it. Formerly nearly the whole of the staves for exportation to Europe were obtained from Canada and shipped via New York, but within the last ten years, in consequence of the exhaustion of the oak timber in that country, the trade has drifted southward, and it may be said now to be exclusively a southern industry, as for several years past three parts of the whole quantity of staves exported have been obtained from the States of Arkansas, Tennessee and Mississippi.

Large quantities of staves were obtained on the Cumberland and Tennessee rivers, but there is now no stave timber on those streams. The larger portion of the staves shipped in the last two or three years has been obtained from Arkansas and Mississippi swamps.

The new railroad running from Memphis through Arkansas to Kansas City, and from Memphis to Vicksburg and New Orleans, opens up a considerable timber country, and within the last two years a large quantity of staves has been shipped to Europe via New Orleans

over these roads. New Orleans is the principal market and shipping point for these staves, while Memphis is the centre of the manufacturing interest.

Large lots of staves are shipped as what is called "dunnage" in the steamers and other ships carrying cotton from New Orleans to Europe. By "dunnage" is meant the portion of the cargo which is heavy and will work with a light, such as cotton or, in other words, acts as a ballast.

The staves for export are made of white oak or timber of the white oak family, such as cow, burr, overcup oak, etc. The timber must be exceptionally good and large, at least 30 inches in diameter, long bodied and free from knots, crooks, wind shakes and shivers, and worm holes.

The stave should be riven with the grain of the wood, setting the frow to run from the bark towards the heart, and splitting the stave to as near an equal thickness on both edges as possible. In setting great care must be taken to strike the axe in at the end of the stave, and never in the middle, which is a very objectionable defect. A merchantable stave should be of nearly uniform thickness. —*Southern Lumberman*.

BOXWOOD.

The boxwood boom seems to have spent its force, and the market has dropped in the year from \$10 to \$17 a ton, which is just \$3 below the low point it started from. This change comes from the loss of interest in skating rinks, and the consequent abandonment of roller-skate manufacture by some of the largest concerns, notably one in Newark, N. J., that made in 1884 160,000, and one in New York that up to last July had a two-year's business of 350,000 skaters. The dissolution of the skating rink syndicate, that for five years has built rinks all over the country, started them and then sold them to local enthusiasts has divided \$400,000 on its last year's business, and has been the medium for sale of over 3,000,000 roller skates. The decline of this business is suggested by the fact that where Norfolk County, Mass., had 15 rinks running last winter, it now has but five. New York's number has been reduced from 23 to eight, and Philadelphia from 13 to six, and those remaining are not liberally patronized. The abandonment of skating rinks has had some influence also over lumber, and is possibly to be in a large degree accountable for the apathy in prices, and their decline nearly 30 per cent. since December 1884, while birch, which came into favor for rink floors in the summer of 1883, and jumped to \$55 a thousand for kiln dried choice stock, is back, like boxwood, to a lower point than whence it started. —*Miss Val. Lumberman*.

CRANKY MACHINES.

There are times when nearly all machines get cranky. The trouble is often a simple one, and is not infrequently owing to the machinist not knowing his business. But that is not always the case. The very best mechanic in the world gets hold of a nut that is difficult to crack. A machine, no matter of what kind, may work perfectly for months, and then one day something goes wrong with it. The machinist looks at it, examines it, and perhaps he even takes it to pieces and puts it up again, but all of no avail; the machine remains like a balky horse, which nothing will make go. At last the machinist gets tired and goes home, sick of pottering with the troublesome thing. He comes to work the next day, perhaps having forgotten the previous trouble, touches a handle here and a wheel there, drops a little oil in a half dozen places, turns on the steam, and off she goes without a murmur as if nothing had ever happened. It cannot be explained by any one. The only conclusion to be drawn is that he omitted, on the occasion of the stoppage, those little necessary touches of handles, turning of wheels and droppings of oil. —*Wood and Iron*.

To Clean Brass and Steel.

For brass: powder rottenstone, put it into a pint of water, add a teaspoonful of sulphuric acid, apply, then rub off and polish with whiting. For steel: emery powder mixed with turpentine.

CARELESSNESS IN THE BOILER-ROOM.

'Familiarity breeds contempt,' is an old saying, says the *Locomotive*, and it is unfortunately true that it holds good in the boiler room. In this case it would be wise to add to the old saw, "and contempt breeds trouble," for many accidents may be traced to the carelessness in management of boilers which naturally follows long connection with them. Especially is this apt to be the case when the man has been so fortunate in his management of a boiler plant for a long time as to have had no serious trouble with it.

It is customary with some mechanics to test new boilers, or old ones which have undergone repairs, by simply subjecting them to a high steam pressure. Why any intelligent person should do this simply passes our comprehension. If a boiler is known to be strong enough to sustain a certain pressure, there is no earthly reason to subject it to that pressure. If it is not absolutely cert in that it will sustain any given pressure, then it is the height of folly, and it incurs a risk that no man can afford to take, to apply that pressure in such a manner that, in the event of the boiler not proving strong enough to sustain it, an explosion will inevitably occur.

During the past year we have a record of at least three explosions, all attended by loss of life and great destruction of property, from this cause. The danger in such cases is usually greatly increased by caulking the seams, rivet-heads, etc., where leaks exist while the boiler is under pressure.

Another dangerous practice is the caulking of joints in steam pipes while pressure is on. If pipes or fittings are corroded, as they very frequently are in such cases, there is danger that the chisel or caulking tool may be driven through the pipe. In such a case the sudden escape of steam is more than liable to seriously scald the workman. Quite recently, in a neighborhood city, a workman was so seriously scalded in this manner that he died from his injuries. The practice is a very dangerous one, and should never be allowed. Of a similar nature to the above, and one which should be as strongly discountenanced, is the practice of screwing up man hole, hand-hole, and similar plates while boilers are under steam, to stop leakage. A great many accidents have been caused in this manner. A few years ago a battery of three horizontal tubular boilers were fired up, and on raising steam the joint of one of the man hole plates was found to leak quite badly. Instead of letting down the steam and repacking the joint, a wrench was applied, and the attempt was made to stop the leak by screwing up on the bolt. This proving insufficient, a long piece of pipe was slipped over the handle of the wrench, and more force applied. The immediate result was the fracture of the man-hole frame, the explosion of the boiler, the destruction of about \$10,000 worth of property, and the loss of three lives.

Only a few months ago a similar accident occurred in a large city in one of the Middle States, but in this case the boiler was of the sectional type. A cap covering the end of one of the water tubes began to leak, and two men, armed with a 24-inch monkey-wrench, attempted to stop the leak by screwing up the nut on a 3/4-inch bolt, with 100 pounds of steam on the boiler. Result: one man killed, and two others badly scalded.

Several bad accidents have also happened through the carelessness of men who have tried to take off man-hole and similar plates while boilers were under the steam. This may appear incredible, but it is nevertheless true. Only a short time ago one of our inspectors, while making quarterly visits in a neighboring city, entered a boiler-room, and found a man trying to remove a man-hole plate with 20 pounds of steam on the boiler. He had removed the nut from the bolt, and was trying to drop the plate (in this case the boiler was provided with an internal man-hole frame) into the boiler. He had just begun the job, and the plate, owing to the great pressure on it, had fortunately so far resisted his efforts to dislodge it. It may be inferred that he had a pretty loud call to "get down of that boiler," and very fortunate for him it was, too.

A few months ago a very bad accident occurred in a rubber works, where two men attempted to remove the head from a vulcanizer before shutting off steam. These vessels consist of a cylindrical shell, and the goods to be vulcanized are put in at one end, and the opening closed by a circular plate or door, which is belted to a flange on the end of the cylinder. After the men had removed some of the bolts, the steam pressure proved to be too great for the remaining bolts to withstand, and the head was blown out with great force, killing them instantly, and damaging the building and machinery to a considerable extent.

This list of accidents might be continued almost indefinitely, but we think we have said enough to call the attention of those interested to the fact that too much care cannot be exercised in the management of steam apparatus of all kinds. Eternal vigilance is the price of safety, and it is much easier and more practical to avoid accidents by the constant exercise of the greatest care than it is to judge the fragments when an explosion occurs.

THE LOGGING OUTLOOK.

In last week's issue of the *Gazette* we noted the apprehensions felt by the lumbermen on account of the soft weather regarding the getting in of a stock of logs sufficient for next summer's cutting. A good deal of delay had been caused and estimators were discounting the stock 10 to 25 per cent off what is required, but a change has come over the spirit of their dreams. Freezing weather has been waited from the boreal regions, and where snow has not fallen the freeze up has rendered the sprinklers available. There is no trouble about shipping in the logs now. Wisconsin is well supplied with snow—too well supplied, in fact, and in some portions of Minnesota and Michigan there is enough to help very materially in the logging operations. Hay will be made while the sun shines (or doesn't shine) and logs will be rushed to the streams until the skidways are bare. By that time another thaw may occur. We are not quite ready yet to decide that this will not be an open winter. But one thing we are convinced of—and that is, the log crop will not be so much as 25 per cent short of actual requirements. But there is time yet for an enforced curtailment. This polar wave may pass away and mild weather prevail in February. We shall know more about it anon.

Of operations in the Northwest the *Lacrosse Republican* says:—

At a meeting of the Menominee River Boom Company, held at Marinette last week, at which were present Senator Sawyer, Jesse Spaulding, of Chicago, Congressman Stephenson and others, the members of the company did not appear to be at all alarmed as to the outcome. They will have with this year's cut and what was left over from last year, sufficient stock to keep them running all next season. There are this season about 5,000 men at work on the Menominee and its tributaries. This year's cut was estimated at 372,000,000 feet, but it will fall below that amount. At the close of last season there was 70,000,000 feet on hand, which, together with the cut this winter will give about 400,000,000 feet for use next summer. The cut on the Peshtigo will amount to about 80,000,000.

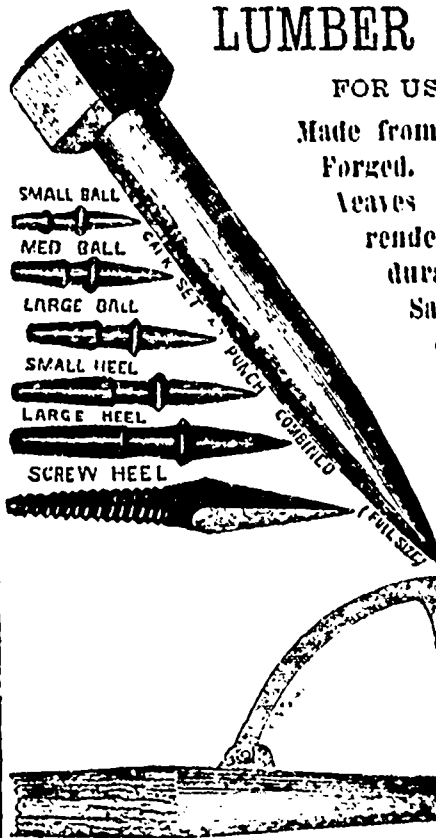
In the Eau Claire region the anxiety of lumbermen was relieved by the heavy fall of snow which was general over the entire Northwest. The weather has proven so disastrous that it was thought several contractors would have to throw up their contracts owing to financial embarrassments, but if favorable weather now sets in they will probably come out all right. The cut will be from 20 to 25 per cent short of the estimate, which in round figures is 135,000,000 in the Chippewa district, making the total cut in that district, under the most favorable circumstances, between 450,000,000 and 500,000,000. There will be at the end of this week, between 3,000 and 3,500 men at work in the woods.

Black River Falls lumbermen predict a short out in their region, even under the most favorable circumstances, and a consequent rise in prices next spring.—*Lumberman's Gazette*.

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Made from the Best Refined Tool Steel and Forged. The method used in tempering leaves every one of the same temper, rendering them stronger and more durable than any other Calks made. Samples and prices free on application to the undersigned.



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Strongest and Lightest in the market. Made of Best Cast Steel by drop forging process. The Handles are made of best quality straight grained split and turned Rock Maple, 6 to 8 feet in length, bored specially to suit the pick. Prices on application.

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Market Reports.

TORONTO.

From Our Own Correspondent

JAN. 25.—Business is now extremely quiet, and will remain so while the present severe weather continues, it will take some days in fact before the railroad companies will be able to do much shunting in the yards owing to the block of snow caused by the last storm. The want will not be severely felt by dealers, as there is but little demand at the yards. The bulk of the lumber now selling is for factory use, 1 1/2 cut up and better being in fair demand and the supply limited. The bulk of that now selling is far from dry, so that the dry houses will be fully occupied until the new cut comes in.

Bill stuff is tending upward. All short stuff will now bring from 50 cents to \$1.00 per M more than for the past twelve months. The splendid sleighing now enjoyed by the mill men will no doubt tend to check any further advance however, as there will be great exertions made to secure a full stock of logs and their efforts bid fair to be crowned with success.

The railroad companies have again started their usual winter campaign of weighing car loads of lumber, and, as it is usual in such cases, the lower priced lumber has to take the brunt. Hemlock seldom escapes the weigh master, and in some cases it becomes a question with the consignor or consignee, as the case may be, as to the advisability of taking delivery from the company, as the amount claimed for freight foots close up to the value of the lumber. Full satisfaction between shippers and the railroad companies will never be arrived at until a lower tariff is made on such heavy and low-priced wood as hemlock. Wood dealers are granted special rates on inferior grades of wood for brick yard purposes, and why not grant the same to dealers in sawed hemlock, large quantities of which await manufacture if it can only be made and shipped at a profit. But at the present time with prices at \$2.00 per M below live bill stuff, it cannot be shipped if passed over weigh scales at 9 cents per hundred weight.

There is no change in prices at the yards as yet, although it is quite clear dealers cannot afford to pay present figures and sell as formerly. The consequence is they will not carry more stock than absolutely necessary until it is clear that present prices are to be maintained.

Table listing various lumber products and their prices, including Mill cull boards, Shipping cull boards, Scantling and joist, and Cutting up planks to dry.

OTTAWA.

From Our Own Correspondent.

JAN. 25.—Reports from different quarters of the upper Ottawa give a most glowing description of the work being done in the woods. The recent thaw which was followed by a sharp frost and a snowfall made roads in the bush just all that the lumbermen could reasonably require, and as a consequence the drawing is well forwarded. The ice on some of the great lakes to the north, however, is said to be anything but good, and the greatest precautions have to

be observed by those whose duty it is to forward supplies. Some time ago 15 teams were drowned on Kiffewa Lake while thus engaged. However, it may be said that casualties are very rare, in fact, considering the immense force of men engaged in the lumbering industry, this is a phenomenal year in that respect. Your correspondent had a conversation with one of the largest lumber merchants on the upper Ottawa a few days ago, and his remarks on the prospects of the trade for the coming season all pointed to a prosperous year. This gentleman expects to get to market three rafts of white pine out on Black River alone, and at least one hundred thousand logs. He says that in his long experience he never saw a more favorable year for work in the woods, and from the present depth of snow in the Black river country he anticipates a good flow of water in the spring. In fact the same may be said of all the other streams in this district. The thaw which occurred about New Years changed all the snow then on the ground into ice, making it a kind of reserve. The matter of water for getting logs out of the various streams on which they are deposited, is, as everyone acquainted with the business knows, of the first importance, and the cheerful prospects in this respect are most encouraging. Mr. E. B. Eddy, one of the lumber kings of the Chaudiere, starts in a few days for an extended trip to Europe, and from thence to South America. It is known that Mr. Eddy undertakes the long journey more for business than pleasure, and hopes to be able to make arrangements whereby he can ship direct to the different markets in Europe and South America without any interference of the middleman. His trip will, it is expected, last over four months. Stocks at the Chaudiere yards may be said to be froze up for the winter, as there is nothing outside the local demands and that itself is but trifling.

CHICAGO.

AT THE YARDS.

The Northwestern Lumberman of January 22nd says:—If orders for shipment had been plenty during the past week, but little could have been done on account of the continued stormy weather, with considerable snow Tuesday and Wednesday, making it difficult to load cars. But orders were few, so that the yard men were content to remain in their offices. The monotony of the current time is, however, being somewhat relieved by the inquiry that is awakening. Within the past week the general lumber trade has shown that it still lives and intends to do business for the year to come. There are few yards that have not been called upon to make estimates on bills during the past week, and some of them have been heavy. As yet buyers appear to be in no haste about placing their orders, and it is quite likely that the majority of inquiries are merely to feel the market. Yet the season for stocking up in the southern part of the prairie states is near, and, judging from past years, lumber must begin to move in considerable volume during the next two or three weeks. It is generally conceded, likewise, that stocks in retail yards are unusually low, which will necessitate early buying. Under the circumstances, there should be a fair movement of lumber by the middle of February, and undoubtedly there will be unless frequent snowstorms and very cold weather prevent.

When the demand for car strips is taken into consideration, January trade this year will exceed that of last. Buyers are still picking up all the clear white pine short flooring and Norway strips for car siding and decking they can find. In some instances cutting long strips to the required length has been resorted to. There appears to be no limit to this demand, nor will there be until all the available dry stock has been absorbed. Inquiry as to prices paid for such stuff is generally answered by a shrug, or vague language, though it is insisted that it is bringing higher prices than a short time ago. In fact, there was no market for Norway strips last summer and early fall. Since all the car shops are busy, and some of them refusing orders unless at an advance in value, it can be safely assumed that car stuff will continue to sell and at stiff prices. The late reduction of five cents a hundred on eastern freight rates has slightly stimulated

shipments in that direction. Dealers say that the reduction is too meagre to be of much benefit unless it leads to cuts and soft rates all around. Inquiries from various eastern points are coming in, and there is some shipping of small lots. The desultory trade that sets in to the eastward and southward in the winter time is for specialties, covers a wide range of territory and demand, and amounts to a considerable aggregate. Orders are received from Maine to Florida, and the dealer here seldom fail to respond with what is wanted. The demand in Pennsylvania, the two Virginias and Maryland, can be called heavy at certain seasons of the year, and is underestimated by the majority when considering the Chicago yard trade. One of the Twenty-second street houses lately filled an order for Portland, Me., and one for Cedar Key, Fla. In the Portland bill was white pine piece stuff and cull fencing; the Florida order called for oak lumber. The reason why there is this widespread call on Chicago stocks is because it is known everywhere that an order sent here will be promptly filled. A man wanting a car load of specials finds it more convenient to order from a point where he knows the order will be attended to at once and filled than to try a near-by place, perhaps, at which he is satisfied that but a part of his bill can be made up, and probably with unsatisfactory lumber at that. While it is conceded by many dealers that the trade of this city may hereafter be reduced in volume by reason of a decline in the white pine supply and the competition of northern districts, it is claimed, and with reason, that this will remain a great market for well assorted and fine lumber as long as the accessible forests yield up their wealth of raw material. The position with reference to lake and rail transportation insures such a continuance.

The talk about prices is still strong. There is no reason why dry piece stuff, fencing, 12-inch boards, and good strips should sell for anything but firm prices. Values for the next 60 days will be more or less affected by the weather conditions, but dealers should not get "rattled" because of dull trade during the winter. If the winter is unfavorable to shipments, and there is consequent delay about putting in spring stocks, it will only result in a greater rush later on, which would be favorable to stiff prices. Time flies fast, and a little patience, with a firm hold on values, will bring the trade through the winter in fine form. But an attempt to force business out of season, and against adverse weather conditions, can only result in a weakening of values.

There is something of a breeze among the sash, door, and blind manufacturers about a shortness in the supply of thick lumber that enters their operations. It is said that the supply at Oskosh is meagre, and that buyers in Wisconsin are active in picking up lots at mill points throughout the state. This feature of demand may have some significance to the holders of thick lumber in the yards of this city.

Receipts of lumber and shingles, for the week ending Jan. 21st as reported from the Lumberman's Exchange:—

Table showing receipts of lumber and shingles for the week ending Jan. 21st, including 1886 and 1885 data.

Table showing stock on hand for Jan. 1, 1885, including Lumber & timber, Shingles, Lath, Pickets, and Cedar posts.

EASTERN FREIGHT RATES. FROM CHICAGO AND COMMON POINTS ON CAR LOAD TO OF HARD AND SOFT LUMBER. IN EFFECT NOV. 1.

Table listing freight rates to various locations: To New York, Boston, Philadelphia, Baltimore, Washington, Albany, Troy, Buffalo and Pittsburgh, Shenectady, Wheeling, Suspension Bridge.

Table listing prices for Salamanca, Black Rock, Dunkirk, Erie, and Toronto.

OBWEGO, N.Y.

From Our Own Correspondent

No change in quotations. The demand has improved some for past weeks; country yards are buying to keep up an assortment. We do not look for a brisk trade during the winter.

Table listing prices for Three uppers, Picking, Cutting up, Fine Common, Common, Culls, Mill run lots, Slidings, Mill run, 1x10, 12 to 18 ft., Selected, Shippers, Mill run, 1x10, Selected, Shippers, Mill run, 1 & 1 1/2 in. strips, Selected, Culls, 1x8 selected for clapboards, Shingles, XXX, 18 in. pine, XXX, Cedar, Lath 1 1/2, No 1, No 2.

BUFFALO.

Table listing prices for Uppers, Common, and Culls.

TONAWANDA.

CARGO LOTS—MICHIGAN INSPECTION.

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

ALBANY.

Quotations at the yards are as follows:—

Large table listing prices for various lumber products: Pine, clear, 4 M, 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., 4 M, Pine, 12-in. boards, 16 ft., Pine, 12-in. boards, 13 ft., Pine, 1 1/2 in. siding, select, Pine, 1 1/2 in. siding, common, Pine, 1 1/2 in. siding, select, Pine, 1 1/2 in. siding, common, Spruce, boards, each, Spruce, plank, 1 1/2 in., each, Spruce, plank, 2 in., each, Spruce, wall strips, each, Hemlock, boards, each, Hemlock, joist, 4x8, each, Hemlock, joist, 2x4, each, Hemlock, wall strips, 2x4, each, Black walnut, good, 4 M, Black walnut, 1 inch, Black walnut, 3 inch, Sycamore, 1-inch, Sycamore, 1 1/2 inch, Sycamore, 1-inch and thicker, White wood, 1-inch, Ash, good, 4 M, Ash, second quality, 4 M, Cherry, good, 4 M, Cherry, common, 4 M, Oak, good, 4 M, Oak, second quality, 4 M, Basswood, 4 M, Hickory, 4 M, Maple, Canada, 4 M, Maple, American, per M, Chestnut, 4 M, Shingles, shaved, pine, 4 M, 2nd quality, extra, sawed, pine, clear, cedar, mixed, cedar, XXX, hemlock, Lath, hemlock, 4 M, Lath, spruce.

LONDON.

The Timber of Jan 16th says:—Flooring holds the chief place in the import list for the past week, although the arrivals altogether are within narrow compass and the reverse of important. In the Quebec sheds will be piled the two Fredrikstad cargoes per Biscaya and Franz, the former of which contains some saleable lines of good quality yellow flooring of Pottersens shipment. The Millwall docks receive several consignments of yellow and white flooring by the Gothenburg and Christiania liners to the extent of about 50 000 pieces. The St. Hilda just discharged in the Russian yard, brings a miscellaneous cargo of Hilmstadt deals and battens of the HB brand w. l. o. to complete the list, a Drontheim cargo (the Victoria) of 260 standards destined for the Centre yard reports for Messrs Bryants' Limited. The impoitation, although not heavy, is about an average for this period of the year, but we hear that several cargoes of flooring,

from Fredrikstad and elsewhere, may be shortly expected to supplement our present stock in the quarters where it is weakest.

The almost impassable state of the roads, consequent upon the recent heavy fall of snow and the succeeding frosts, has seriously affected the returns made by the Surrey Commercial Dock Co. of the deliveries for last week, as the following comparative statement clearly shows:

	1886.	1885.	1884.
Deals, etc. (stds)	1,409	2,549	3,383
Flooring " " " " " "	246	498	682
Timber (loads)	605	719	1,600

Messrs. Churchill & Sim's three days' auction has been the event of the week. Each day has gathered a large assemblage of buyers, all of whom were evidently deeply interested in watching the result of this "trial" auction. The room, although seldom crowded, was always full, and seats near the front were not easy to get at any time during the course of the sale. The catalogue itself, comprising several lots of almost every description of deals and flooring, was peculiarly suited to test the range of values likely to hold during the spring, at least, of 1886.

So far as an improvement in prices is concerned, those who hoped for better things, it seems, have had to bear another disappointment. To look at this week's catalogue, and then back to those dealt with at the end of November, enables us to arrive at no other conclusion than that the market has been virtually unaffected by the enforced repose which everyone thought would be of such benefit to it. In the prices now under consideration we discover the least possible variation from the figures current in November; indeed, we may forget the break there has been in the auctions, and continue to trace the tendencies then observable as though we were taking up the thread of the discourse at only a week's, instead of a month's, interval. Battens and common deals are as weak as they ever were, while flooring in third quality shows a tendency to improvement that is not shared by seconds. There is, however, this gratifying feature about the figures made for best quality goods of all sorts, that a fairly good standard was uniformly made, as there were plenty of buyers for all that was offered. Flooring, as a general rule, commanded the best results.

The most important lines in the auction were the various Petersburg stocks, of which the bulk were battens. Archangel found fair favor. Next in importance to the Petersburgs, come the shipments from the Finnish ports, which again comprise a long string of batten sizes. These may be dismissed with the remark that 7 in. and 8 in. fluctuated between £6, £6 5s., and £6 10s., with other sizes in proportion.

Variety is essentially the crowning feature of the Swedish stocks, and in the prices realized we have grounds partly for satisfaction and partly for regret, although unfortunately the latter is likely to be the predominating feeling. Fifth deals were apparently in sufficient request to save the price falling below £6 15s., at which a variety of marks found ready buyers. This, in itself, may not be much to say, but it is so far satisfactory in that, as will be remembered, not a few lots of this description were sold as low as £6 5s. in the December auctions.

Spruce, pine and red pine were offered in larger quantities than usual, and with satisfactory results. Third Saguenay spruce, 3x9 in. 12 feet, at £6 15s., 11 feet at £6 10s and ends at £6 5s, show a much better result than do most of the Baltic white deals with which, to a great extent, it comes into competition. Third regular pine planks, Saguenay, at £3 15s., reads much like the autumn price; only we should have thought the present partial scarcity would have tempted buyers to pay a little more now that the supplies are closed against them for some time to come. The red pine deals submitted were chiefly in the lower qualities, and for them £6 10s was a fair value. We have seen many better parcels also than the Quebec firsts, of which the plank made £11 15s. The pitch pine deals, ex Telefoi, fetched some wretched prices, although the circumstance that they were a storage lot and of very undesirable specification is accountable for a good deal.

A good result attended the sale of Odessa oak boards, and also of the Fredrikstad slating battens, in both cases a fair advance

being established on last prices. Quebec birch, 16 inch to 18 inch, made 67s 6d, which seems to show that notwithstanding the recent heavy import, buyers are not deterred from paying a good price for fair quality wood.

Flooring, as we have remarked, has the reputation of being the best sold. The freshly imported cargo per Pickwick excited a keen competition, which is attributed as well to its fine condition as to the suitability of the dimensions to the requirements of the market at the present time. The few 2rds that were offered realized prices which confirm us in believing that this quality is to enjoy a slight temporary scarcity, accompanied by a good demand. One of the best pieces of the day was that made for the 7x7 inch 3rd yellow ox Pickwick, and although 7s for this lot may savor of a lucky chance, it shows at least an anxiety to possess the lot on the part of many buyers present. Third 7x7 inch yellow matching—that old offender—was stimulated in one instance to an advance of 6d per square, after which 8 inch matching was quick to follow suit. Narrow matching, in some cases, improved slightly, but we do not lay much stress on this fact. Inch white went exceedingly well, 1sts making 8s 9d and 2nds 7s 9d, the latter figure being also secured by a lot of DDD. Almost all 1st yellow flooring and matching commanded good figures, and this not only in 7 inch but as well in 6 inch and 5 1/2 inch, which is more unusual. For the 1st 7x7 inch and 7x7 inch, t. g. b., ex Pickwick 8s was made, while the 1 1/2 inch scored 13s 3d, and the 1 inch 10s 3d. In inch 2nds, although 7 inch and 6 1/2 (of which there were some good lines in the Pickwick) fell flat at 8s and 3d, there is ample cause for satisfaction that 1x6 inch AHA should secure 8s 3d. A precisely similar remark obtains in the case of the 5 inch 2nd yellow, 6s 9d for 6 inch and 6s 6d for 5 1/2 inch being much more inspiring than 7s and 7s 3d for 7 inch. In white 7 inch, although there are only a few lots to judge by, prices are also firm when 1st Christiania 6 1/2 inch can make 7s and 2nd 6 inch as much as 6s 3d and 5s 6d. The last named is an excellent price, and falls also the cargo ex Pickwick. From the various odd lots of flooring submitted we select the 1x7 inch EA & Co. 3rd Dram. from 6s 6d as evidence of the improvement in 3rd quality, and the JD & Co 7x6 inch yellow flooring at 7s, with the 7x7 inch white matching at 5s 9d, as instances of really good prices. The Kjobbrek 1 1/2 x 6 1/2 inch yellow also shows a considerable advance on the last price made.

WINNIPEG.

The Commercial says:—There is no improvement to note in this branch. Trade still holds in about the same inactive state as during the previous week, and no immediate improvement is considered likely for at least a few weeks to come, or anything like activity until a near approach to the time when building operations can again be resumed.

WOOD-WORKING PATENTS.

- The following list of patents relating to the wood-working interests, granted by the United States Patent Office, January 12th, 1886, is specially reported by Franklyn H. Hough, solicitor of American and Foreign patents, 925 F. Street, N. W., Washington, D. C.
- 331,330—Log turner—H. T. Bassim, Decaturville, Ohio.
 - 331,324—Plane—J. Woods, Columbia, Tenn.
 - 331,175—Saw guide, band—W. Kratzer, Allentown, Pa.
 - 331,285—Saw mill feed mechanism—T. J. Reamy, Nashville, Tenn.
 - 331,284—Saw mill head block—T. J. Reamy, Nashville, Tenn.
 - 331,241—Saw tooth, insertible—A. Krieter, Columbus, Ohio.
 - 331,303—Saw tooth, insertible—J. S. Swank & W. Dages, Big Trees, Cal.
 - 331,297—Sawing machine—D. W. Smith, Long Lake, Mich.
 - 331,141—Sawing machine, circular—J. F. Welch, Brooklyn, N. Y.
- PATENTS ISSUED JAN. 19
- 331,538—Lathé—W. J. Muncester, Cumberland, Maryland.
 - 331,567—Saw—G. N. Clemson, Middletown, N. Y.

- 331,664—Saw mill feed carriage—G. M. Hinkley, Milwaukee, Wis.
 - 331,730—Saws, machine for jointing and dressing circular—C. Scotch, Truckee, Cal.
 - 331,663—Sawing machine—G. M. Hinkley, Milwaukee, Wis.
 - 331,674—Sawing machine—S. P. Dresser, Pleasant Mount, Mo.
- PATENTS ISSUED JAN. 26.
- 331,893—Chuck, lathé—E. Pement Esmond, Dakota.
 - 331,997—Edger, gang—S. S. Vall & J. Solli day, St. Louis, Mo.
 - 331,000—Hoop pole sawing machine—J. Powell, Williamsport, Pa.
 - 331,000—Hoop splitting machine—H. Weit zel, Ithaca, Wis.
 - 331,910—Lumber drier—C. H. Derby, Somerville, Mass.
 - 331,943—Plane—A. Doll, Lena, Ill.
 - 331,818—Saw guide, band—S. Stephens & D. E. Handson, Indianapolis, Ind.
 - 331,785—Saw mill, band—E. Benjamin, South Evanston, Ill.
 - 331,515—Saw mill dog—J. B. Davis, Munroville, Ind.

The Saginaw Courier writes not a prominent lumberman of Ohio in that city last week and asked of the outlook for the lumber business, and was told that a rather better trade than was had last year was expected. The gentleman said in some parts the business had not been very satisfactory, especially in Ohio where the small yards had made but little during the past year. He said they were not stocking up much yet, that in fact the heavy dealers in Cleveland and Toledo were not making an effort to sell as the believed prices must advance.

WANT A LUMBER EXCHANGE.

Agitation for the establishment of a lumber exchange in New York city is going forward. The Times notes the movement as follows:—

"One hundred and fifty firms carry on the lumber business in New York, and one of them estimates the amount of capital invested at more than \$10,000,000. The persons who compose these firms are in the aggregate worth much more than three times this sum, and if the real lumber market of New York is not so large as Chicago's there is more wealth back of it. For years the New York lumber dealers have tried in vain to establish an exchange. The reason an exchange is desired by them is that by surveying and classifying a system of proper prices may be put upon lumber. Such a system of prices has been adopted in all the principal lumber markets of America except New York, where inspection is not standard, but private, each firm employing its own agent. The lumbermen who want an exchange contend that with its influence for good a set of regulations alike just to the men in the south, west, and northwest as well as to the New York dealer to whom he sells, will be taken up and stood by. They want, as one of them said yesterday, 'regulations which will assure an inspection return properly verified, that it will carry with it evidence of the value of material needed at home and the certificates of both value and integrity that is needed abroad. As it is, however, all lumber depends absolutely on the inspector. If mistakes are made, there are some of the New York dealers who wish for a proper exchange to deal justice all around.'

"The eastern editors of the Northwestern Lumberman published at Chicago, say that not a week passes that complaints are not received from shippers of hardwood to the New York market. 'There is no head or tail to the lumber inspection here,' they say, 'and it is this lack of open and authorized inspection that is bringing the New York market into bad repute among mill men all over the country.' The element of the trade which opposes the exchange does so, it is asserted, on the ground that it is not necessary to the needs of the trade, and that, so far as the system of inspection is concerned, the reputation of the firm to which lumber is shipped should be sufficient authority for the honesty of its inspection. The committee which had the matter in charge yesterday adopted a constitution and by-laws. The Legislature will be asked to authorize lawful inspectors."

MANAGEMENT OF BOILER FIRES.

The Hartford Steam Boiler Inspection & Insurance company's bulletin has a timely and instructive article, which exhibits in a striking manner the serious results which may follow the use of very good feed water when a strong course of practice is followed in the management. The facts are as follows:—

Five new boilers all burned and bagged inside of three weeks after they were first started up. The water used was of very good quality, making but little scale or sediment, and the accidents were due entirely to the manner in which the fires were managed. The burns all occurred within a few inches of the front heads of the boilers, and all occurred at the same hour of the day, although on different days.

It was customary to bank the fires at noon, or rather to fill the furnace full of soft coal, and have the fire door open instead of closing the damper partially, to check the formation of steam. This allowed a current of cold air to enter above the fuel and impinge on the fire sheet. This, of course, would check the circulation, and what little sediment the water held in suspension, and which would circulate with the water as long as steam being rapidly generated, would naturally be deposited on the bottom of the boiler near the front end.

Upon starting the works at one o'clock, it was the practice to run a slice bar through the thick layer of coal put on an hour or so before, and which had in the meantime become thoroughly coked, and break it up thoroughly, then close the fire door. This intense heat thus suddenly applied to the boiler burned the sediment on to the fire sheets before a brisk circulation of the water could be established, which would have gradually picked it up and prevented any damage. But after it was once baked on the shell it could not be removed by the circulating water and the over-heating, bagging, and burning of the iron followed naturally in a short time.

The bag, or pocket, shown in the illustration is about four inches deep, 15 inches broad at the base, and at the lowest point the iron is thoroughly burned out. The thickness of the layer of sediment on the interior is only about 1-16 of an inch. Upon careful examination by the company's inspector, a change in practice was made, and no further trouble has occurred for several years.

Another similar case occurred at about the same time in another locality, where, in a battery of 14 boilers, three of them "came down" at once. This latter case was due to the peculiar method of "baking" the fires, and was stopped, as was the first one, by a change in practice.

Too much care can not be exercised in cases similar to the above in the method of firing the boilers. Fires should be started and steam raised gradually, that circulation may be established in a proper manner. This will not only prevent such accidents as have been described, but will also prevent undue strains on different portions of the shells, due to the differences of temperature. Many boilers have undoubtedly been ruined by injudicious firing, and the fault attributed to some defect in the boiler, when in reality none existed.

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In Nevada there is a peculiar wood known as mountain mahogany. The tree does not grow large. A tree with a trunk a foot in diameter is much above the average. When dry the wood is about as hard as boxwood, and being of a very fine grain might no doubt be used for the same purpose. It is of a rich, red color, and very heavy. When well seasoned it would be a fine material for the wood-carver. In the early days it was used in making boxes for for shafting, and in a few instances for shoes and dice in quartz battery. Used as fuel it creates intense heat. It burns with a blaze as long as ordinary wood would last, and then is found (almost unchanged in form) convert to a charcoal that lasts about twice as long as ordinary wood. For fuel it stands much higher than any other kind of wood; indeed, a cord of it always brings the same price as a ton of coal. The only objection to it as a fuel is that it creates such an intense heat as to burn out stoves more rapidly than coal, however used.

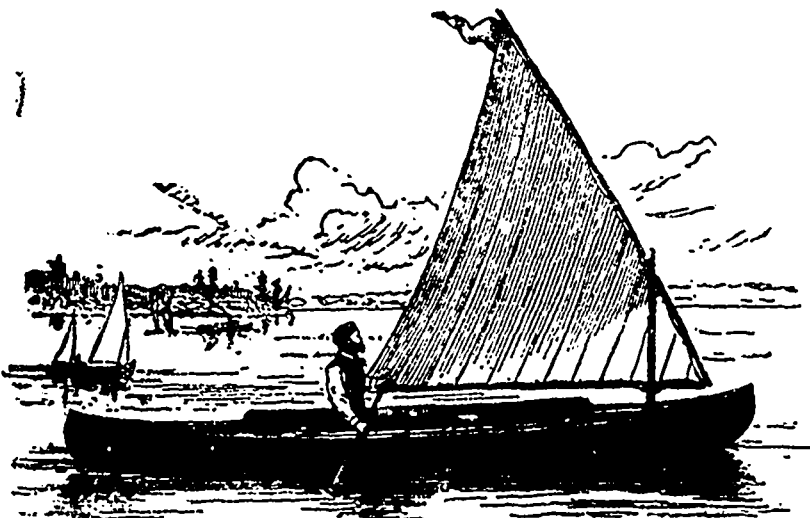
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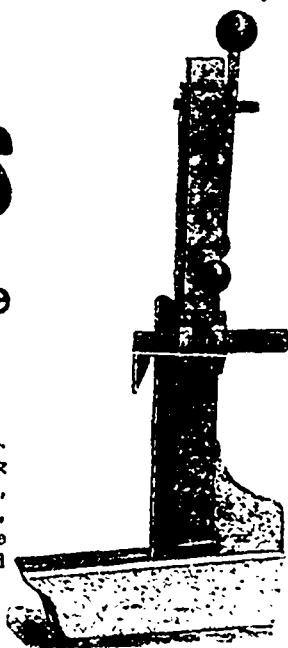
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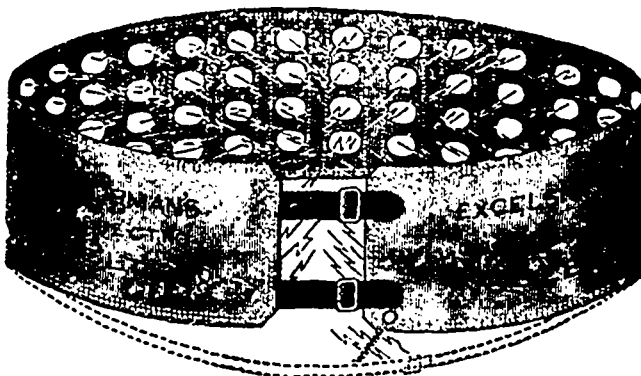
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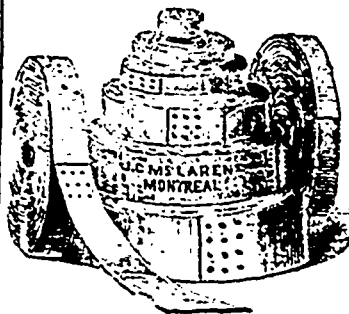
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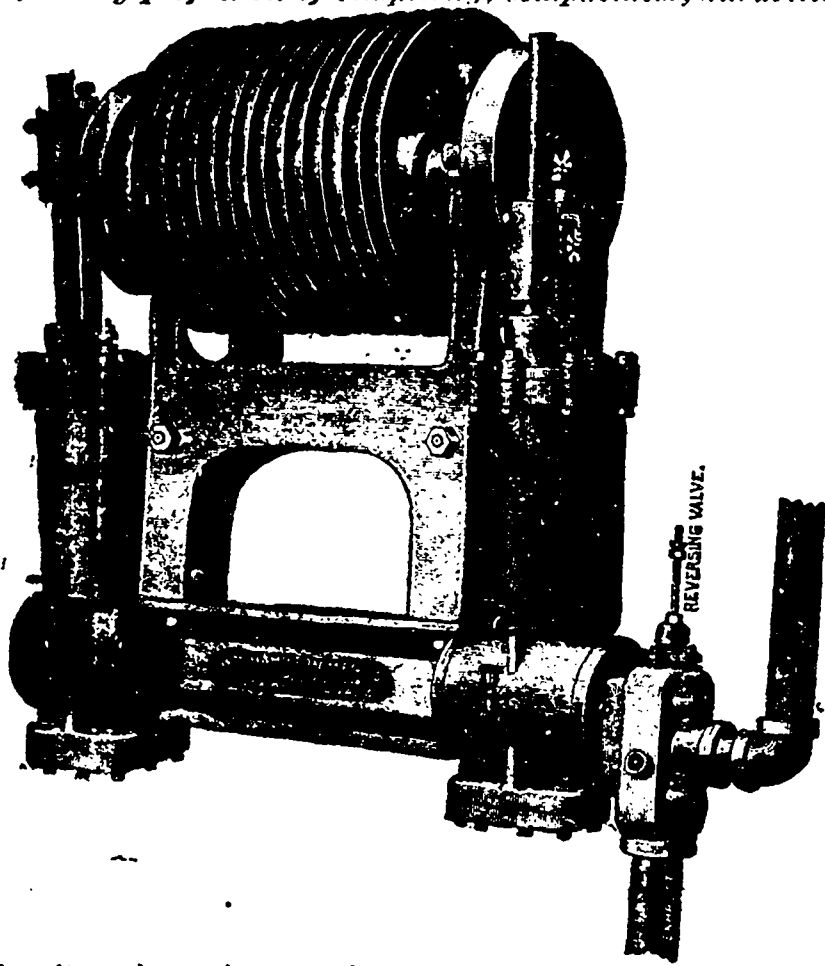
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The above engraving illustrates the Twin Engine, 10x16, for Rope Feed, for Saw Mill Carriages. The spool is 27 in. diameter, 30 in. face, is grooved 2 in. pitch for 1½ in. rope. The shaft is steel, 4½ in. diameter, with disk cranks. No connecting rods, eccentrics or valve rods to get loose and out of order. The ports are in the trunions, and worked by an oscillation of the cylinders, and are held in their place in the downward motion by a steam cushion below. The sawyer's valve is a perfect balance, and by moving this valve the engine can be reversed, stopped or started almost instantaneously if necessary, as the sawyer has perfect control of it by his lever either to go fast or slow. Should the sawyer let go of his lever either by mistake or any other cause, it is balanced so that the valve will come to the centre and cut the steam off both cylinders and stop the feed. When standing, the lever is locked or fastened, so that it is impossible for it to start off itself. The engine stands upright below the carriage, and bolted to two upright beams, placed on the mill for the purpose. When a rack is preferred in place of the rope, we put on a steel wheel 30 in. in diameter, and the engine placed high enough to work into the rack on carriage bar, or if the beams come in the way, an idler wheel can be used between engine and rack segs; or, the engine can be placed at a distance and have a shaft

from it to the carriage; or it can be placed in the engine room, where it is under the control of the engineer for oiling, thence by shaft and pinion to carriage rack bars. These engines are well adapted for cutting long logs, or where the logs are mixed, the advantage of this feed will be apparent to mill men. When the carriages are used in two or more sections, the coupling and uncoupling of each section is quick and simple.

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We guarantee this to be the best Mill of its kind got up, and would ask any one wanting a good Band Saw-Mill to communicate with us. We would also call the attention of Mill Men to our new IRON GANGS, CIRCULAR MILLS and MILL MACHINERY. For further information, prices, &c., address the Manufacturers,

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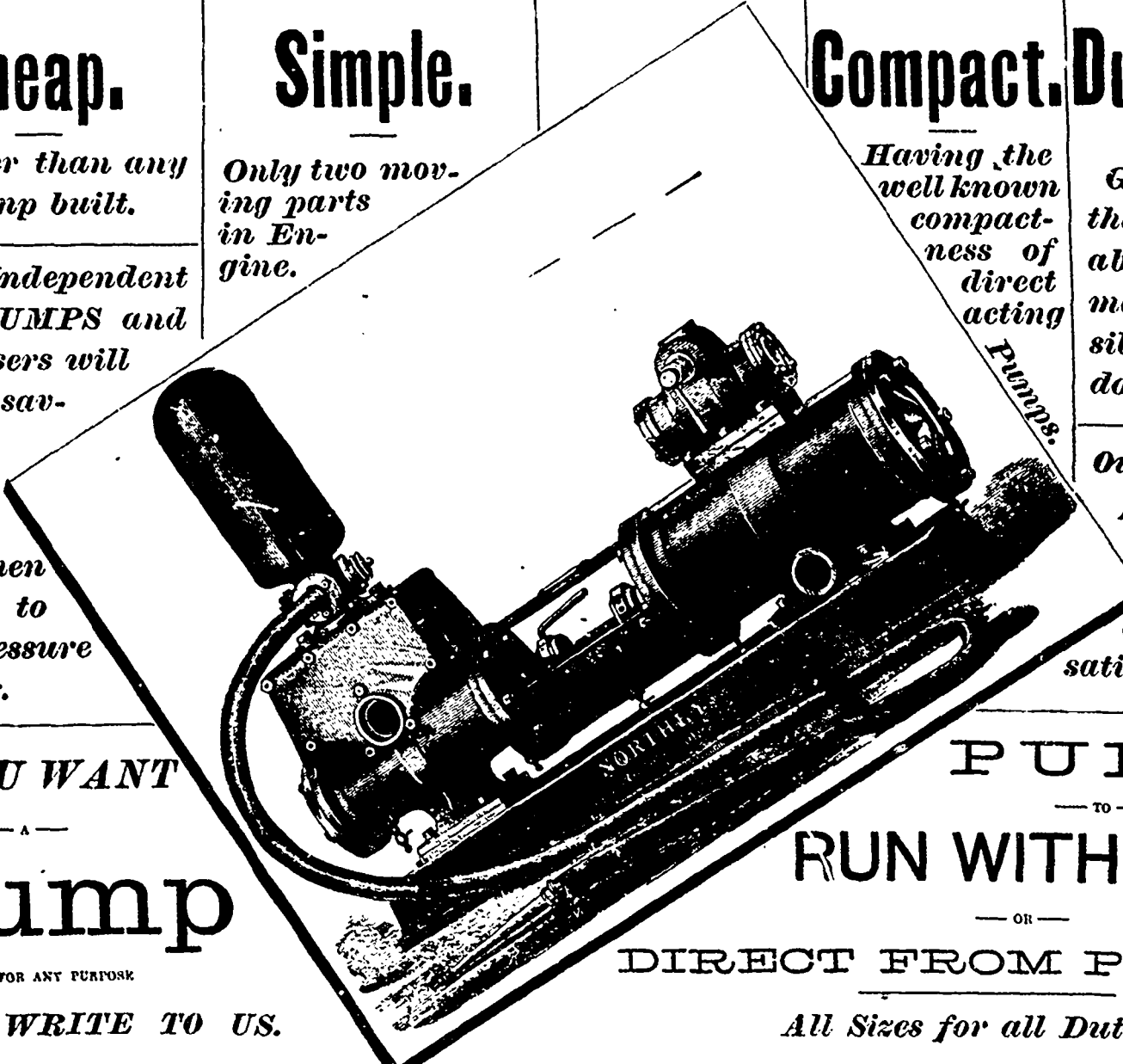
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