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## **The Wisconsin lumberman, devoted to the lumbering interests of the northwest.**

### **Volume I. Number 5 February, 1874**

Milwaukee, Wisconsin: The Wisconsin Lumberman Publishing Co.,  
February, 1874

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THE  
**Wisconsin Lumberman,**

DEVOTED TO THE

LUMBERING INTERESTS OF THE NORTHWEST.

FEBRUARY, 1874.

PRINCIPAL CONTENTS :

The Milwaukee & St. Louis Air Line R'y,	273	Railroads and Lumbering in Michigan,	303
The Winter's Work, - - - - -	277	Steamboat Race on the Mississippi, -	305
Fair Warning to Manufacturers of Lumber,	278	Prospects of a Diminished Crop in Michigan,	309
Annual Report of the Chicago Market,	281	The Forests of Canada, - - - - -	310
Hinkley Power Swaging Machine, (Illustrat'd)	282	The Lumber Interests of Sacramento,	315
The Spring Trade, - - - - -	284	Traffic of 1873 at Williamsport, Pa., -	317
E. B. Ward and Future Trade of Milwaukee,	285	The Timber Supply Question, - - - - -	319
Sec'y's Report to Chicago Lumberman's Ex.,	287	Trade of the Mississippi and its Tributaries,	322
Shawano, Wis., - - - - -	289	Canada Lumber Trade for 1873, - - - - -	324
Oconto, Wis., - - - - -	291	How to Use Boilers, - - - - -	327
Annual Statement of the St. Louis Market,	292	The St. Croix Valley, - - - - -	329
The Wolf and its Tributaries, - - - - -	293	Trade of the Pacific Coast for the Past Year,	330
The Grange Monopoly, - - - - -	293	Northwestern Wisconsin, - - - - -	332
Stowell's New Gang Lath and Picket Mill,	295	The Water Ways of Commerce, - - - - -	334
The Albany Lumber Market, - - - - -	299	The Lumber Trade of Cincinnati, - - - - -	335
The Wisconsin and its Tributaries, - - - - -	300	Kilbourn Dam, Lumber Markets, &c.,	340 to 352

EDITORS: E. B. NORTHROP and H. A. CHITTENDEN, JR.

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 THE WISCONSIN LUMBERMAN PUBLISHING CO.,  
 GRAND OPERA HOUSE, 62 ONEIDA STREET.

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# MUNSON & CO.,

## TANNERS,

AND

# BELTING MANUFACTURERS,

JOBBER IN { Rubber Belting,  
Rubber Hose,  
Lace, Hooks, Studs, &c.

**ENDLESS BELTS A SPECIALTY.**

*14 and 16 West Randolph Street, Chicago.*

### TO ADVERTISERS.

IT is conceded by business men that advertising in class publications ensures greater returns for money invested than advertisements placed before the public in any other way or through other mediums. THE LUMBERMAN is the only journal in the State devoted exclusively to Lumbering interests, and is, even with the first number, widely circulated. It will find its way to the hands of every Lumberman and Manufacturer in the State, and will become one of the best Advertising Mediums in the West.

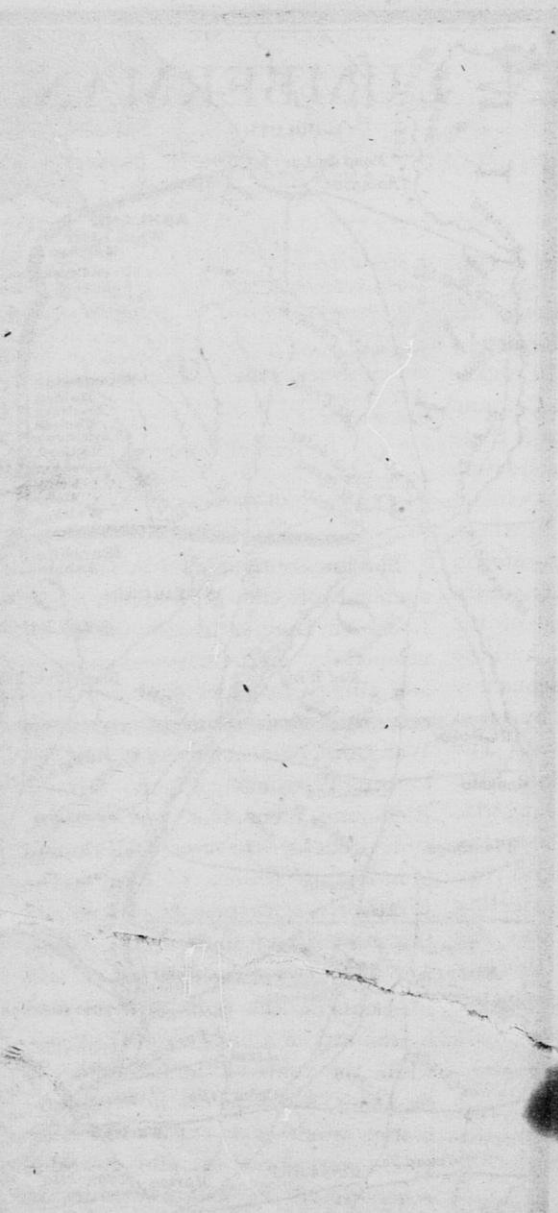
Examine our rates, and send any desired form of advertisement. Especial care and taste exhibited in display.

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SPACE.	1 MONTH.	3 MONTHS.	6 MONTHS.	1 YEAR.
1 Inch, - -	\$3.00	\$7.00	\$12.00	\$18.00
2 Inches, -	5.00	12.00	20.00	30.00
½ Column, - -	8.00	20.00	30.00	50.00
1 Column, -	12.00	30.00	50.00	80.00
1 Page, - - -	20.00	45.00	70.00	120.00







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The State of Wisconsin  
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of the County of \_\_\_\_\_  
State of Wisconsin  
this \_\_\_\_\_ day of \_\_\_\_\_  
19\_\_\_\_  
at \_\_\_\_\_  
Wisconsin  
\_\_\_\_\_



T H E

# WISCONSIN LUMBERMAN.

VOL. I.—FEBRUARY, 1874.—No. 5.

## THE MILWAUKEE & ST. LOUIS AIR LINE RAILWAY.

The Milwaukee & St. Louis Air Line Railway Company was formed by the consolidation of the Milwaukee & Northern Illinois R. R. Co., and the Varna, Peru, Mendota & State Line Railway Co. The consolidation was effected on the 1st of October, 1873. The Milwaukee & Northern Illinois R. R. Co. was incorporated in 1853 by special act of the Wisconsin legislature, under the name of the Fox River Valley R. R. Co., and the name was changed to Wisconsin & Northern Illinois R. R. Co. by act of Wisconsin legislature in 1859. The Varna, Peru, Mendota & State Line Railway Co. is of more recent birth, having been organized in the spring of 1873 under the general railroad law of Illinois. At a recent meeting of the Milwaukee & St. Louis Air Line railway company in this city the following gentlemen were elected

### OFFICERS OF THE ROAD.

JOSHUA STARK.....Milwaukee.....	<i>President.</i>
THERON D. BREWSTER, Peru, Ill. ....	<i>Vice President.</i>
WM. G. PARSONS.....Milwaukee.....	<i>Secretary.</i>
JOHN BLACK.....Milwaukee.....	<i>Treasurer.</i>
JOHN F. MURRELL,....Chicago. ....	<i>Chief Engineer.</i>

### DIRECTORS.

JOHN H. VAN DYKE.....	Milwaukee.
GEORGE BURNHAM.....	"
EDWARD P. ALLIS.....	"
GUIDO PFISTER.....	"
JOHN BLACK.....	"

ROBERT W. PIERCE.....	Milwaukee.
JOSHUA STARK.....	"
PHILO BELDEN.....	Rochester, Wis.
J. H. JOHNSON.....	Woodstock, Ills.
THERON D. BREWSTER.....	Peru, "
CHARLES KELLUM.....	Sycamore, "
C. W. MARSH.....	" "
C. C. MERRICK.....	Chicago, "

### EXECUTIVE COMMITTEE.

JOSHUA STARK,	THERON D. BREWSTER,
JOHN BLACK,	R. W. PIERCE,
C. C. MERRICK.	

The line contemplated by the management of the Milwaukee & St. Louis Air Line, and as thus far developed by preliminary examination and survey by chief engineer Murrell, will form a direct route via Waterford, Rochester and Burlington in Wisconsin, thence through Richmond, Woodstock and Sycamore, and probably through DeKalb and Mendota, in Illinois, to Peru on the Illinois river, thence via Varna and the most direct route to St. Louis. The distance between Milwaukee and St. Louis on the lines now traveled by the way of Chicago, is 379 miles, while the route of the Milwaukee & St. Louis Air Line as now contemplated would not exceed 346 miles and a very practical and desirable route would be but 340 miles in length. There would be at least a difference in the through line of 33 miles in favor of the Milwaukee &

St. Louis Air Line. A still greater difference in favor of the Air Line is apparent when comparisons are noted with reference to certain towns in Illinois. For instance, the distance from Milwaukee to Peru or La Salle is but 140 miles, while the distance from Chicago to La Salle is 101 miles. The distance from Milwaukee to Peoria (should the line be built that way) is 182 miles. From Milwaukee to Peoria by way of Chicago the distance is 246 miles; extra travel of 64 miles. Other instances might be cited, but the above are sufficient to illustrate. The Milwaukee & St. Louis Air Line will of course intersect the various lines of railroad running west and northwest from Chicago, and the Western Union at Burlington, Wis. The projected line passes through a remarkably fertile and well-developed agricultural region which has long felt the necessity of a through route to Milwaukee, and which is willing to contribute largely to the stock of the company, as it is well understood that their only hope for a competing road and a competing market lies in the success of the Milwaukee & St. Louis Air Line. Previous to the construction of the Green Bay division of the Chicago & Northwestern Railway the food crops of Northern Illinois and Southern Wisconsin found market in Milwaukee; and with the construction of the new road those localities would renew their former relations with this market and city.

A large and rich field would also be opened to the wholesale merchants of Milwaukee, to which, although so near, they have of late been entirely

debarred, but which should always have remained tributary to this city.

A feature of perhaps greater importance is the fact of direct connection by means of the Wisconsin Central railroad with the pineries of central and northern Wisconsin and by lake navigation with the lumber products of western Michigan; giving promise that at no distant day Milwaukee will assume her proper position as one of the

#### GREAT LUMBER MARKETS

of the country, and develop an industry which would do more for the rapid advancement of the city than almost any other single interest. Lumber from western Michigan and the Green Bay district can now be freighted to Milwaukee by lake at a cost of from 25 to 40 cents less per thousand feet than it can be delivered in Chicago, and with proper dockage, easily obtained, Milwaukee would soon become the source of supply for the lumber wants of a considerable local trade that now depends exclusively on Chicago. At least along the Milwaukee & St. Louis Air Line, for a distance of eight or ten miles on each side of the road, the lumber wants of the people would be supplied from this city. If favorable rates and suitable accommodations should also be the pleasure of the Milwaukee & St. Paul R. R. company, there is no doubt but Milwaukee would soon rank as one of the largest and most favorable lumber markets. Under the present railway management of the roads leading out of Milwaukee, the Air Line route would become the best distributing



road of lumber running out of the city, and it would be safe to estimate that twenty car-loads of mixed lumber, shingles, etc., would be shipped from Milwaukee on this road, daily. The cost of shipping lumber from Stevens Point, on the Wisconsin river, by rail to East St. Louis is now \$9.50 per thousand feet. The cost of running the same lumber to St. Louis by river is from five to six dollars per M. while the risk on the rapids, the actual loss and the damage to the lumber is such as to almost balance the difference in cost of the two methods of shipment. It seems reasonable to suppose that with the construction of the Milwaukee & St. Louis Air Line the rates could be so materially reduced as to at least allow of the shipment of dressed lumber from the Wisconsin river pineries to St. Louis. Should the Wisconsin Central construct their direct line to Portage city, there can be no doubt but a most important feeder to the Milwaukee & St. Louis road, would result therefrom; the larger portion of the lumber from the central pinery of the state would seek the outlet thus formed and undoubtedly be able to reach St. Louis by rail at a cost not exceeding the present expense of running in rafts. Milwaukee possesses such grand natural facilities for handling cargo lumber, and is so near the seat of manufacture, that with the construction of the long needed air line to St. Louis, there is not a doubt but this city would increase its lumber traffic five or six fold. The lumber trade of Chicago is one of the great features of the success and growth of that

city. Annually nine thousand cargoes of lumber are unloaded at Chicago wharfs, constituting three-fourths of the shipping business of the place. Not less than \$3,000,000 is the sum of lake freights on lumber centering at Chicago. The construction of the St. Louis Air Line is one of the important conditions necessary to the development of the lumber trade of Milwaukee; and with that accomplished the minor obstacles in the way of that development, would be speedily removed.

Still another feature of vast importance pertains to the

#### COAL INTERESTS OF PERU,

and of the Illinois Valley, in the vicinity of La Salle.

Along the whole length of the road, after leaving Woodstock, the inhabitants are compelled to use coal for fuel, no wood of any description being in that part of the country. The coal now must be hauled to Chicago, a distance of at least 100 miles; there transferred and shipped to points along this road, making the hauling distance, in most cases, 160 to 170 miles to points that are not on an average more than forty to sixty miles distance from much superior coal. It is easily to be seen that all the coal consumed must necessarily find its way over this road to supply the wants of the people along the line of the road and its vicinity. The same argument also applies to all roads intersected by this, for railroad corporations, like individuals, generally seek the cheapest and best market. Coal could be delivered to the points of crossing those roads cheaper than those roads can buy de-

livered on cars in Chicago, thus saving to them a hauling distance of about seventy miles, which at the lowest hauling cost, one cent per ton per mile, would equal \$7 per car-load. The same argument applies to the towns and villages on most roads running west, and all running north-west from Chicago. The road would act as a feeder and supply for them all. The value of cheap, good coal to Milwaukee would soon be felt in the increased stimulus given to manufactures, not only of iron, but other products. The city of Milwaukee alone would consume in its furnaces, water-works and other public works, domestic wants, etc., 300 tons per day.

The certainty that the Milwaukee & St. Louis Air Line railroad would soon become one of the most profitable lines of the central railroad system of the United States, seems assured when we realize the late, but rapid and wonderful development of northern Wisconsin and the Peninsula of Michigan. Untold wealth lies dormant in the iron mines, the forests, and in the agricultural and cranberry lands of that region. Capital and immigration are turning in that direction. Milwaukee, by the possession of the Wisconsin Central, has power to establish and maintain controlling commercial interests therein; but the construction of the Milwaukee & St. Louis Air Line is an absolute essential to the grand results which would soon become apparent as the trade and commerce of northern Wisconsin and the Peninsula of Michigan sought its proper channel to the valley of the Mississippi. The

through east freights from St. Louis and the south-east would seek like shipment at Milwaukee; an increased commerce would necessitate new and extended wharfs; manufactures would be greatly stimulated; and Milwaukee would be forced to utilize the natural advantages of her location and surroundings. The question of the building of the road is of vital importance to this city, and is within the power of easy solution. Considerable work was done several years ago on the line of the former Milwaukee & Northern Illinois road, and that work is now the property of the proposed route; there is no doubt but liberal subscriptions from the line of the road will greatly increase the capital stock of the company; and it remains for Milwaukee and St. Louis to extend every possible assistance and encouragement. From the report of the chief engineer, John F. Murrell, we append the following estimates as to the probable business of the line if constructed:

"From careful calculations and estimates founded on the basis of other roads, I find the business that must necessarily find its way over this road for the first five years of its working, would not be less than \$5,500 per mile per year.

TOTAL EARNINGS,

a little less than one-half the earnings per mile of the Chicago & Northwestern railway. That for 140 miles would be \$770,000 per year total earnings. Deducting 56 per cent., the average working expenses and repairs of railroads, \$431,200, leaving a balance of \$338,800 to be applied on the interest and dividends on a basis of 8 per cent., that represent interest on a stock and bonded indebtedness of \$4,235,000, or inter-

est 8 per cent. on \$30,250 per mile cost. According to the estimates herewith submitted, which have been all very carefully considered and calculated, and everything allowed and treated in a liberal manner, the cost per mile for the completed road is \$18,631.64, including rolling stock; or total cost from Milwaukee to Peru 2,622,403.22, which require net receipts of road to amount to (after paying working expenses, etc.,) \$209,792.25, to pay interest at 8 per cent., or a total gross earnings of \$3,406 per mile per year. There can be no doubt that the total earnings per mile will far exceed that amount. I think double it, for I cannot see why the receipts per mile per year should not equal the Milwaukee & St. Paul Railway as soon as the road gets regulated and in good running order. And I have no doubt, should the road be constructed, that the future operations of the road would satisfactorily prove such to be the result."

The clerks in Ingram, Kennedy & Mason's store recently presented Mr. Mason with a beautiful silver pitcher and goblets to match. The presentation was made by Mr. Kennedy, followed by an appropriate speech by Mr. Brown, after which Mr. Mason returned thanks in a neat little speech, and festivities ensued.

The *Jumeau Co. Argus* in its annual commercial review of New Lisbon says:

There are two saw mills, one operated by steam the other by water.

The steam saw mill is owned by Hon. H. F. C. Nichols, and is run to full capacity during the summer and fall months at the close of which mill hands are assigned to the supervision of logging camps in the woods during the winter. The water mill is owned by the firm of J. & E. Smart, who are also owners of the flouring mill. Both establishments are considered handsome property for one manufacturing firm to own and of course are run with success.

#### THE WINTER'S WORK.

It is now generally conceded that but a proportionately small amount of logging has been or will be accomplished this winter throughout the pineries of Michigan, Wisconsin and Minnesota. Scarcity of money, amounting to absolute inability to log, was the first cause of inaction on the part of many lumbermen, and the unfavorableness of the season has compelled, thus far, a cessation of activity in localities where, otherwise, business of logging would have progressed satisfactorily and with the usual magnitude. In localities where—as throughout a large portion of northern Wisconsin—there was a sufficiency of snow, the season has been favorable, for, notwithstanding that the sloughs and low grounds remained unfrozen, good roads could be maintained with very little extra labor of shoveling snow thereon. It is well known that larger loads can be hauled when the temperature is such as to soften the roads somewhat, than when the cold is so intense as to keep them continually frosty; and in this respect the weather has been favorable to those localities. However, it has seemed to be the rule that in most pineries where snow and weather have been favorable there has been a greater scarcity of money proportionately than in many places where only suitable sledding was necessary for usual work. In fact circumstances have seemed to conspire to render correct the prophecies uttered by the WISCONSIN LUMBERMAN in its preceding numbers; and now all are willing to

admit that the season's cut will not average above fifty per cent. of the operations of either 1871-2 or 1872-3. Indeed, it is very questionable if the log crop of Michigan, Wisconsin and Minnesota this season, reaches even that proportion; the contingency depending entirely upon the favorableness and duration of the remaining winter. The general opinion of those whose experience sometimes enables them to correctly judge as to weather probabilities is, that we are to have a very early spring and very likely a general break-up as early as March 1st. If it should so happen that loggers are compelled to leave the woods as early as the middle of the present month, or even the 1st of March, the sum total of logging operations will dwindle down even below the per cent. we have suggested as likely to obtain. While the circumstances of the season have so operated as to cause not only inconvenience but serious embarrassment to hundreds of manufacturers and jobbers, yet in the main we cannot resist the conviction that the lumber business of the country will be most beneficially affected by the very circumstances which have contributed to seeming or actual disaster in individual cases. The spring trade is opening gradually, carefully and fairly prospective for the interests of manufacturers and the dealers who have their stock in hand unincumbered. The winter's work will close, and seem trifling in comparison with that of the two preceding years, but the results therefrom will be the establishment of former prosperity in the lumber business and interests of the land.

## FAIR WARNING TO MANUFACTURERS OF LUMBER.

### CONDITION AND PROSPECTS OF THE TRADE IN THE NORTHWEST.

Only Prompt and United Action can Save it  
—The Markets of Milwaukee, St. Louis and Chicago Overstocked—No Hope of a Change for the Better until Manufacturers Learn the Lesson of Contenance—The Evils of the m following the Blunder of Over-Production—It is the Surplus that does the Injury.

### A CONVENTION OF LUMBER MANUFACTURERS DEMANDED.

*Chicago Correspondence Wisconsin Lumberman.*

CHICAGO, January 20, 1874.

The present season for cutting logs has so far advanced that a fair estimate can be made of the winters product, and it is generally understood that the new supply, added to the amount of logs at the close of last season will exceed the amount of lumber that reached the principal markets during 1873. Should the whole amount be forwarded, or even the majority of it there can be no doubt of an overstock at the principal distributing points, and a decline from the present low prices would naturally follow.

The inventory of January shows larger stocks at Milwaukee, St. Louis and Chicago than at any former time and only a moderate demand for any grade of lumber.

It would seem that lumbermen were too hopeful when they planned their winter business, or misinformed as to the amount of logs that would be provided as the closing prices for cargo lumber were far below a

profit and since November nothing has transpired to encourage manufacturers. It has been a very simple matter, to sell consignments in this market by cargo for cash for several years past, and therefore, manufacturers have added to their machinery until the supply exceeds the demand, at a price that affords a profit. There is no reason why cargo rates will be higher in April than they closed in November last, and should this prove the fact, prices will probably reach a lower range than the lowest of last year, unless consignments are less. I can think of no good reason why the entire amount of logs on hand should be forced upon the market if prices are not remunerative. Still until 1873 most of the logs provided have been manufactured during the season and consigned to market.

The "panic" of September last was the principal cause of so many logs being carried over at the mills on Lake Michigan, and could not in the same manner affect the coming season; but there are reasons that appeal with equal force to all mill owners that should cause them to retain one-fourth of their logs to be sawed in 1875 rather than overstock the market of the coming year. They would realize the same amount of money for three-fourths their logs, and greatly reduce the labor and risk.

The principal markets for lumber are overstocked, and present prices are lower for the common grades than at any time since 1861. Even at the present low prices three-fourths of all lumber sold from yards is on time ranging from 30 days to

four months; averaging 60 days.

The credit system is an evil that always follows over production, and when the retailer is compelled to extend credit, he must soon demand it of manufacturers and obtain it, or very low prices for cash. To this date the rule of the Chicago market has been cash for cargo sales, with an occasional exception when a large fleet was being closed out; but it was apparent to lumber merchants here that had the receipts of 1873 been an average during October and November, the credit system would have been introduced to some extent in order to prevent a decline. Lumbermen will not obtain the same amount of bank accommodation the coming season that they have formerly enjoyed, simply from inability of the banks to furnish the money. In former years they have been liberal borrowers, when their own means were exhausted, and have been favored customers of our banks.

The present and prospective demand for lumber is not encouraging. It is true the country has ample means compared to former years and will buy its proportion for farm improvements; but cities, villages and railway companies buy sparingly compared with past seasons. The consumption in this city will fall much below that of the past seasons, there having been, during 1872 and 1873, fully 1,000,000,000 feet consumed here.

The foregoing reasons are sufficient to cause manufacturers to reduce if possible the amount of their consignments, until the surplus has been removed and the market requires their

lumber. By the reduction of one-fourth in their product for 1874 a net saving of 50 cents per thousand could be made in lake freight, besides a handsome saving in the cost of all skilled labor employed, and also a reduction in the price of common labor. The principal benefit to manufactures would be the increased value of lumber. No dealer here can doubt that should the receipts be regulated by the actual demand, an advance from present prices must follow. For example Manistee and Ludington produce standard demension lumber and control that branch of the cargo sales. The receipts of 1873 from the ports amounted to 250,000,000. It is now supposed that cargo price of such lumber will be \$8 at the opening of spring sales, but were it known that but 175,000,000 feet would be the amount received in 1874 in Chicago it is safe to predict an average of \$2 more per thousand feet than it is likely to sell for now, would be the result.

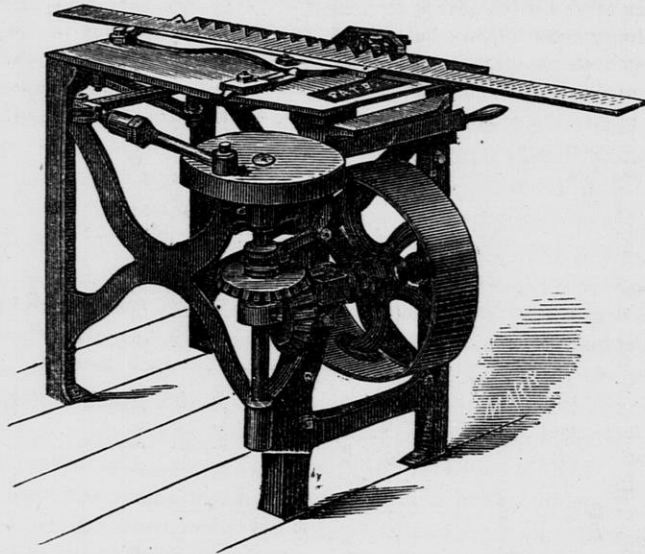
An excess of 100,000,000 feet of lumber beyond the wants of this market, renders the market flat and causes a reduction on a season's business of *more than its whole value*. A few cargoes too many in any fleet make the price for the whole fleet and often of succeeding ones. *It is the surplus that does the whole injury*. It would seem that we are surely drifting into a market similar to 1858 and that only prompt and united action can place the lumber trade again on a profitable basis. In former times timber was of little value, compared to the present, and it was not as important that any plan should be

found to regulate the manufacture of lumber. The country was growing rapidly and there was not sufficient capital invested in lumber to cause alarm as to an overstock. At present manufacturing is so wide spread that some means should be provided to better inform those interested of the amount being produced, with a view to prevent over manufacture. The remedy which I propose to meet the present emergency is to call a convention of lumber manufactures to be held during February, to arrange among themselves to hold over a part of their logs and limit the amount to be manufactured in 1874. The convention to be held at the most accessible point, and any mill owner may become a delegate. Each large manufacturing point could send delegates and by them signatures could be obtained to any agreement made at the convention. It would not be expected that all could reduce, but if 300,000,000 feet of logs could be held over at the lake Michigan mills a fair seasons business could be anticipated.

Such a convention could decide as to the propriety of an organization to include the three great lumber producing sections of Saginaw, Lake Michigan and Mississippi, and through the advantage of such an organization owners of timber and mills need no longer operate with the uncertainty of the past—but adjust the lumber product to the requirements of trade and in this manner make a lasting value to their timber that is just now being so recklessly wasted.



## THE HINKLEY POWER SWAGING MACHINE.



The above is a cut of Hinkley's Power Gang and Mulay Saw Swage, in which every lumber manufacturer and dealer will be interested; the dealers because they get better lumber; the manufacturers because they get more of it, with the same amount of work.

The advantage is, it does the swaging on the under or cutting side of tooth, without altering hook thereof.

## TO THE FILERS.

It is not claimed that this machine does away with all of the work in the filing-room, or requires less skillful labor there, or benefits the proprietors in the price of wages. The proprietors are benefitted on the lumber piles, in both quantity and quality.

Take the spring set out of your saws, have the teeth all 'as near the same shape as is practical, (no practical filer needs this precaution.) Machine to run 75 strokes per minute, (belt pulley may turn either way.) Fit a piece of 1  $\frac{1}{4}$ -inch plank into the mortices made for them, at both ends of machine, letting top of plank come to top of bed-plate; have them long

enough to support the end of saw as it is moved on bed-plate. Have bolts that hold back-piece loose, also cog-gear thrown out of mesh, which is operated by lever, the handle of which is seen at right of cut; next place saw on bed of machine with the top to the left, so adjusted that the swaging-roller will run in the same line with hook of tooth, observing at the same time that the point of tooth comes to the corner of adjustable die, then bring wedge up to back of saw with the big end to the left, then bring the back piece up to wedge and tighten bolts; next adjust the die to top of tooth, so that when the corner hits the point of tooth the back part of die has a clearance of about a sixteenth of an inch. The closer the die fits the top of tooth the farther back on tooth the swaging will be done; when the die is properly set it will press the tooth down on top, just what the roller swages it on the bottom, thereby getting the hook. Always observe in setting the die that the roller will just touch as it passes the corner; next adjust the length of



stroke so that the swaging-roller will not hit the back of the tooth next to the one it is swaging; next adjust the run of swaging-roller so that the roller passes the corner of the die just enough to allow the wedge to give the required amount of feed when in operation. Should the roller come forward farther than is necessary to get the required amount of pressure on the tooth to do the swaging, there will be danger, with a new beginner, of breaking the machine or bending the saw tooth. But by altering the length of the connecting rod, that connects between the wrist and working lever, by means of the long right and left hand nut, the swaging-roller can be stopped at any point on its forward run, and thus stop it so near the corner of die that a new beginner cannot get too much feed on. If the shapes of the saw teeth are very near alike, the set and run of the machine will not want to be altered once in a month.

#### OPERATION.

The operator will stand in front of machine with left hand convenient to the starting lever, by which the machine is stopped or started at will; after starting machine put the left hand to the steel wedge that works against back of saw, with the right hold of front of saw; give just pressure enough on the wedge to move the saw forward as the swaging-roller passes off the point of tooth, thus getting a new swaging pressure as the roller moves back on to the tooth. When the tooth is sufficiently spread to suit the operator, slip back the wedge, raise the front of saw, letting the back remain on bed of machine, and move the next tooth into place. From one to two minutes time will swage a gang saw, and one swaging will hold good for ten to fifteen filings. How is this? Because the swaging is on the bottom, and the principal part of the filing is done on the top of tooth. If the filer, when refitting his saws after a run, will take his hammer and steel, or if the

bottom of tooth was not the widest, he will save saws, save time, and keep the corners full; then put in spring net to keep his gauge full, and let them run before going on to the machine again, as long as the bottom of the tooth is wider than the saw plate is thick.

Use has proved that a gang of saws so fitted, will carry one quarter more feed with the same power than with any top swaging now in use.

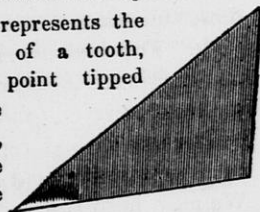


This figure represents the bottom of tooth as the swage leaves it.



This figure represents the top of tooth as the swage leaves it. The curve as seen at the point shows how much the steel is set back along the front or cutting side. Each filing renews this sharp edge on the side as well as at the point.

This figure represents the side elevation of a tooth, showing the point tipped down by the pressure of die, leaving the hook side straight.



The Hinkley Power Swaging Machine is the invention of Mr. G. M. Hinkley, and for further particulars, circulars, etc., address G. M. Hinkley, Reliance Works, Milwaukee. We call attention of Manufacturers to Mr. Hinkley's advertisement in another department of the WISCONSIN LUMBERMAN.

Logging is a little more brisk up the Peshtigo, than was anticipated at the opening of the season. The weather is excellent now and the volume of snow just about right for active operations. There are fewer camps than last winter but in proportion to the force employed there will be fully as much work done, should the favorable weather continue.

## :THE SPRING TRADE.

February is at hand and the spring season of activity in the lumber market has commenced. In Milwaukee the trade has opened fully as active as the most hopeful anticipated. Indeed, the local trade really improved noticeable about the middle of January. Already the yard dealers in different localities are on the outlook for opportunity of making favorable contracts, and manufacturers are beginning to assume an air of firmness that indicates a full appreciation of the fact that the log crop of 1873-4 isn't to be remarkably extensive. In some localities the fact is becoming apparent that even the low estimates which were made early in the season as to the amount of logging to be done this winter, were altogether too high. For instance, we quote from the Saginaw *Enterprise* an article which, if correct, (and the *Enterprise* has an established reputation for accuracy) will be read with surprise. We may here say, however, that the locality referred to in the extract is not an average sample of the work in the pineries, for in many localities in Wisconsin the weather and hauling has been all that could be desired and fully as much has thus far been accomplished as was expected in the early fall. We quote as follows:

The lumber trade, which has practically been as dead as anything could well be, in the valley during the past few months, begins to show signs of a resurrection. There are several buyers now here looking over the market, and the desirable stocks are being picked up. Many causes, so well understood as to render it unnecessary to refer to them in this con-

nection, conspired to prevent a rush to the woods this winter. The general expectation of lumbermen when the season commenced, was that the log crop of this winter would not exceed 25 per cent. of the crop of last year, and from all indications it is safe to presume that the actual amount of logs put in this winter will not exceed more than twelve and one-half per cent. of the crop of last year. To illustrate this it is only necessary to refer to a few of our heaviest operators. Gebhardt & Estabrook put in last year 13,000,000 feet of logs; this year they laid their plans for 4,000,000 feet, but with the same kind of weather experienced thus far, it is doubtful if they get in over 3,500,000 feet. Avery, Murphy & Co. put in last year some 10,000,000 feet, and this winter they will get in about 2,000,000. A. P. Brewer, and the firms connected with him last year put in about 15,000,000; this winter they will not get in over 4,000,000 feet. These may be taken as a fair index of the operations this season in the Saginaw District.

The lumbermen have pinched through the hardest part of the season, and they were never in a better condition financially than at present. Lumber buyers from abroad who come here expecting to buy lumber at their own figures will be disappointed, as lumber will not go below the rates at which it opened the season of 1873. A number of sales have been made recently. On Saturday, Eddy, Avery & Co. sold 1,700,000 ft. to Ransom, Hempey & Co. of Cleveland, at \$6, \$12 and \$35. Yesterday Hale & Co. sold to I. Sturtevant & Co., of Cleveland, 4,000,000 feet at the same figures, one-half of which is now on the dock, and dry. This firm has purchased within the past two weeks ten million feet, mostly dry and selected lots, all of which will be shipped to Cleveland as soon as navigation opens.

Of course the fact that there are

unusual stocks of lumber now on hand in all the western markets is an incentive to cautiousness on the part of wholesale buyers; yet there is still an appreciable desire to make contracts at present prices which indicates to a certainty that there is an almost undivided—although unexpressed—opinion that there must soon be a marked advance. Whether that advance, by the middle of the summer season, will be sufficient to pay fair interest on money now invested in lumber, remains to be seen. Indications, however, argue that money now invested in lumber at prices at which contracts can be made, will amply repay the necessary grit required to handle a pine board in face of the circumstances of unusual depression. The WISCONSIN LUMBERMAN reiterates its predictions that the season of 1874 will be at least fairly prosperous for lumbermen.

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The *Manitowoc Tribune* says: "There is considerable complaint about the commissioners of swamp lands not giving an account of and paying over the amounts due to the several counties as the law prescribes. We do not propose to state particulars now, but hope that the democratic managers of those lands will do their duty like honest men. We have had defalcations enough all around us and we are taxed enough too already, that we could bear any more such doings without getting excited about it."

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We notice that there is an unusual amount of wood being brought up in this market this winter, to be shipped for Milwaukee and Chicago at the opening of navigation next spring.—*Manitowoc Pilot*.

#### E. B. WARD AND THE LUMBER TRADE OF MILWAUKEE.

Many wild and ridiculous statements concerning the operations and purposes of Captain E. B. Ward relating to the lumber trade in Milwaukee have been put forth by the local papers. Within the past four weeks a Milwaukee paper published a highly imaginative and entertaining description of the magical wonders that were expected—by its writer—to arise in the swamp of the surging Kinnickinick at a waive of the wand of the stern old Lake Michigan captain. This plan, we believe, included the instantaneous erection of a glass and iron building to supply which Captain Ward has been obliged to establish a glass factory at St. Louis covering an area of 350 acres, with a tower rivalling in altitude the thousand-foot Philadelphia centennial project, for a sash, blind and door factory. Here, according to our quoted authority—the *Milwaukee Sentinel*—Captain Ward is to give his personal attention to the production of everything within his line of manufacture (sash, blind and door) from a scarlet ribbon, or a political platform to a pair of eyelids. Captain Ward, it appears, owns all the dimension timber now standing in the known world, and New Jersey, and has besides the entire crop of logs for the last eight or nine years hung up in the town of Ludington and its tributaries. We will not attempt to follow the *Sentinel* man into his billions, since the *Wisconsin Lumberman* is a new and young publication, of as yet only moderate resources and dimensions, and cannot afford space for such enormous conceptions as the figures of some of its amateur lumber contemporaries involve.

As, however, the article we have referred to, with others of nearly equal extravagance, was given to the public in apparent good faith, and as there are few subjects concerning which people outside

the trade are so easily misled, as statistics about the production and manufacture of lumber, we will state exactly what Captain Ward has done in this direction in Milwaukee up to this date. The Wisconsin Iron Co. has constructed for him docks of 1,000 feet frontage. Five thousand feet can be added as soon as needed. Here 1,700,000 feet of lumber and a small quantity (170,000) of lath are already in pile. Mr. Ward has mills in Ludington claiming a capacity of 40,000,000 feet a year. His logging operations have been very much curtailed this winter by causes that are general and sufficiently apparent. He had a large crop of logs left over on the Pere Marquette and its tributaries last year, so that the mills will not be idle. It is Mr. Ward's belief that a good deal of the timber product of Michigan that is now sent to Chicago could be more profitably distributed from Milwaukee. He has therefore established these yards in Milwaukee, intending to do his share towards developing this market into something like its legitimate proportions. What this market does not require he will dispose of in Chicago on cargo sales.

Mr. E. B. Ward is one of the most sagacious business men in the west, powerful in resources, shrewd in apprehending opportunities, and successful in choosing and employing men. It was his wisdom that located the Milwaukee Iron Company, which in seven years has grown to be one of the first industries of its kind in the country, and which although one of the youngest came out of the late panic in excellent shape. What Mr. Ward undertakes is not likely to fail.

The step he has taken in locating his great lumber interests here cannot fail to give a new impetus to one of Milwaukee's most neglected and at the same time most inviting fields of commercial enterprise. All that is now needed to make the lumber interest of this city what it should be, is a thorough and prompt reformation of the policy and management of the Milwaukee

& St. Paul railroad with reference to the transportation of lumber. Mr. S. S. Merrill has frequently declared that he "didn't care a d— whether he took a stick of timber out of Milwaukee or not." It is time for all this to be changed.

We inquired of Mr. J. C. Ricketson, of the Wisconsin Iron Company, whether Mr. Ward was to build a sash, blind and door factory right away. He replied, "Not at present. Probably not this year."

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#### THE WISCONSIN LUMBERMAN.

##### What Its Exchanges Say About It.

We are in receipt of the WISCONSIN LUMBERMAN, a new monthly magazine containing fifty pages of valuable and instructive information concerning the lumbering interests of Wisconsin, and of the Northwest. The editorials embrace a great variety of topics relating to the lumber trade, and are remarkably well written.—*Howard Co. (Kansas) Record.*

We had a pleasant visit Tuesday, from E. B. Northrop of the editorial staff of that eminently wide-awake and valuable publication, the WISCONSIN LUMBERMAN. Glad to know it is meeting with flattering success. Although it has been in existence but a few months it promises to be by all odds the best of its class in the country.—*De Pere News.*

We are glad to note the rapid improvements in the WISCONSIN LUMBERMAN, of Milwaukee. The publication has reached its fourth month, and is now one of the finest periodicals in its department published in the country. The January number is full of fresh and valuable information and is very handsomely printed. The LUMBERMAN is edited by E. B. Northrop and H. A. Chittender, and subscriptions are only \$2.00 a year.—*Fond du Lac Reporter.*

The January number of this valuable magazine is before us. Its pages are bristling with facts and figures pertaining to the lumber trade of the country. It is just such a publication as our lumbermen have long needed, as it gathers much of its news from the local papers of the lumber regions, from Canada to Florida, and from Maine to California, and publishes them in a neat, attractive form. It is published by the Lumberman Publishing

Company, Milwaukee, at two dollars per year.—*Eau Claire (Wis.) Free Press.*

SECRETARY'S REPORT TO THE CHICAGO LUMBERMAN'S EXCHANGE.

CHICAGO, Jan. 27, 1874.

To the President and Board of Directors of the Lumberman's Exchange:

We were the recipient of a short call yesterday from E. B Northrop, formerly of the *Stevens' Point Journal*, but now on the editorial staff of the WISCONSIN LUMBERMAN, published in Milwaukee. The idea of starting a periodical in the interest of the lumbering classes was first made of practical import by Mr. Northrop, and although only four numbers have been issued, it has met with complete success. It is one of the best filled and largest monthlies published in the west, and worthy the hearty support of the class it represents.—*Shawano Journal.*

GENTLEMEN — I herewith present you the following report of the stocks of pine lumber, etc., on hand and for sale in the yards of this city January 1st, 1874. The number of yards returned, embracing all in the city at that date dealing in pine lumber, is 108. The returns are made in most cases from actual measurement, and received from the principals themselves, and have been taken in the same manner as has been the practice in previous years.

Mr. E. B. Northrop, of the WISCONSIN LUMBERMAN, published in Milwaukee, favored us with a pleasant call yesterday. Mr. Northrop was formerly editor and proprietor of the *Stevens Point Journal*, and he made that paper an interesting, lively and readable sheet. He is here canvassing in the interest of the WISCONSIN LUMBERMAN, a monthly magazine, published in the interests of the lumbermen of Wisconsin, and the lumbering interests of the west generally. He is a ready and racy writer, and keeps himself thoroughly posted in relation to the specialty made by his magazine. The LUMBERMAN is the best paper of its class in the west, although comparatively a new aspirant for popular favor, having been started only in October last.—*Marinette and Peshigo Eagle.*

On hand and for sale January 1st, 1874.

Sawed Pine Lumber and Timber.....	327,877,742 feet.
Hewn Pine Timber.....	640,000 "
Pickets.....	1,582,530 "
Lath.....	28,830,150 pcs.
Cedar Posts.....	79,745 "
Sawed Shingles.....	29,542 m

Stock of January 1st, 1874, compared with January 1st, 1873:

1874. Lumber.....	327,877,742 feet.
1873. ".....	321,943,232 "
Increase.....	5,934,510 "
1874. Shingles.....	20,542 m
1873, ".....	40,301 "
Decrease.....	10,759 "

The following table shows the comparative receipts of Lumber and Shingles by Lake and Rail for the years 1873 and 1872:

	Lumber.	Shingles.
1873.		
Lake.....	1,020,638,000 ft.	294,548 m.
Rail.....	102,730,671 ft.	223,375 m.
Total.....	1,123,368,671 ft.	517,923 m.
1872.		
Lake.....	1,017,319,000 ft.	302,823 m.
Rail.....	166,730,283 ft.	308,201 m.
Total.....	1,183,659,283 ft.	610,824 m.

Respectfully,

W. L. SOUTHWORTH,  
Secretary.

The fourth (January) number of this valuable monthly in the northern lumber interest has been received, and from it the main portion of its leading article, entitled as above, has been extracted and appears below. The occasion may here be taken to say that this periodical abounds in statistical information and carefully pronounced opinions respecting the lumber interests of the west, and that it is one of the most valuable publications of its class. It may be cordially said, also, that it should be sustained by lumber dealers and manufacturers everywhere. The subscription price is only \$2 a year. The address is the Wisconsin Lumberman Publishing Company, Milwaukee. The article referred to, after recounting the errors which the liberality of lumbermen has led to, to the detriment of their financial interest, proceeds as follows.—*St. Louis Republican.*

## MINNEAPOLIS LUMBER REPORT.

There were on the first of January, one hundred and four thousand feet of sawed lumber on hand in the lumber yards of the lumber dealers in this city. It was distributed as follows:

J. Dean & Co.....	10,000,000
W. S. Judd.....	9,000,000
L. Day & Sons.....	9,000,000
Pettit, Robinson & Co.....	8,500,000
W. D. Washbrn & Co., including stock at Anoka.....	8,200,000
Eastman, Bovey & Co.....	7,700,000
Farnham & Lovejoy.....	7,000,000
L. Butler & Co.....	6,200,000
Fred. Clark.....	6,000,000
W. P. Ankeny Bro.....	6,000,000
Morrison Bros.....	5,500,000
W. E. Jones.....	4,750,000
N. P. Clark.....	3,000,000
Bedford, Boyce & Co.....	3,000,000
Crooker Bros. & Lamoreaux..	2,500,000
Bray, Wilder & Co.....	2,300,000
Todd, Connor & Co.....	2,250,000
L. Fletcher.....	1,000,000
Beaupre & Kelly.....	500,000
John Rollins.....	1,000,000
John Martin.....	600,000
Total.....	104,000,000

There are also about 35,000,000 of shingles in the various yards in the city.

On the first of January, 1874, there were one hundred and ten millions of feet of lumber in the various yards about town.

Of the present stock of 104,000,000, there is but 11,000,000 feet of fencing, an unusually small amount.

LUMBER.—There is a fair demand for the season, and with moderate stocks prices continue to be sustain-

ed. The prospects of the spring trade are favorable.

We have watched the market column of the *Boston Post*, from which the above extract is taken, and this is the first reference to the prospect of the spring trade. It is well understood that there are only "moderate stocks" in any of the eastern markets. The panic stopped the fall movement and it is only within a few days that there have been any indications of life, even, much less activity in shipments by rail. If Michigan would parade fewer funeral processions of figures concerning her lumber business; which if they prove anything prove too much, and lumbermen would insist on a policy not only of "masterly inactivity" but of undemonstrative reticence for a little while, the resurrection of the lumber trade would be far more rapid than it promises to be under the gratuitous manipulation of some of the too anxious newspapers.—*Saginawian*.

The Stevens Point papers sum up the aggregate loss of the recent fire at about \$50,000. The *Journal* of last week says that the district swept over by the fire has presented a very animated scene, and that buildings are being pushed ahead with great energy.

Estimates made and compared by some of the best jobbers on the Wolf, aided by estimates and statistics furnished by the Wescott House register of lumber camps and based on the usual winter weather give a total of 57,000,000 feet of logs to be run down the Wolf above Shawano, divided as follows:

Upper Wolf.....	35,000,000
West Branch.....	10,000,000
Red Rlver.....	12,000,000

Estimates made and based on the most reliable data at hand give 25,000,000 as the total below Shawano, making in all 82,000,000 feet of logs on the Upper Wolf and its tributaries.

## SHAWANO, WIS.

Shawano is the principal village in Shawano county, is the county seat of never-failing justice to its people, be they immigratorial or aboriginal (vide records of White Man et scutawabo, versus Big Injun,) and is the head of steamboat navigation on the Wolf river.

Puleifer lives there. So does Senator McCord and Upham, Wescott, Devlin, Hicks, Crowley and a host of good fellows who we expect to get acquainted with next spring when we go up canvassing for speckled trout. John H. Sturtevant, of Oshkosh, and J. H. Parks, of Shiecton, who will represent the energy and business sagacity of the prominent lumbermen that are yet to be, may as well be classed as bona fide residents for they are among those who enliven the business of the town and make Shawano the base for supplies during the long season of logging and driving on the Upper Wolf.

## THE RESIDENT POPULATION

of the village of Shawano numbers between eight hundred and a thousand persons, and at certain seasons of the year there is a floating population of from one to two thousand men, who are engaged for the lumber camps or the log drives. The town is pleasantly located and is really remarkable for the proportionate number of fine residences; indicating a desirable condition of society and business. The natural resources and material wealth of the country immediately tributary to Shawano, must soon be utilized by steadily increasing development, and the now

prosperous village will become one of the commercial centres of northern Wisconsin.

## ITS GREATEST NEED

at present is the building of a line of railway from Green Bay, over the line already cleared and ready for grading. The entire distance of 32 miles is prepared for the immediate use of scrapers, picks and shovels, and the fact that \$175,000 aid from Brown and Shawano counties has been voted and right of way secured, should be inducement sufficient to attract the attention of the Wisconsin Central to the matter of extending their line as far, at least, as Shawano. The road would pass by the mills of N. C. Foster, Oscar Gray, D. McCartney, those at Angelica, and become immediately tributary to several others but a little removed from the direct line. There is undoubtedly business sufficient already to remunerate capital invested in a railway from Green Bay to Shawano, and that a vast increase of trade would be developed, is certain.

## THE NATURAL RESOURCES

of Shawano county consist of the extensive tracts of superior quality of pine, magnificent forests of hardwoods of the usual varieties, limestone in abundance, fertile agricultural lands, very numerous first-class water-powers and a healthful climate. To the emigrant it offers superior inducements and attractions. The usual yield of winter wheat per acre is from 25 to 35 bushels. Oats, Rye and Barley grow excellently well and produce heavy crops, while corn is raised in fair quantities. Of the

## RIVERS AND LAKES

we can best inform our readers by appropriating the words of our genial friend D. H. PULCIFER, from an article prepared by him upon that subject, and which may appropriately close this article:

The Wolf river, emptying into the Fox, is a large and steady stream suitable for navigation as far as the village of Shawano, while above the village its fall furnishes abundant water power for mills, &c. It runs through the county from north to south, and furnishes a channel for carrying off our immense bodies of pine timber. The Embarrass river is a large stream emptying into the Wolf and running westerly through the county, tapping the pine land in that direction. Red river is a stream containing a large number of valuable mill sites, and at present is used for running logs to Wolf river. It runs in a north-westerly direction from Shawano, and passes through a rich pine region, a large portion of which is valuable land for agricultural purposes. Mill creek is a stream emptying into the Embarrass river, and is used by the lumbermen for getting out logs. It runs through a rich agricultural district, and contains several good mill sites, and would furnish abundant power to run them. Shawano outlet is a stream connecting Lake Shawano with the Wolf river. Lake Shawano is a handsome body of water about ten miles long by six wide, bordered by handsome, thrifty pine lands. White Clay Lake and Loon Lake connect with Lake Shawano, and their surplus waters empty into the Wolf river, thus affording a direct communication between the pine lands which surround them and the lumber market at Oshkosh.

Shawano is the head of navigation on the Wolf river, and is, and must of necessity, remain the terminus of the river carrying trade. All heavy

freight is now brought by steamboat and barge from the lakes or Mississippi river to our village without breaking bulk, and goods purchased in New York and shipped by way of the lakes reach us by water and are landed within the village, thus enabling our merchants to sell heavy freights at a low price as compared with the markets of other inland towns where such goods are carried over rough roads. This means of communication will furnish a cheap and reliable means of carrying off our surplus products, and when the improvement of the Fox and Wisconsin rivers is completed, as it shortly will be, we shall find a ready market on the Mississippi for our timber of all kinds, whether manufactured or cut ready for the manufactories of the large cities.

In water powers Shawano county has more than almost any other county in this section of the state, and what adds to their value, is the fact that they are so equally distributed through almost the entire county, and can be made available in nearly every town. The Embarrass river affords valuable sites for mills in the towns of Bell Plain, Pella and Grant, several of which are already in use. The stream is unvarying and the water abundant. Red River has power enough to run a hundred first-class mills and manufactories. Wolf river can easily and without any heavy outlay, be made available for a dozen or more mills and machine shops. Mill Creek, in township twenty-six and twenty-seven of range fourteen, has several good sites for mills. Shawano Lake and its outlet give a good power at a little expense. The outlet between Lake Shawano and White Clay Lake will furnish a good power for a grist or saw-mill. These sites can now be purchased at reasonable prices; in fact some of the best of them can be purchased of the State at one dollar and twenty-five cents per acre.



**OCONTO, WIS.**

Oconto is one of the principal cities of northwestern Wisconsin, and is also one of the great lumber manufacturing and shipping points of the state. The principal manufacturing firms are:

- Jacob Spiece.....
- The Oconto Company....
- Orr, Newell & Co. ....
- Holt, Balcom & King....
- W. Brunquest.....
- John Leigh.....
- Comstock & Simpson ....
- L. M. Pierce.....
- Winslow, England & Co..
- Anson Eldred.....

Oconto is the place of residence of a very large number of lumbermen who do almost exclusively a jobbing business, and largely do they contribute to the wealth, business and importance of the city. We were enabled to secure a partial list of the names of the jobbers, together with an approximate estimate of the amount of logging contemplated this season :

- B. Brophy.....3,500,000
- Henry Sargent.....1,500,000
- Edward Sargent.....1,500,000
- Jas. Ramsey.... . 1,000,000
- Thos. Porter.....1,500,000
- S. Klaus.....
- W. Klaus.....
- Robt. Simpson.....1,000,000
- Sam'l Simpson.....1,000,000
- Tibbitts & Orr.....1,000,000
- M. E. Castlen.....1,200,000
- Geo. Lyons.....2,200,000
- Jas. Conniff.....1,500,000
- S. Butler .....1,500,000
- Robt. A. Jones .... . 1,500,000
- Geo. Smith ... . . . . 1,000,000

- P. Luby.....1,000,000
- Thos. Goff..... 700,000
- Geo. Lock.....1,200,000
- Jennings..... . . . . 1,000,000
- Comstock & Simpson ....4,000,000
- Chas. Pendleton.....1,000,000

The above list includes not over one-half the firms who are now engaged in lumbering on the Oconto and its tributaries, but is as complete as the information we could obtain, will allow.

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Wonderly & Co., proprietors of the Empire gang saw mill, East Saguaw, are cutting logs on Flat River, in Montcalm county. They have already sawed 5,000,000 feet of logs, but have concluded to cut but 3,000,000 more, They have 11,000,000 feet of lumber on hand.

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The absence of snow has prevented Scofield & Co., from hauling out many of their shingles from the Tornado mill to Ahnapee. There was snow enough in the woods before the last snow storm to enable them to haul logs by putting on small loads.—*Door County Advocate.*

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The officers of the Wolf River Boom Company for the coming year, are : J. A. Paige, President and Treasurer ; J. A. Paige, E. C. Kellogg, P. Sawyer, D. L. Libbey, J. H. Jenkins, Directors.

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The *Marinette and Peshtigo Eagle* says logging is progressing up the Menomonee river as well as could be expected considering the limited amount of snow, and the fact that the swamps are not sufficiently frozen to bear the teams with their loads, safely. Should the months of January and February prove as open as December has, it will shorten the log crop many million feet.



**THE WOLF AND ITS TRIBUTARIES.**

Estimates made by John H. Sturtevant of Oshkosh, in relation to the amount of new logs to be got in this season on the upper Wolf and tributaries, are as follows :

Upper Wolf.....	30,000,000
Red River .....	8,000,000
West Branch.....	8,000,000
Old logs left over on Upper Wolf.....	6,000,000

The estimates prepared by D. H. Pulcifer vary somewhat from the above, and are :

Upper Wolf.....	35,000,000
Red River.....	12,000,000
West Branch.....	10,000,000

Mr. Pulcifer also estimates the amount of new logs that run out below Shawano, on the Wolf, at 25,000,000. It is expected that the Little Wolf will contribute 20,000,000 to the general supply. Last season White Clay Lake produced 20,000,000, while this season but one firm are logging in that immediate vicinity with the prospect of getting in about 2,000,000.

In 1872, there was logged on the Wolf and tributaries and run to the mills, 176,000,000. In 1873 the amount increased to 205,000,000. If the same localities this year produce 100,000,000, the amount will be above the general estimate as figured by thoroughly posted lumbermen. The "section 11," even more famous than the \$46,000. Short-horn, is producing better than was expected; Messrs. Bray & Choate having now on the ice about 2,500,000. The timber is almost entirely "pumpkin" or "cork" pine of large growth and remarkably

free from "shake" or other imperfections. There is little doubt but the section was well worth \$50,000. When the lumber from that section is in market it will be in about such demand as was the beef of the famous two-ton ox.

**THE GRANGE MONOPOLY.**

Communism is directly antagonistic to the true principles of commercial life. Practical communism is the most serious form of monopoly. The present Grange movement is communism intensified. Said a Granger to a representative of the WISCONSIN LUMBERMAN, "we shall one day own our own railroads, grain elevators, ships, manufactories, newspapers, stores, grist-mills, saw-mills and lumber yards. We can control State governments; we can control absolutely and unconditionally the future Congress and executive of the United States." The words spoken seemed sincerely uttered, and by a man of apparent average ability. The possibility of such a monopoly by the class of people who represent the Grange movement is absolutely void; yet in a small way injury is even now being done legitimate trade by the efforts of the Grange communists. Of this injurious influence we shall only speak as it pertains to the industry represented by the WISCONSIN LUMBERMAN. Certain manufacturers in several localities in this State have sold small lots of lumber to representatives of local granges at the same prices they were then asking retail lumber dealers for quantities ranging from five hundred thousand to a million feet. The manufac-

turer undoubtedly had the legal right to effect such sale, but, if we consider the peculiar intent of the grange element—as heralded by itself—the business policy of such sale must eventually result disadvantageously to both manufacturer and retail dealer. Manufacturers depend more or less on the capital of retail dealers to assist in the disposal of their manufactured stock. That capital is worth at least a fair interest compensation. If small quantities may be purchased by grange committees at the same rate at which retail dealers are supplied with their usual orders, it is evident that the retail yards depending on country trade, must soon close out their business entirely. The situation is plain enough; either manufacturers must assume the entire responsibility of the retail trade or else give their retail dealer customers the advantage in price equivalent to fair compensation on the amount of their money invested. A manufacturer who sells a grange committee lumber at the same rates he would dispose of a larger amount to a retail dealer, is assisting an organization which if prosperous, will some day operate greatly to the detriment of that manufacturer. There isn't the slightest possibility of the grange organization ever controlling the business of this country, but every act of manufacturers, whereby grangers are given a preference over, or even equal advantages with the retail dealers, will at least be so much encouragement to the communists whose avowed determination is the ultimate control of the business of the country in their own

interests and for their own pecuniary and special advancement. It is the manifest duty of lumber manufacturers to refuse grange representatives the same rates at which legitimate retail dealers are now purchasing. In Milwaukee several prominent wholesale houses have justly refused applications made for goods by different granges, and have set a very proper example for manufacturers in general to follow. The grange element is assuming the dictatorial tone of monopoly in its worst form. Let anything but encouragement be extended thereto.

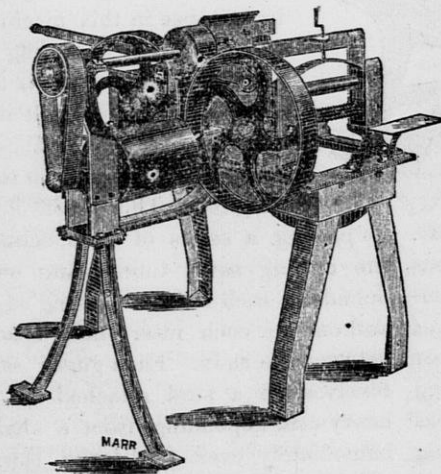
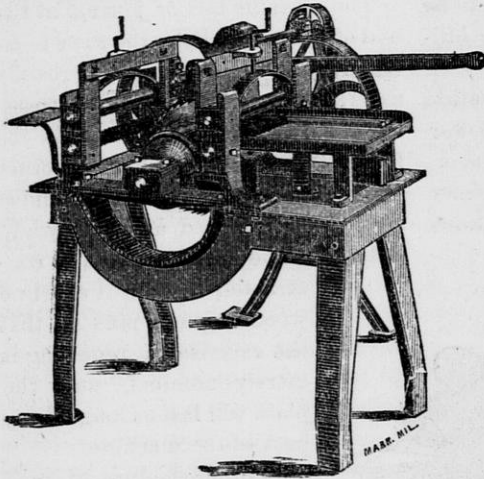
#### FUTURE LUMBER INTERESTS OF ASHLAND, WIS.

The *Ashland Press*, speaking of the new wagon road along the upper Chippewa, says:—Capt. Argus and L. E. Montferrang, representing the La Pointe town board, were in the city last Monday, having just returned from a tour of inspection of the new Chippewa wagon road being made by W. J. Cornell of Chippewa Falls. They report it to be a very good road and state that Mr. Cornell has done his work thoroughly, having constructed twelve bridges and laid several thousand feet of corduroy in a distance of eighteen miles. This road strikes the W. C. R. R. line about 16 miles south of Penoka Gap, and runs in a south-westerly direction, following the main branch of the upper Chippewa to within a few miles of the Chippewa Falls wagon road. Mr. C. will cut out and connect the two routes at his own expense and has a force of choppers at work at the present time. This road will certainly prove of great importance to Ashland in years to come, as it taps the immense pine forest of that section, where it is estimated that several hundred million feet of the best quality of pine stands untouched by the lumberman's axe. Ashland will be the depot of supplies for this vast area, and it is estimated that at least 5,000 lumbermen will be engaged in logging on the numerous streams therein by the winter of 1875, all of whom will obtain their supplies at this point, as it would save at least one hundred miles of hauling over tote roads.

**STOWELL'S NEW GANG LATH AND PICKET-MILL  
AND GANG BOLTER.**

Mr. John M. Stowell, of the firm of Filer, Stowell & Co., Milwaukee, has achieved an enviable reputation as an inventor and machinist, having perfected several of the most useful and popular wood-working machines now in use. For the benefit of our readers who are interested in the manufacture of lath and pickets or who contemplate the addition of suit-

able machinery for such purposes to their mills we have secured engravings of Mr. Stowell's most excellent Gang Lath and Picket Mill and Gang Bolter that manufacturers may be enabled to form correct ideas of these machines and the principles of their construction. The first two illustrations represent views of the Gang Lath and Picket Mill.



The machine was patented in 1873 and its use during the past year has demonstrated its vast superiority. The machine occupies a space 3 1-2 by 4 feet and weighs about 800 pounds. Some of the principal advantages possessed by this machine may be enumerated as follows :

The machine combines all the advantages of the ordinary Gang Lath Mill with the additional capacity for making square pickets, flat pickets, broom handles, sash stuff, or other small strips.

It makes as rapidly as the ordinary gang lath mill, any number of lath from one to ten, according to width of bolt.

It makes six strips of one inch broom handles, or six 3-inch by 1 inch pickets.

It makes five one and a quarter inch square pickets.

It makes five one and a half inch square pickets.

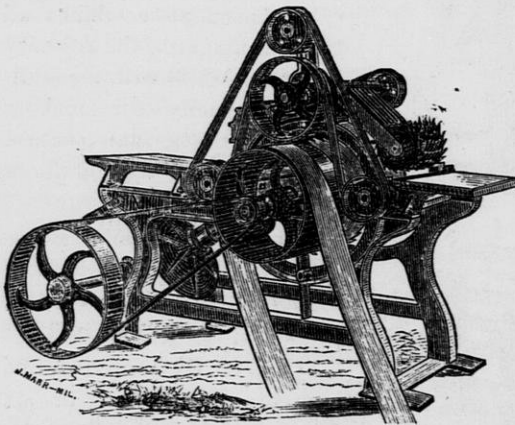
It makes from boards, edgings, or from any refuse lumber, three pickets three inches

wide, or the same number of pieces of any thickness up to three inches; or more pieces of narrower widths.

Those acquainted with the operation of the gang lath mill will appreciate the advantages of this machine, as it does all this variety of work with the same facility as the lath mill makes lath, and it even eclipses that in the specialty of lath making.

For full particulars of price of this machine, more extended descriptions, terms &c., application should be made to Filer, Stowell & Co., Milwaukee, Wis.

We now come to the consideration and illustration of the Gang Bolter which possesses so many points of merit as to have already assured its use whenever its real services have been appreciated.



The Bolter formerly made by Mr. Stowell was subject to some serious objections, which have been completely removed by the perfection of this machine. Formerly the labor and detention incident to removing the saws for changing or filing was considerable, as the eight feeding

chains had to be removed and the arbor taken out at each change; and the guides, being unadjustable, required frequent renewing, and being made of brass were too expensive. The chains also were liable to deposit saw dust on the chain wheels and in the grooves of the roller so that frequent attention was necessary to keep them in order. All of these objections have been entirely removed by the construction of this new machine.

The movable box or journal at the end of the arbor allows the saws to be taken off and replaced just as readily as on an ordinary circular mill by passing them through open circle in the frame, there being no chains or other obstruction in the way. The guides are readily removed and easily adjustable. The guide plate is so constructed as to receive

wooden guide pins so that the expense of renewing is merely nominal, and the plate will last as long as any part of the machine.

Another feature of great importance in this machine is a new device operating as a press roller and guard for each separate bolt while and after being sawed until carried entirely away from the machine. This is effected

by placing a series of saws behind the cutting saws, there being one outside of each outside cutting saw, and one for each intervening space between the saws. Each guard saw revolves on a stud attached to a heavy arm depending from a shaft immediately over the large saws.

These saws ride each bolt, holding it down against the lower feed roller, and as they revolve freely in the direction the bolts are moving they present no obstruction to their passage through the machine. A ratchet wheel and pawl is attached to each of these saws with teeth in the opposite direction to the teeth on these roller saws, so that they are only allowed to revolve in the direction the bolt should travel. If, as sometimes happens, there is a tendency for the rear edge of the cutting saws to catch the bolts and throw them forward, these guard saws being rigid in that direction, and there being a guard for each separate piece, no such result can happen. This is regarded as a very important improvement and one that should be attached to all gangs of circular saws. It is well known many lives have been lost, and many men maimed from the edgings or boards thrown forward by saws in this way. In one town (Manistee, Mich.) no less than three fatal accidents of this kind have occurred quite recently on gang edgers. The forward press roller is a ribbed roller ten inches in diameter, and is driven from the shaft directly over the cutting saws. Being so large, ribbed, and driven, it easily rises over any inequality on the round surface of a slab and materially aids the lower roller in feeding. The feed in this machine as now made is variable and just as positive and strong as the chain feed. There are several other excellent improvements in this mill which will best be appreciated when it is seen in practical operation. In several instances parties after having

one of these machines have purchased a second, throwing out other new machines to give place to this.

For full directions as to setting up and using this machine, price list, and explanation circulars, address Filer, Stowell & Co., Milwaukee, Wis.

#### PNEUMATIC CONDUCTORS FOR SHAVINGS.

*From the Wood Working Machine.*

The rapidity with which a new thing is adopted is generally a true indication of its merits, or at least of its money-saving value. To apply this rule to the system of clearing the shavings from wood manufacturing establishments by induction-fans, or blowers as it has lately come into use in America, we must grant its importance at once, for there is no improvement, involving the same amount of change and expense, has that been so generally introduced in the same length of time. Although but three or four years since the first application of this, it is now the exception to find a first-class mill without it.

The large planing mills of the lake district in America, from being places full of rubbish, dust and shavings, have as if by magic been cleared of everything, and present an appearance of cleanliness, neatness, and safety from fire, that is worth what the conductors cost, to say nothing of the economy otherwise effected.

A large induction-fan is placed at some central point and connected, either by wood or sheet-metal pipes, with the machines of all kinds that create dust or shavings, either by means of hoods that come down over the cutter-heads, or by inclosing the whole machine frame and exhausting the interior. A sufficient pressure, or rather vacuum, is maintained to lift the heaviest shavings, which with the dust are drawn through the pipes into the fan, and there expelled by pressure, and carried to the furnace or elsewhere, as may be wanted.

In point of economy it is hard to institute a fair comparison. The old plan of clearing the shops by hand only related to the removal of shavings after they had accumulated, while the fine dust from sand-papering and other machines of the same class was cleared by special blowers. The new system accomplishes all, and does not allow any accumulation whatever; it besides leaves the whole floor room available for handling material, and conduces to the comfort and health of the workmen.

In regard to the relative cost of simply removing the shavings it is represented, no doubt, very nearly in the difference between

the cost of a man's compared with the same amount of power in a steam engine. Judged from the nature of the operation, that of walking back and forth, carrying a sack or basket, this estimate is perhaps a correct one, supposing the man to be continually employed at this one thing.

#### PATENTS AND IMPROVEMENTS IN THE LUMBER TRADE.

Patents issued December 16th, included the following.

For tool-holder for lathes to Lewis Reder, Wilmington, Del. A washer, fitted loosely around the tool-post, with its sides inclined in opposite directions, one higher or thicker than the other, and a shoe, upon which the tool rests, fitted through the slot in the post bearing upon the face of the washer, having the ends of its under side inclined, and one thicker than the other. With the thick end of the shoe one the thin side of the washer the tool will be level; but with the thin end on the thin side, the tool will be inclined.

For lath-machine, to Theodore Bruno, Saginaw, Mich. The saw-table is provided with a catch which prevents the lath-bolt from being drawn back by the carriage after it is sawed from the slab.

For device for making dovetails, to George Ashby, Decatur, Ill. Dovetails are laid off by sharp edges on the marker being pressed upon the board.

For head-block for saw-mills, to Gustavus Zschech, Indianapolis, Ind. The setting shaft is operated through a system of bevel-gears moved by a hand-lever, to which is attached two segmental gears.

For the week ending December 23:

For machine for shaping pickets, to Andrew J. Sutherland, Ann Arbor, Mich. Pickets can be pointed in various forms by an adjustment of the cutters upon the moving parts.

For try-square, to Leonard Bailey, New Britain, Conn. A screw with a conical swell passes through a slot and holds the blade firmly in position.

For saw-set, to Roswell F. Cook, West Potsdam, N. Y. The hooked extremities of the two branches of the U-shaped spring enter the one a notch in the short arm of the hammer-lever, and by this series of notches the spring, which is compelled to vibrate with every movement of the hammer, may be adjusted to vary the force of the blow. The hammer is successively elevated and given the initial movement in the opposite direction by a hand-lever, which carries a pin which alternately strikes opposite shoulders of a recess in the surface of the hammer-lever.

For water-wheel, to John Kunkle, Newton Falls, Ohio. The buckets are constructed with closed sides and a deep open mouth with curving corners, so that no water can escape from the sides, and therefore act directly up-

on the wheel in the line of rotation. A conical hub prevents the water from lodging upon it, but flows down to the bucket and escapes.

For molding-machine, to Nicholas Jenkins, Madison, Conn. A series of guide-plates are secured upon one side of the material to be operated upon, which is carried forward by suitable feed and guide rolls and presented in the desired position to the action of the forming cutters.

For driving-belt, to Alexander Schpakowsky, St. Petersburg, Russia. The driving-belt consists of a series of oval or flattened helices connected by intermeshing the adjacent elongated extremities and inserting a transverse rod or bolt between the intermeshed parts. Each helix is composed of a single piece of wire and extends with the width of the belt.

For belt-tightener, to William Sellers, Haverhill, Mass. The journals of the driven pulley are supported in sliding boxes, whereby the driving pulley is moved away from the former, so as to produce the required amount of tension of the belt. The shaft of the driven pulley is adjustable vertically, so as to maintain the drum in a true running position.

Extensions were granted to the following patents:

For improved lathe attachment for cutting veneers, granted to B. F. Sturtevant, December 27, 1859. The claim is for method of compressing the wood in the immediate vicinity of the edge of the knife by means of a presser-bar or its equivalent.

For improved machine for planing curved surfaces, granted to J. B. Grosvenor, December 27, 1859. The claim was, 1. For the employment or use of adjustable or yielding feed-rollers when combined with a bearing-roller, or a proper bearing surface, and arranged, relatively with each other, to admit of the feeding of a circular, oval, and serpentine forms to the cutters.

2. Placing the rollers in an adjustable frame or box, fitted in an adjustable box, and used in connection with elastic bars or their equivalent, and the bearing roller whereby the frame or pattern may be properly adjusted, and retained in proper position between the rollers while being acted upon by the cutters.

Considerable improvement, says the Greenwood correspondent of the *Clark County Republican*, has been going on about the mill of Foneywell & Miller during the fall and early part of the winter. Some new buildings have been erected, one of which is a new boarding house for the accommodation of their men. They have also built a large shed for the storing of shingles, a large stock of which they keep on hand, and they are of an excellent quality, too.



## THE ALBANY LUMBER MARKET.

Review of the trade for the Past Year—The Relation of This Market to Those of Canada and Michigan—Prospects of a Diminished Supply and Improved Prices—Stock on Hand Less than it Has Been for Several Years.

From the *Albany Argus* we take the following review of the trade at this important point for the year 1873 :

The year 1873 has not been a profitable one to manufacturers or dealers in lumber. An over production, chiefly in the lower grades, with the depression in business and decline in prices caused by the September monetary panic, have been attended with unsatisfactory results. Fortunately less disaster than was expected attended the panic, with the retail dealers and it caused but few failures. In this respect the trade has stood up remarkably well, and can compare favorably with that of any other branch.

The worst being now over further apprehensions will soon be at an end, and steadily improved prospects are looked for. This, with the large falling off in the winter production, are the favorable features in the outlook, and warrant the opinion of brighter prospects ahead. Besides, the necessity of curtailing production, as seen by the results of the season just past, the mild winter in Canada and the west will force upon producers the result so desirable.

Larger stocks than usual are held over at the mills; but against this the stocks held by retailers are light, and with a continuance of mild weather favoring building operations, will be pretty well exhausted by spring. Stocks at Albany are lighter than they were a year ago.

With anything like an active demand in this country and Great Britain and other foreign ports, a gradual improvement in present prices may be looked for.

It is early yet to speak with confidence of another year's business, especially with the contingency attendant upon log driving, which may seriously affect prices and prospects.

We now proceed to present a summary of the lumber trade of the city, as presented in the reports which during the past year have regularly appeared in the *Argus*.

The season opened with a moderate business and sales rapidly decreasing before the opening of the canals. Reports of low prices at Chicago owing to free receipts and large stocks, had a depressing influence here. Large sales were reported in the Michigan markets, with high rates of freight, notwithstanding the largely increased tonnage. Log driving in Canada was watched with much interest, as upon that would depend the main supplies of pine for this market; the advices early in

the spring were, logs plenty and plenty of water. Early in May the sales were light, as is generally the case prior to the opening of the canals; the western movement of lumber were free; as the month advanced prices declined notwithstanding receipts were somewhat checked by the canal breaks. June opened with a steady market, with ample stocks, and steady but not strong quotations. Advices from Michigan and Chicago were that rates were lower, which the advices from Canada of a short crop were not able to check; towards the close of the month prices were easier, with an increased business at the decline and a pretty general impression that prices had touched bottom; the decline in prices mainly affected the lower grades, the better grades being held with much firmness. Early in July the opinion was reaffirmed that prices had reached the lowest point; the dry weather had checked log-sawing and short supplies of coarse lumber were counted on as certain, with an advance in prices, which was obtained; the receipts of Canada lumber were light; producers were unwilling to accept going rates, and were holding on to their stocks; the month closed with an active market and prices a shade higher, with a continued scarcity of water at the north.

August opened with a better feeling; the receipts of pine were fair, but spruce and hemlock were scarce; choice lots of Canada and Michigan were scarce and held with much firmness; the low grades being cheaper were taken with much freedom. The news was repeated that Canada producers continued to pile up their stocks. The month closed with light receipts and sales, though its average business was good; the purchasers of clear lumber had a light stock to pick from; coarse continued almost in nominal supply. September opened quiet but steady; no speculative feeling was evinced; the northern mills were, as they had been for three months, idle; as the month advanced, the daily increasing shipments show that free purchases, which had not been reported, had been made; the month closed with a light but somewhat variable business, in which the monetary panic bore no inconsiderable part. October opened without animation; the canal receipts showed that there would be a large falling off; quotations were lower, and some sales were reported as having been made below published figures; the uncertainty as to the financial future had a material effect of business, the rains had set some of the northern mills at work; the last week of the month showed signs of improvement; the presence of buyers was large, and considerable lumber changed hands. Late in October and early in November heavy rains set all the northern mills in operation; the receipts by the Champlain canal were free and in excess of those by the Erie canal; coarse lumber, new cut, was readily taken; the stock of dry was limited; the general trade of the district was good.

November opened with a fair degree of activity; the receipts of pine lumber were light; those of spruce and hemlock free, with generally light stock at all of the yards. With the advance into the month of November the active trade continued, with a promise of further depletion of stocks, based on the fact that those points which look to Albany for supplies were lightly stocked; receipts by canal light. During the week closing with the 18th, the attendance of buyers was large; considerable lumber changed hands, some of which was to winter over here should the river close too early to permit its shipment; there was not any speculative disposition evinced; shipments were lively; the arrivals of boats with cargoes of pine were few and far between; those of spruce and hemlock were free but mainly unseasoned. Thenceforward to the close of the river considerable lumber was shipped and all that was freighted, including some cargoes which, at one time, it was apprehended would have to be wintered over here, were sent to their destination.

The receipts at Albany during the seasons of 1872 and 1873 were:

	1872.	1873.
Boards and scantling, ft.	431,348,700	845,670,300
Shingles, m.....	12,602	12,362
Timber, ft.....	2,800	12
Staves, lbs.....	7,878,600	4,860,000

The receipts at tide-water during the seasons of 1872 and 1873 were:

	1872.	1873.
Boards and scantling, ft	789,337,100	579,376,600
Shingles, m.....	25,409	15,439
Timber, ft.....	1,489,522	1,133,466
Staves, lbs.....	200,840,400	280,060,100

It is estimated that the stock of lumber on hand in this market on January 1st, 1874, was from 85,000,000 to 90,000,000 ft; on January 1st, 1873, it was 110,000,000 feet; January 1st, 1872, it was 86,000,000 feet; January, 1871, it was 90,000,000 feet.

The *De Pere News* says: Fox River Iron Co. have commenced buying wood, Messrs. Marsh & Murray and Phelps & Co. are paying cash for stave-bolts and hub and spoke timber, while sundry other firms and individuals are preparing to follow close in their footsteps; which seems to indicate we are on the eve of brisker times. Well, we are exceedingly gratified; and if everybody will now make a little effort to settle up their debts we venture that it will not be long ere business will be booming along in its old channel.

## THE WISCONSIN AND ITS TRIBUTARIES.

**What Is Being Done This Winter In the Wisconsin River Finery—Estimate from Twenty-Six Camps—Activity on the Line of the Wisconsin Central—30,000,000 Feet of Logs to Be Cut Within Reach of Stevens Point.**

The *Stevens Point Journal* of the 3d ult., had the following:

In view of the fact that the lumber market is so very flat, the operations along the line of the Central railroad are quite active. This road has opened up a heretofore inaccessible pine forests that contains millions upon millions of feet of as fine pine as can be found in the wide world, and already loggers have commenced a determined attack upon it. Even some of those who own pine tracts situated on and near streams of sufficient size to float their logs out, show a disposition to let those tracts remain untouched and instead of cutting the timber on their own lands are purchasing stumpage on the line of the Central, bringing the logs out on the cars. For years we have been told that the pine tributary to Oshkosh and Fond du Lac, was nearly exhausted, and that then those cities would come to a standstill, if they did not relapse into partial stagnation. But the years roll on and on, and still every summer finds all their saw-mills running to their fullest capacity. "Backward?" has heretofore been the watchword of their lumbermen, and each winter their camps have been pushed farther into the forest, and back farther from the streams. And now some of those engaged in lumber manufacturing at Oshkosh have turned their faces toward the northwest, and aided by the Central railroad, are getting their next summer's supplies from away northwest of Stevens Point. The pioneers in this enterprise have a large gang of men in the woods near the track, and it is their intention to put in 4,000,000 feet of logs. These will be taken down on the cars and dumped off at Gill's Landing, from which point they will reach the city via the Wolf river. Fond du Lac is also turning her attention this way, and already her sash, door and blind manufacturers have been purchasing lumber from the mills 'up the line' for use in their factories.

**13,000,000.000 TO BE SHIPPED BY THE WISCONSIN CENTRAL THIS WINTER.**

This is practically the first winter that these forests have been accessible, and yet we are told that 13,000,000 feet of logs will be cut and shipped out on the cars. This work will be divided between nine camps, which are now in full operation. Three of these are on section 23. (Auburndale) two on section 32, (Marshfield) one at section 35, two at Waltham, one at section 54, and one at section 75. The latter camp is engaged in getting out

spars. Four million feet of these logs go to Oshkosh, one million to Rounds at Menasha, some to Weyauwega, and many to this place. In addition to the above camps, there is a large force at work on the Jump river, which lies a few miles from the track. The logs cut in this camp, however, go down the stream and into the Chippewa. The supplies for this party are taken up on the cars, many of them being purchased here. By the above it will be seen that lumbering operations along the line of this road are comparatively brisk. Yet they are nothing to what they would have been had the Central established side tracks at this place in the fall, thus enabling our mill-owners to get their winter stock from the same direction, all of whom desired to do so. It is to be regretted that this was not done. Had it been, all our mills would now have been in full operation, thus giving employment to a large number of men.

To show the amount of business that the above mentioned logging operations will give the railroad company, we will state that 4,000 feet of logs are considered a car load. Therefore to transport 13,000,000 it would require 3,250 cars; or it would take a train of fifty cars, making one trip a day, sixty-five days to carry off 13,000,000 feet.

On the 17th ult., the same paper furnishes the following estimates:

Most any one here will tell you, if you ask them, that there is nothing being done among the pines this season. And this may be comparatively true, when the operations of former years is taken into consideration. Yet there are a good many logs being cut on the Wisconsin and its tributaries, in this immediate vicinity. A gentleman who is in the business himself, and who occupies a position to know what is being done, has taken the pains to post us some on these operations, for which he will please accept our thanks. Now, let us take a look through some of the camps and see if everything is at a stand still. We will commence with the.

**LITTLE EAU PLAINE.**

Below will be found the names of those having camps on this stream, with the number of feet it is estimated that each will bank:

- Wm. Wheaton & Son, 150,000.
- A. Ryant, 300,000.
- J. T. Moore, 500,000.
- George Powell, 700,000.
- The logs are being put in for the Hutchinson Bros.
- McGregor & Hackett, 600,000.
- Carol Humphry, 500,000.
- Sam. Marko, 300,000.
- Van Bushkirk & Bro., 500,000
- George Altenberg, 150,000.

**BIG EAU PLAINE.**

- John Weeks, four camps, 2,000,000.
- Rogers & McKendrick, 600,000.

**WISCONSIN RIVER.**

The firms given below are logging within eighteen miles of the city:

- Curran & Richie, 700,000.
- W. R. Weston, 200,000.
- George Whitney, Sr. and Jr., 2,000,000.
- Frank Russell, 500,000.
- H. Hibbard, shingle logs for Wade & Co. of this city, 50,000.
- Frank Gotchy, logs for Wade & Co. 50,000.
- Steve Poquett, for same, 50,000.
- S. Whitney & Bro., 500,000.
- S. G. Crocker, 300,000.
- Andy Scott & Rro., 500,000.
- James Hall, two camps, 3,000,000.

**ABOUT KNOWLTON.**

- Kent, 500,000 for A. B. Gilchrist, of this city.
- John Redfield, 500,000.
- Frank Clark, 300,000.

**LITTLE EAU CLAIRE.**

It is the intention of Wallace & Redford to start up their shingle and saw mills on this stream in a few days. They now have stock of shingle logs on hand, while Scott & Bro., will soon commence hauling to the mill.

The mill of Peter Lameux, is situated about a mile and a half above that of the above named firm, and usually saws about 1,000,000 in a season. It is fair to estimate the stock that will be put in at this mill this season at the same figure.

**MILL CREEK.**

The Lester mill on this stream has been recently overhauled and repaired, and will be in full operation in a few days. This is a saw and shingle mill, and will probably make about 1,000,000 shingles.

**KARNEY & STEVENS**

mill, located in this city is now being stocked from sleds, and will start up in a few days. We have not sufficient data upon which to estimate the stock that will be put in.

**RECAPITULATION.**

From the above it will be seen that logs are being put in on the different streams named as follows:

Little Eau Plaine.....	3,700,000
Pig Eau Plaine.....	2,600,090
Wis-on-in.....	7,350,000
About Knowlton.....	1,300,000
Total.....	15,450,000

While the above figures show that the log crop that will be gathered from the section of country named, is not as large as in previous years, the operations are of a sufficient magnitude to prove that there are many who have not yet lost faith in lumber, and with the logs brought down on the Central, there will be food for the mills for a considerable time.

Referring to the preceding article we find that according to this authority, there will be cut this season, within a few miles of Stevens

Point, nearly 30,000,000 feet of logs. This, when the stringency of the lumber market is taken into consideration, is no bad showing for the "old Wisconsin."

### TIMBER PRODUCTS OF BARABOO, WISCONSIN.

Utilization of the Hard Woods of Baraboo Valley—Operations of the Baraboo Manufacturing Company—Production of Furniture, Barrels and Staves, and Implements.

The valley of the Baraboo river, extending from its confluence with the Wisconsin to the northwest corner of Sauk county, is noted not only for the picturesqueness of its scenery and the fertility of its soil, and the wealth of its water power, but for the abundance, variety and excellence of its hard wood timber. We take from a late issue of the *Baraboo Republic* a summary of the wood manufacturing industries of the place, all of which we have heretofore visited and know to be important adjuncts to the commercial prosperity of one of the most favored points in this state:

#### BARABOO MANUFACTURING COMPANY.

The average number of hands employed in this establishment during the year is fifty, and the pay roll foots up in the neighborhood of \$21,000 per annum, while their expenditures for material were about \$18,400. At present, however, they are running only eight hours a day, in order to keep their skilled workmen about them, and yet furnish all an opportunity to earn a living. The work turned out by this establishment is of such a miscellaneous character, that we can make no detailed report. Their shipments amounted to over one hundred car loads, and, besides items enumerated below, including fanning-mills, washing-machine stags, table-legs, broom-handles, &c., &c. The following are the leading items:

	No.	Value.
Benches.....	10,000	\$20,000
Chairs.....	35,000	15,000
Tables, stands, &c.....	500	1,500
Loung s.....	1,000	3,000
Total sales during the year.....		50,000
Stock on hand about.....		15,000

The company has expended since its organization about 40,000 in permanent improvements, such as machinery, buildings, &c.

#### BASSETT'S STAVE FACTORY.

This institution is but just completed, and will be running under full head of steam in a very few days. The building is 24x40 feet in size, and is located east of the old Exchange hotel, under the hill. A forty-horse engine will turn the power. Over four hundred cords of stave and heading bolts are already on the ground, and Mr. Bassett informs us

that he will require about 3000 cords per annum. He has buyers stationed at several of the railroad stations west of here. During the past year Mr. Bassett has manufactured 32,000 barrels in his cooper shop here, and has shipped staves and headings for 20,000 more. He has also dealt largely in hoop poles, shipping immense quantities.

#### PRATT'S SAW AND PLANING MILL.

Until late in the fall, when it had run out of logs, the buzz of the old saw was almost constantly heard. The following is the result of the year's labor:

Lumber sawed, ft.....	400,000
Lumber planed.....	100,000
Value of lumber sawed.....	\$5,000

### BELT CONTACT AT HIGH SPEEDS.

*From the Wood Working Machines.*

That speed should be an element in estimating belt contact is apparent in looking at the spindle pulleys in cutting-machines. The degree in which belts are affected by centrifugal force in running at high speed is dependent upon the tension, weight, and flexibility of the belt and the diameter of the pulley. At 5,000 feet a minute, which belts of ordinary harness leather, running on pulleys six inches or less in diameter, the amount of contact is not more than three-fifths of what would be shown in a diagram, and is often much less. Coupled with this, however, is the strange fact that the tractive force does not seem to be as constant as the amount of contact. That the pressure on so much of the surface as has contact is increased by the belt "lifting," is unquestionably the case, but it hardly accounts for the want of proportion between the power transmitted and the amount of contact. This matter is mentioned as an experimental fact and merely to stand as a reason for saying that the width of the belts need not be predicated directly upon the pulley contact for high-speed spindles.

For spindles having unusually high speeds, the writer has found belts of cotton webbing to be preferable. Such belts, if closely woven and of the best material, will, when waxed, be found to have a high tractive power and wear well, while there comparatively light weight avoids their lifting from centrifugal force.

The convexity of pulleys to keep the belts central should be sufficient for the purpose and no more. It is difficult to account for the practice of many builders of wood machines, especially in England, who give a degree of convexity to pulleys that interfere with the contact and tends to the destruction of the belt, unless both pulleys have their faces the same, a thing impossible in the case of shifting belts. Without entering into an examin-

ation of the laws and conditions that govern the matter, the following rule is given.

For pulleys from two to twenty-four inches face, the convexity should be from one-eighth of an inch to one-sixteenth of an inch to a foot, graduated inversely as the width of the faces; for pulleys of narrower face the convexity can be slightly increased.

This is quite sufficient to govern the running of belts, and a necessity for more can safely be constructed as a fault in the position of the shafting.

#### RAILROADS AND LUMBERING IN MICHIGAN.

The Anticipations of St. Louis and its Neighbors—Lumbering Operations and Prospects.

A correspondent of the *Grand Rapids (Mich.) Post*, writes from and about St. Louis, of the same state, as follows:

This summer resort for testing and enjoying the benefits of the mineral water here has but few invalid or pleasure-seeking visitors in the winter. During about three months the bath house is kept in operation and the hotels and boarding houses are full. But since the Saginaw & St. Louis railroad has been opened there is some compensation in it for the loss of summer popularity. This being the western terminus the citizens of surrounding towns resort here for business and further travel. The village has a gradual growth, but the inhabitants are anxious to have a western road also. Without it some fear that the present road will not be continued in operation. But the St. Louis, Fruitport & Grand Haven road is now confidently expected. The company have already caused their bonds to be registered in all the counties through which they expect to build their road. They even contemplate building eastward from Saginaw to connect with the Canada Southern road. The road will undoubtedly be built between here and the lake, though delayed somewhat by the financial pressure of all such enterprises. Many towns have a deep interest in the construction of such a road, as Alma, three and a half miles west of this. Ithica, our county seat, lying south of the line, cannot be benefitted by it. Although the St. Louis road runs from Saginaw through the woods and rather low lands chiefly, on either side of it is higher ground, good for tillage. The road drains the portion where it runs, and after the valuable timber is taken off, it will be converted into good grazing land.

The season has been good for skidding

logs and getting out staves, but snow is needed for hauling, the mild winter, not on the whole favorable for lumbering, could not have come in a better time, when many would prefer to have no pines cut at all. A little abstinence in the business will increase the price of lumber, and those who wish to make purchases need look for nothing cheaper than at this time. Prices will stiffen as soon as demands come.

Considerable hard wood, hewn timber, is being hauled now to the line of the road. The quality seems very desirable.

The late heavy wind felled a great number of trees in the forests here in addition to those prostrated by the fire of two years since. A dry season next summer would greatly endanger the country, especially the standing timber all around. So many trees now prostrate and the burning would create so hot fires as to destroy large numbers of green standing trees. But the winter being dry, the summer may be wet, or not dry. "Sufficient unto the day."

#### THE GREEN BAY PINERY.

A correspondent of the *Green Bay State Gazette* reports as follows:

##### COOK'S MILL, LILY LAKE.

This mill has started up and is running in good shape, averaging 125 M shingles per day, and 15 M to 30 M lumber. Four logging camps. Doing well.

##### WOODRUFF'S MILL

has been running four weeks. A limited number of hands. Manufacturing lumber and shingles. A planing mill attached.

##### MCLAREN'S MILL.

on the Shawano road, has started up, having made alterations in its running gear. Expects to be in fine order in a few days.

##### MCCARTNEY'S MILL

has been running some weeks, principally on orders for bridge timber. Has quite a large force in the woods, and is rapidly hauling out the last year's crop of lumber. This establishment has over one hundred hands in its employ, in the mill, the woods and on the road.

##### UPHAM BROS.

expect to get out three million feet of logs. Have thirty to forty teams hauling to Seymour. Running on shingles and lumber.

##### OLSEN CO'S

are cutting 125 to 130 M shingles a day. Has run the steadiest of any mill in these parts for the last seven months. Has 30 to 40 teams hauling the last year's cut to Little Suamico. Intend, as soon as possible, to run night and day. This company will employ 125 hands until the breaking up of the season.

## TENONING.

*From the Operator's Hand Book.*

Machines for cutting tenons are so well understood, and have been so little changed in a long time, that they are perhaps the most successfully built and operated of all wood machines. Those with a fixed table and a cutting movement given to the spindles are slowly coming into use for the heavier class of work, especially when the tenons are double. With this exception, the American tenoning machines have remained about the same for twenty years past. Improvements have been made in strength and workmanship, and by the change from wood to iron framing, the manner of adjusting the heads has also been improved and simplified; but for light work the old machine is as good as the new one, which can be said of few other machines. There are some things, notwithstanding these facts, that need improvement, which any experienced wood workman will appreciate when pointed out. The shoulders of the tenon, for instance, are squared from opposite sides of the piece by reversing it, when it is tenoned at both ends, and it must be both parallel and straight to bring true work; it amounts to the same thing as using the try square on two sides of a piece in scribing shoulders, which would not be thought of by a bench workman. For this we have the remedy of tenoning both ends at the same time, which not only evades this trouble of squaring the shoulders, but saves a great share of the time and labor. It also ensures accurate and uniform lengths between shoulders, a matter of no small importance in tenoning. This plan of tenoning both ends at one operation has gone into operation in Chicago, where it has met with great success, and deserves to be generally adopted in door and sash work.

Some of the joiners' shops in Sweden and Norway employ the same plan, and machines of this kind have been made in England.

Another improvement is needed in the carriages. They are made to run on slides, and to move them backward and forward is the main labor in operating a tenoning machine; it is not only hard work, but consumes time and hinders the operator from holding the stuff, which is nearly all he can perform with his hands. The carriages should in all cases move on rollers, no matter how small the machine;

it is of course more important for heavy work and on the larger machines, but in any case it allows the operator to feel the action of the cutters more sensitively, and saves time. The argument has been in this matter, that a carriage, if mounted on rollers, could not be kept true and square. Without discussing the subject from a mechanical point of view, it is suggested that a maker who cannot produce a tenoning carriage to move true and square on rollers had better leave the work to be done by those who can. The old wooden carriages are so light, and slide so easily in doing light work, that they do very well without roller bearings; but, as now made of iron, a carriage strong enough to stand the rough use to which it is subjected, is too heavy to move on slides. Carriages when mounted in this way start heavy and bring the wood in contact with the cutters in an abrupt manner that shivers the corners in starting. The pressure needed to move the carriage is so great that the cutting is not felt, and, as remarked before, the main work in operating is to move the carriage backward and forward.

Tenoning cutters, with all others that act transversely to the grain, should be as thin and stand at an angle as acute as possible. The tenons depend for accuracy upon the edges being straight and true, which requires precision in grinding and sharpening them, or rather in jointing them, which should be done when on the head at first, and then a gauge prepared that will indicate the true angle for the edges; most makers send out such gauges with their machines, but they nearly always need a readjustment by the operator, who can test them by careful experiments which the machinist has not facilities to do.

Ingram & Kennedy, of Eau Claire are making important changes in the topograph of the office near their island mill.

Mr. Lunt says the mill at Barnum will have nearly if not quite 7,000,000 feet of logs for the saw the coming spring. Various parties are engaged in logging in Wood and Marathon counties, having contracts with the Barnum company, than whom, none more staunch or prompt are engaged in the lumber manufacturing business in the pinery.

## STEAMBOAT RACE ON THE MISSISSIPPI RIVER.

By Mark Twain and Charles Dudley Warner.

At night the boat forged on through the deep solitudes of the river, hardly ever discovering the right to testify to a human presence—mile after mile and league after league the vast bends were guarded by unbroken walls of forest that had never been disturbed by the voice or foot-fall of man, or felt the edge of his sacriligious axe.

An hour after supper the moon came up, and the two boys Clay and Washington ascended to the hurricane deck to revel again in their new realm of enchantment. They ran races up and down the deck; climbed about the bell; made friends with the passenger-dogs chained under the life-boats; tried to make friends with a passenger bear fastened to the verge staff, but were not encouraged; "skinned the cat" on the hog-chain; in a word, exhausted the amusement possibilities of the deck. Then they looked wistfully up at the pilot-house, and finally, little by little, Clay ventured up there, followed diffidently by Washington. The pilot turned presently to "get his stern marks," saw the lads, and invited them in. This cosy little house, built entirely of glass, and commanding a marvelous prospect in every direction, was a magician's throne to them, and their enjoyment of the place was simply boundless.

They sat them down on a high bench and looked miles ahead, and saw the wooded capes fold back and reveal the bends beyond; and they looked miles to the rear and saw the silvery highway diminish its breadth by degrees and close itself together in the distance. Presently the pilot says:

"By George, yonder comes the Amaranth!"

A spark appeared close to the water, several miles down the river. The pilot took his glass and looked at it steadily for a moment, and said chiefly to himself:

"It can't be the Blue Wing. She couldn't pick us up this way. It's the Amaranth, sure."

He bent over a speaking tube and said: "Who's on the watch down there?"

A hollow inhuman voice rumbled up through the tube in answer:

"I am. Second engineer."

"Good! you want to stir your stumps,

now Harry—the Amaranth's just turned the point—and she's a-humping herself, too!"

The pilot took hold of a rope that stretched out forward, jerked it twice, and two mellow strokes of the big bell responded. A voice on deck shouted:

"Stand by, down there, with that larboard lead!"

"No, I don't want the lead," said the pilot, "I want *you*. Roust out the old man—tell him the Amaranth's coming. And go and call Jim—tell *him*."

"Aye, aye, sir!"

The "old man" was the captain—he is always called so on steamboats and ships; "Jim" was the other pilot. Within two minutes both of the men were flying up the pilot-house stairway, three steps at a jump. Jim was in his shirt sleeves, with his coat and vest on his arm. He said: "I was just turning in. Where's the glass?"

He took it and looked:

"Don't appear to be any night-hawk on the jackstaff—it's the Amaranth, dead sure!"

The captain took a long look, and only said:

"Damnation!"

George Davis, the pilot on watch, shouted to the night watchman on deck:

"How's she loaded?"

"Two inches by the head, sir."

"'Tain't enough!"

The captain shouted now:

"Call the mate. Tell him to call all the hands and get a lot of that sugar forrard—put her ten inches by the head. Live-ly, now!"

"Aye-aye, sir!"

A riot of shouting and trampling floated up from below, presently, and the uneasy steering of the boat soon showed that she was getting down by the head.

The three men in the pilot-house began to talk in short sharp sentences, low and earnestly. As their excitement rose, their voices went down. As fast as one of them put down the spy-glass another took it up; but always with a studied air of calmness. Each time the verdict was:

"She's a gaining!"

The captain spoke through the tube:

"What steam are you carrying?"

"A hundred and forty-two sir! But she's getting hotter and hotter all the time."

The boat was straining and groaning, and quivering like a monster in pain. Both pilots were at work now, one on

each side of the wheel, with their coats and vests off, their bosoms and collars wide open, and the perspiration flowing down their faces. They were holding the boat so close to the shore that the willows swept the guard almost from stem to stern.

"Stand by!"

"All ready!" said Jim, under his breath.

"Let her come!"

The boat sprang away from the bank like a deer, and darted in a long diagonal toward the other shore. She closed in again and thrashed her fierce way along the willows as before. The captain put down his glass.

"Lord, how she walks up on us! I do hate to be beat!"

"Jim," said George, looking straight ahead, watching the slightest yawing of the boat and promptly meeting it with the wheel, "how'll it do to try Murderer's chute."

"Well, it's—it's taking chances. How was the cottonwood stump on the false point below Broadman's Island this morning?"

"Water just touching the roots."

"Well, it's pretty close work. That gives six feet scant in the head of Murderer's chute. We can just barely rub through if we hit it exactly right. But it's worth trying. She don't care to tackle it"—meaning the Amaranth.

In another instant the Boreas plunged into what seemed a crooked creek, and the Amaranth's approaching lights were shut out in a moment. Not a whisper uttered now, but the three men peered ahead into the shadows, and two of them spun the wheel back and forth while the steamer tore along. The chute seemed to come to an end every fifty yards, but always opened out in time. Now the head of it was at hand. George tapped the big bell three times, two lead men sprang to their posts, and in a moment their wierd cry rose on the night air, and were caught up and repeated by two men on the upper deck.

"No-o bottom!"

"De-e-p four."

"Half three!"

"Quarter three!"

"Mark under wa-a-ter three!"

"Quarter twain!—"

Davis pulled a couple of ropes—there was a jingling of small bells far below, the boat's speed slackened, and the pent up

steam began to whistle and the gauge-cocks scream:

"By the mark twain!"

"Quar-ter-her less-twain!"

"Eight and a half!"

"Eight feet!"

"Seven-ana-half!—"

Another jingling of little bells and the wheels ceased turning altogether. The whistling of the steam was something frightful now; it drowned all other noises.

"Stand by to meet her!"

George had the wheel hard down, and was standing on a spoke.

"All ready!"

The boat hesitated, and seemed to hold her breath, as did the captain and pilots, and then she began to fall away to starboard and every eye lighted.

"Now then?—meet her! meet her! Snatch her!"

The wheel flew to port so fast that the spokes blended into a spider web—the swing of the boat subsided—she steadied herself—

"Seven feet!"

"Sev—six and a half!"

"Six feet! Six f—"

Bang! She hit the bottom. George shouted through the tube:

"Spread her wide open! *Whale it at her!*"

Pow—wow—chow! The escape pipes belched snowy pillars of steam aloft, the boat ground, and surged, and trembled—and slid over into—

"M-a-r-k twain!"

"Quarter-ker—"

"Tap! tap! tap!" (to signify "Lay in the leads,")

And away she went, flying up the willow shore, with the whole silver sea of the Mississippi stretching abroad on every hand.

No Amaranth in sight!

"Ha-ha, boys we took a couple of tricks that time!" said the captain.

And just at that moment a red glare appeared in the head of the chute and the Amaranth came springing after them.

"Well, I swear!"

"Jim, what is the meaning of that?"

"I'll tell you what's the meaning of it. That hail we had at Napoleon was Wash. Hastings, wanting to come to Cairo—and we didn't stop. He's in that pilot house, now, showing those mud-turtles how to hunt for easy water."

"That's it! I thought it wasn't any slouch that was running that middle bar



in Hog-eye bend. If it's Wash. Hastings—well, what he don't know about the river ain't worth knowing—a regular gold leaf, kid glove, diamond breast-pin pilot Wash. Hastings is. We won't take any tricks off *him*, old man!"

"I wish I'd a stopped for him that's all."

The Amaranth was within three hundred yards of the Boreas, and still gaining. The "old man" spoke through the tube:

"What is she carrying now?"

"A hundred and sixty-five, sir!"

"How is your wood?"

"Pine all out—cypress half gone—eating up cotton wood like pie!"

"Break into that rosin on the main deck—pile it in, the boat can pay for it!"

Soon the boat was plunging, and quivering, and screaming more madly than ever. But the Amaranth's head was almost abreast the Boreas' stern.

"How is your steam now, Harry?"

"Hundred and eighty-two, sir!"

"Break up the casks of bacon in the forrard hold! Pile it in! Levy on that turpentine in the fantail—drench every stick of wood with it!"

The boat was a moving earthquake by this time.

"How is she now?"

"A hundred and ninety-six and still a swelling—water below the middle gauge-cocks—carrying every pound she can stand—nigger roosting on the safety valve!"

"Good! How's your draft?"

"Bully! Every time a nigger heaves a stick of wood into the furnace, he goes out the chimney with it!"

The Amaranth drew steadily up till her jacketstaff breasted the Boreas' wheel-house—climbed along inch by inch till her chimneys breasted it—crept along, further and further, till the boats were wheel to wheel—and then they close up with a heavy jolt and locked together tight and fast in the middle of big river, under the flooding moonlight. A roar and a hurrah went out from the crowded decks of both steamers—all hands rushed to the guards to look, and shout, and gesticulate—the weight careened the vessels over toward each other—officers flew hither and thither cursing and storming, trying to drive the people amidship—both captains were leaning over their railings shaking their fists, swearing and threatening—black volumes of smoke rolled up and canopied the scene, delivering a rain of sparks upon the vessels—two pistol shots rang

out, and both captains dodged unhurt and packed masses of passengers surged back and fell apart while shrieks of women and children soared above the intolerable din.

And then there was a booming roar, a thundering crash, and the Amaranth dropped loose from their hold and drifted helplessly away!

Instantly the fire doors of the Boreas were thrown open, and the men began dashing buckets of water in the furnace—for it would have been death and destruction to stop the engines with such a head of steam on.

As soon as possible the Boreas dropped down to the floating wreck, and took off the dead, the wounded and the unhurt—at least all that could be got at, for the whole forward half of the boat was a shapeless ruin, with the great chimneys lying crossed on the top of it, and underneath were a dozen victims imprisoned alive and waiting for help. While men with axes worked with might and main to free these poor fellows, the Boreas' boat went about, picking up stragglers from the river.

And now a new horror presented itself. The wreck took fire from the dismantled furnaces! Never did men work with a heartier will than did those stalwart braves with axes. But it was of no use. The fire ate its way steadily, despising the bucket brigade that fought it. It scorched the clothes, it singed the hair of the axemen—it drove them back foot by foot—inch by inch—they wavered, struck a final blow in teeth of the enemy, and surrendered. And as they fell back they heard prisoned voices saying:

"Don't leave us! Don't desert us! Don't, don't do it!"

And one poor fellow said:

"I am Henry Worley, striker of the Amaranth! My mother lives in St. Louis. Tell her a lie for a poor devil's sake, please. Say I was killed in an instant and never knew what hurt me—though God knows I've neither scratch nor bruise this moment! It's hard to burn up in a coop like this with the whole wide world so near. Good by boys—we've got to come to it at last anyway."

The Boreas stood away out of danger, and the ruined steamer went drifting down the stream an island of wreathing and climbing flame that vomited clouds of smoke from time to time, and glared more fiercely and sent its luminous tongues higher and higher after each emission. A shriek at intervals told

that a captive had met his doom. The wreck lodged upon a sandbar, and when the Boreas turned the next point on her upward journey it was still burning with scarcely abated fury.

When the boys came down into the main saloon of the Boreas, they saw a pitiful sight, and heard a world of pitiful sounds. Eleven poor creatures lay dead and forty more lay moaning, or pleading, or screaming, while a score of good samaritans moved among them doing what they could to relieve their sufferings; bathing their skinless faces and bodies with linseed oil and lime water, and covering the places with bulging masses of raw cotton that gave to every face and form a dreadful and unhuman aspect.

A little wee French midshipman of fourteen lay fearfully injured, but never uttered a sound till a physician of Memphis was about to dress his hurts.

"Can I get well? You need not be afraid to tell me."

"No—I—I am afraid you cannot."

"Then do not waste your time with me—help those that can get well."

"But—"

"Help those that can get well! It is not for me to be a girl. I carry the blood of eleven generations of soldiers in my veins!"

The physician—a man, who had seen service in the navy in his time—touched his hat to this little hero, and passed on.

The head engineer of the Amaranth, a grand specimen of physical manhood, struggled to his feet, a ghastly spectacle, and strode toward his brother, the second engineer, who was unhurt, and said:

"You were on the watch. You were boss. You would not listen to me when I begged you to reduce your steam. Take that! take it to my wife and tell her that it comes from me by the hand of my murderer. Take it! and take my curse with it to blister your heart a hundred years, and may you live so long!"

And he tore a ring from his finger, stripping flesh and skin with it, threw it down and fell dead! But these things must not be dwelt upon. The Boreas landed her dreadful cargo at the next large town and delivered it over to a multitude of eager hands and warm southern hearts—a cargo amounting by this time to 39 wounded and 22 dead bodies. She also delivered a list of 96 missing persons that had drowned or otherwise perished at the scene of the disaster.

A jury of inquest was impanneled, and

after due deliberation and inquiry, they returned the inevitable American verdict, which has been so familiar to our ears all the days of our lives, "NOBODY TO BLAME."

#### SACRAMENTO BEET SUGAR FACTORY.

This factory is located nearly three miles from the city, in a locality peculiarly convenient for its operations. The full working capacity of the mill was brought into action last year. Some 1,450 acres of ground, in all, are in use for the factory. The buildings are large and well arranged, the machinery is of the most approved pattern, and the fitting up and arrangement of the works is admirable. The main building is 150 feet in length, rising at its highest point 63 feet. Out buildings for boarding and lodging workmen, care of animals in use, tool shops, cooper shops, etc., are numerous. The cost of the factory thus far, for its erection and outfit, has exceeded \$225,000. The beets sown and raised by the factory proprietors yield about 12 per cent, on the average, of saccharine matter. The quality of sugar turned out is superior to that produced from beets grown in any other section of the state. On the grounds of the factory houses are erected for feeding the refuse of the beet, mixed with usual feed, to a large number of cattle. Several thousand head of stock have been fattened already at the works. The motive power for the factory consists of five engines, aggregating 500 horse power. The reduction of the beets in the boiling process consumes about eleven cords of wood daily as fuel. Some 160 men are usually employed at the factory. The yield of beets from the factory grounds is estimated at 7,000 tons for the year. The works are owned by a stock company.—*Sacramento Record*.

#### VAST EXTENT OF THE SACRAMENTO VALLEY.

It is estimated that the Sacramento Valley, from Suisun Bay on the south to Shasta on the north, contains 3,840,000 acres of level valley land; and if the rolling foothills were included, to an elevation of 2,500 feet above the level of the sea, or as far up as the cereals can be raised, and the number of acres would be doubled, or would amount to at least seven millions and a half. If all this land were sown in wheat, says the *Real Estate Circular*, and the small crop of fifteen bushels to the acre only was reaped from it, the total crop would amount to 112,500,000 bushels, which at even \$1 per bushel would amount to as many dollars.

Some day, and that not many years distant, all of this land will certainly produce crops, either of grain, wool, wine, or fruit, equal in value to these figures.—*Sacramento Record*.

## PROSPECT OF A DIMINISHED CROP IN MICHIGAN.

What is Being Done in the Pineries—The Log Crop to be Less than Anticipated—The Need of A Diversity of Industries—The Prediction of the "Wisconsin Lumberman" About to be Verified.

*From the East Saginaw (Mich.) Courier.*

All estimates of the log crop of this winter, made last fall, were of a small crop, not exceeding one-third of the amount put in one year ago. As the season advanced, and the snow fell, every circumstance confirmed the correctness of this calculation, and yet there was a fear on the part of many, who were desirous that there should be no overstock, that if the winter was favorable, many who were holding back from want of means, or for other causes, would start in later, or about the first of January. Reports from nearly every point where lumbering operations are conducted, are to the effect that there is not one camp this year where there were five or six last winter and that in many localities they have had no snow to speak of. This is the case in the neighborhood of Loomis, and some localities on the Cass, and at no points, except possibly on the shore streams and the upper Tittabawassee is the hauling anywhere near decent. This will effectually dispose of additional operations, and will also curtail the operations of those already in the woods. A number of camps, it is reported, have stopped work altogether. The Mason County *Record*, published at Ludington at the west end of the Flint & Pere Marquette Railway, says that many camps on the Pere Marquette have suspended work for want of snow. We are inclined to think that this falling off, while it may be a temporary hardship to some lumbermen who are heavily in debt, will work advantageously to the lumbering interests in general and to localities dependent upon the lumbering business. The tendency for the past few years has been for men to run wild into the lumbering business, and every lumberman seems to have used his utmost efforts, not only to gain possession of all the pine lands within his reach, but each season to cut and put into the streams the greatest possible amount of pine logs, and to convert them into lumber as rapidly as possible. In this all-absorbing business every other productive interest in its vicinity has suffered

neglect. The result has been that the streams have been crowded beyond their capacity, much valuable timber has been wasted, the markets have been overstocked and lumber has been reduced to a price which will scarcely pay the cost of manufacture, and at the same time other important interests, such as the establishment of other manufactories, the development of our agricultural resources, the culture of our fruitful soil, all of which would have been sources of profit, have been neglected and as a consequence lumbering districts feel more keenly than almost any other the pressure of hard times. The shortage in the log crop the present winter will decrease the supply of lumber in the market next season, and should there be a reasonable demand for the article, prices must consequently advance. A prominent lumberman remarked to us the other day that he was glad to see such a winter as this, believing it to be for the best interests of lumbermen in general. These facts must furnish to all thinking men valid reasons for the encouragement of the establishment of other branches of industry and manufacture in our midst and for greater attention to the agricultural interests of our county, which are the very backbone and substantial support of any community. The country indeed is dependent upon its agricultural products.

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 THE WEST WISCONSIN RAILROAD.
 

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The West Wisconsin is one of the very few railroads that have succeeded in paying interest on bonds this winter. Messrs. Baldwin and Humbird have carried this road through difficulties under which a majority of men would have sunk, and we are glad to see that the late panic, which "swamped" so many roads, has not shaken the credit of this one in the least.

The *New York Stockholder*, in speaking of the financial matters, thus alludes to the West Wisconsin:

"Although the completion of this company's road is comparatively recent, the company has promptly met all its liabilities, notwithstanding the late financial difficulties which crippled many worthy enterprises. The January interest on the West Wisconsin bonds is payable in New York at their office, 74 Broadway, in Boston at the Farmers' & Merchants' Bank; and to European

holders at the London and County Bank, London. From the proceeds of land sales, over one hundred thousand dollars of the company's bonds have been retired and cancelled, in conformity with the trust created by the company when its bonds were issued."—*Ec.*

### HOW TO HAUL LONG TIMBER.

*From the American Builder.*

A small man or even a boy with a team can handle a long stick of timber, either round or square, with comparative ease if he understands how to load it. Let us suppose, for example, that one has a quantity of long timber to haul from the forest, perhaps some of the sticks are fifty feet in length. Take the hind wheels of a strong wagon, fit a pole to the axle and hounds for a tongue, then sling the timber underneath the axletree, and lash the end of the tongue to the timber. The timber should be rolled upon a skid a foot from the ground, and the wheels should be secured to it a trifle back of the middle, so that the forward end will be about one hundred pounds heavier than the rear end. Then when the team is hitched by a chain to the fore end, the stick will be kept clear of the ground. The team can be hitched to either end in case of necessity. Timber is frequently slung beneath the axletree of a cart or a wagon, and the rear end is allowed to drag on the ground. By this means nearly half the load will drag heavily, requiring nearly double the amount of team to haul it. Several long and heavy poles can be hung beneath an axletree, and transported with ease by hitching the team to the end. Comparatively few persons in the rural districts have heard of this convenient mode of handling long timber. They should understand it, as it will often save an immense amount of heavy drawing. When going down a hill the weight of the driver on the fore-end of the timber will be sufficient to control the rate of speed, except down steep grades. When one employs oxen and a cart, sling the timber beneath the axletree, lash the end of the tongue to the timber, and hitch the oxen to either end of the stick. A yoke of oxen could be able to draw a stick in this way with comparative ease, which they would scarcely move by hitching one end beneath the axletree, and allowing the team to draw by the tongue of the cart.

### THE FORESTS OF CANADA.

The Ottawa District—Nature and Extent of the Government Works on the Ottawa River—What the British Government is Doing for its Lumbermen.

*From the Boston Lumber Trade.*

A recent writer, Mr. Urquhart, says, that during the past few years over 100,000,000 cubic feet of square timber have been cut down in the forests of Canada, about \$15,000,000 worth of which was exported to Europe and the United States; Great Britain alone taking \$10,000,000 worth; that 16,000 men are employed in the forests; that 10,000 men in saw and planing-mills; that 1,200 ships are annually required to carry off square timber, deals and staves to the United Kingdom; affording employment to 17,000 seamen, and that, everything considered, the productions of the forests afford employment for 50,000 men annually. This is, therefore, a branch of industry which it is hoped will not rapidly die out. But if it did, the cultivated lands of almost incredible extent, finding a market through the valley of the St. Lawrence and the Ottawa, England and elsewhere, and the coal fields of the Saskatchewan for home use, would find ample employment for thrice the number of men and ships that are now fed upon the forests of Canada. From a valuable little work on the lumber trade of the Ottawa Valley, the following extracts are taken:

Many improvements have been made of late years by the government, in the navigation of the Ottawa and its tributaries, by the construction of slides and booms to facilitate the passage of timber past the frequent rapids and falls, and the following list of such works, taken from a report of the Minister of Public Works, may not be uninteresting:

#### OTTAWA DISTRICT.

The government works connected with the descent of timber in this district are on the following rivers: On the Ottawa, main river, 11 stations; on the Gatineau, 1; the Madawaska, 15; the Coulonge, 1; the Black, 1; the Petewawa, 31; and on the Riviere du Moine, 11.

#### SLIDE AND BOOM STATIONS ON THE OTTAWA.

The distances given are measured on the latest maps, following the channel through which lumber is floated down the river:

Names of Stations.	Dis. from mouth of river, miles.
1. Carrillon.....	27
2. Chaudiere.....	98
3. Chaudiere (little).....	100
4. Remous.....	102
5. Dechenes Rapids.....	104½
6. Chats Station.....	131
7. Heads of Chats.....	134
8. Chenaux.....	152
9. Portage du Fort.....	156
10. Mountain.....	161
11. Calumet.....	163
12. Joachim Rapids.....	249

The works at these twelve stations consist of 2,000 lineal feet of canal, 3,334 feet of slides, 29,855 feet of booms, 346 feet of bulkheads, 1,981 feet of bridges, 52 piers, 3 slide keeper's houses, and 3 store houses.

An improvement company, under the title name of "The Ottawa Improvement Company," has been formed for the purpose of effecting improvements on the upper Ottawa to facilitate the descent of square timber in times of scarcity of water.

GATINEAU RIVER.

In ascending the Ottawa, the Gatineau is the first tributary possessing government works.

These works are all at one station, about one mile from its confluence with the Ottawa. They consist of 3,071 lineal feet of canal, 4,138 of booms, 52 of bridge, 10 piers, and 1 slide keeper's house.

MADAWASKA RIVER.

The Madawaska is the second tributary in ascending the Ottawa, on which the government has provided works for the descent of lumber.

List of the names of slide and boom stations on the Madawaska, numbered from the mouth of the river upwards: 1. Mouth of River, 2. Arnprior, 3. Flat Rapids, 4. Balmer's Island, 5. Burnstown, 6. Long Rapids, 7. Springtown, 8. Calabogie Lake, 9. High Falls, 10. Ragged Schute, 11. Boniface Rapids, 12. Duck's Island, 13. Bailey's Schute, 14. Cain Rapids, 15. Opeongo Creek.

The works at these stations consist of 1,750 lineal feet of slides, 18,179 of booms, 4,080 of dams, 182 of bridges, and 43 piers.

COULOGNE RIVER.

The Coulonge is the third tributary in ascending the Ottawa, upon which slides and booms have been placed.

The works consist of a boom at the mouth, 300 feet long, and one support pier, boom at Romain's rafting ground, 400 feet long, and three support piers,

boom at High Falls slide, 1,848 feet long, and six support piers.

BLACK RIVER.

Ascending the Ottawa, the Black River is the fourth tributary upon which works have been placed.

The works consist of 1,139 lineal feet of single stick booms, 837 of slide, 346 of glance piers, and 135 of flat dam.

THE PETEWAWA.

This is the fifth tributary of the Ottawa, upon which works have been placed. Seven miles from its mouth the Petewawa separates into two branches. On these seven miles there are five stations, and on the South Branch eight stations.

I will not here go into details of their respective names; it will suffice to give the number of feet of slides and booms on each of these branches. On the main river there are 2,363 lineal feet of slides, 8,469 of booms, 2,077 of dams, and 7 of piers.

On the North Branch there are 380 lineal feet of slides, 2,671 of booms, 1,131 of dams, and 23 piers.

On the South Branch there are 2,134 lineal feet of slides and 388 feet of dams.

RIVIERE DU MOINE.

The sixth and last tributary of the Ottawa on which works have been placed.

The length of this river is about 120 miles, and it drains an area of about 1,600 square miles.

The works on this river consist of a pier and retaining boom at its mouth, a single thick-slide, and a series of flat dams from the mouth upwards. They may be detailed as follows: 300 feet of slide, 800 feet of booms, 1,324 of dams, and 6 piers.

I will conclude this division of my subject by another extract from Mr. Langevin's report, showing the quantity of timber which passed down the Ottawa during a year, from July, 1869, to July, 1870.

Through the Chaudiere slide from upper Ottawa country, there passed the following products of the forest:

Thirteen thousand three hundred and fifty-one cribs of square timber, containing 300,689 pieces.

One hundred and ninety-six cribs of deals. Eighty-one cribs of flattened timber. Total, 13,628.

Through the Hull slides from the upper Ottawa, 213,143 saw logs, and 2,300 pieces of flattened timber.

Through the Gatineau booms and other works:

Four hundred and ninety-six thousand and ninety-nine saw logs, 7,002 pieces of square timber, 1,124 pieces of flatted timber, and 1,123 pieces of round cedars.

This does not include the vast quantities of saw logs brought down to supply the Chaudiere mills.

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### THE LATHE.

In the last article, we referred to the gouge and chisel, *par excellence*, the tools of the soft wood turner. In this number we propose to describe some tools, adapted to special purposes.

The first are intended to be used wholly for surfacing or facing large flat pieces of board, the second are for hollow ware, and are extensively used in districts where toys and bowls, wooden spoons, &c., are manufactured, as also for making spice and powder bowls, wooden egg cups, and similar articles, which, however, have been largely superseded by metal and earthenware substitutes. The broads are made in two forms, the first very similar to a heel tool used for metal turning; the second has a stem, upon which discs of any special form may be screwed. In either case the rest is placed across the face of the work, and the tool so held that the cutting edge shall make as small an angle as possible with its surface, and this angle must be carefully kept, otherwise the tool will hitch in a moment, and be broken or wrenched from the hand, and in all probability the work will be spoiled. When the first form is used, a flat-topped rest is necessary (or at any rate better) on which the heel of the tool can firmly rest, by which means also the leverage will not be so entirely against the operator. But if the movable discs are used, which are sharp on all the edges, the latter would be blunted by contact with the rest, so that the bearing across the latter must in this case be upon the stem of the tool, and the thin-edged rest must be used instead. Nothing can exceed the finish of the work done by these tools when properly held by an experienced hand, and nothing on the other hand is more difficult at first than to retain them at the exact angle required. Of course the turner holds the longest end of the lever, and, so far as mere power goes, he ought to have no difficulty in preventing the too deep penetration of the cutting the edge. Practically, however, a moment's inattention will cast seeming

power to the winds, so deeply will the tool enter the material. There is a suggestion of vast importance in this case: Don't have the lathe cord tight. If then the tool catches, the cord will slip and save your work; and a similar caution is necessary when using the hook tools. It is, moreover, a mistake ever to have a tight cord; it only drags down the mandrell and makes it run heavily. Rather use a moderately tight cord only, so that, at any moment, the hand laid upon the pulley will stop it instantly.

There is an advantage in this in divers instances. A little resin powdered will give the cord a better grip, if necessary; and if you find you cannot turn with this, and you are using catgut, unhook and give it a twist or two, so as to bring the strands closer. This will shorten, and of course tighten, it at once.

Sometimes hook tools are made broad and sometimes narrow in the hooked part, according to the work proposed, and as shown in the drawing, but in each case the edge is thin and the tool kept as keen as possible.

They are generally bevelled from within, and sharpened by means of a round slip of oil stone. If the bevel, however, is on the outside it is more easily ground and equally good if only the tangential position is carefully retained. Some are bevelled like the chisel from within and without, but in any case they must be very sharp to do good work. A mere glance at a hook tool suffices to show that it is a dangerous customer to deal with. It looks as if it would catch in, and at first, catch in it does. After awhile it begins (if not already broken) to behave better, and the shavings curl off deliciously (for no other word will express the fact. If it catches in, reduce the angle it is held at, so that it is out of cut altogether, and then tenderly but firmly let it take a gentle bite, so as to cut the thinnest shaving possible. No thoroughbred needs more care and gentleness, combined with decision, than these tools, but when the happy knack is once acquired, they will canter and gallop away finely, and to bore a box is the work of a few seconds only. Moreover, an adept at this work seems perfectly careless about the exact position, which nevertheless he retains to the greatest nicety, and you would suppose it as easy to use these tools as to cut cheese with a clasp-knife—but try it. And one ought to try it, and become master, too, of this art, for it will help wonderfully ever after. Noth-

ing is more tiresome than to bore out a soft piece of wood with ordinary tools. The gouge, indeed, in one position, will do something, but is soon put out of the cut as the hollow deepens, and as to the chisel, or any similar tool, it has to be held flat so as to scrape and tear out the fibres in a manner unsatisfactory and provoking. Hook tools, and hook tools alone, are fit for suchwork as this. *Lumber Trade.*

### THE BIG TREES OF CALIFORNIA.

I passed on the Hardins route (which is identical with the Coulterville for a large portion of the distance), from the Yosemite valley to Stockton, in October 1870, and about thirty miles southwest of the valley, passed through a grove on or near the banks of the Tuolumne river, in Tuolumne county. I measured one tree whose trunk was seventy feet in circumference four feet from the ground. There are also thirty trees in this grove, one of which is decidedly the best grown and handsomest tree of any I saw in either the Calaveras or the Mariposa Grove. I measured the Grizzly Giant in the Mariposa Grove and found it seventy feet six inches at eight feet from the ground. It is stated to be thirty feet in diameter; the fact is, this specimen like many others, swells out towards the root, and I consider the dimensions mislead one in forming an estimate of the size. I took my measurement where the trunk is straight. I must confess these gigantic trees did not at first strike me with the wonder I had laid in store for myself on seeing them. The fact of my having ridden for days through forests of giant pines, *P. Ponderosa*, *P. Lambertina*, and *Abies Douglasii*, whose trunks I measured and found to be from eighteen to twenty-six feet in circumference, had so prepared or accustomed the eye to such (to an Englishman) large trees, that the Sequoias did not at first strike me with that amount of surprise I expected them to do. I collected some seed, and I find I had no difficulty in raising seedlings in this variable climate (N. W. Yorkshire.) One fact struck me forcibly while I was in the Mariposa Grove as well as that of Tuolumne—namely, the total absence of seedling plants or young trees, which led me to put the inquiry, are these mammoth trees the last of their race, and, like many of the tribes of red men, to be wiped out in the next generation?—*The Garden.*

### FUTURE PROSPECTS FOR LUMBER.

*From the Manufacturer and Builder.*

Some of the industrial papers are discussing the question as to the future supply of lumber, and as usual in such cases, take extreme opposite views. Thus the WISCONSIN LUMBERMAN fears a great scarcity, and says that the Atlantic states are almost devoid of forests; that the lumber lands of Wisconsin and Michigan are being rapidly used up, while the prairie states have no lumber at all. The *Mining and Scientific Press* of San Francisco maintains to the contrary that there is plenty of it, that the forests of the Sierra Nevada and the coast range for 3,000 miles in length can furnish lumber for the whole continent for untold centuries, and that the pine woods of Canada are also good for a supply of long duration. Without taking a too cheerful view, and so weaken the arguments in favor of forest culture and against reckless destruction of wood, we may remark that there is still much more forests in the Atlantic states than our western friends give us credit for. For instance, in New York state, the Catskill, Shawangunk, Adirondack, and other mountain ranges contain immense forests, covering lands unfit for farming purposes, and in which the denuded places will in a few decades be covered again by nature with a new crop of timber. It is the same in Vermont, New Hampshire, and still more in the southern states, especially in the Carolinas and Georgia, where immense forests are still being utilized, and by the luxuriant southern climate replaced with wonderful rapidity.

Our only uneasiness in this regard proceeds firstly, from the unfortunate and fatal yearly fires, which sometimes burn up as much at one single sweep as a whole generation would consume during several years; secondly, from the increasing demands of our growing population, which, instead of needing 30,000,000,000 feet per year, will in a few decades need 300,000,000,000.

### CALIFORNIA'S GRAIN SHIPMENTS.

California shipped, in 1872, 183,448 quarter sacks of flour more than in 1871, and 2,083,437 pounds more of wool, or over \$1,000,000 more of values in wool. Since July 1, 1872, and to January 1, 1873, California has cleared for the United Kingdom of Great Britain, by 193 ships, 5,385,445 centals of wheat, valued at \$9,154,361. The smallest shipments were in July, the greatest in November.

### A SUIT THAT INTERESTS LUMBERMEN.

The Title of Seven Thousand Acres of Timber Lands in Bay County, Michigan, Determined—Supreme Court Decision In the Case of Johnson vs. Ballou.

In the case of Abner C. Johnson vs. Dexter A. Ballou, which was decided in both the Bay and Saginaw county circuit courts in favor of Ballou, the supreme court has rendered a decision reversing judgment. This decision, while of little importance on account of the case in question, practically decides another relative to the title to 7,000 acres of land in Bay county.

Some years since congress passed an act granting to such parties as should build the Amboy & Lansing and other railroads, certain lands to be deeded to any company building roads as rapidly as it should complete them. The Amboy, Lansing & Traverse Bay R. R. Company constructed a road from Lansing to Owosso, filed certificates of construction with the governor, and obtained certain lands. Subsequently the company became insolvent and a portion of their lands were disposed of at mortgage sale. The company also sold to Messrs. Geo. Campbell, Geo. H. Van Etten, and A. C. Maxwell, of this city, 7,000 acres of land in Bay county, on the line of what is now the northern extension of the J. L. & S. R. R. On the ground that the A. L. & T. B. R. R. had disposed of these lands before earning them, the J. L. & S. R. R. Co. upon building its road filed a bill in chancery praying that the title to the lands be set aside. This suit has not yet been decided, but the case of Johnson vs. Ballou has such bearings upon it that it is regarded as practically settled, and it is considered doubtful if it ever comes to trial.

The case in question is this: Daniel Burns cut some logs on Section 17, and afterward sold them to Abner C. Johnson of Flint. Johnson attempted to sell them to Wm. H. Monroe, whereupon an investigation as to Johnson's title was had, and the fact revealed that he had no title. Accordingly Monroe obtained a bill of sale of the logs from the J. L. & S. R. R. Co., and afterward disposed of them to D. A. Ballou. Ballou and Johnson each claimed the logs—hence the suit, a decision of which was rendered to-day by the supreme court.

It being claimed that Ballou secured

his title through the Amboy, Lansing & Traverse Bay Railroad, the opinion is that the title to the land is practically decided in favor of Messrs. Maxwell, Campbell and Van Etten.

### THE APPROACHING TIMBER FAMINE.

*From the Stove and Tin Trade Journal.*

We have repeatedly spoken of the swiftly approaching scarcity of timber, growing out of its increasing legitimate uses and its reckless waste, in the hope that congress or our state legislatures might be induced to give the subject the attention which its magnitude deserves. However hackneyed the topic may have become, no one can dispute the fact that in the not very distant future it will become the great economical question of the day. For many purposes iron will no doubt take its place, but still it is very hard to imagine how people are to get along without it. Many of our bland optimists, however, believe that the good Lord will gratify us with some sort of equivalent when it is gone, as He did when petroleum was discovered. They point to the fact that we were literally on our last legs for light; but just at the opportune moment the vast storehouses of carbon oil were opened up, and a chance given to the whales to increase and multiply again. In the future, according to these predictions, whale oil will again be cheap and plenty, if it is needed; and so nature ever provides for the necessities of her creatures.

This reasoning would prove more to our mind, were it not for the fact that in some foreign countries—Palestine and Persia, for instance—the timber has not only disappeared, but civilization has gone with it. The population have gone back into barbarism, and the land has become a prey to desolating famine. In ancient times these regions were noted for their fertility; but with the disappearance of their forests the whole face of the country has been changed, as well as the character of the population, to a very great extent.

Our attention is called to this subject just now from reading some remarks by Mr. James Little, of Montreal. He says that the people of the United States will, within the next ten years, use up all their pine, spruce, and hemlock timber east of the Rocky Mountains. These supplies are chiefly found in Maine, New York, Pennsylvania, Michigan, Minnesota, and



Wisconsin. The supply in Maine is nearly gone, and the people are now using spruce as small as six inches in diameter. Pennsylvania uses up 500,000,000 feet of her diminishing stores every year, and her remaining stock will be gone in five years. Northern New York, which has furnished 300,000,000 feet annually, is likely to be appropriated by the state for a public park, when the supply from that source will be at once cut off. The draft upon Michigan last year, owing chiefly to our great fire, rose to the enormous figure of 2,910,000,000 feet. This year it reaches 2,000,000,000. Mr. Little avers that during the next twelve years, judging from the past, this country will require 70,000,000,000 feet of lumber, and that we have not more than one-half that amount remaining in the woods. Canada already is supplying us with large quantities, but all she has east of the Rocky Mountains would not last us three years.

Certainly these figures are alarming, and it would seem that if we are to be provided with a substitute for boards and timber, it ought to be making itself visible pretty soon. Here is a great practical question, which should engage the attention of our savans at some of their frequent meetings. It should be referred by congress to regular standing committees, composed of the ablest men; for, whatever resource the future may have in store for us, it has come to be pretty well understood that providence helps those who try to help themselves.

#### PAPER FROM PINE SHAVINGS.

The manufacture of paper from pine shavings has been commenced by the Burlington Paper Company, of Burlington, Vt. Heretofore the pitch and resin of pine have proved an insurmountable obstacle to its manufacture into paper, although other kinds of wood have been used for this purpose for some years. Lately, however, a process has been patented by Professor A. K. Eaton, of Packard institute, New York, by which this obstacle has been overcome, and a company for the prosecution of the enterprise was organized in August last. The shavings are passed through immense revolving boilers, holding about two tons each, where for six or eight days they are subjected to the action of steam and sulphate of sodium in definite proportions. At the end of that time the resin is found to be extracted, and the shavings are ready for

grinding. The grinding is done by grooved plates of hardened iron cylinders. After grinding, the pulp is washed and mixed with thirty to forty per cent of pulp from old brown paper. This is for the purpose of strengthening it, but it is not absolutely necessary, as some of the strongest paper made by the company was made entirely from wood pulp. The pulp is ground once more and then passed into tanks, ready for the final operation of making it into paper. The company are now making a good article of wrapping paper, but claim that by bleaching the pulp, first-class printing paper can be made. As the shavings cost only about one-tenth as much as straw, the manufacture must be profitable.

#### THE LUMBER INTERESTS OF SACRAMENTO.

The *Sacramento Record*, the largest and finest newspaper that comes to us from the Pacific coast, in a very thorough review of the business of Sacramento, makes the following statements concerning its lumber and kindred interests:

##### THE LUMBER TRADE.

The lumber business is extensively carried on in Sacramento, some of the firms doing the largest business of the interior. The chief firms are N. L. Drew & Co., Second street, between L and M; Friend & Terry, Second street, between M and N; John A. Todd, corner Fifth and L streets; Rufus Walton, corner Twelfth and J streets; John W. Avery, corner Second and M streets.

##### HUNT AND ANDERSON'S SAW-MILL,

Hunt & Anderson proprietors. This large steam saw-mill is located on M street, between Front & Second, occupying a large and well-arranged two-story building 40x80. The firm was organized in 1866, and has been doing a large and prosperous business ever since. They turn out all kinds of scroll work and box work, and ivory turning and fancy carving. The machinery which is very complete and expensive, is of sufficient capacity to render the constant employment of twenty-five men necessary. About 100,000 feet of lumber are used per month, and the business for 1873 will reach \$30,000. The firm lost three months during the year, their mill being burned down, but they have already resumed work, and are rebuilding.

## HOWELL, HOTCHKISS &amp; STAKERS' MILL.

This is an extensive sawing, planing, sash and blind mill, having 40 horse steam power, and running ten saws, four planes and four molding machines. It is located on the corner of Q and Front streets and occupies a large two story frame building 160x75. The great variety of work done at this establishment, and the order and system which prevails in all its branches, renders a visit to this mill one of peculiar pleasure and profit. Thirty men are constantly employed, and the busiest seasons of the year this force is augmented by the employment of extra hands. There is no description of wood work that can be done by the aid of machinery, but this mill is prepared to turn off satisfactorily, and its success and anticipated prosperity is a source of pride and gratification to our citizens, who look upon them as a deserved recognition of a worthy and honorable firm. The value of their property, with machinery, is \$25,600.

## CAPITAL SAW-MILL

Is on L street, between Eleventh and Twelfth. The works are capacitated for every kind of wood-work, and are supplied with the best machinery for getting out "stock" in lumber of all kinds, and the production of furniture.

## MECHANIC'S MILL.

This mill is located on L street, between Fifth and Sixth. The proprietor is F. Mier. The works were put up in 1869. The product is sashes, doors, blinds, mouldings, etc. The shop is 40x160 feet, two-story frame, with steam power. Ten men constantly employed.

## THOMPSON'S BOX FACTORY,

William Thompson, proprietor. The factory is situated on the corner of M and Front streets. It does all kinds of planing and is largely engaged in the manufacture of boxes of every description. During the summer months thirty men are kept constantly employed; the factory not being in full operation in the winter season. During the year Thompson was burned out utterly, but he has built instead of the old wooden factory a handsome brick building 30x60 feet, fitted with the best machinery.

## SACRAMENTO BOX FACTORY,

M street, between Front and Second streets, Barnes & Barber proprietors. This establishment turns out boxes of every description. The machinery, which

is of the best, is operated by a 15-horse steam power engine. The work turned out by this firm is of a marked excellent quality. Fourteen hands are kept constantly busy.

## TUB AND PAIL FACTORY,

Nichols & Co., proprietors. The factory is located on Q street, between Front and Second. All kinds of tubs, pails, churns, boxes and wooden utensils are made. As one item of manufacture it may be mentioned that Nichols & Co. make hundreds of dozens of washboards. The factory occupies a three story and a half frame building, 40x85 feet, with two fire-proof brick drying houses. The firm has extended the business to the manufacture of firkins, kegs, etc., very successfully.

## FURNITURE

Is extensively manufactured and put up by a number of firms—J. Campbell, 87 K street; Cooley & Green, Front street; A. T. Sherwood, 78 J street; Broich & Co., 172 J street; Theiss & Bernhard, L street, between Eleventh and Twelfth; John Brenner, Sixth and K; and others.

The *East Saginaw Enterprise* of the 10th ult. says: "Thus far this season very little has been done in the lumber woods on the lower streams, even by those who intended operating, on account of there being no snow for hauling. On the streams up north more will be done, as north of Standish there is said to be a foot of snow. Some of the operators on the tributaries of the Tittabawassee, who managed to bank a few logs with the snow before Christmas, have been since compelled to abandon all attempts to continue work. On the upper Muskegon there is not enough snow to allow lumbering, and matters are at a stand still. Messrs. Terry, Seely & Co., who have been operating at Terry station on the J. L. & S. railroad, broke up camp yesterday and discharged their men. The logs they have already cut are in a very bad condition, and they prefer to quit further operations until there is snow enough to enable them to get their logs in after they are cut. Other camps in the vicinity are also about breaking up.

TRAFFIC OF 1873 AT WILLIAMSPORT, PA.

Review of the Business for 1873—Total Shipments by Rail and Canal—Operations of the Boom—Stock on Hand at the Close of the Year—Valuable Tables for Comparison and Reference.

From the Williamsport Gazette and Bulletin.

If we add to the logs rafted out of boom for 1873 the logs floated by canal from Lock Haven to this point, and sawed at our mills, we have manufactured about 325,000,000 feet of lumber the past year.

The prices were about the same as 1872 up to the financial crisis when a slight decline was perceptible, but the sales have not been materially affected.

Our lumbermen carry over, in their pools, about the same amount of logs as last year, while the boom is entirely empty, thus avoiding any possibility of loss from early spring freshets.

To A. H. Hanst, of the Philadelphia & Erie, Mr. Turner of the Catawissa, Col. Huey of the canal, we are indebted for faithful transcripts from their books

As compared with the shipments from Williamsport in 1872 the Catawissa shows a gain of 31,259.38 feet; the Philadelphia & Erie a gain of 21,098,153 feet, and the canal a decrease of 7,401,752 feet.

During the freshest last spring it was estimated that from twelve to fifteen million feet of logs escaped from the boom and passed down the river, which were nearly all caught below, but are not accounted for in this statement.

SHIPMENTS FROM 1869 TO 1874.

The following are the shipments from 1869 to 1874 over the railroads and canal, together with the logs rafted out of the boom for the same period.

RAILROAD AND CANAL.				
Years.	Catawissa.	P. & E.	Canal.	Total.
1869	36,223,320	21,734,254	128,719,276	186,676,850
1870	66,156,227	55,019,251	129,443,000	250,764,078
1871	69,660,800	65,727,592	134,535,000	269,923,392
1872	75,771,014	46,206,607	73,526,081	198,506,702
1873	107,053,400	70,304,760	66,124,329	243,462,489

354,787,761 262,032,464 532,453,286 1,149,273,511

BOOM REPORT.

There were rafted out of the boom for the years embraced in the table below, as follows:

Years.	No. Logs.	Ft. Bd. Measure.
1862	196,953	37,853,661
1863	405,175	76,475,826
1864	511,543	96,595,681
1865	389,302	72,421,468
1866	615,373	118,541,494
1867	883,388	173,196,511
1868	853,663	105,388,389
1869	1,080,511	223,061,306
1870	1,099,777	225,180,973
1871	852,129	166,981,181
1872	1,484,143	297,158,652
1873	1,582,460	318,342,712

Total.....9,854,332 1,911,203,344

Estimating four logs to a tree, it required 395,615 trees to furnish the stock for 1873.

STOCK ON HAND.

	Ft. Bd. Measure.
Stock on hand Jan. 1, 1873	152,022,053
Rafted out of boom in 1873	318,342,712

Total for 1873	470,404,765
Shipped in 1873	243,462,489

Stock on hand Jan. 1, 1874.....226,942,276

The difference between the amount shipped and rafted out of the boom in 1873 is 74,880,223 feet, which, with stock on hand at the commencement of the year, makes up the stock on hand at opening of 1874, 226,942,276 feet. These figures have been obtained from the shipping and clearance books of the railroads and canal, and the books of the boom company, and can be relied upon as correct.

MONTHLY SHIPMENTS FOR 1872.

1872.	Canal. Feet.	Catawissa. Feet.	P. & E. Feet.
January	.....	2,631,640	1,770,720
February	.....	3,692,432	4,443,600
March	.....	4,580,840	5,282,920
April	1,977,000	5,273,000	3,691,920
May	12,184,000	6,124,160	4,541,520
June	10,297,000	7,849,542	4,324,861
July	7,770,672	7,143,400	3,027,760
August	9,199,423	7,259,400	3,785,800
September	9,862,763	7,259,400	4,455,820
October	14,471,723	9,005,400	4,462,120
November	7,763,500	8,141,000	4,280,766
December	.....	6,654,500	5,138,800

Total.....73,526,081 75,774,014 49,206,607

MONTHLY SHIPMENTS FOR 1873.

1873.	Canal. Feet.	Catawissa. Feet.	P. & E. Feet.
January	.....	4,621,900	2,576,740
February	.....	6,262,000	5,068,960
March	.....	9,066,500	7,109,360
April	.....	13,637,000	8,202,760
May	10,790,829	12,358,500	9,411,480
June	9,481,000	11,250,500	7,567,200
July	12,708,000	8,963,000	5,288,800
August	10,185,100	9,503,240	5,407,760
September	7,762,000	11,754,650	7,048,320
October	7,935,500	8,591,380	5,147,780
November	7,261,900	5,954,120	3,566,160
December	.....	5,141,480	3,969,440

Total.....66,124,329 107,033,400 70,304,760

Shipments on the canal opened April 18, 1872, and closed Nov 26, 1872, while in 1873 the canal opened May 2, and closed Nov. 22, making a season of only six months and twenty days.

Amongst some of the old settlers still living, and who took a prominent part and endured the hardships in building up the beautiful City of East Saginaw are the following: Judge Campbell, Judge Miller, Jos. M. Tromble, Medor Tromble, Capt. J. F. Marsac, Orrin Kinney, Mrs. Rogers, C. C. Fitzhugh, John Sharp, Benj F. Pierce, Dr. Smith. B. B. Hart, W. L. Fay, Michael Dailey, W. R. McCormick.

## INSPECTION OF LUMBER IN MICHIGAN.

The *Saginaw Weekly Courier* passes the following remarks upon the occasion of the retirement of the late inspector-general of Michigan :

The resignation of Ed. Y. Williams as inspector-general of lumber, will leave a vacancy to be filled before navigation opens. When it was rumored that Mr. Williams would resign last winter there was a lively strife for the office, but somehow or other there is now not much fighting after the office which sustained a loss of over \$500 the past season. The *Courier* has advocated the law from the start, but it now insists that the law is useless unless there is a disposition on the part of manufacturers and shippers to observe it to the very letter. If this had been the case there would be no deficiency, but on the contrary a large surplus to apportion back. It rests with those interested in the lumber business to determine whether they will stand together for the enforcement of the law or not. There should be no privileged classes. These things should be considered in council before a successor to Mr. Williams is recommended, and if necessary an agreement between manufacturers should be entered into.

A correspondent, "A. H. M." of the same paper makes the following valuable suggestion :

Would it not be a good plan, now, while no lumber is being shipped by water and the inspectors have ample leisure for examination and instruction, to see to it that they all have the same schooling, to the end that our qualities are made uniform? The reason the office is not self-sustaining may be a lack of confidence both by buyer and seller. A little lot of about four thousand feet of upper quality lumber has been inspected by four inspectors, all regularly licensed, and a Saginaw City man,

making 2,300, first clear. A Bay City man 1,000. An East Saginaw man 800, and another 4,600.

Almost as marked a difference occurred in the quality of culls in another lot. There is no good reason for this great variation. Can it be equalized so that all will inspect alike?

## MORTISING.

*From the Operator's Hand Book.*

It was remarked of jig saws that they should only be used when no other machine could be employed for the work. It will not be far wrong, and for similar reasons, to say the same in reference to reciprocating mortising machines.

In no other country except America have reciprocating machines been applied to all kinds of mortising, and there is nothing strange in the reaction we now see going on by the return to rotary machines for car building and other heavy work. All reciprocating machines, no matter what their character, if run at a high speed are open to serious objections—from wear, breaking, jar, and vibration—but when we add a kind of duty that consists in heavy blows, like mortising, it amounts to a culmination of these troubles, and explains why the mortiser in a wood shop is generally out of order and requires more repairs than all the rest of the machines.

We therefore suggest a thorough investigation of this mortising question to see whether the reciprocating mortising machine has not been applied to many kinds of works which could have been as well or better done by rotary machines. All the mortising in France, and the greater part in England, is performed by rotary machines, that cut clean true mortises without vibration or noise; the question arises, suppose it takes a little longer to cut a mortise, it is but a small part of the operation in making up work, there are no breakdowns to hinder and derange other things, the work is better done, the tools are not half so expensive, and finally, is it not worth a great deal to get rid of the clashing and banging of a reciprocating machine, as a matter of order and comfort about the works? But even this argument need not be used alone, for some car builders from careful statistics prove that rotary mortising machines effect a saving of time in the end, from the better facilities they afford in presenting and handling long or heavy lumber.

## THE TIMBER SUPPLY QUESTION.

*Correspondence of the New York Real Estate Record.*

There is perhaps no question about the claims of reciprocating machines for light work, and for chisels to  $\frac{3}{4}$  inches wide, or for pieces that are not too heavy to be fed to the chisel. In these machines there is none of the very objectional mechanism needed for a chisel bar feed, and the machines are quite simple throughout. The reciprocating parts can be light and the crank shaft can be placed in the base of the machine, to avoid overhead connections and prevent jar upon a building.

Machines of this kind are suitable for joiner work, cabinet work, and the lighter kinds of mortising generally, except for chairs; all other mortising should be done on rotary machines.

In making comparisons between reciprocating and rotary mortising machines we have to consider—first, the time required to perform the work; second, the character of the work when done; third, the skill needed to perform it; fourth, cost of tools and repairs of machinery, including detention by its derangement; or, briefly, time, quality, skill, and repairs.

To first consider time, it must in the case of reciprocating machines include the cleaning out of mortises after they are beat down, as it is termed, and unless the operator is specially skilled in the proper form of chisels, this cleaning out often equals the mortising. With rotary machines the mortises are clear, but require in most cases squaring at the ends, a work hardly fair to balance against the cleaning out in the other case, for it requires less time and no more skill. If a mortise is made in soft wood and without boring, it will be made in less time on a high breed reciprocating machine, but if there has to be a hole bored for starting, the mortise will be soonest made by a rotary machine, which amounts to the former proposition, that small mortises in light work are soonest made by the reciprocating machines, and heavy work by rotary machines. Presuming that rotary machines had been as long and generally used in America as those with reciprocal motion, the test of time would perhaps be in their favor, taking the general range of work to judge from.

The question of quality need hardly be considered, mortises made by either plan are good enough.

In the matter of skill all is in favor of the rotary machine; those with reciprocating motion need not only as much care and skill to keep up the cutting tools, but a great deal more to keep up the cutting machines, which are with the best care usually out of order.

They are besides laborious to work, not only in the exertion needed to feed, but the jarring communicated to the foot is disagreeable, and often injurious in heavy work.

Of repairs, breakage and detention, they are as the difference between reciprocating and rotary motion, which expresses all that could be said.

In the *Boston Lumber Trade* of the 27th inst., Mr. B. Wait, of Muskegon, Michigan, reviews the letter of Mr. Jas. Little, of Montreal, on the question of the consumption and supply of timber, which was presented at the recent meeting in Chicago of the National Board of Trade, and which appeared in your paper of the 25th October last.

Seeing such a prominent article from a gentleman residing near what might be called the heart of the pine forests of the West, we have a right to expect some valuable information, instead of accusations of inaccuracies which exist only in his own imagination, and conjectures regarding the Canadian stock of timber of which he honestly enough avows his entire ignorance. If the estimates presented (of which he pretends to have some knowledge,) are at all accurate, instead of disproving, they confirm in the most positive manner the correctness of Mr. Little's statements.

A careful examination of the letter referred to, and of Mr. Wait's remarks thereon, compels me to assume that he has never read the letter he has undertaken to criticize—not a single statement of any importance that he is so almost fierce in challenging appearing therein.

Referring to the consumption of timber he makes Mr. Little say "that the pine tree crop east of the Rocky Mountains will be totally consumed in five short years." This whole statement is simply gratuitous, as Mr. Little does not say anything of the kind, or anything in the slightest degree like it. What he does say (and his remark will bear reproducing) is, "The enormous consumption of lumber, timber and shingles by the people of the United States is but partially realized by them or others. It can not be conceived by a statement in figures. No adequate idea can be formed of the quantity comprehended in ten thousand millions of feet,\* the amount of the annual consumption, so as to realize the work of destruction that is going on. But they may, in some manner, be able to understand their position when the fact is presented that, notwithstanding the vast extent of their forests, *ten to twelve years* at the outside will leave them without a stick of pine, spruce, hemlock, or oak between the *headwaters of the Mississippi and the Eastern seaboard.*" A

prediction fully warranted by Mr. Wait's own figures presented below.

And again. "He avers, during the next twelve years, judging from the past, this country will require seventy thousand (70,000) millions feet of lumber, and that we have not more than half that amount remaining in the woods." This paragraph is, like the former one, purely imaginative, since Mr. Little avers nothing of the sort, nor is it at all likely he would do so; his whole argument going to establish the fact that the consumption of the country, allowing a reasonable increase for the future, would be more than double the amount in that time. He does speak of seventy thousand (70,000) millions feet as the probable amount that Michigan will be called upon to supply during the next twelve years to meet the extra demand that will be made on her on account of the other states getting short of stock.

This amount, however, appears to be twenty thousand (20,000) millions feet in excess of Mr. Wait's own estimate, which, together with his estimates of the stock of pine in other states, we give below, without attaching any value to them further than to show the absurdity of his pretensions. Mr. Wait's figures are:

Michigan.....	50,000,000,000
Minnesota.....	18,000,000,000
Wisconsin.....	16,000,000,000
Pennsylvania.....	7,000,000,000
West Virginia.....	7,000,000,000
Maine.....	1,500,000,000
New York.....	900,000,000
Florida (yellow pine).....	1,700,000,000
North Carolina, (yellow pine).....	1,600,000,000
Georgia, do do .....	1,500,000,000
Virginia, do do .....	150,000,000
South Carolina, do do .....	90,000,000
Total east of the Rocky Mountains.....	105,440,000,000
do west do do do .....	70,000,000,000

Grand total, north, south, east and west..... 175,440,000,000

\*Exact amount of all kinds of sawed lumber, according to Congressional returns for 1870, 12,755,543,000 feet.

Leaving out of all calculations the seventy thousand (70,000) millions feet mentioned west of the Rocky Mountains, since we could get timber from the north of Europe for less than the cost of freight alone, even if the Pacific side did not want it all, and discarding the small figures, we have one hundred and five thousand (105,000) millions as the whole of the pine timber supply of the United States from the northern frontier to the Gulf of Mexico, and from the Rocky Mountains to the Atlantic Ocean, according to Mr. Wait.

Allowing these figures to be correct, it would appear that if the consumption is anything like the amount claimed for it, viz., ten thousand (10,000) millions feet annually, it would take only ten years and six months (to be exact) to use up all the pine timber in the whole of the United States east of the Rocky Mountains and down to the Gulf of Mexico, without any allowance for increase in the future rate of consumption. This is certainly a pitiful showing of the pine timber crop of the United States. Nothing in the tenor of Mr. Little's letter shows that even his view of the supply is not largely in excess of that here presented.

As to the stock of Canada, this gentleman with a few strokes of the pen magnanimously presents the Dominion with one hundred thousand (100,000) millions feet, or thereabouts, of pine, fir, and spruce, or at least says he believes there is this amount, but does not state any reason for his faith. It is full time to discard this method of treating the timber question, assuming any ridiculous amount when knowing nothing about it, and parading it before the country as authority. This has always been the way in which the question has been treated. When we go west we hear of the inexhaustible forests of Canada, and when in Canada we are called on to contemplate the illimitable forests of the West.

Mr. Little appears to have dealt very liberally in regard to the supply of Michigan, and it would seem only fair to allow him to speak of his own country, with which he is no doubt as conversant as anyone, and when he computes the available white pine of Canada at thirty thousand (30,000) millions feet, he probably knows what he is talking about.

Adding the Canadian supply, equal to three years, to that of the United States, and assuming the foregoing figures for this country as correct, we have thirteen years as the limit, without anticipating any increase whatever in the future rate of consumption; but allowing only five per cent as the annual increase, it would take just ten years to use up every stick and description of pine, white or yellow, available for our use on the continent of America. Even admitting that the states of Michigan, Wisconsin, and Minnesota could furnish their present annual cutting for a period of twenty years, does not alter the case in the least, since these states, being the only extensive

## GEORGE REED.

The Projector and Builder of the Wisconsin  
Central Railway.LINES BY ADA J. MOORE, READ BY MR. CLARKSON AT  
MENASHA, JAN. —, 1874.

pine territory now remaining, must in a few years turn out more than double their present production, or we will be compelled to look to Europe for the largest part of our requirements.

In conclusion, the writer distinctly disavows all responsibility for the foregoing estimates, and claims only that he has drawn fair deductions from the figures presented by those pretending to be informed on the subject.

The more, however, this question is investigated, the plainer does it appear that Mr. Little is none too soon in calling attention to the rapid destruction of the forests of the country, and also to our folly in trying to keep out Canadian lumber by means of a senseless tariff.

WILLIAM LITTLE.

NEW YORK, Dec. 31st, 1873.

## MARKETING TIMBER IN CONNECTICUT.

L. T. Scott, of Rethlehem, Conn., gives the following advice, in the *Country Gentlemen*, to a Virginia correspondent regarding this subject :

"I infer that he wants to know what kind of factory to erect, in order to sell his timber in a manufactured form, as it would hardly pay to draw the raw lumber 15 miles to railroad. I can only tell him what is being done in New England. We should make the red, white and black oak into plow beams and handles, also truck handles ; scraps or pieces worked into wedges to use in the navy yard ; the hickory into axe and pick handles, spokes and feloes for wagon wheels ; the poplar into bread, butter and chopping trays. When once this business is established ; there is a fortune in it. We are 90 miles from New York by rail, and still we pay three cents per foot (board measure). for all kinds of good oak, saw it in shape for plow, send it to New York, where it is manufactured into plows and sent to any market in the world. The poor timber, unfit for use here, is sent south, as good enough for that market. Now if the southern people will do their own manufacturing, they will not be imposed upon by Yankees. Depend upon it there is money in it, and the Yankee is finding it out ; for many have gone south into all kinds of business, and many more are going. The boys go south to seek their fortunes and the parents follow. A man and his wife are going from this place this week (Jan. 1st) to look after their son who is in a heavy business in Atlanta, Ga. Manufacturing, of course, needs capital, but begin small and grow in business as the capital increases. One thing is pretty sure to lead to others ; of these, choose the best."

Long years in solitude we dwelt  
From busy, bustling life apart—  
The world's great pulse we scarcely felt.  
Or heard the beating of its heart.

And if at times some restless wight  
Aspired to glance at life without,  
How wearily from morn 'till night  
The stage-coach bore him on his route.

Behold the change ! Some magic wand  
Has brought the railroad to our door.  
We clasp the world's extended hand,  
And feel a thrill, unfelt before.

We come to-night with grateful hearts—  
We know what kind enchanters *reed*,  
Has vanquished all opposing arts,  
And "brought this happy chance to speed."

Like iron that his workmen weld,  
His brave indomitable will  
Its chosen purpose firmly held,  
Unchanged, "through good report and ill."

Though countless obstacles arose,  
His patient courage faced them down,  
And now his work draws near its close  
He well deserves a laurel crown.

Instead we bring an offering slight,  
Whose quiet utterance may express,  
At every hour of day or night,  
How thankfully his name we bless.

Sam S. Fifield, the popular representative from Ashland, received an ovation on his way through Superior. A variety of social and commercial organizations were represented in a procession. Among them, as we learn from the *Ashland Press* : Those fore-runners of civilization—the penetrating lumbermen—were on the ground in command of Mr. John Murphy, a noble representative of his class, who left Maine many years ago to seek his fortune in the western wilds. In the front ranks could be distinguished the manly forms of Messrs. Howard, Peyton, Kimball, Bradford, Chase, Canute, Greeley and P. Kelly, of Stillwater, each arrayed in blue blanket shirt untrammelled by pantaloons, hanging gracefully down over their hips ; their feet being encased in oil-tanned boot packs, and the entire corps marching along with measured tread, each bearing aloft a pike pole or peevy, the emblems of their vocation.

## TRADE OF THE MISSISSIPPI AND ITS TRIBUTARIES.

Annual Review Furnished the "Wisconsin Lumberman" by Messrs. Durant & Wheeler of Stillwater, Minn.—Log Products of the St. Croix and the Mississippi for 1873, and the Amount of Logs on Hand—Another Argument for a Convention of the Lumbermen of the Northwest.

STILLWATER, MINN., Jan. 10, 1874.

## Log and Lumber Trade of the St. Croix Valley for 1873.

## LUMBER MANUFACTURED ON THE ST. CROIX.

	Lath Pieces.	Shingles Pieces.	Lumber Feet.
Marine Mills, owned by Walker, Judd & Veazle .....	1,900,000	1,200,000	2,638,976
Areola Mills, owned by M. & John Mower .....			5,000,000
Stillwater Mills, owned by Schulenburg, Boerkeler & Co. ....	7,477,850	5,000,000	25,725,000
Stillwater Mills, owned by Hersey, Bean & Brown .....	4,000,000	3,500,000	10,000,000
Stillwater Mills, owned by Isaac Staples .....	6,000,000	4,000,000	15,500,000
Stillwater Mills, owned by Seymour, Sabin & Co. ....			4,000,000
Stillwater Mills, owned by McKusiek, Anderson & Co. ....			2,500,000
Stillwater Mills, owned by Castle & Gaslin .....			2,000,000
Stillwater Mills, owned St. Croix Lumber Co. ....	1,000,000	2,000,000	4,000,000
Stillwater Mills, owned by Kellar & Co. ....			2,000,000
Hudson Mills, owned by Palmer Bros. ....			3,000,900
Lakeland Mills, owned by Kippen Bros. ....			1,000,000
Lakeland Mills, owned Munch & Nelson .....	1,000,000	1,000,000	4,500,000
Aron Mills, owned by Olds & Lord. ....			2,100,000
Aron Mills, owned by C. S. Getchell & Co. ....		3,500,000	3,600,000
Point Douglas and Prescott Mills, owned by John Dudley .....			5,000,000
Total .....	22,477,000	20,200,000	88,063,976

Logs received from St. Croix Boom Corporation, season 1873: 732,619 logs, measuring 166,163,628 feet, averaging 226 feet per log.

Logs received from St. Croix Boom Corporation, season 1872, was 905,585 logs, measuring 203,382,312 feet.

Decrease of log product in 1873 being 162,966 logs—37,218,684 feet.

Amount logs scaled by Surveyor General of this district, season of 1873, was 147,618,147 feet.

Amount logs received from St. Croix Boom, 1870, was 191,577,776 feet.

Amount logs received from St. Croix Boom, 1871, was 149,777,235 feet

Average price received for logs, season 1873 was \$9 per M feet rafted.

Highest price obtained was \$13.30 per M feet rafted.

Lowest price obtained was \$7.00 per M feet rafted.

## SUMMARY OF DISPOSITION OF LOG PRODUCT FOR 1873.

	Feet.
Logs manufactured into lumber .....	88,063,967
Logs manufactured into shingles .....	3,500,000
Exported in logs .....	56,054,171
Amount on hand below boom .....	18,545,461

Total .....

166,163,628

Corresponding with the amount received from the St. Croix Boom Corporation for the season of 1873.

## VALUE OF LOG AND LUMBER TRADE, ST CROIX VALLEY FOR SEASON OF 1873—\$2,031,996 11—AS FOLLOWS:

88,063,977 feet of lumber at \$13.50 per M feet .....	\$1,188,863.67
20,200,000 pieces of shingles at \$3.00 per M pieces .....	60,600.00
22,477,000 pieces of laths at \$2.00 per M pieces .....	45,954.00
56,054,171 feet of logs exported at \$3.00 per M feet .....	504,487.53
18,545,461 feet of logs on hand at \$9.00 per M feet .....	166,909.14
9,454,539 feet of logs above the boom at \$7.00 per M feet .....	66,181.77

Total valuation .....

\$2,031,996 11

Value of log and lumber product for 1872 .....

\$2,199,600 00

Value of log and lumber product for 1871 .....

2,122,139 00

Excess 1872 over 1873 .....

167,603 89

Excess 1871 over 1873 .....

90,142 89

In addition to the large difference in amount realized for our log production the past season, we have contended the entire season through with a dull and over-stocked market. The September panic besides cutting off trade almost entirely placed an embargo on payments and collections due the St. Croix Valley, from which we have not yet entirely recovered as late as December 15th. The paper held by our banks and by parties engaged in the lumber trade footed up 225,000.00; it is but proper to say, however, that but a small proportion of the paper held by our lumbermen was past due. Collections down river have been generally met, and at this time our people hold but a small amount of paper past due.

Estimates made by log men and surveyors place the cutting of logs on the St. Croix and tributaries at from one hundred to one hundred and twenty millions of feet for 1874. The winter up to the present writing has been unfavorable for cutting and banking logs. A heavy fall of snow in November protected the ground from the frost, consequently the swamps and low lands not being frozen, they are impassable for the heavy logging teams. In many instances the only way to obviate this difficulty has been to make corduroy roads. Taking all things connected with the log trade into consideration, the out-look is not



by any means favorable for our St. Croix people. The prospect of a dull market, a small cutting put in at an increased expense per M. feet offers but little encouragement for the year to come. However, with improved prices for grain along the valley of the Mississippi, fair rates for transportation, a general resumption of confidence, better times may come for our lumbermen with the spring drives.

**Chicago Lumber.**

	Feet.
Receipt of lumber in Chicago for 1871...	1,039,328,375
Receipt of lumber in Chicago for 1872...	1,183,659,283
Receipt of lumber in Chicago for 1873...	1,123,368,671

Showing a falling off in receipts of 1873, as compared with 1872, of nearly sixty-one millions of feet.

Chicago lumber enters into competition with our lumber at all points east and west of the Mississippi, to such an extent, that the daily Chicago quotations fix the price of our lumber from day to day. The advantages in transportation afforded Chicago lumber dealers by the railroad companies centering in that city, discriminates to such an extent against the lumber distributing points on the Mississippi, as to debar us from entering into fair competition with Michigan lumber.

**Lumbering on the Mississippi Above the Falls.**

Lumber produced in the pineries on the Mississippi river above Minneapolis, including logs on hand spring of 1873, 225,000,000 feet, manufactured as follows :

Minneapolis.....	160,000,000
Anoka.....	30,000,000
Elk River.....	1,500,000
Champion.....	500,000
Clearwater.....	500,000
St. Cloud.....	2,500,000
Brainerd.....	500,000
Betsey's Falls.....	2,000,000
Logs on hand Jan. 1, 1874.....	27,500,000

225,000,000

Lumber on hand spring 1873.. 110,000,000

Lumber on hand spring 1874.. 104,000,000

6,000,000

231,000,000

**Magnitude of the Lumber Trade of the Mississippi for the Season of 1873.**

	Feet.
Upper Mississippi above St. Anthony Falls.....	331,000,000
St. Croix River.....	166,163,623
Chippewa river, lumber.....	275,000,000
Chippewa river, logs.....	90,000,000
Black river, logs.....	155,000,000
Black river, lumber.....	50,000,000
Wisconsin river, lumber.....	75,000,000

Total product of Mississippi pineries.... 1,032,163,623

**Estimate Logs on Hand for Season 1874.**

	Feet.
Upper Mississippi booms.....	27,500,000
St. Croix river below Taylor's Falls.....	28,000,000
Chippewa river, including logs held by Mississippi Logging Company.....	100,000,000
Black river, below falls.....	150,000,000
Wisconsin river logs.....	10,000,000

Total logs on hand Jan. 1874..... 315,500,000

It is at all times extremely difficult to approximate as to the winter's cutting of logs. It may not be far out of the way to state that from the most reliable data, we think the entire production throughout the northwest, including all Wisconsin and Michigan pineries will fall short of the average production of the former seasons, fully forty per cent. The number of men and teams sent to the woods is much less than usual, while the winter up to date has been very unfavorable for cutting and hauling logs. Estimates carefully made would serve to show that the winter's crop of logs on the St. Croix will not exceed one hundred and ten millions feet against one hundred and sixty-five million for the past year.

**Importance of the Lumber Trade of the Mississippi Valley.**

The lumber trade of the Mississippi valley is perhaps second to none other as to the value of the trade itself, but the intimate relations it bears toward the general interest of commerce generally, estimating the result of the trade at twenty million of dollars annually, it is safe to calculate that the greater portion of the proceeds must go towards paying for labor and the products of the farm, both of which enter largely into the expense of producing and getting lumber to market.

The number of steamboats engaged in towing lumber is seventy-two, at an average value of ten thousand dollars each. We find capital to the amount of seven hundred and twenty thousand dollars engaged in delivering lumber and logs to the various distributing points along the Mississippi. The prominent points from which lumber is shipped along the river are Winona, McGregor, Dubuque, Clinton, Davenport, Muscatine, Burlington, Keokuk, Quincy, Hannibal, Louisiana, Alton and St. Louis. The latter city received during the past season one hundred and fifty millions feet. Hannibal, Burlington, Clinton and Dubuque each receive and distribute annually vast quantities of lumber, lath and shingles. The railway facilities secured the past season by the city of Louisiana, Mo., will open up new outlets for lumber to the interior of Missouri.

**Requirement of the Lumber Interest.**

First in order, to understand the wants and varied interest of the immense lumber trade of the entire northwest, and to arrive at a correct conclusion as to the requirements pertaining to the entire lumber interest, and to keep pace with other important commercial pursuits, it would seem necessary that a convention be called for the purpose of taking into consideration the many important questions affecting one of the chief interests of the capitalists of the northwestern states. A general exchange of views can be obtained in this manner of material value and importance to lumber operators and dealers. Let lumbermen meet and become acquainted, and not only discuss matters affecting so closely their

general interest, but adopt such regulations as may seem requisite. That such organization is needed all will admit. Once admitted, no time should be lost in effecting an organization, so that in the future the lumber business may be systematized and stand on a footing with other great commercial interests of the country.

#### Necessity of Improving the Mississippi.

For a number of years past the general government has been engaged in improvements upon the upper and lower rapids of the Mississippi. It is well known to all interested in navigation, that until last season the upper or Rock river rapids have been impassable at low water. The recent improvements have so far improved navigation at that point that large boats heavily laden, log rafts and other heavy crafts can safely pass the rocks at this point in any stage of water.

For several years past the government has been engaged in building a canal three hundred feet in width, with suitable locks, at the Des Moines or lower rapids, which, when completed, will give the northwest uninterrupted water communication with the southern and gulf states. The importance of having this canal in operation has been made manifest the past season, on account of unusual low water in the river and the exorbitant railway charges on all southern and eastern bound freights. The lumber and agricultural interests of the entire west require that this improvement so imperatively demanded by the people of the Mississippi valley should not longer be delayed by insufficient appropriations, but insist upon the earliest possible completion of this important work, that our lumber and grain laden fleets may safely pass from St. Paul to New Orleans.

With grain freights at 30 cents per hundred pounds from St. Paul to New Orleans, and ocean freights from thence to Liverpool at 20 cents per bushel on wheat, we can with these improvements completed, disregard the extortion practiced by railway corporations, as regards transit to the southern market, and to and from the seaboard.

The *Eau Claire Free Press* of the 12th ult. said: "The river is again bidding fair to open shortly. Large cakes of ice disconnected with the neighboring plain, are already floating in the open water preserved by the warmer current of the Eau Claire, along the Chippewa's left bank. The water is rapidly overflowing the ice, and the same long channels are being cut across the river on which we recently looked with so much envious speculation.

#### CANADA LUMBER TRADE FOR 1873

Messrs. Carbray & Routh, lumber and commission merchants of Montreal and Quebec, have issued the following review of the trade in Canada, which will interest those of our readers who care to be extensively informed:

It is always more pleasant to review a buoyant market than a falling or dull one. In the former case everybody is in good humor, for, though it is true higher figures have to be paid, still, better prices are realized, and the articles move off and are replaced as quickly as they can be but in a dull season, no satisfaction is experienced in buying cheaply, for the yards are full and everything is plentiful but buyers.

The past year has been a most disappointing one, in this respect, to every one; opening at high prices, it is true, but with prospects of a large business at paying rates to everybody, all thought a rushing trade would be done, and laid themselves out accordingly. Though stocks were large at mills the markets supplied by them were almost bare, trade brisk and steadily advancing, and as far as Canada was concerned, the cut of logs is reported small—adding another incentive to the cry of "short wool." We however early gave it as our opinion that there was something wrong, and that a fall in prices was close at hand. Indeed, before June, when the first new logs were only just reaching the saw, sellers were both numerous and importunate, and up to the close of navigation slight concessions were continually being made in prices on different pretexts which in the aggregate showed by the end of the season a pretty considerable falling off. There is no doubt that matters would have mended considerably before the close, if the panic had not occurred, but this unfortunate affair killed off the reaction that was quietly and surely taking place.

With respect to next season we have confidence in its prospects. A country like the United States, consuming 10,000,000,000 feet per annum, cannot pass two seasons like the last one; and with a quiet money market we expect to see a turn in affairs which cannot but have a considerable effect on lumber. We think however the improvement will come quietly and for that reason will be all the more lasting.

Pine—The stock of last winter though fairly large was soon exhausted; but to the astonishment of mills, no contracts for new cuttings were made, and, as week after week passed without sales, manufacturers began to think that it was time to change plan of operations. Many therefore turned on to deals which sold well during the whole season and at paying prices. We append a comparative statement to show that if in spring 1871, there was money in making deals there was decidedly no risk in accepting the quotations for June, 1873. Prices are per Quebec standard hundred (2,750 feet B. M.)

	Spring, 1871.	June, 1872.
Pine—1st quality.....	\$54	\$112
2d .....	54	72
3d .....	27	36
Spruce—1st .....	52	44
2d .....	23	36
3d .....	16	28

The stock of sawed lumber now on hand is large, but will be in fine shipping order by opening of navigation, and we shall be very much mistaken if it does not largely change hands during the course of the winter. There are already appearances of this, and as mills are disposed to be liberal, no large dealers will lose the opportunity of laying in cheap stock if he can only convince himself that the prospects ahead are fair; we think there are many who will have no difficulty in coming to this conclusion. We might add that the cut last year was smaller than the previous year, only day work or half time being the rule at all the large pine mills, and the logs having come to hand very late many mills lost a month's sawing. The logging will not be large but we look for a fair average get out; mills laying themselves out to cut sufficient logs to keep themselves busy the whole next season, night work excluded.

Spruce—Nothing whatever was done with the United States in 1873, it we may except some trifling shipments of boards manufactured the previous season, and which could not have been cut up this year for the prices at which they were shipped. Every spruce mill as early as January and February, decided on cutting deals for the European market, and as must be observed by our comparative statement above, the result was entirely satisfactory to them; their cutting thus netting them between \$13@ \$14 M feet, instead of \$10@ \$11—prices realized for boards in 1872.

The season for logging in the spruce sections being extremely propitious, a very

much larger quantity will be made than usual, if the winter continues as favorable to the end, but a large proportion is already contracted for, to be cut into large deals, and the balance is intended for the same purpose, but held at present for higher prices.

Hemlock—Comparatively little doing in this wood though there was some demand at the beginning of the season for three inch stuff to replace three inch cull pine which was very high. There is a very large quality of this description of lumber in Canada, but it is considered that present quotations do not pay for cutting it.

Shipments—To River Plate show a considerable advance as will be seen on reference to our export list. It comprises every quality of lumber, both dressed and in the rough, pine, spruce, and a little hemlock.

Freights—(The best index of state of business) were extremely dull by canal the whole season, paying very little more than boats' running expenses, and closed at 30@35 per cent. less than rates paid last year. Ocean freights were very high and ruled 30@40 per cent. higher than in 1872.

Approximate statement of supply and stock lumber in Ottawa and St. Lawrence districts:

OTTAWA AND TRIBUTARIES.		
	Dec. 1873.	Dec. 1872.
Deals, sawn.....	160,000,000	60,000,000
on hand.....	25,000,000	5,000,000
Boards, sawn .....	280,000,000	320,000,000
on hand.....	180,000,000	80,000,000
ST. LAWRENCE AND TRIBUTARIES BELOW MONTREAL.		
	Dec. 1873.	Dec. 1873.
Deals, sawn.....	296,000,000	265,000,000
on hand.....	100,000,000	60,000,000
Square timber, on hand.....	286,000,000	205,006,000
Boards, sawn .....	90,000,000	135,000,000
on hand.....	50,000,000	10,000,000

EXPORTS.			
To Great Britain:	1873.	1872.	1871.
Square timber, M cubic ft..	16,702	22,140	20,720
Deals.....M ft.	170,980	193,086	137,298
To River Plate;			
84 vessels .....	37,037	—	—
72 " .....	—	28,290	—
46 " .....	—	—	16,192
To Peru and West Coast:			
5 vessels.....M ft.	4,007	—	—
18 " .....	—	10,272	—
2 " .....	—	—	1,243
To Australia:			
1 vessel.....	450	—	—
To Portugal and Spain:			
No. vessels.....	11	12	6
To France:			
No. vessels.....	2	3	2
To Holland and Belgium:			
No. vessels.....	3	5	5

## PRICES CURRENT AT CLOSE OF NAVIGATION, 1873.

Pine—Board and plank stocks and fair run of log, short strips and all culls out.....	\$17 50@81 50
Stocks, board and plank.....	16 50@17 50
Sidings, according to quality..	18 00@21 00
Strips and short.....	12 00@14 00
Shipping culls.....	9 00@ 9 50
Third-quality deals, 3-inch.....	12 00@13 00
Good cull deals, 3-inch.....	8 00@ 9 00
Dimension timber, according to size.....	16 00@21 00
Spruce—Boards and plank stocks and sidings, merchantable run of the log.....	11 00@12 00
Deal sidings, promiscuous lengths and widths.....	9 00@ 9 50
Merchantable deals, 20 and 30 feet long.....	13 00@14 00
Hemlock—Boards and plank, merchantable run of the log..	3 50@ 9 00
Pine sugar-tox shooks.....	@    50
Pickets and palings.....	11 00@12 00
Lath, M pcs.....	1 10@ 1 25

## FREIGHTS.

Average figures paid during season, 1873 :

Sugar box shooks to West Indies, each. \$	—@—
Lumber to West Indies.....M feet..	—@15 00
Montevideo.....	26 00@28 00
Peru and Chili.....	25 00@26 00
Melbourne, Australia.....	—@20 00
Quebec to United Kingdom:	
Timber, per load, 50 cubic feet, stg....	42s 6d@45s 0d
Deals, per St. Petersburg std., 1,980 feet, stg.....	110s 0d@120s 0d
Quebec or Ottawa, by Canal:	
To Burlington.....gold	\$2 25@3 25
To Whitehall....."	2 50@3 50
To Albany or Troy.....U. S. cur.	5 00@6 00
To New York....."	6 00@7 00
N. B. First quotations are from Quebec, latter from Ottawa.	
Three Rivers, Sorel, or Montreal, by Canal:	
To Burlington.....gold	\$1 60@1 75
To Whitehall....."	1 75@2 10
To Albany or Troy.....U. S. cur.	3 75@4 75
To New York....."	4 50@5 50
N. B. First quotations are from Sorel or Montreal latter from Three Rivers.	

While Mr. Potter, foreman in Spaulding & Co.'s Barrel Factory at Appleton, was making some repairs to the driving wheel, on which he was sitting, the rising water started up the machinery, and one turn of the wheel on which he was sitting, would have crushed him to death. He made a leap, head first, eighteen feet, and except some severe injuries, from which he will recover, escaped with his life.

A petition has been signed by the heavy tax payers of Stevens Point, praying the legislature to pass an act enabling that city to issue its bonds for \$10,000, in payment for the same amount of stock in the boom company. Mr. Clements has the petition in charge at Madison.

## THE GREAT NEED OF THE CHIPPEWA VALLEY.

From the Chippewa Falls Avalanche.

There is a rumor in railroad circles that the New York & Erie railway company will extend its railroad system in the northwest, in connection with the Southern Minnesota railroad company, by constructing a connecting link between Chicago or Mineral Point, in Iowa county, thence to La Crosse. No doubt this system of railway would prove very beneficial to that company as there is a large tract of country between Mineral Point and La Crosse that would give a railway company plenty of business, and besides open up the country to a much greater extent.

We would suggest to the company (after having built the road to La Crosse) to construct their lines direct to this city, via Black River Falls, thence along the line of the West Wisconsin to Eau Claire, thence to Chippewa Falls. This route is a very feasible one, and could be constructed at very small outlay of money apparently, as the grading to Black River Falls is very light.

We are destined to have railway connections with the outer world, at no very distant day, probably next summer, viz: by the extension of the West Wisconsin from Eau Claire here. This will of course give us a railroad, but it will not give us competition, whereas if we have a direct line to the east, low freights would be the result. We have plenty of business here for two railway lines, as the vast pineries in this section are only in their infancy, and the lumber that will be manufactured in the next fifty years, would freight a large train of cars daily to the eastern markets, for that length of time, and perhaps longer; and the rich agricultural lands in Chippewa county, most of which are yet uncultivated, would, in a few years at least, yield abundant business for competing lines of railroads.

A review of the improvements in Eau Claire, Wis., last year, shows a rapid growth of that thriving city. The improvements for 1873 amounted to \$553,290, including a \$45,000 court house, a \$35,000 hotel, a \$35,000 grist mill, a \$25,000 and a \$20,000 saw mill, a \$20,000 round house, two \$12,000 brick blocks, etc. The improvements for three years amount to \$1,698,012.

## HOW TO USE BOILERS.

Valuable Hints From the Annual Report of J. M. Allen, President of the Hartford Steam Boiler Inspection and Insurance Company—Feeding Boilers—Blistering of Plates—Remedies For Scale and Sediment.

From the Annual Report for 1873, of Mr. J. M. Allen, president of the Hartford Steam Boiler Inspection and Insurance Company we condense the following :

## FEEDING BOILERS.

Boilers fed by cold water are very liable to fracture, from the fact that the water is thrown upon the heated plates, causing sudden contraction and consequently fractures. The feed water of boilers should be heated before entering the boiler ; this is a matter of economy in two ways. It prevents wear and tear from sudden contraction of the plates, and is a saving of fuel ; but in selecting a heater steam users should be careful and not use one that will do them greater damage than cold feed water. If economy in fuel is no object, as is sometimes the case at coal mines, saw mills and wood working establishments, an inexpensive way of obviating the difficulties arising from cold feed water is to introduce the feed pipe at the back end of the boiler, carrying it forward three-quarters or more of the length of the boiler, and then returning it to near the back end, where the water is discharged. By this arrangement the water will have received a temperature nearly or quite equal to that of the water in the boiler. Another cause of fractures is blowing down while the boilers are hot and under a high pressure. The tubes and flues cool sooner than the shell—which is more or less covered by hot brick work—and contract, and the result is bad leaks at the ends. This difficulty will be enhanced four-four if the boiler, while hot, is filled up with cold water.

## BLISTERING OF PLATES.

If furnace plates or fire sheets in externally fired boilers are not homogeneous, blisters are almost sure to occur. The outer laminae, or leaves, become overheated in consequence of the resistance to thermal conduction on account of the want of solidity or homogeneity in the sheet and these overheated laminae expand and bulge out, usually cracking open at the apex, thus reducing the thickness of the plate, and consequently

its strength. These blisters should always be carefully cut off, and if the thickness of the plate has been much reduced, a patch should be put on, or if the sheet proves to be one where the lamination is widely extended over its surface, it should be removed and a new sheet substituted.

## SCALE AND SEDIMENT.

The question will of course be asked what is the remedy for the difficulties enumerated above ? The answer to this cannot be direct and applicable to each and every case. Hence only general instructions can be given, and, for individual cases, personal inspection and investigation must be made.

In the first place, if it is found that the water in a boiler is throwing down any considerable quantity of carbonate of lime, frequent blowing (only an inch or two at a time) will be found beneficial. If the impurity manifests itself at the gauge cocks, and they become furred, a surface blow may be advantageously used. Never, under any circumstances, blow down a boiler when hot and under working pressure, for under such circumstances much of the impurity held in suspension lodges on the tubes and flues, and finds its way into the water legs of locomotive boilers, and those with internal furnaces ; and immediately burns on, forming a hard scale that can only be removed by hammer, pick and chisel. It is a fact that the scale in many boilers is formed by injudicious blowing down. They should be allowed to cool, the fires should be drawn, and furnace doors opened so that the air can circulate freely underneath and through the tubes and flues, and when all is well cooled down, then open the "blow" and no injury will be done. The impurities held in suspension will be found in a soft plastic state or in the form of slush or sludge, and should be removed and the boiler washed out with a hose. This process will require a longer time, and more care and attention than to blow down under heavy pressure and immediately fill up again with cold water, a practice too common, and one ruinous to boilers, and whoever follows it will be troubled with leaks and stoppages the year round.

## SOLVENTS.

There are a great many solvents prepared with a view to increase the solubility of the salts contained in the water by decomposing them, and we have

found some of them to work well, but, as I have already said, the waters in different localities are so varying, and require such different treatment, that it is impossible to prepare any one solvent that will apply in all cases, and beside many solvents are injurious to the iron, causing internal corrosion to a dangerous degree. These solvents should not be used except under advice, or if the steam user is a chemist, he should examine both the solvent and the water used in his boilers.

We have found potatoes and slippery elm advantageous in preventing scale in many cases. The starch or glutinous matter envelopes the precipitated solid particles and prevents their adhering to each other, or to the plates and tubes. Sometimes hard scale is removed by potatoes, and further difficulty prevented. Catechu and other astringents have been found beneficial in certain kinds of water. These substances contain tannic acid, which decomposes the salts of lime and forms tannate of lime. Where such solvents are used there should be frequent blowing, and surface blowing will be judicious. If blowing is not attended to properly there will be a concentration of soluble constituents which will act very injuriously upon the iron.

In some parts of the country crude petroleum has been found to keep boilers free from scale without injury to the iron, while in the same districts, and in the immediate vicinity, boilers not using purgers would have a scale from  $\frac{1}{4}$  to  $\frac{3}{4}$  of an inch in thickness. We have a specimen of scale in this office nearly  $1\frac{1}{2}$  inches thick, that was removed from a boiler in the west by crude petroleum. I am aware that there is great prejudice against using anything of the kind in steam boilers, but earth oils are very different from animal oils. They are very volatile, and in an experience of several years, where hundreds of boilers have been treated with it, we have found no injury to plates or tubes, and the boilers have been kept free from scale. Petroleum works better where sulphate of lime predominates, than in waters impregnated with carbonate of lime. We would not advise it in connection with the latter. I desire to impress upon all persons the importance of careful attention to their boilers when solvents of scale or purgers are used. It often happens that scale is thrown off and allowed to accumulate on the bottom of the boiler, and

from want of attention, not being removed, the boiler becomes burned, and nearly or quite ruined. If a purger is used, the boiler should be often opened and as often thoroughly cleaned.

Feed water heaters are of great service in removing sediment if they are of proper construction. But an open heater using exhaust steam, with no appliances for preventing grease and sediment from entering the boiler, is not to be relied upon, and, as I have already said, steam users should be careful in selecting a heater to get the best. We have experienced a vast amount of trouble with improperly constructed heaters.

The subject of incrustation and scale is one that cannot be elaborately treated in a report like this; but as our experience widens, we hope to be able to lay before our friends and patrons further facts and information in the future.

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In speaking of the recent opening of the Green Bay & Minnesota railway, an exchange thus describes its relations to the lumber interests of Wisconsin: In addition to affording the people of southern Minnesota a new outlet for their wheat and other farm products, this new road opens to the merchants of Winona a large scope of country to be supplied with goods, and it brings to our doors a plentiful supply of hard lumber to be used for manufacturing purposes, at such rates as will enable us to compete successfully with any other point in the northwest in certain branches of manufacture. The first effect of the completion of the road to this place will doubtless be to cheapen pine lumber in this market, but not, we think to such an extent as to injure the lumber interest now established here, or to prevent its expansion. There is a very large breadth of tree-less country to be supplied with all kinds of lumber from this point. That country is rapidly filling up with a lumber-consuming population, and the demand must steadily increase. We do not anticipate that the additional supplies from the Green Bay country can permanently glut this constantly growing market.

## THE ST. CROIX VALLEY.

The Inducements It Offers To Settlers—Its Soil, Climate, Population And Prospects—One of Wisconsin's Most Promising Fields For Grit, Thrift And Capital.

It is within the province of the WISCONSIN LUMBERMAN to extend information concerning the varied resources of the heretofore neglected northern counties of the state. We are therefore moved to give as wide a circulation as possible to the following statement of facts from the *Hudson Star* and *Times* :

Nearly a score of years ago, we began publishing a paper in this valley, and from that time until now, we have continued at not unfrequent periods to present the many advantages which this section offers to the settler. At that time, although settlers were few and improvements scarce we were confident that it would eventually become one of the very richest portions of the state—a very garden of beauty and wealth, and succeeding years have confirmed the conviction.

Other sections of the west are older in improvement, richer in wealth, with better buildings and more of the conveniences which gather around growing prosperity, but in the natural elements of wealth, no section of the state is superior to the St. Croix Valley. With soil of remarkable fertility and endurance, nearly all of which is available for agricultural purposes, with a surface sufficiently varied to prevent monopoly and ensure drainage, with plenty of valuable timber easily accessible, and laced by clearest streams abounding with water powers, this valley is capable of sustaining a dense population employed in varied and remunerative industry. Its towns, Prescott, Ellsworth, River Falls, Hudson, Hammond, Baldwin, Richmond, Osceola and others, are all healthy, but the country is to-day in advance of the towns. Elegant and commodious farm houses are springing up—the cabin of the early pioneer giving place to the home of the prosperous citizen—new lands are fast being subjected to tillage, and to-day the whole valley in the character and extent of its improvements, begins to present the flourishing appearance of the thrifty farming communities of old settled states.

The character of the people too, com-

pares well with the desirableness of their location. Amid the hurry and necessary disorder of early settlement, and the many imperative demands for money for merely material purposes, they have not forgotten the school-house and the church, and we do not believe there is anywhere, east or west, a people with the same means who have expended more for these purposes.

While heretofore our principle staple product has been wheat, all branches of business being largely dependent upon the crop raised and the prices realized, now a more varied industry is beginning to prevail, a wider range of agricultural enterprise manifested, and a diversity of manufacturing interests developed.

The climate here is even, healthful and pleasant, the population intelligent, industrious and thrifty, and society cultivated and refined.

Here as elsewhere, health is in a great degree the reward of care, good social standing is secured only by integrity and culture, and wealth comes only to the enterprising and industrious. Ignorance finds here no immunity from disgrace—dishonesty no protection from punishment, and indolence no paradise of ease and plenty.

It is a poor place here for loafers, but men who have grit to work, enterprise to display, or capital to invest, can find a sure and an ample reward for their labor, enterprise and investments.

We invite all ye sons, east or west, who intend to change their location to come and see what inducements the St. Croix Valley offers, both to the laborer and the capitalist.

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A recent number of the *Marinette and Peshtigo Eagle* says : A rumor is afloat here that there is an effort being made to remove the U. S. Land Office in this district from Menasha to Oconto. We hope it is true, and that such removal may be accomplished. The lands yet unsold by the government in this district are nearly all of them in the counties of Oconto and Shawano, Oconto having the majority of them. The location of the land office at Oconto would accommodate the people far better than its present location does, as it would in that event be much nearer to lands that are yet to be sold by the government.

### TRADE OF THE PACIFIC COAST FOR THE PAST YEAR.

Lumber Shipments From Mill Ports For 1873—Receipts and Shipments For The Year At The Port of San Francisco—The Course of Trade, Special Features and Present Prices For The California Lumber Market.

From the *San Francisco Commercial Herald* we obtain an interesting and full statement of the lumber trade of the Pacific coast for the year of 1873. It says of the

#### GENERAL FEATURES.

This important branch of trade shows some diminution at this port, by reason of high freights; but the direct exports from mill ports to foreign marts, show an increase. For instance in 1873 these aggregated 50,000,000 feet, whereas in 1874 the estimated shipments are 95,000,000 feet. Shingles show an increase of about 4,000,000; Laths an increase of 2,000,000. Railroad ties have diminished in number about 147,000. The lumber receipts at this port for the year are 33,000,000 feet less than in 1872, for reasons above given. Following is the estimate of direct lumber shipments from mill ports, including that from Moody's mills, at Burrard Inlet, which, by the way, were burned down about a month since, but which, we believe, will be speedily rebuilt. Estimate shipments in 1873 from mill ports to foreign marts, and not included in our figures elsewhere given in this issue: Burrard Inlet, 25,000,000 feet; Puget Sound, 50,000,000 feet; coast ports (Redwood and Pine), including railroad ties to domestic ports, 10,000,000 feet. Total 95,000,000 feet. In this market prices of late have undergone no particular change. Lumber moves off briskly. We quote Oregon white pine boards, by cargo to dealers at \$16@17  $\frac{1}{2}$  M feet for rough; \$26@27 for dressed; laths \$3@3.50  $\frac{1}{2}$  M. Export orders executed for delivery at Puget Sound, for

rough timber, at \$10@12; dressed flooring \$18@20; sugar pine \$40; cedar 32.50@42.50. Redwood lumber is still controlled by a combination. Rough \$20; dressed 32.50@35; shingles \$3@3.25. Pickets, rough, \$14; pointed \$16; dressed \$25  $\frac{1}{2}$  M. The estimated value of hardwood lumber and carriage and wagon materials (freight added) for the year 1873, arrived at this port, embracing wood material only, viz: Planks, hubs, spokes, felloes, rims, bows, &c., is as follows: Imported and sold in this city, \$300,000; imported and sold in the interior of California, \$130,000; imported and sold in Oregon, \$25,000. Total—\$455,000. Owing to the importation of so many cheap eastern made wagons since the opening of the Overland railroad, business in this line as concerns manufacturing has been much depressed and not very profitable. At the present time the prospect for trade has improved and our manufacturers are encouraged to believe that they can successfully compete with any good eastern-made work. We quote wholesale prices: Oak plank 13c  $\frac{1}{2}$  foot or 1.30  $\frac{1}{2}$  M feet; hickory plank 14@16c  $\frac{1}{2}$  foot or 1.40@1.60  $\frac{1}{2}$  M feet; ash plank 12@14c  $\frac{1}{2}$  foot or 1.20@1.40  $\frac{1}{2}$  M feet.

#### EXPORTS FROM SAN FRANCISCO.

The associations or combinations control the Pine and Redwood production, respectively; the former is rather slack to enforce prices; but the latter more rigid, and the business better controlled.

The lumber exports from January 1st, 1873, to January 1st, 1874, are as follows:

To	Feet.	Value.
Tabiti.....	1,756,841	\$31,846
Mexico.....	1,056,971	22,869
Panama.....	748,911	19,752
Central America.....	1,925,135	33,612
Australia.....	2,431,920	57,250
Russian Asia.....	345,458	8,577
China.....	1,106,808	20,250
Iquique.....	1,228,715	21,673
Eten, Peru.....	154,198	4,400
Callao.....	2,956,912	59,394
Navigator's Island.....	460,630	7,805
Honolulu.....	1,041,000	12,320
Liverpool.....	2,829	99
Victoria.....	82,554	2,985
Valparaiso.....	2,773,135	40,947
Molendo.....	3 6,579	5,720
Japan.....	18,370	427
Totals, 1873.....	17,415,287	\$350,024
Totals, 1872.....	16,517,171	309,325
Totals, 1871.....	17,590,854	312,570

#### RECEIPTS AT SAN FRANCISCO FOR 1873.

From an elaborate table we take the following recapitulation:





ON CASS RIVER.	
Lull's steam mill.....	1,000,000
Hoyt's " " Birch Run.....	2,000,000
Hinckley & McLean's steam mill.....	1,500,000
Richardson's water mill.....	2,000,000
Hurd's water mill.....	1,000,000
North & Elmon's water mill.....	8,000,000
Watrous & Co.'s steam mill.....	1,000,000
ON FLINT RIVER.	
Blackmar's steam mill.....	1,500,000
Seymour's water mill.....	1,500,000
" " ".....	1,500,000
At Flint village and above are 14 mills, of which 6 are steam and 8 water mills, which will cut for exportation as esti- mated.....	10,000,000
KAWKAWLIN MILLS.	
Fraser & Co., water.....	3,000,000
" " steam.....	2,000,000
Making a total of 61 mills in operation with estimated cut of.....	108,000,000
And 9 being built, which, when in opera- tion, will cut, say.....	20,090,000

### NORTHWESTERN WISCONSIN.

#### Description of Dunn County and Menom- onie, its County Seat.

Dunn county is situated in northwestern Wisconsin. To the immigrant in search of occupation and a home it offers superior inducements. Its favorable location, its accessibility, its varied fields of labor, its rapid settlement, place it in the front rank of those counties which are now attracting the attention of the pioneer. The county contains twenty-four townships, with a total area of 552,960 acres. The eastern portion is mostly prairie and light openings, with some meadow lands. It is generally level, and has a fertile and productive soil. The western portion is more rolling, and covered with extensive forests. The soil is excellent, producing splendid crops. Winter wheat is largely grown, and yields from twenty to forty bushels per acre. Oats, rye, corn, potatoes, etc., bring forth a rich harvest. In short, the general quality of soil throughout the county, and its productiveness, will average as high as any county in the state, to which the attention of the immigrant can now be directed.

There are at present about 75,000 acres under cultivation, not including many thousand acres inclosed for pasturage. All of the unimproved lands are fit for cultivation or pasturage. About 200,000 acres are owned by actual settlers, in farms ranging from 80 to 320 acres. The average price of such land is about \$8 per acre. In the northern part of the county there is yet a number of sections subject to entry under the homestead law; some of them very desirable locations.

The county is watered by the Chippewa river in the southeast; the Eau Galla in the southwest, and the Red Cedar, which runs through the county from north to south. The Chippewa is navigable for rafts and small steamboats; the Eau Galla and Red Cedar

for rafts and logs only. These streams with their numerous tributaries furnish a large number of fine water powers, many of which are unimproved. Sawmills and flouring mills, however, are springing up in all parts of the county, opening new fields for labor and capital and furnishing a substantial home market for the products of the forest, the farm, and the garden.

Lumbering is the leading manufacturing interest. There is annually manufactured in the county about 75,000,000 feet. Hundreds of men find steady employment in the pineries, at the mills, on the river; and no man able and willing to work, need remain idle a single day. This is especially favorable to the immigrant, who by the constant demand for labor, is certain of a place to work at good wages, the moment he reaches his destination. One firm alone, Knapp, Stout & Co., at Menomonie, employs about 1,200 men. Carson & Rand of Eau Galla, and S. A. Jewett, of Cedar Falls, have, in the aggregate, several hundred men in their employment.

But the attention of the mechanic and manufacturer can turn with profit to other industries the development of which cannot fail to prove remunerative to the persons engaged therein. The vast forests of hard wood which cover the western half of the county, are a mine of wealth almost untouched. Oak, maple, ash, elm, basswood, butternut and pine of the best quality, grow in great profusion, and invite the industrious and enterprising manufacturer, with promise of rich rewards. Stave mills, hub and spoke factories, establishments for the manufacture of furniture, agricultural implements, wagons, sleighs, etc., will here find abundant water power and a never failing supply of excellent timber. A woolen factory is much needed. No less than 20,000 pounds of wool were shipped from Dunn county during the past season, which amount might soon be increased tenfold with proper encouragement.

Banks of clay suitable for brick are numerous, but little used. Quarries of limestone have been opened and successfully worked. Quarries of beautiful sandstone abound, similar in geological formation to the celebrated Potsdam sandstone, which furnish a fine and serviceable building material. These natural deposits, together with the immense quantities of lumber, furnish an unlimited supply of cheap and accessible building material.

The railroad facilities are good, and promise to be better in the not distant future. The West Wisconsin railway, which is an important link of the air-line railroad from St. Paul to Chicago, passes through the county from east to west. By this road Menomonie, the county seat of Dunn county, is only thirteen hours ride from Chicago. The business of the road is large and constantly increasing. The Chippewa Valley & Red Cedar railroad is

projected, and the route surveyed. Its course is from the mouth of the Chippewa river to the confluence of the Red Cedar, thence along that stream through Dunn county, northward to Barron county, thence to Lake Superior. This road will open up a fine country north of Dunn county and will attract a large immigration. With these roads in full operation, the business of the manufacturer, merchant and farmer will receive a new impetus on the road to permanent wealth and prosperity.

Fish and game abound in great variety, pike, pickerel, bass and speckled trout are caught by the not over-skillful angler. Bear, deer, squirrel, pheasant, prairie chickens, grouse, wild geese, ducks, etc., are here to tempt the hunter and sportsman. Beaver, mink, otter, muskrat, of the fur-bearing animals fall a prey to the vigilant trapper.

All things considered, there is not a county in the northwest that offers a more diversified industry—a wider or better field for labor—or a surer prospect of reaping its just reward. No more healthful climate can be found. Clear springs, and swift running streams afford the coolest and purest of water. The atmosphere is clear and dry, and the general healthfulness of the people is remarkable. In Dunn county the enterprising and industrious settler will find no difficulty in securing a home for himself and family. Farmers, mechanics, tradesmen, in fact men of every honest and honorable calling, can find room here and a cordial welcome.

#### MENOMONIE.

Menomonie, the county seat of Dunn county, is a thriving town of nearly 2,000 inhabitants. The town was laid out in 1857 by Messrs. Knapp, Tainter and Wilson. Since the foundation of the town its rise has been gradual and permanent, and at the present time we find a thriving town inhabited by a moral and refined people. One of the most pleasing features of Menomonie is its numerous and costly church edifices. The Congregational church is a model of neatness and utility. The Baptist church was erected by Capt. Wm. Wilson at his own expense, costing \$15,000. This building has a very fine pipe organ, with the talented Miss E. Deming as organist. Besides these there is the Episcopal, the German Lutheran, German Evangelical, and Catholic churches. All of these denominations have their charitable societies the ladies taking active and leading parts in all matters that tend to alleviate the sufferings of the more unfortunate of their fellow beings.

Rare, indeed, are the cases of vice and crime in Menomonie, that are so often found in other young and rising towns.

The merchants of Menomonie are not so go-ahead as business men of other cities, yet they all carry large stocks of goods, and have a good reputation for promptness and punctuality in all their business transactions.

The improvements made in Menomonie dur-

ing the last year amount to 125,000. A handsome court-house was completed last spring; the building cost \$40,000. One school-house costing \$15,000, another \$5,000, are some of the latest improvements. Four brick blocks will be erected next spring, also a new jail, at a cost of \$10,000. Many dwelling houses will be built. Andrew Taylor has nearly finished his mile track, which when completed will be one of the best in the state.

As a manufacturing a point, Menomonie stands almost unrivaled. The water power is one of the finest description, affording privileges for all classes of manufacturing. A sash, door and blind factory would be a paying institution, for all that class of work has to be brought either from Eau Claire or St. Paul. More than enough lumber is wasted every year to supply a sash and blind factory. The demand for these goods is very great, and it is a wonder that some one has not yet started a factory of this kind. A woolen mill would also be a paying investment. There is not a woolen mill in the whole of the Chippewa Valley.

The business firms of Menomonie, Wisconsin are, Knapp, Stout & Co., manufacturers of lumber, lath and shingles, and dealers in general merchandise; S. B. French, banker and land agent and dealer in general merchandise; J. B. McKahan, dry goods; Carter & Junck, dry goods; Brooks & Hess, dry goods; Amund, son & Larson, N. C. Eytchson & F. Wesenus, general store; W. R. Culbertson, hardware; P. J. Edwards & Son, hardware; Flint & Weber, editors *Dunn County News*; Freeman & Hunt, attorneys at law; R. C. Bierce, attorney at law; Bundy & Macauley, attorneys at law; F. M. McLean, attorney at law; O. H. Bunker, architect; W. F. Nichols, physician; Geo. Tonnor, druggist; E. S. Hull, druggist; A. Ohustad, boots and shoes; C. Jungck, boots and shoes.

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Mr. G. Ames, of wood pulp fame, arrived in the city last Friday morning. When you touch the right cords in brother Ames, you will find plenty of music in him—and you can't touch the wrong ones.—*Appleton Post*.

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The *Oconto Republican* is gloomy over the educational problem. An additional levy of \$15,000 will have to be made or the school closed.

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The *Appleton Post* says: "T. D. Kellogg started up his saw mill at Stephenville last week, and is now ready to do all kinds of custom and other work.

**THE WATER WAYS OF COMMERCE.****Governor Taylor on the Fox and Wisconsin and the Mississippi Rivers.**

From the message of William R. Taylor, governor of Wisconsin, we make the following extract relating to water courses of the north-west and their improvement:

**CHEAP TRANSPORTATION BY WATER.**

The relation of our state to the national commerce is peculiar. More than three-fifths of the Wisconsin boundary is washed by navigable water, conceded to be under the special care of the general government. Our principal interior streams are also navigable, dividing their bounty between the Gulf of Mexico and the Atlantic Ocean on a line nearly equidistant between Lake Michigan and the Mississippi river.

I concede that the monies paid into the federal treasury belong to the people of the whole union, and we cannot rightfully claim the intervention of the federal government for any strictly local objects. But as to the duty of general government to improve natural channels of commerce, clearly pertaining to the general welfare and necessary to inter-state commerce, there can be no doubt. More than fifty years ago, President Monroe commended to congress the propriety of improving the navigation of western rivers between their highest navigable points, for the purpose of facilitating "intercourse between the Atlantic and the western country." The government has hitherto most signally failed to fulfil the measure of its obligations in this particular. Congress has made large and uniform concessions to special industries fostered by eastern capital, and these industries have been largely sustained by indirect taxation upon western labor and the products of our western soil. Equity, as well as the discharge of a clear constitutional duty, requires a different estimate in the apportionment of federal obligations in future, to the end that the blessings of government to our agricultural and commercial population may better accord with its cost. It is impracticable in this place to explore or explain all the mysteries of taxation upon the western labor and productions. But the direct and indirect contributions of Wisconsin to the federal treasury are believed to equal six or eight millions of dollars per annum, in addition to taxes indirectly imposed for the protection of special industries, constituting no part of the national revenue. It is obvious that for the most of this taxation we are unlikely to derive any adequate return, except so far as our ability to bear the burden is enlarged by an increase of those facilities of transportation now demanded by the general interests of both eastern and western trade and commerce.

I congratulate you upon what has been al-

ready achieved in these particulars, having a direct relation to the prosperity of our own people. During the year ending on the 20th of June last, the total sum of \$142,187.56 was expended by the federal government for the improvement of harbors at Menomonie, Green Bay, Sheboygan, Port Washington, Milwaukee Racine and Kenosha. A considerable sum has also been expended on these harbors during the current fiscal year, and the work will probably be continued the ensuing year, in accordance with the recommendations of Assistant Engineer, W. H. Hearing, under whose immediate and efficient direction these improvements were prosecuted during the past season. The aggregate exports and imports from these harbors are now immense, the exports of Milwaukee alone exceeding 3,000,000 tons, and those of the other ports named being proportionately large. The benefits which accrue to the federal government and to the people from these expenditures on our lakeshore are general and permanent, while the expenditures are limited and temporary.

**THE MISSISSIPPI RIVER.**

An amount comparatively moderate has also been expended by the government the past calendar year, on the Mississippi at points contiguous to our state or otherwise directly relating to the trade and commerce of Wisconsin. Practical and judicious measures for the continuous improvement of this watercourse from the head of navigation to the mouth of the river, deserve, and must command the support of our representatives in congress and the approbation of our people. An important portion of our state is now dependent upon the facilities afforded by this river for the export of its products and for its future growth in population and wealth, and a much larger portion may justly anticipate more important results from additional facilities for transportation by means of this river hereafter.

In this connection I would also call your attention to the importance of a slack water communication between the Mississippi and St. Croix rivers. Such an improvement would hasten the rapid development of our own state, and would prove equally beneficial to other northern states bordering on the Mississippi. A memorial to congress on this subject might serve to call the attention of that body to the nature and importance of this route.

**FOX AND WISCONSIN RIVERS.**

Intimately connected with the question of cheap transportation is the commendable undertaking of congress to complete a practical and permanent water route between the Mississippi river and the great lakes, by means of the Fox and Wisconsin rivers. For the first time the national government assumed the active and exclusive responsibility of this important national enterprise in October, 1872. At that time the work was transferred from the Green Bay and Mississippi canal company to

the United States government, and during the past year the improvement has been effectively prosecuted under the immediate direction of assistant United States engineer, Capt. John Nader. In his recent report of progress, Col. Houston, in general charge of this improvement, states that there is no public work more national in its character than this; that by this route the products of the southwest will find cheaper transportation to the seaboard, and the iron of the northwest to the Mississippi Valley, and that "there is no other route which will meet the necessities of so large a portion of the United States at so small an expense." Capt. Nader estimates that the whole work may be completed in accordance with the plan early in the year 1876, and at an expense to the nation trifling in comparison with the benefits anticipated.

**THE LUMBER TRADE OF CINCINNATI.**

**Business for the Year Ending August 31st, 1873—Statement of the Secretary of the Chamber of Commerce—The War Now in Progress Against the Pine Forests of Michigan—The Cooperaage Business of Porkopolis.**

We obtain from the annual report of the Cincinnati chamber of commerce a statement of the lumber trade of that point. Like the products of most organizations of this character, this report is about six months behind those obtained through individual enterprise expressly for the WISCONSIN LUMBERMAN. Still we trust it may interest some classes of our wide circle of readers, and serve for comparison in some particulars with the extensive statistical information which we elsewhere produce in this issue:

The business in pine lumber, during the past year, has not in volume varied greatly from the preceding year, though the variation is in the direction of an increase. The receipts by river are given approximately at 13,000,000 feet as compared with 14,000,000 feet in the preceding year, and the receipts by railways and canals at 70,000,000 feet, compared with 60,000,000 feet in 1871-72. The total receipts have been 83,000,000 feet, compared with 74,000,000 in the preceding year.

The receipts of yellow pine from the Kana-wha region have been more liberal, but the supply from the south, to which we have, of late, somewhat turned our attention, has diminished.

The season, in the main, has been a satisfactory one to the dealers. The demand has been uniformly good throughout the year. The markets has been steady and prices have been well sustained. The year's work has brought fair remuneration for the capital and labor employed.

The prices per 1,000 feet of dry pine lumber, from the yards, at the close of August, during a period of two years, were as follows:

	1873.	1872.
Clear.....	\$55 00@65 00	\$55 00@60 00
First common.....	45 00@50 00	45 50@47 50
Second common.....	27 50@30 00	27 50@28 00
Third common.....	22 50@25 00	20 00@22 50
Framing timber.....	22 50@25 00	22 50@25 00
No. 1 shaved shingles 7 50@.....	7 00@ 8 00	
No. sawed shingles.. 5 50@ 6 00	5 25@ 6 00	
Pine lath, sawed.... 3 50@ 4 00	4 00@ 4 50	
Yellow pine (wholesale rates)...	24 00@30 00	25 00@30 00

A noticeable feature, of the time has been the growing mania for cutting down the pine forests of Michigan. At no time has there been such a war against the timber as of late. The consequence has been a great accumulation of logs, with what result to the future market remains to be seen.

The sales of hard lumber for the past year aggregate 15,000,000 feet, compared with 14,000,000 feet of the preceding year. The estimated value of the lumber of this kind sold during the past year, is \$500,000. The year has been marked by a steady and firm market. Walnut and poplar, the great staples, have ranged rather higher than during the year 1871-72. Hickory, too, was quotably higher at the close. The remainder of the list remain at about the quotations of the previous year.

The following table exhibits the prices per thousand feet of green hard lumber, at the close of August for three years:

	1873.	1872.	1871.
Ash.....	\$22 00@27 00	\$26 00@30 00	\$22 00@26 00
Cherry... 28 00@35 00	25 00@35 00	25 00@35 00	
Elm..... 16 00@20 00	16 00@20 00	.....	
Gum..... 16 00@18 00	16 00@18 00	.....	
Hickory.. 25 00@32 00	20 00@25 00	.....	
Oak..... 23 00@25 00	20 00@25 00	20 00@22 50	
Poplar... 20 00@25 00	18 00@25 00	18 00@24 00	
Sycamore. 16 00@20 00	16 00@20 00	.....	
Walnut... 45 00@65 00	45 00@55 00	35 00@45 00	

**COOPERAGE AND COOPERS' STUFF.**

With the exception of the manufacture and the sale of oil barrels, in which Cincinnati has largely engaged during the past year, there has been no special feature connected with the trade in cooperaage. Our manufactories have generally been busily employed, and owing to the ease with which they turn their attention from one article of manufacture to another, it has been possible to avoid the expenditure of their forces in the unprofitable directions. It must be admitted, however, that the year to the manufacturer has not been satisfactory.

The receipts of cooperaage for the year were 452,018 pieces, compared with 455,083 in 1871-72, and the shipments 204,423, compared 150,896, showing an increase in the latter of 53,527 pieces. The increase is mainly attributable to the large number of oil barrels which have been made here, and shipped to the east.

The receipts, as will be seen from the table appended, were, with the exception of the



## WISCONSIN ITEMS.

From the annual report of Mr. George Atkinson, lumber inspector for that district, it is learned that the amount of logs scaled at the mouth of Black river, together with the amount of manufactured lumber for the past year, is 227,000,000 feet. There were also manufactured 25,000,000 shingles, and 20,000,000 lath.

Lumbermen in the vicinity of Greenwood (Clark Co.) are reported as hopeful, and log hauling is being pushed forward with vigor.

Wednesday, says the *Clark County Republican*, was a field day for loggers in Neillesville; we noticed Robt. Ross, Harry Mead, Al. Brown, G. W. Hubbell and others. The demand for laborers is still good.

Messrs. MacBride & Allen have received from the lithographer the first installment of their maps of Clark county. The map is drawn on a scale of one inch to the mile, and is therefore 54 inches long and 30 inches wide. The towns are in colors—blue, green, red and yellow. The drawing by L. J. Glass, is done in a very artistic and accurate manner. Mounted on rollers and nicely varnished, the map has a clean, finished and substantial look rarely witnessed in similar productions. It is an ornament anywhere, and no business office, at least, in the county, should be without one of the maps, which after little use will be found indispensable. They are sold at \$5.

From the *Wausau Pilot* we learn that the total number of buildings erected in Wausau during the year 1873, is 130, costing about \$150,000. That thriving village hopes by next year to have the Wisconsin Valley R. R., now running from Tomah to Grand Rapids in operation to Wausau.

Mr. Cowan, general manager for Mr. A. Eldred, at Stiles informs the *Green*

*Bay Advocate* that the roads are now in splendid condition for logging. The frame for the new mill on the Little Suamico is up and Taylor & Duncan are making the engine and machinery ready for spring use. Mr. E. will carry over from 14 to 15 million feet of logs on the two streams, (Oconto and Little Suamico) and will put in this winter about nine million, mostly by contracts and jobbing.

There is a lack of snow in the Menominee pineries, and hauling is poor. The roads are hard and well packed, and a few inches of snow would put them in a good condition.

The *Oconto Reporter* says a pious man of its acquaintance lost a deed to his homestead about a year ago. Last week he found it in the family bible.

The Milton correspondent of the *Janesville Gazette* makes the following remarks concerning the practise of cheating in the measurement of cord-wood: The man who sold a poor family in this village three quarters of a cord of wood for a cord, and took a twelve dollar saddle and bridle from the lady of the house in payment for the same, did not lack for cheek, and this circumstance has brought to our mind the proverbial shortcomings of wood sellers. The truth of the matter is that the wood dealers, with but a few rare exceptions, do not scruple at anything as regards short cords or poor quality. It is the duty of purchasers when they buy wood by the cord to get just what they pay for, no more nor less, no man being obliged to pay for a cord unless he gets his full measure. A person who buys coal by the ton does not pay full price for fifteen hundred pounds, and a person who buys wood by the cord ought to get 128 feet and not accept 100 in lieu of a cord. The remedy is in the hands of purchasers, and the law will back them up in getting their rights, and if they had rather be swindled than to

assert their rights, it is nobody's fault but their own.

There were 25 per cent. more logs in the Menominee river on the 1st of January, 1874, than there were a year previous.

Mr. R. Butler, who has a camp at Amicaw Lake, on the Chippewa, has with the assistance of seven men, put in up to January 3, 700,000 feet of logs, and intended to put in 700,000 more this winter.

The want of snow is felt at Two Rivers, and the *Chronicle* says that manufacturers there are in doubt about getting out the usual stock of logs.

One million feet of pine logs and a million feet of hemlock logs will be put in this winter for the Clay Banks sawmill.

The Ashland Lumber Company are progressing finely with their logging operations on the opposite side of the bay. They expect to bank 1,000,000 feet.—*Ashland Press*

Oak wood is worth at Oshkosh \$4 a cord, as against \$5 last year.

The *Oconto Reporter* says the cut of lumber at the Peshtigo mill during last season was 40,000,000 feet. They have on hand 15,000,000 feet of logs and expect to put 25,000,000 during the winter.

The building statistics of Chippewa Falls for 1873 amount to \$300,000; those of Eau Claire foot up \$500,000.

The *Hudson Republican* says a movement is on foot in Pepin county, in order to lessen the county expenses, to have but one jury term each year instead of two, as now. In Pierce and St. Croix counties, where so much complaint is made in regard to court expenses, the same plan may yet be tried.

Mason, Barnes & Co., are keeping their saw mill running at Shawano, and buying all the logs that offer. A man

named Rasmussen had both legs broken at their mill on the 12th ult., but is recovering.

The *Green Bay Gazette* says lumbering prospects are not improving. Snow is wanted badly. Labor in the woods, is in better demand, however, than a month ago.

Lively times on the road from Superior to Bayfield and Ashland, with the two lines of passenger and regular daily trips. The road is in good condition, fair accommodations at the station houses, and the trip a pleasant one.—*Superior Times*.

The *Door County Advocate* says the log crop of the Green Bay region promises to be much smaller than for several winters past, especially if we have only a scant supply of snow during the winter.

Gen. Strong of Chicago, secretary of the Peshtigo Company, was in Peshtigo not long since, on business of the company.

Mr. S. B. Dresser informs the *Polk Co. Press* that there are sixty-two lumber camps on the St. Croix river and its tributaries this winter. This is near the usual number, and it is his opinion that a much larger quantity of logs will be cut during this winter than was contemplated in the fall.

The appropriation for the Fox and Wisconsin rivers improvement is likely to be cut down from \$750,000, the amount asked for, to \$300,000. We do not believe there is either "reform" or economy in the reduction. It is the general opinion that the surest way to solve the freight problem is to improve the water courses of the country. This fact accepted, the improvement should be made as early as possible and the appropriations should be large enough for the purpose.—*Portage City Sale Register*.



Almost every traveler on the upper Mississippi has seen the Indians and their canoes at the mouth of the Trempeleau and Black rivers. A company of U. S. soldiers has been gathering them together and shipping them to the Nebraska reservation. They were very unwilling to go.

The following, as near as the *Oconto Reporter* could ascertain, is the whole amount of lumber manufactured on the Oconto in the following table :

Amount of lumber cut in city	64,021,500
By Comstock & Simpson	8,000,000
By Joseph Lacy	2,000,000
By John Leigh	6,000,000
By Anson Eldred	10,000,000
<b>Total</b>	<b>90,021,500</b>

The track of the Wisconsin Central was completed on the 10th ult. to section 101, and all work suspended for the winter, with the exception of the party at work on the Tote road. This road was cut through, so as to allow the passage of teams, on the 25th of last month.

Work on the Wisconsin Valley railroad, between the Junction and Knowlton, has been entirely suspended. The hands were paid off a few days ago and discharged.

**MENOMINEE RIVER BOOM.**

The capacity of the Menominee River Boom is 150,000,000 feet in logs. During the past five years the Boom company have handled the following amounts :

	Feet.
Amount of logs boomed, (1869)	114,398,810
do do (1870)	95,089,770
do do (1871)	117,342,697
do do (1872)	142,917,228
do do (1873)	122,008,529

The officers of the company owning the boom are :

- H. Ludington, (Milwaukee) President.
- I. Stephenson, (Marinette) Vice President.
- Chas. J. Ellis, (Marinette) Sec'y and Treas.

**DIRECTORS.**

- Harrison Ludington, Milwaukee, Wis.
- Isaac Stephenson, Marinette, Wis.
- Frederick Carney, Marinette, Wis.
- A. C. Merryman, Marinette, Wis.
- S. M. Stephenson, Menominee, Mich.
- Robt. Stephenson, Menominee, Mich.
- O. B. Johnson, Saugatuck Mich.

**LUMBER AT CHEBOYGAN, MICH.**

*From the Cheboygan Independent.*

There were seven saw mills and two shingle mills in operation during the most part of the summer of 1873. We have taken some pains to ascertain the amount of lumber, etc., manufactured at these mills during last summer, and below is the result :

	Lumber.
McArthur, Smith & Co	6,000,000
Thompson Smith	20,000,000
Wm. Smith	4,000,000
Vorce, Baker & Co	2,100,000
Nelson, Strohn & Co	8,000,000
Barclay & Mattoon	6,000,000

In addition to the lumber sawed, the following amount of shingles and lath have been manufactured :

	Lath.
McArthur, Smith & Co	500,000
Thompson Smith	800,000
Nelson, Smith & Co	500,000
	Shingles.
Vorce, Baker & Co	3,000,000
Smith Bros	600,000

We also give in addition to the above amounts, the lumber sawed, held over, and the amount of logs on hand of last year.

	Lumber.
McArthur, Smith & Co	1,900,000
McArthur, Smith & Co	2,500,000
Wm. Smith	400,000
Thompson Smith	11,000,000
Vorce, Baker & Co	607,129
Vorce, Baker & Co	67,860

The mills are located on the Cheboygan river with the exception of Mr. Thompson Smith's, which are located two miles east of this place, at Duncan City, but are reckoned as the mills of this place. These mills did not commence operations until the last of June. The estimate we have made for the cut this winter is, as we have stated, liberal.

Up to the present time there has been cut and banked by two companies, Thompson Smith of Duncan, and Nelson, Strohn & Co. of this place, 2,000,000 feet—1,000,000 each. We have already stated that the stock of logs put in this winter will not exceed one-third the amount put in last winter, and know of nothing that has since transpired to contradict the above estimate.

## MICHIGAN ITEMS.

Mr. W. R. McCormick read a sketch of the settlement and early history of Bay City and Portsmouth, at a meeting of the executive committee of the Pioneer Society at the Fraser House, East Saginaw, on New Years Day. We are indebted to it for several interesting items in this column.

The various members of the Pioneer Society are cordially invited to be present at its annual meeting in the court house of East Saginaw, Saturday, Feb. 21, at 2 P. M.

Judge Albert Miller at the meeting of the committee of the Pioneer Society related an incident of 1847. In that year he was doing business at Portsmouth. His wife, who resided at Saginaw City, soon expressed a desire to remove there, that she might be with her husband. Accordingly he purchased the old Marsac house and began to repair it. He hired a carpenter by the name of Smith Dodge to help him for one week, he paid him for his services in lumber. Dodge purchased a lot where the Campbell House now stands, for \$75, removed his lumber thereto, and so rapidly did the pile grow that he soon had lumber enough to build a public house.

The late James McCormick removed to Portsmouth, in 1841, with his family from above Saginaw. He and his son, the late James J. McCormick, bought an interest in the old Portsmouth saw mill, the only mill at that time there, and commenced the manufacture of lumber. They shipped the first cargo of lumber that ever went out of the Saginaw river. The late James McCormick died in 1864. and his son, James J., died in 1872. He has one son, still living in Bay City, Wm. R. McCormick.

Still no snow! The season is advancing and no logs in for the summer cam-

paign! This beautiful weather which delights everybody else only serves to lengthen the faces of our lumbermen as the prospects for an active season grows more and more dubious.—*Montague Lumberman.*

At Water's lumber camp, on the Gratiot, about seven miles above Alma, some 30 to 35 men are employed at from \$18 to \$25 per month. The force will be increased during sleighing to 40 men. About 3,000,000 feet of logs are expected to be got out there the present winter.

The *St. Louis* (Mich.) *Herald*, speaking of lumbering operations in that vicinity, says:—If the weather proves favorable, the indications are that there will be more lumber camps in operation in this part of the state than the first shock of the panic promised.

In the mining regions the latest industry is said to be an attempt to dry snow and make salt of it.

The *Marquette Mining Journal* calls this a "Local Cinder:" Menominee lumber dealers are figuring on the conundrum whether it pays to plane lumber before shipping it. To tell the plain truth, we don't know anything about it. It's a rough question at present, but we hope they will be able to *smoothe* it all out. In this connection we might state that some of our hash consumers are decidedly averse to the *plain board* now being furnished.

John McEachine and Robert McHaffy, were recently loading logs on a sleigh at Frazer's lumbering location at Cherry Creek, when one log rolled off and caught both men beneath it. McEachine had a leg broken, and the other man was considerably jammed.

A dispatch from East Saginaw, Mich., reports a sad catastrophe by the burning of a dwelling. The dwelling house of Mr. McManagle, in the township of

East Dayton, five miles east of Mayville, Tuscola county, took fire from some cause not known, and was completely destroyed, burning to death the entire family, consisting of Mr. McManagle, his wife, and child. The particulars of this awful catastrophe will probably never be learned, as none were left to tell the tale.

The *Marquette Mining Journal* has a paragraph which will serve for a great many latitudes at this time: The man who will make the cry of hard times an excuse for not paying his bills, when he is abundantly able to do so, is meaner than—well, we can think of anything mean enough but what it rises to a virtue in comparison. But there are lots of just such people in this country at the present time. Men who have money stored away out of sight, and who go about with long faces and dejected countenances, whining away at the scarcity of currency. You mean, dishonest, soulless sneaks, it is just your presence in the community that makes times hard. You who have money, and cling to it like grim death to a sick nigger, and then wonder where all the money is! Pay your debts, and thus enable others to pay theirs; then get up and leave the country. No one will shed tears at your departure. We have sympathy for the honest, unfortunate man, be he rich or poor, who is unable to meet his obligations, but these vampires in human form, who can pay, but take advantage of every means to make creditors wait, are deserving of no sympathy, and certainly will not get it.

The *Farwell Register* says, from parties just down from the Muskegon, we learn that lumbering is going on along that stream unabated. Scott Garrish some days ago had in 1,000,000 feet, and had as many more skidded, and still hauling, though snow was a pretty scarce article. On Monday logs were going over the "plains" with snow about two or three

inches deep, but with excellent bottom Lumbermen believing that an open winter is a sure thing this time, are sending outside for all the teams they can hire, and appear determined to rush things while snow enough remains to make a sleigh track.

About two years ago Stone & Seeley, a lumber firm at Sand Lake Station, 26 miles north of Grand Rapids, on the Indiana Railroad, lost their mill by fire. It was then supposed that an incendiary fired it, but no trace of the villain could be gained. Afterwards their logs were "dogged," that is spikes, etc., were driven in them to break the saws. This was probably done by the same villain. On the night of the 9th ult. their lumber in the yard was discovered to be on fire. They had 3,000,000 feet burned, and Beaver, Miller & Co., adjoining, had rather more destroyed. At one time the fire threatened to destroy their mill, and help was asked from Grand Rapids, but could not be sent, as engines are not allowed to go from there except upon requisition from the authorities of a village or city in danger of a general conflagration. The mill was saved, but the total loss is \$100,000, on which there is but \$80,000 of insurance, about equally divided.

The annual meeting of the Bad River Boom Company was held at Saginaw City on the 12th ult., at which time the following officers and directors were elected for the ensuing year: President, E. J. Ring; Secretary and Treasurer, R. J. Carney; Directors, E. J. Ring, R. J. Carney, J. F. Burnham, J. T. Lyons, N. B. Bradley. The quantity of logs rafted by the Bad River Boom Company for the past year amounted to 37,000,000.

The annual meeting of the stockholders of the Tittabawassee Boom Co., was held on the 14th ult., in the office of the company. The meeting was called to order by the president. The roll of the

stockholders was then called and stockholders representing 769 shares were found to be present. The president then presented his annual report which was read by the secretary, and which was accepted. The following directors were chosen: A. W. Wright, John Moore, Sewell Avery, W. R. Burt, C. H. Davis, Newell Barnard. The new board then met and proceeded to elect officers. President, A. W. Wright; Treasurer, John Moore; Secretary, C. H. Davis.

The people of Eagle Harbor are again before Congress with a petition, asking an appropriation of \$150,000 for improving the entrance to that port, and rendering it accessible to vessels of all descriptions.

The total amount of lumber cut in western Michigan during the year 1873 is stated at 1,106,876,763 feet—including the Saginaw valley the cut is estimated at 2,350,000,000 feet.

The Kirby Carpenter Co., of Menominee have given the subject of planing lumber before shipping a very thorough trial during the past year, and have decided it in the affirmative. In the first place the work is done at Chicago prices, and there are men who will contract to plane all the lumber manufactured on the Menominee at the same figures. They thus save about  $\frac{1}{3}$  bulk in freighting, they save in dock room in Chicago, and their product is ready for market when it reaches the yard. The company mentioned, estimate that they save from 35 to 50 cents per thousand on all lumber planed here this season, and if this can be done on the entire product, it is certainly worth looking after.

Thus far this winter we have been spared the recording of the list of accidents in the lumber regions, owing to the limited operations. Still there is occasionally an accident, and one of the most painful that we have heard of oc-

curred yesterday at the lumber camp of Tim Nester, on the north branch of the Tobacco River. Edward Casey, the unfortunate victim, was engaged in cutting a pine tree, when it lodged against a dead tree, which breaking off fell, and before Casey could get out of the way, it struck him on the head, crushing him to the earth and producing instant death.—*East Saginaw Enterprise.*

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#### GLYCERINE FOR STEAM BOILERS.

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The manufacture of glycerine has of late, in view of the constantly extending importance in the arts, been greatly expanded. During the past year the production of the United States alone reached 2,000,000 lbs., of which one firm in Cincinnati manufactured one half. In a communication addressed to the French society of civil engineers, M. Austin has highly recommended the employment of this substance as an anti-incrustator in steam boilers. Glycerine, which is soluble, in all proportions, in water, appears, according to M. Austin, to increase very notably the solubility of lime salts, to which the evils of incrustations in boilers are mainly ascribable; indeed, according to the author, it really forms with them a soluble compound. When the lime salts accumulate to such an extent as to be no longer soluble in the glycerine present, they are deposited in the form of a gelatinous sediment, which does not adhere to the boiler surface. M. Austin recommends the employment of one pound of glycerine to every three or four hundred pounds of coal burnt. From actual trials made with the material, it is declared in the communication that the employment of glycerine for this purpose, and in the manner above described, proved successful.—*Technologist.*

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The amount of lumber now on hand in the Milwaukee Market is at least 50,000,000 feet.

## THE KILBOURN DAM IN COURT.

The next phase of the controversy between the entire lumbering interest of the Wisconsin and the Yellow rivers and a one-horse grist mill at Kilbourn City, will be in the United States circuit court of the western district of Wisconsin sitting at Madison this month. The controversy is an old one and its merits are familiar to every well-informed lumberman in the northwest. The battle has been fought with many weapons and on many fields; and many a hardy lumberman of "the old Wisconsin" can use the words which Æneas used in speaking of the wars of ancient Troy—"all of which I saw and part of which I was."

This dispute came into the United States court of the eastern district, at an early stage. The injurious character of the dam had not then been proved, and Judge Miller signified his unwillingness to decide that it was a nuisance beforehand. The case was dismissed on some technicality—the failure to join all the proper parties in the suit, we believe—and has rested ever since, so far as the courts are concerned.

There are now pending five suits relating to this matter. Two are in favor of Messrs. Bradford, McCoy & Co. of Quincy, Ill., in the United States court for the western district; two in favor of John T. Kingston of Necedah, Wis., and one in favor of George H. Burch, in the circuit court of Columbia county. The suits of Messrs. Bradford, McCoy & Co. are to be tried in Madison about the middle of this month; the remainder will not come on until May. All of these suits have the same ends in view—which are, first, to have the Kilbourn dam declared a nuisance and ordered to be torn down, and, second, to compel its owners to pay the plaintiffs for the damage it has caused them in detaining and breaking up their rafts. The defending parties in each instance are the "Kilbourn Mill Co.," the

"Kilbourn Manufacturing Co.," and G. J. Hansen, Theodore Hansen, Oscar Hansen, George Ribenack and George Litner. The attorneys for Messrs. Bradford, McCoy & Co. are Messrs. G. C. Prentiss and M. P. Wing, of Portage, who have employed Messrs. Cottrill & Cary of this city as counsel. Messrs. Gregory & Pinney, of Madison, are attorneys for the defendants.

Mr. Jed. Cottrill, one of the shrewdest and most popular lawyers of Milwaukee, has charge of the case for the plaintiffs. The case is one of great importance, as its determination for the plaintiffs would establish a large number of similar claims for damages, amounting to many thousand dollars and would effectually rid the great natural highway of Wisconsin of this intolerable obstruction. The trial will occupy several days, will involve the examination of about twenty witnesses on a side, and will attract to Madison a large audience of lumbermen from Wisconsin and many points on the Mississippi river.

We are not of course, at liberty to anticipate the argument of Mr. Cottrill, of which a full report may be expected in the next number of the WISCONSIN LUMBERMAN. Mr. Cottrill relies on that portion of the famous ordinance of 1787, which was incorporated in the constitution of Wisconsin, declaring all navigable streams highways and "forever free" for the purposes of commerce, and upon the various statutes of the state relating thereto, all of which have been notoriously infringed by the erection and operation of the Kilbourn dam.

Lumbermen of the whole northwest will feel grateful to Messrs. Bradford, McCoy & Co. for making this good fight for the common cause, will observe its progress with interest, and will hail its issue with satisfaction.

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For advertising rates of the WISCONSIN LUMBERMAN, see second page of cover.

**MILWAUKEE MERCHANTS AND THE LUMBERING TRADE.**

A hurried tour among the leading wholesale houses of Milwaukee that deal extensively with lumbermen—just as we go to press—assures us of a generally stronger tone in all the northwestern pineries and the expectation of a prosperous summer for this trade, after the winter of its discontent.

Mr. Allen Johnson, a member of the long-established grocery house of Goodrich, Terry & Co., has during the past month visited the principal pineries of Wisconsin and Michigan. He estimates that not over a quarter to a third of the usual crop of logs will be put in, and considers this a hopeful omen for the trade. The want of money is more severely felt in the Michigan than in the Wisconsin pineries, for the reason that Michigan lumbermen are largely confined to the market of Chicago and have had to sell at a regular loss, while Wisconsin lumbermen take advantage of the whole Mississippi valley and have usually realized more than cost on what they have sold.

Messrs. Mann, Beals & Co., the enterprising boot and shoe house, were found in a cheerful frame of mind, and expressed the disappointment they had felt in lately receiving large remittances of cash from lumbermen whom they had hardly expected to pay before next summer.

Mr. H. C. Stayner, of F. W. Ambler & Co., the widely-known hat and cap jobbers, visits the various pineries of Wisconsin frequently, and reports the prospect of a "sound, moderate healthy business among lumbermen the coming season." He believes that the predictions of the WISCONSIN LUMBERMAN are about to be realized, and that the season's supply of timber is to be so much less than the consumption as to bring fair prices and a brisk market for the whole stock on hand. It is the opinion of Mr. Stayner that the larger manufacturers

find themselves so much extended that they do not feel like paying out a dollar where they can help it, while those who have done a smaller and closer business are rapidly getting into better shape and are paying their debts in advance of the expectations entertained by their creditors earlier in the winter.

Messrs. H. Bosworth's & Son's old drug house, reports a greatly improved tone among lumbermen, and the settlement of a good many accounts, especially in Wisconsin.

Messrs. Ricker, Crombie & Co., quoted a letter from Mr. D. J. Spaulding, the large lumberman of Black River Falls, predicting easy times and a sound trade within a short period. Mr. Charles Goss, a representative of this house, who travels exclusively in the valley of the Wisconsin river, is the most emphatic of all whom we have consulted in predicting plenty of money and good prices for their product among lumbermen the coming season. He argues that those merchants who have carried this class of trade through all its reverses and are now getting discouraged and proposing to neglect it, will presently discover their mistake.

Mr. A. P. Redfield, of the shelf-hardware house of K. & A. G. Sexton, reports an already increased demand for nails by reason of the unprecedented purchases of lumber the past winter by farmers in all parts of the country. Dealers who have been accustomed to take 50 keg lots are calling for 200 kegs. He is advised that stocks in the hands of lumber dealers have been reduced at an enormous rate.

C. Shepard & Co., wholesale hardware merchants, who have sold the lumbering trade very largely, both in Michigan and Northern Wisconsin, for a number of years, they are much better satisfied with the prospects of their trade in lumber districts, than they have been at any time during the past year. Accounts are in much better shape than last winter.

Dealers are getting in better condition to meet their obligations. Nearly all of their customers have written expressing their confidence in their ability to square up early next spring. The hard times that lumbermen have had for the past few years has cautioned them to do business more prudently and the lesson is one that will exert a most beneficial influence on this trade generally.

We present these reports just as we have received them. We find only one tenor to them all. That is certainly very encouraging. While it shows that the merchants of Milwaukee have increased confidence in the class of trade which they have handsomely supported through unprecedented trials, it is a trustworthy omen of the approach of a brighter epoch, when the obligations will be on the other side and the patronage of lumbermen will be sought by merchants as the most desirable of any in the northwest.

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#### PROPOSED REPEAL OF THE YELLOW RIVER BOOM BILL.

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Concerning the proposed repeal of the Yellow River Boom bill, the *Eau Claire Free Press* makes the following comments, which are entitled to a hearing:

With all due deference to our logging friends who are anxious to have the Yellow River boom bill wiped out, we would say, we hope it will not be done—rather modified in such a manner as will be just and equitable to all parties. The manufacturing interest is the basis of our wealth in this valley. It is for the interest of all citizens to have the pine on the Chippewa and its tributaries manufactured in the valley, hence the manufacturers should have a reasonable encouragement in this direction. Who is there that has not seen year after year the manufacturers investing their surplus, more and more, in improvements so as to enable them to continue and expand their business and, as often as the spring rolls around, a large share of these improvements, more or less damaged by the elements? These improvements have come to a comparative substantia-

lity, only by the expenditure of hundreds of thousands of dollars, and in these improvements lies the prosperity and back bone, of not only Eau Claire, but Chippewa Falls. We further state that the principle, embodied in the Yellow River bill, is correct. That where parties expend considerable sums to improve the "driving and holding" on a stream and if this is absolutely done, and others enjoy the benefits therefrom, they should be compelled to bear some of its burdens.

The powers granted in the Yellow river bill may be too great, and we think they are—that the toll is too large; that perhaps some other features need modification—then let it be a modification, and an equitable one, not a wrong, as would be the case to repeal the bill.

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Governor Taylor has appointed as land agents for the state of Wisconsin Hon. Pat. Walch, of Milwaukee, Mr. Leffingwell of Columbia county, Mr. James M. Burgess, of Rock, and Mr. Freese of Winnebago. These appointments, as usual, seem to have been made on the *lucus a non lucendo* principle—if the reader will pardon this familiar Latin quotation, which freely translated means, always ask a man to do that about which he knows as little as possible.

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It is very much to be hoped that congress will grant the extension of two years asked on the grant for the building of the Sturgeon Bay canal. The canal cuts off about one hundred and fifty miles of very dangerous navigation and will be of great benefit to the lumber and shipping interest of northwestern Wisconsin. Though 200,000 acres were granted to aid the work in 1866, nothing was done until year before last, when Mr. Wm. B. Ogdan advanced money to start the work. The extraordinary intervention of the panic affords sufficient ground, were no other to be found in the peculiar importance of this work, for the extension that is sought.

## WHERE SOME OF MICHIGAN'S LUMBER, GOES TO.

From the Saginaw Enterprise:

Time was when nearly all the lumber, shingles, etc., shipped from the Saginaw River to lower Lake Erie ports went to Buffalo. Of late years however, the advantages of Tonawanda as a distributing point for lumber, etc., have become known to our shippers, and in consequence the shipments to that point have largely increased, and now exceed those to Buffalo. The originator of this trade and the first to put our Saginaw lumbermen in possession of the importance of Tonawanda as a shipping point for their products was Mr. John A. McDougal, an extensive lumberman, and to him the honor belongs. The following statement of the business at Tonawanda during the season 1873, from the Buffalo Courier, will be perused with interest by many of our lumbermen and shippers.

## DUTIES.

The duties collected at the port of Tonawanda, District of Buffalo Creek, for the year 1873, were:

Duties in coin.....	\$10,323 18
“ currency.....	1,174 01
Total.....	\$11,497 19
Collected at the port of Tonawanda in the District of Niagara, for the year 1873:	
Duties in coin.....	\$835 46
“ currency.....	239 70
Total.....	\$1,125 16
Total coin.....	\$11,208 64
“ currency.....	1,414 71
Grand total.....	\$12,622 35

## VESSELS ENTERED AND CLEARED.

Number of vessels that entered and cleared from the District of Buffalo Creek port of Tonawanda, during the season of 1873:

American vessels in coastwise trade entered.....	313
“ “ “ “ cleared.....	328
“ “ entered from foreign ports... 32	
“ “ cleared for “ “ .. 19	
Foreign vessels entered.....	46
“ “ cleared.....	46
Total.....	784
Total number entered.....	391
“ “ cleared.....	393
Total.....	784

District of Niagara, port of Tonawanda:

American vessels in coastwise trade entered.....	128
“ “ “ “ cleared.....	132
Foreign vessels entered.....	24
“ “ cleared.....	23
Total.....	307
Total number entered.....	152
“ “ cleared.....	155
Total.....	307

The total receipts at the port of Tonawanda, in the District of Buffalo Creek, were:

Sawed lumber, feet.....	79,500,000
Round saw logs, feet.....	37,400,000
Square timber, cubic feet.....	3,210,000
Lath.....	814,000
Hoops.....	616,000
Shingles.....	726,000

The total receipts in the District of Niagara, port of Tonawanda, were:

Lumber, feet.....	25,400,000
Staves.....	502,090
Hoops.....	614,000
Lath.....	444,000
Shingles.....	386,000
Tons, iron ore.....	16,500
Cords, stone.....	273
Total—Lumber, feet.....	104,900,000
Logs, feet.....	37,400,000
Square timber, cubic feet.....	3,210,000
Lath, No.....	1,255,000
Hoops, No.....	1,230,000
Shingles, No.....	1,112,000
Staves, No.....	502,060
Iron ore, tons.....	16,500
Stone, cords.....	273

## LOGS AT ALPENA.

A correspondent at Alpena sends us the following estimate of the log crop, old and new, at Alpena for the season of 1874:

	Feet.
Old logs.....	40,500,000
New logs.....	46,508,000
Total.....	87,008,000

The new logs that are being got in by parties, in detail, are as follows:

A. Peck & Co.....	8,500,000
F. W. Gilchrist.....	2,000,000
Richardson, Avery & Co.....	5,000,000
Falkerts & Butterfield.....	4,000,000
Hough, Hillard & Co.....	4,000,000
Berwick, Comstock & Co.....	2,000,000
J. S. Miner.....	5,000,000
Campbell, Porter & Co.....	3,000,000
B. Cushman & Co.....	1,090,000
A. F. Fletcher & Co.....	1,000,000
Geo. Prentice & Co.....	4,000,000
P. Cicero.....	1,000,000
A. N. Spratt.....	2,000,000
H. R. Morse.....	2,000,009
Richardson & McMasters.....	2,000,000
D. H. Holmes.....	2,000,000
Odd Lots.....	3,000,000
—Saginaw Enterprise.	

The last edition of the WISCONSIN LUMBERMAN, comprising 3,000 copies, was entirely exhausted the 18th of January, not even the usual "file" being reserved.



GAN SHIPMENTS BY RAIL.

Partial Statement of the Shipments over the Jackson, Lansing & Saginaw Railroad.

From the Saginaw Courier.

We are indebted to the courtesy of W. H. Hopper, who has charge of the freight department of the northern division of the J. L. & S. Railroad, for the subjoined statement showing the shipments from the stations north, including the East Saginaw station, during 1873. The exhibit is only a partial one for the road, but will give a fair idea of its business. The shipments are given by car loads :

	Lumber.	Shingles.	Lath.	Hoops.	Salt.
East Saginaw..	558	34	29	6	543
Zilwaukie .....	4	—	—	—	386
Wenona .....	2,351	84	38	14	274
Kawawlin....	1,260	13	28	22	—
Terry.....	138	—	1	18	—
Pinconning....	744	8	23	1	—
Standish. ....	650	250	50	20	—
Deep River....	415	6	22	3	—
Wells .....	386	4	—	—	—
West Branch..	241	145	6	—	—
Otego.....	—	3	—	—	—
	1,742	547	187	84	1,153

There was also shipped from Wenona, 156 cars of plaster, from Standish 28 cars of telegraph poles, and from West Branch 688 cars of logs. Reduced to feet, etc., the totals above would show the following quantities for the stations enumerated :

Lumber, ft.....	53,936,000
Shingles.....	24,615,000
Lath.....	8,415,000
Hoops.....	3,780,000
Salt, bbls.....	80,920

Among the other stations included in the Saginaw valley are Chesaning, St. Charles, Tittabawassee and Saginaw City, which we expect to be able to give shipments from within a few days.

Senator Barron has introduced in the Wisconsin legislature a memorial which has passed the senate and is at this writing before the assembly, asking congress to provide for a preliminary survey of the country between the St. Croix river and Lake Superior with reference to the construction of a ship canal. Senator Donnelly has proposed a similar memorial in the legislature of Minnesota.

IEWS OF J. G. THORP.

Mr. J. G. Thorp, a prominent member of the Eau Claire Lumber Company, writes to the *Eau Claire Free Press*, from Bergen, Norway, an interesting letter, which was crowded out of our last issue. Concerning the death of Mr. N. C. Chapman, of St. Louis, he says :

To keep good my promise, I will again write you, feeling that I have friends in Eau Claire who will be glad to know that I still live though far away—yet not so far away but that telegrams suddenly announce that he whom I last saw and heard from, in strong and vigorous health, is no more. "Died yesterday!" and then, after waiting twenty days we receive by mail the particulars. It is not easy to fill the place of such a man as N. C. Chapman. The family chair will ever remain vacant and his place never be filled. Our company has also lost, as it were, the active moving power. But such is the uncertainty of life and human affairs. Death comes, and these most useful and needed are called, we trust, to a better life, where their characters will have fuller and wider scope. Soon shall we follow, but while life here remains let us continue our activity and usefulness so far as possible. This is our duty, and also our pleasure, if we take the right view of it.

His views of the railroad interests of Wisconsin are prudent and sound, and merit particular attention at this time :

You are still talking, I see, over railroads and land grants. But the legislature will have the opportunity the coming session to pass another law, and whether the Chippewa valley comes in for a share remains to be seen. Chippewa Falls go in for themselves to secure the branch to Eau Claire, and that is natural, but the county refuses to be taxed for it, and in that refusal there is wisdom. Experience of other portions of the state should be sufficient to keep them from it, and I hope the amendment of the constitution will have a large majority this fall, so that a limit to taxation for all such purposes will be fixed.

I hope that a good legislature will be elected, and that in their actions wise counsel may prevail, so that extremes may not be in the ascendancy. That our railway companies are becoming huge and fearful monopolies in the country and in our own state is very evident. We should have laws controlling and governing them against extortionate rates and compelling fair connections for freight and passengers between the different lines.

I have always thought that a board of commissioners to look after all these difficult things would be well for the railroads and the people. While the people have rights to be guarded, the railways have also rights to be respected, and the capital so largely invested protected; and encourage such further outlay as is needed in our state.

## LUMBER MARKET.

## Milwaukee Market.

MILWAUKEE, Feb. 2d, 1874.

During the last two weeks local trade has been active at Milwaukee yards, even beyond the expectations of the most hopeful dealers. The spring shipping trade has fairly commenced and in line of fencing and common boards the demand is fully up to the average of former seasons. The prospects for a busy spring season are at least more favorable than most dealers dared to hope for, and a general firmness in the market is the result. The season has really commenced under favorable auspices and with several indications that the spring trade will be very active. As yet yard prices remain unchanged and we quote as follows :

Common boards.....	13 00@
Joist and Scantling, 12 by 16 ft.....	18 00@
do do 18 ft.....	14 00@
do do 20 ft.....	15 00@
do do 22 to 24 ft.....	17 00@
Fencing.....	13 00@
1st and 2d clear dressed siding.....	25 00@
1st com. do do.....	20 00@
2d com. do do.....	16 00@
1st com. flooring.....	35 00@
2d do do.....	30 00@
3d do do.....	25 00@
1st and 2d clear boards.....	45 00@
3d do do.....	35 00@
Narrow select finishing boards.....	28 00@30 00
Wide select com.....	20 00@
1st and 2d clear 1½, 1½ and 2 inch.....	47 00@50 00
3i clear do.....	35 00@38 00
Wagon Box Boards.....	30 00@35 00
A stock do.....	35 00@
B do do.....	25 00@
C do do.....	@18 00
Square pickets.....	14 00@
Flat pickets.....	@13 00
Lath ¾ M pieces.....	2 75@3 00
A shingles, ¾ M.....	3 50@
No. 1 do do.....	1 50@2 20
Timber, 18 to 22 ft.....	15 00@18 00
Timber, 24 ft and over.....	18 00@35 00

## Chicago.

The annual report of the secretary of the *Lumberman's Exchange* shows that while the receipts of 1873 are over sixty millions less than the re-

ceipts of 1872, yet there is now a stock of lumber on hand of 5,934,510 feet in excess of January 1st, 1873. The decrease of amount of shingles on hand Jan. 1st, 1874, as compared with Jan. 1st, 1873, is 10,759,000, but the same report also shows that the receipts of shingles in 1872 exceeded those of 1873 by 92,901,000; indicating a large falling off of the shingle trade in this particular market. The season for the commencement of the spring trade is at hand and is marked with fair activity, but as yet with no increase of prices. We quote yard rates as follows :

First and second clear.....	\$50 00@55 00
Second clear, 1 to 2 in.....	47 00@50 00
Third clear, 1½ to 2 in.....	45 00@48 00
Third clear, 1 in.....	38 00@40 00
Select, 1 in.....	25 00@35 00
Wagon-box boards, 13 in. and upward, select.....	35 00@40 00
Stock boards, A.....	36 00@38 00
Stock boards, B.....	27 00@30 00
Stock boards, C.....	15 00@17 00
Common boards, joist and scantling, 12 to 16 ft.....	12 00@13 00
Fencing.....	12 00@13 00
Joist and scantling, 18 to 20 ft.....	14 00@16 00
Joist, 22 and 24 ft.....	16 00@18 00
Flooring, first and second clear.....	43 00
Flooring, first common, rough.....	33 00@36 00
Flooring, second common, dressed.....	26 00@30 00
Siding, first and second clear, dressed.....	23 00
Siding, common, dressed.....	18 00@20 00
TIMBER—Sawed, 12 to 16 ft.....	12 00@13 00
Square pickets.....	18 00@15 00
Flat pickets.....	12 00@13 00
SHINGLES—Sawed A ¾ M.....	3 50@3 75
LATH.....	2 25@2 50

Hardwood lumber is quoted at the annexed prices :

Black walnut, counter tops.....	\$100 00@150 00
do clear.....	70 00@85 00
do common.....	40 00@50 00
do cull.....	25 00@35 00
do flooring.....	55 00@70 00
Ash, clear.....	28 00@40 00
do common.....	16 00@25 00
do cull.....	10 00@15 00
Oak, clear.....	28 00@40 00
do common.....	18 00@25 00
do cull.....	14 00@15 00
Hickory, clear.....	30 00@45 00
do common.....	25 00@35 00
do cull.....	12 00@18 00
Maple, clear.....	25 00@35 00
do common.....	18 00@25 00
do cull.....	10 00@15 00
Butternut, clear.....	40 00@50 00
do common.....	25 00@35 00
Cherry, clear.....	40 00@60 00
do common.....	20 00@30 00
do cull.....	12 00@18 00
Whitewood, clear.....	30 00@40 00
do common.....	20 00@25 00
do cull.....	12 00@18 00

**WAGON STOCK—**

Hickory axles, per set.....	1 00@ 1 50
Wagon poles, each.....	45@ 63
Box boards.....	30 00@ 40 00

ON TRACK—Shingles on cars were held at unchanged prices. We quote:

A or Star.....	\$ 3 25
No. 1 sawed.....	1 25@1 50

Three dollars per car to be added when transferred, which charge follows the shingles.

Thickness—Five shingles to be two inches in thickness.  
Length—Sixteen inches.

**ST LOUIS MARKET.**

**METHUDY & MEYER'S REPORT.**

St. Louis, Mo., Jan. 1874.

We quote the range for depot and levee lots: Yellow pine flooring—3d rate at \$12@16; green 2d and clear do at \$24@25; dry do at \$26@27; yellow pine mill-run dimension at \$14@15; poplar at \$17@20 for mill-run boards and strips—2d and clear do at \$21@23, 3d rate at \$12@15; black walnut at \$20@25 to \$30 for inferior to fair. \$35@40 for good to prime—choice would command higher figures; oak at \$20@23; ash at \$23@27; hickory at \$25@35; sawed cedar timber at \$27@30; cedar posts at \$25@30 per 100; walnut table legs sell at 16@20c per set. Special orders filled at higher rates.

**Yard Rates—WHITE PINE.**

1st clear, inch.....	\$66 00@65 00
do thick.....	65 00@66 00
2d clear, inch.....	50 00@52 50
do thick.....	50 00@55 00
Star lumber, inch.....	35 00@37 50
do thick.....	38 00@40 00
A stock.....	40 00@42 50
B do.....	25 00@27 50
A box.....	40 00@45 00
B box.....	30 00
Common boards.....	16 00@18 00
Fencing.....	16 00@18 00
Sheathing.....	12 00@13 00
Grub plank.....	12 00@13 00
Joist and scantling, 12 and 14 ft.....	16 00@18 00
do do 16 ft.....	16 00@18 00
do do 18 and 20 ft.....	18 00@20 00
do do 22 and 24 ft.....	22 00@24 00
Clear flooring, count.....	47 50@50 00
2d clear flooring, count.....	39 00@40 00
Common flooring, count.....	29 00@30 00
Clear siding.....	24 00
2d clear siding.....	22 00@22 50
Common do.....	16 00@17 50

**YELLOW PINE.**

Clear flooring.....	47 50@50 50
2d clear flooring.....	36 00@40 00
Common do.....	26 00@27 00

**POPLAR.**

1st and 2d clear boards and planks.....	37 50@40 00
Common do do.....	25 00@26 00

**SHINGLES, LATH, ETC.**

Star shaved.....	5 00
Star sawed.....	4 00
No. 1 sawed.....	2 25@ 3 00
Lath.....	3 00
Pickets, 4 ft.....	15 00

**CAR-LOAD RATES.**

A shingles.....	3 90
Lath.....	3 00

**Saginaw, Michigan Market.**

January price list of rough and dressed lumber delivered at the yard of Charles Lee, corner of Hoyt and Water streets.

**ROUGH LUMBER.**

Three upper qualities.....	\$34 00
Common boards.....	12 00
do 12 inch stock boards.....	12 50
Fencing strips.....	10 00
Cull boards.....	6 00
Timber, joist and scantling 12 to 18 ft.....	10 00
do do do 18 to 22 ft.....	12 09
do do do 22 to 26 ft.....	15 00
Lath.....	2 00

**DRESSED LUMBER.**

Siding No. 1 clear.....	21 00
" No. 2.....	18 00
" No. 3.....	14 00
Flooring No. 1, 6 in.....	26 00
" No. 2, ".....	20 00
Ceiling No. 1, clear.....	40 00
" No. 2.....	30 00
" No. 3.....	20 00
Clear boards, s 1 side, 7 to 20 in.....	40 00
No. 2 " " ".....	30 00
Select " " ".....	25 00
Common " " ".....	17 00

**Albany Market.**

The receipts at Albany during the seasons of 1872 and 1873 were:

	1872.	1873.
Boards and scantling ft.....	431,348,700	346,679,800
Shingles, M.....	12,602	12,362
Timber, ft.....	2,800	12
Staves, lbs.....	7,878,600	4,860,000

The receipts at tide-water during the seasons of 1872 and 1873 were:

	1872.	1873.
Boards and scantling ft.....	739,367,100	579,387,600
Shingles, M.....	25,409	15,430
Timber, ft.....	1,489,522	1,133,466
Staves, lbs.....	200,430,400	208,660,100

It was estimated that the stock of lumber on hand in this market on January 1st, 1874, was from 85,000,000 to 90,000,000 feet; on January 1st, 1873, it was 110,000,000 feet; January 1st, 1872, it was 86,000,000 feet; 1st January, 1871, it was 90,000,000 feet.

The current quotations at the yards at the close were as given below, though it is generally understood that sales were made of low grades of pine below the published quotations. And the closing quotations of the season, as has been the result of observation of previous seasons, remain unchanged until the opening of navigation.

Clear per M feet.....	\$58 00@60 00
Fourth quality, per M feet.....	53 00@ 55 00
Select, per M feet.....	48 00@ 50 00
Good box, per M feet.....	23 00@ 26 00
Common box, per M feet.....	16 00@ 20 00
Clapboard, stripes, per M feet.....	50 00@ 53 00
10 inch plank, each.....	43@ 46
10 inch plank, culls, each.....	25@ 28
10 inch boards, each.....	27@ 29
10 inch boards, culls, each.....	18@ 20
10 inch boards, 16 feet, per M ft.....	26 00@ 28 00
12 inch boards, 16 feet, per M ft.....	28 00@ 30 00
12 inch boards, 18 feet, per M ft.....	26 00@ 28 00
1 1/2 inch siding, per M feet.....	31 00@ 34 00
1 1/2 inch siding, selected, per M ft.....	40 00@ 45 00
1 1/2 inch siding, common, per M ft.....	19 00@ 21 00
1 inch siding, per M feet.....	25 00@ 30 00
1 inch siding, selected, per M feet.....	38 00@ 42 00
1 inch siding, common, per M feet.....	18 00@ 20 00

CHICAGO,  
MILWAUKEE & ST. PAUL  
RAILWAY.

THE ONLY THROUGH LINE

BETWEEN

MINNEAPOLIS,  
ST. PAUL,  
MILWAUKEE  
And CHICAGO.

AND THE ONLY RAILWAY LINE

Traversing the Valley of the Upper  
Mississippi River,

AND

ALONG the SHORE of LAKE PEPIN.

This Route passes through more Summer  
Resorts and Business Centers than  
any other Northwestern line.

THROUGH PALACE COACHES

AND

SLEEPING CARS

On all Through Trains, without change.

Connecting in Minneapolis and St. Paul with  
the several lines centering at those points.  
St. Paul Depot, corner of Jackson and Levee. City  
Office, corner Third and Jackson Streets.

Connecting in Chicago with all routes for the  
East, South and Southwest.  
Chicago Depot, corner Canal and West Madison  
Streets. City Office, 61 and 63 Clark Street.

Connecting in Milwaukee with Western Union  
and Wisconsin Central and other Divisions. Also  
other Divisions of this Road.

A. V. H. CARPENTER,  
Gen'l Pass. and Ticket Agent.

S. LINDLEY,

GREEN BAY, WIS.

SAW REPAIRER AND FURNISHER.

All kinds of Saws Gummed and Straightened, and  
made as good as new. When sending Circulars, it is  
necessary to mark the log side of the saw, or send  
instructions in regard to it. All orders promptly  
attended to. Agent for Henry Diston & Co.'s celebra-  
ted Saws. A full stock of Saws constantly on  
hand.

HOWARD FOUNDRY AND MACHINE WORKS

TAYLOR & DUNCAN,

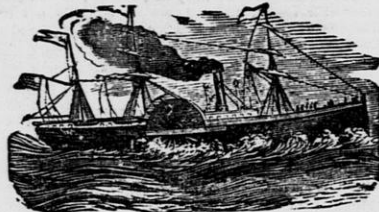
Manufacturers of Steam Engines,  
Blowing Engines, Mill and Blast Furnace Machinery,  
Iron and Brass Castings, &c.

FORT HOWARD, WISCONSIN.

INMAN LINE

Royal Mail Steamers

TO AND FROM LIVERPOOL, CALLING AT  
QUEENSTOWN.



City of Brooklyn..... Saturday, Jan. 17, at 2 P. M.  
City of Brussels..... Saturday, Jan. 24, at 10 A. M.  
City of Montreal..... Saturday, Jan. 31, at 2 P. M.  
City of Chester..... Saturday, Feb. 7, at 9 A. M.  
City of New York..... Saturday, Feb. 14, at 2 P. M.  
City of Antwerp..... Saturday, Feb. 25, at 9 A. M.

And every following Thursday and Saturday, from  
Pier 45, North River, New York.

RATES OF PASSAGE.

CABIN—payable in gold..... \$70 \$80 \$90

EXCURSION TICKETS at reduced rates.

STORAGE—To Queenstown, Liverpool, Glasgow,  
Londerry, London, Cardiff or Bristol, Hamburg and  
Havre, \$30 currency.

Prepaid Certificates from above ports, \$32 currency

Sight Drafts on Great Britain and Ireland for sale

ROUND TRIP TICKETS.

	Inside room.	Outside room.
Queenstown or Liverpool.....	\$140 gold	\$160 gold
London.....	150 "	170 "
Paris.....	170 "	190 "
Hamburg, Antwerp, Havre, etc.	160 "	180 "

For further information apply at the Company's  
Offices:

Liverpool... Wm. Inman, 62 and 63 Tower Buildings.  
London..... Eves & Allen, 61 King William Street.  
Paris..... H. Keene, No. 9 Rue Scribe

Apply to JOHN G. DALE, Agent, 15 Broadway,  
New York, or to

LOUIS AUER & CO., 2d Ward Bank Building.  
LOUIS RIEDT, 333 Grove Street.  
THOS. FORBES, Newhall House.  
HARRY PRADFORD, D. & M. R. R. Office,  
Milwaukee, Wis.

# Milwaukee Thermo Therapea.



MILWAUKEE THERMO THERAPEA

Comprising all the appliances of a first-class Water Cure, with the Electro-Thermal and Turkish Bath  
wedish Movements, Health Lift, &c. The only Turkish and Electro-Thermal Bath in the City.

## BOARD AND TREATMENT AT THE CURE.

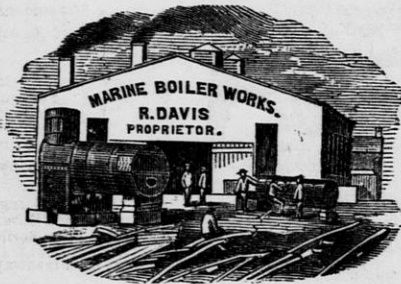
S. P. HANSON, M. D. } PROPRIETORS.  
GEORGE J. ROGER. }

Send for Pamphlet.

This institution has, within the last six years, treated with wonderful success, over five thousand patients representing nearly all classes of diseases, Chronic and Acute. A large portion of them of long standing, in which other means had failed, such as Rheumatism, Gout, Dyspepsia, Scrofula, Local and General Dropsy, t. Vitus' Dance, Asthma, Bronchitis, Chloroia, and all Female Weakness, Contracted Limbs, Constitutional syphilis, Bright's Disease of the Kidneys, and Diabetes Diseases of the Lungs and Air Passages, the Liver, the Womb, the Heart, the Head and also the Skin.

# Marine Boiler Works

LAKE STREET, MILWAUKEE, WISCONSIN



## R. DAVIS,

MANUFACTURER OF

HIGH AND LOW PRESSURE

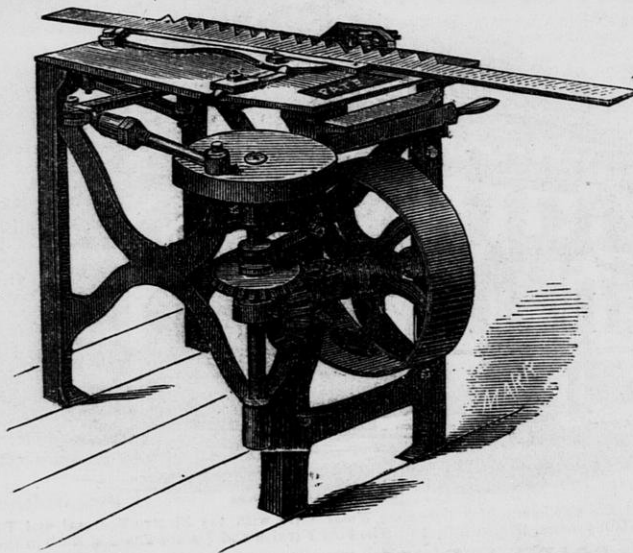
## Steam Boilers,

## LARD & OIL TANKS,

and Sheet Iron Work in General.

Particular attention paid to repairs. Orders solicited and promptly executed.

# HINKLEY'S POWER SWAGING MACHINE.



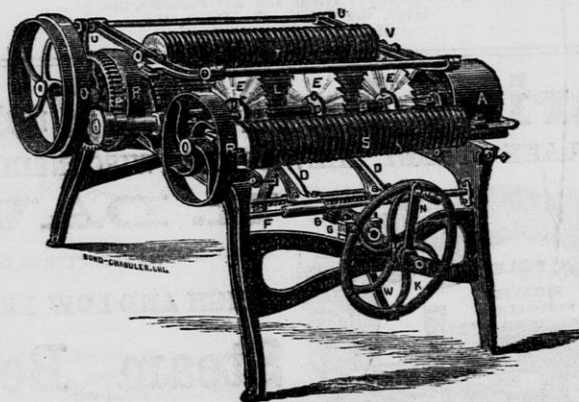
Address G. M. HINKLEY, care E. P. Allis & Co., Milwaukee.

## O. L. PACKARD, Milwaukee, Wis.

**SAW MILLS,**

Gang Lath Mills,

SHINGLE and HEADING MACHINERY,



Surfacters, Planers, and Matchers,

EMERY SAW GUMMERS,

STONE'S BURE GUMMERS,

Belting, Lacing, Rabbit Metal, etc., etc.

**CALDWELL'S PATENT PARALLEL GANG LUMBER EDGER,**

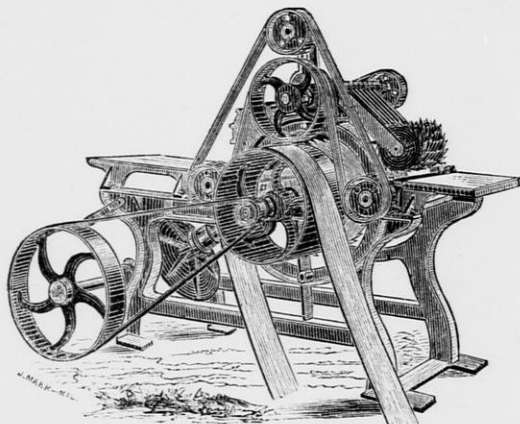
2, 3, 4 or 5 Saws. Do not fail to send for Circulars of this Machine.

Ames' Stationery Engines, Portable Engines and Boilers,

IRON AND WOOD WORKING MACHINERY, OF ALL KINDS,

**PORTABLE FORGES. ETC.**

# ATTENTION LUMBERMEN!



## GANG BOLTER.

YOU CAN GET, ONLY AT THE

## Cream City Iron Works,

The Best Steam Engine,  
The Best Circular Saw Mill,  
The Best Water Wheel, (new invention.)  
The Best Shingle Mill, “  
The Best Gang Edger, “  
The Best Gang Lath Mill, “  
The Best Gang Bolter, “  
The Best Automatic Bolter, “  
The Best Swaging Machine, “

We are willing to risk the amount asked for either machine that a trial will verify this assertion. Also on hand

Leffel, Bryson and other Turbine Water Wheels Judson's Governors, Bird's Chain Pulley Blocks, Patent Oilers, Feed and Flour Mills, Steam Guages, etc., etc.

But we make a SPECIALTY of making the BEST MACHINERY for manufacturing Lumber, Shingles, Lath, etc.

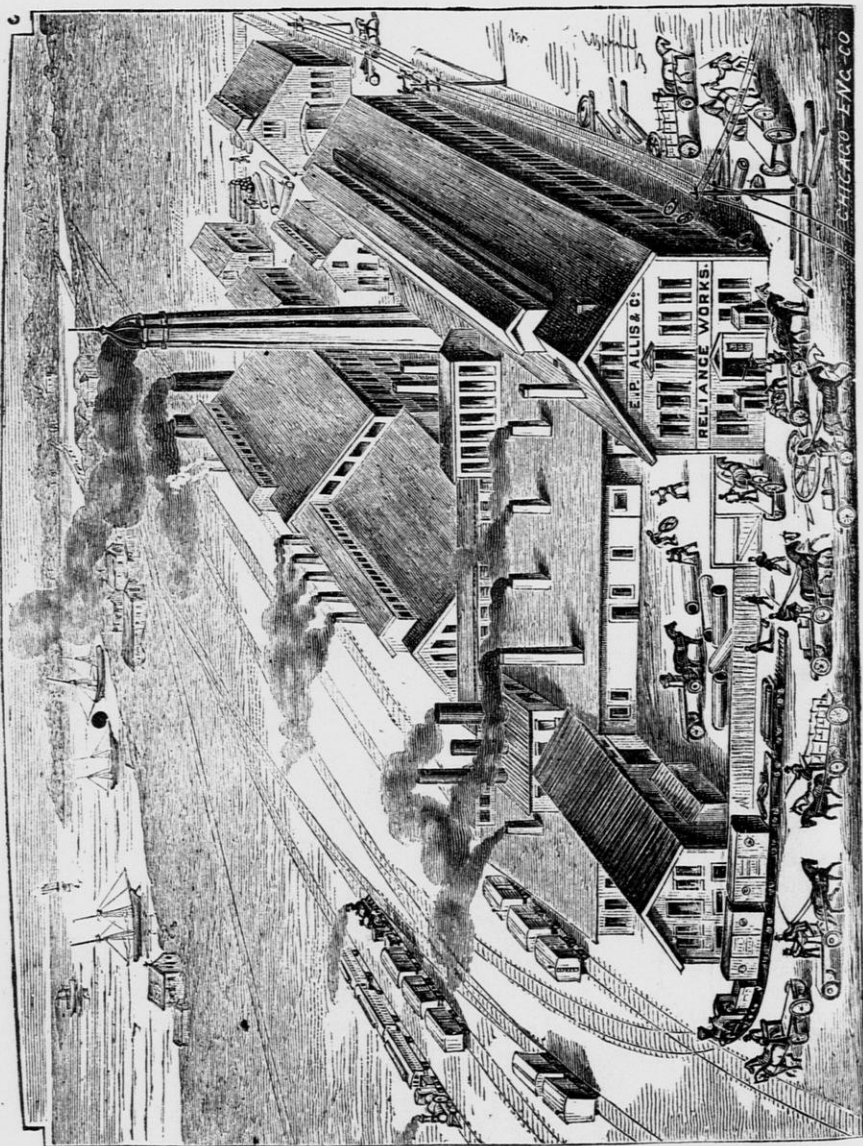
### FILER, STOWELL & CO.,

Northwest corner Clinton and Florida Sts.,

MILWAUKEE, WISCONSIN.

# RELIANCE WORKS

E. P. Allis & Co., Prop's, Milwaukee, Wis.



FOUNDRYMEN, MACHINISTS AND MILL BUILDERS,  
MANUFACTURERS OF  
STEAM ENGINES.



No. 2.

(Corrected for the February No. of The "Wisconsin Lumberman.")

No. 2.

# WISCONSIN CENTRAL RAILROAD,

OPERATED BY

THE PHILLIPS AND COLBY CONSTRUCTION COMPANY.

**SPECIAL**

# INTERFER TARIFF.

FROM

Table with columns for TO (PLYMOUTH, ELKHART LAKE, KIEL, HOLSTEIN, HAYTON, HILBERT, FOREST JUNCT'N, LATHAMS, GREENLEAF, LEDGEVILLE, GREEN BAY, DEPERE, SHERWOOD, MENASHA, WEYAUWEGA) and rows for various destinations like CHICAGO ILL., RACINE, WIS., SOUTH MILWAUKEE, etc.

\* W. B. to Chicago.

† W. B. to South Milwaukee.

|| W. B. to Plymouth.

FROM

Table with columns for STEVENS POINT, MILL CREEK, AUBURNDALE, MARSHFIELD, WALTHAM, UNITY, COLBY, DORCHESTER, MEDFORD, CHARLESTOWN, CHELSEA, ROXBURY, MALDEN, WORCESTER and rows for various destinations like CHICAGO ILL., RACINE, WIS., SOUTH MILWAUKEE, etc.

‡ W. B. to Milwaukee Yard.

§ W. B. to West Menasha, by distance Tariff.



# WISCONSIN CENTRAL RAILROAD,

OPERATED BY

THE PHILLIPS AND COLBY CONSTRUCTION COMPANY.

## SPECIAL LUMBER TARIFF,

(LUMBER, LATH AND SHINGLES.)

In Effect January 20th, 1874.

### SPECIAL CONDITIONS.

The Rates in this Tariff are for car loads of 20,000 pounds, which is to be considered a full car load, although 22,000 pounds may be allowed as a maximum weight. For the excess over 20,000 pounds, proportionate rates must be charged. Any excess over 2,000 pounds is subject either to be unloaded where discovered, at risk of owner, or charged third class rates, at option of the carrier.

When actual weight cannot be ascertained, Agents will use the following table of estimated weights and measurements for local points:

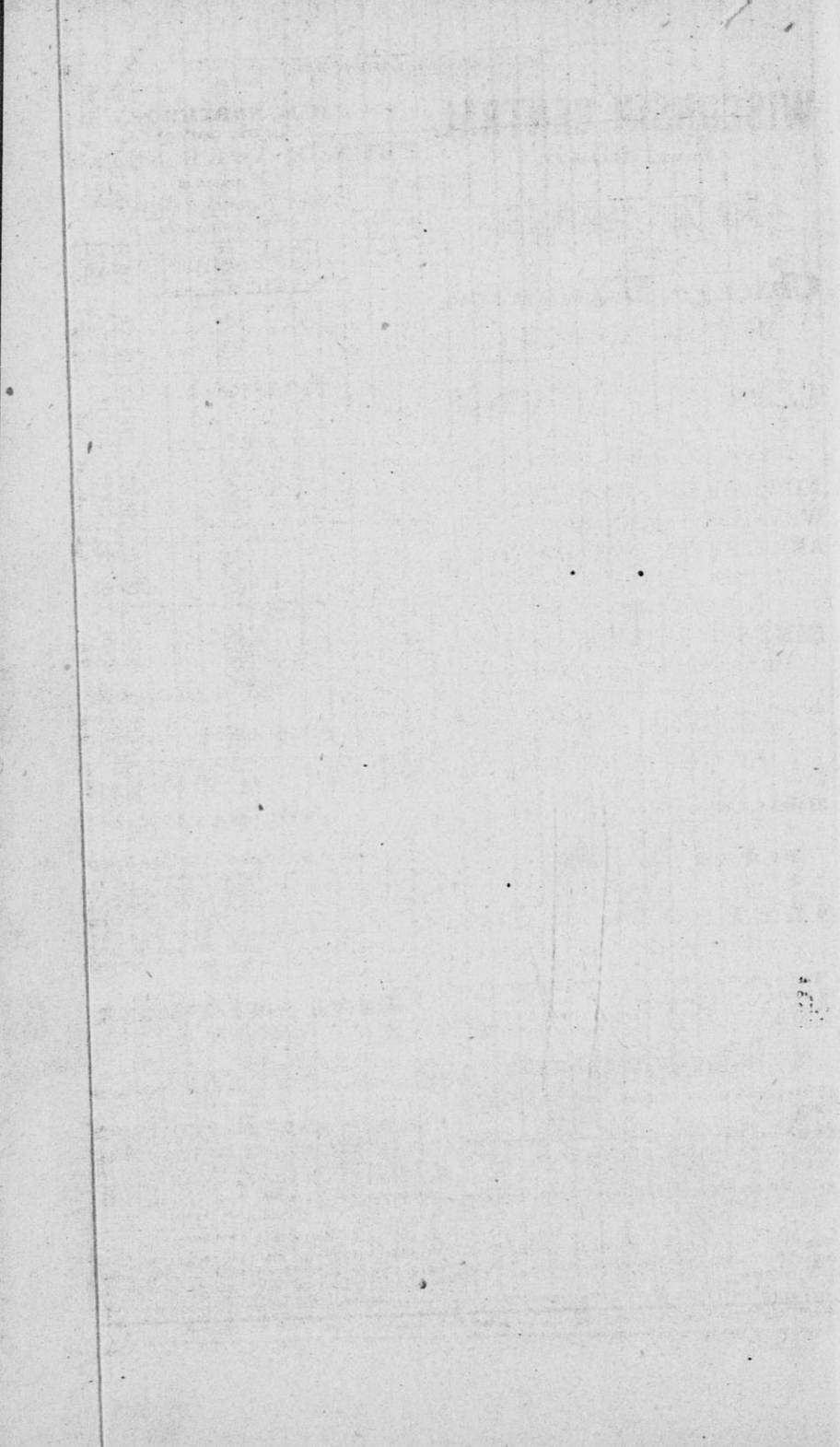
	WEIGHT.	CAR LOAD.
Pine, Basswood, Whitewood and other Soft Lumber, seasoned,	2,500 lbs. pr M ft.	8,000 feet.
" " " " " part seasoned,	3,000 "	6,700 "
" " " " " green,	3,500 "	5,700 "
Oak and other heavy Lumber, green,	5,000 "	4,000 "
" " " partially seasoned,	4,000 "	5,000 "
Shingles, seasoned,	250 lbs. per M.	80 M.
" part seasoned,	275 "	75 "
" green,	300 "	70 "
Lath,	500 "	40 "

*Rates to foreign Railroads subject to Change Without Notice.*

**E. B. PHILLIPS,**  
President and General Manager

**C. HARRIS,**  
General Superintendent.

**J. E. FOLLETT,**  
General Freight Agent.



# WISCONSIN CENTRAL RAILROAD.

New Short Through Line

BETWEEN

**Chicago, Milwaukee,  
DE PERE, GREEN BAY,**

AND

**ALL POINTS in the GREAT NORTHWEST.**

THE ONLY CONTINUOUS LINE BETWEEN

**MILWAUKEE, MENASHA,  
WEYAUWEGA, WAUPACA,  
AMHERST and STEVENS POINT.**

AND THE

Only Route to the

**IMMENSE LUMBER DISTRICT**

Of Northern and Central Wisconsin.

Between Stevens Point and end of track a train runs each way daily, (Sunday excepted.)

**NO CHANGE OF CARS**

BETWEEN

**Milwaukee and Green Bay**

AND

**Milwaukee and Stevens Pt.**

**SLEEPING CARS**

ATTACHED TO ALL NIGHT TRAINS.

Passengers for FOND DU LAC, SHEBOYGAN and all points on Sheboygan and Fond du Lac Railroad, will find this the QUICKEST and MOST COMFORTABLE ROUTE.

**CONNECTIONS:**

At **Plymouth**, with Sheboygan and Fond du Lac Railroad.

At **Green Bay**, (Fort Howard), with Chicago and Northwestern, and Green Bay and Minnesota Railways.

At **Amherst Junction**, with Green Bay and Minnesota Railway.

Ask for Tickets via Wisconsin Central Railroad, the best equipped and most popular Road in the Northwest.

C. HARRIS, Gen'l Sup't, Milwaukee. H. PRATT, Gen'l T. A., Milwaukee.

H. M. SCHOLLAR, Travelling Agent.

**H. M. NORTHROP,**  
MANUFACTURER OF  
**FRENCH YOKE SHIRTS,**  
AND DEALER IN  
Men's Furnishing Goods,  
jan'4-1y 86 Wisconsin St.

**MILWAUKEE FINE ART GALLERY,**  
**No. 416 Broadway.**  
OPEN DAILY FROM 8 O'CLOCK A. DUSK.  
Season Family Tickets \$10. Single admission 25 cts.  
jan'4-1y B. FRODSHAM, Manager.

**O. F. LINDMAN & CO.,**  
**MERCHANT TAILORS,**  
**90 Wisconsin St.**  
Gentlemen visiting Milwaukee should call at our establishment and leave their measure, that they may, at their convenience or necessity, order by sample or otherwise, complete or partial suits. Your measure once on our books, we can guarantee perfect fits and the very latest styles, at any season of the year you may wish to order. jan'4-1y

**Wanted—Agents**

To sell a Novelty just patented. Head sawyers buy it at eight. Commission liberal. Address,

**FITZGERRELL & PRESSER,**  
jan'74-3t East Saginaw, Mich.

**500,000 ACRES OF PINE AND  
FARMING LANDS  
FOR SALE!**

The lands of the Jackson, Lansing & Saginaw Railroad Company are now in market. They are situated along its railroad, and contain tracts of the best Pine on the Tittabawassee, Rifle, Muskegon, Manistee, Au Sable, and Cheboygan Rivers. The grant having been made before any considerable quantity of pine land had been located in the northern part of the state, it now includes some of the finest and choicest

**WHITE PINE TIMBER,**

AND BEST

**NORWAY PINE.**

The FARMING LANDS include many thousand acres of first-rate

**BEECH AND MAPLE LANDS.**

No better can be found, and they are well watered, and located where they will have the best railroad facilities. No section of the country offers greater inducements to the settler than the above lands.

**Terms For Sale.**

One-fourth down, and the remainder in three equal annual installments, with interest annually at 7 per cent. Farming lands will be sold on longer time if desired. For list of lands, further information, or purchase, apply to the undersigned at LANSING MICH.

O. M. BARNES,  
Land Commissioner.

**CURTIS & CO.,**

MANUFACTURERS OF

**All kinds of Saws.**

Circular, Gang, Mulay, Mill, Pit,



Cross Cut and Scroll Saws, Billet Webs.

ALSO,

**MANDRELS AND EMERY WHEEL MACHINES**

Dealers in French Band Saws, Rubber Belting, Files, Saw-Gummers, and all kinds of Mill-Furnishing Goods,  
and Sole Manufacturers in the West of

**Grandy's Patent Cam-Power Saw-Set**

THE BEST SAW SET EVER MADE.

Send for Price Lists.

**117 VINE STREET, ST. LOUIS, MO.**

**JAMES H. HOES,**

IMPORTER AND DEALER IN

**WATCHES,**

**JEWELRY, DIAMONDS,**

*PEARLS, CORALS, PRECIOUS STONES,*

Paris and Vienna Fancy Goods,

**ARTISTIC BRONZES,**

**Solid Silver and Electro Plated Goods**

OF ALL KINDS. NEW STYLES OF

**CASED GOODS,**

*SUITABLE FOR PRESENTS.*

A FINE ASSORTMENT OF

**Table Cutlery, Forks, Spoons, etc.**

Only Agent in the State for the **STANDARD AMERICAN WATCH**, the best time-keeper yet produced. Also, the Howard, Waltham, Elgin and Springfield Watches, in Gold and Silver Cases, etc., etc.

**Corner East Water and Wisconsin Stre ,**

**MILWAUKEE.**



F. J. BOSWORTH.

B. B. HOPKINS.

E. C. HOPKINS.

**BOSWORTH & SONS,**

JOBBER IN

**DRUGS, CHEMICALS, PAINTS, OILS AND FINE LIQUORS,****MILWAUKEE,**

OFFER TO THE WHOLESALE TRADE,

- 5,000 Boxes Window Glass,  
 500 Brls Raw and Boiled Linseed Oil,  
 300 Brls Tar Pitch,  
 200 Brls Rosin,  
 1,000 Brls Extra Carbon and Headlight Oil,  
 200 Tons White Lead,  
 200 Carboys Muriatic, Nitric and Sulphuric  
 Acids,  
 500 Cases Niagara Star Bitters,  
 1,000 Boxes Sun Chimneys,  
 200 Brls Extra Lubricating and W. V. Oils,  
 500 Pks Ginger, Mustard, Nutmegs, Spices,  
 1,000 Pks Whiskey, Brandy, Wine, Gin, Rum,  
 A Large Stock of **BRUSHES** of all Descriptions.  
 " " **DRUGGISTS SUNDRIES** and **FANCY GOODS.**

*We Make a Specialty of the Lumber Trade.*

# PEIRCE & WHALING

*Milwaukee, Wis.,*

HAVE IN STOCK,

1,200 Tons American Iron,

50 Tons Sleigh Shoe Steel, Flat and Curved,

70 Tons Chain, All Sizes,

2,500 Boxes Horse Nails, North Western, Ausable,  
Globe, National and Brundage.

AND A FULL LINE OF

Horse and Mule Shoes, Perkin's Patent,

Toe Calks,

Heavy Hardware,

Blacksmiths Tools,

Plow Materials.

---

SEND FOR OUR CATALOGUE AND PRICES.

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## PEIRCE & WHALING,

133, 135, 137 and 139 West Water Street,  
MILWAUKEE, WIS.

**JOHN NAZRO & CO.,**  
 WHOLESALE  
**HARDWARE,**  
**MILWAUKEE,**

Will occupy in a few months their

**Mammoth New Store,**

Corner of South Water and Reed Streets, near the Milwaukee  
 & St. Paul Passenger Depot,

**ON THE SOUTH SIDE.**

Meanwhile they offer at the old stand, on East Water Street,  
 all kinds of

**SEASONABLE GOODS,**

INCLUDING

**CROSS-CUT SAWS, WOOD SAWS,**  
Champion, Lightning and Perforated Tooth. Lightning, Livingstone's, Braced and Common.

**AXES,**  
Leading Brands.

**HORSE SHOES,**  
Burden's.

**COIL CHAIN,**  
Full Assortment.

Carriage and Tire Bolts, Augurs and Augur Bits, Rafting  
 Augurs, Skates and Sleigh Bells, and Stock Re-  
 plete with everything in the line of  
 Hardware, Metals and  
 Tinner's Goods.

# Mann, Beals & Co.,

Manufacturers of and Wholesale Dealers in

## BOOTS AND SHOES,

Constantly keep on Hand a Large Stock of

## BOOT AND SHOE PACKS,

ESPECIALLY ADAPTED FOR THE

## LUMBERING TRADE.

---

We sell more of this class of goods than all the rest of the Northwest put together.

Consequently can afford the trade a better assortment at lower prices than any other house.

---

THE LUMBERING TRADE A SPECIALTY.

---

MANN, BEALS & CO.,

91 *Huron Street,*

**MILWAUKEE**

# GOODRICH, TERRY & CO.

Have a Large and Well Assorted Stock of

## GROCERIES

Suited to the Lumbering Trade,

Consisting of, in part,

**500 KEGS OF SYRUP,**

5 and 10 Gallons, convenient for the Woods.

---

**Full Assortment of Canned Goods,**

COMPRISING

PEACHES, TOMATOES, BERRIES AND FRUITS OF VARIOUS KINDS,  
VEGETABLES AND OYSTERS.

*KENTUCKY AND VIRGINIA*

**Plug and Fine Cut Tobacco**

**GREEN, OOLONG AND JAPAN TEAS**

Packed in quantities to suit the demand of the camp.

**DRIED FRUITS:** Apples, Peaches, Cherries,  
Blackberries, Turkish Prunes, Zante  
Currants, Etc., Etc.,

*SUGARS, COFFEES AND SPICES,*

**Goodrich, Terry & Co.,**

314 AND 316 EAST WATER STREET, MILWAUKEE, WIS.

## IMPORTANT TO MILL OWNERS AND MACHINISTS.

# Vulcanized Friction Board.

We desire to call attention to our celebrated VULCANIZED FRICTION BOARD, as a substitute for Leather and Rubber, in Packing, and for Friction Pulleys. It is only a comparatively short time since this article was introduced, but its use is already rapidly superseding that of Leather and Rubber, on account of both its greater cheapness and greater durability, costing less than one-third the price of Leather and one-sixth that of Rubber, and wearing more than double the time. It is absolutely the ONLY article to make a good friction against iron, as it will not slip like leather or wood. It is put up in 50 lb. bundles, in the following SPECIAL sizes:

33x44 inches, 5, 6, 8 and 10 sheets to bundle.  
 19x29 " 20, 25, 30 and 35 sheets to bundle.  
 22x26 " 15, 20, 25, 30 and 35 sheets to bundle.

Nos. 5 and 6 are about  $\frac{1}{2}$  of an inch thick, and are those most used, and will usually be found the most available for all purposes. For mill men and machinists, for pulleys and packing, and to foundries for raising patterns, this article is almost indispensable, and in all our experience we have never found parties, who having used it, would return again to the use of wood, rubber or leather.

The following parties have used it largely, and will doubtless recommend it to all who may inquire regarding it:

FILER, STOWELL & CO.,  
*Founders and Machinists, Milwaukee.*

W. H. HINER & CO.,  
*Founders and Machinists, Fond du Lac.*

C. J. L. MEYERS,  
*Manufacturer of Lumber, Sash, Doors, etc., Fond du Lac.*

C. C. PAIGE,  
*Eagle Iron Works, Oshkosh.*

UNION LUMBERING CO.,  
*Lumbermen, Chippewa Falls.*

EAU CLAIRE LUMBER CO.,  
*Lumbermen, Eau Claire.*

HAMILTON, MERRYMAN & CO.,  
*Lumbermen, Marinette.*

This is the only Board manufactured expressly for this purpose, and will be found the only one that will give perfect satisfaction.

FOR SALE BY

## TYTUS, HAMILTON & CO.,

382 and 384 Broadway, Milwaukee.

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*Business College*  
 MILWAUKEE, WISCONSIN.

*This Institution offers superior facilities for preparing young and middle aged men and women for the counting-room and business pursuits. For circulars or information, address Robert H. Spencer.*

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MILWAUKEE JOURNAL OF COMMERCE

# Job Printing Rooms

**No. 62 Oneida St., Grand Opera House,**

**MILWAUKEE.**

THE LARGEST NEWEST AND MOST COMPLETE JOB OFFICE IN THE STATE.  
 EVERY VARIETY OF JOB, BOOK AND SHOW PRINTING  
 NEATLY EXECUTED AT THE LOWEST RATES.

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LUMBERMEN'S MARKS ENGRAVED, ELECTROTYPED  
 AND MADE A SPECIALTY.

## LUMBERMEN'S REGISTER.

The following list is intended to represent every firm in the pineries of the Northwest who are engaged in the manufacture or the buying and selling of lumber, shingles, &c. The list will be published from month to month and names added just as rapidly as we can, through the medium of canvassers, obtain them. We propose making this Register perfect in all its details, but of course several months must necessarily elapse before we can hope to obtain anything like a full and complete list.

The Register will prove of much benefit to lumbermen generally. Names will be classified as nearly as possible in accordance with post-office address. We desire the assistance of lumbermen in correcting and making complete this department. Send us names of all reliable firms in your locality.

## WISCONSIN.

Upham Chas M & Bro.....	Angelica	Price W T.....	Black River Falls
Laird & Co.....		Shepherd A.....	
McCartney D.....		Spaulding D J.....	
Foster N C.....		Mark Bump.....	
Smith & Rickett.....		Burchard Harrison.....	
Oleson & Co.....		Porter W B.....	
Clinton McLaren & Co.....		Sawyer A E.....	
Hall A & Co.....	Ahnapee	Smith John B.....	
Young D.....		John and James Dickson.....	Bloomington
Jewett Lawrence & Co.....	Algoma	Barron John.....	Blue Mills
Sawyer P.....		Briggs & Barnes.....	Boaz
Lane F.....	Alma	Bucker A.....	Buffalo
Pretz Z.....	Alma Centre	Rouch & Erding.....	
Reynolds & Tibbetts.....	Appleton	McCarty J.....	Bloomer
Jerard J F.....		Smith, Brooks & Macauley.....	
Ross Huntress.....		Nelson H & Co.....	Boscobel
Rose & Heath.....		Weston, Miner & Co.....	
Dorr & Steele.....		Pierce & Sly.....	Branch
Phillips Dr.....	Arena	Yerty J & Krippl.....	Brandon
Yorker S J.....		Bowen E.....	Brodhead
Goodrich J & Co.....	Augusta	Lamson C & Co.....	
Randall S.....		Usher & Hassinger.....	
Bennett & Hurd.....		Blake Francis W.....	Burlington
Parr G.....	Avoca	Woddford & Davis.....	Barton
Bowen E.....	Albany	Betcher & Alley.....	Bay City
Morrison Creek Lumber Co.....	Albion, Jackson Co	Carney & Fairbanks.....	
Smith J B.....		Phillips L D.....	
Ashland Lumber Co.....	Ashland	Hulnes H.....	Bell Center
E Inglalls & Co.....		Delveux A & C.....	Bellevue
Daniels E W.....	Auroraville	Randall Johnson.....	Binghamton
Holbrook M S & Co.....	Arkansaw	Herman Henry.....	Black Creek Station
Humphrey D & Bros.....		C B Fay & Co.....	Casco
Miles & Knight.....		Horn F W.....	Cedarburg
Flower J H.....	Bangor	Wehausen Henry.....	
St. Louis & Wisconsin River Co.....	Barnum	Deniston J C.....	Cadiz
Hodgman S & N, Spring c Mackier.....	Beaver Dam	Deniston C R.....	
Townsend Jones & Co, Spring c Second		Martin & Deniston.....	
Gratlot E H.....	Belmont	Staines J M.....	Calumet
Goodhue W T.....	Beloit	Bock.....	Centralia
Peet & Keeler.....		Edwards J & Co.....	
Gray James.....		Garrison & Blinckley.....	
Weed J H & Co.....		Jackson H W.....	
Peck S W.....		Lefevre H.....	
Talbot H G.....	Berlin	Lyon R C.....	
Treadway S N.....		Clark & Scott.....	
Cohn L S.....		Wrahern W C.....	Charlestown
Harmon S C.....	Berlin	Graves James.....	
Troan E.....	Black Earth	Montgomery Geo H.....	Chippewa Falls
Ward J S & Bro.....	Black River Falls	Union Lumbering Co.....	
Edmonds J.....		Allen C.....	
Elliott A.....		Marriet, La Beulf & Co.....	
Given P G.....		Phillips Jackson.....	
Ice J.....			



Robson John.....	Chippewa Falls	Coe & Lyman.....	Fairchild
Vincent, Mandilett & Co.....		Pedrick & Co.....	Fort Howard
Woodruff & Taft.....		Cook & Foster.....	Fort Howard
Lyon & Co.....	Clark's Mills	Howard Mill Co.....	
Crosby P.....	Clinton	Lamb, Watson & Co.....	
Lampheer H P.....		O Schwartz & Co.....	
Wilcox Bros & Co.....		J. P. Laird & Co.....	
Bond A D.....	Columbus	Oscar Gray.....	
Long & Henderson.....		Taylor A.....	
F. F. Farnham.....		Clapp & Mead.....	Fountain City
Aldrich V M.....	Cooperstown	Matthaies F & Co.....	
Wright P.....	Coral City	Bohan & Grant.....	
Stricher M.....	Cross Plains	Bowman W.....	Frankfort
Bates, Hoag & Co.....	Darien	Arpkee J.....	Franklin
James T & Co.....	Darlington	Cooley & Race.....	Fredonia
Pratt & Carpenter.....		Bergtresser L.....	Fremont
Woodward T.....		Schroeder & Co.....	
Clark H.....	Deansville	Kinsman C C.....	
Gormley P & Co.....	Delevan	Townsend E.....	
Watson J J & Co.....		Edwards J & Co.....	Frenchtown
Blake Samuel.....	DePere	Freeman A W.....	Genoa
B. F. Smith.....		Wightman E D.....	Germantown
A. Reid.....		Natchway H.....	Gibson
John McLelland.....		Clark & Thorp.....	Glenbeulah
Kingsley W O.....		Rasfans & Co.....	Glen Haven
Marsh G S.....		Olds J S.....	Glenmont
Ritchie James.....		Coulson T.....	Grafton
Monroe John.....		Berrey Bros.....	Glenmore
Stetson Q S.....		Bowen E & Co.....	
Struthers Thomas.....		Hubbard S.....	
Hiles G.....	Dexterville	Smith Charles.....	
Nason S L.....		O. & W. Freeman.....	Genoa Junction
Remington H W.....		Arpen A.....	Grand Rapids
C M & A R Worth.....	De Soto	Arpen J.....	
Kinney Francis.....	Durand	Byron F.....	
Plummer & Morse.....		Clark & Scott.....	
Hoard & Earl.....	Doylestown	Langworthy, Mehan & Co.....	
Peck M N.....		Meehan P & J.....	
Knapp, Stout & Co.....	Dunnville	Neeves Geo & Son.....	
Rosenberg & Co.....	Dykesville	Rablin John.....	
Stockman W H.....	Eagle	Roe & Butterfield.....	
Smith W F.....	Elkhorn	Sampeon H.....	
Larson & Olsen.....	El Paso	Scott Thos B.....	
Magee Bros & Anderson.....		Miller John.....	
Eau Claire Lumber Co.....	Eau Claire	Whipple E E.....	
Northwestern Lumber Co.....		Hickerson N H.....	Grantsburg
Bangs & Fish.....		Graves J A.....	Gravesville
Boyd A.....		Modlin Henry.....	
Burdock, Preston & Co.....		Earle & Case, Washington.....	Green Bay
Chubb H C.....		Lamb, Watson & Co.....	
Estabrook W B.....		McCartney D.....	
Graves D P.....		Sanford & Co.....	
Ingraham & Kennedy.....		Schwartz C. & Co.....	
Graham, White & Co.....		Shirland & Co.....	
Kiley Hiram.....		Whitney & Foster.....	
W Maxter & Bro.....		Woodruff J W & Co.....	
Ira Mead.....		Benjamin S A.....	
Pinkham J.....		Holmes & Thompson.....	
Daniel Shaw & Co.....		Anton Burkhardt.....	
Smith & Buffington.....		Kellogg C W.....	
H D Stockman & Co.....		K aus Anton.....	
Tarrant E.....		Lefehre Charles.....	
Wilcox & Co.....		Lucas J & T.....	
Carson & Rand.....	Eau Galle	Marshall L M.....	
Week John.....	Eau Pleine	Herling Theo.....	Green Bush
Hutchinson & Bro.....		Bailey D. R.....	Hammond
Webster & Palmer.....	Embarrass	Schmidt Adam.....	Harrisville
Fifield E.....	Evansville	Cook J.....	Hartford
Parker A.....		Mills J D.....	Hartland
Mack H & Bro.....	Evanswood	Olmstead Sheldon P.....	
Shaw J.....	Fall River	King P.....	Helena
Griffith J Q & Son.....	Fond du Lac	McCutcheon A.....	
Meyer Charles J L.....		Rounds W F.....	High Cliff
Merayman & Co.....		Tripp N D.....	Hillsborough
McDonald Alexander.....		Fisher J. Lake.....	Horicon
Sexsmith G W.....	Fond du Lac	Baily D R.....	Hudson
Moore, Galloway & Baker.....		Palmer M P & Co.....	
Parker N & Co.....		Andrews F M & Co.....	Jenny
Mihills N D & Co.....		Matthews Thos.....	Jenny
Hamilton & Finley.....		White C F.....	
Bryant & Brown.....		Jewett A & Sons.....	Jewett's Mills
Hunter, Stewart & Co.....		Sutherland Sol.....	Juda
Dale J L.....	Forrestrville	Blair & Wagner, Jackson.....	Janesville
Curtis & Cornish.....	Fort Atkinson	Fifield, D W, River.....	
Wilcox, Southwell & Co.....		Lovejoy & Blount, W Milwaukee.....	

Rexford J D, Academy.....	Janesville	Hubbard H F.....	Manitowoc
Rockwood & Sons, High.....		Cooper & Jones.....	
Schutt U, River.....		Smith Ira B.....	
Clapp J R.....	Juneau	Smith, Flegler & Co.....	
Taber J B & Co.....	Kenosasville	Wallach A & Co.....	
Backus N G.....	Kenosha	Wallich T H A.....	
Grant & Son, Market.....		Zander & Co.....	
Truesdell Gideon, 3 Main.....		Klingholz Charles.....	Manitowoc Rapids
Hitchcock & Mashek.....	Kewaunee	Pierce Plinn.....	
Murray, Slauson & Co.....		Reune Chas.....	Maple Works
Slauson, Grimmer & Co.....		Brayton, L J.....	Marquette
Stranky W.....		Green J S.....	
Dikeman & Latimer.....		Hamilton, Merriman & Co.....	Marinette
Clapp N S.....	Kinnickinnic	Hilbeck H & Co.....	
Brauman B.....	Knowlton	Menomonee Mfg Co.....	
Brook V.....		Spaulding, Houghtaling & Johnson.....	
Wallace & Redford.....		McCartney Wm.....	
Starte & Bros.....		N Ludington Co.....	
Hurlbut H H.....	Kilbourn City	Witbeck H & Co.....	
Cloespeck M.....	Kosuth	Bartlett L H.....	Marshall
Kellnor M.....		Bronson D W, Broadhead.....	Mazo Manie
Black River Improvement Co.....	LaCrosse	Rein Daniel.....	Medina
Hogan & Chamberlain.....		Hewitt Henry, Jr.....	Menasha
McDonald Bros.....		Pope, Ross & Co.....	
Salzer G. J.....		Spaulding, Houghtaling & Johnson.....	Menekaune
Crosby W. W.....		Stephenson T & Co.....	
Colaman C L.....		Kuapp, Stout & Co.....	Menomonee
Gile & Holway.....		Bainbridge W.....	Mifflin
Moore R M.....		Harker & Bainbridge.....	Mifflin
Bright & Withee.....		Greene N S & Co.....	Milford
Russell W C, Main c Second.....		Brown & Evans.....	Mills Centre
Gile Abner, Third.....		Dunham L.....	
Hankinson & Son.....		Lucas & Bro.....	
Hewett & Woods, Main c Second.....		Greenman R J.....	Milton
Hixon & Withee, Main c Second.....		Hutchinson James.....	Mineral Point
McMillan Alexander, Main c Third.....		Pierce J H.....	
McMillan Duncan D, Main c Third.....		White S.....	
Nevis S L, Main c Second.....		Weyhausen A.....	Mishicot
Paul John, Front.....		Williams J W.....	Monroe
Polleys W H, Main c Second.....		Dessert J R.....	Mosinee
Root W C, c Second.....		Goldsbury W.....	
Servis John.....		Bruneau J.....	
Sill Wm R, Main c Third, c.....		Kronenwetter S.....	
Vincent & Edwards, Front.....		Roberts & Sicard.....	
Washburne C O, Main c Second.....		Sterling W A.....	Mukwa
Weston R8 Main c Second.....		Garland J.....	Muscoda
Abbey Edwin.....		Parr & Co.....	
Abbey Hiram.....		Bull & Bowers.....	Muskego Centre
Emery T B.....		Houghton Geo G & Co.....	Milwaukee
Farnum Geo.....		Schroeder & Steinman, dealers.....	
Goddard H.....		Ernst Herzer, planing mill.....	
Hankerson A H.....		Wm. Willer, planing mill.....	
La Crosse Lumber Co.....		H. Jalass & Co., planing mill.....	
Mitchell.....		Brockhaus & Bradley, planing mill.....	
Ross Robert.....		W. C. Conway, planing mitl.....	
J. H. Ross & Co.....		Nic. Schuh & Son, dealers.....	
Barron John.....	Lafayette	Engelmann, Babcock & Salling, Manufactur- er and dealer.....	
Hodgens & Robson.....		Weston Bros, manufacturer and dealer.....	
Holbert Thos & Co.....		Mayhew Bros.....	
Mitchell & Clement.....		Durr & Rugee.....	
Barney S P.....	Lavalle	Schmidt & Reichel.....	
Sanford J F & Son.....		Judd T H & Co.....	
Hull Elijah.....	Luha	Comstock L & Co.....	
Leigh J.....	Little River Mills	Chandler Walter S.....	
Bailey & Vincent.....	Little Sturgeon	Seyfried Martin.....	
Gardner, Davis & Co.....	Little Suamico	Brembach Fred.....	
Chase & Dickey.....		Mabbett & Foster.....	
Conn A C & Co.....		Simpson E B & Co.....	
Lamont A.....		Pierce R. W. & Co.....	
Peters C & Co.....		Kellogg A S.....	Neshoto
Mike/John James.....	Little Wolf	Cooper, Myers & Co.....	
Furitze W.....	Logansville	Cooper & Jones.....	
Hankvitz F.....	Lomira	Raymond & Jones.....	
Zelder L.....		Lamb W.....	New Franklin
Vaedsch & Runkle.....	Lowell	Latham & Smith.....	New Franklin
Amby P.....	Lyndon	Smart J & E (manufacturers) Bridge.....	New Lisbon
McWilliam A.....		Bradford & Co.....	Necedah
Bunker & Vroman, Mifflin c Carrol.....	Madison	Burch G B & Co.....	
Sorenson & Frederickson.....		Dawes W F & Co.....	
Stein C R, Washington av.....		Shorey P & Co.....	
Walsing & Bailey.....	Malden Rock	Weston T & Co.....	
Malden & Jones, Quay.....	Manitowoc	Sherry Henry.....	Neenah
Emeison L.....		Hewitt & Woods.....	Neillsville
Guyles & Pankratz, Quay.....		King G W.....	
Horn W H, Commercial.....			

Blakely C.....	Nellsville	Williamson G M & Co.....	Oshkosh
Clark A W.....		James & Stille.....	
Green A.....		Nash, Lines, Libbey & Co.....	
Lindsley F D.....		Morgan Bros.....	
Ross Robert.....		Fraker J S.....	
Putnam L G.....	Neosho	Spalding & Peck.....	
Cooper & Jones.....		Campbell Wm & Sons.....	
Hale & Springsted.....	New London	Libby D L & Co.....	
Bell Marcus.....	New Richmond	Regan, Cheney & Pratt.....	
Crozier & Jacobs.....		Doe & Miller.....	
Moore & Bro.....	Northport	Ripley & Masd.....	
Wisconsin mfg Co.....		E. C. Kellogg.....	
Streeter J & A C & Co.....	Oconomowoc	John A. Paige.....	
Vilas G, opp depot.....		Dorby & Curran.....	
Woodruff Bros, n depot.....		McMillan R. & Co.....	
Brunquest W.....	Oconto	Sawyer J P & Son.....	
Orr, Newell & Co.....		Baine C N & Co.....	
Jacob Spies.....		Reed L B.....	
Anson Eldred.....		Sheldon L P & Son.....	
Leigh John.....		Laabs J & Co.....	
Oconto Lumber Co.....		Buckstaff Bros & Chase.....	
Comstock & Simpson.....		Foster & Jones.....	
Hart L W.....		Henderson & Wilson.....	Palmyra
Holt, Balcom & King.....		Wentworth, McGregor & Co.....	Portage City
Fierce L M.....		Gillon N.....	Pine Grove
Winslow & England.....		glawe C.....	
Brownsgig John.....	Okee	Bruce, Fuller & Co.....	Rock Falls
Monizeneux E.....		Garland & Niehols.....	
Vanderpool & Clark.....		Bates & Hoag, Second n Main.....	Racine
Woodley Samuel.....		Hall & Scott.....	
Johnson H & Co.....	Omro	Hood S & Co, Main c Second.....	
Curtis & Burlisheiser.....		Murray, Slanson & Co, Second.....	
Gerard N.....		Peck S B & Son.....	
Morton, Arnold & Morton.....		Tremble & Doud, State.....	
Webster & Foster.....		French D C.....	Randolph Station
Wilson A.....		Cushman A G.....	Readstown
Foster N C.....	Cawego	Smith Timothy.....	Reedsburgh
Aiken F & D.....	Onalaska	Rudolph C J.....	Richland Centre
Hali Chas.....		Richardson Mrs. W.....	Richland City
Hayden L D.....		Learmouth J.....	Bio
Jenks C L.....		Barlow J B & Co.....	Ripon
Moore R M.....		Pedrick M.....	
Nichols Chas H & Co.....		Bowman Na.....	Roundhill
Bradley C G.....	Oscola	Moore J P & Co.....	Royalton
Dresser & Wilco.....		Judd, Walker & Co.....	Saint Croix
Talboys & Hauscome.....	Oshkosh	Roberts George.....	Sandy Bay
Knapp L E.....		Halasz Chas.....	Sauk City
Jenkins J & Co.....		Obrecht U.....	
Harris M.....		Cowles H H.....	Scott
Osborn & Christenson.....		Carrol S.....	Seneca
Conlee Bro & Co.....		Campbell Y.....	Sharon
Lane C & W.....		Treat J A.....	
Gill & Son.....		M. McCord.....	Shawano
Copeland Alex.....		C. D. Wescott.....	
Freeborn John.....		Asa Hicks.....	
Turner Bros.....		C. Crowley.....	
Sturtevant & Son.....		Hockner A.....	Sheboygan
Stevenson Chas.....		Schrage Joseph.....	
Bray Jefferson.....		Weeks A L.....	
Danforth Joseph.....		Haseltine C P.....	Sherman
Danforth E M.....		Kelly W P & Co.....	
Edward's Henry.....		Stafford & Gray.....	
Elwell Joseph.....		J. H. Parks.....	Shiocton
Farrow T H.....		Mason, Barnes & Co.....	
Reynolds Paul.....	Oshkosh	W. D. Sordon.....	
Jewell, Lawrence & Co.....		Nutwig Ole.....	Siegel
McNair Jas.....		Harriman Samuel.....	Somerset
Barnes W W.....		Irwin O L, Maple.....	Sparta
Duzhty & Bro.....		Johnson S E.....	Springfield
Streeter Geo.....		Stafford L R.....	Staffordville
Rockwell & McCord.....		Bailey D C.....	Stevens' Point
Bray & Chote.....		Blake & Mitchell.....	
Lynch John.....		Benson P & Bro.....	
Wall & Fitzgerald.....		Burns, Thompson & Co.....	
Rumery & Kellogg.....		Boynton N.....	
Hutchinson Thos.....		Brown E D.....	
Miller L J.....		Burr, Emmons & Co.....	
Fuinely & McDonald.....		Bean T G & Son.....	
Eighme R P.....		Campbell P.....	
Wetherby David.....		Clark Owen.....	
McAllyster J P.....		Cooper B F.....	
Hanson W E.....		Cronkwhite, Plummer & Co.....	
Crowell & Son.....		Clements D R.....	
Webb, Albert & Co.....		Cook Cornelius.....	
Myers & Van Every.....		Curran H & J D.....	

Homestead Seth.....	Stevens Point	Barrett J.M.....	Trempealeau
Gilchrist A B.....		Healy Benj B.....	
Goodhue Geo J, Jr.....		Reed Joseph.....	Tyrone
Gamble Ross.....		McCaul & Son.....	Tomah
Hungerford Seely.....		Hinton T.....	Trap River
Hutchinson & Bro.....		Mann Joseph & Co.....	Two Rivers
Hubbard.....		Goyt C.....	Ualo
Karner S H.....		Foster N C.....	Upper Duck Creek
Kelly Bros.....		Lucas J & Bro.....	
Knox Bros.....		Taylor A.....	
Meehan Bros.....		Arntz P.....	Wauceda
McCulloch H D.....		Smith & Foster.....	Wauzeka
McDill T & Bro.....		Lewellen & Lumb.....	Waterloo
McMillan & Sons.....		Squires & Sheldon.....	
Moe Louis I.....		Goe O K.....	Watertown
Lester and Plummer.....		Hamlin & Sleeper.....	
Park G L.....		Streeter J & A C & Co W Water.....	
Pike E L.....		George V. Brill.....	Wrightstown
Perry I & J.....		Hammond Alfred.....	Waukechon
Quinn Jas.....		Semple A.....	
Rennie John.....		Semple F.....	
Robeson J M.....		Kimball R N, Madison.....	Waukesha
Reading & Van Order.....		Richardson Silas.....	
Richardson Chas.....		Morse O A.....	Waupun
Clifford Wm J.....		Yewdike A H.....	
Rousseau M. A.....		Andrews & Parcher.....	Wausau
Sherman S A.....		Ancutt & Callon.....	
Scott Bros.....		Allen Henry.....	
Sheckels Wm.....		Bernhard & Simpson.....	
Wadleigh & Walker.....		Brown John.....	
Woods.....		Clarke J C.....	
Whitney Ebenezer.....		Clark T W.....	
Wade Geo & Co.....		Cohn & Curran.....	
Warner.....		Daniels H.....	
Welch Adam.....		Fitzer Al.....	
O C Wheelock.....		Gray Robt.....	
Callahan Chas.....		Hermann & Miller.....	
Redfield John.....		Kickbush & Bro.....	
Isherwood J & H.....		Leahy Capt J.....	
Blow Louis.....		Lawrence & Peters.....	
Johnson J O.....		Manson Rufus.....	
Martin John R.....		McLain Henry.....	
Lawson & Co.....	Stoughton	McGinnis Daniel.....	
Severson S H.....		McCrosen Jas.....	
Turner O M.....		McGinnis John.....	
Ives W A.....	Sturgeon Bay	Nichols Ed.....	
Anderson Geo.....	Seymour	Plummer B G.....	
McIntosh, Ross & Perry.....		Single Ben.....	
Pope G M.....		Single Jas.....	
Procker & Blair.....	Sheboygan	Stafford M.....	
Freyverg E.....		Wenhime & Kickbush.....	
Thompson & Schrader.....		Zastrow Ed.....	
Winter M.....		Shaw Daniel & Co.....	West Eau Claire
Graham W.....	Sheldon	Wheaton Lumber and mfg Co.....	
Wait S.....		Shell Bros.....	West Salem
Wilson George.....		Allen N H & Co, Railroad.....	Whitewater
Callon Wm.....	Sherman	Easterly Geo W & Co.....	
Gray J.....		Littlejohn A M.....	
Davidson D.....	Saumico	Nutt M E & Killips.....	Winneconne
Klaus & Wright.....		Jones, Wellington & Co.....	
Trumble M E & Co.....		Knapp Bros.....	
Gray O.....		McArthur & Co.....	
Lamb, Watson & Co.....		Starks, Stickles & Co.....	
Marshall & Co.....		Schultz C.....	Woodland
Weed A & Co.....	Saumico	Converse H.....	Wycocena
Coburn R G.....	Superior	Wells & Craig.....	
Howard John D.....		King P & Sons.....	Wyoming
Peylon H M & Co.....		McCutchen H.....	
Mann J H & Co.....	Sun Prairie	Baker & Blair.....	Yankeetown
Huct John.....	Trim Bell		

**ILLINOIS.**

Brown T H & A L.....	Chicago	Morris & Williams.....	Chicago
Dencer & Weise.....		Northwestern Planing Mill.....	
Driver Thos.....		Palmer, Fuller & C.....	
Dufour Bros & Rowe.....		Ricketts & Mavor.....	
Farson, James & Son.....		Russell S T.....	
Fullam & Co.....		Sheriffs John & Son.....	
Gess & Phillips Manuf'g Co.....		Sinclair J H & Co.....	
Holtstander, Randall & Daniels.....		Walker, Kelton & Co.....	
Kirby, Carpenter & Co.....		Ward, Stephens & Co.....	
McDougal & McKinlay.....		Welles, Ludington & Van Shalck.....	
Mears C & Co.....		White C M.....	
Meyer C J L.....		White G E.....	
Gilbert, Hubbard & Co.....			

THE

# Wisconsin Lumberman

IS devoted exclusively to the Lumber interests of the Northwest, and will endeavor to become the champion and advocate of all measures pertaining to the welfare of those interests. Statistics and information will be gathered and examined with great care, that THE WISCONSIN LUMBERMAN may become standard authority with the manufacturers and dealers throughout the Northwest.

At least one member of the editorial corps will be traveling almost constantly through the Pineries of Wisconsin, Minnesota and Michigan, seeking information, statistics and opinions from reliable sources. Illustrations of prominent lumbermen and scenes throughout the different pineries will form a prominent and attractive feature of THE WISCONSIN LUMBERMAN, thus rendering it a pleasant and welcome visitor to the family of every Manufacturer, Logger, Landowner or Raftsman in the Northwest.

THE WISCONSIN LUMBERMAN will be increased in size in proportion as its patronage will warrant. It is for the manifest interest of all persons engaged in lumbering to assist in substantial manner our efforts towards furnishing a class publication that shall rank first among its kind.

**THE WISCONSIN LUMBERMAN PUBLISHING CO.,**

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