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NO. 20.

HACKMATAK KNEES.

Among the board piles and heaps of shingles which line Banvor's wharves at intervals are noticed another product of the forest which, a though used for many purposes and shipped far and wide, are little known about. I mean knees, which come from the roots of the hackmatack and spruce tree, generally from the former. The handling of knees has been carried on in Maine, for many years, and although the trade has declined considerably late, several firms are yet engaged in it. The knee trade is not what it once was, for the reason that ship-building has declined, while iron knees have to a considerable extent taken the place of wooden. A wooden vessel requires a great many knees, large and small, every deck beam being fitted with six—three at each end—and when ship-building in Maine is good, so is the knee trade. A good part of the knees sold now go into the construction of large warehouses in the big cities, floating bath or boat houses, barges, etc.

Knees are gotten out at all seasons of the year. Sometimes a man can make four or five dollars a day and at other times but small wages. It all depends upon whether he strikes a locality where suitable trees are grouped together, or a section where they are few and scattered. He selects the biggest root for the knee and then bores into the tree trunk a little way from the ground to find whether it be decayed or sound. The knee is cut out in a rough manner with an axe and shipped to the nearest buyer. Sometimes the tree trunk is taken out for timber, but it is oftener left where it falls. A gnarled and stunted tree is the best for knees, as may readily be inferred, and a loam subsoil with clay bottom is the kind of land where such trees grow, the hard clay turning the roots aside and thus forming the desired angle. The knees, as its name indicates, is formed of two parts at right angles with each other. The lodger is known as the stock and the shorter as the root. The knees are of various sizes, designated by numbers from four to ten, inclusive. The dimensions range from four feet length of stock and two feet root for a No. 4 knee, to five feet six inches stock and four feet root for a No. 10. The thickness varies, according to these dimensions, from four inches to ten, after the rough knees have been run through a Daniel's planer. The prices paid by dealers to the cutters are as follows: No. 4, 20 cts. each, No. 5, 50 cts. each; No. 6, 65 cts. each, No. 7, \$1.25 No. 8, \$2.25, No. 9, \$3.25 No. 10, \$4.25.

The greater part of the knees that come to Bangor are cut in Piscataquis county, which abounds in hackmatack. Regarding the present timber growth of Piscataquis I heard a good yarn the other day. It seems that away back in the dim and legendary good old times that we hear so much about, there was in Maine a

land agent named McIntire, who must have come of the famous "bold McIntyres," for he was a man who used his authority for all it was worth, and in this particular instance for more. In his time there were certain domains of Niatou, now Medway, who were accustomed to helping themselves liberally to the timber about Quakish Lake, which is on the West Branch of Penobscot above Grand Falls. This timber then belonged to the State, as it stood on land that had not yet been conveyed to any purchaser, and McIntire resolved to put a stop to the Niatou people's enterprising operations. There was a great growth of meadow hay in this section, on which the trespassers depended for the sustenance of their cattle, and the land agent, perceiving this, ordered some of his henchmen to set fire to the dry grass. They did, and quite a conflagration started. In fact McIntire builded better than he knew, for instead of simply burning up the hay the fire attacked the fine old pines and hardwood trees and swept across the country nearly to Moosehead Lake, destroying millions upon millions of the best timber Maine ever saw. But the fire was not all loss, for from its ashes, over the stumps of the old pines, has sprung up since a growth of sapling pine, white birch and poplar—three trees which are the source of much of the manufacturing life and commercial property of Piscataquis and Penobscot. The famous spool wood district, with its factories, is included in this rejuvenated forest section, and from there are obtained second-growth pine logs from which so many millions of box-boards are sawn, and the poplar, of which so much has been used for paper pulp. The spool stock has been sent from Bangor to points as far distant as Paisley, Scotland; the pulp-wood to Providence and Maryland, and the box-board all over the New England and Middle States, while thousands of sacks of finished spools are sent to Connecticut and elsewhere.—*J. D. in Maine Industrial Journal.*

LEAKAGE AT TUBE ENDS.

Leakage at tube ends is one of the most frequent and annoying defects to which the ordinary horizontal and upright tubular boilers are subject, and while it is not necessarily on its first appearance dangerous, it indicates that something is wrong either in construction or management of the boiler, and it should be attended to at once, for if neglected the resulting corrosion of the head and tube ends will speedily induce a dangerous condition. Many explosions of upright tubular boilers have resulted solely from this cause. Faults of construction may consist of insufficient rolling, or too severe rolling or expanding of the tubes, by which the ends may be split or cracked, so that it is impossible to keep them tight. The second defect is, perhaps, more frequent than the first. The feed-pipe is also very frequently wrongly

located in the head close to the tubes, and when it is, and cold feed-water is used, the tubes in the immediate vicinity are almost sure to show a chronic leak. A heavy coating of scale on the heads between the tubes is sure to set them leaking severely, as the water is thus kept away from the head and tube ends, and they become overheated. In this case the only thing that will do any permanent good is to remove the cause, that is, the scale, when generally, if the defect has not existed for too long a time, the tubes may be rolled and made tight again. But a comparatively short time of severe leakage in this case is pretty sure to so severely corrode the ends that new tubes are required. This collection of scale is also a fruitful source of scaling and cracking of the back tube sheet. The front end of the boiler is not so much subject to this action, as the heat to which it is subject is not so intense. The removal of a heavy coating of incrustation from between the tubes of a boiler is sometimes a matter of some difficulty unless due intelligence is used. With "staggered" tubes, very bad water, and where the boiler is worked hard, the case is much complicated, and the almost sole reliance is a judicious use of solvents, coupled with proper cleaning, as often as the boiler can be spared for the purpose. With properly arranged tubes much help can be obtained by the use of proper chisels and scraping tools. Still no rule of procedure can be given that will apply to all cases. A thorough examination of each case is always necessary to determine the best method of procedure, and it is always easier to keep a boiler clean than it is to clean it after it is badly fouled.—*The Locomotive.*

KEEP A RECORD.

Some weeks since we called upon an engineer friend who was thoroughly wrapped up in his machine. In the course of the conversation he produced a book in which he had for months kept a record of the coal consumed each day, and the horse power developed by his engine as shown by indicator cards taken in the fore and afternoon. These cards, being filed, served as a record of the condition of the engine in these respects which are apparent from the card. This was kept for a long time without his employer's knowledge, half in fear that some objection would be raised, but was at length produced to settle one of the innumerable little points, which only such a record can definitely settle, and met with so hearty an approval that the engineer was supplied with a record book, purposely ruled and lettered, and a planimeter for the more convenient and accurate working up the cards.

All engineers who are handling powers of any extent should inaugurate a system of this kind. Keep a record not only of your coal and power, but of changes which are made and their effect upon your fuel consumption and the

working of your engine. It will not only enable you to review your experience and retain valuable information, but suggestions will frequently arise from it which will be invaluable. It begets a habit of thought, and furnishes the material for deductions which will make you a success in your business, and gives you a means of proving what you have done and can do, which no amount of assertion on your part or recommendation by others can equal.—*Journal of Commerce.*

SAWDUST PAPER

A Vermont newspaper has recently appeared which is entirely printed on paper made from sawdust, the product of Mr. Pond's roller pulp machine, by which sawdust, shavings, chips and pieces of wood can be made with great rapidity into a pulp of clear, fine fibre. This machine will also manipulate the stocks of cotton, sugar cane, wild hemp, etc., at the rate of from 2 tons of dry pulp per diem. The resulting pulp is far superior to any other form of wood pulp, because the fibre is preserved intact and the cellulose is left with it, giving it great strength, softness, and pliability. The tensile strength per square inch of newspaper, which contains from 60 per cent to 75 per cent of ground wood pulp, is from 8 lb. to 12 lb., and stands a test of 17 lb. to the square inch, showing that it is much stronger than paper made from one third rags. As all kinds of paper can be made from this pulp without the addition of rags, cotton, or jute, it can be manufactured at a reduction of from 30 to 50 per cent. or the present cost. The unbleached pulp is also useful for wrapping-paper, and is equal in color and strength to the best Manila. The woods most adapted to the process are the soft woods, such as spruce, fir, pine, poplar and hemlock, the latter making the strongest fibre being equal to jute in strength. Besides the manufacture of paper, the pulp can be utilized for woodware, such as pails, barrels, and mouldings.—*Journal of Progress.*

A DESPATCH from Pichanock on Oct 5th says Lumbering is going to be very brisk in this neighborhood this season. For the last three or four years nothing has been done on the Gilmour limits, and this year several jobbers have received contracts from Mr. Gilmour at very fair prices, and a number of them have already entered on the fulfillment of their contracts. Men and provisions are arriving daily, and there is every prospect of things being pretty lively here this winter. Mr. Gilmour's Pichanock farm has been re-opened, as have also the offices and stores. The Gilmours themselves will also carry on operations on a fairly large scale. Prices average to jobbers from 80 cents to 90 cents per standard.

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PRACTICAL HINTS TO HARDWOOD MANUFACTURERS.

The demand for oak throughout New England is small, as compared with the demand for other hardwoods, and to consumers have such queer ideas in regard to the wood that the trade is not altogether satisfactory. The shipbuilders whose yards are located along the coast, probably use as much as any one industry. Carriage makers use quite an amount, and the railroad companies buy more or less for bridge purposes, and in addition to these there is at certain seasons of the year a limited demand for white oak plank for export.

White oak is the only species that find any sale in New England, and the prejudice is so strong against red oak that few consumers will attempt to use it at any price. The supply is obtained partly from northern Vermont and Canada, partly from Ohio and Indiana, while considerable is consigned east by the mill men of West Virginia and Kentucky. The carriage and bridge builders obtain much of their supply from Canada. The shipbuilders send to Ohio for their long sticks, and to the Virginias and Canada for certain smaller sizes. For house finishing purposes the trade is largely supplied by the mills of Ohio and Indiana. The export trade calls for plank from two to four inches thick, and generally all 16 feet long; the quality must be almost perfect, and a check or crack in the ends will condemn a piece immediately. The oak of West Virginia is well adapted to meet the demands of the foreign trade, but there appears to be very few mill men who understand how to manufacture good quality oak, hence the unsatisfactory comments on the southern oak are largely due to the ignorance of the mill men. It is the nature of oak to crack in drying, not only in the ends but on the face, and it should be the study of the sharp sighted mill man to reduce that feature to a minimum. First of all paint the ends of the logs, and when the lumber is sawed and ready to pile, place the sticks close together and directly over each other, and above all things thoroughly protect the lumber from the snow and rain. Heavy dews and occasional rainfalls, followed by the rays of a burning sun, will spoil the best of oak in a very short time; it therefore pays to put a substantial covering over each pile, at the same time allowing the air to pass around and through the piles continually. Several attempts have been made to introduce Virginia oak into the New England territory for bridge and railroad purposes, but all such efforts have proved unsuccessful and unprofitable, almost wholly on account of the inferiority of the manufacture. Splits, cracks and heart shakes have condemned its use.

The rules of inspection on oak in the Boston market are as follows:—

Oak shall be inspected as No. 1, No. 2, and cull.

No. 1.—Shall be 7 inches and up wide, and free of all defects.

No. 2.—Shall be 6 inches and up wide, and may have a few small sound knots, but two-thirds of the entire piece, as a whole, must be suitable for first-class work without waste.

Culls—shall include all lumber not up to the standard of the above grades.

Oak is inspected for cracks and splits, and such defects will lower the grade.

Standard lengths are 12, 14 and 16 feet.

Standard thicknesses are 1, 1½, 2, 2½, 3 and 4 inches.

The standard inspection is 75 per cent. firsts, the balance good seconds.

For the last two years quarter-sawed white oak has gradually been growing in favor, and the present demand is largely in excess of any previous demand for years. The thickness most used is inch, and it is worked into flooring and general house finish. The furniture manufacturers are using quite an amount for dining tables and sideboards, and the manufacturers of desks and chamber sets use limited amounts. The beauty and value of quarter-sawed oak is in the figure, and it takes more than an ordinary sawyer to cut the saw to good advantage. Only the largest and best logs should ever be quartered, as a most desirable feature in such stock is to secure clearness and width. The eastern market will take quartered oak, five inches and up wide, but the buyers also place

the value on a car load by the amount of lumber that is over 12 inches in width.

The best length to cut quartered oak is 14 feet, although there is a demand for more or less 16 feet, and for such a good price is easily obtained. The demand for thick quartered oak is limited, and the price is usually from \$3 to \$4 a thousand more than for boards.

Quartered oak should always be square edged, and piled in such a manner as to dry out perfectly straight. An eighth of an inch should always be allowed in the sawing, so that the boards will dry out full thickness. It is always better in shipping oak from the South to send it by all rail, as the saving in freight by rail and water is not sufficient to offset the damage in handling, and the unsatisfactory dock accommodations in Boston. Cull oak and three-quarter inch stock, used in the south for tobacco boxes, are not used in the east, and have no market value.—*Northwestern Lumberman.*

FACTS OF INTEREST.

At the fourth annual meeting of the American Forestry Congress President Higley responded and drew attention to the importance of the movement for the restoration of the forests as touching agricultural, climatic, and commercial interests. The various causes, and bringing about the waste of forest trees was referred to and statistics presented in detail showing the rapid and wide-spread destruction of the country's forests. The speaker claimed that the climate and the culture of the soil would be greatly improved and the water supply would be made more abundant by the conservation of trees.

The Rev. N. H. Eggleston, Chief of the Forestry Division of the Department of Agriculture, Washington, read a paper giving some facts and figures in regard to the forests of the country and their consumption. In the course of his remarks the speaker said that the recent census shows that the whole area of land surface, Alaska being out of consideration, is 1,856,070,400 acres; total forest area, 440,990,000 acres; total farm area, 295,650,000 acres. Of unimproved and waste lands, including "old field," there are 1,115,430,400 acres. There are 150,000 miles of railway, including side tracks. It has required 396,000,000 ties for their construction. Supposing that the ties require to be renewed once in six years and that 10,000 miles of new road are built annually, if 25 years be allowed as the time necessary for trees to attain a size suitable for making ties, then it would require 15,000,000 acres of standing timber to supply the annual demand for ties, or an area almost exactly equal to that of Vermont, New Hampshire, Connecticut, and Rhode Island combined. But with the increase of railroads it is to be considered that the annual demand for ties is all the while increasing. The census reports the consumption of 145,778,713 cords of wood and 74,000,000 bushels of charcoal for fuel in dwellings, stores, factories, steamboats and locomotives. This, in a single year, would clear the forests from an area of 30,000,000 acres, about equal to that of New York and North Carolina. The census also reports that in 1880 forest fires consumed the trees on 20,274,089 acres, and there is no reason to believe that a less area will be burned over this year than in 1880. The census gives the amount of lumber cut in 1880 at 18,000,000,000 feet. Last year the cut had increased to 28,000,000,000 feet, which would lay bare an area of 5,600,000 acres, equal very nearly to that of New Hampshire. Altogether, it appears that the forests of the country are subject to an annual drain of 50,750,089 acres, which would clear a wooded surface equal in extent to the area of all the New England States, together with New Jersey and Maryland. It may well be inquired how long the forests can endure this drain, how long the country can bear this rapid destruction of its most important material element of its prosperity.

A Lovely Complexion.

"What a lovely complexion," we often hear people say. "I wonder what she does for it? In every case the purity and real loveliness of the complexion depends on the blood. Those who have sallow, bilious faces, may make their skin smooth and healthy by using enough of Dr. Pierce's 'Golden Medical Discoveries' to drive out the humors lurking in the system.

TIMBER AND DEALS FROM ST. JOHN

One-sixth is not a serious falling off in shipment from St. John of deals thus far in 1885 as compared with 1884. The total shipment from that city to Europe during nine months of the present year, has been 126,503,963 superficial feet, carried by 181 vessels of 144,803 tons, as compared with 150,013,731 feet, 202 vessels, 169,931 tons in a like period of 1884. A notable point of contrast is a smaller number of steam craft which have this year carried deals; there were 50 steamships of 65,768 tons in this trade last year, while this year there are only 23 of 32,451 tons. The shippers were, in the main the same as the former year, Alexander Gibson leading, with 65,000,000 feet, then W. M. Mackay with 15,500,000, R. A. & S. Stewart with 18,000,000, Guy, Bevan & Co. with 11,000,000, followed by Geo. McKean, Sam Schofield and Knight and Co. The shipments to principal ports in the two years as under:—

Port.	Vessels.	1885.	1884.
Liverpool	52	47,081,383	70,619,539
Bristol Channel	33	24,023,843	22,846,324
Barrow	7	6,220,610	11,929,629
Queenstown	9	5,828,401	4,150,311
Belfast	6	4,604,123	3,670,202
Dublin	0	4,102,213	2,958,156
London	4	2,776,609	
Crookhaven	7	2,651,042	1,261,188
Cork	8	2,593,709	2,044,235
Londonderry	4	2,272,526	2,408,017
Fleetwood	3	2,072,842	4,231,370
Glasgow	4	1,671,029	1,167,176
Lundalk	4	1,654,600	1,916,016
Limerick	8	1,618,230	3,758,863
Mersey Channel	2	1,395,467	
Waterford	2	1,197,785	1,167,705
Continent	2	1,347,955	2,347,007

Though none were despatched to Africa, as last year some went to Rotterdam. Cargoes went to two or three smaller Scottish ports, as Ayr and Irvine; the bulk of the remainder to Irish minor ports.

There is not much difference in the shipments of timber from St. John this year from those of last year. The total quantity of birch timber exported this year, says the *St. John Globe*, was 12,231½ tons. Of this total 10,487 tons went to Liverpool, 800 tons to Carnarvon, 370 tons to Glasgow, 563 tons to Queenstown, 7 tons to Haro Island, and 4½ tons to Wexford. In the like period of last year, the shipments of birch were 11,555 tons, Liverpool receiving 5,521 tons, London 2,432 tons, Bristol Channel 752 tons, Carnarvon 1,054 tons, Conway 315 tons, Glasgow 847 tons, Queenstown 404 tons, and the remainder going in small lots to three or four ports. The pine timber shipped this year amounted to 2,973 tons, 2,315 tons being sent to Liverpool and the balance to Fleetwood. Last year the total shipments of pine amounted to 3,676 tons, Liverpool receiving 2,865 tons, Fleetwood 626 tons, and the remainder going to several ports in small lots.

A NEW WRINKLE IN SAWS.

There has always been some things in the behaviour of band saws when in motion that have never been satisfactorily explained. After the saw has been carefully hammered and put in apparently perfect shape, when no straight-edge can detect any irregularities in the surface, and when it seems to be all that it is possible for a band saw to be, there have still been imperfections in its running which have been explained in a vague and empirical manner by referring them to imperfections in the wheels, or to weakness in some part of the machine.

There has, however, a discovery recently been made in Chicago which solves one of the problems in connection with the use of the large-sized band saws, and which has attracted great attention on the part of some of the principal saw manufacturers, who admit that it has taught them a new wrinkle in the fitting of saws for actual duty.

To Mr. Edwin Benjamin must be given the honor of this discovery, though he disclaims any particular credit for it, saying that it is only what any sensible man might by a little consideration have known to have been the case, and the only wonder is that it was not thought of before, and long ago.

Mr. Benjamin has been engaged for six months past in building a band saw mill on his own designs and when the saw was first

stretched on the and the power was applied, he was naturally very critical of its workings. The saw seemed to be in perfect order as far as the plate was concerned. The wheels were in perfect balance, and the whole machine was of unusually solid construction. Yet, when he put his hand against the guide blocks just above where the log would be run through, he felt a distinct and disagreeable vibration. He was at a loss how to account for it. If the saw had been cutting he would not have been surprised. It occurred to him that perhaps the saw might not be perfect after all. He found that the saw felt as rough as a rasp; hitting a confused succession of irregular blows. This convinced him that after all the pains taken in hammering the saw, it was not flat, so he stopped the mill and examined the saw.

Straight-edges showed irregularities in the plate. It was full of "open" spots, causing hollows on one side and "bumps" on the other. An experienced hammerer was sent for—Mr. Sampson, foreman of the Diston repair shops in this city—who fitted up an anvil which could be applied to the side of the saw, which was then carefully hammered as it stood stretched on the wheels. The result was that the saw, when again put in motion, ran with perfect evenness.

The point of all this is simply that putting a saw under its working strain brings out latent defects which could not be discovered before. Saws are ordinarily hammered when lying flat on a saw table and anvil. But that very hammering, while it corrects observable irregularities, weakens the saw by making it thinner in spots or changing the texture of steel, so that when put under working strain these weakened spots stretch out and show in the shape of concave or convex places. It is evident that where such a spot occurs the strength of the saw is lessened by just the proportion that the diameter of such a lump bears to the whole width of the saw, and thus the saw is rendered liable to give away. Moreover, such irregularities must cause the saw to do rough work and render it liable to heat.

The importance of this discovery is testified by such saw manufacturing concerns as Henry Diston & Sons, of Philadelphia; Branch, Crookes & Co., of St. Louis and E. C. Atkins & Co., of Indianapolis, each of whom sent representatives to investigate the matter. One of the firm of Branch, Crookes & Co., said that he put an entirely new phase on the matter, and he telegraphed his firm to make no more guarantees on band saws sold, until they had facilities for finishing them under working strain. Mr. E. C. Atkins, of Indianapolis, came to Chicago with no other object than to see Mr. Benjamin in regard to the matter. In a call at the *Lumberman* office he said that the discovery put a new responsibility on saw makers, who would have to revise their methods of finishing and hammering.

Not only are band saws altered by being put under working strain, but any saw that is worked under strain can be improved in the future. It is pretty certain that much of the trouble with both gang and circular saws has been caused by defects developed only under working strain; though in the case of the latter it probably cannot be remedied, as that strain is produced only when the saw is revolving, when no work can be done on it.

Though Mr. Benjamin's discovery can yield him no profit, he takes justifiable pride in it as one which will prove of vast benefit to the lumber manufacturing industry, and make possible another step forward in the progress of the band saw as a practical tool in the saw mill.—*Northwestern Lumberman.*

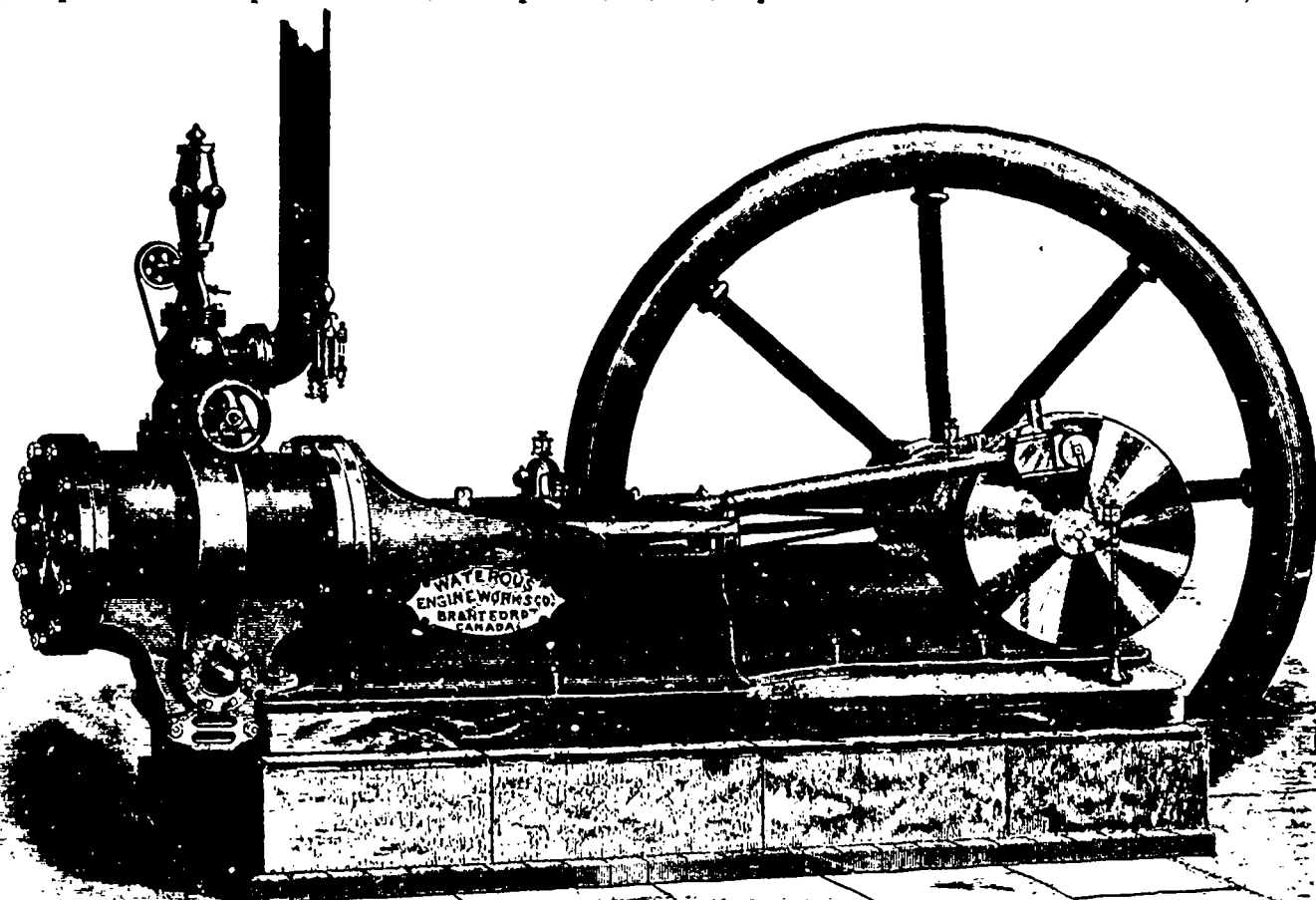
Advice to Mothers.

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 physalians in the United States, and is for sale by all druggists throughout the world. Price 25 cents a bottle.

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CHASED BY OYCLONE.

Within a few rods of the opening of the gulch I heard a roar as of oncoming wind. Nan cried out again to her horse, the animal lurched forward yet faster, and in a moment we were all entering the ravine. It was extremely uneven ground, and covered by broken, sharp stones. My sister and I were watching Nan; she slipped off the saddle and hurriedly motioned to us to do the same. The instant we were dismounted, the horses scrambled rapidly forward further into the gulch, and we did the same. Nan now in the rear, and trying to drive us along. That night I found my shoes cut, and a gash in my foot, but I did not feel the wound when I received it. While we were thus hurrying to get to the deepest shelter of the gully, the roar above us was awful, and was increasing ever moment. It reverberated strangely through the ravine. We could not have heard a word had we spoken. We all stopped simultaneously and looked at each other. There were two very white faces that I saw, with strained, frightened eyes. Nan made a movement with her head that we were not to go on, and we crouched down against the rocky sides of the earth. The next instant Emma leaned heavily upon me and silently pointed upwards towards the chasm's opening, where we had entered. The black cloud was just going past our point of vision, it had dilated to twice its former size, but still retained its cylinder shape. If it could be possible, it was more dense than ever, and boiling in its blackness. Balls of fire sped back and forth in the air, or my sight was under a hallucination to that effect. All the phenomena seemed to have their centre in that cone of

black cloud. The strangest, the most awful thing of all that fearful experience was what I saw now. Behind that black cloud, whether following it or driving it, I know not, came a all cloud of dense, most dazzling white—a pillar of glory, growing every instant more like a pillar of fire, and soon appearing to control the inky shape. The raving noise was now at its height. In a moment the two mysterious shapes had passed from our contracted line of vision, they marched on, destroying as they went. The crash of timber along a stream not far off, the cannonading of the thunder, which had now opened its forces, and above all the overwhelming roar of the wind, made us shrink and cower closer together. A fierce blast caused us to throw ourselves flat on the stony ground, grasping at each others hands. So ignorant was I that I believed at that time that we were in the full power of the tornado instead of being comparatively sheltered by the walls of the gulch. Afterwards I know that we could hardly have saved our lives had we been not able to reach this ravine. Once I felt a touch on my head, from which my hat had long since gone. I found that it was one of the horses. They had all come back from their first run up the gulch to be near us; the three stood huddled close by, when we had a chance to look.—*New York Post.*

ARCTIC EXPLORATIONS.

ANNAPOLIS, Ind., Oct. 10. — The United States Naval Institute, composed of officers of the Navy, discussed at the Naval Academy last night Lieut. Danenhower's paper on North Polar Researches, in which he takes the ground that there is no continent yet undiscovered in

the North Polar Basin, and the only lands yet unknown are some small Islands and groups of islands, and the scientific knowledge yet to be obtained is not worth the loss of life and treasure that will be required for future expeditions. Chief Engineer Geo. W. Melville writes that he agrees that the work of the explorers of the past has been well done, but he does not concur with Lieut. Danenhower, either in his selection of route toward the pole or his statement that because of the hardships endured or the loss of life and treasure, the researches should be abandoned. He urges that Franz Josef Land has the two essential features recommending it as a base for an advance toward the pole. Lieut. Greely writes that he has no inclination to deny the merits of the essay, but the tendencies seem particularly unfortunate, and he regrets that it emanated from an officer of the service. Prof. H. Rind, of Norway, supports Lieut. Danenhower in his theory of islands and groups of islands in the polar basin, and believes that further Arctic research is not worth its cost.

Lumber Sales at Quebec.

QUEBEC, Oct. 9.—Two of Messrs. McLaughlin's rafts of choice Petewawa wood have been sold. The price is supposed to be 30 cents with a railroad raft of 53 feet average and 60 inch girth at 20 cents. Mr. Muir's oak, consisting of about 30,000 feet, has been placed at 40 cents. Mr. Lesueur has disposed of about 100,000 feet of oak at 48 cents for delivery this Fall and 49 next Spring.

The Women's Medical College at Kingston was formally opened on Monday afternoon.

THE HARVEST IN THE STATES.

WASHINGTON, Oct. 10.—The crop report of the department of agriculture states that the average condition of cotton has fallen from 87 Sept. 1 to 78. The corn crop has met with very little injury from frost and will yield slightly above the average. Present indications point to yield of 26½ bushels per acre throughout the country. The returns from wheat are on a basis of the yield per acre for the area harvested. The average is about 10½ bushels. It is only 9 bushels on the area sown which was nearly forty millions. The average yield of oats will be nearly 28 bushels per acre, insuring a crop in excess of six hundred million bushels. The rye average is 10 decimal 4 bushels, nearly 2 bushels short of the yield of 1884. The average yield of barley will be about 22 bushels per acre. The condition of potatoes has seriously declined on account of the prevalence of rot in New York, Michigan and elsewhere. The decline from September 1st was 11 points.

Blowing up Hell Case.

has been a laborious and costly work, but the justness of the effort. Obstructions in any important channel means disaster. Obstructions in the organs of the human body bring inevitable disease. They must be cleared away, or physical wreck will follow. Keep the liver in order and the pure blood courses through the body, conveying health, strength and life. Let it become clogged and the channels are clogged with impurities, which result in disease and death. No other medicine equals Dr. Pierce's "Golden Medical Discovery" for acting upon the liver and purifying the blood.

We guarantee the speedy, painless and permanent cure, without knife, cauter or saline, of the largest pile tumors. Pamphlets and references sent for two letter stamps. World's Dispensary Medical Association, 603 Main Street Buffalo, N. Y.

REDWOOD IN CHICAGO.

A California correspondent writes the *Lumberman* asking in regard to the status of California redwood in this market. He says, "can you inform me whether there is any particular prejudice among the dealers and carpenters against the wood, or whether the light demand is the result of high prices and limited supply? So far as we know on this coast the latter is the cause." This opinion is the correct one. What prejudice there may have been in the past seems to have about passed away, and now consumers are perfectly ready to use it for any purpose for which it is adapted, provided it can be obtained, and the price is not too high.

The wood has had to contend against the difficulty of a small and uncertain supply. Various firms have tried to handle it here; but, as they were not willing to invest the necessary amount to carry a full stock here, and depended on shipments from California, as they received orders, in which shipments they were often disappointed from lack of dry stock in the hands of their coast connections, the business has languished. We may be doing an unintentional injustice to some Chicago dealers; but, as far as we know, there is at present but one firm in the city that has such arrangements on the coast that it can guarantee shipments, and even this firm does not carry any stock worth speaking of here. Its method of carrying on the business does well enough in the case of large contracts when there is time for the lumber to come from California, but it does not do for the smaller trade which wants material for immediate use. The result of the present condition of the trade here is that redwood hardly figures as a factor in the lumber trade of this city, and can not come into general use among the carpenters and other small consumers.

Our correspondent also enquires as to whether the wood cannot come into competition with white pine for some uses. It is hard to tell what it might do if the price was 25 per cent. lower than it is, but at present it is no more a competitor of white pine than is black walnut. It is merely thought of as a special finishing wood. Some architects make use of the lumber; and a good many dimension shingles, both plain and fancy butts, are used for roofs and in place of siding on suburban cottages; but neither have any acknowledged standing. What is needed to introduce the wood is a supply in yard in this city sufficient for any current demand. A stock of 1,000,000 feet of lumber and plank with a few millions of shingles, the whole well assorted and held at as low prices as possible, would probably encourage a large consumer demand.

That the necessity of such a method is understood on the Pacific coast is shown by our correspondent, who says:—

"There has already been inaugurated a movement which, if completed, will place an abundant supply at your door. Believing that arrangements should be made to control an abundant supply, that the same should be thoroughly seasoned to reduce the freight as much as possible, and that the lumber should pass through as few hands as possible, it is proposed to form a company, the stockholders to be only redwood lumber manufacturers. It is expected that the company will have to carry a stock of from 10,000,000 to 15,000,000 feet of our best and most valuable clear lumber, which will involve a capital of from \$250,000 to \$500,000. There has, as yet, been found no artificial dryer that will season redwood and turn it out in as good condition as when seasoned in the open air. Hence, should the company start in now, it would be four or six months before it would be ready to ship any lumber. We anticipate that such a company as this, which looks for a manufacturer's profit only, will be able to place our clear redwood in your market at about the price that clear pine is selling for there, and should your consumers give it a fair trial, we are confident they will find it equal to your best clear pine in all respects, and for many purposes, especially where its lasting qualities are tested, far superior."

Such a scheme, if carried out, should put a large stock of redwood in this market in time for next spring and summer's building. And

we believe that all that is necessary to make it a success is to thoroughly advertise, not the merits of redwood, but the fact that an ample supply is at hand for all which it.

Our correspondent also asks whether such an introduction of redwood would be kindly received by our dealers. It is difficult to see why there should be any antagonism to it. Redwood could only come in competition with white pine uppers, and they are firm in price and growing in value year by year. A few millions of redwood will be but a drop in the bucket of the lumber trade of Chicago, and could hardly influence the market in any way. —*Northwestern Lumberman.*

THE WOODEN AGE.

This has been properly called the iron age, the age of steel, and the metal age generally, but from figures that go to show the enormous consumption of manufactured lumber, and the inevitable future impoverishment of the supply sources, the age may be more fitly termed the age of wood. Metal manufacturers, says the *Building Woods Journal*, there will always be as long as there is human strength to wrest the ore from the bowels of the earth, but it is a fact, made evident from careful computation, that each successive year so diminishes the extent of forests in this country and Canada that the time must come when the scarcity of timber, particularly pine, will so increase its market that it will be stricken from the list of economical building materials. This period may be farther in the future than has been predicted, but it is safe to say that in the next century a gradual revolution in building will be commenced by the enforced use of metals where wood has been used in construction. At the recent convention of American engineers, a paper was read containing very carefully compiled statistics, proving the necessity of more economy being used in the manufacture and use of lumber products. The author concluded that the supply of white pine in the United States, and probably in Canada, at the present rate of consumption, was almost certain to be exhausted by the end of the present century. Of yellow pine, spruce and hemlock, the forests of the South would yield a supply of 150 years, at the present rate of consumption. East of the Mississippi there is probably twenty-five years' supply of hard wood. The supply of walnut and ash is being rapidly exhausted. It may be that these theoretical limits may be greatly extended in reality, as the country is large and the possibilities of the growth of new timber very great, if immigration to this country and natural increase in population do not make such demand upon the forest territory that the next generation of timber will be insignificant in amount and value.

When the lumber supply is at an end so far as concerns building operations, entirely new features of architecture will be developed. Building will be erected that will stand as long as brick, stone and metal will endure, and the comparative cost being greater, a higher order of architectural talent will be encouraged to suit the universal demand for permanence and beauty. Then will truly begin the age of metal and architectural perfection.

THE DULUTH TRADE.

There is a startling change taken place in the direction of Duluth's lumber trade. The manufacturers of that district have hitherto looked westward for their distributing field. They have mainly depended on the Northern Pacific railroad as an outlet, and, within two years past tried to squeeze a little of their surplus into Kansas and Nebraska. For a few years they had a bonanza in the Northern Pacific trade, which took everything which could be run out of a saw mill, without question as to quality or grade. But a change came upon the Duluth business after the boom of 1880-82 subsided. Customers became more fastidious, competition sharper, and the full flush of Duluth prosperity was overlaid with gloom. Manufacturers in that district for the past two years, until recently, complained bitterly of the limited demand and meager profits. But this season the demand has improved. It has come from all parts of the compass—west, southwest, from

Port Arthur, Chicago and the East. Now our correspondent from that point announces that the prospect is that hereafter a large proportion of the Duluth mill product will go to Buffalo and Tonawanda. The big coal barges from Buffalo offer to take lumber from Duluth to the lower end of Lake Erie at \$2 a thousand, only 50 cents more than from Saginaw or Bay City. At this rate lumber can be profitably shipped from Duluth to eastern markets, and thus the surplus at that point can be disposed of. There is also an increase of shipment from Duluth to this city. This new direction of Duluth lumber shows, as the *Lumberman* has before intimated that the markets situated on the great lakes must absorb most of the lumber tributary to the lakes. Low lake freight rates determine the movements of lumber in the direction of the lake markets. It is also evident that the consumptive requirement east of Chicago is bound to be such as to constantly draw away and absorb the bulk of the lumber to be produced in the territory contiguous to the lakes. —*Northwestern Lumberman.*

A SUCCESSFUL SAWYER.

1. Acquire sufficient knowledge of machinery to keep a mill in good repair.
2. See that both the machinery and saws are in good order.
3. It does not follow because one saw will work well that another will do the same on the same mandrel, or that even two saws will hang alike on the same mandrel: on the same principle that no two clocks can be made that tick alike, no two saws can be made that will run alike.
4. It is not well to file the teeth of circular saws from the same side of the saw, especially if each alternate tooth is bent for the set, but file one-half the teeth from each side of the saw, and of the teeth that are bent from you, so as to leave them on a slight bevel and the outer corner a little the longest.
5. Never file any saw too sharp or acute angles under the teeth, but no circular lines, as all saws are liable to crack from sharp corners.
6. Keep your saw round, so that each tooth will do its proportional part of the work, or, if a reciprocating saw, keep the cutting points jointed on a straight line.
7. The teeth of all saws wear narrowest at the extreme points consequently they must be kept spread so that they will be widest at the very points of the teeth, otherwise saws will not work successfully.
8. Teeth of all saws should be kept as near a uniform shape and distance apart as possible, in order to keep a circular saw in balance and in condition for use. —*Michigan Manufacturer.*

CROSS-TIES.

According to the report made by F. B. Hough, of the Department of Agriculture, on the "Durability of Cross-Tie Timbers," the cross-ties needed for railroad construction are a heavy draft upon our forests. In France and England the country does not raise sufficient timber to furnish ties, and they have to be imported abroad; and in Mexico and South America, notwithstanding the great forests, many ties were similarly imported. In this country, on the other hand, we are exporting them; but the time will soon come when the demand will meet the supply. It requires 17,000,000 acres or 26,500 square miles of forests to furnish the present demand of the railroads, and at the rate of progress in building new lines 30,000 square miles of forests will have to be set aside for this purpose within a decade.

The principal timbers employed for railroad purposes are the following, given in the order of their use. Oak, pine, chestnut, hemlock, cedar, tamarack, cypress, elm, ash, cherry, black walnut, fir, butternut, coffee nut, mulberry and mesquite.

The oak lasts seven and a half years as a cross-tie, and costs 41 cents per tie. Red oak, however, lasts only five years and black oak four and a half. Southern pine is good for six and a half years, and costs 37 cents, white pine has the same durability, but costs less, 31 cents.

Cedar shows the greatest average durability of twelve years, with a cost of 34 cents, but it

is to be soft to bear heavy freightage and is consequently not much used in railroad building.

California redwood is also very durable and lasts seven years, but this, it must be remembered, is in the dry climate of California, where all kinds of timber last well.

Cypress makes a good cross-tie, lasting nearly nine years where white and black ash rot in four years. Finally, all hewed woods are much more lasting than when sawed.

The present price paid for cross-ties in the United States—an average of 35 cents—is phenomenally low in comparison with other countries, and is due to the fact that so many of our railroads traverse well-wooded districts. It is inevitable that with the destruction of our forests their price will rise, and that our railroads of the future will find cross-ties among the most expensive articles of construction.

HOW TO PREVENT FIRES.

The *Boston Globe* gives the following report of a debate at the Forestry Congress in which the Canadian delegates took part:—

Mr. William Little, of Montreal, who was endorsed very handsomely as a friend of the forests and a practical lumberman of Canada for many years, opened a discussion on the Rev. Mr. Eggleston's paper. He claimed that in the condition in which lumbermen leave forests the woods are naturally made the prey of fire. He asserted that lumbermen were largely and principally responsible for the destruction of the forests.

Commissioner Coleman asked what should be done to prevent leaving forests mere masses of kindling wood and to guard against forest fires.

Mr. Little thought that one remedy was to take out and utilize the entire tree when it is cut down, somewhat after the custom in France, where every portion of a tree is recognized as valuable timber.

Judge Ladd, of New York, asked as to the practicability of requiring the burning up of branches and limbs and debris on forest-cleared land in winter, so that fire might not spread.

Mr. Little said the scheme would not be practicable. The true idea was to secure a recognition of the value of tops and branches of trees.

Mr. Merriam, of New York, explained the advanced methods of some of the Adirondack lumbermen, who see the value of protection to their property, and take every possible precaution against forest fires. It is from the carelessness of tourists that damage to the Adirondack woods has been chiefly done of late years. The residents are aroused to the importance of preserving our forests. Mr. Merriam regretted that Boston should not have shown more interest in the great cause.

Mr. Little spoke of the interest felt in American forestry by the Hon. Mr. Lynch, Commissioner of Crown Lands for the Province of Quebec, a gentleman who would gladly have attended the congress, but had been kept away by unavoidable circumstances.

A VALUABLE TREE ATTACKED.

The haematac trees of the whole Province of New Brunswick presents a half-dead appearance on account of the ravages of a grub or worm of the caterpillar species. It attacks the largest trees by preference, destroying the fresh verdure of the upper portions first and leaving that of the lower branches comparatively uninjured. It spares the very young trees, those about eight feet in height and under being untouched. The work of this pest was first discovered on the south side of the Miramichi in Blackville parish, but it has since been seen in different parts of New Brunswick, and Gloucester. A contemporary referring to the ravages of the same worm, says:—"For some time past an insect, which has been mistaken by many for the army worm, has been destroying the haematac trees of the province. All along the St. John river and the New Brunswick railroad their ravages are discernible." We understand the spruce trees have also been attacked by the same insect. —*Ex*

THE WOOD GIANT

From Alton Bay to Sandwich Dome, From Mad to Speco river, For patriarchs of the primal wood, We sought with vain endeavor.

And then we said: "The giants old Are lost beyond retrieval, This flamy growth the axe has spared Is not the wood primeval.

"Look where we will, o'er vale and hill, How idle are your researches, For broad girthed maples, wide limbed oaks, Centennial pines and birches!

"Their tortured limbs the axe and saw Have changed to beams and trestles; They rot in walls, they float on seas, They rot in sunken vessels.

"This shorn and wasted mountain land Of underbrush and boulder— Who thinks to see its full-grown tree Must live a century older."

At last to us a woodland path, To open sunset leading, Revealed the Anakin of pines, Our wildest wish exceeding.

Alone, the level sun before, Below, the lake's green islands, Beyond, in misty distance dim, The rugged Northern Higulanda.

Dark Titan on his Sunset Hill, Of time and change defiant! How dwarfed the common woodland seemed, Before the old time giant.

What marvel that in simpler days Of the world's early childhood, Men crowned with garlands, gift and praise Some monarch of the wild wood.

That Tyrian maids with flower and song Danced through the hill grove's spaces, And hoary-bearded Druids found In woods their holy places!

With somewhat of that Pagan awe With Christian reverence blending, We saw our pine trees' mighty arms Above our heads extending.

We heard his needles' mystic rune, Now rising and now dying, Assert Dodem's priestess heard The oak leaves prophesying.

Was it the half-conscious moan Of one apart and motionless, The weariness of unshared power, The loneliness of greatness?

O dawns and sunsets, lend to him Your beauty and your wonder, Blythe sparrow, sing your summer song His solemn shadow under.

Play lightly on his slender keys, O wind of summer, waking For hills like these, the sound of seas On far-off beaches breaking!

And let the eagle and the crow Rest on his still green branches, When winds shake down his winter snow In silver avalanches.

The brave are braver for their cheer, The strongest need assurance, The sigh of longing makes not less The lesson of endurance.

—John Greenleaf Whittier.

SOME CURIOSITIES OF RAINFALL.

Here in Canada we have no particular extremes of wet and dry as in the tropical regions, and the same attention is not paid to the rain gauge as in such countries as dear old England, green Erin, or the west of Scotland, where it rains always except when it "snows." The rain "faileth on the just and the unjust" alike, but if we are to judge by the very uneven distribution of "the gentle rain from Heaven" we should say there were some very just, and of some extremely unjust folk on the face of our globe. For instance: on the Guano Islands, off the coast of South America, they do not know what rain is, while in some other favored regions they have a trifle of two or three feet of rainfall in as many hours. The rainfall of a country depends much on the prevailing wind, its permanence, temperature, and the elevation and character of the district over which it passes. High mountain ranges have a great deal to say to the matter, as they intercept a great deal, and in some particular cases, nearly all of the aqueous vapors with

which the atmosphere becomes charged in its passage over the ocean, which of course is the chief source from which the great supply of moisture is derived. These mountains catch the rain clouds and cause the moisture to be deposited on the windward side, while the leeward receives little or none.

Intensely heated plains, by elevating the temperature of the winds passing over them, even though saturated with moisture on their arrival, greatly tend to prevent precipitation. Thus we see the deserts of Sahara, Egypt, Arabia, and immense tracts in Central Asia, nothing but arid wastes. The great Table Lands of Tibet and Mexico, parts of California, and what is known as the Atacama desert, are all comparatively rainless districts. The greatest known rainfall occurs in some parts of India. On the western slopes of the Ghats the average fall for a period of forty years was 275 inches. A. C. Chapman, on the Garrow Mountains, the annual rainfall averages 550 inches, which is about the entire quantity that they get at Alexandria, in Egypt, in a century. Hooker, the naturalist, observed in some of the valleys of the Himalayas, a fall of 470 inches in seven months, and 30 inches on one occasion in four hours, which equalled the annual rainfall of France. At Khasia, in the month of August, 1841, we are told that 264 inches fell, 30 inches falling daily for two successive days! They must be preternaturally "just" in that part, if the rainfall be any criterion.

Latitude exercises a great effect on rainfall. Humboldt estimates the average fall at the equator at 96 inches; at lat. 19°, 80 inches; at 45°, 29 inches, and at 60°, 17 inches. The average for some parts of the United States are: Brunswick, Me., 44.68 inches; Burlington, Vt., 34.15 inches; New York, 43.24 inches; San Francisco, 19.56 inches; San Diego, Cal., 9.16, and Fort Garland, Co., 6.11 inches.

The lowest monthly rainfall in England in 1884 was in August, 0.67 inches, and the highest in June, 2.24 inches.

An inch of rain means a gallon of water spread over a surface of nearly two square feet, or 3,630 cubic feet—100 tons up in an acre. For snowfall the record of the year 1827 has not yet been broken. In that year on the 16th and 17th of February the fall in the neighborhood of Montreal was between 60 and 70 inches, converted into water, however, this light, dry snow would not represent much.

AN INDIAN SHOW FOR GERMANY.

Professor Jacobson and his brother departed on the "Olympian" on route to Berlin. They were accompanied by nine Indians from the west coast of the Bella Bella tribe, intended for exhibition at the Royal museum at Berlin. If the Indians could conceive the amount of land and water they must travel over before reaching Germany, the strange sights of the great cities, and hundreds of novelties to them, it would appear a great cumbrum and it would be hard to prevail upon them to forsake their primitive existence and manners. Each of these Indians receives \$20 a month and all expenses during their absence, including transportation both ways. They will be quite civilized when they return a year hence. The Professor carried several tons of curios with him, which cost over \$1000. He has purchased and shipped from this coast in all about \$16,000 worth of Indian curios.—Victoria, B. C., Colonist.

JUST A TRIFLE TOO CAUTIOUS.

It is still advisable for people who are camping out to keep a sharp look-out and make sure of the character of nocturnal visitors, especially before using the rifle. It is well to be cautious, but not hasty. A case in point occurred near town the other night which resulted unfortunately for one of our neighbors. He had just bought a horse and taken it to his hay camp. In the stillness of the night he heard a suspicious noise, and peering cautiously under the edge of the tent he saw in the starlight what he declared to be an Indian. Knowing that safety lay on the side of the one who got the drop on the other, our agricultural friend fired at the midnight disturber of his peace and cautiously withdrew to the safety of his tent to await the result. No further noise broke the stillness of the night,

and when the return of daylight enabled him to see, he found that his aim had been true—the well directed bullet had done its deadly work, for there stiff in death and wet with the morning dew, lay the body of his new-bought horse.—Saskatchewan Herald

"I Don't want Relief But Cure," is the exclamation of thousands suffering from catarrh. To all such we say: Catarrh can be cured by Dr. Sizer's Catarrh Remedy? Your danger is in delay. Enclose a stamp to World's Dispensary Medical Association, Buffalo, N. Y.

"Consumption Cure" medicine yet discovered for arresting the early development of pulmonary disease. But "consumption cure" would not sufficiently indicate the scope of its influence and usefulness. In all the many diseases which spring from a derangement of the liver and blood the "Discovery" is a safe and sure specific. Of all druggists.

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GRAND Colonial Exhibition in London, ENGLAND, 1886. FIFTY-FOUR THOUSAND FEET RESERVED FOR CANADA. First Royal Exhibition Commission Since 1862.

THE COLONIAL AND INDIAN EXHIBITION to be held in LONDON, England, commencing MAY 1st, 1886, is intended to be on a scale of great magnitude, having for object to mark an epoch in the relations of all the parts of the British Empire with each other.

In order to give becoming significance to the event, a Royal Commission is issued for the holding of this Exhibition, for the first time since 1852; and His Majesty's Highness the Prince of Wales has been appointed President by Her Majesty.

The very large space of 54,000 square feet has been allotted to the Dominion of Canada by command of the President, His Royal Highness.

This Exhibition is to be purely Colonial and Indian, and no competition from the United Kingdom or from foreign nations will be permitted, the object being to exhibit to the world at large what the Colonies can do.

The grandest opportunity ever offered to Canada is thus afforded to show the distinguished place she occupies in the progress she has made in AGRICULTURE, HORTICULTURE, IN THE INDUSTRIAL AND FINE ARTS, IN THE MANUFACTURING INDUSTRIES, IN THE NEWEST IMPROVEMENTS IN MANUFACTURING MACHINERY AND IMPLEMENTS, IN PUBLIC WORKS BY MODELS AND DESIGNS; also in an adequate display of her vast resources in the FISHERIES, and IN FOREST AND MINERAL wealth, and also IN SHIPPING.

All Canadians of all parties and classes are invited to come forward and vie with each other in endeavouring on this great occasion to put Canada in her true place as the premier colony of the British Empire, and to establish her pre-eminence before the world.

Every farmer, every producer, and every manufacturer, has interest in assisting, it having been already demonstrated that extension of trade always follows such efforts.

By order, JOHN LOWE, Sec. of the Dept. of Agriculture. Ottawa, 1st. Sept., 1885. 3w3

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DEPARTMENT OF CROWN LANDS. (WOODS AND FORESTS BRANCH.)

Toronto 10th August, 1885.

NOTICE is hereby given that certain territory on the North Shore of Lake Huron will be offered for sale by Public Auction, as timber berths, at the Department of Crown Lands, Toronto, on Thursday the Twenty-second Day of October next, at one o'clock p. m. B. PARDEE, Commissioner.

NOTE.—Particulars as to locality and description of limits, area, etc., and terms and condition of sale, will be furnished on application personally, or by letter to the Department of Crown Lands, where also maps of the territory can be obtained. No unauthorized advertisement of the above will be paid for. 4L17

Johnston's Fluid Beef



The nourishing, palatable and warmth giving qualities of Johnston's Fluid Beef has caused this invaluable preparation to become a favorite and fashionable beverage for the winter season. It is now obtainable on draught at the leading hotels and restaurants throughout the Dominion. 1867



DEVOTED TO THE LUMBER AND TIMBER INTERESTS OF THE DOMINION.

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

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

PETERBOROUGH, Ont., OCT. 15, 1885.

A MAN named Magloire Robergo was cut in two by a saw, in a mill near Arthabaskaville, Que., on Oct. 10th.

THE Rathbun Company have an order from Ottawa for 300,000 ft. of cedar lumber to be used for stringers for new boardwalks.

THE schooner Onward, bound to Milwaukee with a load of lumber, went ashore at Gill's pier, five miles north of Northport, Mich., during a recent gale.

In order to evade the 10-hour law, Saginaw valley operators in the woods are having contracts printed for more than 10 hours work each day, which they require each man employed to sign.

THE tug McArthur, with a large raft in tow, ran into Cobourg storm bound Friday night, and remained until Monday evening. She brought the tow from Lake Superior, her destination being Quebec.

THE Ludington, Wells & Van Schaick Company of Chicago, recently purchased 600 acres of pine land on Point river, Marquette county, Mich., for which it paid \$48 an acre. The land is estimated to have on it 9,000,000 feet of pine.

A PARTY of surveyors is in the upper peninsula, Mich., running lines for the Canada, La Crosse & Southwestern railroad. The line has already been run from La Crosse, Wis., to Negaunee, Mich., to which terminal surveys will be completed in October.

A SUDDEN rise in the Strohmanish river, W. T., lately, broke the Pillehuck boom and let loose 1,500,000 feet of logs. The whole lot went out to sea. About 1,000,000 feet were saved and turned into Ebey's cove, 100,000 feet going out on ebb tide and drifting into Port Susan bay. Through the breaking of the other booms it was thought that not less than 2,000,000 feet of logs went out to sea, about three-fourths of which were saved.

JARRETT & CUSHING are about to erect a steam ash and door factory at Calgary.

THE prevalence of small-pox in certain sections at the present time should cause lumbermen to be cautious and careful so that the disease may not find its way into the woods. When men are engaged who reside in places where the disease exists, care should be taken to see that there is no danger of the infection being carried into the camp. With proper care there need be no alarm, but to be safe, and for the safety of the men in the camps, care should be exercised. Lumbermen should see that their agents pay attention to this matter.

WOOD-WORKING PATENTS.

The following list of patents relating to the wood working interests, granted by the U. S. Patent Office, Sept. 29th, 1885, is specially reported by Franklin H. Hough, solicitor of American and foreign patents, 925 F. Street, N. W., Washington, D. C. :
327,343.—Lath, boring—H. B. Stevens, Buffalo, N. Y.
327,322.—Lumber drier—A. M. Schilling, Chicago, Ill.
326,030.—Lumber drier—H. S. Smith, Brooklyn, N. Y.
327 346.—Planing machine—H. B. Stillman & W. F. Paterson, Boston, Mass.
327 189.—Planing and polishing lumber—W. R. Norris, Fort Ann, N. Y.
327,015.—Saw handle—R. E. Poindexter, Indianapolis, Ind.

327,428.—Saw mill, band—D. K. Allington, East Saginaw, Mich.
327,103.—Saw mill head block—G.M. Pelton, Belmont N. Y.
327,416.—Saw sharpening device—W. Tucker, East Brookfield, Mass.
327,270.—Saw swage—N. Johnson, Jasper, N. Y.
327 303.—Saws, Device for operating vertical.—C. W. Page, Chathamet, Washington Territory.

327,203.—Wood dressing machine—C. D. Smith, Templeton, Mass.

PATENTS ISSUED OCT. 6.

327,903.—Mumber drier—C.F. Starkweather, Pullman, Ill.
327,588.—Planing machine—F. J. Plummer, Boston, Mass.
327,968.—Planing and turning machine—H. S. Stillman & W. F. Paterson, New York, N. Y., and Boston, Mass.
327,736.—Saw, drag—F. C. Storrs, Hudson, Ind.
327,774.—Saw filing machine—J. W. Dale, Du Bois, Pa.
327,792.—Saw frame—S. Hale, Bloomfield,
327,776.—Saw handle—C. Elshardt, New York, N. Y.
327,574.—Saw mill—J. S. Miller, Erie, Pa.
327,637.—Saw mill dog—E. S. Woodworth, Allegheny, Pa.
327,609.—W. O. Smith, Boston, Mass.
327,651.—Saw table gage—J. D. Bradshaw, Providence, R. I.

FIRES IN THE FOREST.

ACCORDING to reports received of the discussion in the American Forestry Congress, it is the opinion of one lumberman of large experience that lumbermen need not loose so much by the forest fires. If lumbermen, Mr. Little, of Montreal, is reported to have said, would take the same care of his forest that he does of other property, he would not loose as much as he does. Left as he almost always leaves it, the laws of cause and effect would have to be suspended if fire did not follow. When really accidental fire does run through (except on peaty soil), the trees are not destroyed, they are merely scorched on the outside, and if cut at once, as they always are in lumbering regions, they are worth little, if anything, less than other trees. When lumbermen come to value permanent forests we shall here little about fires. Most of them valde the woods only as affording them one crop, and after that the deluge. France has as such dry weather as we have, yet she does not lose one-tenth of one per cent. by fire.

Such is the testimony a lumberman of experience gives. When so much material for the flames is left in the woods, within their easy reach, it is indeed not a matter for surprise that destructive fires do occur. The tops and branches, which become very dry and are often left in heaps, are too frequently placed as if they were almost intended to feed a fire. Some lumbermen, as Mr. Little's statement, that neither he nor his father ever lost one per cent in any one year through fire, shows, understand this so well that they do not leave their forests in such a state. The evil will not, in all probability, be entirely removed, until all lumbermen appreciate the value of all the lumber they possess, or until it becomes so valuable that it will pay to remove the most of it, that it may be placed on the market.

Still, if care was exercised in this matter, solely with a view to preventing fires, it would pay, for much valuable timber would then be saved that otherwise becomes the prey of the flames.

SOWING SEEDS FOR FUTURE FORESTS.

To the Editor of the Canada Lumberman.

Sir,—Many of your readers, no doubt, who have not at present the time for planting may yet intend in a year or two to give their farms the benefit of some wind-breaks and plantations. When ready they will be obliged to go to the forest for young trees, a matter of considerable labor, or to buy of the nurserymen one of considerable expense. Let me suggest that instead, if they sow the tree seed, they will by the time they need them have on hand as many thousand young trees as they desire with far better roots than the forest seedlings, and in a position much more handy for transference to their ultimate stations. This has been a pretty good seed year, and this month is the time for gathering the following seeds:—Hard Maple, Ash leaved Maple, or as it is now called Manitoba Maple, Sycamore, Mountain Ash, English and Native Ashes, Basswood, Buckthorn and Hawthorn, Locust, Oaks, Hickories, Walnuts and Butter-nuts, Beech, Chesnuts, Pines and other evergreens. Of these, such as have a pulpy covering will need bruising with a hoe or macerating through the hands, the pulpy matter then washed off and the seeds partially dried, when mixing with sand will facilitate the sowing process. The rest should be kept in a cool dry place till they can be sown. They should be sown in light rich loam, but if obliged to use clay soil covering the seed with sand does well. It is well to cover the seed twice the depth of itself and tread it firmly down, then cover all with about two inches of leaves, straw, corn-stalks or strawy manure. They must be so mulched to ensure success. In the spring, this, if of a fertilizing nature, can be raked between the rows and keep weeds down and the soil moist; if too bulky remove it altogether. Next summer from a small bed thus treated, you will obtain thousands of plants of any variety you have sown, and these transplanted the next season will be fine young trees.

Yours, &c, R. W. PHIPPS.

Toronto, Oct. 9th, 1885.

THE LARGEST TREES.

"Here are the extremes of plant life," said a botanist, holding a microscopic slide in one hand and a picture of a great tree in the other. "This is a diatom, one of the smallest vegetable organisms, invisible to the naked eye, while this" flourishing the picture, "is the largest tree as to height in the world."

"One of the sequoias?" "No," was the reply. "Uncle Sam has done pretty well with trees, but when it comes to height the British lion takes the belt, as the loftiest trees are found in the Australian dominion. This picture is a photograph of one found by a traveller in the Black range of Berwick, and it is estimated at 500ft. from the ground to the topmost branch. Think of it a moment," continued the speaker. "Five hundred feet means a good deal. It would dwarf the Bartholdi statue; Trinity would look like a telegraph pole compared to it; the Brooklyn bridge would be nowhere; Strasburg Cathedral would be 54ft. below the birds' nests on the top branches, and,

if the giant was placed by the side of the pyramid of Cheops, the leaves of the eucalyptus would be still 25ft. above it. That's the kind of trees they have in Australia, and they are undoubtedly the largest on the globe, though it is claimed that the California specimens are more impressive from their greater bulk. The gum trees, as the Australian giants are called, are a comparatively modern discovery, and for a long time it was impossible to approach them, but now roads are broken, and travellers can ride directly to the foot of several. One of the first known, a Kanni eucalyptus (Eucalyptus colosea) of botanists, was discovered in a glen of the Warren River, Western Australia. When found by a party of riders, it was prostrate upon the ground, and four riders abreast entered the trunk, that was estimated at 400ft. in length. Another species, E. Amzgdalina, measured by Boyle in the gloomy forest of Dandenong, was found to be 420ft long, while another, now growing on the Black Spur, ten miles from Healeville, is 480 feet high. These measurements, you see, are far ahead of the California trees, one of the largest, that I think is known as "The Father of the Forest," only measuring 435 feet, and being 110 feet in circumference at the base. The one called 'The Mother of the Forest' measures 320 feet in height, with a circumference at the base of 90 feet. When they felled the famous 'Traveller' in 1853, and, by the way, every man that had a hand in it ought to have been sent to Dry Tortugas, it took five or six men nearly a month to bring it to the ground, and they had all kinds of tools to work with, pump-augers, wedges, and everything you could think of."—Timber.

QUEBEC CULLERS' OFFICE.

The following is a comparative statement of Timber, Masts, Bowsprits, Spars, Staves, &c measured and culled to date:—

Table with 4 columns: Item, 1883, 1884, 1885. Rows include Wany White Pine, White Pine, Red Pine, Oak, Elm, Ash, Basswood, Butternut, Tamarac, Birch & Maple, Masts & Bowsprits, Spars, Std. Staves, W. I. Staves, Brl. Staves.

JAMES PATTON, Supervisor of Cullers. Quebec, Oct. 9.

HOW TO RECOGNIZE GOOD TIMBER.

It may be interesting to your readers to know that the microscope is of great value in testing the qualities of wood. It is stated that if the microscope condemns the sample, further delay in testing is not necessary. The larger the specimens to be tested the greater will be the gain the microscope will effect in avoiding the cost of further proof. Samples and microphotographs of bridge timbers which have proved faulty, but which a preliminary examination with the microscope would have thrown out, have been exhibited in America. The timber from which these specimens were taken was a fragment from a railway bridge wrecked in 1879. The timber was so excessively poor, that on mounting a specimen on the plate of the microscope, its weak and porous nature was at once apparent. The annular rings appeared about three times as far apart as they would be in good wood of similar kind. The medullary rays were few in number and short in length, whilst in good wood, they are of considerable length, and so numerous that tangential sections present the appearance of a series of tubes seen endwise on a number of parallel chains. After one seeing and comparing samples of good and bad wood, it is easy to recognize the difference with a pocket magnifying glass. The trunks and limbs of exogenous trees, as it is well known, are built up of concentric rings or layers of woody fibre, which are held together by radial plates acting like tree-nails in a boat's side. The rings, representing successive years' growth are composed of tubes, the interstices of which are filled with cellulose. The slower the growth of the tree, the thinner these yearly rings and the

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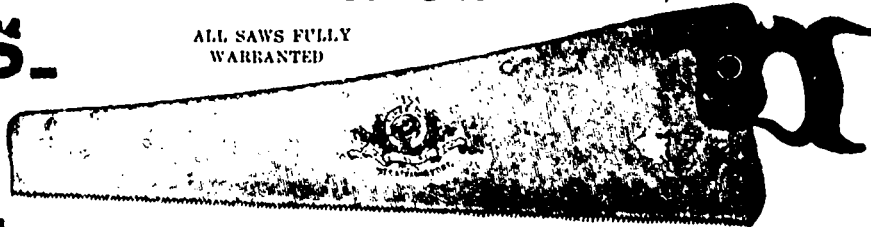
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denser and harder the wood, other things being equal. Not only is the closeness of texture an indication of the hardness and strength of the timber, but the size, frequency, and distribution of the radial plates which bind the annular layers together may be taken as a very close illustration or sign of the character of the wood and its ability to resist strains, especially a breaking stress. The micro-photographs of good and bad show that in the strong kinds the concentric layers are close in texture and narrow in width and the radial plates numerous, wide, long and stout, while in poor stuff the opposite characteristics prevail. The practical application consists in having such enlarged photographic sections longitudinal and transverse of standard pieces of timber bearing a certain known maximum strain, and rejecting any piece which the assisted eye detects to have fewer rings per inch of diameter, fewer fibres or fewer radial plates per square inch of section, or to use such pieces with a greater factor of safety. The advantage of the method is that it allows all timber for important positions to be tested before being used.—*Journal of Progress.*

LIQUID GLUE.

With any desired quantity of glue, use ordinary whiskey instead of water. Break the glue in small fragments and introduce these in a suitable glass vessel, and pour the whiskey over them. Cork tightly and set aside for three or four days, when it will be ready for use, without the necessity of applying heat. Thus prepared, the mixture will keep unaltered for years and will remain permanently liquid, except in cold weather, when it may be found necessary to place the bottle in warm water for a little time before using. The vessel in which it is kept must, of course, be kept always tightly corked, to prevent the volatilizing of the solvent.

A French formula for a liquid glue directs that a solution of eight ounces of glue be made in a half-pint of water, in the usual way, by placing it in a vessel of water until solution is effected. To the solution it is directed that 2½ ounces of strong aqua fortis (nitric acid) be added, stirring all the while. Effervescence will take place with the evolution of orange nitrous fumes. When all the acid has been added, the liquid is allowed to cool. It should be kept in a well stoppered bottle, and will remain permanently liquid. It will neither gelatinize nor putrefy, and is said to make a very serviceable cement for various domestic uses, and as repairing cabinet-work, chinaware, etc.

Another formula directs that a jar or bottle be filled with glue broken into small fragments, and the same covered with acetic acid. It should then be placed in a vessel of hot water for several hours until the glue is dissolved.—*American Druggist.*

"The Proper Study of Mankind is Man," says the illustrious Pope. If he included woman in the list, he would have been nearer the truth than most poets. Dr. R. V. Pierce has made them both a life study, especially woman, and the peculiar derangements to which her delicate system is liable. Many women in the land who are acquainted with Dr. Pierce only through his "Favorite Prescription," bless him with all their hearts, for he has brought them the panacea for all those chronic ailments peculiar to their sex; such as leucorrhoea, prolapsus and other displacements, ulceration, "internal fever," bloating, tenacious internal cancer, and other ailments. Price reduced to one dollar. By druggists.

FOREST TREES.

Eleven years ago I examined the stumps of two white oaks and the grave of a third, which told this singular story by circumstantial evidence, so strong that it could not be doubted. In the year 1502 an acorn fell about one and a half miles from where I am now writing (Rockville, Ind.), and by favorable chance sprouted and grew to an oak. In 1591 another acorn sprouted about 20 feet distance from it. It may have grown on the tree before mentioned, as it was then 92 years old. In 1731 a tornado from the northwest blew down a still older oak which, in its fall, struck against and greatly damaged the top of the one born in 1502. There is to day the well-marked grave of the fallen giant, the dirt piled upon the southeast side of the hole, and a long depression in the ground where the trunk fell and rotted till not a vestige of its wood can be seen to-day (though some traces of the bark of the roots can). This depression points to the stump of the damaged oak. The two younger had been freshly cut down when I examined them. The stumps were about four feet across, and there was not over an inch difference between their diameters, though ninety-two years difference in their ages. The younger had large, healthy top, no broken or dead limbs, and it had put on rings of growth from the beginning of more than average size. The older one had been injured in its branches by the fall of the still older one before mentioned, in 1731, and for fifty-seven years had put on very small rings of growth (about 25 to 30 years to the inch instead of twelve to fifteen as it should), when a new set of branches developed to take the place of the damaged ones, and the rings began to increase in size and gradually attained to the average. I examined their tops, which coincided with what has gone before. There were the peculiar knots in the top of the older one where dead limbs had rotted off and were healed over. (Any expert timberman will readily recognize them.) During this delay the younger oak caught up with the older one in size. The size of a tree is a very uncertain indication of its age.

In all the cases of the hundreds I have examined of the oaks (the oldest trees of the forest I think) I never saw but one that was here when Columbus discovered America. That one was by far the largest I ever saw, and was over 600 years old, about twice the age of the other largest ones. I could not get its exact age, as it was so decayed near the heart. I could not distinguish the rings. It was between six and seven feet in diameter, and forked about sixty feet up, and each fork was as large as the other largest trees. It was not sound enough to make good lumber, being what in this region is called "doughty," a state between soundness and rottenness. It had been down a year before I examined it (being out of the country before it was cut), so that it was very difficult to examine it. I have made memorandum of it but it would be about as follows: At the age of about 200 years it had some misfortune which caused it to form about 100 small rings. It then regained its health and formed normal rings for about 140 years. Then another mishap caused small rings till within the past fifty years, when it was putting on fair growth again. This tree was about one and half miles southeast of Rockville, Ind., and was noted

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amongst hunters and woodmen. It was a disagreeable showery day when I examined it, and for that reason I did not examine its top to see if dead, and lost, and healed over limbs coincided with the small rings, but I have often done so in other cases, and found them to coincide.

Last May, 1884, I examined a sycamore and water elm in the Wabash river bottom, the former six feet in diameter and the latter five, each 180 years old. They stood about 150 feet apart. They were standing on the upper end of a newly made bottom, (I mean now as compared with the higher and older bottoms a little more inland from the river, say 200 years old). This was the largest sycamore I ever saw that was sound to the heart. I have seen hollow ones nearly eight feet in diameter. This tree seems never to have met with any mishap till the logman came along, as the rings of growth were all unusually large.

These trees very probably sprouted 12 to 15 feet below the present surface of the bottom. They generally begin life on the lower end of river sandbars, and as sedimentation builds up the surface they put out new surface roots at every two or three feet of elevation. Such trees, with their several sets of roots, are often seen in drift piles, and also still standing on the verge of a steep river bank where one side is exposed by the erosion of the river. Their roots are often hollow like their trunks, the hollow, and root too, decreasing in diameter downward till it terminates in a point, like a conestanding on its point. In the southwest corner of this county is a hollow cottonwood stump on what is now a high bottom of the Wabash in which the hollow extends downward 12 feet. Mr.

Joseph J. Daniels, an intelligent, observing man, on whose land it stands, told me so. Such silting up over the surface roots would kill most of the upland trees, or those that grow from the seeds on the high bottoms.—*John T. Campbell in American Naturalist*

WANTED--A LOG JOBBER

TO CORRESPOND WITH RESPONSIBLE LOG JOBBERS, with a view of making a Contract for a series of cars to stock from 100,000,000 to 200,000,000 feet of Yellow Pine, to commence operations during October, 1885. Logging road, 30-lb. steel rails, cars and locomotive all new and first-class in every particular. Deep water landing.

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THE SUBSCRIBER WILL SELL HIS TIMBER LIMITS and Saw Mill property, at Cowichan, British Columbia, and if purchased by a Company, will invest a large amount of price in shares.

The Limits are supposed to contain about two hundred millions superficial feet. (An estimate is now being made.)

The Timber is mostly Oregon Pine of an excellent quality. The average haul, only about half a mile to floatable water. The run thence to mill, 30 miles. Full particulars furnished on application.

W. SUTTON
4120 W. Jones, Ont.

BURNING SAWDUST.

Every once in a while we read two or three columns about "how to burn sawdust." Some people make an awful fuss about trying to burn sawdust, especially if it is green, or wet. There is no trouble in burning sawdust under steam boilers, if all the conditions are favorable.

Some men say we must have a Jarvis furnace, in order to burn sawdust; some say we must have a blower, but that kind of talk is all nonsense. Sawdust needs a pretty fine grate. It cannot burn if it falls through the grate into the ash-pit. A chimney large enough to give good draught is absolutely necessary.

Sampson put in a tubular boiler, 5x15 feet and connected his uptake with a 11x17 chimney flue. The building was originally a dwelling house. No new chimney was built, but the partition was knocked out of the old one, making the two flues into one. Sampson tried to burn sawdust with the draft this old chimney gave him. He gave it up in less than a day and tried to burn coal. He saw that up also, and managed to keep up steam ten days with dry oak slabs worth \$5 per cord. Sampson put in a blower and forced the smoke up that miserable chimney. He burns slack and sawdust now. It keeps his fireman busy, and when the steam gets "started down," it is just all the poor fireman can do to keep that Corliss engine from "pumping." And when the steam gets down so low that a Corliss engine refuses to cut off, thereby taking steam during the whole stroke, then it is time for a reform. This engine will not do good work when the steam pressure is less than 60 pounds—unless it is a low pressure concern. 60 pounds used to be the rule for the amount of steam carried by ordinary boilers for driving engines. It is different now. It has been found more economical to carry 70, 80, or even 90 pounds pressure per steam gauge.

To burn sawdust, we have a good large chimney, thus securing good, natural draught. When this is secured, and a good grate is provided, there is no reason why sawdust will not burn well and keep up steam also.

"How do you manage to burn so much sawdust?" we asked the engineer of a large saw mill. "We can burn it without any trouble," said he. "Getting it to the fire is our difficulty. It is quite a job to fire sawdust and do it well. It burns through so quickly that half your grate is bare before you know it; this lets cold air get to the boilers, steam goes down and you growl because you can't burn sawdust."

Keep a thickness of sawdust on your grate according to the amount of draught your chimney gives. If it is not very strong a thin fire must be used, but if the chimney will almost draw up unburned sawdust, then we can carry a thicker bed of dust upon the grates, and burning sawdust will be much less work.

When a man says he can't burn sawdust, and you know that chimney and grate are sufficient, then just open the furnace doors and see the condition of the fire. Probably you will find 16 inches of green sawdust piled back of each door. You will find the back of the grate entirely bare, the corners full of dirt and rubbish, while a fringe of fire is struggling around the edges of these heaps of fuel.

The man who has no trouble with burning dust, always keeps a level fire. You never catch him with lumpy fires, or dirty corners, or see the cold air drawing through his grates to cool off the boilers. He never lets a layer of fuel get entirely burned out before he fires up again. Some chaps get into the habit of burning the charge almost to a tinder before again firing. They don't consider that ten hundred little streams of cold air are continually trying to get at the boiler through the grate bars. They let the fire burn down until there is hardly enough left to ignite the fresh dust, and then their steam goes down while they are waiting for the fire to come up.

The successful dust burner will fire up while he has a glowing bed of live dust. He never waits a minute too long. He is on deck with his big shovel at just the right time. He don't put in too much at one time to roll the smoke up chimney and over the neighboring country like a Naragansett fog.

We find that burning sawdust requires no special rig. A well proportioned furnace is all that is required for plant, but we must have a

special man. Dust burning is an art, and depends almost entirely on the man who attempts it. Some men can never burn sawdust; they never burn coal or wood to advantage. Such men double the fuel and three times the help, and then can't turn out as much steam.

Did you ever know of a fireman who would run 8, 10, or even 12 boilers, and then always seem to have plenty of time to talk with every body who chanced to come along? Probably you have seen such a man. Perhaps he used to work for you, and you thought he was having such an easy time that you could squeeze down his pay a quarter, so you tried it, but fireman wouldn't be squeezed and jumped the job. You found it took two firemen and two coal heavers to do this fireman's work.

Such a man will have no trouble in burning sawdust, or any other fuel you may have. It all depends upon the "know how" of the man. Anybody can shovel coal or dust into a fire box, but that is not burning it to advantage, by any means.

He who would be a successful sawdust burner must keep his eyes open to every little point. There is no great principle underlying this art. It is just like many other branches of science where attention to detail, trusty experience, will secure good results even with the crudest of apparatus.

A Jarvis furnace is good for sawdust burning, but it is not necessary by any means — James Hobart.

THE CARE OF HARDWOODS.

A correspondent of the *Saw Mill Gazette* makes the following suggestions:—

It has occurred to me that a few suggestions with reference to the care of hardwoods might be timely, and perhaps well received.

Hardwoods are growing more and more into favor for interior decorations. First class residences, offices, etc., since the revival of Gothic features in architecture, are almost exclusively finished in hardwood, and choice oak, cherry, etc., clear and fine grained are in lively demand.

It is to be supposed that every man who is sawing these woods for future market desires the highest price for them; and yet, lumber is daily arriving in the market which is heavily discounted on account of its bad condition.

The acids of oak are strong, and when two pieces of plank are placed side upon side a souring, moulding, darkening process takes place, and this stain cannot be removed, and is even intensified by kiln drying.

It seems to be the custom of many to place wide boards or planks between layers for ratlines, one at the centre and one at each end of pile, and the result is that every plank is stained at the point of contact with these wide ratlines. A strip for this purpose should not over two inches wide and it would be better if no more than 1½ inch.

Another reason for the rejection of or discount on hardwood is, that using for ratlines for the lot that is being piled necessitates a pile 12, 14 or 16 feet wide, and such a pile cannot be well ventilated. As a consequence much of the lumber in the centre of the pile is browned and streaked in hot weather by the gaseous vapor which has evaporated from the lumber during the day and settled back upon it at night. This gives the lumber a dozy appearance, and a hardwood finish should be bright and cheery. No pile should be more than eight feet wide, and width of six only would be much better.

Again, the top of a pile dries faster than the bottom, because the top gets more air, and besides much of the moisture arising from the earth is absorbed in the lumber nearest it thus retarding the drying. Prudence would suggest the setting of posts or short cuts of trees in the ground and timbers placed upon them in three lines for bearings from three to four feet above the ground. If the piles have a space of three feet between them and protection from the sun above them, that will be about the best arrangement for out door drying that can be devised.

The demand of the hour will be the demand for several years to come—yard-dry lumber of choice grades, and the lumber cannot be yard-

dry, in the sense in which manufacturers understand it, unless it is as many years old as it is inches thick.

If hardwood lumber could be as easily kiln-dried as soft woods, then lumber of less age could be successfully used. But 1½ and 2 inch oak or ash are kiln-dried at great risk of "honey-combing" if they are of less age than that I have mentioned, and kiln-drying is a necessity in the use of plank of any age.

MR. PHIPPS AT THE BOSTON CONVENTION.

The American Forestry Congress has been holding its sitting daily in Boston since Wednesday, and many valuable papers and addresses have marked the sittings. On Thursday Mr. R. W. Phipps, the Ontario commissioner for forestry, read an interesting report on his work, which he had been officially engaged in for the past two years. Having in view the advisability, indeed necessity, of caring for forests and replanting, he had been engaged in spreading far and wide how these desirable things could be accomplished. From everyone willing he had obtained the results of experiments in forestry, and "although frequent suggestions in that direction have been thrown out, no scheme has yet met with such general favor as to warrant legislation in the way of granting exemption from local taxation to such owners of forests as shall agree to leave them uncleared. In the more wooded parts of the country it was found that taxes were so low on woodland that the remission would form no inducement. In those localities where it would, the county councils have not yet endorsed the plan. The Government of Ontario gives for all trees planted on roadside or farm boundaries, 25 cents each bonus after three years' growth, on condition that the township approve the act and pay one-half the bonus. Many thousand trees have been planted under this act. As yet we have not in Ontario placed trees to any amount in solid plantations of acres in extent. A very few experimental plots is all we can point to, and on such as these no bonus is yet given. I trust however, shortly to be able to report a change in both these points. Neither have we been able to agree on a plan for removing the June rubbish, which is so dangerous in creating and extending forest fires."

LUMBERING WASTE.

After referring to the great waste in cutting trees found afterwards too small for lumbering, and often left floating by thousands as logs in rivers, Mr. Phipps went on to say that "the true way is to preserve the forest, but cut out and sell yearly the large trees. I should recommend where practicable, a 15-inch limit."

The passing of the "Fire Act" to prevent careless burning, was passed in Ontario some years ago. As it was not properly enforced, the Government last season on his report "issued a notification to lumbermen that on application being made, the Government would pay half the cost of any number of men the lumberman might think necessary to enforce the Fire Act near his limits. This movement is what was needed. These men whose business it is to warn, observe and inform, will prevent many fires and save much money, and also will enable to calculate that his forest will not be destroyed by fire. Therefore he will not cut half-grown trees lest they be burned, but will leave them to grow."

He had also received testimony that planted trees for breaking the force of the wind had always resulted in benefit to crops. The wind-breaks are generally single rows of deciduous trees or evergreens. "Some complaints having been made that the telephone and telegraph men cut valuable trees to make room for their wires, I have inaugurated an arrangement with the companies by which they promise, wherever possible, to run wires only on the north and west of roads. If, then, farmers plant their shelter belts only on the north and west side of their farms, (the side most needing shelter) they will always be on the opposite side from the wires. Perhaps this suggestion may be of service in the States."

RUST IN WHEAT AND FORESTRY.

"I should like to give my experience concerning rust on wheat, in connection with forests. It was 25 years ago, we were clearing

a then thickly wooded district—the slope of a range of mountain in fact. We got then, surrounded by the forests as we were, very good crops with slight labor. Right under the lee of a great wood I knew a farmer get by summer following 60 bushels to the acre of splendid fall wheat, the sort of wheat which, in this, our mis-luck-stricken day, we never see. Occasionally we had rust; not much; the vitality in the soil seemed to carry the crops through all dangers. Still, farmers used to say: 'When we get more cleared, and let the air in, there will be little rust.' How prone we are to cut away the branch we are standing on; ay, and encourage one another, and hold agricultural meetings, sapiently pointing out to one another the most rapid way of breaking our necks! That whole slope is now almost denuded; the crest, which should have been preserved in wood, will soon be bare; the wash yearly of the upland is very injurious to the soil; and I hear this year that the rust is much worse than ever. I would say, therefore, let us not suppose, that by clearing away all the trees we will prevent rust. These examples prove we will not. The way to keep the land in condition for wheat is to preserve some forest near it, and the crops on that land will have a vitality (or else my experience goes for nothing) which will carry them successfully to ripeness."

Mr. Phipps finally referred to the advantage of having an official appointed in every State in the Union and province in Canada to take up forest affairs, write and disseminate forestry literature, and advance in every way the cause of the forest. It will not be long till openings present themselves whereby in each locality such an official, if his heart be in the business, will discover ways of working for the general benefit.

A MAN ATTACKED BY COYOTES.

Heretofore coyotes have been regarded as harmless, but the experience of Senator Walker last week contradicts this theory, and shows that when rendered desperate by hunger they will not hesitate to attack anything. The Senator left the Orana Mine, of which he is Superintendent, late in the evening of Saturday last, intending to inspect the road leading to the coal pit of the company on Walsby Gulch. The road from the mine to the gulch leads through dense patches of pine and tamarack trees interspersed with scrub brush and grass-wood. It was while passing through one of these dense thickets that the Senator was suddenly arrested by a pack of howling coyotes. Quickly dropping a lot of mutton he was taking to the coal pit, the Senator soon found himself perched in the topmost branches of a small nut pine tree which fortunately happened to be near at hand. Although as brave as a lion and in possession of a trusty Winchester rifle, the Senator's indignation was so great that he could hardly maintain himself in the tree, especially when he imagined he could hear the miserable brutes trying to climb up to him. Finally, however, his trusty rifle began to speak and dead coyotes soon covered the ground. After exhausting his shot the Senator was compelled to sit in the tree top and watch the pack fight and snarl over the bones of the slain until daylight, at which time he was happily rescued by a party of hunters from Virginia City — *Dayton (Nev.) Times*.

The Monson Waterpower and Manufacturing Company is to be organized in Portland, Maine, October 5th. The company will improve the water power and mills at Monson, Maine. The business will consist of lumber manufacture, pulp making, and wood working. Timber land to the extent of 10,000 acres, additional to that already belonging to the plant, has, or will be, purchased. A large pulp mill will be erected, and also a wood-working factory.

An Important Arrest.

The arrest of a suspicious character upon his general appearance, movements or companionship, without waiting until he has robbed a traveler, fired a house, or murdered a fellow man, is an important function of a shrewd detective. Even more important is the arrest of a disease which, if not checked, will blight and destroy a human life. The frequent cough, loss of appetite, general languor or debility, pallid skin, and bodily aches and pains, announce the approach of pulmonary consumption, which is promptly arrested and perma-

Chips.

PORT WILLIAM, N. S., will henceforth be known as Port Lorne.

DURING the month of August 23,000,000 feet of lumber passed through the Sault Ste. Marie canal as compared to 23,000,000 during August, 1884.

AN upper peninsula paper states that Saginaw valley lumbermen are establishing branch offices in the Lake Superior region, to look out for the purchase of logs and lumber.

THE bark *Safara*, Capt. McDougall, which sailed from Sharpness September 26th, for Miramichi, has been burned. The crew have landed at Queenstown.

THE Simms Brush Company, at St. Johns, N. B., are running their factory night and day to enable them to fill large orders recently received from Prince Edward Island and Newfoundland.

A WATCHMAN on the boom of the Marquette Saw Mill Company, at Marquette, Michigan, went to sleep, and as a consequence 2,000,000 feet of Tim Nester's logs escaped and floated out into the lake. They were recovered by tugs.

THE schooner *Anna Tomino* from Chicago, loaded with lumber, became waterlogged and was capsized on Oct. 5th, near Grand Haven, Michigan. The crew was saved by a life-saving crew.

A Mr. PIERCE is to erect a mill for the manufacture of a new patent ladder, at Martinville, Que., and also for shingles, bobbins, etc., the present mill and engine being too small for his purpose. He will employ a good number of men in his business.

THE quantity of sawed lumber exported from Ottawa to Montreal and Quebec this summer was larger than usual. The Blanchard & Williamson Barge Company had sixty barges employed in their business all summer as against only twenty the preceding summer.

A PULLEY thirty-four feet in diameter and weighing eighty-three tons has just been made in England. It has grooves for thirty-two ropes, which, together, will transmit 1,280 horse-power, and the rim will have a velocity of more than a mile in a minute.

E. R. PHINNEY has purchased of Wells, Stone & Co. a tract of land about four miles north of Coleman, Mich., on the south branch of the Tobacco, estimated to cut 10,000,000 feet of logs. The price paid was \$28,000, and 3,000,000 feet of logs will be put in the coming winter.

THE flourishing establishment known as "Wood's Mills," at Smith's Falls, Ont., will soon be supplemented by one the finest little saw mills in the country. Mr. Wood has spared no pains or expense in fitting his saw mill out with the best machinery for the purpose. He expects to have it in running order in a very short time.—*Almonte Gazette*.

IF it is true, as is stated in a current news item, that in Kansas the farmers are chopping down walnut trees and selling the wood for fuel at \$5 a cord, and that in Ohio a single walnut tree brought \$400, the people in Kansas who own walnut trees must be acting in a very shortsighted manner.

MAJOR WALKER, of Calgary, N. W. T., is just receiving his last million of feet of saw logs of the cut of 1893, from his timber limits in the mountains. These will all be converted into lumber at the Major's mill on the Bow River here this winter. He purposes commencing operations immediately for a cut of from one to two million feet of logs for next season's business.—*Calgary Herald*.

A CORRESPONDENT of the *Farmer's Review* writing from the Wisconsin woods on the shores of Lake Superior, says:—It does not take any great measure of discernment for the traveller through those regions to see that the stock of white pine is becoming exhausted. This is shown by the kind of logs with which the mill yards are stocked. Immense quantities will be seen which will not average more than twelve inches diameter, and which a few years ago no lumberman would have thought of cutting.

PRESERVING FORESTS.

The great importance of preserving forests was proved to Lieut. Col. Playfair in a most forcible manner by what he had observed in Tunis. "In Roman times," said the gentlemen, speaking in the geographical section of the British Association, "the province of Africa and the territory of Carthage was the granary of Europe." But how changed was it now! Where once were magnificent Roman farms, there was practically but a desert. Only the scattered remains indicated what once had been. "The hill sides were covered with nothing but sand," and all around was desolation, where once the rich soil had blossomed like a rose. And to what was this sad transformation due? To the destruction of the forests. The vegetable soil had in consequence been washed away into the valleys, where it now laid buried beneath several feet of sand and water worn pebbles. In Col. Playfair's opinion, there was no more striking instance of the importance of preserving forests, and this lesson is for us.

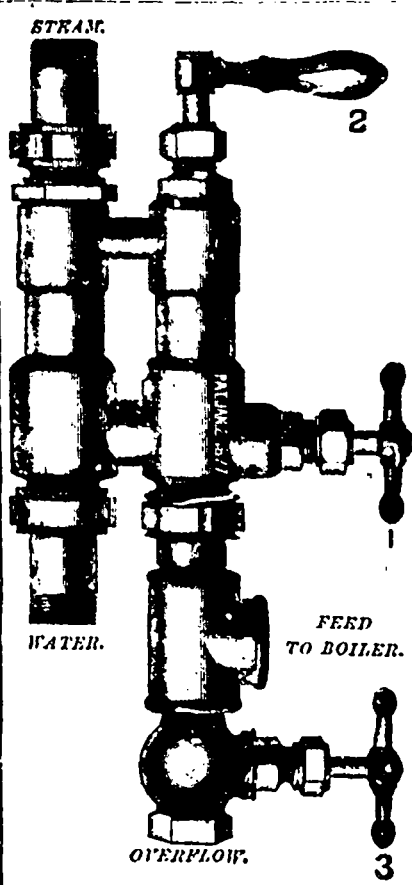
The Poor Little Ones.

We often see children with red eruptions on face and hands, rough, scaly skin, and often sores on the head. These things indicate a depraved condition of the blood. In the growing season, children have need of pure blood by which to build up strong and healthy bodies. Dr. Pierce's "Golden Medical Discovery" is given, the blood is cured of its bad elements, and the child's development will be healthy, and as it should be. "Croup, asthma, diphtheria, measles, fever sores, hip joint disease or other grave maladies and suffering arising from neglect and lack of proper attention to such cases."

Mild, soothing, and healing is Dr. Sage's Catarrh Remedy.

Catarrh—A New Treatment.

Perhaps the most extraordinary success that has been achieved in modern science has been attained by the Dixon treatment for Catarrh out of 2,000 patients treated during the past six months, fully ninety per cent. have been cured of this stubborn malady. It 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 tissue, Mr. Dixon at once adapted his cure to their extermination: this accomplished the Catarrh is practically cured, and the permanency is unquestioned, as cures effected by him four years ago are cures still. No one else has ever attempted to cure Catarrh in this manner, and no other treatment has ever cured Catarrh. The application of the remedy is simple and can be done at home, and the present season of the year is the most favorable for a speedy and permanent cure. The majority of cases being cured at one treatment. Sufferers should correspond with Messrs. A. H. DIXON & SON, 305 King street west, Toronto, Canada, and enclose a stamp for their treatise on Catarrh.—*Montreal Star*, 17122.



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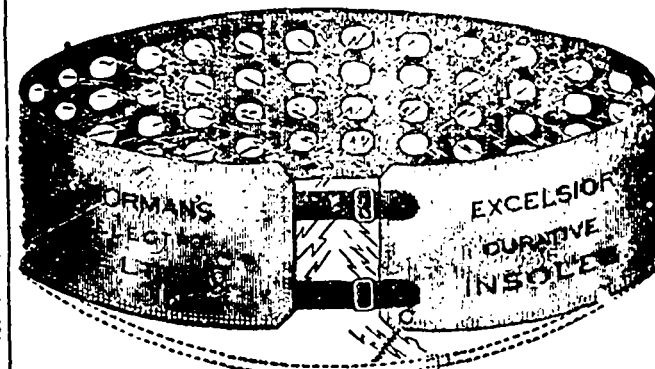
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This Belt is the last improvement and the best yet developed Curative Appliance in the world for
INDIGESTION,
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RHEUMATISM,

and all diseases of men, and is a grand remedy for Female Complaints also. Circular and consultation free.

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N. B.—Mr. Norman has had long experience in the Treatment of Diseases by Electricity, and will give his personal attention to every case, by letter or examination

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CANADIAN AXES
Both inlaid and overlaid steels, 10 patterns, from \$7.00 upwards per dozen.

AMERICAN AXES.
Both inlaid and overlaid steels, eight patterns, from \$10.00 upwards per dozen.

SILVER STEEL LANCE TOOTH CROSS-CUT SAWS.

Warranted to be good temper or will be replaced. Special three square and extra fine cut flat files for these saws.

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Your Money on Buying new, when the old ones will do. We pay Freight one way.

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FAIRPORT, N.Y., and TORONTO, ONT. 17122

Market Reports.

TORONTO.

From Our Own Correspondent.

Oct. 9.—All the yards have done a fair trade during the past two weeks and lumber has moved from the cars readily, so that both retail and wholesale men feel in good humour, and hope for prolonged open weather, which would be considered a fair recompense for the late opening of the last spring work.

The railroad companies are pushing for empty cars in order to meet the demands of their customers, especially those having to make shipments over the docks, the bulk of such shipments consists of stock lumber. Considerable of that class of lumber is now moving for Oswego, a few more cargoes will, however, close up the seasons work.

Table listing lumber types and prices: Mill cull boards and scantling \$10 00, Mill cull boards, pronounced widths 12 00, Scantling and joist, up to 10 ft. 13 00, etc.

Table listing lumber types and prices: 11-Inch flooring, dressed 25 00@30 00, 12 " " " 14 00@15 00, etc.

MONTREAL.

From Our Own Correspondent.

Oct. 9.—Trade for the past two weeks has been of a very limited character, and nothing like the activity which usually takes place at this time is noticeable. Manufacturers appear to be pretty busy in the west, but here dullness is the prevailing feature in the market and likely to be for some time to come.

Table listing lumber types and prices: Fine, 1st quality, # M \$35 00@40 00, Pine, 2nd " " 22 00@24 00, etc.

SHIPPING.

Shipping has been going on to a fair extent since our last report, and there are now about 9 vessels loading deals for U. K. and all the sailing ships in port are loading for South America. The latest rates of freight are by the Henerice for Liverpool, 40s 3d., the Penzance for London at 40s, and regular liners 40s to 50s.

Hamburg, 9,937 boards, 20,090 deals and 1,136 deal ends; SS Toronto, for Liverpool, 12,223 boards and 9,083 deals; BK Noro, for deal t.o., 9,116 deals, 1,162 deal ends and 10,231 boards; SS Lake Superior, for Liverpool, 7,316 pcs. lumber, 9,933 boards and 7,406 deals; SS Celtic Monarch, for London, 9,012 boards and 15,728 deals; BK William Owen, for Buenos Ayres 600,316 feet pine lumber; BK Mary Shaker for Buenos Ayres, 647,805 feet pine lumber; SS Montreal, for Liverpool, 3,473 boards, 1,435 deals and 4,874 pcs. lumber; SS Ontario, for Bristol, 3,504 deals; SS Lake Champion, for Liverpool, 1,119 deals and 4,070 boards; SS Bavaria, for Glasgow, 3,856 deals and ends, 9,987 boards and 10,000 feet lumber; SS Beina for Barrow on Furness, 10,870 deals, 502 deal ends and 6,905 boards.

CORDWOOD.

There has been a rather better demand during the past two weeks and wholesale dealers have advanced prices, although retailers say they cannot get any advance on their old rates. We now quote wood at the wharves and railway stations ex cartage as under:—

Table listing cordwood types and prices: Long Maple \$5 50, Long Birch 5 00, Long Beech 4 00, Tamarack 3 50.

OSWEGO, N.Y.

From Our Own Correspondent.

Table listing lumber types and prices: Three uppers \$42 00@46 00, Picking 32 00@35 00, Cutting up 24 00@28 00, etc.

CHICAGO.

BY THE CARGO.

The Northwestern Lumberman of Oct. 10th says:—There has been next to no market this week, for the reason there has been but few offerings. The port list has been for the week ending Wednesday showed but 118 cargoes, nearly the whole number having gone directly to the yard docks. On Monday there were probably not more than half a dozen cargoes at the docks, and on Tuesday and Wednesday there was not more than one or two on each day.

The cause of the lack of offering on the market is partly attributable to adverse weather for the sailing craft, and partly to the determination of the manufacturers to hold their piece stuff for higher prices. Lumber at the mills is largely going into cross-pile, which is proof that the holders are not anxious to force their stock on the market at present prices.

Short green piece stuff is now quoted at \$9 thousand, and nothing else—that is when sold on the market. It is sometimes sold at the mill in Muskegon directly to the yard men, which, of course, saves the commission at \$8 75 delivered here. The meagre supply on the market naturally has a tendency to stiffen prices. Lot joints are still wanted in excess of supply, and are occasionally arriving from Manistoc and Lake Huron in separate lots in vessel cargoes. All two inch joints, from six inches in width upwards, and 22, 24 and 27 feet long, are worth \$12 50 a thousand; stuff 3 inches thick is worth \$13.50; mixed lots will sell for \$13 a thousand. There is considerable inquiry for railroad bridge and culvert timber of those who handle it, and good orders are being frequently placed.

It is claimed that the small market offering of No. 2 stock is having a tendency to stiffen prices for this class of lumber also. Dealers that have a heavy trade begin to call for it with more urgency than when the market was well supplied. The enquiry is mostly for dry stock, which shows that it is wanted for immediate shipment, and that the inquirers have run short of supplies. The season has gone by when really green stock can be made available in the fall and early winter trade.

The tendency of lake freights is to increased strength as winter approaches and the season draws to a close.

Quotations on lumber and shingles are as follows:—

Table listing lumber and shingle types and prices: Dimension, short, green \$79 00, long green 12 00@14 00, No. 2 boards and strips 10 00@11 50, etc.

AT THE YARDS.

There have been two sections of opinion among the yard men this week in respect to current demand. One is positive that orders have fallen off within the past few days, while the other is as positive to the contrary. The dealers who declare that another period of dullness has struck the district give us as a reason for it that the late advance in the price list has caused uncertainty to the minds of country dealers; that they are unwilling to give the advances that are claimed, and have concluded to rest for the time being, until they can make sure as to what course prices are likely to take in the near future.

The course of trade within the next two weeks will develop a more positive condition for or against higher prices.

The recent restoration of eastern freight rates, which makes them about one-third higher than they were, will tend to check shipments in that direction, though one house that does a heavy eastern business stoutly asserts that it is shipping freely on the higher rate, and can make money in doing so.

Receipts of lumber, shingles, etc., from Jan. 1st to Oct. 8th as reported from the Lumberman's Exchange:—

Table showing receipts of lumber and shingles for 1885 and 1884, including cumulative totals from Jan 1, 1885.

Table showing stock on hand Sept 1, 1885 and 1884, categorized by lumber and shingles.

EASTERN FREIGHT RATES.

Table listing freight rates to various destinations: To New York 30c, Boston 35c, Philadelphia 28c, Baltimore 27c, Washington 27c, Albany 28c, Troy 28c, Buffalo and Pittsburgh 17 1/2c, etc.

TONAWANDA.

Table listing cargo lots for TonaWanda: Three uppers \$45 00@46 00, Common 18 00@24 00, Culls 12 00@18 00.

ALBANY.

Quotations at the yards are as follows:—

Table listing lumber and shingle types and prices: Pine, clear, # M \$50 00@53 00, Pine, fourths 45 00@48 00, Pine, select 40 00@43 00, etc.

BUFFALO.

Table listing lumber types and prices: Uppers \$45 00@46 00, Common 17 00@18 50, Culls 12 50@13 00.

LIVERPOOL.

The Timber Trades Journal of September 26th says:—During the past week there has been a considerable decrease in the arrivals of timber-laden vessels, which so far is satisfactory, as there is a probability that we stand no small chance of being over-stocked with nearly every description of wood goods, and it is only by restricting the supplies as far as possible that the continued downward course of the market can be arrested.

The public sales on Wednesday were eminently unsatisfactory, for in spite of the low prices to which sellers would have submitted, comparatively little was sold. This was not the case only with one particular description, but pitch pine, birch, and spruce deals alike failed in some instances even to bring out a bid.

WEST HARTLEPOOL.

The Timber Trades Journal of September 26th says:—The sawn wood department of the trade is extremely quiet; the orders are few and merely of a light description, whilst in nearly every instance urgency of despatch is particularly requested.

Amongst large timber business appears better than in any other department; a lot of oak is being sent into the interior from the shipments which arrived a week or two ago, and there is also a fair demand for Quebec birch, sawn pitch pine and Memel and Swedish fir. The stock of Quebec goods is throughout light, there is rather a scarcity of large sizes in sawn pitch pine; but apart from this fair stocks are held of most kinds of timber, probably Stettin fir being the heaviest, as a considerable quantity of this wood comes along with the oak shipments to float it, and the demand is out of proportion to the supplies which so arrive.

TYNE.

The Timber Trades Journal of September 26th says:—The arrivals of the past seven days are very much smaller in number and amount, the principal items being a cargo Peterburg battens, one cargo pitch pine timber, one of Riga lathwood one of pit-props, one steamer, with a varied cargo from Christiania, and another from Gothenburg. These cargoes are being mainly placed to stock, and so far stocks do not appear to melt away very rapidly. Redwood deals and battens are more heavily held than they have been for a long time past;

prepared floorings are also a fairly large stock. In American goods stock had run down very low at the commencement of the import season, but although the import has been below the average, the stock held is large enough for any prospective requirements.

In pitch pine there is a very heavy stock, and prices lower than they have been for a very long time past. There is no revival to report in any description of trade, and the probability is that it will be spring before any sign of improvement can be noted.

GLASGOW.

The *Timber Trades Journal* of September 26th says:—A public sale of timber and deals took place at Port Glasgow on 17th inst., when there was a good attendance, and a fair quantity changed hands.

The sale of deals held here on 23rd inst. was well attended. There was a large catalogue, comprising 1st, 2nd and 3rd quality yellow pine deals, and red pine and spruce deals, California redwood, etc., but there was not much business done as the offers made were, in view of the brokers, too low for acceptance. For 1st quality Michigan pine deals, large dimensions, offers were to 3s. 4d. per cubic foot.

There were some sales made of Quebec 1st pine deal ends, at from 2s. 2d. to 2s. 8d. per cubic foot.

Some Quebec and Dalhousie birch timber was submitted after the sale of deals, but there was none sold, offers being under brokers's limits.

There have been no arrivals to note at Greenock or Port Glasgow during the past week. Some parcels of deals have been received here for steam liners.

QUEBEC.

The *Chronicle* of Oct. 9th says:—Our Timber Trade at this port continues in the same sluggish state which it has been in for weeks. The manufacturers hold out for higher rates, which shippers are not inclined to give, owing to the dull and depressed state of the markets of Great Britain. Two of Messrs. McLaughlin's rafts, choice Pettawa's wood, have been sold, price supposed to be about 30 cents, with a railroad raft 53 feet average, and 60 inch girth, at 20 cents. Mr. Muir's Oak, consisting of about 30,000 feet, has been placed at 40 cents. We understand that Mr. LeSueur has disposed of about 100,000 feet of oak at 48 cents for delivery this fall, and 49 cents next spring.

RAFTS ARRIVED.

The Quebec *Chronicle* gives the following list of rafts arrived:—

Sept. 25—McArthur Bros., staves, New London cove.

Sept. 28—Collins' Bay Co., staves, Union cove.

D. D. Calvin and Co., oak and pine, sundry cove.

Sept. 30—W. Ritchie, pine and spruce deals, Three Rivers.

McLaughlin Bros., sawn lumber, Cape Rouge.

TIMBER LIMITS SOLD.

On Oct. 9th the vestibule of the Russell House was filled with a strong sprinkling of our lumbermen, attracted by the sale of 767 square miles of timber limits, in the Kippewa, and the Braceville mills within three miles of Arnprior, as also the mills on the Ottawa near city known as E. B. Eddy's steam saw mills, with all the plant and piling grounds.

The first lot put up was the E. B. Eddy steam mills, and the best bid was \$20,000; after a tedious pull—the price offered being only \$24,000, the property was withdrawn. This mill being in complete running order and having over seventy-four acres of ground attached, with all the necessary out-buildings, is valued at \$150,000.

The next lot offered was berth No. 6, Kippewa and Bois Franc, 28 square miles. There is on this lot—over 200 acres cleared—eleven barns and all necessary out-buildings for carrying on the timber limit farming. The farm is now rented for \$400 per annum. Sold to W. E. Edwards for \$9,000.

Berth 11, Kippewa and Osterbonne, 45 square miles.—A square timber limit. Sold to Perley & Pardy for \$2,300.

Berth No. 15, Kippewa and North river, 28 square miles. Forty acres improved with a store, stables and sheds thereon. Sold to E. B. Eddy for \$11,200.

Berths Nos. 30, 31, 32 and 33 on the Kippewa and Sagsagenege, 200 square miles—divided into berths of 50 square miles each with shanties and stables. Sold to J. R. Booth for \$84,500.

The last lot—Lako Temiscamingue—front berths, 58, 59, 60, 61, 61 A rear berths, Nos. 38, 39, 40, 42, 43, 44, and Quinze 423—in all 465 1/2 square miles. In this lot there is a farm of over 300 acres, also stores, blacksmith shop, stables and sheds, all in good shape for successfully carrying on an extensive manufacture of timber—the timber is represented as very choice. This lot was knocked down to A. Coburn for \$60,000.

A lot on the Upper Gatineau, comprised of licenses Nos. 155, 156, 157, 158, 159, 160 and 530, containing 265 square miles. This was sold at a rate per square mile. In this lot there is a good farm of about 200 acres, in a good state of cultivation and has a good stone dwelling house, sheds and stables. These are known as the Jean-des-terres limits, and were sold to Gilmore and Co., at a rate of \$335 per square mile, or a total of \$69,275.

The last lot on the list was the Range river limits, of 159 square miles, sold to J. K. Ward, for \$18,500. M. I. B. Tackaerry is to be congratulated for the manner in which he handled this sale. The total footed up the handsome sum of \$247,775., not a bad day's work.—*Ottawa Free Press.*

HINTS FOR THE SAW MILL.

Clean and oil leather belts without taking them off their pulleys. If taken off, they will shrink. Then a piece must be put into them and removed again after the belt has run a few days.

Look well to the bearings of your shafting, engine and machines. Sometimes twenty-five, thirty, forty and even fifty per cent. of your power is consumed through lack of good oil.

Set an engine upon three or four movable points, as upon three cannon balls. Connect with steam and exhaust by means of rubber hose. If the engine will run up to speed without moving itself back and forth, then that engine will run a long time with little repair. If it shakes itself around the room, then buy another engine.

Safely moving a tall mill chimney has been accomplished several times. Chimneys which have been caused to lean slightly through settling of the foundation may be straightened up again by sawing out the mortar between courses of brick at the base. A chimney 100 feet high and 12 feet square at the base will be varied over 8 in. at the top by the removal of 1 in. at the base.

When you begin to fix up the mill for cold weather, don't forget to put a steam trap in each and every steam pipe which can be opened into the atmosphere for heating purposes.

For leading steam joints, mix the red lead or litharge with common commercial glycerine instead of linseed oil.

In tubular boilers the hand holes should be often opened and all collections removed from over the fire. When boilers are fed in front and are blown off through the same pipe, the collection of mud or sediment in the rear end should be often removed.

Nearly all smoke may be consumed without special apparatus by attending with a little common sense to a few simple rules. Suppose we have a battery of boilers and "soft coal" is the fuel. Go to the first boiler, shut the damper nearly up, and fire up one half of the furnace, close the door, open damper and go to the next boiler and repeat the firing. By this method nearly, if not quite, all the smoke will be consumed.

A coiled spring inserted between engine and machinery is highly beneficial where extreme regularity of power is required. It is well known that a steam engine, in order to govern itself, must run too fast and too slow in order to close or open its valves.—*Timber.*

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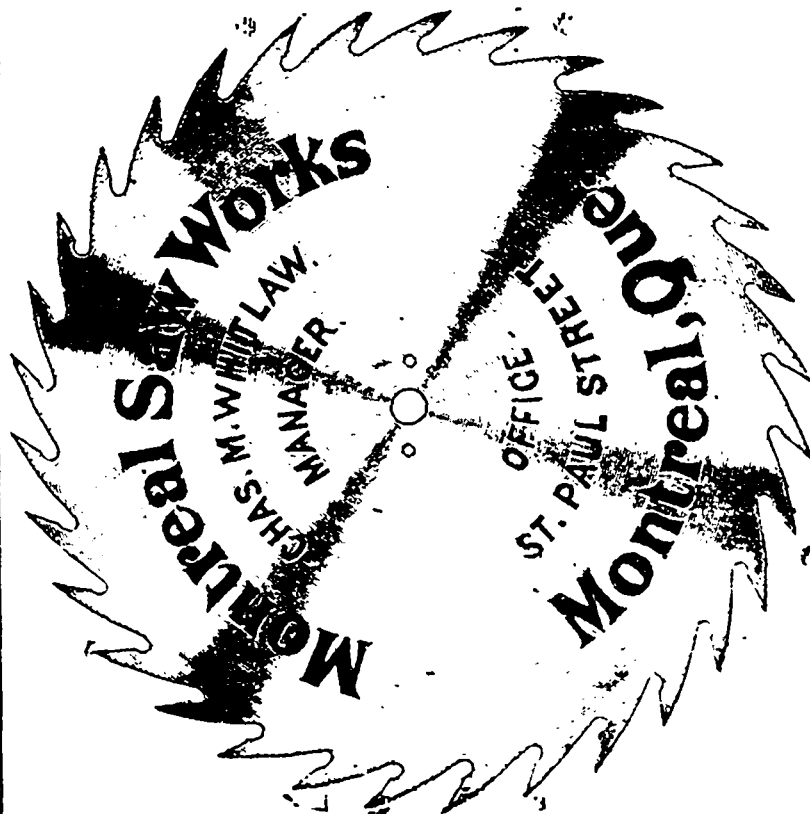
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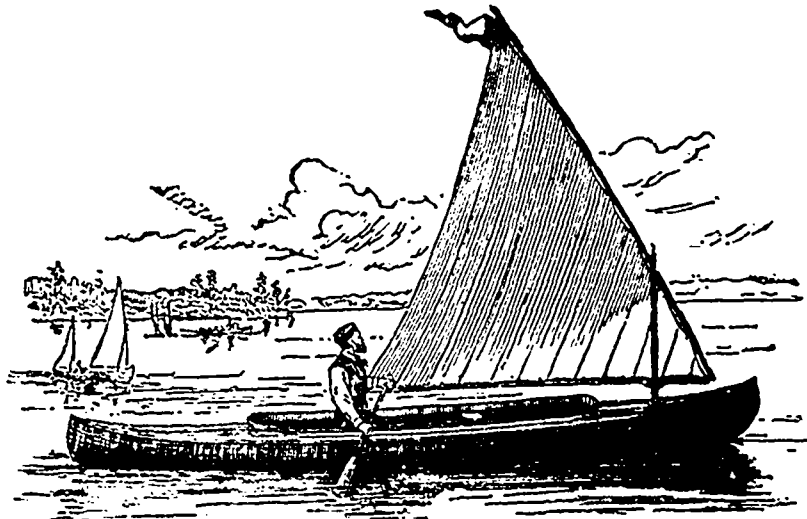
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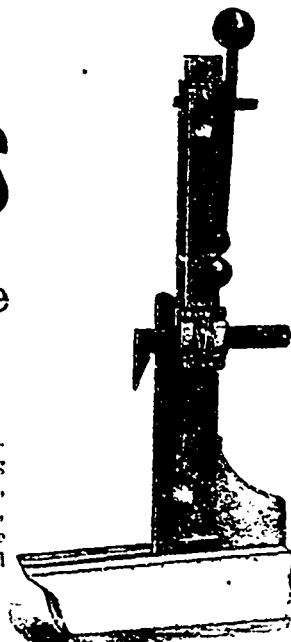
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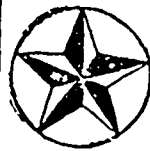
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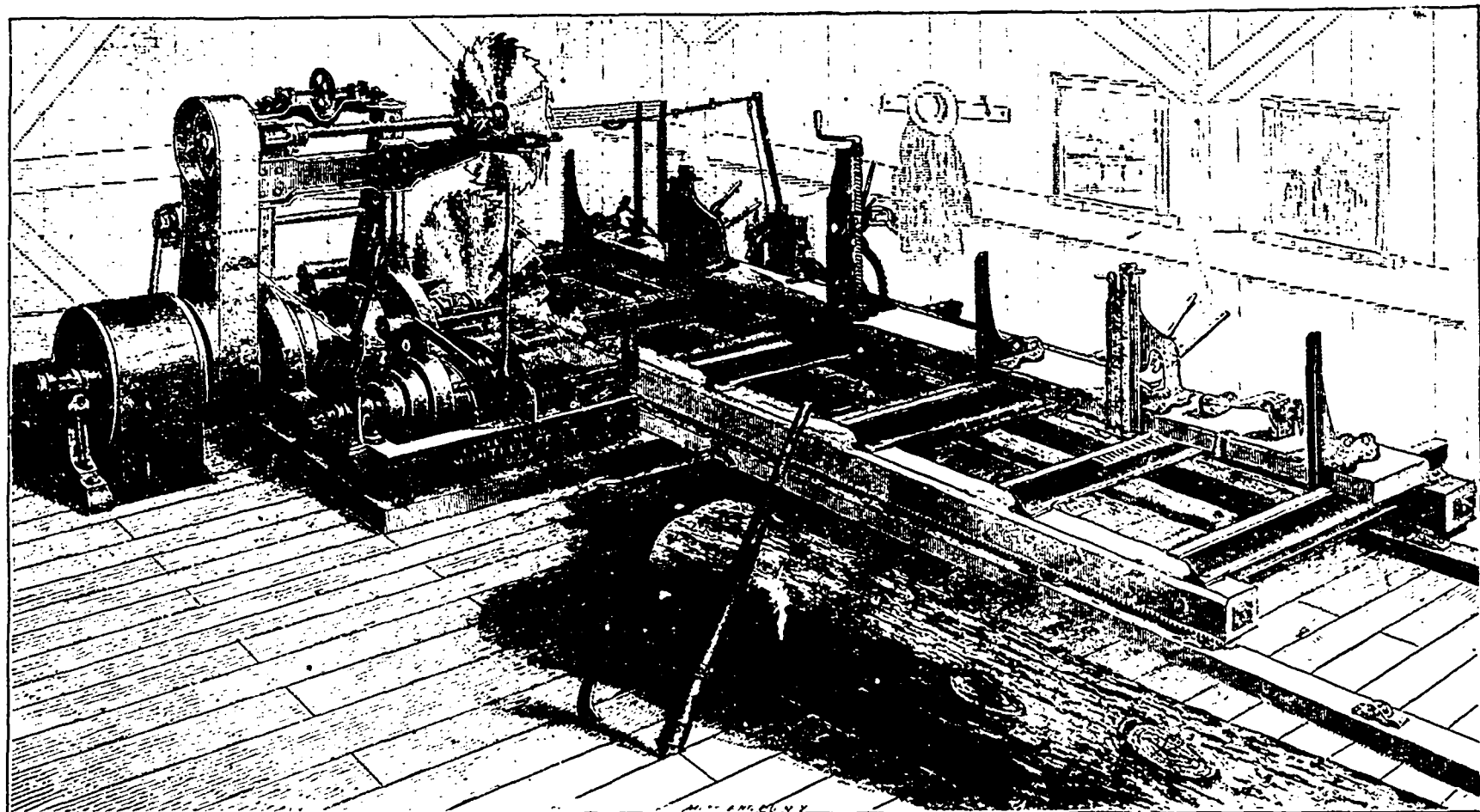
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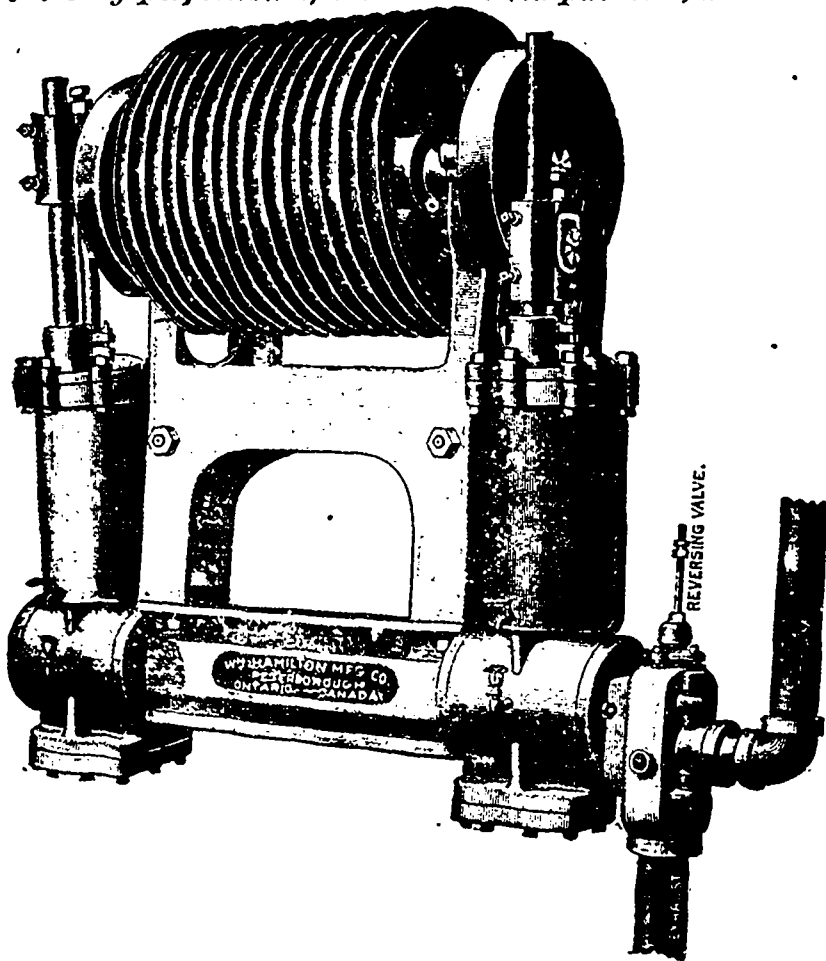
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The above engraving illustrates the Twin Engine, 10x16, for Rope Feed, for Saw Mill Carriages. The spool is 27 in. diameter, 30 in. face, is grooved 2 in. pitch for 1½ in. rope. The shaft is steel, 4½ in. diameter, with disk cranks. No connecting rods, 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.

There were two of these feeds working this summer and giving the best of satisfaction, one with rope feed at James Playfair & Co's Mill, Sturgeon Bay, near Waubaushene, and one at the new mill furnished by us to Francis Carswell & Co., at Calabogie Lake, on the Kingston and Pembroke R. R. This mill is working with the Rack and Pinion feed, and drops from fifteen to seventeen stock boards per minute. We have also sent one to the Rathbun Company, Deseronto, to put in to feed their heavy Circular Mills. They will also commend themselves for various other cases, especially for running Elevators, hoisting Engines, and wherever a simple and easily reversible motion is required.

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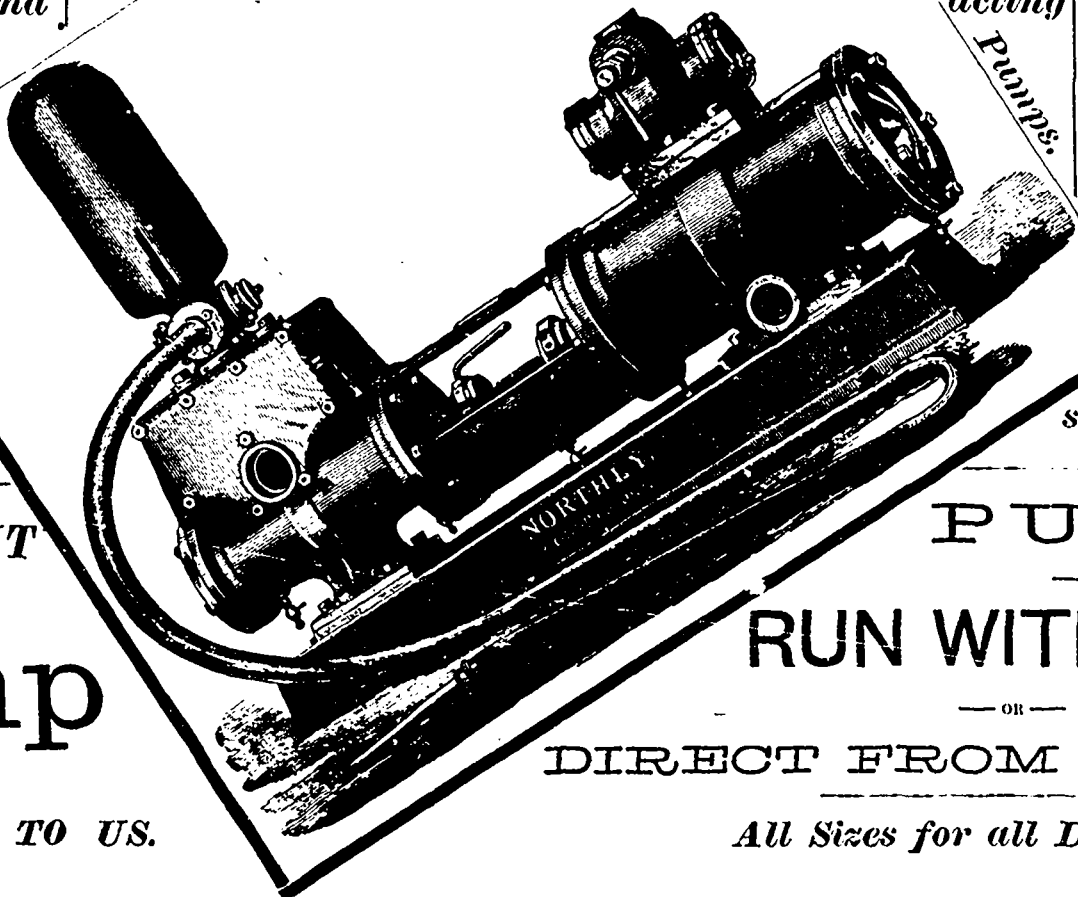
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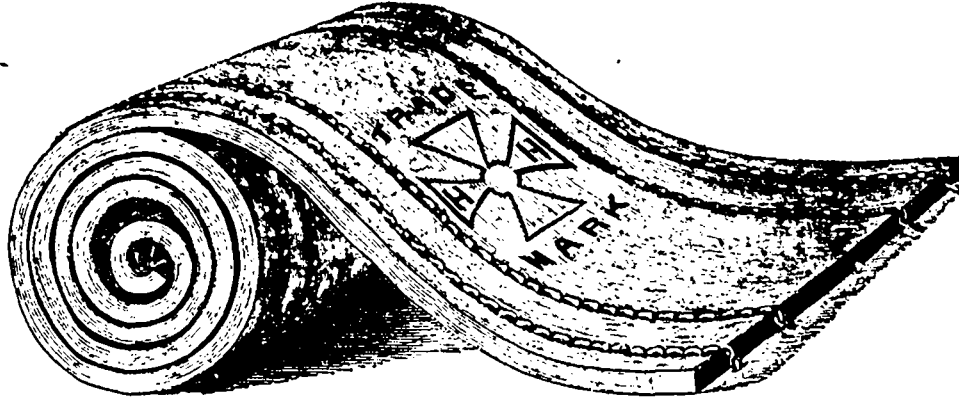
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