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## **The Wisconsin lumberman, devoted to the lumbering interests of the northwest. Volume II. Number 2 May, 1874**

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May, 1874

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# THE Wisconsin Lumberman,

DEVOTED TO THE

LUMBERING INTERESTS OF THE NORTHWEST.

MAY, 1874.

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SITUATED ON

**CONANT RAPIDS, at CITY OF STEVENS POINT, WIS.**

In consequence of my continued ill health, I now offer for sale the

**Most Valuable Mill Property on the Wisconsin River.**

This Mill adjoins the town plat of the city of Stevens Point, and within one and one-half miles of the city. Has one large double Rotary, capable of cutting fifty thousand ft. per day of eleven hours, with Gang Edger, Cutting-off Saws, etc. This Mill is new, with the latest improvements; was run only last summer. Also one Stock Gang, one Slabbing Gang, and Shingle, Lath and Picket Mill.

There is eleven foot head of water the year round; Water Wheel of Rotary Mill never freezes; can saw in summer and winter, and never lacks power. Each mill has its own separate flume, enabling you to saw with either Mill alone.

Connected with the Mill is a Store, Blacksmith Shop, Boarding House, double Residence and large Barn, Ice House, and eight Tenement Houses.

The Boomage is now capable of holding from six million to eight million feet of logs, and with a very small expense, would be capable of holding twenty million feet. The Piers, Dams and Mill all rest on rock foundation, and in good order.

In short, this is the most complete lumbering establishment on the Wisconsin river, and presents an opportunity to any one desiring to go into business seldom met with.

Also an immense water power, capable of running a number of mills of various kinds, which is now valuable, belonging to the property.

For further information enquire of the subscriber at the mill, or A. EATON, Esq., at Stevens Point.

**J. M. ROBISON.**

Stevens Point, Wis., March 1, 1874.

# THE WISCONSIN LUMBERMAN.

VOL. II.—MAY, 1874.—No. 2.

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## THE LOG DRIVE.

The conditions essential to favorable log driving have been wanting in most localities throughout the pineries of the northwest. The weather has been cold and unfavorable for the continued high water necessary to the drive. In fact, the driving season thus far has not been as good as usual. We have had reports from many different localities, and all agree that unless the weather shall prove exceptionally favorable from now until the last of June, there will be a much larger per cent of logs hung up than usual.

The reports from the Chippewa Valley have all along been very unfavorable, and the very latest news, up to May 5, is to the effect that if the present conditions of the drive are not speedily improved by warm weather and heavy rains, not over 55 per cent of the log crop will be got down on the spring drive. Similar special reports reach us from the other pineries of Wisconsin, and it will be noticed that the many extracts from the local press, to be found in this issue of THE WISCONSIN LUMBERMAN, corroborate the information we have received. At the present writing, it would seem that there

is hardly a possibility of any improvement in the situation to be looked for until the June freshets. Should the June freshets fail, the summer's sawing will be limited indeed.

Reports from Michigan are even more unfavorable for a successful spring drive than in Wisconsin and Minnesota. The Muskegon, Mich., *News and Reporter* for May 2 has this to say of the drive on the Muskegon river and its tributaries:

Nearly all the logs in Grindstone Creek had to be abandoned, and we are informed by the very best authority that over one-third of the logs in the tributary streams of Muskegon river were hung up for the season. The rear end of the drive is at Big Rapids Jam, and it will take about ten days to sort the logs there, when the entire quota of logs in the drive for the year 1874, that can be got out, will start for Muskegon Lake.

The logs in the Hersey Branch, Grind Stone, Middle Branch, West Branch, Main River, Clam and West Branch of Clam, and a portion of the little Muskegon, a total of about 50,000,000 are considered as "hung up," though it is possible that some of them will come out with such a fall of rain as we are liable to have.

The Huron county, Mich., *News* says:

They have been trying to run logs on the different streams during the

past week, but with indifferent success. The water is too low, and as no snow remains in the woods, it will require continuous rains to bring down the logs from the head waters.

It is also reported from all the different pineries where the logging has been done high up on the streams, that the snow yet remains unmelted, but is gradually passing from the effects of the wind and the usual wearing away process, and that there is little hope of their being sufficient water to bring out the logs from the smaller streams. The facts and conditions, as they now exist, seem to say conclusively that the season for log-driving has thus far been decidedly unfavorable, and that there will be a larger amount of logs hung up than usual. Of course there are exceptional instances, but the assertion holds true when we speak of the log crop and drive of the pineries of the northwest.

Just as we go to press the following dispatch was received in this city, from Eau Claire:

"Lumbermen are well satisfied that they must now wait for the July raise in order to get a respectable drive. So far it has not been over a quarter done. The weather continues dry, and the prospects are that it will last for some time to come. Lumbermen of the Black River are quoting from the conditions on the Chippewa. They say but little over a fourth of the winter's cut will be floated to the booms."

The latest reports from the northern rivers are to the effect that the spring run of lumber is fairly on its way to market, on favorable water.

#### THE PROSPECTS FOR AN ADVANCE IN PRICES.

Notwithstanding that last winter's log crop was comparatively small, that the prospects for even a tolerable drive are dubious, that the winter and spring demand has been remarkably active, and that the lumber markets are pretty thoroughly depleted, prices are yet low and in reality weak at present quotations. The peculiar situation can only be accounted for by the recognized fact that the entire business energy of the country is considerably depressed and that in all branches of trade prices have gone down to the very bottom. One has only to notice that iron, dry goods, groceries and the principal articles of manufacture and use have steadily declined in value during the past few months, to become convinced that agencies are at work which will surely do away with the high pressure system under which the business machinery of the country has been operated since the war. The existing feeling that the general standard of all prices is to be materially lower in the future, effectually counteracts the influence of a prospective scarcity of lumber, and induces buyers to exercise caution in all bargains made. At any previous time during the past ten years a similar state of the lumber market together with the conditions of a small crop, would have sent up prices with a bound. Now it is evident that money prefers to remain quiet, rather than assume any risks, until the season has advanced far enough to give some positive indication as to the real basis of prices. Relative

values are influenced by the circumstances of demand and supply rather than the actual cost of production. The supply of iron is so largely in excess of any legitimate demand which can at present be created, that there can only be an advance in the price of that commodity under the action of those who have it in power to bull the market. The same may be said of many different productions of our manufactories. But it is different with lumber. The ordinary demand for pine boards will not be easily met during the summer and fall if a large per cent of the logs fail to reach the mills; or even if the extent of the cut this winter is no larger than at present estimated, and only the usual per cent of logs should be got out on the spring and summer drives. There is no danger of a serious overstock under any circumstances, and therefore it seems reasonable that manufacturers and the trade generally have it within their power to increase prices until they are fairly remunerative. We believe this will be done, and that before next September prices will have advanced materially. The lull in the trade just now is partially attributable to the unsettled condition of business, and in part to the fact that the farmers are busy with their seed-ing and are not in the retail markets. The arrival of cargo lumber in Chicago and the starting of rafts for the Mississippi, is causing prices to weaken a trifle, but not alarmingly. When the business of the country is sufficiently settled to do away with the present mistrust of values, lumber will be one of the first commodi-

ties to feel the beneficial effect, and prices will advance. Lumbermen should consider that the present tendency of prices is to the gold standard. Labor must also approach the same standard. Lumber must and will be manufactured at less cost than at any time during the past few years. Eleven dollars per M now is as high a price proportionately as was twelve dollars two years ago. But prices for lumber are not now remunerative, and they must advance until they are. The business will regulate itself as other businesses are being regulated by the general change in values. The change is now taking place, and with the conditions of a small crop of logs, a poor driving season and a fair demand existing, we believe prices will be firm at a considerable advance, before the summer is ended.

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The duty on lumber is as follows : Timber squared, 1c per cubic foot; sawed boards, plank, deals and other lumber of hemlock, whitewood, sycamore and basswood, \$1 per M., board measure; all other varieties of sawed lumber, \$2 per M., provided that when lumber of any sort is planed or finished, there shall be paid in addition to this 50 cents for each side so planed or finished; \$1 extra if planed on one side, tongued and grooved, and \$1.50 if planed on two sides, tongued and grooved. Hubs, posts, lasts, blocks, wagon blocks, oar blocks, heading blocks, etc., 20 per cent.; pickets and palings, 20 per cent; lath 15c per M; shingles 35c per M; pine clap-boards, \$2 per M.; spruce do, \$1.50 per M.



## PINE LANDS

We have received many letters asking for general information concerning the pine lands of Wisconsin. Most of the letters we have received are from eastern men who desire to know if there is government pine lands in Wisconsin, or who ask to be informed of price, quality, favorableness of location, &c., of lands in the different pineries of Wisconsin and Minnesota. Thus far we have answered all such letters privately and have given the information asked. For the benefit of our eastern readers we will endeavor to state a few facts which we have learned by personal observation.

There is yet a great deal of government land in Wisconsin and even during the past winter entries have been made, at the different land offices, of land which had been found by the land-lookers and reported as bearing sufficient pine to pay for entry. There is undoubtedly pine lands which have never been examined by the land lookers, but it is only exceptional or inaccessible forties or fractions which will not pay the labor of surveying or looking up. There is considerable difference in the price of stumpage in the different pineries of this state—more, we think, than the difference in quality and location of timber will warrant; although of course we acknowledge that prices will and do properly regulate themselves in accordance with real values. In the Green Bay district and the Wolf river pinery stumpage is much higher than on the Wisconsin, Yellow or Black rivers. Then

again favorable locations in the Chippewa Valley can ask and obtain prices which equal the average value of stumpage on the Wolf. Probably the Green Bay district or Wolf river pineries have produced the largest amount of the best lumber yet manufactured in Wisconsin. But on the Wolf, especially, the pine is so nearly exhausted that stumpage is too high to admit of buying and holding merely as a matter of speculation. On the Wisconsin and its tributaries it is different. All things considered we believe that pine lands are cheaper in proportion in the Wisconsin Valley than in any other locality in the state. During the past winter a very favorably located tract of pine land sold at less than one dollar per M stumpage—allowing that the estimates of the amount of timber on the land, were nearly correct. This was an exceptional case, yet we doubt if the average value placed upon pine stumpage on the Wisconsin and its tributaries exceeds \$1.50 per M. There is considerable very good pine along and contiguous to the line of the Wisconsin Central railroad, especially after the road reaches the Jump river. On the line of the Green Bay & Minnesota railroad there is also considerable pine, but a large proportion is young timber, thrifty and of fair quality. The largest, best and most thrifty young timber (and by far the largest amount of valuable pine land) lies in the great valley of the Chippewa. To the speculator, we believe there is no locality in the west which offers such rare inducements for investing in young, growing pine, as does the



Chippewa Valley. The question of locality is now done away with in a measure, for the railroad system of the north is rapidly affording facilities for shipment from all the principal pineries.

A letter received May 8, asks particularly for information concerning the pine timber along the line of the Northern Pacific from its junction with the road from St. Paul to Duluth and on the line of the last mentioned road. The pine along the line of the St. Paul and Duluth road is hardly worth mentioning unless we consider the occasional patches of tolerably fair Norway. The same may be said of the timber along the line of the Northern Pacific. The country immediately on the line of these roads cannot be classed as a pinery although it may appropriately be termed a pine barren.

We have now given a few hints which may serve to answer inquiries in the minds of many of our eastern readers. We will state in conclusion that there are very many opportunities offering daily in the pineries of this state which if properly accepted by capital would prove remunerative investments. In most localities pine lands are not held at anything like the price which is certain to be their real value within a very short time. Five years will witness a remarkable advance in the value of pine lands in Wisconsin and Minnesota. There will undoubtedly be a greater increase in value than there has been during the past ten years.

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#### THE WISCONSIN RIVER IMPROVEMENT CO.'S WORK

The improvements on the Wisconsin river thus far, north of Stevens Point, have been a "miserable failure," and have caused the loss of many valuable lives.

The above extract is from the *Wausau Central Wisconsin*, and is an example, merely, of several newspaper attacks upon the work accomplished last winter by the Wisconsin River Improvement Co. at Little Bull Falls. The editor of the *Central Wisconsin* is somewhat justified in the sweeping assertions made from the fact that personal grief, at the loss of his esteemed uncle, Mr. M. Stafford, is accountable for his feelings in the matter. In justice to the gentlemen of the Wisconsin River Improvement Co., it is only fair to explain their work at Little Bull. It is well known that ever since the running of lumber commenced on the Upper Wisconsin river the "Jaws of Little Bull" have been veritable "jaws of death." Very many lumbermen, pilots and raftsmen have lost their lives in running lumber at that point. The Wisconsin River Improvement Co., who have made valuable improvements on Grand Rapids and at other points, whereby the danger, both to life and lumber, of passing over rapids has been materially lessened, last winter undertook to lessen the dangers at Little Bull by the construction of a dam below the rapids, with a view to "drowning out" the dangerous rocks and eddies. The Improvement Company constructed the dam, and upon trial this spring it has been found that, while the work of improving the running at the points which were

most dangerous [before has been accomplished, yet a new trouble has come from the waters washing out the bed of the river at the foot of the slide of the dam allowing rafts to make a fearful plunge as they leave the slide. The Improvement Company supposed that the bed of the river where the dam was constructed was sufficiently rocky to withstand the action of the water from the slide, and therein was their mistake. We learn that the Improvement Company intend sinking a crib, or cribs, of stone at the foot of the slide, which shall obviate the present difficulty and render their improvement most valuable. It should be considered by those who are just now heartily abusing the Wisconsin River Improvement Co., that Little Bull has always been most disastrous to life and property, and that while the work done by the Improvement Company has perhaps created a new danger, it has also removed the old and terrible dangers which have so long existed. The task of improving Little Bull was an experiment necessarily, and the company should receive credit for the good they have accomplished and be allowed sufficient time to perfect their efforts before they are accused of wholesale murder and destruction of property.

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*The Lumber Journal*, published at Albany, N. Y., is a new candidate for favor and patronage among the lumbermen of the country. Albany is one of the largest lumber markets in the country, and we shall expect to glean valuable information from a journal issued from so important a lumber center.

#### THE SHEERING BOOM PATENT CASE AGA

We have received and read Edward N. Dickerson's argument before the committee on patents of the House of Representatives, delivered in opposition to bills Nos. 1,380 and 1,391, proposing to repeal the act of Congress whereby the patent laws of the United States were set aside for the benefit of Levi W. Pond ostensibly, and the Eau Claire Lumber Co., in fact.

Since reading Mr. Dickerson's argument, we are more convinced than ever that the act of Congress which delegated the rights of a patentee to Mr. Pond and the Eau Claire Lumber Co., was one of the most unparalleled cases of special legislation which has received the assent of our national Congress. It was not a case of legislation (as has been claimed) where a poor man was granted rights justly his due and which had been withheld because of circumstances. It was simply a scheme of the Eau Claire Lumber Co. whereby they expected to realize many thousand dollars without in any way giving value received. The only thing Congress can do to atone for its special legislation in this case is to immediately pass bills 1,390 and 1391. We shall endeavor in our next issue to review Mr. Dickerson's argument and show up the monstrous fraud he is advocating.

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It appears to be necessary for us to inform our readers that the editors of the *WISCONSIN LUMBERMAN* are alone responsible for its statements, estimates, opinions and criticisms. An article upon the sheering boom

patent case, published in our March number, has occasioned dispute. We have reason to believe that certain parties have been unjustly charged with the writing of it. It is simply a matter of justice to Mr. J. P. Cottrill, of this city to say that he did *not* write a word of that article, that he never saw it before its publication, and that he is no way responsible for any part of it, excepting the few paragraphs that were distinctly quoted from a statement of facts which he prepared and published for the information of members of congress.

#### POPULARITY OF THE WISCONSIN LUMBERMAN.

We have reason to believe that THE WISCONSIN LUMBERMAN is appreciated by its many readers. We are constantly receiving words of encouragement and approbation from our subscribers in all the northwestern states, and our cotemporaries of the press have placed us under obligations by the regularity and generosity of their notices. Some of our most able exchanges, in fact, show their appreciation of the editorial opinions and estimates of THE WISCONSIN LUMBERMAN and the items of information which it spares no expense to procure, by circulating them without crediting them to their source, and even without taking the trouble to disguise them. This mark of appreciation is always gratifying. We shall feel all the more the responsibility that attaches to our articles as we bear in mind that, besides having the confidence of our own large circle of practical readers, they are destined to form the basis

and substance of so much that appears on the subject of lumber in papers not especially devoted to that subject. To instance the authority which THE WISCONSIN LUMBERMAN has acquired, and the high estimation in which it is held, we compare the portions of two articles, as follows:

*From an editorial article in the Wisconsin Lumberman for October, 1873.*

All that portion of the state, north of 45 deg. we shall term as northern Wisconsin; this region possesses the timber of the state. Over nearly all this region extends the forests of pine, and although hundreds of millions of feet of lumber are annually run to market out of the Wolf, Wisconsin, Black, Chippewa and St. Croix rivers, the real development of this great resource of wealth is hardly commenced. The most thoroughly developed portion of this great timber region is that bordering on the eastern line of the state in Oconto and Shawano counties, the lumber being shipped through the Menominee, Peshtigo, Oconto and Pensaukee rivers to Green Bay and Lake Michigan, and thence to Chicago and the lumber markets of the west. The future development of the pineries of Wisconsin will result in the manufacturing of lumber on the Wisconsin, Black, Chippewa and St. Croix river, and their tributaries, whence it is floated to the Mississippi, to supply the demand created by the settlement of that vast treeless plain beyond the Mississippi. The lumber, heretofore manufactured on these rivers, has been conveyed to market by running of rafts; this means of transportation will soon be superseded by the Wisconsin Central, West Wisconsin, Green Bay and Lake Pepin, Wisconsin Valley, and other lines of railroad now in process of construction, as they will afford immediate and always to be trusted means of transportation.

*From the St. Louis Democrat, in an article entitled "Product of the Northern Pineries for 1874."*

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## STAVES—DIMENSIONS, &amp;C.

Within two years the business of manufacturing staves in Wisconsin has largely increased. Manufacturers have already succeeded in overstocking the market. Now there is scarcely sale for any but the best quality of seasoned staves. Manufacturers run principally on pork and whiskey barrel staves and heading and use white and burr oak as material. We have noticed particularly that staves cut across the grain of the wood are less merchantable than those cut in such manner that the grain of the wood is nearly parallel with the flat surface of the staves. The right kind of a stove cutting machine with the proper riving and handling of bolts obviates the necessity of cutting across the grain. A merchantable stove should be four inches in width, exclusive of sap. As a matter of economy, stove bolts should be cut from large timber. Heading must always be sawed from the block *with the grain*. In the Milwaukee market we have seen many hand-rived staves which were unmerchantable because of having been got out in such a careless manner that too much labor was afterwards required in dressing. The following table is about the standard dimensions.

	Long.	Thick on Heart.	Average width.
Pork barrel staves.....	31 inches.	$\frac{3}{4}$ inch.	4 inches.
Whiskey barrel staves 33 "		1 "	4 "
Hoghead staves.....	46 "	$\frac{3}{4}$ "	6 "
Pork heading.....	20 "	$\frac{3}{4}$ "	
Whiskey heading.....	22 "	$\frac{3}{4}$ "	
Shaved hoops and hoop poles, $7\frac{1}{2}$ and $8\frac{1}{2}$ feet long.			

## THE STEEL CONSUMERS AT WASHINGTON.

The prominent steel consumers of the country have recently visited Washington for the purpose of securing such modification of the tariff that the present *ad valorem* tariff on steel may be changed to a specific duty. It will interest our mill owners, who are interested in obtaining first-class saws, to read the following statement of Mr. Joseph W. Branch of St. Louis, made before the committee on ways and means:

"At the evening session the consumers of steel were heard.

MR. JOSEPH W. BRANCH,

of the firm of Branch, Cookes & Co., opened the fire, being introduced by Geo. Barnes, of Syracuse, of the Consumers' Association. He stated that he wanted a specific duty so as to know what he was about. As it was now he could not look ahead, as he never knew what his imported steel would cost him. It was necessary to use English steel, although it cost him more than the American. His goods (saws) were used by the lumber mills at the west, and they demanded articles that would stand immense pressure. He valued his reputation and was obliged to use English steel to retain it. He defied any man to distinguish a bar of second quality steel from that of the first. There was no expert living that could. What an absurdity then was the present *ad valorem* tariff, since any dishonest importer could cheat the government by invoicing first quality steel as second class. If he had cheap raw material he could beat the world in his line of goods. Mr. Branch delivered his testimony in a straightforward, honest way, and a member of the committee remarked that he was the most honest man he had seen in the room for a long time."

The WISCONSIN LUMBERMAN, only \$2 per year. Every lumberman in the country should read it.



The Peshtigo Company have been engaged in driving their logs for the last fifteen days, and have been very successful. The logs on the small creeks could only have been got out by the aid of dams, which were built by Fred. Armstrong, the prince of dam builders, under the superintendence of Hon. I. Stephenson, manager of the company.—*Marinette Eagle*.

#### LUMBER IN CANADA.

Statistics of Lumber on Hand in Canada, March 10th, 1874, and the Quantity Manufacturers Expect to Make During the Season of 1874, as Gathered and Reported by Capt. S. M. Hurd for H. W. Sage & Co., of Albany, N. Y.

Canada, and the probable demand in the States, makes them reasonably expect better prices. The lumber on hand in Canada is below the average run in quality.

	Feet.	Feet.
On hand, pine stock and sidings.....	346,100,000	
Expect to make of same..	724,725,000	
	1,070,825,000	
On hand, pine deal board measure.....	80,870,000	
Expect to make of same...	238,375,000	
	319,245,000	1,390,070,000
On hand, spruce sidings...	17,780,000	
Expect to make of same...	86,525,000	
	54,255,000	
On hand, spruce deal board measure.....	32,275,000	
Expect to make of same...	116,375,000	
	148,650,000	202,935,000
Total cut of Canada .....		1,592,975,000

TORONTO AND GEORGIAN BAY DISTRICTS.

In *The Lumber Journal* of May 4th we find the following extensive report of lumber operations in Canada. The report was prepared expressly for an Albany, N. Y., lumber firm, and may be considered authentic. It will be observed that in Canada, as in the pineries of the United States, the log crop of last winter is comparatively small. The report also claims that there was less lumber and logs held over than usual.

Lumbermen did not make calculations on putting in the usual stock of logs. The winter was so open they did not get to work as early as formerly, and have not put in what they prepared for. It is generally estimated that there is fully 100,000,000 feet less than in the winter of '72 and '73. There was a very small stock of lumber held over. The production of lumber the coming season cannot be much more than one-half that of last year.

PORT HOPE, LINDSEY, PETERBORO' AND RICE LAKE DISTRICT.

The estimate all through Canada was not from lumbermen only, but from crown land agents and forest rangers who know what is being done in the woods, and may be relied on as very near correct. Very few have made any disposition of their stock for the coming season. Those who have a desirable stock are holding off afraid to name a price, fearing it will not be high enough, and they are not inclined to consign and take last years' results. Many of those who can will hold back for a time, believing they will get better prices. All the western part know their stock is short, that the production of logs is from 25 to 40 per cent. less than the year before. This, with the increasing demand for lumber in

There is less lumber and logs held over than usual. Some manufacturers say not over half stock of logs were put in last winter; probably it was two-thirds. About three-fourths stock will be made. Probably three-fourths will not be shipped, unless they ship it closer than usual at the end of the season.

TRENTON AND BELVILLE DISTRICTS.

Trenton is holding over the usual stock of lumber; have large stock of old logs on hand. Their cutting will not vary much from other seasons. About two-thirds as many logs were put in as heretofore. At Belleville there is a light stock of lumber on hand. Did not make what they ex-



pected last season; are holding large amounts of old logs. If the market is favorable they will increase the cutting of the season by running nights. Not much more than half the stock of logs put in the past winter.

## BROCKVILLE DISTRICT.

Takes in the Brockville Railroad to Charleton Place, Perth and up to Sandpoint. Holds over about 47,000,000 of sawn lumber that must come out this way. The railroad has not the capacity to bring out much if any more than the stock on hand. Probably but very little of the new cut will be shipped. The cutting this season will not be more than three-fourths the capacity of the mills. Have not put in more than one-half or two-third stock of logs.

## OTTAWA,

like Brockville, holds a large stock of lumber and much below the average run in quality. This season there will be within 10,000,000 of last year's cutting. There will be considerable falling off in the cutting of the old mills, which will be made up in part by Gilmour's Hull mill, McClyment's (both new), Skead & Rochester holding old logs. The cutting of deal will likely be much more than reported. Few contracts were made; they would only say if the market was favorable deals could be made. The quantity of new logs put in the past winter was only two-thirds of the season before. Some of them have not put in one-half the quantity. This will be made up in part by jobbers who have put in small lots that will be for sale.

The lumber shipped to the east coasts of South America and Australia for the years 1871, 1872 and 1873 were:

	1871. Feet.	1872. Feet.	1873. Feet.
South America.....	17,465,000	38,562,000	41,044,000
Australia.....			450,000

Of the lumber shipped to South America in 1873, there was an average loss of \$6 per M. feet, owing to the dull markets. The prospect is

there will be quite a falling off in that trade in 1874.

They are now shipping to the English market the fourth quality deal, with an increasing demand for that quality. The general impression is that the deal trade this season will much more than make up for the falling off in the South American trade. The present price of deals and the probable advance, it is probable there will be a larger cutting than usual in the Ottawa and St. Lawrence districts. There have been a number of contracts made, though rather early—one as high as \$110.

## TIMBER AND DEAL SENT TO ENGLISH MARKET FROM CANADA.

	1871.	1872.	1873.
Sq. timber red'd to bd measure.	248,640,000	265,680,000	200,424,000
Deals, pine and spruce .....	137,298,000	193,086,000	170,980,000

Three-quarters of timber, white pine, one-fourth red pine and hard woods. About 3 per cent. of white pine timber comes from Michigan. Three-eighths hardwood timber, largely oak and elm, from Michigan and Ohio. Deals—Three-fourths pine, one-fourth spruce.

## TIMBER WORTH.

	1st.	2d.	3d
Pine timber, per cubic foot.....	35 c	25c	2 c
Oak " " " " " " " " " "	47 1/2 c	50c	...
Elm " " " " " " " " " "	37 1/2 c	40c	...
Walnut logs " " " " " " " " " "	80 c	85c	...

There is now in port of Quebec, to be shipped on the opening of navigation:

## Feet.

White pine square timber reduced to bd. measure .....	209,397,000
Red pine same .....	15,038,000
Oak, elm, a-h, bass, Tamarack, walnut, white wood, maple, hickory, spruce, hemlock, cherry, birch .....	38,100,000

## DEAL SELLING IN QUEBEC, MARCH 10, 1874.

	Gold	Gold.
Pine, 1st qual. \$108 standard, or \$39.25 per M meas.		
" 2d " " 72 " "	26.19	" "
" 3d " " 36 " "	13.09	" "
" 4th " " 28 " "	10.19	" "
Spruce 1st " " 44 " "	16.00	" "
" 2d " " 36 " "	13.09	" "
" 3d " " 28 " "	10.18	" "
" 4th " " 20 " "	7.27	" "

For special advertising rates, address "THE WISCONSIN LUMBERMAN PUBLISHING Co.," 64 Oneida street, Milwaukee.

## ON THE WISCONSIN RIVER

Fine Stage of Water for Running Rafts—  
Amount of Water to be Run out Between  
Knowlton and the Plover River.

From the Stevens Point Journal, May 9.

Those who have had a long experience on the river, tell us that they never saw the water in a better stage for running lumber at this season of the year than now. It is neither too high or too low—but just right. At first considerable difficulty was experienced in running Little Bull Falls, but they are now “snubbing over,” and we understand everything there is working satisfactory. A good deal of lumber that started from this vicinity is already floating down the father of waters, while a still larger quantity is following in its track. The amount to be sent out, although not as large as in previous years, aggregates a considerable distance up in the millions. The amount to go down the river between Knowlton and the Plover river is estimated at 11,450,000 feet, as follows:

Bailey & Cook.....	600,000
Antoine & Durne.....	700,000
Coon & Curran.....	1,400,000
Wm. Walton.....	400,000
McDill Bros.....	1,200,000
Wadleigh & Walker.....	1,700,000
J. M. Robinson.....	700,000
From Hall's mill.....	1,000,000
John Redfield.....	750,000
— Brooks.....	650,000
Rogers & McKendrick....	650,000
Scott Bros.....	650,000
A. B. Gilchrist.....	600,000
J. Weeks.....	1,000,000
E. D. Brown.....	500,000
Burns, Thompson & Co....	900,000
Total.....	11,450,000

Log driving on the Eau Galle this spring has thus far been only partially successful, owing to a too gradual disappearance of the snow, and the utter absence of our usual heavy

rain fall this season of the year. Nevertheless, a fair stock of logs is secured and the extensive lumber manufacturing establishment of Messrs. Carson & Rand will be in full blast before the close of the present week.—*Durand Times.*

## DESTRUCTION OF TIMBER.

It is almost impossible from the mere study of statistics or even from personal observation of work in the pineries, to fully realize how our forests are being depleted. But the matter is brought forcibly to the mind by such experience as we find Hon. Albert Miller describes in a recent number of the *Lumberman's* (Mich.) *Gazette*.

Having been a resident of the Saginaw Valley since its whole extent was a wilderness, and having witnessed the extent and progress of all its material interests, I now have an opportunity of reviewing the past, and indicating the adoption of measures which will prevent the wholesale destruction of large tracts of valuable hardwood timber which exist in the northern portion of the lower peninsula; the like of which, owing to the long distance from market and a lack of demand for that commodity, was worse than useless to the pioneer of the Saginaw Valley. The finest oak, butternut and black walnut timber that I ever saw, stood on the banks of the Saginaw river and its tributaries, forty years ago. I have cut butternut trees on the flats of the Tittabawassee river, which were two feet or more in diameter, from each of which I could get eleven foot rail cuts before coming to a limb; black walnut trees, (which were considered the greatest pests, because it was with difficulty they could be burned in log heaps,) were standing on the ground having a diameter of from three to four and a half feet—I have

seen one that was six feet in diameter. The lands that were first selected on the uplands, were those that were dryest, and of course they were those that contained the finest oak timber, all of which except a little that was converted into fence rails, was burned up by the farmer as he cleared his land. On many farms that I have in mind if the timber was now standing as it was in its primitive state it would be worth more than the farms with all the improvements. But the past cannot be recalled, the timber has been destroyed and can never be restored. A gentleman who was well acquainted with the northern portion of our lower peninsula with whom I had a recent conversation, described large tracts of beech and maple timbered land with twenty thousand acres in a body, some portions of which were timbered almost wholly with maple of the finest quality and grandest proportions. He mentioned one tree that he saw, of dimensions that would produce a stick of timber twenty-four inches square and sixty feet long; and he said you could hardly cut a chip from a tree without discovering the beautiful "bird's eye" that is so much admired in almost all kinds of furniture. But my information tells me that notwithstanding the fine quality of timber and its great value in the latter part of the nineteenth century, the few pioneers who have reached it with a view of settling the country, are slaughtering it with the same recklessness that the same class did forty years ago the valuable timber of the Saginaw Valley. Now for the remedy: I have for some time past considered that a line of railroad constructed from the valley to the Straits of Mackinaw by the way of the Pine and Rifle rivers, Alabaster, Tawas, East Tawas, Au Sable, Harrisville, Alpena, Presque Isle and Sheboygan, would be the best paying road of any unoccupied line that I know of in the United States. I have heard of the contem-

plated Cincinnati & Mackinaw railroad. Let the managers of that enterprise carefully consider the line above referred to before adopting any other. By adopting the line here mentioned they could secure a monopoly of this vast timber tract which I have referred to, besides the tract of all the towns above mentioned, with a chance of undeveloped resources of wealth and trade.

#### THE REMOVAL OF FORESTS.

In a recent issue the Virginia City (Nev.) *Enterprise* speculates as follows: As there is now taking place in our immediate neighborhood one of the most extensive, rapid and complete denudations of forest lands that has been seen in modern times in any part of the world, it will be of interest to mark the change this wholesale sweeping away of forest trees may produce. Beginning at the base of the Sierras our lumbermen have been rapidly advancing towards the summit of the mountains, and in a short time will have advanced over their crest. As this great denudation is taking place but a few miles west of us, and in the direction whence come our prevailing winds and principal storms, its effects should, it appears to us, be all the more readily apparent and decided. It is not alone on the eastern slope that the forests are being swept away; on the western slope, also, the dense forests that have for unnumbered ages clothed the hills and mountain slopes are being felled but little less rapidly. The time is near at hand when the whole range of the Sierra Nevada mountains will stand a vast, sterile mass of almost naked granite. That this immense region of rocks, heated and parched as it will be by the summer's sun, will have some marked effect upon our climate cannot be doubted. Just what this effect to the full will be remains to be seen. It is quite certain, however, that there will be seen great floods in the early spring months followed by

long and relentless droughts in the summer and fall. This is almost certain to be the case, because there being no timber to shade and protect the snow, it will all melt away during the first considerable spell of warm weather that may occur in the spring, sending floods of water pouring down all the ravines. The season of droughts will then set in. The heated rocks and parched earth will attract no moisture from the clouds, which will pass over the range without being condensed, and thus the dryness and sterility will increase until no rain will fall upon the mountains during autumn, and no snow until late in winter, when the heated rocks have at length somewhat cooled and the vapors passing over them are again condensed. These it seems to us, are the probable effects of a denudation of the Sierras, but exactly what climate changes may occur when the forests are gone, of course, remains to be seen.

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The stove and lumber mill of Beach & Bishop, at Brillion, Calumet Co., on the West Division of the M. L. S. & W. R. R., was destroyed by fire, as already reported, last Friday evening. The fire originated in the fire room, and spread over the entire building with surprising rapidity. Loss about \$8,000. No insurance. The engine and boilers are supposed to be but lightly damaged, and the owners are at work rebuilding and intend to be manufacturing staves within four weeks. Happily no stock was destroyed, for which much credit is due to the ladies of the neighborhood, who, by their own activity and courage, inspired the men to their utmost efforts to save as much as ever possible. Among these ladies named were Mrs. McBride, Mrs. Warner of Appleton, and Mrs. Baily, but all there present have the heartfelt gratitude of the unfortunate proprietors and the richly deserved acknowledgement of the community.

#### MEDFORD, WIS.

Among the towns that have sprung up out of the wilderness, as it were, since the Wisconsin Central railroad was commenced, is one at Sec. 67, in Clark county, which has been named Medford. Those who have been there inform us that it is one of the best locations for a town on the line of the road. The Black river at this point runs parallel with, and within a few rods of, the road for a distance of about two miles, thus affording fine sites for steam mills. The town has but recently been christianized, and yet it already presents a lively appearance. Great impetus has been given it, if, indeed, its existence is not entirely due to the splendid saw and shingle mill which is now in course of erection by Messrs. Semple & McDonald, two experienced lumbermen from Oshkosh. This is the largest mill on the line of the road, and will be in operation by the first of June. The firm has had one hundred and fifteen men in its employ for some time, and already they have not only got their mill well along, but have also put in two million feet of logs. They have taken hold of business on a large scale, and as they are backed with plenty of capital it has had the effect to draw others around them. The town already boasts of a store, run by J. A. King, formerly of Foud du Lac, and a hotel, while several manufacturing institutions promise to be commenced at an early day. Among the latter may be mentioned a broom handle factory and a tannery, as well as another mill. Village lots have been laid out, and several of them purchased by parties who have already commenced to erect dwellings upon them. A new hotel, one much larger than the one now in operation, is also going up, and will soon be in running order. But what augurs better for the future prosperity and permanent growth of Medford than the erection of hotels or the rapid



sale of village lots, is the fact that a good many hardy pioneers are locating homesteads round about it. The timber consists of the different varieties of hard wood, with intervening belts of valuable pine. The mill now being built is to be stocked with pine from the railroad lands, Messrs. Semple & McDonald having contracted with the company for a large amount. —*Stevens Point Journal.*

#### REMOVAL OF SCALE IN STEAM BOILERS.

We believe that Mr. Geo. W. Lord's process of removing scale in steam boilers is giving good satisfaction wherever tried, and we therefore recommend what is known to be useful rather than say that the following receipts, which have been used with varying success, are infallible:

1. Potatoes, in weight one fiftieth part that of the water, prevents the adherence of scale.
2. 12 parts of salt, 2 1-2 parts of caustic soda, 1-8 part of extract of bark, 1-2 part potash.
3. Pieces of oak wood suspended in the boiler and renewed monthly.
4. 2 ounces of muriate of ammonia in the boiler twice a week.
5. A coating, consisting of 3 parts of blacklead and 18 parts of tallow, applied hot to the inside of the boiler every few weeks.
6. 12 1-2 lbs. molasses, fed into an 8-horse boiler at intervals, prevented incrustation for six months.
7. Mahogany or oak saw dust in small quantities. Use this with caution, as the tannic acid attracts iron.
8. Carbonate of soda.
9. Slippery-elm bark.
10. Chloride of tin.
11. Spent tanners' bark.
12. Frequent blowing off.

#### CONCERNING LUMBER.

##### Shipments from the Saginaw River During the Past Month—The Market.

*From the Saginaw, Mich. Courier.*

Last season the first shipment was made from the river April 30th. The river opened much earlier this season, and the shipments, up to this time, have been quite brisk, reducing the quantity of lumber on hand very materially. The shipments during the past month, which embrace all the lumber shipped by water this season, are as follows, the figures being taken from the books of the custom house:

	East Saginaw.	Bay City.
Lumber, feet.....	18,576,219	31,284,098
Lath, pcs.....	922,500	2,328,490
Shingles.....	1,850,000	1,821,000
Staves.....	88,000	180,980
Salt, bbls.....	8,000	9,335

The shipments from the river for the season, to May 1st, were as follows:

Lumber.....	49,880,317
Lath.....	3,250,990
Shingles.....	2,532,000
Staves.....	268,930
Salt, bbls.....	12,336

All of which is an increase over the shipments for a corresponding time last year. The shipments by rail are also largely increased over those of last year.

#### THE MARKET.

The market opened the latter part of February quite brisk, the sales being largely confined to old stock. Large inroads were made on the better class of lumber, clear and selects, and prices were obtained considerably in advance of last year's quotations. Buyers extended their operations not only throughout the length of the Saginaw river, but to the interior and railroad mills, the purchases for 30 days exceeding rather than falling short of 50,000,000 feet. The prices obtained ranged from \$6, \$12 and \$35, to \$7, \$14 and \$42, a large proportion of the sales realizing the higher figures. In some instances better prices were obtained than those quoted. During the first two or three weeks there has been a lull in



the market, and but few sales have been reported. The outlook, however, is bright, and manufacturers are holding firm at the highest quotations. They are sustained in this by the fact that only about a quarter of a stock of logs were wintered, and the further fact that the absence of the usual spring freshet will hold back a proportion of the logs which with good water would have been brought to market. At least half a dozen of the river mills will remain idle the present season, for want of logs, and others will run but a portion of the season.

#### UNDER THE LAW.

The amount shipped under the law is small compared with the shipments. This is owing in a measure to the fact that Mr. Mershon received his appointment late and did not get fairly to work until late in the month. The office is now in good working order, with the promise of a satisfactory showing at the close of the year. The amount inspected through the three offices on the river last month was about 24,000,000 feet.

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#### THE CASS DRIVE.

From Mr. O. E. Elsemore, an operator on the Cass, we learn that there has been delivered by the Huron Log booming Co. up to the first of May, inst., 81,479 logs, scaling 15,045,800 feet. There have been 20,000 pieces rafted out by this company which will scale somewhere in the neighborhood of from three to four millions, which have not been delivered on account of want of room in mill booms of the owners. The jam now in the Cass boom will not exceed twelve million feet, which will be cleaned out in less than two weeks, unless timely rains should come to bring down the balance of the drive. There is estimated to be still back from thirty to forty millions.—*Saginaw, Mich., Courier.*

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

For the week ending April 14th: For saw, to William H. Bentley, Westford, N. Y. The scoring and clearing teeth are operated by a scroll-formed chip-chamber.

For saw-swaging machine, to William Glue, Muskegon, Michigan. A block is secured upon the bed, and carries segmental lever, said lever controlling the movement of the anvil-block to or from the tooth.

For gang-saw mill, to George W. Nichols, Clinton City, Iowa. The slides are so arranged as to allow a current of water to pass through them for the purpose of keeping them cool.

For casing for turbine wheels, to Theodore H. Risdon and William W. Tyler, Mount Holly, N. J. The seats (or standards) and guides so constructed and so arranged with reference to the flanged gate and the surface, toward which the gate moves in opening, as to leave a space between said surface and the flange for the escape of obstructions.

For machine for riving shingles, to David Shankland, Watsonville, assignor of one-half his right to Chas. A. Gates, Gilroy, Cal. The reciprocating riving-knife is so arranged as to follow the grain of the wood while passing through the bolt.

For circular-sawing machines, to Oscar A. Dean, Bethel, Vt. The saw-guard is adjustably attached to the gage upon the saw table by means of slotted standards, guide-blocks, and a supporting-lever provided with a strengthening-arm.

For saw-grinding machines, to William Dreyer, Newark, N. J., assignor to himself and George B. Sharp, New York city. Springs are placed under the ends of the sliding presser-bar in order to support it and prevent contact with the stone.

For feed-roll for saw mills, to Thomas N. Egery, Bangor, Me. The roll is composed of series of disks,

which are prevented from revolving independently of each other by tongues and grooves upon their hubs.

For water-wheel, to Thomas N. Egery, Bangor, Me. The top of this water-wheel is about one foot less in diameter than the bottom for each foot it is distant from it, and the buckets incline inward at the top in the same proportion. This causes both top and bottom of the bucket to be acted upon equally by water. The buckets are slanted at both extremities.

For log-turner for saw mill, to Levi P. Gilbert, Fort Atkinson, Wis. Two alternately reciprocating toothed bars are employed for the purpose of moving the log from the logway to the carriage, and for turning it thereon.

For saw table, to Edward H. Hanna and Charles W. Hanna, Dover, Ky. The table is made vertically as well as angularly adjustable.

For saw-tooth swage, to Andrew J. McCollum, Indianapolis, Ind., assignor to himself and George D. Emery, same place. The sockets carrying the swage can be adjusted to teeth of different lengths and angles.

For circular saw, to William P. Hale, Brockport, N. Y. The saw is made concave upon one or both sides, in order to prevent friction against the material being cut.

For water-wheel, to John W. Smith and Calvin J. Weld, Brattleborough, Vt. The rotating portion of this wheel consists of a horizontal plate, to the centre of which the vertical shaft is fixed, an annular curb, and a top flange or cover for the buckets. There are two kinds of buckets in this wheel, and they alternate with each other. One set radiate from the axis of the wheel-shaft and are flat, extending from flange or cover down as far as the circumference of the plate. The

other buckets consist of upper vertical portions corresponding to the buckets, which portion terminates below the plate in curved tangentially arranged portions.

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#### TANNIC ACID AS A WOOD PRESERVATIVE.

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Mr. Hatzfeld presented, at one of the late meetings at the Academy of Sciences of Paris, a paper upon the preservation of wood by tannic acid and protoxide of iron. He urges that the tannic acid, combining with the albuminoids of the wood, is able to form insoluble tannates, and thus remove in a great measure the support of the vegetable and animal parasites which are so abundant; that the more durable woods are those containing the greatest amount of tannic acid, and that this substance is therefore the true natural preservative. Besides injecting tannic acid into the softer woods for their preservation he proposes to harden them by further treatment of protoxide of iron. This may be applied after the tannic acid or in conjunction with it. The tannate of the protoxide of iron being perfectly colorless, blackens upon exposure to the air, and when injected into the wood, is deposited in the cells on account of this transformation, thus increasing its density to a wonderful extent.

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We clip the following item from the *Oconto Reporter*:

The lumber shovers on the bay shore refuse to load vessels for less than seventy-five cents an hour. The schooner Mott was detained two days on this account, the captain refusing to pay more than fifty cents. On Tuesday morning men were sent from the mill of Holt, Balcom & King owners of the vessel, to load her, which was accomplished in good time.

## IMPORTANT LOG SUIT.

**The Question of Title Raised in an Important Suit to Replevy Logs Cut by Indians on the Oneida Reservation—The United States Versus George Cook—Eloquent Argument by Messrs. Smith & Stark.**

By an action of replevin, the United States has endeavored to dispossess Mr. Geo. Cook of Green Bay, Wis., of certain logs purchased by him, at full market value, from Indians of the Oneida tribe. The suit was first tried in the United States circuit court for the eastern district of Wisconsin, and upon certificate of division of opinion between the judges of that court, the case went before the supreme court of the United States, in the October term, 1873. As a matter of general interest to our readers who may wish to thoroughly understand the facts and arguments in the case, we submit Mr. Cook's brief and argument, as prepared by his counsel, Winfield Smith, Esq., and his attorneys, Messrs. Smith & Stark, of Milwaukee. When the case is decided we shall give a full report to the readers of THE WISCONSIN LUMBERMAN.

## BRIEF FOR THE DEFENDANT.

This action is replevin by the United States for logs cut by Indians of the Oneida tribe on their reservation near Green Bay, Wisconsin, and sold by them to the defendant for full value.

The Indians are of the First Christian and Orchard parties, who are named in the treaty of February 3d, 1838. There are about twelve hundred of these Indians, and they reside on this reservation, of which there are about 65,000 acres in all. Some of them cultivate a part of this land (some 3000 or 4000 acres), but many of the Indians do not cultivate any

land. The logs in question were not cut upon the portion of the reservation which is cultivated. The Indians have an annuity from the United States, which amounts to about \$800 a year in all. Ever since 1838, they have cut and sold timber from this land without objection.

The question on the record is whether the United States can maintain this action upon the foregoing facts.

## ARGUMENT FOR DEFENDANT.

The facts do not show title in the plaintiff. The Indians through whom the defendant claims the logs, possessed the land from which they were cut, and the logs after they were cut. The United States never had possession.

We think it quite clear that the United States have no right of present possession, without which the action would not be maintained. The right of possession was in the Indians. The logs in question being cut on the land reserved to the Indians, are rightfully in their possession, unless the United States have a title to the fee of the land, and the Indians have only such tenure that the severance of the timber vests the title thereto in the owner of the fee. Two things must concur: First, that the United States have actual ownership. Second, that the Indian tenure is of such character that cutting timber forfeits their right of possession, at least as to the timber cut. The latter of these propositions can by no means be maintained. We think the former also unfounded.

The Indian title to the land in question has never been extinguished.

By article 2 of the treaty referred to in the record, made February 3d, 1838, with the First Christian and Orchard parties of Indians (7 Statutes at Large, p. 566) the land on which this timber cut, is expressly reserved to those Indians, "to be held as other Indian lands are held."

By article 1, the Indians cede to

the United States the land previously held by them, except the reservation mentioned in article 2.

These Indians derived this title from the Menominee Indians, with the assent of the United States, as appears from the two treaties cited in article 1.

The first treaty, made February 8th, 1831, between the United States, and the Menominees (7 Statutes at large, p. 342), defined the boundaries of the country of the Menominees (including their reservation on which this timber was cut). The country is claimed by the Menominees "as the exclusive property of their tribe." Article 1. In the same article the Indians agree that a part of their lands, (including this "Oneida reservation,") may "be set apart as a home to the New York Indians." "It is distinctly understood," the article further declares, "that the lands hereby ceded to the United States for the New York Indians, are to be held by those tribes under such tenure as the Menominee Indians now hold their lands, subject to such regulations and alterations of tenure as Congress and the President shall from time to time think proper to adopt." It may be added here that no regulations have been made by Congress which affect the questions here arising.

The treaty of October 27th, 1832 (7 Statutes, 405), varies the boundaries of the land reserved to the New York Indians, but without affecting the question here presented.

A treaty made with the New York Indians, January 15th, 1838, (7 Statutes, 550), recognizes in article 1 the Indian title to this reservation.

The nature of the Indian tribe has been heretofore considered by this Court.

In *Fletcher v. Peck*, 6 Cranch, 87, it is declared (p. 140), that the Indian title "is certainly to be respected by all courts," until it is legitimately extinguished."

In *Johnson & Graham's lessee v.*

*McIntosh*, 8 Wheaton, 543, Chief Justice Marshall says of the Indians, in discussing their relations to the European discoverer (p. 574 :) "They were admitted to be the rightful occupants of the soil, with a legal, as well as just claim, to retain possession of it, and to use it according to their own discretion." In summing up his views, while holding that the Indians could not convey to any individual perfect title in fee without the consent of the government, the Chief Justice said (p. 603): "It has never been contended that the Indian title amounted to nothing. Their right of possession has never been questioned. The claims of this government extend to the complete ultimate title, charged with this right of possession, and to the exclusive power of acquiring this right."

See the opinion of Chief Justice Marshall in *Worcester v. Georgia*, 6 Peters, 515, on page 544. "This principle, acknowledged by all Europeans, gave to the nation making the discovery, \* \* \* \* \* the exclusive right to purchase, but did not found that right on the denial of the right of the possessor to sell." See Judge Washington's opinion, page 579 to 582, inclusive.

And see the case of *Cherokee Nation v. Georgia*, 5 Peters 1, 48.

As Judge Kent says (1 Com. 257): "Congress has the exclusive right of pre-emption to all Indian lands lying within the territories of the United States. He adds that the Indians have a right of occupancy, and the United States possess the legal title, subject to that occupancy, and with an absolute and exclusive right to extinguish the Indian title of occupancy, either by conquest or purchase. The principle is that the Indians are to be considered merely as occupants, to be protected while in peace in the possession of their lands, but to be deemed incapable of transferring the absolute title to any other than the sovereign of the country."



All treaties, statutes, and practice of the Government, from its organization down, are in harmony with this principle. The Government claims the right of pre-emption, when the Indians desire to sell their land, but has never claimed the right to interfere with the occupation or use of it, until the Indians sell.

The manner of use is at the discretion of the Indians. Whether they will hunt and fish, or clear and cultivate it, is for themselves to decide. It is the well known policy of the Government to lead them to the practice of the arts of civilization, and to teach them to so use the land as to obtain their support from a small surface, by tilling it as the white men, rather than to occupy a large extent in the sole pursuit of game. The treaties to which we have referred are significant to this point.

The treaty of 1831 (7 Stat. 344) provides for "weaning the Indians from their wandering habits, by attaching them to comfortable homes," for teaching them the business of farming, for teaching the women housewifery, for supplying them with household articles, with horses, cows, hogs, sheep, farming utensils, and other articles of husbandry necessary to their comfort, for erecting a grist mill and a saw mill, for employing millers to instruct the Indians, and for erecting houses for the Indians and for their instructors.

The treaty of 1838, Article 15, makes briefly similar provisions, appropriating no less than \$400,000 to aid in removing the Indians, supporting them for the first year, assisting them in education and learning to cultivate their lands; "in erecting mills and other necessary houses; in purchasing domestic animals, and farming utensils, and acquiring a knowledge of the mechanic arts." The Oneidas are to have lands so laid off (Article 5) "as to secure them a sufficient quantity of timber for their use."

Other treaties and other legisla-

tion might be cited in abundance to show the policy and practice of this government in dealing with the Indians.

It is evident that cutting timber on the Indian lands is the first essential step to bring about the desired change in their habits. How could the lands be cleared and cultivated if the trees are not to be cut down? How could the mills and houses be erected without the timber? How would the Indians learn to lead the life of the white man if they are not permitted to adopt his practices? How can they raise grain and feed their cattle in the unbroken forest? Many of these Indians make their living as farmers. Could they have done this if the idea had prevailed which is at the bottom of this suit? On the contrary, the record (fol. 12) shows that from the beginning of their occupancy they have been cutting and selling timber. No objection was ever made until now.

It is clear that the laws and treaties admit, and even guarantee the right of the Indians to use and dispose of the growing timber on their reservations.

There is another urgent and conclusive reason why the practice has not been, and should not be restrained. It is absolutely necessary to the support of the Indians. Most of them have no other means of subsistence. The annuity (fol. 12) from the government is about two-thirds of a dollar only for each individual. While some of the Indians have farms, the others have only this timber land. They are confined to this reservation, which furnishes in its present state only timber. The game remaining on this small reservation, surrounded by whites, would not avail even so much as the annuity. For food, clothing, for the materials to construct dwellings, for lumber, nails, glass, shingles, iron, for ploughs, harrows, horses, cattle, and other necessities, they have but one article to give in exchange—the



trees which cumber their land and retard its cultivation. On what theory then should the lawful occupants be forbidden to cut them? And if allowed to cut them, why not sell them? Why should this wealth, furnished them by nature, and all they have, the only source of their hope to compete with the whites, and to acquire their knowledge, their habits, and their skill,—rot on the ground, or be wastefully burned to get it out of the way? Can the Indians learn or practice farming except by removing the timber? They cannot live even for a year without the proceeds of that timber. I respectfully refer the court to the remarks made by Judge Drummond, before whom we tried a case quite similar but upon evidence more full in details than this record presents. (*United States v. Foster*, 2 Bissell's Reports, 377.)

In the courts of the state of New York the question here presented has been fully considered and adjudicated.

In *Ogden v. Lee*, 6 Hill, 546, it appears that the State of Massachusetts formerly owned in the Cattaraugus reservation the same rights now owned by the United States in the Oneida reservation. The plaintiff had succeeded to those rights, and brought trover for sawlogs cut on the land by the Indians who occupied it, and sold the logs to the defendant. Judge Bronson discusses the question fully, and the Supreme Court held without dissent that the action would not lie. He concludes: The Indians "have cut and sold *their own timber*, and I see no principle on which the plaintiff can have an action either against them or their vendees." This case was unanimously affirmed in the Court of Appeals. *Fellows v. Lee*, 5 Denio, 628.

In *Strong v. Waterman*, 11 Paige, 607, the Court of Chancery asserted the same doctrine, and while declaring "the ultimate fee of land," to be in the state, chancellor Walworth

held the right of the Indians "to the beneficial use and occupancy thereof," to be unquestionable. Upon bill of complaint filed by two Indians, on behalf of all, an injunction was maintained against the defendant, who had cut timber on their reservation, and an account was decreed against him for the damages sustained.

The views set forth on behalf of the defendant herein are supported by the Supreme Court of Indiana, in *Wheeler v. Me-shing-go-me-sia*, 30 Indiana, 402. One suggestion of the Indiana court so fitly meets a claim which may be made here, that the Government is injured by waste, that I cannot forbear to cite it. The complaint was for cutting timber on Indian land. The Court says: "It is by no means clear that the acts complained of amount to waste. \* \* \* It was wild land. The doctrine of the common law as to waste could have no application to the members of the band. It was competent to change the forest into cultivated fields; to build houses on the land; to occupy and cultivate it in convenient portions; in short, to use it as a prudent farmer would do with his own land. The trees of our large forests are common articles of traffic. In the improvement and development of a new country, they are as much an article of trade as the annual crops."

But, may it please the Court, these Indians are not tenants, subject to impeachment of waste. They do not hold their lands, nor the forests which grow there, by the grace of this Government. The Indians held their lands before this Government was. They took from them what they would. They used them as they would. They were the absolute, uncontrolled possessors. If they did not own the fee it was because there was then no fee. They did not sell land because there was no one to buy. No discovery, no immigration, no new institutions have abridged, nor have sought to abridge their

rights. Least of all, has the Government of the United States asserted any claim in derogation of these rights. It has held itself out as acknowledging and protecting them. It has with reason challenged the admiration of other nations for its honorable and just dealings with these, its predecessors. The noble words of its great Judges have, by statutes and treaties, been made deeds. The executive and legislative departments have even led the way in which the courts have followed. The United States Government has only insisted for its safety that no other nation, no corporation, no individual should take from the the Indians their right to the soil. The right of the native owners to what grows on the soil was never gainsayed nor limited.

These suits stand without a precedent, as they stand without reason or law for their support. We have never heard the faintest suggestion of a legal foundation for them. How, when, where, by what treaty, by what purchase, by what gift of God or man, did the Government obtain right to take this timber from these Indians? The Indians—Oneidas or Menominees—have lived under the shade of these trees, and of the trees from the cones of which these grew, hundreds of years ago, when, as to white men, there was as yet none of them on all this continent. The Indians and their ancestors possessed this forest, as now they do, in the days when the memory of man runneth not to the contrary. Their prescription is far more ancient than the parvenu tenures of which we boast. We bow before claims so venerable, so indisputable. We must concede—all courts must respect—the titles of these lords of the forest. We yield them all they hold, all they have ever demanded. When the covetous heart of the white nation is set upon their possessions, the nation buys. It pays a price, sometimes small, sometimes fair, sometimes lib-

eral. It does not steal nor rob. Heretofore, it has always made a purchase. A solemn treaty has been deemed a necessary form.

Now, it would seem, *nous avons change tout cela*. The thing is to be done differently. There is a new invention. A better plan has been devised. An effectual plan, and particularly, a legal plan—a point much insisted upon by some good people. Some person in Wisconsin has contrived it. By the new method the Indian property is got;—not by purchase; not by theft; not by robbery. Better than these. By REPLEVIN.

It is a new use for a replevin suit. But, if it works, there will be much following of this example. Perhaps the novelty commends it more to the inventor than to this court. We cannot but believe, after all, that the humble functionary who seeks eminence, and would have attained notoriety by the success of these suits, may be disappointed. As the Executive has not authorized, so we presume the Judiciary will not approve these unexampled proceedings.

It is then evident that the Indians were acting within the spirit and the strict letter of their legal rights while cutting the logs in question. That these products of their land belong to them until they sell the land; that the sale of the timber is necessary for their support, as the cutting was necessary to the cultivation of the land, that the title to the logs is in them and their vendees; that of a surety, the United States Government has no present title to the logs in question, and therefore cannot maintain this action. We do not discuss the power of Congress to pass laws conflicting with the right of the Indians to use this timber. We do not consider whether the practice or any other mode of starving the Indians on their reservations would be wise or constitutional. It disposes of this case to say that no laws of that sort exist. These suits are as plainly in the face of the uni-

form policy of the law making power, and of the treaty making power, as of humanity and justice.

#### THE HEMLOCK FORESTS OF WISCONSIN.

The very best quality of hemlock timber covers thousands of acres in northern Wisconsin. Perhaps the most dense forests in the state are the hemlock tracts which intersperse the pine and hardwood timber land north of 44 degrees. The hemlock usually grows very large and with remarkable thrift, while the amount of timber to the acre is astonishing. As yet the hemlock forests have been almost entirely neglected and there are hundreds of thousands of acres subject to entry at government price. The hemlock is easily accessible by water course and by the rapidly developing railroad system of the northern portion of the state. It is certainly remarkable that capital and enterprise have given so little attention to the valuable forests of hemlock or the matter of establishing tanneries in Wisconsin. In many localities individuals have, with small experience and less capital endeavored to utilize the advantages offered. As a rule these efforts have only resulted in building up a small local business. Insufficient capital and inadequate shipping facilities have prevented a marked development of this industry. Now we look to a speedy recognition, by capital, of the value of hemlock forests of Wisconsin. Railroads are penetrating the forests affording means of shipping in hides from the west and southwest, while cheap transportation is afforded by the lines to the south and southwest. Water powers abound along the lines of railroad now building in central and Northern Wisconsin, and the usual necessities and requirements of the tanning business are easily obtained. Northern Wisconsin will some day, not far distant, become a great tanning district, and its production of leather will

become one of the leading articles of export from the state. From an article recently published in the *Shoe and Leather Reporter*, we make the following extract:

The forests of hemlock are a fortune to America, and bound to be utilized in the commerce of the world. Europe says, your bark is good enough, now give us your workmanship, and the tanners are answering with a will. While coarse, illy-fleshed, badly rolled leather drags along, the bright, well-filled, honest stock finds an immediate customer. And the demand does not slacken, but grows from city to city, till American hemlock leather is a staple in all Europe.

Of the result of all this it is not difficult to guess. The tanner will make better leather and insure his success. The manufacturer, relieved from the anxiety of the sudden changes, will work confidently and cheerfully. And Europe, no longer the bugbear of the trade, will stand a ready customer, utilizing our forests and adding to the material wealth of the country.

**RAFT OF LUMBER CUT LOOSE.**—A raft of lumber belonging to the Union Lumber Company, that had been tied up below the ferry all winter, was cut loose early Monday morning, by some unknown scoundrels, and left to float down stream and be destroyed. As luck would have it, it ran into the Gravel Island mill's boom and was saved. A crew of men are now at work getting it out. This had not happened it would have been almost a total loss, which would have fell on Mr. J. P. Mitchell and Joe Crowley, who run their lumber last season and who are responsible for all lumber that they run. The public has stood such outrages and kindred ones long enough, and shortly some of these chaps will be looking through the grates and living on bread and water.—*Chippawa Avalanche*.

## THE DIAMOND TOOTH SAW.

Stone-Sawing Extraordinary—A Valuable Invention by J. W. Branch, Esq., of St. Louis.

Mr. J. W. Branch, of the celebrated saw manufacturing firm of Branch, Crookes & Co., St. Louis, has perfected an invention which will so simplify stone-sawing that we may expect eventually to devote a portion of the space of the WISCONSIN LUMBERMAN to the market reports of the price per m. of stone boards. We give the following description from the St. Louis *Commercial Gazette*:

One of the most wonderful achievements of mechanical skill—one that must, from the very nature of present imperfect appliances to accomplish the same object, be mighty in revolutionary effects—has just been completed in St. Louis, by St. Louis brains, aided by St. Louis skill, intelligence and capital. Our readers are, we presume, all familiar, more or less, with the various appliances now in use in cutting stone, and it will be unnecessary to weary them with a description of the ordinary motion of the saws, which have done well, but must now be superceded by the Diamond Tooth Saw, which cuts exactly like unto the circulars as used in sawing lumber.

Many attempts have been unsuccessfully made during the past two years to perfect a saw such as we have this week seen in successful operation; and even this one, which is a most remarkable success, with its features of almost amazing simplicity, now that its correct operation is assured, has failed a number of times. It would be difficult to even imagine the toils and perplexities, the hours of study and reflection, the tantalizing experiments, the unceasing brain work, which is involved in this achievement.

The new invention has been appro-

priately christened Branch's "Stone Monarch." A visit to the place at which it has been fitted up, on Seventeenth street and Tayon avenue, at H. M. Thompson's sewer-pipe works, permitted an examination of the saw and its work, of which we desire to convey a necessarily imperfect idea.

The Diamond Tooth Saw is the child of the brain of Mr. Jos. W. Branch, of the well-known saw manufactory of Branch, Crookes & Co. Under the light of well-digested knowledge, of infinite experience, of untiring assiduity and pertinacious use of money, a small germ has developed into an absolute perfection of fruition. Many attempts to accomplish the same result had been tried, to adapt the use of diamonds to the cutting of stone; but all had signally failed because the prime essential of success in a diamond tooth saw was wanting. Saws were made, diamonds placed apparently secure, but the tremendous force of the work and their imperfect attachment to the steel ever defeated the object, and the diamonds were thrown out and lost. This, then, was the real objective point—this the point which has been successfully accomplished in the saw in consideration. By the use of a variety of devices, Mr. Branch has succeeded in gaining so tenacious a grip, by imbedding the diamonds in the metal, that no power save absolute breakage can retard their successful operation on any material, however obdurate.

The saw is in all its accouterments and general appearance nearly similar to those usually seen in wood saw-mills. The particular one seen by us was a circular, forty-four inches in diameter, armed with twenty diamonds. The principle is applicable to circular and upright saws. At the time of visit, there were a number of the old friends of the patentee, incredulous at first, but abundantly convinced finally, reporters from the daily press, a few ladies, together with the necessary force to operate



the saw. The first work was the sawing of a slab of Warrensburg sandstone, which is a peculiarly difficult thing to do without breakage, it being of so soft a texture. A board (?) was cut of one and a half inches thick, fourteen inches wide, and eight feet long. This occupied three and a half minutes. Another one of the same material took a slightly diminished time, and a very obdurate specimen of limestone was next tackled and rapidly gone through. Amidst wondering exclamations, congratulations and anticipations, the saw was unshipped and exposed to the critical gaze of the assembly, who, one and all, searched for diamonds, as though objects of great rarity. An attempt of one of the Fabers to drag a diamond from its sincere attachment, surreptitiously, by his teeth, was an ignominious failure—it was tooth-in.

Looked at from a practical standpoint, which is the only valuable view to take, this invention must, in a short time, produce most wonderful results. It has been barely two weeks since it commenced work in earnest, and its capabilities can be but faintly foreshadowed. There are so many things to be carefully looked into, so many inaccuracies attendant upon the initial performance of any mechanical invention, that after the first shout of success, much work and study is requisite to make its principles popularly and generally available and understood. In this case, as with the sawing of logs, the feed and the speed must be regulated to suit the varying requirements of hard or soft material. Men who are accustomed to saw-mill work would be most likely to develop this saw the most fully, and each month of use would witness as vivid a change in the successful sawing of stone as was witnessed in the augmented usefulness of saws for cutting timber. With time, with experienced sawmen, with fuller and more intimate acquaintance with the latent forces,

a study of the nature of the entire appliance, so that every advantage can be taken, the present hopeful step of this young invention will gradually lengthen out into a stride of mechanical progress, whose extent will embrace and astonish the civilized world.

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### THE DRIVE OF LOGS.

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*From the Chippewa Herald, April 24.*

As we write the weather is dry and somewhat chilly, and the prospects for a drive on most of the tributaries of the Chippewa exceedingly poor. The driving crews on several of them have come off.

On the Yellow River, the logs are running moderately, and with the assistance of the flooding works there the stock on the stream is assured.

Should the weather continue the same as now, not one-half of the stock put in on the Chippewa and tributaries will be got down. The same is reported as true of other streams in the State.

The Eagle Rapids dam is substantially completed—the water raised in the pond, and the work tested. The boom and sorting works are in order, and logs are just commencing to run from below Brunet's eddy—being as far as the river is open. No fears are entertained of any difficulty in handling the logs, and assorting them as they run.

The Eagle Rapids dam has been filled, and everything thus far works to a charm. Both old and new logs are coming down, and all go over the dam without any trouble. We learn that the dam has been filled so that the plateau upon which the boarding house stands is flooded, and there is no strain upon any part of it. The river fell about one inch last night. A gentle rain set in about midnight and continued until morning. It undoubtedly extended up river, and will probably raise it to a good driving stage. Several rafts have

been sent below the past week. The Ida Campbell arrives regularly every other day. She will be joined by the Monitor soon, and form a daily line.

The drive on the Eau Claire will be finished by Monday evening. The South Fork and tributaries will be fairly cleaned. Unless there shall be more water but few logs will be got into the boom from the North Fork. A visit to the South Fork with Mr. Alex Kempt, this week, satisfies us that a more thorough "sacking" was never done on any stream. The water is pretty low, but there is a determination to bring in the rear, even if they have to resort to "jamming" to get a head with which to float logs.

#### RAFTSMEN DROWNED.

Three Men Find a Watery Grave at Little Bull Falls—Death of Michael Stafford.

*From the Stevens Point Journal, April 20.*

A sad accident, which resulted in the going out of two lives, occurred at Little Bull Falls (Mosinee) last Tuesday morning. A rapids piece belonging to John Grey, and on which there were eight men, went over the falls at about nine o'clock. All went well with them until they arrived at the dam put in by the Improvement Company this winter. Here, we understand, the pieces take a deep plunge into the seething waters, carrying the lumber, as well as the men on it, out of sight. It seems that the cribs in this piece separated, either while going over the dam, or immediately afterwards, and two of the men fell through one of the apertures. Pieces of their clothing, as well as of their flesh, were found on the lumber afterwards, and it is thought by some that the body of one of them was severed. A third man was severely injured, and received a bad cut on his face, but succeeded in holding on to the succor rope, and thus saved his life. One of the men drowned was named Ed. Smith. He was a brother-in-law of James Doty,

the pilot who was taking the piece over the Falls. We have not been able to get the other man's name, but understand that he was a Frenchman and lived at Grand Rapids. This is the first accident of the kind that has occurred on the river this season, but is a very sad beginning, as only about twenty pieces had got over the falls before it occurred. There was a report in circulation to the effect that two more men had been drowned in the afternoon of the same day, but happily this proved to have been an error. We understand that a good many pieces have been badly broken up in going over the dam mentioned, and that the improvement is looked upon with distrust by all rivermen.

Accidents like the one above recorded are appallingly frequent on the river, and yet any quantity of men are willing to take the chances, even though the wages paid are getting lower each year. A lumberman who has served four years in the army, as well as run these falls in all stages of water, tells us he would take his chances in a day's battle in preference to running the falls the same length of time.

#### LATER—STILL ANOTHER.

Since the above was in type, the news that Michael Stafford was drowned at the same place has reached the city. This melancholy accident occurred Thursday afternoon, and has carried sorrow to many hearts. He was helping to run his own lumber over the Falls, and on the fatal trip the oar unshipped, and striking Mr. Stafford swept him off the piece. Mr. Stafford was an old and prominent citizen of Wausau, and was well known and universally esteemed throughout this whole pine region.

This is indeed a sad beginning for the summer's operations on the river. The first lumber came over the falls last Monday, and already three men have been drowned, and one seriously injured.

# THE GREEN BAY & MINNESOTA RAILROAD.

**A Trip over one of Wisconsin's New Lumber Routes—New Enterprises Going Forward and Old Ones Revived—A Glance at Certain Water Powers, Lumber Manufactures and Other Businesses.**

*From the Green Bay Advocate.*

We went over this road last week as far as Merrillan, and find it in good shape for spring, with the frost scarcely out of the ground. We hear from others that the west end of the road is still pretty rough, but it is being improved as fast as gangs of men and construction trains can do it. The very few accident that occur on the road, however, attest that it is in fair running order. The trestle work across the flat on this side of the Mississippi is about completed. The elevator has not progressed very much, owing to the difficulty of getting timber there before the completion of the trestle work connection, but we are told that it can be completed within six weeks.

## ARCADIA.

We met Mr. Dewey, from Arcadia, on the train, and he informs us that there has been a vast improvement in trade there since the building of the road. Very little wheat is being shipped from that point, owing to the fact that farmers are holding on, hoping to realize higher prices. From another man we learn that Rev. E. B. Edmunds, state Sunday school missionary, has been holding a series of religious services in Arcadia during the past month and has preached 26 sermons; has baptised three persons and more are ready. A Baptist church of about 25 members will be organized there. Rev. A. B. Green continues the meetings. He tells us that all the towns around Arcadia in the recent elections voted against licensing the sale of liquors. In Arcadia the women are organizing for a crusade.

## MERRILLAN.

In this place we find business as

yet rather dull, but with better prospects ahead. We have not space to go into detail of business there at this time. Quite a change has taken place in the clerical force of Messrs. H. Ketchum & Co., Merrillan, by the retirement of Messrs. Cole and Guesnier to establish a business of their own. Clark & Son are about putting in another planer in their mill, and also a re-sawer and matcher. Mr. Putnam, in the hotel at the depot, is, we believe doing a good business. He keeps one of the best hotels on the line of the road. We understand that Mr. Williams, of the Williams House, contemplates retiring and removing to California.

## DEXTERVILLE.

We had no time to stop here, but noticed an immense pile of stave bolts around the saw-mill, and that the mill is in operation.

## GRAND RAPIDS.

We find here that business has enlivened considerable and is quite brisk. The Wisconsin river is open at this point, and the water has attained a height sufficient for floating rafts, although we saw none going over the rapids. We find here the Rablin house, in charge of E. S. Reynolds & Co. They are keeping a good house—no doubt the best hotel in the city. There is a sad looking blank where the recent fire occurred, but it will not remain so long. Dr. Witter has got the earth remove for the foundation and cellar of his new building. It will be 31x70 feet—basement 10 feet high; store 14 feet clear; public hall 15 feet clear. The side and rear walls will be of stone and the front wall of brick. The doctor's loss in the recent fire was very severe, and he has devoted all the means he could raise to paying his debts, relying on his book accounts to rebuild his store. He has the good will of the people, and he deserves it for his honesty and energy, as well as his professional ability. We learn that his new

building will cost \$7,000. Thomas W. Stephenson is the architect and builder. Mr. S. is also the architect and master builder of the new school house that we have previously described. It will be finished next fall and cost \$27,000. We also learn of quite a number of building operations proposed, and judge that this branch of business will be lively. The Grand Rapids folks rely much for their future prosperity on the Wisconsin Valley railway, now in operation to this point. It will be finished to Knowlton and a bridge built there across the Wisconsin by the middle of May. The road is also contracted from Knowlton to Wausau. Of course we called on our old friend Kline, he who inoculated that country with angle worms, and found him rejoicing over a new stock of splendid cutlery. Mr. Kline offers a number of business lots with good water power for sale.

## CENTRALIA.

Shares in the general prosperity with Grand Rapids. Mr. Corriveau, who is probably the heaviest dealer there, says the prospects for this season are good. A large restaurant is being built near the depot of the Wisconsin Valley railway, and probably a hotel will be built also. Four buildings have been put up this spring so far. Jasper Hayden, from Beaver Dam, is about to erect a planing mill. Mr. Corriveau has started a lumber yard near the depot, for the convenience of the public. The water power here is immense, and we understand that Mr. Garrison, who owns a considerable portion of it, will sell out on reasonable terms. Messrs. Jackson & Co., from Menasha, have taken the grist mill of Mr. Weller. J. W. Glassford is the efficient station agent of the Green Bay & Minnesota railway on the Grand Rapids side.

## FLOVER.

ere we had a few minutes time, an looked in upon some of the

folks. We got the impression here that business was not very lively. Joseph Pettis has assumed charge of the hotel and is fixing it up in good shape. At the office of the *Times* we barely had time to shake hands with the proprietor and run.

## NEW LONDON.

We learned at the depot that I. S. Ingersoll met with a sad accident on the 16th at his mill in the town of Bear Creek, 9 miles north of New London. While riding on the saw carriage the carriage ran off and in jumping to save himself he came in contact with the circular saw, which stripped the flesh from the calves of his legs and cut through one ankle. One leg had to be amputated and he is in a precarious condition.

## SHIOCTON.

We had but little time, and have little space for notes. Scott & Co., are about to enlarge their drug store by taking out a partition, and will put in a new floor and re-arrange things generally for the summer business. They will put in a handsome soda fountain—the first in town. The Shiocton dramatic club, at their recent entertainment realized about \$70 over expenses. The character of the play is very highly spoken of. In about four weeks the club will play the American Cousin. They have good scenery which is all paid for. Messrs. Willey & Bertschy and Mason, Barnes & Co., are doing a good business at their mill and have shipped a large amount of their wares, but not yet having received returns, the town feels the effect of a scarcity of money. A Mr. Skinner, from Oshkosh, was to start up the old Jourdan & Sheldon mill last Monday. Messrs. Jenny and Rexford are to start an ax and broom handle turning establishment soon. A Mr. Stevens has bought the old livery stable building for a blacksmith shop. The building prospects for the season are good. A considerable amount of new sidewalk will be laid, which



will be a vast improvement. George Richardson informed us that he would commence last Monday the erection of the depot at Shiocton, between the main and side tracks. It is to be 30x63 feet, and will be finished in four or five weeks.

### OUR FORMER AND PRESENT TIMBER SUPPLY.

*From Report No. 259, 43d Congress.*

At the period of European discovery, the region of country east of the Alleghany Mountains, and over a vast extent of country east of the Alleghany Mountains, and over a vast extent of country to the west of that range, was covered with a dense forest. These woodlands were particularly heavy in the Northwestern States, in a large extent of the South, and especially so along the low lands adjoining the rivers. On the western coast the timber was, with some noted exceptions, chiefly limited to the region between the Pacific and the coast range, especially toward the north and adjoining British Columbia. These forests appear to have existed through a period extending indefinitely back into the past, although, from the indications seen in the mound regions of the West the surface they covered may have once been partially cleared; yet these improvements had been so long abandoned that the most massive timber grew upon these ruins, and the decaying trunks of others that had fallen from extreme age everywhere bore witness of their great antiquity.

Other extensive regions were prairie, and had never within our knowledge borne a forest; and others were what have commonly been termed *deserts*, which name we now understand to apply to certain barren and alkaline regions, mostly destitute of vegetation, because wanting in water, and seldom visited by rains. In the State of Texas alone, it is represented that there is an area four times that of the State of Penn-

sylvania without a tree or shrub. This treeless region extends northward in a broad belt of vast extent, (with some notable exceptions,) nearly across our Territories, and westward to the Coast range of the Pacific States. It is believed that the soil throughout this region, as on the prairies, contains the mineral elements requisite for highly successful cultivation, and that water alone is wanted to develop these natural resources.

Within the region formerly timbered the work of clearing began with the first settlement, and steadily went on as it extended. The pioneers, in their efforts to subdue the forests to make room for cultivation, saw in the extensive abundance around them little cause to apprehend a scarcity in the future, and an apparently inexhaustible supply led to unlimited waste. The work of destruction, begun with necessity and continued without reflection, has gone on until in every section of the country we begin to see the injurious effects, and our fields over extensive regions are left without a tree to shelter them from the sun and the winds.

### STATISTICS OF TIMBER SUPPLY.

An estimate has been made that the percentage of woodlands in the several countries mentioned in the following list is:\*

	Per cent.
In Norway.....	66
In Sweden.....	60
In Russia, in Europe.....	40
In Germany.....	26½
In Sardinia.....	12½
In Holland.....	7.1
In Spain.....	5½
In United States.....	25
In Belgium.....	18½
In France.....	16½
In Switzerland.....	15
In Denmark.....	5½
In Great Britain.....	5
In Portugal.....	4½

From estimates, based upon the census of 1870, it is stated that the amount of woodland in the United States is about 380,000,000 acres, the whole area improved and unimproved being 2,311,544,959 acres. The per-

centage by States and Territories is estimated as follows :†

	Per cent.
Alabama.....	56.0
Arkansas.....	51.4
California.....	4.1
Connecticut.....	24.4
Indiana.....	39.6
Iowa.....	16.2
Kansas.....	11.2
Kentucky.....	48.9
Louisiana.....	56.9
Maine.....	38.1
Maryland.....	31.8
Massachusetts.....	25.8
Michigan.....	40.7
Minnesota.....	20.6
Mississippi.....	60.6
Missouri.....	41.8
Nebraska.....	10.2
Nevada.....	6.4
New Hampshire.....	29.0
New Jersey.....	24.0
New York.....	25.5
North Carolina.....	60.6
Ohio.....	31.7
Oregon.....	31.8
Delaware.....	28.0
Florida.....	60.0
Georgia.....	54.6
Illinois.....	19.6
Pennsylvania.....	31.9
Rhode Island.....	38.7
South Carolina.....	53.2
Tennessee.....	55.0
Texas.....	41.6
Vermont.....	30.6
Virginia.....	45.7
West Virginia.....	51.1
Wisconsin.....	29.3
Alaska.....	30.0
Arizona.....	5.9
Colorado.....	9.9
Dakota.....	3.0
Idaho.....	14.9
Indiana.....	7.9
Montana.....	15.9
New Mexico.....	6.0
Utah.....	9.9
Washington.....	33.1
Wyoming.....	7.9

The States arranged in the order of relative abundance, according to the above estimate would stand as follows: North Carolina and Mississippi, (alike;) Florida, Louisiana, Alabama, Tennessee, Georgia, South Carolina, Arkansas, West Virginia, Kentucky, Virginia, Texas, Missouri, Michigan, Indiana, Maine, Rhode Island, Pennsylvania; Maryland and Oregon, (alike;) Ohio, Vermont, Wisconsin, New Hampshire, Delaware, Massachusetts, New York, Connecticut, New Jersey, Minnesota, Illinois, Iowa, Kansas, Nebraska, Nevada, and California.

The census reports statistics of timber in forests with perhaps less accuracy than any of its other inquiries. Large tracts are owned by non-resident proprietors, from whom

the assistant marshals can obtain no data, and when returned as "unimproved" land, it is still very uncertain as to how much it may be depended upon for timber-supply.

\* These percentages are given on the authority of Reutzsch, a German writer, except as to Russia, where it is from an official statement, by P. N. Werekha, in a recent pamphlet entitled "*Notice sur les Forêts et leurs Produits*," (St. Petersburg, 1873,) and as to the United States, in which it is from census data and estimate. A later and very reliable authority, cited in the following pages, gives the percentage of German forests as 25.7.

† Report of Commissioner of Agriculture for 1872, p. 46. The census included only farm-lands, leaving untouched the wild unoccupied regions of the old States and the lands owned by the Government in the new. As deduced from returns of improved and unimproved lands in farms, the area is 39 per cent. The amount of wood lands not included in the returns is estimated by the statistician of the Department of Agriculture from general information, and should therefore be received as only an approximation, but the best of the kind that we have. The rules upon which this estimate is made are stated in the report from which we quote, page 46.

**THE POTTERY TREE.**—Among the many vegetable products of Brazil, the pottery-tree of Para is not the least worthy of note. This tree, the *Moquilea utilis* of botanists, attains a height of 100 feet up to the lowest branches. The stem is very slender, seldom much exceeding one foot in diameter at the base. The wood is very hard and contains a very large amount of silica—not so much, however, as the bark, which is largely employed as a source of silica in the manufacture of pottery. In preparing the bark for the potter's use, it is first burned, and the residue is then pulverized and mixed with clay in varying proportions. With an equal quantity of the two ingredients a superior quality of ware is produced. It is very durable, and will bear almost any amount of heat. The natives employ it for all manner of culinary purposes. When fresh, the bark cuts like soft sandstone, and the presence of the silex may be readily ascertained by grinding a piece of the bark between the teeth. When dry it is generally brittle, though sometimes hard to break. After being burned, if of good quality, it cannot be broken up between the fingers, a pestle and mortar being required to crush it.

## USES OF TIMBER IN THE ARTS.

The last census, referring to the business of 1869, reports 63,928 establishments manufacturing articles made entirely from wood, employing 393,387 persons, and using materials worth \$309,921,403 annually.

There are besides 109,512 industries in which wood is an important part; for example—carriages, furniture, bridges, ships, &c., employing 700,915 persons, and using materials worth \$488,530,844. If we assume that half of the latter class of mixed manufactories are employed upon wood alone, we have a grand total of 118,684 establishments, employing 7,439,840 persons, and using wood valued at \$554,186,825 annually. We cannot conceive the consequences that would happen to our civilization were the supplies for these great industries consumed. While no one would wish to see the consumption of wood for use in the arts reduced below the proper wants of the country, we may justly hope that the economies of forestry and of manufacture may be most carefully studied, and that there may no longer prevail that wasteful disregard of material which is now everywhere observed. It is hoped that the important lesson may be early learned, that timber-culture is in many cases the most profitable investment of labor and capital when viewed simply as to the value of its material, to say nothing of the incidental benefits resulting to agriculture in the protection which woodlands offer to insectivorous birds.

Although costly experiments have been made to find inorganic materials for the road-bed of railways, nothing has yet been found that will supply the place of wood; nor have we reason to hope that the demand for ties will ever be less per mile than at present.

At the end of 1873 there were reported 71,564.9 miles of main lines, and 13,512 miles of sidings and double tracks, making 85,077.9 miles of railroad within the United States.

Of the main lines, 5,462.3 miles were in the New England states, 14,209 in the middle states, 33,905.9 in the western states, 15,316.4 in the southern states, and 2,671.3 in the Pacific states. Upon these roads locomotives were running, and a large proportion of them used wood for their fuel. The number of ties used varies from 2,200 to 2,800 per mile. If we take 2,500 as a mean, we find that 212,692,500 pieces of timber, 8 feet long, and from 6 to 8 inches between upper and lower surfaces, are required to supply this single item.

The durability of ties varies with the kind of timber, soil, climate and use, ranging from four to ten years. Taking six as an average, the amount required for annual supply must be 35,448,750 pieces, or 94,530,000 cubic feet. In considering this, we must remember that a large amount of waste occurs from hewing and from leaving the upper parts of the trees, some of which are used as firewood, the remainder being a total loss. It must also be borne in mind that the demand for timber by railroads, besides for ties and for fuel, is very great, including fencing, bridges, buildings and structures of various kinds; that the risk from fires is exceptionally great, and that our requirements in this direction are increasing even more rapidly than our supplies are wasting.

We are entirely without official data for presenting statistics of the amount of wood used for fencing, and we only know that it is enormous and to the last degree wasteful and improvident. When we have learned, perhaps from necessity, but better from reason, that live hedges, walls and ditches are often cheaper than wooden fences, and especially that it is better to keep farm stock within the range they are allowed than out of the places where not wanted, it will be a most useful lesson. Again, the larger the field, of course the less, relatively, it will cost to enclose it, so

that by a short calculation we may readily see that were the field about twenty miles square, one rail would fence an acre of ground. This thought has its application in such great grazing regions as Southern California, where fencing materials are scarce and costly, and it is not without its use in all grazing districts.

#### TREE GROWING IN COLORADO.

Mr. N. C. Meeker, the editor of the *Greeley Tribune*, says:

"We print a short extract from the *Omaha Herald*, showing that a farmer near Fremont, in Nebraska, has made 200 lbs. of sugar this year from soft maples of his own planting. This is good news to us, because the soft maple grows in Greeley nearly as fast as the cottonwood; and is next to it as a rapid grower, while it is just as hardy and tenacious of life. We have raised soft maples from the seed that are now over two feet high, and they have certainly been neglected. We have obtained about 4,000 of these trees, which we shall plant this spring; and there shall be at least one maple forest in Greeley, whether or no. It looks now as though we were on the right track as to one forest tree, and that we may safely plant largely. The next to try is the ash; of these we have several thousands, which we shall also plant.

**MILLS NOT OPERATED.**—It is quite probable there will be some six or eight mills on the river that will not be operated but a short time this season on account of a short supply of stock. Among the mills that certainly will not be run are those of Heather & Allison, Lathrop, Incho & Co., and the Litchfield Carrollton mill. Among those that will probably not be run are the Briggs and Little mill. The stock all around promises to be light.—*Saginaw Courier*.

#### MAYOR LUDINGTON'S POSSIBILITIES.

The *Menasha Press* inspired evidently by the current issue of the *Wisconsin Lumberman* says:

We are indebted to his Honor, Mayor Ludington, of Milwaukee, for a copy of his inaugural address. In facts and figures it is a ripe production of his judicious management of that city's municipal affairs during his past year's administration, while the whole document is freighted with wholesome suggestions for the required necessities of 1874. Mayor Ludington has proven himself possessed of rare executive ability since he was first called to public life, and the people of the state of Wisconsin might do worse than in calling him up for the manipulation of our state affairs.

**RUNNING BIG BULL.**—On Wednesday a large crowd of people assembled at the "Falls" to witness the first "pieces" over Big Bull. During the winter some improvements have been added to that put in a year previous, and many were curious to see what benefit would "result." It may be summed up in a few words; the first piece of lumber (from the Pine River Mills of Davis & Co., Geo. Vanderpool, pilot), broke up pretty badly while passing over the "jump off," or sunken pier, and ground heavily on Lumber Yard Rock. The second piece stuck on the dam the hind crib having become wedged between the new fingers (placed there to check the velocity of the piece before reaching the "jump") and in this instance we think it had "filled the bill" completely checking the lumber that the combined strength of over 100 men pulling on a cable was not sufficient to move it. The men, after remaining on the piece partly covered with water for five or six hours, cut the other cribs loose and floated through the falls without more difficulty. We suppose the crib will remain on the dam until a farther raise of water, a monument of the wisdom and brains of the improvement company.—*Wauau Pilot*, April 28.



**TIMBER STEALING.**—Perhaps the most disappointed individual we have met for a long time was a gentleman who came here last week to look up some land he had been paying taxes on for several years, owing to the beautiful arrangements of "township organization," the officials of which usually tax no resident land to the utmost the law admits. This party has paid out a goodly sum of money and expected to find his land in a highly cultivated farming district, having good roads, school houses, etc. His indignation may be imagined when he found that his land had been "pine land," the timber of which had been removed by some other party, and the land, to use our friend's words, was not worth a d—n. We think it would be better for non residents owning land here in the county to make arrangements with responsible parties to protect their timber. They will find it money in their pockets in the long run. There are always to be found in all lumbering districts a class of men who have no scruples as to cutting timber off "speculator's" land, as non residents are called. There is a law to protect land from trespass, but it is, like all other laws, a dead letter if you fail to find the party who commits the depredation. The county and also the state has a special agent to look after lands, and very little cutting of timber is the consequence. We had occasion to look after the land of a friend who lives away from here, and saw timber cut on the land of non-residents which we have reason to think was stolen during this last winter.—*Wausau Pilot*.

WE are informed that John C. Clark has sold out his lumbering interest in our city, including all his pine lands, to some eastern parties who contemplate moving here. The amount Mr. C. receives for his business is, we are credibly informed, \$114,000.—*Wausau Central*.

**FORESTS IN GERMANY.**—Few people have any idea of the extent of forest land in Germany, and most imagine that of the Black Forest little is left except a tradition. On the contrary, in Hanover alone there are 900,000 acres of wood under State management, while nearly a fourth part of the area of Prussia is in forest, although half of that is in private hands. As is well known, the forest administration in particular districts has long been famous, especially in Thuringia and the Hartz Mountains. In North Germany generally the responsibilities are allotted in districts among a carefully organized body of officers, presided over by a forest director. The appointments are fairly remunerated, and they are so eagerly sought after that candidates will remain on probation for years at their own cost, or with moderate and precarious pay, in the hope of securing a place in the corps at last.

**CANADA LUMBER.**—The *Belleville Intelligencer* says: "We learn that the quantity of saw logs to be brought down the Moira and other streams in this district will this season be smaller than usual. The monetary panic in the United States operated largely against production, which has subsequently been much diminished. Besides this, the season was highly unfavorable for drawing, there having been but little snow, and the open character of the winter preventing the freezing of the swamps. This, in the case of most lumbermen, crippled their operations most seriously, it having been found necessary to abandon a portion of the season's cut in the woods until next winter. Fair prices are, therefore, expected to rule, and the misfortune of having to leave logs in the woods may prove "a blessing in disguise," by limiting the supply. At all events, we trust it may prove so, as last year lumber manufacturers had not much to boast of in the way of prosperity.

## NORTHWESTERN LUMBERMAN'S CONVENTION.

Many prominent lumbermen are thoroughly alive to the importance of establishing an association which shall properly and adequately represent the lumber interests of the northwest. Suggestions as to time and place of holding the first meeting are already offered and there is reasonable hope that the important object of securing a permanent organization, will be speedily accomplished. We give in full several excellent letters which have been written to Mr. Judson of the *Northwestern Lumberman*:

EAU CLAIRE, WIS., MAR. 20, 1874.

W. B. Judson, Esq., Editor *Northwestern Lumberman*, Chicago.

DEAR SIR: Yours of 10th instant received suggesting a meeting of lumbermen of Michigan, Wisconsin and Minnesota, to confer with each other on matters interesting to the trade. We like the idea, and are sure by a judicious management it might be made of very great value to us all in knowing more of each other and our business.

We have seen Knapp, Stout & Co., of Menominee, and others of our leading lumbermen, and find them of like minds to ourselves. You can therefore rely on the co-operation of the trade here. Would suggest Milwaukee for the place of meeting, and the time, say middle of May to June 1st.

EAU CLAIRE LUMBER CO.,

Per Allen Kempt, Sec'y.

CLINTON, IOWA, March 22, 1874.

W. B. Judson, Esq., 284 Wabash Avenue, Chicago, Ill.

DEAR SIR: Yours of February 28, only reached me here on my return from a southern trip, hence the delay in replying. First, in common with all our northwestern lumber dealers,

manufacturers and producers, I fully recognize the importance of forming an organization for our general good. The reasons for this are manifest as each season passes with unexpected difficulties springing up at every move the lumbermen attempt. Over-production is perhaps the most serious and difficult obstacle to combat and overcome. There are also many other questions of general importance to the trade that should be considered and discussed at a general meeting of all the northwestern lumbermen. While at Hot Springs, Arkansas, I met quite a number of lumbermen from various lumber regions. Among others C. C. Washburn, ex-governor of Wisconsin, Gen. W. D. Washburn, of Minnesota, both of whom favored a convention looking to a permanent organization for the purpose of fostering and protecting our great lumber interests. Chicago is the easiest of access for lumbermen, and is, I think, the proper place to meet. As to the time, perhaps June next may be as early as would be practicable to get up such a meeting as we should want, in order to bring about the desired results. This latter, however, you could think over and take such steps as may seem best.

I shall be in this vicinity for the next two or three weeks; after that time shall return to Stillwater, Minnesota. Shall be pleased to hear from you, and if I am in Chicago, will pay you a visit. Very respectfully,

E. W. DURANT.

OFFICE OF W. D. WASHBURN & CO., }  
MINNEAPOLIS, MINN. April 8, '74. }

W. B. Judson, Esq., Chicago.

DEAR SIR: I have only just received your favor of the 2nd ult., on my return from quite an absence from home.

I agree entirely with the suggestions of your letter.

I trust early steps will be taken to have a meeting convened in Chicago,

that all the questions raised by you may be considered.

We will give a good representation from here. Yours very truly,

W. D. WASHBURN.

### MANUFACTORIES AT ALPENA, MICHIGAN.

*From the Saginaw Courier.*

The lumber manufactories in Alpena are the leading interests of the city. The firm of Bewick, Comstock & Co. possess a mill in which are cut eight millions of feet of lumber per year, and in which are employed thirty-five hands. The above firm during the past winter erected a shingle mill with a cutting capacity of sixteen million of shingles per year. This firm have in their possession 20,000,000 feet of pine at the present date of writing.

The mill of Richardson, Avery & Co. turns out 8,500,000 feet of lumber per year, and there are about 40 men in their employ.

The door, sash and blind factory of Gebhardt & Co. is one of the institutions of the place. This is a new firm, having started last May, and they are already doing a good business, with improved prospects for the future.

A. Fletcher & Co. are proprietors of an extensive lumber and shingle shingle mill. The lumber mill has a capacity for cutting 8,000,000 feet of lumber per year, and the shingle mill 15,000,000 of shingles. The above firm have recently put into their mill one of Munn's gang saws, which gives good satisfaction. Fletcher & Co. employ about 40 men. They have a full supply of logs on hand, and have 1,500,000 feet of cut lumber in their possession.

Eels & Gillett's shingle mill is doing a good business. It has a cutting capacity of about 10,000,000 of shingles per year. They employ upwards of 25 men.

The mill of John S. Minor is a timber mill. Its proprietor does a good business in the way of cutting car

sills, joists, etc. The capacity of Mr. Minor's mill is from 8,000,000 to 10,000 feet of lumber per year. About 20,000 lath per day are also cut.

Campbell, Potter & Co. manufacture 7,000,000 feet of lumber per year, and employ 40 men. They are about to enlarge their chimney. They have a full stock of logs on hand.

B. Cushman & Co. are manufacturers of shingles and clapboards, and turn out upwards of 100,000 shingles per day, 11,000 clapboards, and employ about 35 men.

Mason, Luce & Co. have a mill that has a cutting capacity of 30,000 feet of lumber per day. The above firm are building a shingle mill which will be completed in a few weeks. This will be run by water and will have a capacity for cutting 100,000 shingles per day. The firm have a full stock of logs on hand and employ in their lumber mill 28 men.

Hilliard, Churchill & Co. are proprietors of a lumber, lath and picket mill. They manufacture 10,000,000 feet of lumber per year, and in the various branches of their business employ 80 men.

The mill belonging to Falkert & Butterfield turns out 7,000,000 feet of lumber per year. The firm have a lath and picket mill attached to their establishment in which are turned out 15,000 of lath and 4,000 pickets per day.

The mill of Frank Gilchrist has a cutting capacity of 7,000,000 feet of lumber per year. Mr. Gilchrist also has in connection with his lumber mill a lath and picket mill. They have a capacity of 15,000,000 lath and 5,000 pickets per day.

Eau Claire now lays claim to being the seventh city in population in this state. At its last election it polled 1,729 votes. The only cities in the state that polled a larger vote were Milwaukee, Fond du Lac, Oshkosh, Racine, La Crosse and Madison. At the last census, Eau Claire ranked as the eleventh city in the state.

## PINE LANDS.

Meeting of the Michigan Timber Association at the Council Chamber Yesterday—The Adoption of the Articles of Association and By-Laws—Names of the Present Members of the Association, etc.

From the Saginaw Enterprise, April 16th.

As announced, the adjourned meeting of the Michigan Timber Association was held at the common council chamber in this city yesterday afternoon. There was a very fair attendance of delegates from Detroit, Grand Rapids, Ionia, Greenville, Bay City and Saginaw. After considerable delay the meeting was called to order by the president of the association, Col. Stockbridge, of Grand Rapids, who announced the absence of the gentleman who had acted as secretary at the meeting at Lansing, and requested the appointment of another. On motion H. S. Dow, editor of the *Lumberman's Gazette*, was elected to the position.

## COMMITTEE REPORT.

The committee appointed at the Lansing meeting to have printed and distributed the articles of association, by-laws and resolutions there submitted, and to correspond with the land owners of the state, and to invite their special attention and co-operation in perfecting an organization for their common benefit, reported that they had performed said duty. The committee consisted of Newell Avery, and Thomas Palmer, of Detroit, L. B. Townsend, of Ionia, James A. Whittier, of East Saginaw, David Ward, of Pontiac, James Shearer, of Bay City, and D. M. Benjamin, of Grand Rapids.

At a request of the chair, the secretary read the articles of association and by-laws as printed.

## ARTICLES OF ASSOCIATION.

ARTICLE 1. The name of this association shall be the Michigan Timber Land Association.

ART. 2. We, the persons whose names are signed to the following ar-

ticles, do hereby agree, each with the other, that we will each pay the membership and annual fees fixed in said articles, and will also pay such sums as may be assessed to us and each of us from time to time, and that we will use our efforts individually to carry out and promote the objects of this organization.

ART. 3. All who shall sign these articles of association, or may hereafter be recommended by the executive committee, may become members of this association by signing these articles and paying to the treasurer an admission fee of ten (10) dollars, and the annual dues of ten (10) dollars in advance.

ART. 4. The officers of this association shall consist of a president, five vice presidents, a recording secretary, a corresponding secretary and treasurer, all of whom shall be members of this association, and the president and a majority of the executive committee shall be residents of the state of Michigan.

ART. 5. For the appointment or election of all standing committees the by-laws shall provide.

ART. 6. Each person signing these articles shall set opposite his name the number of acres of land which he owns or represents or is interested in.

ART. 7. All money necessary to carry out the purposes of this organization shall be raised by an assessment against members, on the basis of the number of acres owned or represented or controlled by each respectively, and from admission fees and annual dues.

ART. 8. The by-laws of this association shall only be amended or changed at the regular annual meeting.

ART. 9. The officers of the association shall be elected in such manner and at such times as the by-laws may provide, and shall hold their office for one year, or until their successors are elected.



ART. 10. These articles of association may be changed and amended at any annual meeting, as may be provided for by resolution, by a two-thirds vote of all the members present.

On motion of Newell Barnard, of Saginaw City, article 2 was amended by the addition of the following words: "Provided, however, that the aggregate assessments in any one year shall not exceed  $2\frac{1}{2}$  mills per acre.

On motion of Mr. Barnard, article 7 was amended, by adding after the word respectively the following provisionary clause: "By a vote of the association at a regular meeting."

As amended, the articles of the association and by-laws were adopted.

#### A RECESS OF FIFTEEN MINUTES

was obtained for the purpose of allowing such gentlemen present as desired to become members of the association, to sign the articles. Signatures were not obtained very rapidly, and all the manoeuvres of the president failed to induce those present to come forward and sign. The "breach" was mainly caused by the pine land owners of the Saginaw valley, who held back for some reason which was not stated. Mr. McGraw said it was his intention to sign the articles, and he, as well as Mr. Sage, would in all probability do so within 30 days. The Grand Rapids and Detroit men expressed themselves as disappointed, believing that there would be no difficulty encountered in permanently organizing the association at this meeting. Among those present who wouldn't sign were Ezra Rust, G. L. Burrows, John McGraw, David Ward, David Rust, and about twenty other Saginaw valley men. The names of subscribers to the articles of association are as follows:

David M. Benjamin, Joseph A. Whittier, Edward Bradley, Eddy, Avery & Co., Joseph Heald, for Heald, Avery & Co., W. L. Webber, for Potter & Webber, L. B. Town-

send, George A. Mitchell, Newell Barnard, W. H. Bradley, T. W. Palmer, Edwin Eddy, for R. C. Remick, D. A. Blodgett, Col. Stockbridge.

As it requires 20 persons to constitute a quorum, and as only 15 names could be obtained at the meeting, the permanent organization of the association could not be effected. It is generally believed, however, that a better understanding will be secured before the next meeting.

Seeing that nothing could be done, Mr. W. L. Webber moved that the same committee which was appointed at Lansing to have printed and circulated the articles of association and by-laws, be re-appointed to procure members for the association among the timber land owners of the state, and when a sufficient number has been obtained for the purpose of organization, that they call a meeting for the election of permanent officers. The motion was adopted and the meeting adjourned.

#### PUMPING ENGINE CAPACITY.

*From the Scientific American.*

A *soi-disant* "practical friend" writes us a note, referring to an editorial of March 2d (page 176 of our current volume) commenting upon that "Remarkable Report about Remarkable Pumping Engines," in which he informs us that the Providence pumping engines "were overhauled and boilers cleaned just previous to the two million gallon test," that indicator cards were taken, that the coal was screened, and that a maximum duty test could not be made "owing to causes still unexplained." He thinks that a different method of testing might have given a more satisfactory result; "but that there are many points, not embodied in the report," which influenced the decision of the board of experts. He encloses several of the indicator cards taken, a set of which we here reproduce as illustrating the

peculiarities of the two styles of engine, the one being the representative of the standard drop cut-off single cylinder engine and the other being a good representative of rather conservative practice in the construction of "compound" engines.

We based our remarks and strictures upon the report of the board, which we found published in the *Providence Journal* of March 2d, in which the statements occur that: "The coal was not selected for any supposed superior quality, and was consumed just as it came from the yard, without screening, picking or other special preparation," and "the engines and boilers, in both cases, were taken just as they were found, without any cleaning or other preparation. No mention, as we have already remarked, was made of indicators being applied to determine the cause of the low duty obtained. We have no reason to change our views as already expressed, views which we find expressed quite as strongly in the editorial columns of the *Engineering and Mining Journal* of subsequent issue and contemporary date. We have nothing to add: except that we are pleased to know that the examination was more complete than we had been led to suppose, and regret that the board should have rendered a report apparently inconsistent with the results, and that they should have allowed themselves to report at all before "circumstances permitted" a duty trial at full power and without the acquirement of essential data: and except that we are more than ever convinced that it is to the interest of all parties to make another attempt to obtain a knowledge of the real merits of the case.

The steam engine has been two thousand years and more in growing from the form described by Heron to its present shape, and the prominent details of designs now familiar to all were known to James Watt a century ago. The problem of designing a

good engine for any special purpose is still the most important and most difficult presented to the engineer; and we doubt if one in a hundred of those who attempt it are capable of doing creditable work. Indeed we believe that the number of engineers who are really familiar with the essential conditions of success, might almost be counted on the fingers, and we are always distrustful of those who are most confident of their own powers as designers of steam engines.

In the Corliss engine, steam is expanded from about one-eighth stroke. In the Worthington there is no expansion by cut-off, but the ratio of expansion is the ratio of piston areas, about three to one, while the latter exceeded the former, on the two duty tests, by ratios of nearly two to one and four to one, respectively. The Corliss card is an exceedingly fine one, as exhibiting the action of the valve gear, but it gives no clue to the real value of the engine. The Corliss machine consists of five similar pairs of steam engines and pumps, coupled to one crank shaft; the Worthington was a single pair of cylinders, yet the pump card of the latter is beautifully smooth and far superior to that of the former. The vacuum on the steam card of the compound engine is better than on that of the single cylinder engine, as given by gage; but the difference seems less on the card. It is, however, sufficient to account for a part of the difference of duty.

The great causes of loss with the Corliss, we presume to be a short cut-off with low steam, large exposed surfaces in and outside the steam cylinders, and a boiler surface immensely disproportionate to the work done. This is shown to be the fact, also, by the evident tendency to equalization of efficiency at the higher duty test, and we are probably fully sustained in our demand for careful test at full duty. We cannot understand yet why this was not made, and

hope that we may be given good reasons for the neglect, if any exist.

The lesson taught by the affair, as it now stands, may be repeated in a few lines. It is as important for a designing engineer to know when expansion causes loss as to know when it may be expected to produce economy. It is important that the designer should understand the serious effect of external losses by conduction and radiation, and still more important that he should comprehend the nature and extent of losses by internal condensation and re-evaporation. It is important that an engineer should comprehend the necessity of making his boiler power just right, and that great losses will be incurred by error in making it either too large or too small for the work for which it is designed.

It is important that a constructing engineer should know that a loss of an inch or two of vacuum, a too tightly packed pump, or a leaky piston or valve, may destroy a hardly earned reputation.

It is important for the engine driver to understand these last points, and also that careless firing, an air hole or two, dead coals in the corners, or irregularity elsewhere, may mean a loss of very serious extent.

It is important that experts should understand all this, and many other matters not much less essential, and that they should: First, see what are the conditions under which the trial is to be made; secondly, see for themselves that everything is in order before commencing their test; thirdly, conduct the trial in such a way as shall reveal every defect and bring out every excellence of the apparatus tested; and finally, make a report that shall not only express their conclusions, but that shall enable all parties interested to see plainly the reasons thereof, and to judge for themselves whether the experts are experts, and whether their judgment is well sustained by facts,

and is not warped by charity or prejudice.

### LOGS ON THE PERE MARQUETTE RIVER.

*From the Mason County Record.*

Nearly all the camps on the Pere Marquette river have broken up, and logging operations for the season are mostly at an end, though some will cut more or less through the summer. We have endeavored, as nearly as possible, to ascertain the amount of the log crop upon the river, including those held over from last year.

<b>DANAHER &amp; MELENDY.</b>	
Amount put in the past winter.....	11,000,000
Amount held over from last season.....	3,000,000
<b>E. E. WARD.</b>	
Amount put in.....	22,000,000
Amount held over.....	3,000,000
<b>P. M. LUMBER CO.</b>	
Amount put in.....	2,600,000
Amount held over.....	14,000,000
<b>GEO. W. ROBY &amp; CO.</b>	
Amount put in.....	8,500,000
Amount held over.....	2,300,000
<b>FOSTER &amp; STANCHFIELD.</b>	
Amount put in.....	5,000,000
Amount held over.....	3,000,000
<b>GRAY &amp; DICKINSON.</b>	
Amount put in.....	5,000,000
Amount held over.....	2,000,000
<b>M. J. DANAHER.</b>	
Amount put in.....	2,000,000
<b>DURR &amp; RUGEE.</b>	
Amount put in.....	2,000,000
Total.....	82,700,000

Durr & Rugee, M. J. Danaher and Foster & Stanchfield are still cutting, and the latter firm will probably operate through the summer upon both the north and south branches. Nearly all the mills are in readiness to run as soon as the ice will permit.

**THE PINE RIVER DRIVE.**—The *Gra-tiot Journal* says: "The Pine River drive reached Alma on Saturday, when the first logs of the season passed the dam. There is a good stage of water, pleasant weather for the hands, and the logs are fast sent adrift, and go gaily floating for the Saginaw Valley. There are not many logs in Pine river this spring, only about 20,000,000, it is said, and many men are running their own logs in separate squads, not giving the whole job, or 'drive,' to one man, as has usually been done."

## HAND-CUT FILES.

*From the Iron Age.*

Although there can be but little doubt that the more common variety of files will, in this country at least, be manufactured by machinery very soon, in such quantities as to supply the domestic market, still it may be interesting, in view of the fact that files made by hand are still used very largely in proportion to the others, to inquire into the methods of manufacture—the kinds of steel used, the processes of tempering, hardening, and of cutting the teeth, beside such other matters of interest as may relate to this branch of industry. The files employed in the mechanical arts are almost endless in variety, a fact which is to be accounted for by there being some four, five or six features in every file that admit of choice, in order to adapt the instrument to the several kinds of work for which it is to be used. Most of the names of files express these different qualities, such as taper, blunt and parallel files, single cut, smooth, rough, saw file, half round file, cotter file, &c.

The great majority of files are made considerably taper in their length and to terminate nearly in a point, and are called taper; some others are made nearly parallel, but with the sides somewhat arched or convex, and are known as blunt files; a very few are made with sides almost straight, and are called parallel. There are three forms of teeth made—those of double-cut files, those of floats or single-cut, and those of rasps. The floats and rasps are scarcely used but for wood and soft materials, the double-cut files being used for working on metals and general purposes. When a file is spoken of, a double-cut is always implied, unless a float or rasp is specifically named.

In the American Encyclopedia of Arts and Sciences, published by John Low, New York, in 1807, we find the following quaint description

of files and the method of their manufacture:

"Files, in mechanics, are made of iron or forged steel, cut in little furrows with chisels and a mallet, thus and that way, and of this or that depth, according to the grain or touch required. After cutting, it must be tempered with a composition of soot very hard and dry, diluted and wrought up with wine, vinegar and salt, the whole being reduced to the consistence of mustard. Tempering the files consists in rubbing them over with the composition and covering them with loam, after which they are put in a charcoal fire, and then taken out; by that time they have acquired a cherry color, which is known by a small rod of the same steel put in along with them. Being taken out of the fire, they are thrown into cold spring water, and when cold they are cleaned with charcoal and a rag, and kept from rust by laying them up in wheat bran. Iron files require more heat than steel ones."

So far the process of making files in 1807.

At present, the pieces of steel or blanks intended for files are forged out of bars of steel that have been either tilted or rolled as nearly as possible to the sections required, so as to leave but little to be done at the forge; the blanks are afterward annealed with great care, so that in neither of the processes the temperature known as the blood red heat may be exceeded. The surfaces of the blanks are then rendered accurate in form and quite clean in surface, either by filing or grinding. When the manufactured files are small the blanks are mostly put into shape by filing, as being the more exact method, and when they are large they are commonly ground on large grindstones as the more expeditious mode, and in some few cases, as in that of those called dead parallel files, the blanks are planed in the



planing machine, the object being in every case to make the surface clean and smooth. The blank, before being cut, is slightly greased, that the chisel may slip slightly over it.

The file cutter, when at work, is always seated before a square stake or anvil, and he places the blank straight before him, with the tang toward his person. The ends of the blank are fixed down by two leather straps, or loops, one of which is held fast by each foot. The chisels vary in size and angle of edge, as does also the weight of the hammer used. The object is rather to indent than cut the steel, and consequently one bevel is a little more inclined than the other. The angle of the edge in the larger is about 50 degrees, and in the smaller about 30 degrees. The usual angles for the vertical inclination, in holding the chisel, are reported to be as follows :

For rough rasps,	15°	beyond the perpendicular.
" rough files,	12°	" " "
" bastard files,	10°	" " "
" second-cut files,	7°	" " "
" smooth-cut files,	5°	" " "
" dead smooth cut files,	4°	" " "

The blow of the hammer upon the chisel causes the latter to indent and slightly drive forward the steel, thereby throwing up a small ridge or burr. The chisel is immediately replaced on the blank, and slid from the operator until it encounters the ridge previously thrown up, which arrests the chisel, or prevents it from slipping further along, and thereby determines the succeeding position of the chisel. The heavier the blow the greater the ridge, and the greater the distance from the preceding cut at which the chisel is arrested. The chisel is again struck, the blows being as nearly as possible of uniform strength, and repeated at the rate of about 60 to 80 times a minute, until the entire length has been cut with inclined parallel and equidistant ridges. This is called, among file makers, the first course. The greater proportion of files, however, are double-cut, and have two courses.

After the first has been cut the surface is smoothed over by passing a file once or twice along the face of the teeth, and again greased. The second course is again cut at about this same angle of vertical inclination as the first, and about 5 to 10 degrees from the rectangle horizontally. The blows on the chisel are given less strongly than in the first course, so as barely to reach the bottom of the previous cut, and the burrs being consequently smaller the teeth are somewhat finer in the second course than the first. The teeth all incline toward the point of the file. When it is turned over to be cut on the other side, if the file be flat, a thin plate of of pewter is placed between it and the anvil to protect the cut teeth. Triangular and other files require blocks of lead having grooves of the appropriate sections to support the blanks so that the surface may be placed horizontally. Taper files require the teeth to be somewhat finer toward the point to avoid the risk of the blank being weakened, or broken in the act of being cut. For a double cut rectangular file eight courses are required, but eight, ten or more courses may be required to cut one rounded face of a half-round file. For various reasons chisels with concave edges are objectionable, and the rounded face must be cut in sections with the straight chisel, and as the work is light, it is generally performed in the English workshop by boys.

The teeth of rasps are cut with a punch varying in size and shape, and it is requisite that they should not be cut in straight lines, for if they were they would produce furrows on the substances to which they were applied.

In the process of cutting files and rasps almost always become more or less bent, and are straightened out while at the red heat immediately previously to their being hardened and tempered.

Before being hardened the files are drawn through beer grounds, yeast or other sticky matter, and then through common salt mixed with cow's hoof previously roasted and wounded, which serve to protect the delicate teeth of the file from being injured by the direct action of the fire. The compound serves also as an index of the temperature, because on the fusion of the salt the hardening heat is attained. It also lessens the liability of the files to crack or clink by supply carbon to the outside.

After being smeared with this composition the file is gradually heated to a dull red, and then most usually straightened with a leaden hammer on two small blocks, also of lead; the temperature if afterward increased till the salt just fuses, when the file is immediately dipped in water. It is immersed quickly or slowly, vertically or obliquely, according to its form, the mode being adopted for each variety of file which is best calculated to keep it straight. The half-round file is disposed, on being immersed, to become hollow or bowed on the flat side, and this tendency is provided for by curving it while soft in a nearly equal degree in the the reverse direction, and by this compulsory method the hardening process leaves them nearly straight. If in spite of ever precaution the file should get bent in the hardening, it is straightened before it gets quite cold, or else it is partially reheated and subjected to pressure, never to blows. When straightened it is cooled in oil, which saves the teeth from becoming rusty.

To prevent the tangs from fracture they are softened either by being grasped in a pair of heated tongs, or by means of a bath of melted lead in an iron vessel with a perforated cover, through the holes of which the tangs are immersed in the melted lead heated to the proper degree. The tang is afterward cooled in oil, and

when the file has been wiped and the teeth brushed clean it is ready for use.

The superiority of the file is found to depend on four points: 1. The primary excellence of the steel. 2. The proper forging and annealing without excess of heat. 3. The correct formation of the teeth; and, 4, the success attained in hardening. There is, perhaps, an equal amount of philosophy and prejudice in the methods adopted by various manufacturers for hardening files; some attach very great importance to the coating or defence, others to the medication of the water, and all to the mode of immersion best calculated to keep it as straight as possible—questions of opinion that it is impossible to generalize. One of the largest importers of files into the American market gravely informed us, not long ago, that the cause of the superiority of the Sheffield files over those manufactured in Birmingham, England, was attributable to some peculiar quality in the water with which Sheffield is supplied, and in which they are tempered and hardened. He said he had known the same qualities of Swedish iron to be used in their manufacture in both cities, and subjected to the same treatment in every particular, while the result was always in favor of the Sheffield file.

Fresh water, at a temperature of 45 degrees Fahr., is generally considered as effective in producing the proper degree of hardness as any fluid at the same time or any other temperature, and the salt on the surface of the file acts principally as an antiseptic.

The principal difference between hand and machine-cut files seems to be in the shape of the tooth or cutting surface. Teeth on machine cut files stand, as a general rule, straighter and at a less angle to the surface to be operated upon than those made by hand. The peculiar effect of the file cuttes' hammer when striking a solid

blow on a chisel held at an angle of 15 to 20 degrees, and the spring of the wrist, is believed to cause the most important difference between the teeth cut by hand and by machinery. Files cut by machinery are generally conceded by file manufacturers who use only hand labor to excel the hand-cut in the regularity of the teeth and evenness of surface, and on all other points, such as steel, shaping, grinding, hardening, etc., there is little or no difference.

A considerable amount of business is done in recutting files, a work that has always been hitherto done by hand. For ordinary work a recut file is as serviceable as a new one, and cheaper, averaging only about one-half the price. For particular work mechanics always select new files, as they are much straighter and truer than when recut. It is estimated that at present about three-fourths of the files used in the United States are hand cut, a state of affairs which is likely to be considerably modified before long.

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#### PHILETUS SAWYER.

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A Washington correspondent of the *Milwaukee News* produces the following passable sketch :

Sawyer is one of the oldest members in congress. He has been here ever since the thirty-ninth congress. Here is his picture. A huge bald head, lightly fringed with a little rim of grey hair. His face, rugged featured, strong nose, shrewd sleepy eyes, huge smiling mouth, a genial air of good nature and kindness over all, reaching down even to the wrinkles upon the border, that lose themselves in the short grey furze bush of whiskers under his chin. A huge and expansive body upon a pair of very bow legs complete the picture. Happy embodiment of energy, the venerable Philetus never rests. Before he dies his legs may give away, they are bent now to almost

the extreme limit, but as long as they hold out he will continue to move about. He is an influential man in the delegation, and one of the most influential in fact, owing to the predominance of his party and his own energy. Sawyer was born in Vermont in 1817, came to Wisconsin in 1847, knows all about lumber, and would die happy if he could be made governor of Wisconsin.

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#### LOG DRIVING IN MICHIGAN.

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Log driving has commenced on Bad river. There is no big flood, but plenty of water.

The *Huron county News* says: "They have been trying to run logs on the different streams during the past week, but with indifferent success. The water is too low, and as no snow remains in the woods, it will require continuous rains to bring down the logs from the head waters. The wages offered to men for work range from \$2 to \$2 50 per day."

The *Caseville Advertiser* says:—"Henry Compo, foreman for F. Crawford, went up the river on Friday last with a gang of twenty men. They returned on Tuesday afternoon, reporting that the logs were hung up for the want of water. The other drives nearer the mouth are still running, but if the present cold weather holds, they will be in a similar condition. Mr. Compo reports that the river fell on Monday last about twenty inches."

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The *Oshkosh Northwestern* says:

The WISCONSIN LUMBERMAN for April comes enlarged to over 100 pages. It contains log statistics for 1874, articles on inspection of lumber, the Kilbourn Dam and Boom Patent case, pine lands in Wisconsin, the new railroad tariff, and other articles which make it a valuable number, for lumbermen especially.

## THE WOODBURY PATENT.

*From the Boston Lumber Trade.*

We have received, from the Woodbury Patent Planing Machine company a copy of a pamphlet, just issued by them, in which are set forth fully the ground on which they, the owners, by assignment and transfer of Joseph P. Woodbury, of his rights under the patent, granted to him and dated April 29th, 1873, claim that said patent is valid and that there is no substantial reason for doubting that their rights, acquired under it, will be sustained. As we proposed, in the article presenting the case of those who contest these claims, and as a matter of interest to our readers, we will, in this article, present as strongly as we may be able, the case from the standpoint of Mr. Woodbury, or of the company, which has succeeded to his rights, whatever they may be.

There are two points necessary to be made and but two, in behalf of the patent. The first is that the invention was original with Mr. Woodbury and of a novel device. The second that it had not been at any time abandoned to the public by the inventor. On the first point, it is claimed that the examiner, who rejected the application, made June 3d, 1848, did not understand the merits of the invention, on the peculiarity of the device, as distinguished from other previous devices, and which rendered it more valuable and effective for its purpose. In proof of this, it is shown that the examiner was in an error in supposing that Brown's device, patented Oct. 9th, 1845, was substantially equivalent to that of Woodbury, the pressure in Brown's machine being secured by a roller, rigid from end to end and carried upon springs, while Woodbury's was a flat bar. The variance and superiority of Woodbury's device over Brown's was manifest in three particulars. It would press upon the board very much nearer to the cutters than would be possible with a roller; it would be in contact with the board

over more surface, that is by the whole width of the bar instead of by a single line; and there would be, in a stationary bar, much less liability that chips, slivers or shavings would be pressed into, and mar the surface of the board than in case of a revolving roller. In answer to the examiner's reference to Burnett's English patent it is claimed that, while the "powerful flat spring" of Burnett's resembled the pressure bar of Woodbury in the two advantages of nearer pressure to the cutters, and of less liability to the admission of chips under the pressing surface, it differed in one very important respect. Burnett's flat spring not only yields in a vertical direction, but also transversely, so that, if there be a protuberance in the board from any cause, such as a warp or a knot, &c., the spring would yield at that point and continue to press the remainder of the width of the board, whereas Woodbury's bar is rigid transversely, and the whole force of the spring, bearing down upon the bar will be concentrated at the particular point where the cutters would be likely to tear out the wood. This would seem to be a most important difference between the "flat spring" of Burnett and the "pressure bar" of Woodbury. In answer to the point made by the examiner, that Joseph E. Andrews, in his rejected application for a patent, made nearly two years before Mr. Woodbury's application, referred to "yielding pressure bars" as being in use prior to the date of his application, it is stated that Mr. Andrews referred to the pressure bars, which he had seen on Woodbury's machine, and therefore this reference does not weigh against the device being original with Mr. Woodbury. This statement is sustained by the affidavits of Mr. Woodbury and his brother.

On the other point, we observe that abandonment may consist in the failure to apply for a patent before putting it or allowing it to be put into public use. The law of 1836, made a.



patent invalid, and, by consequence, an application for one would be refused on the ground that the invention "had been in public use, with the applicant's consent or allowance, prior to the application." The law of 1839 altered the condition, so as to provide that "no patent shall be held to be invalid, except on proof of utter abandonment to the public, or that such purchase, sale, or prior use has been for more than two years prior to such application for a patent." Under the law of 1839, which was in force at the time of Mr. Woodbury's first application of June 3d, 1848, unless it can be proved that, prior to June 3d, 1846, he had perfected the invention and sold or otherwise consented to or allowed its use, he was entitled, so far as the matter of abandonment is concerned, to a patent. As to Andrews' reference to the bars being in use prior to July 27th, 1846, it is for the contestants to show that this use, thus referred to, was not merely between June 3d, 1846, and July 27th of that year, but prior to the first date. In reference to this use, which was known to Andrews, and also as to its use by any other parties prior to June 3d, 1846, the burden of proof is on the contestants. A simple denial, on this point, by Mr. Woodbury, if it is not controlled by positive evidence to the contrary, would be sufficient to sustain his case.

The next point to be considered is this, whether, at any time between June 3d, 1848, and the date of his renewed application which was Dec. 5th, 1870, Mr. Woodbury abandoned his invention to the public use. The law of 1870, approved July 8th, provided "that when an application for a patent has been rejected or withdrawn prior to the passage of this act, the applicant shall have six months from the date of such passage to renew his application, or to file a new one, and, if he omits to do either, his application shall be held to have been abandoned." According to this provision

it is of no consequence whatever, in our judgment, whether the application, made in 1848, was withdrawn by Mr. Woodbury's authority or with his knowledge or not, or whether the power of attorney, given to his solicitor at Washington, conveyed to the solicitor power, to act at this point. Allowing that the withdrawal was valid, and have all the effect which any withdrawal could have on Mr. Woodbury's rights, those rights were revived under the law of 1870. As to the question of any abandonment, we understand that this was, by agreement between the commissioners of patents, the appellate court, having jurisdiction and parties interested, left to be decided by a single test case, to save the time of the court and expense to all interested, and it was understood that a decision in this case should be a decision virtually of the others. So that, in a proper sense, the commissioner says that the application was finally granted "in obedience to the decision of the superior court of the District of Columbia," and Mr. Woodbury may truthfully claim that the court decided this question in his favor.

From the above it is clear that the contestants have the *onus* upon them to show either that the peculiarities of Mr. Woodbury's device, as to form, and the advantages gained by it, had been in use, or had been described in some publication prior to his construction and use of it, or that more than two years before he first applied for a patent, he had consented to or allowed its use, or that in the interval between his two applications, he had consented to or allowed its use in such mode as to have amounted to an abandonment of it. He has the advantage of the fact that the patent has been granted to him, which, in itself, is *prima facie* evidence in its favor. We shall keep our readers advised of the progress of the suit, involving, as it does, such immense interests to both parties.

## RELIANCE WORKS OF E. P. ALLIS &amp; CO.

**A Monument to the Sagacity, Industry and Nerve of Mr. E. P. Allis—An Evidence of Milwaukee's Manufacturing Importance—The Largest Works of the Kind in the United States Under Individual Control.**

*From the Milwaukee Journal of Commerce.*

It is quite the effective and popular thing, when ambitious and patriotic Milwaukeeans desire to impress a stranger visitor with the extent and importance of the manufactures of the city, to invite a cursory ramble through the "Reliance Works" of E. P. Allis & Co.

The stranger, by way of disappointing his expectations at first and preparing to more complete surprise afterwards, is first led through the unpretending offices on Florida street. Perhaps he may already have visited the new and elegant office and counting room of the MILWAUKEE JOURNAL OF COMMERCE, and the comparison is therefore the more keenly appreciated. The cunning Milwaukeean, if determined to follow out his idea of the effectiveness of the surprise party theory, will, from the office, lead his companion through great rooms on the second floor of the same building, where only piles of boards are visible. Or, he will plunge into the drafting rooms where one is impressed with the idea that he is at least in the presence of a corps of railroad engineers. Ascending to the third floor, the "pattern loft" is open to the stranger's inspection. Here the visitor will commence to express the astonishment that finally culminates at the "pipe shop," in wondering how all these great works are so thoroughly systematized and operated. The "pattern loft" is the store-room of the thousands of patterns by which the various machines and parts of machines are fashioned. It would require weeks, even months, of time to fully investigate them. The amount of lumber used in the construction of patterns is of its self an item of importance, while the skilled labor required in their construction has cost thousands of dollars. An insurance of thirty thousand dollars but partially protects the contents of this room. The old Bay State Works, which are now a part of the Reliance Works, are also largely occupied with valuable patterns. From the pattern loft the stranger descends to the pattern shop, and here finds busy workmen skilfully shaping

the new devices. The carpenter's bench and tools seems of but little use here. All the latest and best machinery for wood-working assists the pattern makers in their designs, and one is impressed with the idea that the department represents some great builder's establishment or mammoth cabinet-ware manufactory.

The foundry is easily accessible now, and Milwaukee keeps his friend busy at least half an hour in endeavoring to discover the limits of the place and in counting the laborers at their work. The great furnaces are glowing with the smelting of their daily proportion of the fifteen thousand tons of iron which are annually used in the varied products of the works. All the different processes of labor which at lesser establishments are usually classified and performed upon different days regularly, seem here to be continually in operation. It will also be observed that manual labor is assisted by every possible means that inventive genius has yet developed. In the course of the ramble, suddenly through the large open doors a view of the pipe shop is obtained. The stranger at this point ceases to utter his astonishment. Milwaukee rhetorically insinuates, that the great machine shop, the stone shop, the engine rooms, the tool rooms and the extensive yards are yet to be visited if a correct idea of the extent of the Reliance Works is to be obtained. The stranger is already lost and bewildered, and he therefore complaisantly follows his guide for another hour, in viewing the wonders of the establishment.

Much curious information is to be gathered in the course of the visit. It is noticed that the articles manufactured embrace cast-iron water and gas pipe, steam engines, flour and saw mills, steam heating apparatus, and the general products of an extensive foundry and machine shop. Moreover, this is the largest manufactory of French burr mill-stones, west of New York city. Four hundred men are usually employed at the works, at wages ranging from that of the common laborer to the price paid the most skilled mechanic. Fifteen thousand tons of iron are annually used in the manufacture of the varied products of the works, together with the necessary amount of other metals needed in finishing &c. Two thousand tons of coke, two thousand bushels of charcoal and from sixteen to eighteen hundred tons of hard coal are consumed during the year, and thousands of dollars worth of lumber

is used in the different departments.

The general excellence and durability of the various machines manufactured at the Reliance Works is a matter of even more than state or national fame, for flouring-mills and other machinery have been built at their shops for shipment even to Japan, and a considerable amount of work annually finds its way across the border into Canada. Steam engines varying in price from \$250 to that of the mammoth motors for elevators and water-works, one thousand times as great, are built to order, and their points of superiority in construction are generally acknowledged in the west.

The visitor who hastily examines the Reliance Works is impressed with the magnitude and number of the different buildings and departments, the multitude of laborers, the immense weight of pulleys and shafting, and the ponderous machines in operation, the glowing furnaces, the wonderful contrivances which simplify and perfect labor; yet it is impossible to adequately realize the amount of system, character, energy, understanding and capital required in this close competing age, to successfully manage such an enterprise. The Reliance Works have grown, under their present management, in a short period, from the ordinary foundry and machine shop, to be the largest establishment of its class in the west. This establishment is, in fact, the largest iron industry of its kind in the country exclusively under individual control. Its wonderful success is not more an evidence of the sagacity of its proprietor, than it is an omen of the great future that is in store for Milwaukee as a manufacturing center.

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The new railroad law of Wisconsin does not meet with the approval of the Milwaukee & St. Paul railway company, and will be resisted. Hon. Alexander Mitchell, president of the corporation, said to a reporter on Saturday that the constitutionality of the law would be tested in the courts, and if the decision was against the company, all trains would be withdrawn from the road. This course would doubtless bring the legislators to time or else result in the loss of the charter of the company. It would also stop the practice of dead-heading freight for certain parties, in favor with some of the officers of the company, which has caused so much complaint since 1871.—*Chicago Times.*

## CHIPPEWA COUNTY, WISCONSIN.

One of the Great Lumber Counties of the State—One Million and a Half Acres of Pine Land in the County—One of the Largest Saw Mills in the United States.

A pamphlet has just been issued by the West Wisconsin railway company, and from it we clip the following:

### CHIPPEWA COUNTY.

To the north of Eau Claire county is the county of Chippewa, which, though not touched by the railway line, contains a large amount of the West Wisconsin railway lands. This county is as large as some of the states of the Union. It contains 114 townships. It was organized in 1855, with a population of 600. Its population in 1870 was 8,311. The valuation of its taxable property in 1872 was 5,000,000. The soil of the hard-timbered land is what is termed clay loam, that of the prairies is a rich black sandy loam. The surface of the country is generally quite level. Farming lands, both prairie and timbered, as choice as can be found anywhere, are found here in great abundance. Vast quantities of winter and spring wheat are produced yearly; the average yield being twenty bushels per acre, which sells in any market as the best quality.

The average yield of oats per acre is forty bushels, which in grade rarely falls below number one. Barley and rye grow equally as well. Hay grows wild in great abundance and yields an average of two tons to the acre. There is also raised in the county the first quality of timothy hay, the average yield being two tons to the acre. As for potatoes, the yield and quantity is unsurpassed, the average crop being two hundred bushels per acre.

Wild fruits of all kinds grow in abundance, and planted fruit trees, such as apples and the like, are thrifty. Stock raising is extremely

profitable, the pineries creating a great demand for horses and cattle. There is also an abundance of sandstone and granite for building purposes. For a new county the roads and public buildings are good. There are plenty of good school houses, and the schools are well attended and well taught.

The home markets are very excellent on account of the pineries, and the farmer can sell his produce of all kinds at home.

The county is well watered, the Chippewa river being navigable to Chippewa Falls, and besides this there are almost countless small streams and lakes abounding in fish of all kinds. The county possesses abundance of the very best hardwood timber, affording excellent facilities for the manufacture of anything into which this material enters, such as wagons and carriages, barrels, farming tools, etc. The debris of the saw-mills would supply in unlimited quantities and without cost stock for tub and pail factories, and capital has already been secured for the erection of such factories. Lumbering is the speciality of the county in the way of manufactories. According to the lumber inspector's report, 43,316,319 feet of lumber, 20,000,000 shingles, were manufactured in this county in 1870. During the year 1872 there was manufactured 78,556,000 feet of lumber, 665,000 pickets and 3,000,000 shingles. There are 1,580,480 acres of pine land in the county, which, at the present rate of consumption of 200,000,000 feet per year, will last fifty years. A large portion of the pine lands have oak, maple and ash timber scattered through them. This land is valuable for agricultural purposes after it is stripped of its timber.

The county seat of the county is Chippewa Falls, situated at the head of the navigation on the Chippewa river. It is the base of operations for this lumbering region.

We venture the assertion that its

water-power cannot be excelled in any country. It has one of the largest saw mills in the United States run by water, with a capacity of 45,000,000 feet per season, also two grist-mills, manufacturing yearly a vast quantity of flour. For twenty miles up the river, saw-mills, having a capacity of from 1,000,000 to 15,000,000 feet are found frequently. Over 200,000,000 feet of logs are put into the Chippewa river each season. This requires over 2,000 men and horses and cattle, and large amounts of provisions in proportion. To supply this force furnishes the farmers a good market for all they can raise, aside from employment for themselves and horses and cattle during the winter.

Chippewa Falls, where most of the lumber is manufactured, is a city of five or six thousand inhabitants, where, but a few years ago were only a few hamlets. Its thrifts and enterprise have wrought out a success which makes this city not only the just pride of Chippewa county, but of the state at large. It is situated on the Chippewa river, is beautifully located and boasts the finest hotels and the most complete business blocks, as well as largest sales of any city of twice its size in the northwest, and is moreover accessible from all points of the county.

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The four leading Atlantic ports since the first of January have exported merchandise of the value of \$58,822,630 against \$52,396,349 during the corresponding period in 1873. It is noticeable that while New York, Philadelphia and Baltimore have made marked gains, Boston has scarcely held its own, the increase being about \$300,000, while Philadelphia's increase is \$1,872,020. In the eyes of Boston there is an alarming significance in these figures, and the fact that Philadelphia, with its independent railroad route to the west, connecting at tidewater with the American steamship Company, is gradually crawling away from Boston its grain trade, is throwing the Hub into a cold commercial perspiration.



## THE NATIONAL ASSOCIATION.

**Its Indispensable Importance to Lumbermen—Preparations for Its Organization Next June at Williamsport, Pa.—What the "Boston Lumber Trade" Has Done Towards This Step and Its Views Upon the Subject.**

*From the Boston Lumber Trade*

The *Boston Lumber Trade* has labored earnestly and consistently to awaken an active interest among lumbermen in the matter of the establishment of a national association which shall represent the lumber interests of the country. Just now Mr. J. Henry Symonds, editor of the *Lumber Trade*, is doing even more than using the influence of his pen towards the organization of such an association, and is visiting the lumbering centers at the east with a view to personal effort in behalf of the project. Mr. Symonds has recently visited Williamsport, Pa., and it is now proposed to hold the first meeting in that city some time during the coming June. The benefits to be derived from a national association of lumbermen, have been so often discussed and urged that we will not repeat them now. It is sufficient that a large number of manufacturers and dealers are thoroughly interested in the matter, and will form a nucleus to which will be attracted in course of time, representatives from all the important lumbering localities. Once established, the association will be a success and will prove of incalculable benefit to the trade generally. Mr. Symonds is entitled to more than passing credit for his efforts towards the consummation of the desired object of a national association, and we are glad to be able to extend the congratulations of the WISCONSIN LUMBERMAN to his energy which is now likely to result in permanent good.—*Wisconsin Lumberman*.

We reproduce the above from the current number of the most able publication of its kind in the country with a certain degree of pride. And with both pleasure and pride, we are able to inform our contemporaries and the trade, that the prospects of a very successful issue of our efforts for the formation of an association are indeed flattering. More than eighteen months ago we became convinced that the lumber trade of America, more than any

other business interest, stood in need of such an organization as would harmonize its modes of business, and induce such uniformity of operations as must inevitably result in mutual benefit. Our further acquaintance with the trade, and our recent extensive correspondence and personal interviews with leading manufacturers and dealers, representing all the important sections of the country, have but strengthened our first impressions, and have proved our fancied want a most urgent need.

We have written in the past in favor of this association and the steps we have taken to bring it to the attention of all parties interested in the trade, is a subject familiar to all our readers and known more or less to the whole trade of the land. Without desiring to arrogate anything to ourselves in this matter, or to allow our zeal for the cause to induce us to any overt act of officiousness, we felt it incumbent upon us to take some more active steps towards its consummation than the mere public discussion of its merits through our columns. In this spirit we corresponded at considerable extent with the trade of the country, then, in the full belief that "what was everybody's business was nobody's business," we took the liberty of canvassing the merits of several locations, in regard to their availability as the best place for an initiatory meeting of the lumbermen of North America, and, as a final step, we visited the city, that to us seemed the most favorable and personally examined its disadvantages, and we gained the assurance of its leading lumbermen that they would be more than happy to welcome to their city a thousand lumbermen from the four quarters of the continent.

The city of Williamsport to which we refer, is known to all who are in any way associated with lumber; for years it held a leading position among the pine producing regions of the country, it has—with Lock Ha-

ven, eight miles distant—nearly forty saw-mills, all of which, with one exception, are steam mills. The reputation of these mills and the work done by them is first class, and they will be well worth a visit by mill-men from all sections; its location is as convenient and accessible as any that would seem to be suitable for a gathering of that nature. Southern men will find a direct line of rail communication from Washington or Baltimore; the northern and western trade, from Buffalo, Erie or Elmira; our friends from the middle states from Philadelphia and eastern men from Albany. It is laid out very tastefully and, for a city of its size—less than 20,000—it presents a very busy and thriving appearance. It has three first class hotels, the Herdic, the Crawford and the City hotels, besides several of less pretensions, and a gathering of the proportions we hope to see, can find better accommodations than in many cities of 50,000 inhabitants; and in the month of June—the time it is intended to convene—it must be one of the loveliest spots in the country; added to these inducements is the fact that Williamsport and vicinity boast of a local association, the West Branch Lumbermen's Exchange, with a membership of over one hundred, and an organization second to none of its kind in the country.

We shall take immediate steps to call the attention of every lumber man to this matter, and to impress upon him its importance. The association is a necessity to the trade! This is a fact almost unanimously acknowledged. The first meeting can be made a splendid success, and to this end we solicit the hearty cooperation of the press, and of individuals interested in the welfare of the trade, wherever timber is cut or lumber sold.

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Subscribe for THE WISCONSIN LUMBERMAN, only \$2 per year.

### EAU CLAIRE RIVER DRIVE.

*From Eau Claire Free Press, April 30.*

A large number of men came down from the drive yesterday. With the exception of the head waters of the Wolf and the North and South forks, the drive has been very good. It is estimated that about 50,000,000 have been driven in. A jam, about a mile long, has formed just below Fall Creek. It is supposed that this will be broken and the logs all driven today.

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**STEAM BOILERS.**—A very recent improvement in steam boilers consists in having each flue provided with an ordinary damper, connected with light chains, guided by pulleys to its corresponding fire-door, so that when the fire-door is opened for firing, the damper shall fall by its own weight and nearly shut the flue, and thus prevent the admission of the cold external air. When the steam is blowing from the safety-valve from from an excess of steam, and the fire-door is opened to diminish it, the damper, by being lowered, prevents cold air from entering the furnace and flues and allows the steam to diminish gradually without cooling the metal plates.

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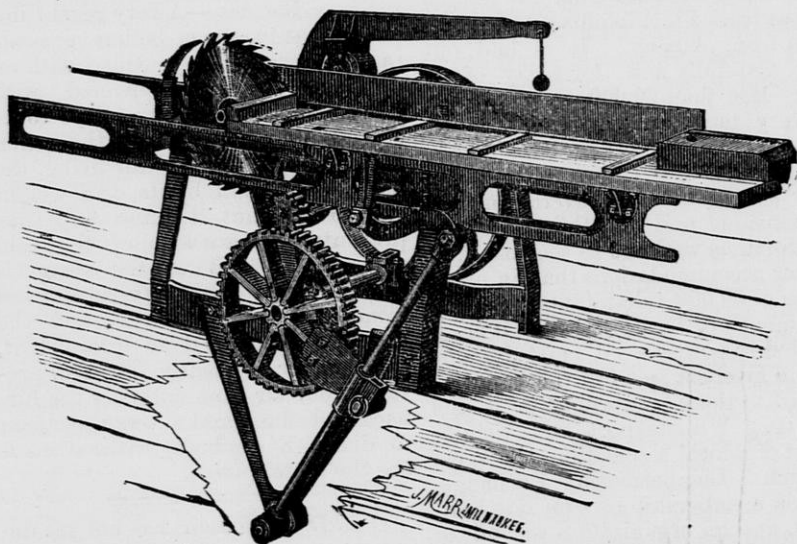
Gen. Dick Wilson has not yet decided upon what plan he will organize the squadron of land grant agents of which he is commander-in-chief. He is in active correspondence with Von Moltke, McMahon, Sherman, Adjutant General Parkinson and other distinguished chieftains in regard to the most efficient plan of rendering his raw recruits effective in the coming campaign against the horde of pine-thirsty wood-butcherers who delight to forage on his territory. At the close of the first grand review of his forces Dick is said to have remarked, in the language of the redoubtable Falstaff, "If I be not ashamed of my soldiers I'm a soused gurnet."—*Dunn County News.*

**NEW LUMBER MACHINERY.**

Perhaps, to our subscribers who are engaged in the manufacture of lumber, we can render no better service than by directing their attention to any new and really valuable machinery especially devoted to their use. In a previous number of *THE WISCONSIN LUMBERMAN* we have given illustrations and descriptions of machinery for the manufacture of lath on a large

greatly increased. For those wanting to cut from twenty to twenty-five M lath per day this machine is probably the best obtainable. It is perfectly simple, not liable to get out of order, and any boy able to handle the slabs can manage it. We append the following description:

This machine is adapted to all kinds of small sawing, where the stuff is not more than four feet long. The



scale, to wit: Stowell's gang bolter and gang lath and picket mill. But there are many mills which are not of sufficient capacity to furnish stock for so fast working machines. For the benefit of such we present the bolter illustration below. Hinkley's automatic bolter improved. The changes made in this machine by Mr. Stowell are so recent that no cut showing them has as yet been obtained. Suffice it to say that every objectionable feature has been eliminated and its strength and efficiency

guide back of saw is four inches perpendicular height; can set stuff on edge and saw as true as if it laid on the table. The guide is adjustable for wider stuff, and can be filled up for thinner stuff than lath bolts. The table moves on upright ways and has a five-foot run.

The engraving shows for itself, and but little explanation is necessary to a practical mill man.

Stock mandrel, pulley on mandrel 8 inches diameter, 9 inches face; saw, 20 inches diameter, to run 2,000 rev-

olutions per minute.

The feed motion is transmitted direct from the arbor to pulley on the pinion shaft, which works direct on the crank wheel.

With the above motion on the saw, the table makes 20 strokes per minute, coming back in just half the time required to move forward, which is an advantage over every other machine for a like purpose now in use. The table is reciprocated by a direct crank, consequently there is no jar or jerk in reversing motion, making it noiseless in its movements.

It is built entirely of iron, except the plank which forms the table (which rests on iron brackets,) and the butt pieces which drive the stuff to be sawed, forward, which has a slot in it, one part running back of saw to drive such stuff as should be too thin to be driven by that part of the driver that comes in front of the saw.

In setting machine, level by top of frame, setting the legs on the floor, which brings top of table about 32 inches from the floor when placed; cut a hole through to admit the v shaped piece that supports the lower end of cam; this v piece connects with the iron frame in such a manner that the most casual observer cannot fail to put it in the right place; then make the connections. The stroke of machine may be varied to saw as short as desired, by moving the crank piece.

This machine is also made to run two saws.

A few pounds weight will be necessary on the friction lever.

The space required to set the machine is 3x10 feet, including the run of table.

In setting up the machine, have a lever running across front end close to the floor, and connected with the friction lever so that the operator can stop and start the feed with his foot.

Weight of machine, about 900 pounds.

Price at shop, with one saw, \$225. When arranged for two saws \$250.

Extra saws furnished at manufacturers' prices.

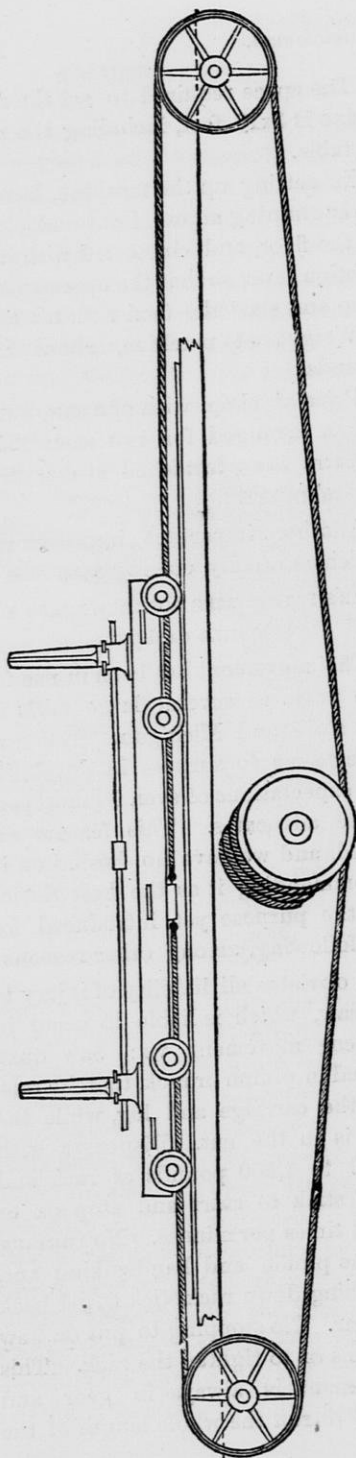
Another important improvement which is rapidly coming into use is

LAMB'S PATENT WIRE ROPE MOVEMENT FOR SAW MILL CARRIAGES.

This movement has been in use for two years in several large mills in this state and Michigan. The wire rope seems to surpass in durability the expectations of even its most sanguine advocates. This feature secured, and we have no hesitation in recommending it as the best device for the purpose yet introduced for the following, among other reasons:

It obviates all liability of injury to the saw, which is liable to occur in the cog movement, viz: Saw dust, caked in pinion or rack, thereby raising the carriage and log, while the saw is in the cut. Dispenses with 1,000 to 1,500 pounds of rack and rack stick to start and stop six or eight times per minute. No running off the pinion and handspiking and weighing down rack stick to get back in gear. No stopping to put on new pinions or to tighten the rack. This movement is always in gear and ready to run the whole length of the





mill. The construction of this carriage movement is plain, and described as follows:

The rope is passed three times around a twenty-eight or thirty inch pulley, twenty inch face, on the feed shaft, where the pinion is usually used; then leading off the under side; thence through under the bed timbers or near the end of the mill; and then up over a twenty-eight or thirty inch sheave, and attached to the carriage girths. It may be carried to the opposite ends of the carriage, which throw the carriage nearly its length beyond the sheave which may be placed at the end or within twenty feet of the center of the mill.

Rope for a 28 inch pulley should be  $\frac{3}{4}$  inch diameter, and  $\frac{7}{8}$  inch rope on a 30 inch pulley; or if to run a cant mill carriage, the rope might be used  $\frac{1}{2}$  or  $\frac{5}{8}$  inch in diameter, and the pulleys 24 or 26 inches, which will reduce the cost materially. It will be seen that movement may be given to rack shaft, on which is the driving drum, in any of the usual methods.

The new mills now being erected by the Pere Marquette Lumber Co. in place of the ones recently destroyed by fire at Ludington, Mich., are to be supplied with this new "movement." Many others in various parts of the country are arranging for its introduction. Further information relating to these innovations, as well as the innovations themselves, may be obtained at the Cream City Iron works of Filer, Stowell & Co., in this city.

## THE BARABOO STAVE FACTORY.

*From the Baraboo Republic.*

A day or two since we made a long deferred visit to the extensive stave factory of Mr. Wm. P. Bassett, located on the river front of the east part of the village. The land upon which the factory is located embraces five and one-half acres, all of which is required for the proper carrying on of the business. The main building was erected last winter, although extensive additions have been made quite recently. In size it is 24x60 feet, with a lean-to 12x60, substantially built. Throughout the establishment is supplied with new and first class machinery, including a thirty horse power engine, a stave cutter, four jointers, and the requisite number of equalizers, circular heading, and cutting-off saws, planers, heading jointers, &c., altogether seventeen or eighteen separate machines.

The factory began operations about Feb. 1st, and up to the present time has manufactured about 800,000 barrel staves and headings. Since December 1st Mr. Bassett has purchased over 3,500 cords of stave bolts, buying at Ableman's and Bloom's station, as well as at home, and shipping to the factory by rail. Two kinds of timber are chiefly used; red oak for staves, and basswood for headings. For the former the price paid was from \$3 to \$4 per cord, according to quality, and for the latter \$2.50 to \$3. The capacity of the factory is about thirty cords of bolts per day, viz., twelve of oak and eighteen of basswood; and as it is designed to keep it running night and day the year round, after making liberal deductions for stoppages from breakage and other unavoidable causes, it is estimated that the factory will consume from twenty to twenty-five thousand dollars' worth of bolts per annum. During the three months it has been running, notwithstanding the unusual delays

incident to starting new machinery, making additions, &c., it has worked up over fifteen hundred cords. About twenty hands are kept constantly employed, and the weekly payroll, not including purchases of stock, foot up \$800.

A large part of the product of the above factory is made up into barrels by Mr. Bassett himself, at his cooperage in this place. In this work he gives employment to sixteen additional hands. As we remarked several months since, Mr. Bassett's best customer is his nearest neighbor, Mr. R. H. Strong, proprietor of the Baraboo flouring mills, who takes about 3,500 barrels annually. Mr. B. has no difficulty in disposing of his surplus stock, for the timber is of the best quality and unusual care is exercised in preparing it for market.

The importance of this and kindred enterprises to our county should not be underestimated. They perform a two-fold purpose, that of giving employment to a large number of persons, and of opening a ready and comparatively profitable market for timber. Incidental to the latter is the inducement offered for the placing of a higher estimate upon our forests, and thus leading to greater economy in the exercise of our stewardship over one of the richest gifts by Nature of which our valley can boast.

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Little Bull falls are worse than ever, the improvements at that place being a decided failure. The damage to human life is increased ten fold, and the damage to lumber is a thousand times greater. Three lives have already been lost and several men badly injured. If our Improvement Company cannot connect a little more practical wisdom with their engineering they had better leave the river as God made it.—*Wausau Pilot.*

## LOGS AND LUMBER.

**The Season's Operations in the Chippewa Valley—Statistics of the Amount of Logs Banked During the Winter—The Probable Yield of Lumber Not as Large as Last Year.**

*Special Correspondence of The Chicago Times.*

EAU CLAIRE, Wis. April 20.—It is a well-known fact that the valley of the Chippewa contains a larger amount of pine timber than any other region of country on this continent east of the Rocky mountains. The amount is variously estimated at from 30,000,000,000 to 50,000,000,000 feet. (This estimate of the amount of standing pine is certainly erroneous. 25,000,000,000 feet is a large estimate of the amount of standing pine in the Chippewa Valley.—*Ed. Wisconsin Lumberman*). Interspersed with this is an immense amount of hemlock, spruce, cedar, maple, oak, ash, butternut, basswood and elm.

Gen. Street and Judge James H. Lockwood built

## THE FIRST SAW-MILL

on Nilson's creek, a tributary of the Menomonee, in 1823, upon the same spot where now stands the shingle-mill of Knapp, Stout & Co., the largest lumbering firm in the world. Jeff. Davis, then a lieutenant, stationed at Fort Crawford, was afterwards ordered, with a detachment of troops, to get out a lot of timber at the same place. After cutting the allotted supply, the mill was for the second time allowed to decay, and not until 1846 was there much of anything done. In this year Messrs. Wilson and Knapp located at Menomonee, and purchased the old mill and site, and began the business in a small way. Aside from the old mill, two or three log shanties had been built. In the fall of 1850 Andrew Tainter, an experienced lumberman, joined the firm, and in 1853 A. L. Stout, of Dubuque, took an interest. Mr. Stout was in the mercantile business, and was forced to take this step, the firm having become indebted to him to a

considerable amount. He probably did not dream at that time of the magnitude the business was to assume. The firm has since been known as

KNAPP, STOUT & CO.

The members of the firm are live, active, generous men, none more so than the general manager, Uncle "Billy" Wilson. From a small beginning they have become immensely rich. They have three mills at Menomonee and one at Downsville; own a foundry and machine shop; several grist mills and stores; three steamboats; run their own butcher shops, hotels, cooper shops, wagon factories, several large farms, etc., etc. To give some idea of the magnitude of their business, I will state that what generally costs farmers but a few dollars to build—the hog-pen—costs this firm \$15,000. They raise upon their farms from 70,000 to 80,000 bushels of small grain yearly. The retail sale of their stores last year were over \$750,000. Twelve hundred men are constantly on their pay-rolls. Instead of the single saw with which they commenced business, they have now about 150 running in their four mills. They own 115,000 acres of the choicest pine and hardwood lands, and thousands of acres of farming lands. Sixty million feet of lumber, twenty-five million shingles, and twenty millions of lath and pickets were manufactured last year by this company. It is a difficult task to describe the vast business of this and other firms in this valley; and to begin at the time when they first came here and follow them through their early trials until success had crowned their efforts, would fill a volume. Menomonee, the county seat of Dunn county, is a pleasant village of about 2,500 inhabitants. The above-mentioned firm have built up the place, and with the exception of one member, all reside here

JEWETT & SON

are the only parties aside from Knapp,

Stout & Co., operating on the Menomonee, upon any very extended scale. There is a small mill at Red Cedar, which manufactures for home trade only. Jewett & Son cut seven million feet of lumber last year, employing 75 men.

#### THE UNION LUMBERING COMPANY

own the largest mills in the valley. They also own their own foundry, stores, shops, etc. They cut in June last, under one roof, 8,125,000 feet of lumber; lath, shingles and pickets in proportion. Their total cut last year was 42,000,000 feet of lumber, 15,000,000 shingles and 12,000,000 lath and pickets. They give employment to about 600 men. The capital stock of the company is \$1,500,000. They bought the mill in 1860 for \$70,000, going heavily into debt; their capital was very limited, but the firm at that time composed of Thad. Pound, Al. Pound and Tom Halbert, had pluck, perseverance, business tact and energy, in many instances better than capital. The president of the company, ex-Lieut. Gov. Thaddeus C. Pound, is well known throughout the northwest as one of her most enterprising citizens. The company own 800,000 acres of pine lands. They own one of the finest stores in the valley, and their retail sales foot up a half million yearly.

#### STANLEY BROS.

This is one of the oldest and staunchest firms in the valley. They own a large saw-mill above Chippewa Falls, and manufacture about 8,500,000 feet of lumber and 1,500,000 lath yearly. They also own a grist mill with a capacity of 75 barrels of flour daily, and also own a very large store. They employ about 100 men.

#### JACKSON PHILLIPS

owns a mill at Jim's Falls, above Chippewa Falls, cuts about 5,000,000 feet of lumber and employs about 50 men.

#### JNO. ROBINSON'S MILL

is situated about three miles below

Chippewa Falls. Mr. Robinson resides at Winona, Minn. He cuts about 14,000,000 feet of lumber and 4,000,000 feet of lath yearly, and employs 150 men.

#### THE FRENCH LUMBERING COMPANY'S MILL.

is situated farther down the river, cuts 6,000,000 feet of lumber and 2,000,000 lath. Headquarters at Chippewa Falls. Employs 50 men.

#### CHIPPEWA FALLS

was laid out as a village in 1855. Its present municipal organization dates from January, 1869. It is situated about twelve miles above Eau Claire, with which place it is connected by an almost unbroken chain of villages, a telegraph, and three daily stages. A railroad must follow soon. This city has a population of between 4,000 and 5,000, and is growing very rapidly.

#### LUMBERING FIRMS OF EAU CLAIRE.

The most prominent firm in the city, and in fact of the Chippewa Valley proper, is the

#### EAU CLAIRE LUMBER COMPANY.

They own four mills, besides a large grist mill, store, shops, such as butcher, harness, tin, tailor, etc., etc. Their dry goods store was recently destroyed by fire, and they are making preparations to build the best store in the valley. They manufactured last year 45,000,000 feet of lumber, 16,000,000 lath, and 12,000,000 shingles. They own three steamboats, and give employment to about 800 men. Their retail sales are about \$500,000 yearly. Capital stock of the company, \$2,000,000.

#### INGRAM & KENNEDY

operate five saw mills, and cut last year 26,000,000 feet of lumber, 8,000,000 shingles and 3,250,000 lath. They also own a large store, their retail sales amounting to over \$3,000,000 yearly. They give employment to about 400 men. They also own two steamboats.



## THE NORTHWESTERN LUMBER COMPANY

cut last year 14,175,000 feet of lumber, 700,000 shingles, and 5,450,000 lath. Mr. Porter, the president of the company, was recently elected Mayor of the city. He started *The Eau Claire Free Press* in 1856. There were less than fifty families here then. The company own two stores, and do a very large mercantile business. They employ about 200 men.

## DANIEL SHAW &amp; CO.

cut last year 13,584,000 feet of lumber, 3,250,000 lath and 3,100,000 shingles. They also own a store, shops, etc., and put up a fine grist mill last year at an expense of \$400,000. They employ 200 men.

## JNO. BARRON &amp; CO.

cut 9,000,000 feet of lumber and 3,000,000 lath last season. In connection with the mills a pail and tub factory, the only one in the valley. They also own a store, shops, etc. They employ 100 men.

## GRAHAM, WHITE &amp; CO.

This firm own an interest in Prescott, Burdick & Co.'s mill, which cut last year 5,000,000 feet of lumber and 2,000,000 lath. They also own an interest in Barron & Co.'s tannery, own two grist mills, a foundry, and a planing mill, store, etc. They do a large contracting and building business. Mr. Graham, the senior member of the firm, was the first mayor-elect of the city, and is at present state senator. They employ about 150 men.

## THE CHIPPEWA LUMBER CO.

cut last year 7,500,000 feet of lumber, 3,500,000 lath and pickets, and employ about 75 men.

## SMITH &amp; BUFFINGTON

cut last year 4,500,000 feet of lumber, 2,500,000 shingles, and 2,500,000 lath. They employ about 50 men.

## W. B. ESTABROOKS

cut 7,500,000 feet of lumber and 2,500,000 lath last season. He employs about 75 men.

## L. HUYSEN

operates two mills. He cut last year 6,000,000 feet of lumber and 1,000,000 lath. He employs 60 men.

## BOYD &amp; RANDALL

cut last year 4,000,000 feet of lumber, employing 40 men.

## THE WHEATON LUMBER COMPANY

cut 2,000,000 feet of lumber and 50,000 lath last season, employing 20 men.

## CARSON &amp; RAND,

of Eau Galle, cut last season 11,000,000 feet of lumber. They are the only firm operating on the Eau Galle river, the lowest down of any of the tributaries of the Chippewa. They have put in the last log standing on the stream this winter, in all about 7,000,000 feet, and this summer will close their operations on that stream. They have employed 75 men during the winter. To sum up, there was cut last year by the mills in this valley 297,759,000 feet of lumber, 82,900,000 lath, and 72,600,000 shingles. About 4,470 men were employed in the work. The wages received by these men will range from \$28 to \$100 per month, and will average about \$40, board included.

## MARKETS.

This lumber finds a market in the river towns on the Mississippi, between Reed's Landing, Minn., and Louisiana, Mo. Most of the mill men own their own yards in the larger cities along the river, and ship into the interior by rail from their yards. The rafts are made up at the mills and contain from 45,000 to 150,000 feet, according to the stage of water. These rafts are run up to the mouth and coupled into Mississippi rafts, containing from half a million to two million feet, and then run below. In high water about 500 men are employed to run these rafts to the mouth, and in low water double that number are required weekly. These men are shipped back daily by a line of steam-

boats running between Eau Claire and Reed's Landing.

#### THE BEEF SLOUGH COMPANY,

the members of which are composed of Mississippi river mill men, have been operating upon the Chippewa with more or less success since 1868. They have a boom at the mouth of Beef slough, capable of holding 150,000,000 feet of logs. Beef slough, so called, is the eastern outlet and a branch of the Chippewa river. The company have expended \$150,000 in clearing the slough, building dams, booms, etc. They purchased in the winters of 1872 and 1873 about 45,000,000 feet of logs upon the Chippewa. Owing to the breakage of the dam at Eagle Rapids the logs came down so fast that the mill men could not handle them, and about 1,000,000 ran into Beef slough. This year the company have again purchased 45,000,000 feet of logs, which they calculate upon running to Beef slough, there to be rafted for their mills upon the Mississippi.

#### THE EAGLE RAPIDS FLOODING DAM

is the most important piece of work ever undertaken by the mill men of the valley. It is situated at the foot of Eagle Rapids, about six miles above Chippewa Falls. The dam is 1,800 feet long, 80 feet wide at its base, and 20 feet in height. Five million feet of timber were used in its construction, and it cost \$140,000. It was started in the summer of 1872, and completed the following winter. As before stated, part of the dam went out a year ago, and the repairs have cost the company \$40,000. Sorting works and stop booms are connected with the dam, so that parties wishing their logs held here can have them assorted and stopped until such time as they may wish to use them, while the rest are allowed to go by. The booms connected with the works have a capacity of 100,000,000 feet. The dam is so arranged that the river can be flooded from its contents at any time, materially assisting the mill men

in running their lumber to the Mississippi during low stages of water. It is not a very easy matter to get the exact

#### AMOUNT OF LOGS CUT DURING THE WINTER.

There are, outside of the large operators, many small ones who bank from 1,000,000 to 3,000,000 of feet every winter, and sell in the spring to the mill men, and it is hard work to keep track of them all. I have been to much pains in getting as accurate a statement as possible, and judge that there were about 275,000,000 feet of logs banked in the valley. There are about 60,000,000 feet of old logs back. To supply the Beef slough demand and our home mills for the season, a better drive than usual is required.

#### The Chippewa Falls Avalanche of April 29th says:

Most of the mills in this section are now running. The U. L. Co's mill started up Monday, commencing on old logs.

The French Lumber Company's mill (formerly Grave Island mill), commenced running yesterday morning. They steamed up last Saturday, but did not do any sawing until yesterday.

The French Town mill is in full blast, and everything is busy life again in this section.

The Eagle rapids dam is now completed and to the satisfaction, we believe, of the improvement company. The dam has been filled and tested, and no strain on the works was observed. Logs are now being run over it. This is one of the greatest enterprises of this country, and will prove a great benefit to the county and vicinity generally.

U. D. Mihills & Co., of Fond du Lac, manufactured 6,500 doors, 2,000 pair blinds and 8,500 windows during the month of April.

## LUMBERMEN'S ASSOCIATION.

Annual Meeting of the Lumberman's Association of the Saginaw Valley—Election of Officers, etc.

From the Saginaw Courier, April 23.

An adjourned annual meeting of the Lumbermen's Association of the Saginaw Valley was held at the common council room, Wednesday morning, April 15th. In the absence of the president, the meeting was called to order by Vice President Barnard, who presided.

The following letter from the president was read:

BAY CITY, April 14, 1874.

C. B. Headley, Secretary Lumbermen's Association:

I find it impossible to be present at the meeting to-morrow. I regret this very much, as I had intended to have suggested (to such of our manufacturers as could remedy it without damage) the evil effects of throwing so much green lumber on the market, before the bulk of the dry was disposed of. The same amount would still be made during the season, as the stock of logs will not be sufficient to fully run the mills. The effect of an early start of the mills will be, 1st, to overstock the early market; 2d, to reduce the price of dry lumber, to that of the green.

There are no doubt mills enough, which have not full stocks, to apply the remedy if they choose to do so, and at the same time sell all the lumber they have at fair prices, instead of sacrificing in the spring market, and having no lumber to sell in the latter part of the season, when fair prices can no doubt be had.

Respectfully,

JAMES SHEARER.

The treasurer reported that the total receipts of the association were \$1,855, and the total disbursements 1,844.60. Balance on hand \$10.40. A detailed report from the treasurer was filed with the secretary.

On motion of George N. Hauptman an assessment of \$5 per member was ordered, to defray the expenses of the association.

W. J. Bartow offered the following resolutions, which were unanimously adopted:

WHEREAS By the dispensation of Providence, this association has been bereft of one of its prominent members, by the sudden death of Mr. J. F. Bundy this day, therefore

*Resolved*, That as an association, we hereby evince our appreciation of the many excellent qualities of head and heart, which were possessed in a most eminent degree by our deceased associate, Mr. Jefferson F. Bundy, and while we are pained to revert this sad event on account of the loss of a valuable member, we are also well aware that the community in which he has lived as a useful business man will suffer a loss of no small consideration.

*Resolved*, That we hereby tender to his bereft family our most heartfelt sympathies in this season of their sore bereavement.

*Resolved*, That the secretary of this association be directed to furnish the widow of Mr. Bundy a copy of these resolutions, and request their publication in the newspapers of the valley.

Joseph A. Whittier offered the following resolutions, stating that it was brought before the meeting on the recommendation of the inspector general:

*Resolved*, That it is the sense of this meeting that all lumber, not joist and scantling, which may be of less thickness than the size for which it was intended, should be measured as follows: All 1½ inch stuff and less than 2 inches thick shall be called inch and one half; 1½ inch and less than 1½ inch shall be called 1½ inch.

Mr. H. M. Bradley offered as an amendment that scant 2-inch boards be measured as 1½ inch instead of 1½ inch.

The matter was discussed at some length. On putting to vote both the amendment and original resolution was lost on a tie vote, the vice president in the chair declining to vote.

On motion of Mr. Barton, the meeting proceeded to ballot for officers for the ensuing year, with the following result:

President—James Shearer.

Vice Presidents—Newell Barnard, W. R. Burt.

Directors—N. B. Bradley, W. L.

Fay, Thomas Cranage, Jr., Ezra Rust, E. F. Gould, C. H. Green, C. K. Eddy, W. J. Bartow, A. H. Wright.

Committee on Arbitration—Edwin Eddy, Joseph A. Whittier, George L. Burrows, T. Jerome, S. G. M. Gates, H. M. Bradley.

The meeting of the association then adjourned, when the

#### BOARD OF DIRECTORS

were called to order, a quorum present and vice president Bartow in the chair. The following officers were elected:

Treasurer—W. J. Bartow.

Secretary—C. B. Headley.

After which the meeting adjourned.

**MUSKEGON RIVER.**—The *Detroit Free Press* says it is the general belief of the lumbermen on the Muskegon River that they will be unable to get out of the small streams that flow into the Muskegon River one-half of the logs that have been put into them during the winter. The lumbermen who put their logs into these small streams rely upon the freshet in the spring to enable them to float their logs into the Muskegon River, but this spring the snow has melted so gradually that there has been no freshet at all, and the water has hardly risen above low water mark. It is estimated that about 50,000,000 feet of logs will be laid up this season on the tributaries of the Muskegon River.

**VALUE OF WALNUT LUMBER.**—As an illustration of the increasing value of walnut lumber, the *Indianapolis Journal* notes that the standing walnut trees on a half section of land on Eel river, in Miami County, Indiana, were recently sold to a lumber dealer for \$17,000. There is a large amount of other timber on the tract which is not included, only the walnut timber being sold. Walnut lumber is coming more into use throughout this country and Europe, and at present a very

large business is done in preparing and shipping it from Indiana.

#### MUSKEGON, MICH., RIVER DRIVE.—

The *News and Reporter* says the rear of the Muskegon River Drive has reached Butterfield Creek, and is moving extremely slow for this season of the year. The drive was started about three weeks ago, with a good stage of water and fair weather for the men, and the logs were put afloat, winding their way toward Muskegon Lake. Owing to the almost entire disappearance of snow in the woods, and the unusually low stage of water this spring, the apprehension of a general "hang up" are well founded. The small streams, where the heaviest proportion of new logs have been put in the past winter, are filled, and but little water to float the logs. West and Middle Branch, Butterfield Creek and the head of Little River, with the rest of the small tributary streams, offer very poor encouragement for getting out much more than half the quota of logs now in those streams during this season. It is very probable that at least from fifty to seventy-five million feet will be "hung up" this summer, despite all that men can do, unless some extraordinary freshet sets in and starts the armies of logs at the head of the several streams named. It is true it is rather early in the season for this stage of water, but it is conceded by all that the amount of snow last winter was rather limited, with an occasional thaw to limit the supply on hand, leaving the creeks comparatively as dry as if the woman's crusade had been inaugurated in the pinneries early this spring.—*Saginaw Courier*, April 23d.

Subscribe for THE WISCONSIN LUMBERMAN, only \$2 per year.



## LUMBER SHIPMENTS FROM WILLIAMSPORT, PA.

**Large Increase in the Amount Shipped This Year as Compared with Corresponding Season in 1873—Lumber Market Firm—Manufacturers are Encouraged—The Lumber Traffic of 1874 Will Largely Exceed that of Any Previous Year.**

*From the Williamsport Gazette.*

Last week the shipments of lumber from Williamsport, by rail and canal, reached a total of 5,577,046 feet, a falling off, as compared with the previous week, of 681,937 feet. This decline was caused by the stormy weather which prevailed for several days.

The shipments for the year, up to the 25th inst., now foot up the enormous total of 80,040,145 feet, an increase over the same period last year of 26,467,205 feet. Of this amount the Catawissa branch of the Philadelphia & Reading railroad has forwarded 39,315,080 feet, requiring 4,106 cars; the Philadelphia & Erie railroad 29,884,180 feet, requiring 3,121 cars; 10,840,885 feet have been shipped by the canal, since the opening of navigation this spring, which required the services of 128 boats.

The lumber business is firm, and manufacturers feel greatly encouraged at the prospect of a heavy demand during the summer. Estimating from the shipments of the first quarter, we feel safe in predicting that the lumber traffic of 1874 will exceed that of any previous year in the history of Williamsport.

The river is at a good rafting stage and lumber is passing to the markets below at a lively rate. The great jam of rafts against the Lock Haven bridge is not entirely removed, which causes considerable detention to raftmen.

The log drives will be got out of the tributary streams in good order, and will reach the boom in due season. At the present time there is a large quantity of logs in the boom, and as soon as the waters subside, rafting out will commence. Should

no disastrous flood occur, the mills will have an abundant supply of logs for the season.

Last week the shipments on the Northern Central, from points south of Troy, reached 354,360 feet, requiring 37 cars for its transportation. The bark shipments only reached 4 cars, making 340 for the year.

From points east of Renovo on the Philadelphia & Erie road, 18 cars, carrying 173,440 feet were shipped.

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The *Albany Argus* of the 30th inst. says:

There has been a fair trade during the week. We hear of two sales that will amount to two and a half millions of feet. The character of most of the business now being done is not quite so active as we should wish to see it, buyers only taking what they want to keep their assortment right or to fill immediate orders. The stock in market is good, although the district begins to show signs of depletion; all desirable lots will be pretty well run off before the opening of the canals. From what we can learn there is not much dry stock arranged for to come in early. The opinion is becoming very general that building and other operations involving the consumption of lumber will now be much more active in consequence of the president's veto of the currency bill and a decided improvement in all branches of trade is looked for. The reports from Pennsylvania are that losses by fire of nearly up to 25,000 000 feet of lumber prices must stiffen. The Chicago market with increasing receipts has become active, especially for the out of town trade; the stock on January 1st was 327,877,700 feet against 321,943,000 in 1873. A late Ottawa paper says that lumbermen complain that unless heavy rains fall forty-two millions feet of loss will be left in the Ottawa tributaries this year; the trade there is generally inactive; the *Citizen* says it is impossible to get anything like a reliable

statement of the amount of lumber that has been wintered over at the Chaudiere this season, but shrewd, practical men, who have been through the piling grounds, calculate it at about forty millions. Of this Mr. Booth has between ten and eleven millions, Mr. Young between six and seven millions. Mr. E. B. Eddy twelve millions, Mr. Bronson seven millions, Messrs Batson & Currier and Hon. orable James Skead have also several millions on hand. Burleigh & Bros., of Whitehall, signed a contract yesterday to freight twelve million feet of lumber for Mr. Levi Young to Albany \$76  $\text{\textcent}$  M, which is about \$1  $\text{\textcent}$  M less than last year's rate. The lumbermen congratulate themselves on the fact that the finance minister has let them alone in framing the tariff. The new policy will not materially affect their trade.

#### OPENING OF A U. S. LAND OFFICE.

By notice elsewhere it will be seen that U. S. land office at this place will be opened for business June 1st. Notwithstanding the utmost dispatch has been used at Washington in supplying papers, making out plats, books, etc., it will be observed that a period of almost six months has elapsed since the burning of the office in December last.

The public will be extremely thankful to know that a day has been finally fixed upon for the re-opening of the office.—*Eau Claire Free Press.*

An Eau Claire correspondent says reports from the "drive" are very discouraging. Logs are all hung up on the north branch of the Eau Claire. About two-thirds have been secured on the south branch. Nothing is being done on the Chippewa, owing to the continued cold weather. The wind consumes the snow but does not raise the water. The streams are all falling, and unless there is warmer weather or rain soon

the "drive" will not amount to much.  
—*Clark County Republican.*

#### LUMBER AFLOAT ON THE WISCONSIN.

*From the Wausau Pilot.*

Mr. William Callon has just returned from Point Basse, after seeing his lumber started from that point. Mr. Callon's fleet was the first to run Little Bull, and the first at Point Basse, and is probably floating down the Father of Waters at this time. Mr. Callon has been for years the first to reach market with lumber from this pinery. Most of the spring run of lumber is now on the way; a few fleets are still at this place and Little Bull. Mr. Andrews' lumber probably left Little Bull on Thursday. The Stafford fleet on Wednesday, two fleets from Jenny are at Little Bull, or have left within two days; one Jenny fleet leaves here today. Miller & Gensman are under way, two fleets at the McIndoe mill, and one at Clarke's are nearly ready, which, with a few fleets now in process of sawing, will constitute the spring run. By the end of next week the whole amount destined for the lower market will be afloat. Much more lumber will go into pile this season, owing to the prospect of shipment by railroad. The spring has been very cold and the snow has melted so slowly that there has been but little rise in the river and small streams, so that many of the logs cut will not be got out, and consequently the yield of lumber from this pinery will be far less than it has been for many of the preceding years. Our railroad completed and a more western market open to us, St. Louis and the lower Mississippi must look elsewhere for those superior grades of lumber which this pinery yields. The lumber now on the river will constitute nearly the entire amount which will be shipped this season to the lower Mississippi markets.

## LUMBER AT LUDINGTON, MICH.

A *Chicago Times* correspondent writing from Ludington under date of April 17, says:

Two years ago this city had some few hundred inhabitants, and good business lots on the main streets sold for \$100 each. It has grown to a population of 4,000, and good stands for shops cost \$1,000 and more. It is no "slouch" of a town that furnishes its own lectures, dramatic performances, and even negro minstrels, and that, too, in so satisfactory a manner that the hall is always full when a home entertainment is given, and not full to listen to imported talent,

Real estate has taken a start upward this spring, some points being held at \$10 more to the foot than the same were valued in January.

To give some facts in regard to the lumber interests, I will mention the business of one operator on this river, the Pere Marquette lumber company, owning more pine land than any other concern. Next in order is Mr. E. B. Ward, of Detroit, who purchased some 67,000 acres of pine land on this river ten years ago, which then belonged to the state, and were known as canal lands. Ward now operates two mills, each with engines 26 inches in diameter with 32 inch stroke. Both are friction mills, and together are able to cut 45 million feet per season. Ward's new mill is the handsomest in the state and is provided with first class machinery and every modern improvement. Two hundred men are employed about these mills, at wages running from \$1.50 to \$4.00 per day; and about 300 men are in the woods up the river, who cut logs, haul them to the river, and run them down. It is estimated that all the pine will be cut in thirty years at the present rate of operation. The gross receipts for both these mills in 1873 were about \$250,000.

Most of the mill owners are owners of extensive tracts of pine, although some saw on contract only.

The Pere Marquette lumber company, whose mill was burned last month, will have another running by July.

A disastrous fire occurred at the city of Williamsport, Pa., on the 14th, destroying the Lumber Company's planing mill, with its contents and all the lumber in the yard of that company. It then leaped the railroad and attacked the lumber yard of Brown, Early & Co., completely destroying all the inflammable material stowed therein. The lumber in the yard of Filbert & Otto was reduced to ashes, together with their saw mill. The lumber yard of Peter Herdic & Co. was swept almost clean of lumber, but the energy of the firemen saved the mill. They lose about three million feet of lumber. On Filbert street, opposite the mill and lumber piles, fourteen frame dwelling houses were completely destroyed, with nearly all their contents. The area swept by the fire covered over forty acres and 30,000,000 feet of lumber burned.

WHERE OUR TIMBER GOES.—It is estimated that the number of railroad ties in present use in the United States is 150,000,000. A cut of 200 ties to the acre is above the average; and it therefore has required the product of 750,000 acres of well-timbered land to furnish the supply. Railroad ties last about five years; 30,000,000 ties are used annually for repairs, taking the timber from 150,000 acres. The manufacture of rolling stock disposes of the entire yield of 350,000 acres, and a full supply of 500,000 acres more every year. Our railroads are stripping the country at the rate of one million acres per annum.—*New York Express*.

## NATIONAL ASSOCIATION.

*From The Boston Lumber Trade.*

The following important communication, covering the action of the West Branch Lumbermen's Exchange of Williamsport, is just received. We doubt not that the cordial invitation of this body will meet a hearty response from the trade:

*Office West Branch Lumberman's Exchange.*

WILLIAMSPORT, PA., April 22.

J. HENRY SYMONDS, ESQ.

*Editor The Lumber Trade, Boston:*

DEAR SIR.—I am directed by the President to inform you that your proposition "to convene a gathering of the lumbermen of North America for consultation on matters of interest to the whole trade, and to take action for the permanent association of lumbermen," was laid before a regular meeting of the West Branch Lumbermen's Association, held on Tuesday, April 13, 1874.

I take great pleasure in informing you that your proposal met with the hearty approval of all present, and you may rest assured of the earnest co-operation of the lumbermen of this section for the advancement of the end in view.

I herewith enclose a copy of the resolutions passed. I have the honor to be, Yours respectfully,

WM. RANDALL PRIOR, Asst. Sec'y.

At a regular meeting of the West Branch Lumbermen's Exchange, held on Tuesday, April 13th, 1874, the following resolution was agreed to:

## EXTRACT FROM THE MINUTES.

*Resolved*, That the members of the West Branch Lumbermen's Exchange give their hearty approval to the proposition of J. Henry Symonds, Esq., "to convene a gathering of the lumbermen of North America, for consultation on matters of interest to the whole trade, and take action for the permanent association of lumbermen," and that the same be referred to the Board of Direc-

tors for them to take such action as will further the end in view.

At a meeting of the Board of Directors, held on Monday, April 30th, the following was agreed to:

## EXTRACT FROM THE MINUTES.

*WHEREAS*, It has been brought to the notice of this Exchange that a convocation of all the lumber manufacturers in the United States and Canada would be productive of good results to the trade, and,

*WAEREAS*, It is believed that the meeting should be held in the city of Williamsport, Pa., as the advantages of central location and hotel and other accommodations would be unsurpassed,

*Resolved*, That the West Branch Lumbermen's Exchange extend a cordial invitation to all manufacturers of lumber in the United States and Canada to meet in convocation in this city the 23d day of June next.

*Resolved*, That the Secretary be ordered to transmit copies of these resolutions to all lumber organizations and to papers in the lumber districts for publication.

[SEAL]

True copy, attest,

WM. RANDALL PRIOR, Asst. Sec'y.

An interesting question relating to the growth of trees is now being discussed by botanists and other naturalists, the point at issue being, whether there is, during growth, an elongation of wood already formed. A suit between two mill owners, reported in the *Ledger*, last fall, turned on this question, the legal height of the water at one mill being fixed under an order of court, by certain markings on a tree trunk, which, it was alleged, had been raised by the growth of the tree. The court decided that the tree mark had not been raised, and this is in accordance with the views, not then expressed, of Prof. Gray, the botanist. He says: "If trunks actually lengthen throughout, that of a young tree or sapling should show it more equivocally than an older one, a far greater proportion of it being in a living state." He recommends that tacks be driven in



the trees in a vertical line, at certain sharply defined distances, so that if there should be an elongation of the trunk in growth it may be readily observed. Comparing a mark on the tree with exterior marks or with fixed objects may or may not give indications of the truth or falsity of his views, for the whole body of the tree might be lifted up by the swelling of the roots and pressure against rock or other hard substance. The growth of a sapling is so rapid that an unquestionable elongation, if any, should take place within six months between any two points in a vertical line.—*Philadelphia Ledger.*

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

For machine for edging shingles, to James E. Austin, Oswego, N. Y., assignor of one-half his right to Middlebrook & Mack, same place. A stationary and a moveable circular saw are placed upon the same arbor, suitable mechanism being provided for adjusting the saws to different widths of shingles, and for carrying them through the machine.

For water-wheel, to Dodge P. Blackstone, Berlin, Wis. The revolving wheel provided with buckets cut away in the upper part, and stationary chutes terminating at their inner ends, on a line concentric with said wheel, thus forming an open or free annular passage around the wheel.

For turbine water-wheel, to Thomas B. Coursey, Kent county, Del. The outer edge of this bucket is provided with a concave-convex lip, which extends forward of the greatest concavity of the bucket, and is reduced in front to a thin edge.

For dovetailing-machine, to William F. Moody, Chicago, Ill., assignor to himself, Charles L. Ames and Abel H. Frost, same place. The chisel is brought to a dead stop when it reaches the bottom of the dovetail, for the purpose of allowing the stuff

operated upon to be withdrawn, so that the chips may be removed.

For dovetailing-machine, to James M. Seymour, Newark, N. J. The joints of sash and other articles are dovetailed by means of an adjustable wabbling-saw in combination with adjustable tipping and swinging beds upon reciprocating tables acting upon a vertically-sliding frame.

For saw-set, to Moses E. True, Oakfield, N. Y. The improvement on letters patent No. 143,598 consists in making a rest adjustable and reversible, and in providing same with shoulders adapted to set the teeth of different saws.

For saw-joiner, to George S. Prince, West Salisbury, N. H. The claim is for a combination with the head, of the jointer, the file-plate and screws.

The patent for feed-roller to circular saws has been re-issued to John Mutty, Brewer, Me. A roller is placed in front of and close to the saw, the weight of the piece of lumber being sawed, together with the pressure caused by the action of the saw-teeth, producing sufficient friction upon the surface of the feeding-roll to cause a forward movement of the lumber.

For the week ending March 31:

For water-wheel, to Nathan F. Burnham, York, Pa. In this water-wheel the hub has an upward flare, with its lower portion extending below the periphery of the wheel, in combination with buckets having their lower edges sloped downwardly from the periphery to the hub. The wheel-shaft passes through a suffing-box and an elevated bearing-box mounted upon the casing. There is also a cam or eccentric, and a yoke or strap to operate the gate.

For machine for sawing staves, to Asa Hatch, Newcastle, Ind. The stove-bolt is secured in a vertical position by suitable dogs upon a revolving annular carriage, and the staves are cut from the bolt by a band-saw.

For veneer-cutting machine, to Stephen D. Carpenter, Madison, Wis.

The veneer is cut from a log which is made cylindrical by a cutter on the knife-stock that cuts the veneer.

For band-saw tooth, to Asa Hatch, Newcastle, Ind. The saw has each alternate tooth set to one side, the other remaining in line with the blade, so that it may be cut in a curved line.

For planing-machine, to Orson G. Howes, Fort Ann, N. Y. The cutter-head frame is made to be adjustable across the bed at any angle.

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#### EFFECT OF THE NEW TARIFF LAW ON THE LUMBER TRADE OF MILWAUKEE.

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Referring to the lumber interests of Milwaukee and the effect of the new railroad tariff upon that interest, Mr. Langson in his generally admirable report says:

"It is claimed that the tariff under the new railroad law will operate to the advantage of the lumber trade of Milwaukee."

To any person practically familiar with the lumber trade of Milwaukee or the lumber interests of Wisconsin, the assertion of Mr. Langson will possibly seem somewhat unwarranted. Unless the Wisconsin Central railroad company sees fit, and is allowed, to discriminate in favor of Milwaukee it is utterly impossible that lumber from the Green Bay district or from the pineries of Wisconsin can be brought to Milwaukee, handled, and then reshipped to the interior. The location of Milwaukee is such that without favorable discrimination on the part of the roads running north, this city must depend entirely on receipts by water. Oshkosh, Fond du Lac, Green Bay, Stevens Point and other lumbering centers have railroad facilities that enable them to reach every point that has sent a customer to Milwaukee lumber yards. It will be seen that if the new tariff law is enforced lumber cannot be delivered by rail in this city, here handled by the

dealers and then shipped again; for every foot of lumber, in that case, must be twice subjected to the high rates which govern the first fifty miles of transportation. The truth is that under the new tariff law Milwaukee will hardly be able to receive even Michigan cargo lumber and distribute it within the radius of sixty miles—which has constituted a valuable market—and compete with the lumbering towns in the pinerias of the north. Lumber from Fond du Lac, Oshkosh and Green Bay will pass through or around Milwaukee and be delivered at the very points which have bought almost exclusively at Milwaukee yards. The new tariff law, enforced, will kill the lumber trade of Milwaukee. Unless discrimination is made in favor of Milwaukee by the railroads, dealers cannot compete with the manufacturing cities to the north.

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#### SHIN PLASTERS IN THE MAINE LUMBER REGION.

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A letter from Presque Isle gives some particulars respecting the new currency that has appeared in that regions. We quote:

In the first place it is by far the greater parts of the money we get here. It has almost entirely driven out greenbacks. In our business, for instance, we do not take a single greenback sometimes for a week at a time. It has been paid out to a large number of lumbering operatives. It is estimated that from eight to ten thousand dollars of this "white money," as it is here called, have been put in circulation in this immediate neighborhood. People don't know what to do about taking it. If they don't take it they can't do any business. It is a difficult job to get greenbacks to buy postal orders for our outside creditors. The bills are in denominations of one, two and five dollars, and read—

"To Jewett & Pitcher, Brokers, Boston:

Pay to bearer [e. g.] one dollar in current funds of the United States."

They are dated St. John, N. B. December 1, 1873. If the law is enforced in regard to this money, every one in this part of the county would have to plead guilty.

## THE FIRE RECORD.

## Seventy-Five Thousand Dollars Worth of Property Saved by a Babcock Fire Extinguisher.

WEST EATON, N. Y., April 4, 1874.

F. W. FARWELL, Secretary—Dear Sir: On Monday evening 16th March, while sitting in my house, I heard the alarm of fire, and hastening for one of my Babcock extinguishers proceeded to the scene, which proved to be an old church, now used as a store-house. The fire was in the attic and could be got at only through a small scuttle hole in the ceiling.

Efforts had been made to put it out before I reached it, and on attempting to approach was urged not to venture, as all hope of saving the building had been given up; but having faith in the machine on my back I went near enough to throw a stream through the scuttle. Instantly the effect of the gas was shown in lessening the flames, and taking courage I crawled nearer and with one charge of the extinguisher succeeded in putting out this fire that had resisted other means and had been regarded as under too great headway to undertake suppression. The 'Babcock' is held in high estimation by our citizens since this event, and we shall probably purchase a number for our protection. I may add that this is the fourth fire I have put out with this machine, saving property to the value of \$75,000.

Respectfully,

J. BARNES.

## INJUSTICE OF THE NEW STATUTE TO NEW ROADS AND TO THE LUMBER TRAFFIC.

*From the Green Bay Advocate.*

We stated a week or two ago, what we believed to be some fatal defects in the law of the recent session for the regulation of tariffs on the railroads in this state. In that article we commended the legislature for taking steps to ascertain whether the railroad companies are, or are not, oppressing the business interests of the state by levying unjust freight and passenger rates. The appointment of three fair and intelligent men who shall investigate this subject and report the result to the next legislature for action thereon, was a proper and timely step. But the legislature at the same time committed a most ludicrous error in going ahead, without any basis to operate upon, and reducing the price of freights upon all the roads. It did just

one thing too many. When it appointed a committee to ascertain what would be fair rates, it should have waited for the report of that committee before it meddled with the rates. But if it was possessed of sufficient knowledge to go on with the reconstruction of the rates, what was the use of keeping a committee in the field for a year to ascertain that precise knowledge? In the language of the lawyers, it "proved too much."

We have taken the pains to examine the operations of this legislative tariff as affecting one of our roads here at home—the Green Bay & Minnesota. This is a new road, just put in operation, covering a route heretofore destitute of railroad facilities, and promising, if successful, to be of vast advantage to every interest in the part of the state through which it passes. There has been no complaint so far as we are aware, of extortionate prices demanded by its operators. It has inaugurated trade, and is filling localities with populations, where none existed before, and is an institution hailed everywhere along its line as a great boon to all; and so far from lessening its receipts, the universal desire is that it shall be successful and profitable to the largest practicable extent. The material resources of the country along its line, which are mainly products of the forest, were, before its completion, valueless. The cost of transporting them to market exceeded the price which they would bring on arrival there. Now, the shipments of all the products of the country have started up and are made a source of wealth. These are, mainly, lumber, shingles, wagon stuffs, brick, lime, sand, stone, and to some extent, flour and grain. We shall show, by tables below, how unjustly the new law deals with this industry—cutting down its earnings an average of 35½ per cent on these items of freight—while in the item of merchandize, in which it does comparatively little business, the reduction is only an average of 11½ per cent.

We understand that on older and more perfect roads—for instance, the north-western, Milwaukee & St. Paul, &c.,—the actual cost of moving freights amounts to about 70 per cent of the gross receipts, leaving 30 per cent to pay for renewal of track, rolling stock, &c., cost of management, interest on indebtedness, insurances, disasters, and so on. If this be true, it must be a difficult matter to see where the profit on the investment comes in. And if this be true on the older roads, which carry

merchandise to a greater extent (the deduction on which, under the law of last session, is largely less, as will be seen by the tables below) how much harder must it bear upon such new roads as the Green Bay & Minnesota, whose whole business is cut into of the extent of 35 per cent on its total earnings?

We subjoin a carefully prepared table, showing the difference in rates between the Wisconsin law and the tariff of the Green Bay & Minnesota railroad.

#### BUSINESS PROSPECTS IN MICHIGAN.

*From the Grand Rapids Eagle.*

Inquires among business men develop the following facts respecting the condition and prospects of trade in this state. So far as the merchants are concerned, movements have been more slow and cautious than usual, but they are on a healthy and substantial basis. The panic last fall had the effect to weed out such dealers as were shaky, financially, thus leaving the field to the better class. Jobbers appreciate this fact, and hence they feel more confidence in their customers than ever before. The farmers, who mainly constitute the patrons of the country merchants, have apparently been rather hard up since the panic. Not that they are involved or closely pressed—they are almost universally well-to-do. There is still much wheat in the country, which will in all probability be marketed as soon as navigation is fairly opened. Prices have been advancing of late, but whether they are high or low, the wheat will be pretty well cleared out in this state this spring. The wool crop will soon be in market, and will bring considerable money into the state. To sum up the condition of affairs in our state in other respects in a few words, it may be said that money has not been very plenty among the farmers, and that they are buying rather more sparingly than usual just now, and are more slow in making payments on their accounts with the merchants, while the merchants are doing business more closely and on reduced stocks, supplying themselves with only articles such as they need from time to time to keep up an assortment.

Next to agriculture, Michigan is more largely interested in lumber than anything else, and this interest was almost stagnant after the panic, until lately. Mills were shut down, operations in the

woods largely suspended, and there were no sales to amount to anything. But all that time stocks in outside markets were becoming depleted, and now they must be replenished. Our lumbermen, well understanding this fact, maintained fair prices throughout the fall and winter, making very few concessions for the purpose of forcing sales. The result has been that business opened briskly this spring, with advanced prices. On the full opening of navigation it is probable that the lumber trade will see the liveliest season it has seen for many years. All this will bring money into the state, to be disbursed in the interior cities and towns, whose mercantile business will thus be greatly revived. For various reasons, therefore, the trade of the state promises to be better than ever as soon as the grain and lumber and other products can go forward freely to meet the demand.

**THE LOG DRIVES.**—We learn that the drive prospects on some of the streams emptying into Green bay are improving, and really look quite favorable. The Menominee river last week rose at the rate of from one to two inches per day, owing to the melting of the snow on the head waters, and it is probable that every log will be got down within two or three weeks, rain or shine. About 20,000,000 feet of logs were down to the dividing boom, up to last Saturday, and the river was filled with logs for miles above.

The Peshtigo drive will all be got down without rain unless perhaps two or three millions in the north branch of Beaver creek. They are all out of Little river, Gravelly creek, and Mud brook, and were on Saturday expected to be out of the south branch of Beaver creek in three days. To get some of them down, it has been necessary to build temporary dams.

In the Escanaba river, the ice went on Sunday, the 3d inst., and the entire drive will probably be got down in safety.

From all we can hear, the prospects on the Oconto are not so flat-



tering. Many logs will be got down, but still a large portion of the drive must be "hung up" unless there are heavy rains.—*Green Bay Advocate*, May 14.

#### HARD WOODS.

The steady advance in the price of hard wood lumber for some years may be taken as pretty good evidence that the available supply is decreasing at a rapid rate, or that the demand is increasing faster than facilities are furnished to put it in the market. There is no room to question the first proposition, however, for let any one travel in almost any direction in the northwestern states where twenty years ago were fine forests of hard-wood timber, and he will no longer doubt the fact that a very large portion of such forests have been depleted of this wooded wealth.

The ax of the pioneer has been called "a great civilizer," but it has, at the same time, been a despoiler of untold riches in the hands of injudicious or thoughtless men. It is true that hundreds of men have hewn down the primeval wilderness and carved out homes in the deep forests, but in almost every case they have done so with scarcely a thought or a care about the value of the timber which fell before their ax-strokes. They selected their sites for their dwellings and their "clearings" upon considerations into which the relative or prospective value of different kinds of wood did not enter. Their "slashings" took no account of varieties or kinds of wood, and walnut, cherry, bird's-eye maple, etc., were sacrificed indiscriminately with beech, elm, or poplar. A tree, no matter of what kind, was an enemy to be got rid of; and thus hundreds of thousands, yes, millions of feet of the

choicest hard-wood varieties of timber were destroyed in the conflagrations of the "wind-row." Many of the men who acted so unwisely, lived long enough to see and regret this improvident waste of what would have proved a very important source of profit to them. The "clearings" might, very often, have been located where the sacrifices would have been less, and the ultimate benefits infinitely greater.

Now, this may recall the story of the milkmaid, or its moral, but it may not be altogether profitless; for the same thing is still going on in some of the newer portions of the wooded regions of the northwest; and if those who are pursuing a policy so suicidal do not desire to repine over short-sighted and improvident destruction of valuable resources, let them take warning, and preserve their hard-wood timber.

This wanton destruction of woods which possess so much intrinsic value, has had very much to do with the appreciation in prices referred to at the outset of this article, and as these woods become scarcer, the prices will advance still more. The consumption, in the legitimate wants of trade, is increasing, also, every year, and while the demand will draw more largely upon the resources of the forest, and these will be annually shortened, it is a question—and a very important one—how long will they last? Certainly not always, and while we shall not attempt to answer the question at this time, if we had the data upon which to make an estimate, we may suggest that it is a matter upon which not only those of to-day who have a personal interest so far as business is concerned may profitably bestow some attention, but one also, upon which every thoughtful man who looks to the future will do well to ponder. One generation of men owes something to posterity. Should we go on, blindly and selfishly ignoring the requirements of the future?

# INCORUSTATION OF STEAM BOILERS.

Discussion Before the Master Mechanics' Meeting in Chicago May 12—Various Remedies Suggested for Prevention of Incrustation of Steam Boilers.

From the Chicago Journal, May 13.

The Master Mechanics' Convention transacted the following business yesterday afternoon:

On motion of Mr. Towner, discussion of the report of the Committee on the Operation and Management of Locomotive Boilers, etc., was deferred until 9 o'clock this morning, in order to afford Dr. Rogers an opportunity to read a paper and make some experiments.

## SAFETY VALVES.

The report of the committee on the best form of safety valve, or method of relieving boilers of overpressure, and the best way of testing pressure-gauges, was read. The results of several trials and experiments were given, from which the committee came to the conclusion that the Richards valve was by far the best, though open to some objection. The report closed with a general description of steam-pressure gauges, all of which were said to be greatly alike, in construction, and very imperfect. The store rooms of the western mechanics were full of rejected gauges, and, no doubt, many boiler explosions were due to them.

The report was received.

## THE MECHANICAL LABORATORY.

Mr. W. A. Robinson offered the following, which was adopted:

In view of the importance of the subject of the "Mechanical Laboratory," and the length of the report and papers of the committee on that subject, Resolved, That a special meeting of the convention be held for its consideration this afternoon from 8:30 to 6 o'clock, in the club room at the Sherman House.

## A DISCUSSION

was held on the report of the safety-valve and pressure-gauge committee, which continued till the hour of adjournment.

## SPECIAL SESSION.

The special session of the convention met at the Sherman House club

room at 4 o'clock, President Britton in the chair.

The report of the committee on mechanical laboratory, appointed to take into consideration the propriety of establishing such an institution, also to ascertain the cost of a dynamometer for the purpose of determining the resistance of trains on the straight and curved tracks was read by the secretary. It suggested the following:

1. Adjustable model valve motion.
2. Machine to test tensile, torsional and compressive strength of metals.
3. Machine to test friction of metal.
4. Machine to test the lubricating value of oils, etc.
5. Steam indicator, with full diagram and apparatus.
6. Most approved speed or revolution counter.
7. Pyrometer for testing high boiler temperature.
8. Thermometer with long range.
9. Vacuum-gauges for use in locomotive smoke-stack.
10. Mercuria column for testing steam gauges.
11. Registering dynamometer for obtaining train resistance.
12. Microscope for the examination of metals.
13. Means of testing calorific value of different classes of coal, and the principal of their most economical combustion.
14. Means of testing various qualities of water used.
15. Means of testing acids in tallow under high temperature.
16. Means of testing incrustation compounds, and discovering their injurious ingredients, where any.
17. Means of testing composition of specimen of boiler scale, etc.

The remainder of the report is divided under the heads: "Organization of Laboratory," "Location of Laboratory," "Financial, or Ways and Means," and "Questions to be Voted On. The latter embody all the suggestions in the report.

An additional report on the same subject, from the pen of Professor Thurston, was read, in which he proposed that the laboratory be incorporated with the Stevens Institution, Hoboken N. J.

A discussion followed the reading of the reports, at the close of which the association adjourned till 9 o'clock this morning.

## THIS MORNING'S SESSION.

The convention opened at 9 o'clock this morning in Kingsbury Hall, President Britton in the chair.

Dr. Joseph G. Rogers, of Madison, Ind., on being introduced, proceeded to read

## A PAPER

on "Steam Boilers, Waters and Incrustations." The reading of this lengthy paper was listened to with apparent interest. Dr. Rogers illustrated his ideas on the subject with numerous chemical experiments, having necessary apparatus on the platform for that purpose. The experiments, however, were such as any schoolboy familiar with the elementary principles of chemistry might have performed as well as the doctor. The gentleman stated that "owing to the paucity of apparatus in the great city of Chicago," he could not present as many experiments as he should had he the necessary appliances. The experiments he did go through with were designed to illustrate his plan for preventing incrustation in boilers.

At the close of the doctor's effort, the President announced that

## DISCUSSION

on yesterday's report would be next in order. Mr. Towne, of the Northern Pacific Railroad, asked Dr. Rogers for a further explanation of one or two points in his paper, which the doctor gave. Mr. Towne then followed up his questions with some remarks on the report of the committee on the purification of water, which report was read before the convention on yesterday and made the special order for this forenoon.

Mr. Jackson, of the Chicago & Alton Road, spoke briefly on the subject, and moved that Professor Sewell, of the same road, be invited to address the meeting. The motion prevailed.

Professor Sewell proceeded to make some remarks. He said he had examined theories enough to purify all the water that had fallen since the flood, but he was still obliged to inquire, "What shall be done with this great nuisance of boiler incrustation?" He believed the only remedy was to first purify the water used, so that when it entered the boilers it would

be free from all the elements which tend to produce incrustation.

Mr. Sellers, of Philadelphia, corroborated the statements of Professor Sewell, and mentioned numerous experiments which had been made in purifying water in heated tanks. Those experiments had proved successful.

Mr. Miles, of Philadelphia, said they had an upright boiler made on purpose for their establishment on the Scuykill, and had there tried carbonate of soda effectually. Once in about three months they gave the boiler a dose of carbonate of soda, and thus kept the plates and tubes clear of incrustation.

Mr. Jackson said he had made numerous experiments in the matter of preventing incrustation. For the past year he had been using two boiler compounds; he was not at liberty to tell what they were composed of. But they proved quite effective. At every cleaning out of their stationary boiler, in which one of these compounds was used, they generally took out forty or fifty pounds of sediment. But this compound would not do for locomotive boilers. For those he had used the other compound, by way of experiment. It did some good, no doubt, but the question was, would it pay? Was the benefit derived from its use commensurate with the expense incurred?

Mr. Jeffrey, of the Illinois Central, thought a heater and a filter were very effective for steam boilers; at least he found them so in the shops of the Central. For locomotive boilers, however, he thought the water should be purified before being used, as recommended by the committee.

Mr. Woodruff, of the Iowa Central, inquired what compounds Mr. Jackson had been using, and on being informed, related his own experience with the same compounds. He found no good result from Morrison's compound. He tried another with no better result. He then tried a com-

pound made by a man in Minnesota, and found it somewhat effective in an upright boiler, but he had since used sal soda, and found that much better than either of the compounds mentioned.

Mr. Hudson, of the Rogers locomotive works, thought it desirable that the water should be purified before entering the boiler if practicable.

Questions and cross questions were continued by numerous members until noon, but nothing particularly new or important to the public was elicited.

At 12 o'clock the discussion closed, and the convention took a recess of ten minutes.

#### THE MEASUREMENT OF FLOWING WATER.

There is, probably, no point which has occasioned more dispute and litigation than the conflicting rights of persons, entitled to take water power, in certain proportions, from a common source, where the demand exceeds the supply. The experiments, conducted by mathematicians and philosophers, have been, many of them, conducted on a small scale, and the results not be regarded as entirely conclusive, as the causes of contraction and other phenomena in a vein of water an inch in diameter would hardly bear the same proportion to the waters of a river, discharged through a sluice. As a consequence, persons having charge of large works have endeavored to form rules based on their own experience. English engineers, on their own account, have made many experiments to determine the difference between the theoretic discharge (computed by the laws of gravitation) and the actual discharge, as modified by friction, lateral retardation, reaction of adjacent fluid and other causes of diminished velocity and volume, and consequently of quantity. The French government, also, some twenty-five years ago, appointed a commission to determine the ques-

tion, and elaborate experiments on a very extensive scale were made by competent engineers, and the results of these experiments have brought the question within narrow limits.

In the philosophical transactions of the royal society of London, we have the following conclusions which have been deduced from the experiments just referred to. 1. That the quantities, discharged in equal times, are as the areas of the orifices. 2. That the quantities, discharged in equal times under different heights, are to each other nearly in the compound ratio of the areas of the apertures and of the square roots of the heights. The heights are measured from the centers of the apertures. The mean result, also, of several experiments, all the openings being formed in brass plates 1-20 of an inch thick, showed that, for round, triangular, and rectangular holes, the average of the numbers showing the proportion between the theoretic discharge of water, calculated as a falling body, and the actual discharge, as measured, was 6.1 and, for the rectangular holes, it was 6. It has also been found that the effect of gravity may be represented by 64 feet 4 inches, or 64.3—that is, the height in feet through which the body falls being multiplied by 64.3 will give the square of its velocity in feet per second. For the actual discharge per second in cubic feet, multiply the product of the altitude or head of water in feet, the area of the orifice in square feet, and the time in seconds, by 64.3, then extract the square root, and multiply by 6. It is found, also, that with small orifices the effect of a high head is to contract the vein and to diminish the discharge, so that the nearer the orifice can be brought to the surface, and yet the water be kept running with a full stream and without causing any eddy or depression of the surface, the greater will be the discharge. But, with larger apertures, as for instance one with 3 1-4 feet in length by 1 5-8 feet in



width or about 5 3-8 square feet of area, the discharge increases with the increase of head.

As to the discharge of water from open notches in dams, it is found to be equal to 2-3 of the discharge from an orifice of the same size with a full stream under the same head. The proportion between the theoretic and the actual discharge from open notches varies with the depths, the factors being used less with the greater depths. An English hand-book of tables gives 214 cubic feet per minute as the quantity which would run over every foot in width of a regular notch, 1 foot in depth from the water's surface. The amount discharged depends very much on the form of the notch or aperture. A plain rectangular notch, cut with square edges in a 3-inch plank, will discharge very much less than one which has its inner edges beveled or rounded off in the parabolic form of the contracted stream or vein of water. If the aperture be small the difference may amount to a fourth of the whole quantity. Care should also be taken to form the wing-walls to sluices with curved or trumpet shaped approaches, conformed to the natural contraction which may be produced by the overflow or sluiceway.

To obtain the quantity which passes through a parallel channel in a given time, the sectional areas should be multiplied by the mean velocity, the latter element being obtained by adding the velocity of the water at the surface and that at the bottom of the current and dividing the sum by two. As it may not be convenient, in every case, to ascertain the velocity at the bottom, the mean velocity may be determined with accuracy, sufficient for practical purposes, by ascertaining the surface velocity in inches per second in the middle of the stream, and the mean velocity will be equal to this velocity less the square root of this velocity minus five. If, for example, the surface velocity in the stream is equal to 36 inches per second—the

mean velocity will be found by subtracting 5 from 36, leaving 31, then extracting the square root of 31, which is 5.5 and subtracting this last figure from 36, giving 30.5 inches per second for the mean velocity. Multiplying this number by 60 and dividing by 12, or, which is the same thing, multiplying it by 5, will give the velocity in feet per minute. In the case, just supposed, the velocity per minute will be 152.5 feet. If, then, the water course be 4 feet wide and 2 feet deep, the amount of water discharged per minute would be  $152.5 \times 8$  or 1,220 cubic feet.

When the overfall is a thin plate, it will discharge a greater proportionate quantity when the stream is only one inch deep than with greater depths. When the overfall is of two inch plank, the flow of water is more retarded, a greater head is requisite, and the maximum discharge is given by a head of seven inches. When the length of the overflow plank is ten feet, the coefficient is greatest with a depth of five inches, and when wing-boards are added, causing the stream to converge toward the overfall at an angle of 64 degrees, the coefficient is greater even when the head is less, showing the utility of proper wing-walls on sluices.

To determine the height of the waterfall in a running stream, a small temporary dam, unless one exists, must be made so as to secure a still surface. Take two poles, sufficiently long to reach from the bottom of the water to the required line level. Make a plain mark or notch on both sticks, at a distance from the upper ends equal to the distance of the intended line level above the water, marking that distance in feet and inches. Push the poles down through water into the earth at the bottom until the notches are both at the level surface of the water, care being taken to have the poles plumb and at a convenient distance apart. Sight across the tops of these two, and set as many more as may be desired to run the

line of level to the desired point, and the tops, being ranged accurately by the first two, will show a water level so many feet above that of the water. It is estimated that this is a more accurate way than the use of the ordinary spirit level.—*Boston Lumber Trade.*

EAST SAGINAW, Mich., May 3.—The Tittabawassee boom company have rafted out to date 188,154 pieces. Last year they had rafted out 272 pieces up to May 1.

The Cass river boom company have delivered 81,479 logs, scaling 15,045,800 feet. There have also been 20,000 pieces rafted out, scaling about 4,000,000 feet, which have not been delivered on account of lack of room in the mill booms of the owners.

The jam now in the Cass company's booms will not exceed 12,000,000 feet, which will be cleared out in less than two weeks, unless rain falls and brings down the balance of the drive, estimated at from thirty to forty millions.

Below we give a statement of the lumbering done on the Muskegon and its branches during the past winter.

Muskegon.....	100,000,000
Tamarack creek.....	20,000,000
Little Muskegon.....	16,000,000
Ryan creek.....	6,000,000
Hersey branch.....	5,000,000
Grind Stone.....	4,000,000
Middle branch.....	6,000,000
Bear creek.....	3,000,000
West branch of Clam.....	4,000,000
Clam river.....	12,000,000
Butterfield.....	11,000,000
West branch Main river.....	6,000,000
Total.....	193,500,000

LOG CROP FOR 1874.—The latest and most careful estimate of logs on hand, at points on Green Bay, is stated as follows:

NEW CUT.	
Menominee river.....	107,000,000
Other points on Green Bay.....	120,000,000
HELD OVER FROM LAST YEAR.	
Menominee river.....	10,000,000
Other points on Green Bay.....	110,000,000
Total on hand.....	347,000,000

Messrs. F. W. Ambler & Co., 372 and 374 Broadway, Milwaukee, one of the leading hat and cap jobbing houses of the northwest, whose agents are constantly traveling in the great pineries of Wisconsin and Michigan, and whose dealings informs them thoroughly as to the condition of these regions, report a material improvement in the feeling among lumbermen. They have realized from accounts with this class this season far more than they had been lead to expect, and they express a firm faith in the stability and prospects of this great industrial interest.

#### OCONTO.

Men are leaving the drive in many places. Want of sufficient water the cause.

The water on the Oconto tributaries is failing fast and the drivers are resting accordingly. A heavy rain would be a welcome visitor among the boys at this time.

A one-horse railway is spoken of to extend from the depot to the bay shore. A regular ferry will also be established from the railway terminus to the pier in this connection.—*Ex.*

THE AU GRES, MICH., DRIVE.—A gentleman who came down from the Au Gres river Tuesday informs the *Chronicle* that the drive on that stream is coming down pretty well. There was some trouble in the main stream on Friday, but it was thought this would be set right, as there is water enough in the dams above for about twenty days running. The west boom of the Au Gres is now pretty well filled with logs.

## THE NORTHWESTERN LUMBERMAN.

The *Northwestern Lumberman*, Messrs. Judson & Dicey publishers, issued monthly from 284 Wabash avenue, Chicago, is one of the finest of the number of publications that have lately sprung up in the lumber interest in various parts of the country. Under the name of the *Michigan Lumberman* it was published for a considerable period by its present proprietors in Muskegon, Mich., where it established a wide circulation and reputation. Its first number from Chicago was issued in February last, greatly enlarged, under the most liberal auspices, and improved in every material respect. Mr. W. B. Judson, the editor and manager, has already demonstrated his fitness for the duties of a peculiarly responsible position. Mr. B. Wait, the associate editor, is known as the author of articles and estimates on the sources of the American timber supply, which, however exposed they may be to criticism and dispute, have attracted attention from the press in Canada and in all sections of the United States. Mr. J. J. Fitzgerrell, who is also known as a writer to lumbermen, is a traveling correspondent of the *Northwestern Lumberman*, as also Mr. J. H. Roberts and Mr. S. J. McFarren. With so large and experienced a force of workers, and with the prestige of being one of the earliest pioneers in a comparatively undeveloped field of class journalism, we are warranted in expecting the *Northwestern Lumberman* to continue to be, what it now is, a worthy exponent of the

greatest community of lumber dealers in the world. The subscription price is \$2.00 a year, and all dealers and manufacturers should take it.

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 ADVANCE IN PRICES.
 

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The *Northwestern Lumberman* agrees with us in our repeated opinion that prospects are good for an advance in the price of common lumber, and says:

In Michigan there is not one location save Manistee, which can count on or claim more than two-thirds of their usual stock, and many not over one-half. It is safe to say that Michigan will come to the market with a stock of boards and logs in amounts diminished by at least five hundred million of feet from the amount cut in 1873, and this we think just ground to base a rising hope upon. We learn the destruction of thirty millions of feet recently by fire at Williamsport, Pa., had the effect of raising the price of boards two dollars per M at Albany, New York, and other centers. If such is the truth, is it not reasonable to infer that to withhold other hundreds of millions, by any cause, the price would still go up? and as this fact becomes more and more manifest, go *upper* and in the end reach the *uppermost* degree. From a clear consideration of these patent facts, we counsel holders to stiff remunerative figures, but not to an aggressive point, in which case the holder may become his own executioner. Here we say is the flood of the tide upon which a *bon* harbor may be reached, if seized as it ought to be, before its ebb, but should these indications be utterly ignored, and the holder continue to rush his new stock pell mell upon the market, and with no astuteness in his reasoning, insist upon keeping the prices down to the present unremunerative figures, we can promise him nothing other than a continued depressed financial condition.

**EDWIN BROWNE'S NATIONAL DRAMATIC COMPANY.**

Edwin Browne's National Dramatic troupe is now making a tour of central and northern Wisconsin and Minnesota and will visit the principal cities, Eau Claire being the objective point after leaving Milwaukee. The company is one of the finest that has ever visited the west, and probably superior to any troupe that has ever visited the northern portion of Wisconsin. Of the performance in this city the *Milwaukee News* says:

Last evening the talented young actor, Mr. Edwin Browne, made his first appearance as a star before the foot-lights in Milwaukee, in the sensational military drama of "Jack Harkaway," which was given in good style to a fair-sized audience.

This is the first appearance of Mr. Browne as a star actor before the Milwaukee public, and he went through his part in a very commendable manner, and on the whole exhibited considerable ability. Mr. Browne was connected with the Katie Putnam combination for a number of years, in which position he formed a large circle of admiring friends.

The play of "Jack Harkaway" is entirely new to the theatre goers of Milwaukee, and although it would be almost impossible to give an adequate description of the play, suffice it to say, that it abounds in thrilling incidents, plots and counter-plots, a pleasing variety of scenes, and an elegant display of wardrobe. The scenic effects were most excellent, and every scene was in harmony with the play. The company which consists of twenty-five members is a very good one, and all acquitted themselves well.

The play of "Jack Harkaway" promises to have a successful run during the present week, and it is

safe to say, that it ranks high among that class of sensational dramas. Secure your seats early for to-night.

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KNOWLTON.--Those acquainted with the Wisconsin river about Knowlton, will remember that the R. R. bridge crosses the river at Rocky Point, one mile above the Knowlton hotel. That portion of the river above the R. R. bridge for several miles is well adapted to artificial boomage, and we expect to see the mill site occupied soon, and a thriving town growing up at this point. Capitalists are turning their attention to this pinery and seeking investments in mill property, and this available and truly valuable point will not remain long unnoticed.—*Wausau, Wis., Pilot.*

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Orville Beach, Esq., a large real estate owner and heavy lumberman, was in this city last Saturday, paying taxes, entering pine lands and looking over our place with a view of investing in our midst. Mr. Beach's home is in Oshkosh.

We had the pleasure of receiving a call this morning from Capt. John Lynch, a heavy lumberman and superintendent of the Wolf line of steamers, whose residence is in Oshkosh, who has been in this city during the past few days looking after pine land interests in this county. It will be remembered that Capt. Lynch is the gentleman who a short time ago purchased about 5,000 acres of pine lands near Mosinee.

James Riley, Esq., a leading lumberman and heavy capitalist of Fond du Lac, and who has lately purchased an interest in pine lands in this county from Capt. Lynch, spent a few days in this city this week, admiring the beauty of our go-ahead little burg.—*Wausau Central Wisconsin.*



## THE MARKETS.

Chicago, Illinois.

MILWAUKEE, May 15, 1874.

The Milwaukee lumber market is reported inactive, and although there are no changes in the quotations of yard rates, prices are weak. Dealers in Chicago and Milwaukee complain of a great falling off in sales during the last three or four weeks. That might be the case and yet a fair state of activity be maintained, for it should be remembered that the trade was unusually, even remarkably active during January, February and March. Reports from the Mississippi river markets above St. Louis are very favorable, as are also reports from the manufacturing centers in the pineries. We believe that the prices which have ruled for cargo lumber in Chicago during the past two weeks have been the result of forced sales in cases where the manufacturer could not hold his lumber. Dealers generally believe that prices must advance before the summer is past. We quote Milwaukee yard sales as follows:

Common boards.....	13 00@
Joist and Scantling, 12 by 16 ft.....	13 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.....	28 00@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.....	45 00@
3d clear do.....	35 00@
Wagon Box Boards.....	80 00@35 00
A stock do.....	85 00@
B do do.....	25 00@
C do do.....	18 00@
Square pickets.....	14 00@
Flat pickets.....	13 00@
Lath & M pieces.....	2 75@3 00
A shingles, & M.....	3 50@
No. 1 do do.....	1 50@2 25
Timber, 18 to 22 ft.....	15 00@18 00
Timber, 24 ft and over.....	18 00@35 00

Of the present condition of the Chicago market the *Northwestern Lumberman* for May says:

A retrospective glance at the market of the past month, at this point, does not discover any remarkable activity or remarkably favorable results to operators. Since our last monthly review, trade has not exhibited that degree of activity, or prices maintained the standard which, in our opinion, the "situation" warrants. Lumber has declined in our market materially. Piece stuff which sold three weeks ago at \$10.50 has been sold within the past week at \$9.00, and common boards and strips at \$10.00 which previously brought \$12.00. The receipts upon this market, by lake and rail, to May 1, are about 80,000,000 feet in round numbers. Freights have been in a sadly demoralized condition, and vessel men who a season or two since "coined" money so rapidly from anything that would float, now wear long faces and are much given to meditation upon the extreme mutability of all things "navigable." Charters to Oconto have been made at \$2.00, and Menomonee and Muskegon at \$1.50; vessels being plenty at these rates.

We know of but one instance in which Muskegon mill run lumber, of fair average quality, has been sold at less than \$14.50, and then the price was only shaded twenty-five cents. It would, therefore, not be advisable for country buyers to act upon our quotations of the low grades, and come to this market expecting to purchase better qualities at proportionate prices. We quote:

Joist and Scantling.....	\$ 9.00 to 9.50
Common boards and strips.....	10.00 to 11.00
Muskegon mill-run.....	14.25 to 14.50
Lath.....	2.00 to 2.25
Shingles.....	2.75 to 3.00
Cedar posts, cargo lots, for best.....	10 @ 16
Lower grades.....	9 @ 15 and 8 @ 14
RECEIPTS FOR WEEK ENDING MAY 2, 1874.	
Lumber.....	20,533,500
Shingles.....	15,702,000
Lath.....	1,410,000

FOR SAME TIME 1873.	
Lumber.....	74,190,000
Shingles.....	15,775,000
Lath.....	2,208,000
RECEIPTS SINCE JANUARY 1, 1874.	
Lumber.....	81,021,920
Shingles.....	157,281,500
Lath.....	6,583,000
SAME TIME 1873.	
Lumber.....	79,064,000
Shingles.....	105,968,000
Lath.....	10,868,000
SHIPMENTS FOR WEEK ENDING MAY 2, 1874.	
Lumber.....	11,977,944
Shingles.....	9,556,000
Lath.....	684,300
SAME TIME 1873.	
Lumber.....	10,622,060
Shingles.....	9,112,000
Lath.....	1,141,000
SINCE JANUARY 1, 1874.	
Lumber.....	113,772,069
Shingles.....	111,103,193
Lath.....	6,830,500
SAME TIME 1873.	
Lumber.....	92,952,000
Shingles.....	92,870,000
Lath.....	6,870,000

The *Chicago Journal*, May 13 reports: Trade in the yards was fairly active, and a steady feeling prevailed. Prices were firm as follows:

YARD PRICES.	
First and second clear.....	\$52 00@55 00
Second clear, 1 to 2 in.....	43 00@43 50
Third clear, 1½ to 2 in.....	34 00@45 00
Third clear, 1 in.....	38 00@40 00
Select, 1 in.....	25 00@30 00
Wagon-box boards, 13 in. and upward, select.....	35 00@40 00
Stock boards, A.....	32 00@35 00
Stock boards, B.....	28 00@30 00
Stock boards, C.....	15 00@16 00
Common boards, joist and scantling, 12 to 18 ft.....	12 50@13 00
Fencing.....	12 50@13 00
Joist and scantling, 18 to 20 ft.....	13 00@18 00
Joist, 23 and 24 ft.....	17 00@20 00
Flooring, first and second clear.....	38 00@44 00
Flooring, first common, rough.....	28 00@30 00
Flooring, first common, dressed.....	33 00@35 00
Flooring, second common, dressed.....	28 00@30 00
Siding, common, dressed.....	17 00@20 00
Osils.....	10 00@12 00
TIMBER—Sawed, 12 to 16 ft.....	27 00@35 00
Pickets.....	@12 50
SHINGLES—Sawed A & M.....	3 37½@3 75
On track.....	3 12½@3 25
LATH.....	2 50@2 70

#### St. Louis, Missouri.

Methudy & Meyer send us a complete report of the condition of the St. Louis market, from which we quote to date of May 9:

White pine in raft nominally unchanged—little or none offered on the market as yet. A lot of 100,000 feet ordinary mill-run Wisconsin sold in pile at \$17.00. Parties just from Wisconsin and Chippewa state that

while there is no difficulty in driving on those rivers, that, in the smaller streams tributary thereto the greater portion of the logs will be "hung up" for the want of sufficient water to effect a drive.

The market for depot and levee lumber continues to rule as unsatisfactory as ever. There is a moderate demand only for best grades of all descriptions, while inferior and common is avoided by buyers—prices, however, on all grades are essentially unchanged. At the yards a fair business was done at unchanged rates. Best grades of shingles lower at \$3.80 del., and lath at \$2.75 on levee.

We quote the range for depot and levee lots: Yellow pine flooring—3d rate at \$14.00a16.00; green 2d and clear do, \$24.00a25.00; dry do, \$26.50a27.00; yellow pine mill-run dimension at \$13.00a14.00; poplar at \$16.00a18.00 for mill-run boards and strips—2d and clear do at \$20.00a22.50, 3d rate \$13.00a15.00; black walnut, \$20.00a25.00 for inferior, \$30.00a35.00 for common to fair, \$38.00a40.00 for good, and \$42.50a45.00 for choice; oak at \$20.00a28.00; ash at \$20.00a27; hickory at \$30.00a35.00, sawed cedar timber at \$30.00a32.50—hewn \$25.00a27.00; cedar posts at \$30.00; walnut table legs sell at \$16.00a22.00 per set. Special orders filled at higher rates.

Sales reported at the depot and on the levee: 1 car yellow pine dimension \$14.00, 1 do strips at \$15.00, 14 do flooring at \$24.00 and \$14.00, 5 do at \$25.00, 3 do at \$26.50 and \$15.00, 1 do at \$26.00 and \$16.00, 9 do \$27.00 and \$16.00, 18,000 feet poplar (common) at \$15.00, 4 cars do (1½ inch) at \$20.00 del., 26,000 feet do (1st and 2d clear) at \$20.00, 20,000 feet do (do do strips) at \$21.00, 3 cars do (strips) at \$21.00 and \$14.00, 5 do (dry 2d clear strips) at \$3.00, 1 car do (order) at \$25.00 and \$14.00, 45,000 feet walnut (calls) on p. t., 2 cars do (common) at \$25.00, 1 car do at \$30.00,



up 31,710,548 feet, a fraction over one million per day. This is an increase over March of 5,523,409 feet.

The total for the operations of January, February, March and April, including two days of May, now reaches 88,624,097 feet, an increase over the same period last year of 29,687,357 feet. Were we to add the shipments by canal from points east of Lock Haven, and cleared from this city, amounting to 2,149,858 feet, the grand total would be 90,777,955 feet.

To transport this lumber to market the services of 250 canal boats and 7,685 cars have been required. Of this number the Philadelphia & Reading railroad furnished 4,371, and the Philadelphia & Erie 3,314 cars.

#### Albany, New York.

The *Albany Argus* says, May 5th : As a general rule the market the week before the receipts of lumber by canal rules quiet ; this, however, has not been altogether the case this year, for notwithstanding the very backward season and the stormy weather there has been more than the usual activity and we hear of some good sales having been made since our last report. It is estimated that there has been over 45,000,000 feet already shipped hence this spring and the district shows decided signs of reduced stocks.

The lumber and saw log drive on the Ottawa has not commenced yet ; on some of the lakes and streams the ice is 30 inches thick.

The current quotations of the yards are :

Pine, clear, $\frac{3}{4}$ M.....	\$58 00@60 00
Pine, fourths, $\frac{3}{4}$ M.....	53 00@55 00
Pine, selects, $\frac{3}{4}$ M.....	48 00@50 00
Pine, good box, $\frac{3}{4}$ M.....	23 00@27 00
Pine, common box, $\frac{3}{4}$ M.....	17 00@20 00
Pine, clap-board, strips, $\frac{3}{4}$ M.....	@50 00
Pine, 10 inch plank, each.....	42 @ 46
Pine, 10 inch culls, each.....	25 @ 26
Pine, 10 inch boards, each.....	28 @ 31
Pine, 10 inch boards, culls, each.....	18 @ 20
Pine, 10 inch boards, 16 feet, $\frac{3}{4}$ M.....	26 00@30 00
Pine, 12 inch boards, 16 feet, $\frac{3}{4}$ M.....	28 00@32 00
Pine, 12 inch boards, 13 feet, $\frac{3}{4}$ M.....	26 00@29 00
Pine, 1 $\frac{1}{4}$ inch siding, select $\frac{3}{4}$ M.....	42 00@45 00
Pine, 1 $\frac{1}{4}$ inch siding, common, $\frac{3}{4}$ M.....	19 00@21 00

Pine, 1 inch siding, selected, $\frac{3}{4}$ M.....	40 00@43 00
Pine, 1 inch siding, common, $\frac{3}{4}$ M.....	18 00@20 00
Spruce, boards, each.....	@ 17
Spruce, plank 1 $\frac{1}{4}$ inch each.....	@ 21
Spruce, plank, 2 inch, each.....	@ 32
Spruce, wall strips, each.....	13 @ 14
Hemlock, boards, each.....	@ 17
Hemlock, joists, 4x6 each.....	34 @ 38
Hemlock, joists, 2 $\frac{1}{2}$ x 4, each.....	15 @ 16
Hemlock wall strips, 2x4 each.....	12 @ 13
Hemlock, plank, 2 inch, each.....	32 @ 34
Black Walnut, good, $\frac{3}{4}$ M.....	75 00@85 00
Black Walnut, $\frac{3}{4}$ inch $\frac{3}{4}$ M.....	75 00@78 00
Black Walnut, $\frac{3}{4}$ inch, $\frac{3}{4}$ M.....	75 00@80 00
Sycamore, 1 inch, $\frac{3}{4}$ M.....	33 00@35 00
Sycamore $\frac{3}{4}$ inch, $\frac{3}{4}$ M.....	30 00@32 00
White Wood, chair plank, @ M.....	65 00@68 00
White Wood, 1 inch, and thick, $\frac{3}{4}$ M.....	38 00@45 00
White Wood, $\frac{3}{4}$ inch, $\frac{3}{4}$ M.....	35 00@40 00
Ash, good, $\frac{3}{4}$ M.....	38 00@43 00
Ash, second quality, $\frac{3}{4}$ M.....	25 00@30 00
Oak, good, $\frac{3}{4}$ M.....	35 00@45 00
Oak, second quality, $\frac{3}{4}$ M.....	25 00@30 00
Cherry, good, $\frac{3}{4}$ M.....	60 00@70 00
Cherry, Common, $\frac{3}{4}$ M.....	25 00@35 00
Birch, $\frac{3}{4}$ M.....	25 00@30 00
Beech, $\frac{3}{4}$ M.....	20 00@25 00
Basewood, $\frac{3}{4}$ M.....	22 00@30 00
Hickory, $\frac{3}{4}$ M.....	40 00@45 00
Maple, $\frac{3}{4}$ M.....	22 00@40 00
Chestnut, $\frac{3}{4}$ M.....	40 00@45 00
Shingles, shaved, pine, $\frac{3}{4}$ M.....	8 00 @ 8 25
Shingles, do 2d quality $\frac{3}{4}$ M.....	6 00 @ 7 00
Shingles, extra, sawed, pine, $\frac{3}{4}$ M.....	6 00 @ 6 25
Shingles, clear, sawed, pine, $\frac{3}{4}$ M.....	4 50 @ 4 75
Shingles, sawed, 3d quality, $\frac{3}{4}$ M.....	2 50 @ 3 00
Shingles, cedar, $\frac{3}{4}$ M.....	3 00 @ 3 30
Shing'er, hemlock, $\frac{3}{4}$ M.....	3 00 @ 3 25
Lath, hemlock, $\frac{3}{4}$ M.....	2 25 @ 2 38
Lath, spruce and pine, $\frac{3}{4}$ M.....	@ 2 50

**BOOM COMPANY.**—The *Evart Review* says, that steps are being taken by a number of prominent gentlemen toward the organization of a boom company in this village. We are not at liberty to mention the names of the gentlemen interested in this matter at present, but we feel assured the enterprise will be successfully carried out at an early day. The splendid dam at this point affords excellent facilities for the success of such an organization, and the value it would be to the village cannot be estimated at present.

**THE RIFLE BOOM.**—A gentleman who came from the Rifle river on Tuesday informs the *Bay City Tribune* that the logs are moving down tolerably well, considering the low stage of the water. The dam at the head of the rapids, just below the forks, gave way recently for the second time this season, but it is expected that it will be repaired and ready for operation to-day.—*Saginaw, (Mich.) Courier.*



# JOHN B. BOTTINEAU, REAL ESTATE,

Insurance and Loan Agent.

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Special attention given to paying taxes, procuring and perfecting titles to lands entered by HALF-BREED SCIP. Soldiers' 80-Acre Claim and Warrants bought and sold. Personal application, under Chippewa Treaty, Feb. 22, 1855, to enter Land always on hand, by which I can enter Pine Lands in Minnesota at \$2.50 per acre.

Persons having numbers, or expecting such, will do well to give us a call or correspond. Letters will receive prompt attention.

Also owners of Pine or other Land, who wish to dispose of the same, will find I am in a position to make speedy sales.

## Choice Timber Land.

In Townships 158 to 160 inclusive, Range 30, situated between the St. Vincent Extension of the St. Paul and Pacific Railroad and the Red River to the North, on which latter there is constant traffic, and where the surrounding country is somewhat deficient in timber, I have 10,000 acres of land, first-class black loam and alluvial soil, surpassing any tract in the State for the production of wheat and farm produce. Specimens of the produce of this locality at the last State Fair took the first prizes. The above tract is heavily timbered with White and Burr Oak, averaging at least 4,000 feet select timber to the acre on which the government in adjoining tracts collects stumpage at \$3.00 per thousand feet. The lumber is not only in demand for local consumption, but finds a ready market in Pembina and the Province of Manitoba, where also timber is scarce, and to which there is water carriage.

Extra inducements to capitalists will be offered in the above lands for joint operations.

I have also for sale 1,120 acres in township 130, range 34 and 35. First quality Farming Lands, well timbered and prairie and well watered; near railroad. \$5.00 per acre.

## Choice Pine Lands.

6,331 acres, on which stand 27,710,000 feet of choice lumber, all within four miles of landing, in tract as follows:

160 acres in sec. 24.....	T. 182, R. 30
400 acres in sec. 21, 22, 30 .....	T. 187, R. 33
440 acres in sec. 1, 12 .....	T. 187, R. 34
160 acres in sec. 10, 22, 24, 34 .....	T. 137, R. 33
877 acres in sec. 6, 11, 18, 14, 24, 25, 33, 34 .....	T. 189, R. 25
160 acres in sec. 8 .....	T. 137, R. 33
240 acres in sec. 4, 18 .....	T. 131, R. 30
450 acres in sec. 10, 14, 24 .....	T. 131, R. 31
200 acres in sec. 18 .....	T. 132, R. 30

240 acres in sec. 10, 14, 21 .....	T. 132, R. 31
360 acres in sec. 14, 18, 24 .....	T. 132, R. 31
240 acres in sec. 30 .....	T. 40, R. 25
380 acres in sec. 3, 22, 24, 26 .....	T. 40, R. 29
320 acres in sec. 6, 10, 28, 34 .....	T. 51, R. 26
360 acres in sec. 10, 14, 26, 34 .....	T. 51, R. 27
320 acres in sec. 14, 22, 26, 30, 34 .....	T. 63, R. 26
160 acres in Wisconsin, sec. 30, T. 44, R. 2 W., near crossing of Wisconsin C. R. R.	

**Prices range from \$4.50 to \$12.50 per acre.**

1,000 acres estimated to cut 5,000,000 feet of White Pine, in townships 129 and 130, range 32. Will be sold cheap to close a partnership.

Have also several hundred acres that have been partly cut, some years ago, which at the prices asked would be a good paying investment.

And several thousand acres of choice Pine Lands tributary to Duluth markets.

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Sparks, McPherson & Co., Bankers, Minneapolis.

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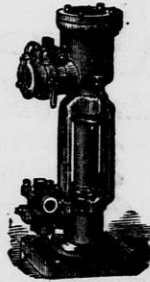
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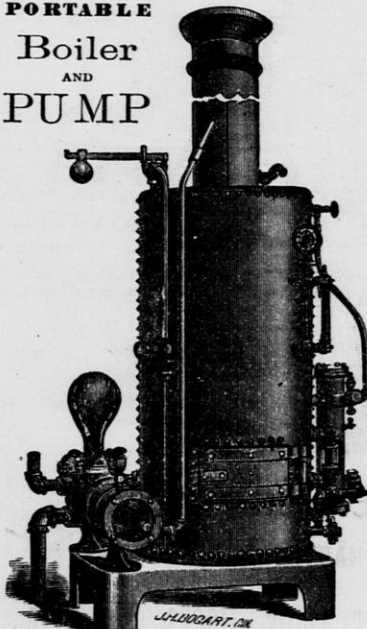
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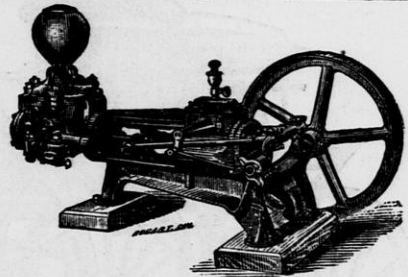
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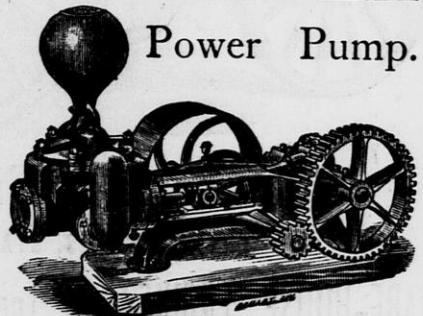


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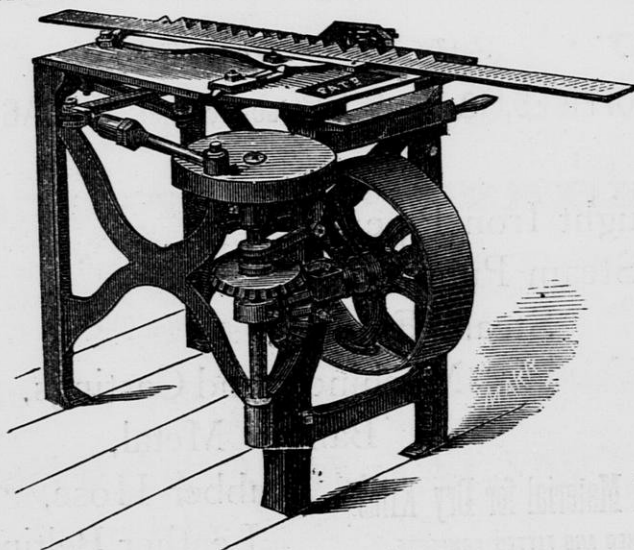
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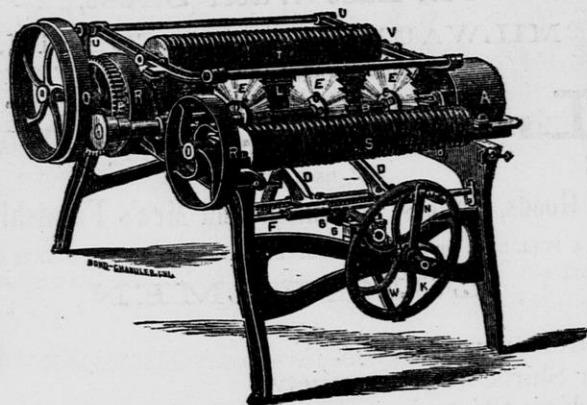
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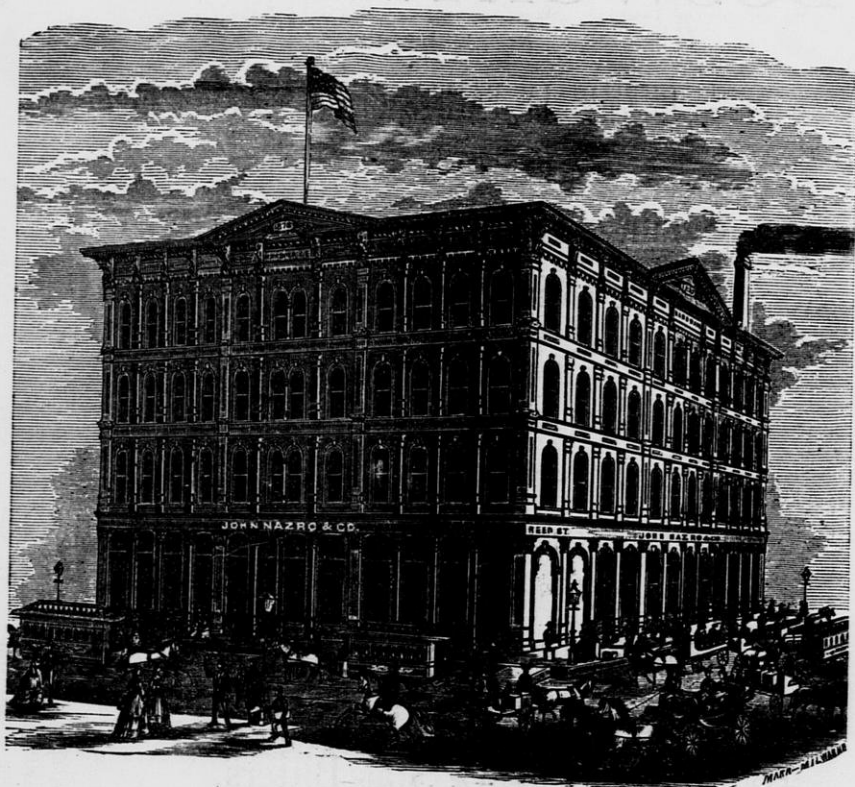
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# Vulcanized Friction Board.

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.,  
*Foundries and Machinists, Milwaukee.*

W. H. HINER & CO.,  
*Foundries 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.

## Green Bay &amp; Minnesota Railway

## Passenger Time Table.

GOING WEST.	STATIONS.	GOING EAST.
7:30 A. M. Dep.	Green Bay	8:45 P. M. Arr'e
7:47	Duck Creek*	8:27
8:04	Onelda*	8:10
8:34	Seymour	7:40
8:57	Black Creek	7:17
9:20	Shiocton	6:54
9:50	New London	6:24
10:10	Royalton	6:04
10:23	Manawa	5:51
10:40	Ogdensburg	5:34
11:00	Scandinavia	5:14
11:30 } † Arrive.	Amherst	4:44 } † Depart.
11:50 } Depart.	Plover	2:24 } Arrive.
12:30 P. M.	Grand Rapids	3:44
1:17	Dexterville	2:57
2:07	Scranton	2:07
2:34	City Point*	1:40
2:45	Hatfield*	1:29
3:10	Black River	1:04
3:58	Merrillan	12:17 } † Depart.
4:28 } † Arrive.	Alma Center	11:47 } † Arrive.
4:48 } Depart.	Hixton	11:27
5:00	Taylor	11:14
5:19	Blair	10:54
5:41	Whitehall	10:31
6:00	Arcadia	10:11
6:22	Dodge*	9:48
7:05	Marshland	9:00
8:11	Bluff Siding*	8:00
8:39	Winona	7:55
8:45		7:30
9:05		7:00

\* Trains stop only on signal. † Trains will stop for meals. Trains do not run on Sundays. Black figures denote the stations for meeting and passing trains.

## CONNECTIONS.

At Green Bay, with O. & N. W. Railway and Wisconsin Central Railway for Chicago, Milwaukee, Fond du Lac, Oshkosh, Neenah, Menasha, Appleton, and all points in Lake Superior; and in the season of Navigation, with Union Steamboats Co's Line First-class Propellers between Green Bay, Buffalo, Detroit and Cleveland, with Connections at Buffalo for New York, Boston, and all Eastern points.

At Amherst, with Wisconsin Central Railway for Stevens Point, Waupaca, Menasha and intermediate points.

At Grand Rapids, with Wisconsin Valley Railroad. At Merrillan, with West Wisconsin Railway for Hudson, Stillwater, St. Paul, Minneapolis, Duluth and intermediate points.

At Marshland Junction, with La Crosse, Trempealeau & Prescott Railway for La Crosse.

At Winona, with Winona & St. Peter Railway for all points in Western and South-Western Minnesota, and with M. & St. Paul, Minneapolis, La Crosse and intermediate points.

S. B. KENRICK,  
Assistant Superintendent.

## METHUDY &amp; MEYER,

COMMISSION LUMBER DEALERS,

22 South Main Street,  
ST. LOUIS, MISSOURI.

## Scale in Steam Boilers.

I will remove and prevent Scale in any Steam Boiler, and make no charge until the work is found satisfactory.

GEO. W. LORD,  
232 Arch St., Philadelphia, Pa.

H. M. NORTHROP,  
MANUFACTURER OF

## FRENCH YOKE SHIRTS.

AND DEALER IN

Men's Furnishing Goods,  
jan'4-ly 86 Wisconsin St.

## MILWAUKEE FINE ART GALLERY,

No. 416 Broadway.

OPEN DAILY FROM 8 O'CLOCK A. M. TO DUSK.

Season Family Tickets \$10. Single admission 25 cts.  
jan'4-ly B. FRODSHAM, Manager.

## O. F. LINDMAN &amp; 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-ly

## Wanted—Agents

To sell a Novelty just patented. Mill-men and Head sawyers buy it at sight. Commission liberal. Address,

FITZGERRELL & PRESSER,

jan'74-8t East Saginaw, Mich.

## 500,000 ACRES OF PINE AND FARMING LANDS

## FOR SALE!

The lands of the Jackson, Lansing & Saginaw Railroad Company are now for 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.

# 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.

# WISCONSIN CENTRAL RAILROAD

OPERATED BY PHILLIPS AND COLBY CONSTRUCTION CO.

## New Short Through Line

BETWEEN

**Chicago, Milwaukee,  
DE PERE, GREEN BAY,**

AND

**ALL POINTS in the GREAT NORTHWEST.**

The Direct Route to the  
**IMMENSE LUMBER DISTRICT**

Of Central Wisconsin.

THE ONLY CONTINUOUS LINE BETWEEN

**MILWAUKEE, MENASHA,  
WEYAUWEGA, WAUPACA,  
AMHERST and STEVENS POINT.**

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.**

COMMENCING MAY 1st, 1874, all trains of this Road  
will arrive at and depart from

**Union Depot, Milwaukee,  
REED ST., SOUTH SIDE.**

## 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 COMFORT-  
ABLE ROUTE.

**CONNECTIONS:**

**At Plymouth,** with Sheboygan and Fond du Lac  
Railroad.

**At Green Bay,** (Port Howard), with Chicago and  
Northwestern, and Green Bay and Minnesota Rail-  
ways.

**At Amherst Junction,** with Green Bay and  
Minnesota Railway.

Ask for Tickets via Wisconsin Central Rail-  
road, 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,** Traveling Agent.

1874 Season Arrangement. 1874

**\$3.00** IN FARE  
**SAVED**

BY TAKING THE

**DETROIT & MILWAUKEE**

RAILROAD LINE.

The Cheapest and 100 Miles the Shortest Route to

**Grand Rapid,** **Saginaw,**  
**Detroit,** **Cleveland,**  
**Suspension Bridge, Buffalo.**

**NEWYORK, BOSTON****And All Points in the East.**

On and after Monday, April 6th, 1874, the Steamers of thisline will leave MILWAUKEE from their dock, 48 West Water Street, daily at 9 P. M. (Saturday excepted) making direct connections at GRAND HAVEN the following morning with Trains for

**DETROIT AND ALL POINTS EAST.**

PULLMAN'S PALACE SLEEPING CAR ON NIGHT TRAINS  
PARLOR CARS ON DAY TRAINS.

**Fare \$3.00 Less than any other Route.**

Through Tickets for sale at all principal Ticket offices in the Northwest. Also at Company's Office 385 Broadway, Milwaukee, and on board steamers.

**HARRY BRADFORD,**  
Ticket Agent, Milwaukee.

**W. W. WILSON,**  
Western Pass- Agent, Milwaukee.

**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 Disston & Co.'s celebrated 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.**

**Chicago & Northwestern Railway**  
Passengers for  
**CHICAGO,**

DETROIT, TOLEDO, CLEVELAND, BUFFALO, NIAGARA F'S, PITTSBURG, CINCINNATI, ROCHESTER, ALBANY, TORONTO,	MONTREAL, QUEBEC, PORTLAND, BOSTON, NEW YORK, PHILADELPHIA, BALTIMORE, WASHINGTON, WHEELING, COLUMBUS,	DAYTON, INDIANAPOLIS, TERRE HAUTE, CHAMPAIGN, ILL BLOOMINGTON, JACKSONVILLE, SPRINGFIELD, QUINCY, ST. LOUIS, CAIRO,
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SAN FRANCISCO, OGDEN, CHEYENNE, SIOUX CITY,	SACRAMENTO, SALT LAKE CITY, COUNCIL BLUFFS, YANKTON,
--	---

—ALSO FOR—

**FOND DU LAC,****Ripon, Green Lake,****PRINCETON, BERLIN****WINNECONNE,****Stevens Point, Wausau,****Oshkosh**

**Appleton, Menasha, Escanaba, Green Bay, Neenah, Ishpeming, L'Anse, MARQUETTE, and the Shores of**

**Lake Superior.**

And ALL POINTS SOUTH and EAST, Should  
Buy their Tickets via

**Chicago**

AND THE

**CHICAGO & NORTHWESTERN RAILWAY.**

Clos Connections made with all Railroads running  
EAST or SOUTH from Chicago.

Among the Inducements offered by this Route, are all

**THE MODERN IMPROVEMENTS.**

Rock and Gravel Ballasted Track; Steel Rail, Rock and Iron Bridges, Pullman Palatial Cars and Coaches; Parlor and Drawing room Day Coaches; Smoking and Lounging Cars; Westinghouse Safety Air Brakes; Miller's Patent Safety Coupling and Platforms; Close Connections at Junction Point Less Transfers than any other Route; Union Depots, No Car Ferry Transfers; Speed, Safety, and an absolute comfort.

From 2 to 10 Fast Express Trains run each way daily over the various lines of this road, thus securing to the Traveler selecting this route sure and certain connections in any direction he may wish to go.

See that your Tickets **READ VIA THIS ROUTE, and TAKE NONE OTHER.**

Milwaukee Offices, 102 Wisconsin Street, and at the Depot foot of Wisconsin Street.

**MARVIN HUGHITT,** **W. H. STENNETT,**  
General Superintendent. Gen'l Passenger Agent.  
**S. SANBORN, General Agent.**



# Chicago and Alton Railroad

## THE ONLY FIRST-CLASS ROAD IN THE WEST.

(See Classification of Railroads by Board of Railroad Commissioners.)

### SHORTEST, QUICKEST AND BEST ROUTE

From CHICAGO to

## KANSAS CITY AND THE WEST,

AND

## ST. LOUIS, TEXAS and the SOUTH,

Joliet, Bloomington, Springfield, Alton, Jackson-  
ville, Peoria, Keokuk, Moberly,  
Jefferson City.

### NO CHANGE OF CARS

From Chicago to Kansas City, St. Louis, Springfield  
and Jacksonville.

The ONLY LINE running

### Reclining Seat Palace Cars

From CHICAGO to KANSAS CITY without change.

### PULLMAN PALACE SLEEPING CARS

Run to Kansas City without change.

### 94 Miles Shorter Route to Texas

Than the old Roundabout Route via Hannibal.


THE ONLY LINE RUNNING


### A SATURDAY NIGHT TRAIN

To SPRINGFIELD and ST. LOUIS,

And making the time to

## St. Louis in 11 Hours.

 The only Line running Pullman Palace Sleep-  
ing Cars from Chicago to Springfield, Jacksonville,  
and St. Louis.

 The only Line under one management from  
Chicago to Springfield, St. Louis, Jacksonville and  
Jefferson City.

### IF YOU ARE GOING WEST

In large or small parties, to Missouri, Kansas, Col-  
orado, Texas, etc., before buying your tickets, apply  
personally or by letter to

**J. CHARLTON,**

2 and 4 West Van Buren Street, Chicago.

You can always depend upon getting the LOWEST  
RATES, and good reliable advice as to the best route  
to take.

### THE BEST ROUTE

From ST. LOUIS to

## Chicago, Milwaukee,

## ST. PAUL,

## NEW YORK, BOSTON,

## THE EAST and THE NORTH.

## Elegant Day Cars

AND

## PULLMAN Palace SLEEPING and DINING CARS

Run through WITHOUT CHANGE from

## ST. LOUIS to CHICAGO.

### NO CHANGE OF CARS

From ST. LOUIS to

Alton, Jacksonville, Pekin, Peoria,  
Louisiana, Mo., Hannibal, Quincy,  
Keokuk, Burlington, Springfield,  
Bloomington, Joliet, and

## CHICAGO.

THE ONLY LINE MAKING CONNECTION

IN

## UNION DEPOT, CHICAGO,

WITH TRAINS TO

Pittsburgh, Harrisburg, Williamsport, Phila-  
delphia, New York, Milwaukee, La  
Crosse, St. Paul, and Principal  
Points East and North,

## WITHOUT CHANGE

### REDUCED RATES

FOR

## LUMBERMEN TICKETS

TO

## ALL POINTS NORTH.

Apply to the following Ticket Agents:

S. H. KNIGHT,

117 North Fourth St., corner Pine St., St. Louis, Mo.

R. H. ELLIOTT,

Depot, Alton, Ill.

G. McFADDEN,

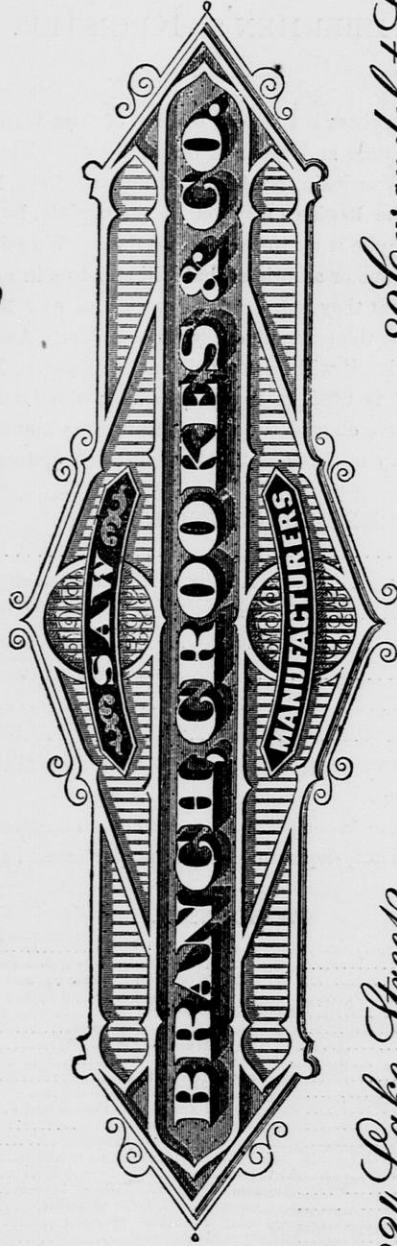
Depot, Louisiana, Mo.

**J. C. McMULLIN,** General Superintendent, Chicago.

**JAMES CHARLTON,** General Passenger and Ticket Agent, Chicago.

**ST. LOUIS SAW WORKS**

Established in 1849.



*224 Lake Street*  
**CHICAGO.**

*114 & 116 Vine Street*  
**ST. LOUIS.**

*80 Carondelet St.*  
**NEW ORLEANS.**

## LUMBERMEN'S REGISTER.

The Lumbermen's Register is a special feature of THE WISCONSIN LUMBERMAN. We have devoted much time and labor in obtaining and classifying the names of the lumbering firms of Wisconsin, Michigan, Minnesota, Iowa, Nebraska, Missouri, Kansas and Chicago. The Register may yet be incomplete, but it is as perfect as we have been able to compile it up to the present date. We ask, now, that lumbermen send us any corrections or additions that will assist us in making the Register absolutely perfect, and that they will send us notice of new firms formed or old ones dissolved. We want the name of every reliable firm. Assist us in obtaining them. In our classification it will be noticed that in Missouri, Kansas and Nebraska, the term "saw mill" is used in many instances; the term refers to the local hard-wood mills. We have classed the manufacturers as manufacturers and dealers, because it is generally understood that saw-mill proprietors are at least wholesale dealers.

### GENERAL CLASSIFICATION.

m and d.....	Manufacturers.
d.....	Wholesale and Retail Dealers.
s m.....	Shingle Manufacturers.
p m.....	Planing Mills.
Sash, doors, &c.,.....	Manufacturers of Sash, Doors, &c.
Saw mill.....	Hardwood Mills.
Staves.....	Stave Manufacturers.
Logger.....	Jobber or logger who sells his logs or has them sawed by custom sawing.

Our Register is more incomplete in reference to loggers than to any other class of lumbermen. That department will be perfected as rapidly as we can obtain the names.

### WISCONSIN.

Upham Chas M & Bro m and d.....	Angelica	Bailey D R.....	Baldwin
McCartney D m and d.....		Hann Henry sash, doors etc.....	
Oleson & Co m and d.....		Woodford & Davis m and d.....	Earton
Clinton McLaren & Co m and d.....		Townsend & Co, d Spring c Second.....	Beaver Dam
Hall A & Co m and d.....	Ahnapee	Gratiot E H d.....	Belmont
Brammer Henry & Co m and d.....		Gray James p m.....	Beloit
Young D m and d.....		Weed J H & Co d.....	
Sawyer P m and d.....	Algoma	Peck S W d.....	
Reynolds & Tibbetts m and d.....	Appleton	Talbot H G d.....	Berlin
Lederer B W sash doors etc.....		Cohn L S m and d.....	
Spaulding G W & Co staves.....		Diamond & Co m and d.....	Big Lester Bay
Whorton Bros m and d.....		Bates Geo d.....	Black Earth
Rose & Heath.....		Ward G S & Bro d.....	
Dorr & Steele m and d.....		Hurlburt W D m and d.....	Black Brook
Yorker S J d.....	Arena	Price W T m and d.....	Black River Falls
Goodrich J & Co logger.....	Augusta	Bright & Wither loggers.....	
Ball J L p m.....		Merrill L G m and d.....	
Stone J F & Son m and d.....		Elliott A m and d.....	
Randall S logger.....		Ice J logger.....	
Bowen E.....	Albany	Spaulding D J m and d.....	
Ashland Lumber Co m and d.....	Ashland	Bump Mark logger.....	
Engalls & Co m and d.....		Burchard Harrison logger.....	
Cary Bros m and d.....	Auroraville	Porter W B logger.....	
Flower J H.....	Bangor	Sawyer A E logger.....	
St. Louis & Wisconsin River Co.....	Barnum	Dickson John and James.....	Bloomington

Barron John.....	Blue Mills	Estabrook W B m and d.....	Eau Claire
Briggs & Barnes.....	Boaz	Ingram & Kennedy m and d.....	
Bucker A.....	Buffalo	Graham, White & Co m and d.....	
Rouch & Erding.....	Bonduel P O	Pinkham J P m and d.....	
Somers W & Bro m and d.....		Robson John m and d.....	
Nelson H & Co d.....	Boscobel	Daniel Shaw & Co m and d.....	
Weston, Miner & Co m and d (Necedah).....		Smith & Buffington m and d.....	
Pierce & Sly m and d.....	Branch	Tarrant E m and d.....	
Yorty J & Kripp d.....	Brandon	Wilcox & Co m and d.....	
Bowen E d.....	Brodhead	Carson & Rand m and d.....	Eau Galle
Thompson C C d.....		Week John m and d.....	Eau Plaine
Lamson C & Co d.....		Hutchinson & Bro m and d.....	
Usher & Hassinger d.....		Brown R R d.....	Edgerton
Blake Francis W d.....	Burlington	Huntley & Co d.....	Eloy
Stevens & Lyons d.....	Burnett Junction	Webster & Palmer m and d.....	Embarrass
Fay C B & Co m and d.....	Casco	Mather & Lowrie d.....	Emory
Horn F W m and d.....	Cedarburg	Isabelle Mill Co m and d.....	Eschelle
Hilgen & Son m and d.....		Foot, Foster & Co m and d.....	Eureka
Wehachsen Henry m and d.....		Avery A H m and d.....	Excelsior
Denison J C d.....	Cadiz	Mosier W S m and d.....	
Denison C R d.....		Pearson & Pake m and d.....	
Staves J M d.....		Long, Henderson & Coe m and d.....	Fairchild
Neff D d.....	Calamine	Randall, Simeon d.....	Fall Creek Station
Bock Chas d.....	Calumet	Anderson C B d.....	Fall River
Myers Cas d.....	Cambria	Fifield E d.....	Evansville
Taylor & Bach d.....	Carleton	Johnson D & Co d.....	
Stephens Daniel B d.....	Cassville	Mack H & Bro m and d.....	Evanswo
Harris Bros m and d.....	Cato	Griffith J Q & Son m and d.....	Fond du Lac
Rix Bros m and d.....	Cedar Creek	Riley & Bosworth loggers.....	
Edwards J & Co m and d.....	Centralia	Hamilton I K & W C loggers.....	
Garrison O & Co m and d.....		Fond du Lac Mfg Co m and d.....	
LeClerc H.....		Lewis & Steenberg sash doors etc	
Lyon R C sm.....		McCourt E sash doors etc.....	
Clark & Scott m and d.....	Charlestown	McDonald & Stewart sash doors etc.....	
Graves James m and d.....	Chippewa Falls	Parker N & Co d.....	
Union Lumbering Co m and d.....		Stevely & Higbee p m.....	
Priest, Coburn & Co p m.....		McDonald John logger.....	
Withrow & McLean sash doors etc.....		Wiley Dr logger.....	
Mariett, La Bonté & Co loggers.....		Gainer James logger.....	
Vincent, Morelet & Co loggers.....		Chicago & NW Co's mill m and d.....	
Clark Ira m and d.....	Clark's Mills	Webster N D logger.....	
Hilt & Davidson m and d.....	Clay Bank	Meyer Charles J L sash doors etc.....	
Tuf Jas Chicago dealer.....		Merryman & Co m and d.....	
Lamphear J P d.....	Clinch	McDonald Alexander m and d.....	
Wilcox Bros & Co d.....		Sexsmith G W m and d.....	
Colby Mill Co m and d.....	Colby	Moore, Galloway & Baker m and d.....	
Graves J S m and d.....		Parker N & Co.....	
Bond A D d.....	Columbus	Mihills U D & Co sash doors etc.....	
Levy & Underhill d.....		Hamilton & Finley m and d.....	
F. E. Fahm d.....		Hunter George logger.....	
Aldrich V M d.....	Cooperstown	Curtis & Cornish d.....	Fort Atkinson
Wright, P & Bro m and d.....	Coral City	Wilcox, Southwell & Co d.....	
James T & Co d.....	Darlington	Cook & Foster m and d.....	Fort Howard
Carpenter H N d.....		Lamb, Watson & Co m and d.....	
Woodward T saw mill.....		C Schwartz & Co sash doors etc.....	
Clark H d.....	Deansville	Leird J. P. & Co m and d.....	
Ross H J & Co d.....	Delevan	Gray Oscar m and d.....	
Gormley Watson & Co d.....	Delevan	Matthias F & C m and d.....	
Blake Samuel m and d.....	DePere	Bowman W m and d.....	Fountain City
Smith B. F. m and d.....		Arpke F m and d.....	Frankfort
Reid A. p m.....		Archer & Johnson m and d.....	Franklin
McLellan John m and d.....		Arnold G M m and d.....	Frankville
Marsh G S m and d.....		Cooley & Race m and d.....	
Ritchie James m and d.....		Cooley & McEvoy staves etc.....	Fredonia
Monroe John m and d.....		Bergtresser L m and d.....	Fremont
Struthers Thomas sash doors etc.....		Brickley John m and d.....	
Hiles G m and d.....	Dexterville	Edwards J & Co m and d.....	Frenchtown
Remington H W m and d.....		Storns & Son staves.....	Galesville
Worth C M & A R s m.....	De Soto	Freeman A W d.....	Genoa
Schofield Chas & Co d.....	Dycksville P O	Arnold J m and d.....	Germantown
Kinney Francis m and d.....	Durand	Natchway H.....	Gibson
Plummer & Morse m and d.....		Olds & Lord m and d.....	Glenmon
Hoard & Earl d.....	Doylestown	Freeman O. & W. d.....	Genoa Junction
Knapp, Stout & Co m and d (Menomonee).....	Dunnville	Arpen A logger.....	Grand Rapids
Rosenberg & Co.....	Dykesville	Butler & Smith sash doors etc.....	
Baker & Lee d.....	Elkhorn	Edwards John & Co m and d.....	
Larson & Olsen m and d.....	El Paso	Hertel Fred p m (Centralia).....	
Eau Claire Lumber Co m and d.....		Trabern W C.....	
Rathbone N S logger.....		Arpen J logger.....	
Rundle & Free sash doors etc.....		Byron F m and d.....	
Wheaton Lumber & Mfg Co m and d.....		Clark & Scott m and d.....	
Northwestern Lumber Co m and d.....		Meehan P & J m and d.....	
Bangs & Fish p m.....		Nees Geo & Son m and d.....	
Boyd A m and d.....		Rabin John m and d.....	
Burdett, Preston & Co m and d.....		Roe & Butterfield m and d.....	



Scott Thos B m and d.....	Grand Rapids	Mitchell A S p m.....	LaCrosse
Whipple E E s m.....		Ross Robert m and d.....	Lafayette
Weed Lumber Co m and d.....		Barron John m and d.....	
Hickerson N H.....	Grantsburg	Robson John m and d.....	
Graves J A m and d.....	Gravesville	Sanford G P & Co d.....	Lavale
Modlin Henry.....		Leigh J m and d.....	Little River Mills
Earle & Case s m.....	Green Bay	Mikeljohn James m and d.....	Little Wolf
Willard Lumb m and d.....		Gardner & Co m and d.....	Little Suamico
McIntosh C E s m.....		Conn A C & Co m and d.....	
Lamb, Watson & Co m and d.....		Olsen Geo & Co.....	
Woodruff J W & Co m and d.....		Zelder L.....	Lomira
Holmes & Thompson m and d.....		Snow W H d.....	
Anton Burkhardt p m.....		Vaedsch & Runkle.....	Lowell
Klaus Anton m and d.....		Smith D F m and d.....	Luck
Marshall & Darling s m.....		McMillan A d.....	Lyndon
Herling Theo m and d.....	Green Bush	Eighmy Freeman d.....	McFarland
Sultz, Lewis & Henry m and d.....		Bunker & Vroman d.....	Madison
Schmidt Adam m and d.....	Harrisville	Sorenson & Frederickson p m.....	
Ewing Thos m and d.....	Hartford	Stein C R d.....	
Mills J D d.....	Hartland	Taylor C L staves.....	Malden Rock
King P & Son d.....	Helena	Cooper & Jones.....	Manitowoc
Tripp N D d.....	Hillsborough	Woerfel E staves.....	
Fisher J.....	Horicon	Guyles & Pankratz d.....	
Briggs & Son m and d.....	Hortonville	Hubbard H F d.....	
Gowell, Logan & McMurdo m and d.....		Zander & Co p m.....	
Redout Bros sash doors etc.....		Klingholz Charles m and d.....	Manitowoc Rapids
Whitman & Morse m and d.....		Pierce Finn.....	
Baldwin D A m and d.....	Hudson	Reune Chas m and d.....	Maple Works
Palmer H G & Co m and d.....		Brayton L J d.....	Marquette
White & Jones sash doors etc.....		Green J S d.....	
King G W logger.....	Humbird	Hamilton, Merryman Co m and d.....	Marinette
Roberts John d.....	Iron Ridge	Tweedie & McMaster p m.....	
Blair J d.....	Janesville	Menominee Mfg Co m and d.....	
Fifield, D R d.....		Spaulding, Houghtaling & Johnson m and d.....	
Lovejoy & Blount d.....		McCartney Wm m and d.....	
Jeffries David d.....		N Ludington Co m and d.....	
Schutt U d.....		Whitbeck H Co m and d.....	
Hitchcock & Reind d.....	Jefferson	Bartlett L H d.....	Marshall
Andrews F M & Co m and d.....	Jenny	Craig & Maroney sash doors etc.....	
Matthews Thos m and d.....		Kling Walter staves.....	Maxville
Jewett A S & Sons m and d.....	Jewett's Mills	Webster C m and d.....	Mazo Manie
Sutherland Sol.....	Juda	Bronson D W d.....	McNasha
Knapp J R d.....	Juneau	Hewitt Henry, Jr logger.....	
Taber J B & Co.....	Kansasville	Mitchell, Watkie & Co sash doors etc.....	
Backus N G d.....	Kenosha	Potter & Dutchman m and d.....	
Harrison W M p m.....		Schneider & Ruth p m.....	
Head & Southerland d.....		Spaulding, Houghtaling & Johnson m and d.....	Menominee
Grant & Son, Market d.....		Stephenson T & Co m and d.....	Mifflin
Truesdell Gideon, 3 Main d.....		Kuapp, Stout & Co m and d.....	Mifflin
Hitchcock & Mashek m and d.....	Kewaunee	Bainbridge W.....	Milford
Slauson, Grimmer & Co m and d.....		Harker & Bainbridge.....	Mills Centre
Stranky W m and d.....		Greene N S & Co.....	
Dikeman & Latimer s m.....		Brown & Evans m and d.....	
Walker, Munger & Co sash doors etc.....	Kilbourn City	Dunham L m and d.....	
Britton C W m and d.....	Kinnickinnic	Lucas & Bro m and d.....	
Brook V logger.....	Knowlton	Wight S s m.....	
Wallace & Redford m and d.....		Greenman R J d.....	Milton Junction
Cloespeck M m and d.....	Kossuth	Hutchinson James d.....	Mineral Point
Kellnor M m and d.....		White S d.....	
Black River Improvement Co.....	LaCrosse	Weyhausen A m and d.....	Mishicott
Hogan & Chamberlain loggers.....		Williams J W saw mill.....	Monroe
McDonald Bros loggers.....		Dodge, Churchill & Co p m.....	
Salzer G. J.....		Dodge & Davenport d.....	
Crosby W. W m and d.....		Rood J L d.....	
Coleman C L m and d.....		Dessert J R m and d.....	Mosinee
Gile & Holway m and d.....		Kronenwetter S m and d.....	Muscola
Moorer R M logger.....		Garland J d.....	Muskego Centre
Bright & Withee m and d.....		Bull & Bowers.....	
Lill & Fourer m and d.....		Houghton Geo G & Co m and d.....	Milwaukee
Hewett & Woods m and d.....		Schroeder & Steinman, dealers.....	
Hixon & Withee m and d.....		Ernst Herzer, planing mill.....	
McMillan Alexander loggers.....		Wm. Willer, planing mill.....	
McMillan Duncan D loggers.....		H. Jalass & Co., planing mill.....	
Nevins S L m and d.....		Brockhaus & Bradley, planing mill.....	
Paul John m and d.....		W. C. Conway, planing mill.....	
Polleys W H logger.....		Nic. Schuh & Son, dealers.....	
Root W C logger.....		Engelmann, Babcock & Salling, Manufactur- er and dealer.....	
Sill Wm R logger.....		Ewing Thos K commission.....	
Vincent & Edwards d.....		Weston Bros, manufacturer and dealer.....	
Washburne C C m and d.....		Mayhew Bros d.....	
Weston R S m and d.....		Durr & Ruege d.....	
Emery T B logger.....		Schmidt & Reichel d.....	
Goddard H logger.....		Judd T H & Co d.....	
Hankerson A H logger.....		Comstock L & Co m and d.....	
La Crosse Lumber Co m and d.....			

Chandler Walter S d.....	Milwaukee	Talboys & Hanscome m and d.....	Osceola
Seyfried Martin d.....		Knapp L E m and d.....	Oskosh
Brembach Fred d.....		Neff A & Co p m.....	
Mabbett & Foster d.....		Chapman L C & Co p m.....	
Simpson E. B & Co commission.....		Thompson A p m.....	
Pierce R. W. & Co d.....		Vandercook & Furgerson p m.....	
Merrill Bros m and d.....	Merrillan	Gould J P sash doors etc.....	
Ketchum H & Co m and d.....		Porter & Batts sash doors etc.....	
Warren J M logger.....		Jenkins J & Co m and d.....	
Hayden A S logger.....		Harris M m and d.....	
Clark S & Son logger.....		Osborn & Christenson s m.....	
Merrill L G m and d.....		Conlee Bro & Co m and d.....	
Austin G A & Co m and d.....	Neillsville	Lane C & W logger.....	
Gallaher L W sash doors etc.....		Gill & Son loggers.....	
Gile & Halloway m and d (La Crosse Wis)		Freeborn John logger.....	
Kellogg A S.....	Neshoto	Turner Bros contractors.....	
Cooper Jones & Co m and d (Two Rivers Wis)		Sturtevant & Son contractors.....	
Cooper, Myers & Co.....		Stevenson Chas logger.....	
Cooper & Jones.....		Danforth Josiah logger.....	
Raymond & Jones.....		Reynolds Paul contractor.....	
Lamb W.....	New Franklin	Jewell, Lawrence & Co loggers.....	
Latham & Smith.....	New Franklin	McNair Jas logger.....	
Smart J & E (manufacturers) Bridge,.....	New Lisbon	Doughty & Bro loggers.....	
Nichols D.....		Streeter Geo logger.....	
Bradford, McCoy & Co m and d.....	Necedah	Rockwell & McCord loggers.....	
Fuller & Co sash doors etc.....		Bray & Chote loggers.....	
Burch G B & Co m and d.....		Lynch John logger.....	
Dill M B & Co s m.....		Wall & Fitzgerald loggers.....	
Shorey P & Bro m and d.....		Rumery & Kellogg loggers.....	
Weston T & Co m and d.....		Miller L J logger.....	
Sherry Henry d.....	Neenah	Fulnely & McDonald logger.....	
Sanford J B p m.....		Eighme R P logger.....	
Hewitt & Woods m and d.....	Neillsville	Stevenson, Badgett & Co m and d.....	
King G W m and d.....		Williamson G M & Co p m.....	
Green A logger.....		Wetherby David logger.....	
Lindsley F D logger.....		McAllyster J P logger.....	
Putnam L G d.....	Neosho	Hanson W E logger.....	
Nichols D.....	New Lisbon	Crowell & Son logger.....	
Hale & Springsted m and d.....	New London	Webb, Albert & Co s m.....	
Dixon H S m and d staves.....		Myers & Van Every s m.....	
Dougherty, Delano & Demming sash doors etc.....		James & Stille d.....	
Ketchum H m and d (Merrillan Wis)...		Lines, Libbey & Co p m.....	
Jacobs E P m and d.....	New Richmond	Morgan Bros m and d.....	
Johnson Bros m and d.....		Weed J H & Co m and d.....	
Pierce & Son m and d.....		Fraker J S s m.....	
Brown J & Co m and d.....	Northport	Spalding & Peck m and d.....	
Wisconsin mfg Co m and d.....		Campbell Wm & Sons m and d.....	
Putnam & Blair sash doors etc.....	Oakfield	Libby D L & Co m and d.....	
White J T & Co p m.....		Regan, Cheney & Pratt m and d.....	
Streeter J & A C & Co d.....	Oconomowoc	Doe & Miller m and d.....	
Roll & Turnham p m and sash doors etc		Ripley & Mead m and d.....	
Vilas G d.....		E. C. Kellogg logger.....	
Woodruff Bros d.....		John A. Paige Pres Wolf River Broom Co..	
Branquest W m and d.....	Oconto	Durby & Curran s m.....	
Planders W B logger.....		McMillan R. & Co m and d.....	
Goodrich T B logger.....		Sawyer P & Son m and d.....	
Luby logger.....		Raine R N & Co m and d.....	
Orr, Newell & Co m and d.....		Reed L B & O B m and d.....	
Jacob Spies m and d.....		Sheldon L P & Son m and d.....	
Leigh John m and d.....		Laabs J & Co m and d.....	
Oconto Lumber Co m and d.....		Backstaff Bros & Chase m and d.....	
Comstock & Simpson m and d.....		Foster & Jones m and d.....	
Holt, Balcom & King m and d.....		Henderson & Wilson d.....	Palmyra
Pierce L M p m and sash doors etc.....		Mitchell Bros d.....	
Winslow, England & Co m and d.....		Gray A D m and d.....	Pepin
Livermore & Co m and d.....	Ogdensburg	Peshtigo Co m and d.....	Peshtigo
Loosey Chas d.....	O'Kee	Fritzmann Henry d.....	Pewaukee
Vanderpool & Clark d.....		Fritzsche & Westover d.....	Pine River
Woodley Samuel d.....		Gratiot E H d.....	Platteville
Culver E d.....	Ontario	Lovelson F m and d.....	Plum City
Lovejoy & Richards d.....	Oregon	Bowman G M d.....	Plymouth
Harris D d.....	Orfordville	McGraw E M & Co d.....	
Johnson H & Co m and d.....	Omro	Wentworth, McGregor & Co d.....	Portage City
Morton, Arnold & Morton p m.....		Lyon D B & Son d.....	
Webster & Foster m and d.....		Neavel & Davis d.....	Potosi
Wilson A m and d.....		Schneider Joseph d.....	
Foster N C m and d.....	Owego	Jamison Hugh d.....	Poynett
Hall Chas s m.....	Onalaska	Reynolds & Lenfeldt p m.....	Prairie du Chien
Hayden L D (La Crosse Wis).....		Smith & Foster m and d.....	
Moore R M (La Crosse Wis).....		Weston T & Co m and d (Necedah).....	Prairie du Sac
Nichols Chas H & Co m and d.....		Meacham & Bro p m.....	Prescott
Bradley C G m and d.....	Osceola	Green G d.....	Princeton
Stapels C H logger.....		Gillon N.....	Pine Grove
Dresser & Wilson m and d.....		Glawe C.....	

Bruce, Fuller & Co.	Rock Falls	Moe Louis I logger	Stevens' Point
Garland & Nichols		Lester & Plummer m and d	
Peck S B & Son d	Racine	Park G L logger	
Driver Thos p m		Pike E L logger	
Kelly, Murray & Co d		Perry I & J logger	
Kensie W D & Co sash doors etc.		Rennie John logger	
Miner E B & Co sash doors etc.		Robeson J M m and d	
Siawson Jas R & Co d		Reading & Van Order shingles	
Iseley & Wilson d	Randolph Station	Richardson Chas logger	
Tremble & Doud, State d		Clifford Wm J logger	
Cushman A G	Readstown	Rousseau M A m and d	
Smith Timothy	Reedsburgh	Sherman S A m and d	
Snow W H d	Reeseville	Scott Bros m and d	
Remington H W m and d	Remington	Sheckels Wm logger	
Rudolph C J	Richland Centre	Walker & Wadleigh m and d	
Richardson Mrs. W d	Richland City	Whitney Ebenezer logger	
Learnmouth J d	Rio	Wade Geo & Co shingles p m	
Barlow J B & Co d	Ripon	Welch Adam logger	
Lanning A p m		O C Wheelock logger	
Chinock J H s m	River Falls	Callahan Chas logger	
Foss H W d	River Side	Redfield John logger	
Shirland & Co s m	Robinson	Isherwood J & H logger	
Pease D G m and d	Rockbridge	Johnson J O logger	
Hawn Charles m and d	Rock Elm	Martin John R logger	
Pedrick M d		Clark Owen m and d	
Bowman Na m and d	Roundhill	Cooper B F m and d	
Moore J P & Co d	Royalton	Cronkrite, Plummer & Co m and d	
Judd, Walker & Co m and d	Saint Croix	Clements D R logger	
Roberts George m and d	Sandy Bay	Cook Cornelius logger	
Halasz Chas d	Sauk City	Curran H & J D loggers	
Obrecht C d		Severson S H d	Stoughton
Cowles H K & Bro m and d	Scott	Turner O M d	
Girard & Co m and d	Seneca, Wood Co	Ardt F p m	Sturgeon Bay
Campbell Y d	Sharon	Wright Rufus m and d	
Daniels G d		Anderson Geo	Seymour
M. McCord logger	Shawano	McIntosh, Ross & Perry m and d	
Beecher L S logger		Callon Wm m and d	Sherman
Miller, Mathias m and d		Gray J m and d	
C. D. Wescott logger		Klaus & Wright m and d	Saumico
Asa Hicks logger		Bruce J & Co	
C. Crowley logger		Cook & Sons	
Hockner A d	Sheboygan	Trumble M E & Co m and d	
Thompson & Schroeder d		Gray O m and d	
Winters M d		Lamb, Watson & Co m and d	
Weeks A L d		Marshall & Co	
Haseltine C P m and d	Sherman	Weed A & Co m and d	
Kelly W P & Co m and d		Howard John D m and d	Superior
Bishop Bros staves and m and d	Sherwood	Peylon H M & Co m and d	
Nugent & Collins m and d		Angell W H & Son d	Sun Prairie
J. H. Parks logger	Shiocton	Eldred Anson m and d	Stiles
Mason, Barnes & Co m and d		Zimmermann W d	Thinsville
W. D. Jordan m and d		Huet John	Trim Bell
Harriman Samuel m and d	Somerset	De Coursey M m and d	Trap River
Irwin O L, Maple d	Sparta	Gleason & Squires m and d	Tomah
Holden G B d		Warren & Gamble m and d	
Setson Bros p m		Barrett J M d	Trempealeau
Walker J H d		Reed Joseph	Tyrone
Farnum E B d	Springfield, Walworth Co	Mann Joseph & Co m and d	Two Rivers
Hopkins P G d		Cooper & Jones m and d (Manitowoc)	
Bennett T m and d	Star	Goyt C	Ualo
De Jean I D & A W m and d		Foster N C s m	Upper Duck Creek
Seeley & Son m and d		Lucas J & Bro s m	
Kellogg & Son m and d	Stephensville	Hamlin & Ford d	Watertown
Wunderlich Z m and d		Bray, Robinson & Co d	Waldo
Smith & Halsted Bros m and d	Stockbridge	Sibley C L d	
Stafford L R	Staffordville	Whitney & Darling d	
Bailey D C logger	Stevens' Point	Cooley C F & Co m and d	Waubeka
Blake & Mitchell loggers		Howlett & Co p m	Wauapaca
Benson P & Bro loggers		Payne & Co m and d	
Burns, Thompson & Co m and d		Smith & Foster	Wauzeka
Boynton N m and d		Lewellen & Lunn	Waterloo
Brown E D m and d		Squires & Sheldon	
Bean T G & Son m and d		Hamlin J H & Co d	
Campbell P logger		Streeter J & A C & Co W Water d	
Homestead Seth logger		George V. Brill p m	Wrightstown
Gilchrist A B logger		Mc Kesson staves	
Goodhue Geo J, Jr logger		Hammond Alfred	Waukechon
Hungerford Seely logger		Semple A	
Hutchinson & Bro m and d (Eau Claire)		Semple F	
Hubbard		Richardson Silas d	Waukesha
Karner S H m and d		Morse O A d	Waupun
Knox Bros m and d		Hollendyke N d	
Meehan Bros m and d (Linwood)		Andrews & Parcher m and d	Wausau
McDill T & Bro m and d		Callon John T m and d	
McMillan & Sons m and d		Callon Wm m and d	

Annult & Callon m and d.....	Wausau	Enderby & Austin staves.....	Wellington
Allen Henry.....		Mc Queen, Davis & Co d.....	Werner
Bernhard & Simpson loggers.....		Shell Bros d.....	West Salem
Clarke J C m and d.....		Littlejohn A M d.....	
Clark T W logger.....		Weed, Gummaer & Co m and d.....	Weyauwega
Cohn & Cattan m and d.....		Nutt M E & Phillips s m.....	Winneconne
Daniels H s m.....		Ingersoll, Rising & Co m and d.....	
Miller Hermann logger.....		Jones, Wellington & Co m and d.....	
Kickbush & Bro loggers.....		McArthur & Co m and d.....	
Leahy Capt J logger.....		Starks, Stickles & Co p m.....	
Lawrence & Peters loggers.....		Schultz C.....	Woodland
Manson Rufus m and d.....		Day O & Co m and d.....	Wrightstown
McCrosen Jas logger.....		Mc Kesson staves.....	
Plummer B G m and d.....		Converse H.....	Wyocena
Single Ben m and d.....		Wells & Craig.....	
Single Jas m and d.....		King P & Sons d.....	Wyoming
Stewart A & J m and d.....		McCutchen H d.....	
Wenhime & Kickbush loggers.....		Haverson & Peterson m and d.....	Yankeetown
Zastrow Ed logger.....		Twing A.....	

## MICHIGAN.

Hoxie L S m and d.....	Acme	Wilson H D s m.....	Auster City
Headley John.....	Ada	Hawley A M.....	Averill's Station
Baker D M d.....	Adrian	Miller A & G m and d.....	
Berry James m and d.....		Steele C s m.....	
Maxwell A & Co p m.....		Kroetzer G & Co p m.....	Bainbridge
Wright Peter m and d.....	Alamo	Babcock Surret & Co m and d.....	Baltimore
Cosad & McGregor.....	Albion	Crutcher G W m and d.....	
Haynes & Beard m and d.....	Alcona	Childs E J sash doors etc.....	Bangor Van Buren Co
Folkerts F C & Co m and d.....	Algonac	Coombs & Smiley m and d.....	
Smith A & S S m and d.....		Green & Thompson m and d.....	
Allegan Mfg. Co p m.....	Allegan	Nyman J H m and d.....	
Bass R.....		Moore Smith & Co m and d.....	Banks Bay Co
West N B sash doors etc.....		Taylor & Moulthrop m and d.....	
Roberts Richard m and d.....	Allendale	Keystone Lumber Co m and d.....	
German & Dewey m and d.....	Allens	Bendry James m and d.....	Baraga
Wright Ira.....		Buck Hoyt & Co p m.....	Battle Creek
Winchester & Parish staves.....		Dwinell Pettee & Edwards sash doors.....	
Pierce, Hall & Ward m and d.....	Alma	Ellison H H & Co d.....	
Wise & Co sash doors etc.....	Almena	Halbert & Knight sash doors etc.....	
Farnum Rufus K m and d.....	Almont	Leggett S L p m.....	
Bewick Comstock & Co m and d.....	Alpena	Mason Rathbun & Simmons d.....	
Campbell Potter & Co m and d.....		Avery Murphy & Co m and d.....	Bay City
Davis D G & Co s m.....		Ames Bros m and d.....	
Doane Bingham & Co sash doors etc.....		Archibald & Bradley m and d.....	
Fletcher A F & Co m and d.....		Bradley H M & Co m and d.....	
Folkerts & Butterfield m and d.....		Bradley N B & Co m and d.....	
Gilchrist Frank m and d.....		Carney R J commission.....	
Hough Hillard & Co m and d.....		Carney T sash doors etc.....	
Mason Luce & Co m and d.....		Carrier John & Co m and d.....	
Minor J S & Co shingles.....		Chapin & Barber m and d.....	
Morse H K.....		Chapman G P & B.....	
Prentise Geo & Co m and d.....		Dolson Chapin & Co m and d.....	
Richardson Avery & Co m and d.....		DeWitt Jas N m and d.....	
Richardson Arthur R.....		Eddy Avery & Co m and d.....	
Richardson Chas W.....		Folsom & Arnold m and d.....	
Richardson Geo.....		Gardner F F & Son.....	
Spratt Aug.....		Gates & Fay m and d.....	
Spratt Frank.....		Haiser F & A.....	
Cummings Geo W s and m.....	Arnsden	Hay Butman & Co m and d.....	
Ferdon John & Son d.....	Ann Arbor	Hitchcock & Ingraham m and d.....	
Krapp Conrad d.....		Miller Albert m and d.....	
Wright J S m and d.....	Antrim	McEwen John m and d.....	
Battershall L A m and d.....	Arcade	McGraw John & Co m and d (Portsmouth).....	
Jackman J F m and d.....	Armada	McRoberts & Savage square timber.....	
Miller Caleb & Sons m and d.....		McLean Seth & Son m and d.....	
Battershall L A m and d (Arcade).....	Attica	Moore Smith & Co m and d.....	
Darwood & Daley m and d.....		Patrick M S.....	
Jenness J N & Co m and d.....		Peters W m and d.....	
Williams W m and d.....		Pitts & Cranage m and d.....	
Bracy & Clark p m.....	Augusta	Ramedell James.....	
Davis Wilson m and d.....	Aurelius	Richards Miller & Co m and d.....	
Davis B G & Co m and d.....		Rouse J M m and d.....	
Au Sable Lumber and Shingle Co m and d. Au Sable		Rust A & Co m and d.....	
Backus & Bros m and d (Detroit).....		Rust Hay & Co.....	
Charles Stone Timber Co (Detroit).....		Sage H W & Co m and d (New York city).....	
Colwell Smith & Langstaff m and d.....		Sanford J S p m.....	
Glennie J W m and d.....		Shearer James & Co m and d.....	
McDonald D A.....		Stevens & Shaller m and d.....	
Moore Alger & Co m and d (Detroit).....		Smith & Westover.....	
Moore & Tanner.....		Smith & Wheeler p m.....	
Vaughan S.....		Talbert James.....	
Richardson J C m and d.....	Auster City	Taylor Moulthrop & Co.....	



VanEtten Kaiser & Co.....	Bay City	Hart & Richardson p m.....	Charlotte
Webster S H & Bro m and d.....		Johnson N A p m.....	
Westover Culver & Co.....		Loring Allen T.....	
Whilthauer Schuerman & Co.....		Merritt & Co p m.....	
Whipple Parmely & Co m and d.....		Smith J W H & Co m and d.....	
Watrous Bros & Co m and d.....		Hurd & Smith m and d.....	Cheboygan
Watrous M & Sons m and d.....		McArthur Smith & Co m and d.....	
Hopkins Bros & Wise m and d.....	Bear Lake	Mattoon S A m and d.....	
Anderson D H & Co m and d.....	Bear Lake Mills	Nelson Strahn & Co m and d.....	
Wilson Lather & Wilson m and d.....	Belding P O	Prentice Geo H m and d (Detroit).....	
Davey W & Co d.....	Bellevue	Smith David m and d.....	
Hull Bros p m.....		Smith Thompson m and d.....	
Smith A A & Co m and d.....	Bell River	Smith E & F s m.....	
Remick E & Co m and d.....	Benona	Vorce Barker & Co m and d.....	
Williams H m and d.....	Benton Harbor	Weller J B & Co m and d.....	
Cave L W m and d.....	Benzonia	Goodale J C m and d.....	Chesaning
Fitch & Phelps m and d.....	Big Rapids	Nason R H & Co m and d.....	
Green L H m and d.....		Garton & Davenport m and d.....	Chester
Ives S m and d.....		Cobb J W m and d.....	Clam Lake
Monroe Bros & Rose s m.....		Coombs & Bro m and d.....	
Stimson L D m and d.....		Harris & Bro m and d.....	
Stinson & Clark m and d.....		McKinnon D C.....	
Wood H B sash doors etc.....		Mitchell Geo A m and d.....	
Ballard & Co m and d.....	Birch's Mills	Shackleton & Green m and d.....	
Stanton Leroy s m.....		Starrett Henry d and p m.....	Clinton
Weller John m and d.....		Linderman & Ricker m and d.....	Clintonville
Whitney M S m and d.....		Curry Jos L.....	Clio
Brown John m and d.....	Bird	White John.....	
Hipp & Hays m and d.....		Maxwell H N & Co m and d.....	Clyde Mills P O
Smith W H m and d.....	Birmingham	Vincent Edward m and d.....	
Ferry & Sons m and d (Grand Haven).....	Black Lake	Atkins Gilbert & Co p m.....	Coldwater
Jipson H m and d.....	Blissfield	McLane & Frith d.....	
Wiley, Lane & Co staves.....		Sweet G C m and d.....	Columbia
Anable T C m and d.....	Bloomington	Henningsway H L & J L m and d.....	Columbiaville
Conger & Broadwell m and d.....		East Thos m and d.....	Columbus
Holmes L K m and d.....		Hungerford R H d.....	Concord
Killeffer & Ames m and d.....		Boubricht & French m and d.....	Constantine
Jenson L & Co s m.....	Blue Lake	George & Tweedall sash doors etc.....	
Schmitz Anthony m and d.....	Blunfield	Harwood H J & Co m and d.....	
Bond Bros m and d.....	Bonds Mills	Jones Wolf & Co m and d.....	
Bowen E H & Son m and d.....	Bowen's Mill	Hart J P m and d.....	Coral
Headley Silas m and d.....		Wagley John.....	Cross Village
Richardson J H m and d.....	Browne	Backart Geo m and d.....	Croton
Brown Sarah D m and d.....	Breedsville	Collins David m and d.....	
Purley Putnam & Son m and d.....	Bridgenan Laketon P	Higbee Nelson m and d.....	
Weed B staves.....		Rice W m and d.....	
Brucker F & Co shingles.....	Bridgeport Center	Oneida Lumber Co m and d.....	Crow Island
Hill L L m and d.....		Fuller & Smith m and d.....	Crystal P O
Hodgeman L m and d.....		Coffin & Cuddeback m and d.....	Dallas
Ketchum Bros shingles.....		Needham & Wilson m and d.....	Dayton
Phelps & Wyman m and d.....	Bridgeville	Wilson Jas H m and d.....	
Holmes J m and d.....	Bronson	Wallace John B m and d.....	Dearborn
Richards & Fox m and d.....	Buchanan	Bull & Ackley m and d.....	Decatur
Roe Charles m and d.....		Rawson L T p m.....	
Sherwood Alonzo m and d.....		Roger A H & Co m and d.....	
Pierce L m and d.....	Burlington	Warner J P m and d.....	
Herrington & Bros m and d.....	Burnips Corners	Blinn & Row staves.....	Deerfield
Baker O R p m.....	Camden	Lovett & Smith p m.....	
Mokinley James p m.....		Packard & Son m and d.....	
Welker H R m and d.....	Campbell	Adams & Ferguson m and d.....	Detroit
Downey Bros m and d.....	Capax	Allen E G d.....	
Tibbals Botsford & Co staves.....		Avery & Murphy m and d.....	
Ballantine H A & Co m and d.....	Carrollton	Backus & Bro m and d.....	
Carrollton Lumber Co m and d.....		Bearss J H d.....	
Gould Erastus T m and d.....		Bewick, Comstock & Co m and d.....	
Jerome T & Co m and d.....	(New York City)	Bigelow A E d.....	
Litchfield E C m and d.....	(Detroit)	Brooks C F m and d.....	
Merrill C & Co m and d.....		Campbell E P d.....	
Saylor T & Co m and d.....		Carrier August d.....	
Shaw & Williams m and d.....		Carrier Byron d.....	
Tilden & Sackett m and d.....	Carson City	Chisholm Jas d.....	
Congdon & Colton m and d.....		Crapo W W m and d.....	
Lacy John G sash doors etc.....		Damon J B T & Co m and d.....	
LaDue & Young m and d.....	Caseville	Detroit Lumber & Wooden Ware Works.....	
Crawford Frank m and d.....	Cedar Springs	Dewey J & Son sash doors etc.....	
Barber W L.....		Dingeman & Rabaut sash doors etc.....	
Beckhart Jacob p m.....		Dubois Lewis p m.....	
Benedict J O & E R s m.....		Dwight Wm M & Co m and d.....	
Graham C & Co m and d.....		Faulconer R C d.....	
Grosvenor E m and d.....		Ferguson A & Co d.....	
Moon Chas B m and d.....	(Chicago)	Fletcher Geo M m and d.....	
Hubbard & Wood m and d.....		Flynn John sash doors etc.....	
Esterly Geo W & Co m and d.....	Charlevoix	Foster Joseph E d.....	
Charlotte Manufacturing Co staves.....	Charlotte	Gamble P M d.....	
Curtis Houck & Bennett p m.....		Green Geo B & Co d.....	

Hebard Chas d.....	Detroit	Glynn P & Co m and d.....	East Saginaw
Hubbard & King d.....		Goddard E G m and d.....	
Huebner E sash doors etc.....		Grant C W & Co m and d.....	
Huff & Vandermullen d.....		Grant & Saylor m and d.....	
Ingersoll J W p m.....		Hill Jas H.....	
Ives, Green & Co m and d.....		Hunter Bros.....	
Japes John sash doors etc.....		Hoyt Jesse m and d (N Y City).....	
Jessup & McCune d.....		Johnson T B s m.....	
Kershner & Rea d.....		Jones Chester B m and d.....	
Klies Martin d.....		Lee Charles m and d.....	
Loud Gay & Co m and d.....		Mc Cormick A W.....	
Lyon Isaac L d.....		Mc Dougall R B.....	
Nason Chas E d.....		Lathrop, Inscho & Co m and d.....	
Merrill & Palmer m and d.....		Marks & Flitz.....	
Moffat Hugh m and d.....		Merrill Chas & Co m and d.....	
Moore Chas F d.....		Mitchell & Roland Lumber Co m and d (Cincinnati).....	
Moore Frank d.....		Oneida Lumber Co m and d.....	
Moore F & S d.....		Ortman Chas L m and d.....	
Moore & Alger m and d.....		Owens & Brewer m and d.....	
Oakes Wm d.....		Rose D F & Co m and d.....	
Osborne C F & Co d.....		Rust J F & Co m and d.....	
Perley J H d.....		Saylor T & Co m and d.....	
Pitts & Cranage m and d (Bay City).....		Sears & Holland m and d.....	
Prentice Geo H m and d.....		Ten Eyck C E s m.....	
Ramm & Co sash doors etc.....		Terry Seeley & Spencer m and d.....	
Rea W J d.....		Tolfree & Simpson m and d.....	
Remick R C d.....		Turner H m and d.....	
Ross Geo d.....		Tuttle & Pease m and d.....	
Ross Daniel A & Co m and d.....		Thompson, Camp & Potter m and d.....	
Ross Geo A & Co d.....		Warner & Eastman m and d.....	
Ross A & Co d.....		Wiggins G B & B J m and d.....	
Schneider Stephen sash doors etc.....		Wright & Co m and d.....	
Skillings & Whitney Bros m and d.....		Yawkey, Wideman & Co m and d.....	
Standish J R pine lands.....		Adams, Jolley & Co m and d.....	East Tawas
Steele A M d.....		Bliss & Pierce m and d.....	
Tegeler Chas sash doors etc.....		Grant W G & Son m and d (N Y city).....	
Turner Robert sash doors etc.....		Smith H P & Sons m and d.....	
Warriner W d.....		Staats & Quackenbush p m and sash etc	
Weber J F & Co d and sash doors etc.....		Garton & Davenport m and d.....	Eaton Rapids
Whittemore & Prentice m and d.....		Perrine D W & S C m and.....	
Wight H A & S G d.....		Stevens C W staves.....	
Williams, Osborne & Co m and d and p m.....		Hipp B W.....	Eau Claire
Wood W H & Co sash doors etc.....		Anderson J H m and d.....	Edgerton
Holmes Geo m and d.....	De Witt	Becker G m and d.....	
Copeland R P.....	Dexter	Bradfield E m and d (Ada).....	
Pratt Geo.....		Cain James m and d.....	
Gray Thos m and d.....	Douglas	Cook & Scarvel s m.....	
Judd W sash doors etc.....	Dowagiac	House Oscar m and d.....	
Sill Benj. D & Son m and d.....		Kidder M C m and d.....	
Starett C p m.....		Monroe & Jones m and d.....	
Darwood & Daily m and d.....	Dryden	Porter D. m and d (Rockford).....	
Mears C m and d (Chicago).....	Duck Lake	Porter Seth s m.....	
Hall, Ward & Brewer m and d staves.....	Dundee	Truax Jas H s m.....	
Hunt, Wheeler & Co sash doors etc.....		Dexter & Noble m and d (Chicago).....	Elk Rapids
Morse Nathan m and d.....		Blair E W p m.....	Elsie
Stowell J A m and d.....		Leach & Ramsey m and d.....	
Kellogg & Sawyer m and d.....	Dunningsville	Mc Quinton Robt m and d.....	
McCrumb Geo W m and d.....	Eagle	Moore J B m and d.....	
Mitchell & Mahan m and d.....	East Bay	Butler & Gallagher m and d.....	Emmett Station
Bushnell John m and d.....	East Leroy	Herman & Son m and d.....	Erie
Quick, Fish & Andrews m and d.....		Whittington W & D E m and d.....	
Eastman Galen m and d (Grand Haven).....	Eastmanville	Glaser Emil p m.....	Escaaba
Hefferan Thos m and d.....		Ames Bros m and d.....	Essexville
Thayer Edwin m and d.....		Carrier John & Co m and d (Bay city).....	
Allison J P m and d.....	East Saginaw	Ferris & Hull m and d.....	Estrella-Sunner P O
Atwood W Q m and d.....		Hicks James m and d.....	
Ballantine H A & Co m and d.....		Tucker, Morris W & Co.....	
Bissell A G & Co m and d.....		Kanfield & Andrews m and d.....	Eureka
Burt W R & Co m and d.....		Davis & Curtis m and d.....	Evart
Bundy & Youmans m and d.....		Farewell Jas G m and d.....	
Burnham & Still m and d.....		Hamilton & Mason s m.....	
Cummings L E & Co m and d.....		Lamb & Matthews m and d.....	
Duncan & Gamble m and d.....		Palmer, Welch & Russ m and d and staves.....	Exeter
Dutton C S staves.....		Scofield S A m and d.....	
Estabrook & Mason m and d.....		Travor staves.....	
East Saginaw Manufacturing Co.....		Bloomer E J m and d.....	Fairfield
Eaton, Potter & Co m and d.....		Calvin John m and d.....	
Eddy C K m and d.....		Fuller & Sager p m.....	
Eddy, Avery & Co m and d.....		Odell S & J m and d.....	
Edwards & Sanborn m and d.....		Myer Henry shingles.....	Fair Haven
Elsworth Arthur L.....		Schnoor H C m and d and staves.....	
Finnal Wm.....		Farwell & Sawyer m and d.....	Fair View
Gamble John m and d.....		Parkins & Sons m and d.....	
Gardner F F & Sons.....			
Gebhart & Estabrook m and d.....			

Batcheller, Slaughter & Co m and d (Chicago).....	Ferrysburg	Wheeler Ruben sash doors etc.....	Grand Rapid
Slatt & Co m and d.....		Wilkins & Bachman p m.....	
White, Glover & Co m and d.....		Withey L H & Co m and d.....	
Bailey C C m and d.....	Fife Lake	Wonderly Lumber Co m and d.....	
Gilbert Ira W m and d.....		Dewory E m and d.....	Grandville
Walter W L s m.....	Flat Rock	Jennison H.....	
Atwood J B & Co m and d.....	Flint	Belknap & Oliver sash doors etc.....	Greenville
Beardsley, Gillis & Co sash doors etc.....		Clark & Rhinesmith Lumbering Co.....	
Begole, Fox & Co m and d.....		Fuller & Gowan m and d.....	
Briscoe & Lockwood.....		Hart Henry m and d.....	
Busenbark & Stone.....		Hutchings S G.....	
Carpenter Samuel m and d.....		Jenks C C s m.....	
Crapo W W m and d.....		Wright Bros.....	
Decker Grant staves.....		Pardee Cook & Blanchard m and d (A Par. dee & Co New York).....	Hamlin
Eddy Chas C & Co m and d.....		McRoberts A m and d (Bay City).....	Hampton
Eddy Jerome p m.....		Backus A J m and d (Backus & Bro De- troit).....	Harrisville
Gibbs D & Co.....		Westons Colwell & Co m and d.....	
Hamilton Wm m and d.....		Hills W m and d.....	Hart
Hascall H C m and d.....		Allen & Crook m and d.....	Hartford
Lee & Wilcox.....		Hinckley Bros staves.....	
McCreery W B p m.....		Olde & Crandal sash doors etc.....	
McFarland A m and d.....		Walker s m.....	
Smith Hiram m and d.....		Bentley J W & C G sash doors etc.....	Haastings
Davenport Geo & Co m and d.....	Florence	Hortin & Jacobs m and d.....	Hazleton
Grant & Saylor m and d (East Saginaw).....		Kellogg & Sawyer m and d.....	Heath
Haskins, Martin & Wheeler m and d (East Saginaw).....		Starker D F s m.....	Hemlock
Merrill Chas & Co m and d (East Saginaw).....		Blodgett D A m and d.....	Hersey
Shaw & Williams m and d.....		Gerrish Murphy & Co m and d.....	
Ford River Lumber Co m and d (Chicago).....	Ford River	Sutton & Fisher d.....	Hillsdale
Smith & Kelley m and d (Au Sable).....	Forester	Ferris R B m and d.....	Holland
Dwyer Geo G s m.....	Frankfort	Vanderveer E & Co staves and shingle mill.....	
Hubbell & Wakefield p m.....		Buzzell Bros sash doors etc.....	Holly
Hileman & Hessen m and d.....	Freeport	Bavid Robt A m and d.....	Hopkins
Fruitport Mfg Co m and d.....	Fruitport	Hillard L m and d.....	
Gage Joseph m and d.....	Gagetown	Chubb J F s m.....	Howard City
Lloyd & McNair m and d.....	Gaines Station	Lord & Kipp s m.....	
Sayers Bros m and d.....		Morgan & Quick m and d.....	
Blakeslee Geo A m and d.....	Gallien	Mason & Reed.....	
Carle H E m and d.....	Girard	Barnard J E & Co.....	Howell
Batchelor Slatt & Co m and d.....	Grand Haven	Blood E & Co.....	
Bigelow & Stone.....		Wright J W sash doors etc.....	
Cutler D m and d.....		Bates Gould & Gorham s m.....	Ionia
Dirk & Barker m and d.....		Colby E & Co m and d.....	
Eastman Galen m and d.....		Stanton & Son m and d.....	
Ferry & Bro m and d.....		Webber Bros m and d.....	
Gibson James.....		Bennett & Woods.....	Jackson
Monroe & Howlett m and d.....		Brooks C F d (Detroit).....	
Reynolds & Emley.....		Baxter & Selfridge p m.....	Jonesville
Rysdorf & Busch m and d.....		Bixby Bros & Flagg d.....	Kalamazoo
Stows C L.....		Dewing & Son m and d.....	
Wyman Buswell & Co.....		Kellogg J E & Haltenhaus m and d.....	
Bradley H Rose p m.....	Grand Ledge	Sweetland & Co.....	
Lamson Edmund m and d.....		Tyler & Turner p m.....	
Russell E s m.....		Buskirk & Dennison m and d.....	Kalkaska
Barnhart & Osterhaat m and d.....	Grand Rapid	Ballou Gustin & Co m and d.....	Kawkawlin
Borden A D & Co p m.....		Wade & Pettys m and d.....	Lake Port
Clancey John.....		Ciley Bros & Co sash doors etc.....	Lamont
Clark G B & Co sash doors etc.....		Bellows W D & Bro m and d.....	Langston
Comstock C C m and d.....		Briggs N H.....	
Crossette Graves & Co m and d.....		Biggs Z E.....	
Cutcheon L M.....		Crawford & Co m and d.....	
Cutler Robt.....		Norton J D.....	
DeGraaf Vrieling & Co sash doors etc.....		Sprague R F.....	
Farrin & Ca.....		Wilcox & Briggs m and d.....	
Knight Geo L & Co m and d.....		Allen & Wise sash doors etc.....	Lansing
Krum Foster & Co p m.....		Clark & Harris m and d.....	
Long A B & Sons m and d.....		Longstreet & Lapham p m.....	
Lore R W staves.....		Ottis & Son d.....	
McElmer J G m and d (Lockwood).....		Scofield S G m and d.....	
Mackey Walker & Co lath mill (Chicago).....		Walker Gilman & Co sash doors etc.....	
Nichols & Co p m.....		Hughes & Bro m and d.....	Lapeer
Norton A F & Co.....		Dodge C T m and d.....	
Pardee Cook & Bro m and d.....		Hemingway C M & Co p m.....	
Pew G H p m.....		Johnston Alex m and d.....	
Powers W H p m.....		King Robt m and d.....	
Putnum Enos.....		Millie J D & Son.....	
Quimby J L.....		Peters F J s m.....	
Roberts A & Son.....		Stevens Currier & Townsend m and d.....	
Robinson S & Co p m.....		Walker Bros m and d.....	
Ryan Yonng & Co m and d.....		Powell Hauck & Bro m and d.....	Lawton
Ward E F & Co.....		Fray H P staves.....	Lealie
Webster A & Co p m.....		Grout V H p m.....	
		Russell S O.....	

Moss Mills & Gage m and d.....	Lexington	Crittenden Chas d.....	Mt. Clemens
Nims Tewksbury & Co m and d.....		Hall & Shook m and d.....	
Woods J L m and d.....		Snook Bush & Mosier m and d.....	
French Wyman & Co m and d.....	Lockwood	Snook T W staves.....	
King Quick & Co m and d.....	Lowell	Tucker E J m and d.....	
Mason & Ecker p m.....		Hughes Bros m and d.....	Mt. Morris
Wooding & Hine m and d.....		Look Asher p m.....	
Donaher & Melendy m and d.....	Ludington	Weeks Huntton & Co m and d.....	
Foster & Stanchfield m and d.....		Fancher & Brazee m and d.....	Mt. Pleasant
Pere Marquette Lumber Co m and d.....		Abbey French & Co m and d.....	Muir
Roby Geo W & Co m and d.....		Begole J & Co m and d.....	
Ward E B m and d (Detroit).....		Hayes Bros.....	
Black & Sage m and d.....	Macon	Hewitt W P s m.....	
Spafford & Conklin m and d.....	Manchester	Rumsey C Jr.....	
Butters Horace m and d.....	Manistee	Wager & Fox m and d.....	
Canfield & Wheeler m and d.....		Wager & Whitman m and d.....	
Cushman Calkins & Jo m and d (Chicago).....		Willett A M & J W p m.....	
Dennett & Dunham m and d.....		Allen A M m and d.....	Muskegon
Engleman Salling & Babcock m and d (Milwaukee).....		Beidler Mfg Co m and d.....	
Filer & Sons m and d (Milwaukee).....		Bigelow W H & Co m and d.....	
Giffith Ruddock & Co m and d.....		Blodgett & Byrne m and d.....	
Hopkins Bros & Wise m and d.....		Browne Nelson & Co m and d.....	
Leitch Neil m and d.....		Chapin & Foss m and d (Chicago).....	
Magill & Canfield m and d.....		Davis Chauncey & Co m and d.....	
Diller M F m and d.....		Easton Robt s p.....	
Paggeot & Thorsen m and d (Sironach Lumber Co).....		Gluc W & Co m and d.....	
Peters R G & Co m and d.....		Hall S C.....	
Reitz Bros m and d.....		Kelley Wood & Co m and d (Chicago).....	
Sands Louis m and d.....		Mann A V & Co m and d.....	
Sibben S p m.....		Mason Lumber Co m and d.....	
Tabor & Huennekins m and d.....		Merrill J D & E W s m.....	
Tyson Sweet & Co m and d.....		Merrill & Palmer m and d (Detroit).....	
Seaman Warren m and d.....	Mantou	Montague C S & Co p m.....	
Jones R m and d.....	Maple Rapids	Morrison & Flemming m and d.....	
Gallinger Adams m and d.....	Marathon	Newaygo Co m and d.....	
Cobb J & Co staves.....	Marcellus	Outhwait G T.....	
Hunt A S m and d.....		Roberts & Hull m and d (Chicago).....	
Baird W m and d.....	Marine City	Rutherford W & Co m and d (Chicago).....	
McElroy C m and d.....		Ryerson Hills & Co m and d (Chicago).....	
Silvernall & Trumbull m and d.....		Sandford S R.....	
Decker Chas m and d.....	Marion	Storrs & McDougal m and d.....	
Stevenson W M m and d.....		Torrent Esau m and d.....	
Alexander M J m and d.....	Marshall	Torrent John m and d.....	
Church Nelson m and d.....		Torrent & Arms m and d.....	
Bunce H E m and d.....	Marysville	Truesdell Gideon m and d.....	
Mills N & B m and d.....		White Smith & Swan m and d (Chicago).....	
Sandborn W m and d.....		Wilcox T B & Co m and d (Chicago).....	
Darrow & Walker m and d.....	Mason	Wilson & Boyce m and d.....	
Huntington J L & C D m and d.....		Kirtland & Son staves.....	Nashville
Willett J m and d.....		Olds A W & Co m and d.....	
Peacock R m and d.....	Masonville	Baker W m and d.....	New Baltimore
Brown & Lacy m and d sash doors etc.....	Matherton	Francisco & Bro staves.....	Newport
Lance & Jones sash doors etc.....		Johnson W S d.....	Niles
Mather Asaph & Vernon m and d.....		Tuttle Jos S d.....	
Dysinger D m and d.....	Memphis	Bentley W m and d.....	North Branch
Mansfield J & Co m and d.....		Moyer A m and d.....	
Bagley & Copps p m.....	Menominee	Lawrence Sidney m and d.....	Nunica
Paison A p m.....		Converse & Wickham staves.....	Oakley
Stephenson Robt & m and d.....		Peck & Sackridge m and d.....	
Wright & Tweedle p m.....		Baser J m and d.....	Ogden Center
Larkin John m and d.....	Midland	Hodges J S m and d.....	
Lindsay & Gamble m and d (Detroit).....		King T m and d.....	
Sias John m and d.....		Hall Hiram m and d.....	Orleans
Garman & Tone m and d.....	Millbrook	Smith Kelly & Dwight m and d.....	Oscoda
Howd Walter S m and d.....		Richardson Avery & Co m and d (Alpena).....	Ossineke
Randall W & Bro m and d.....	Millburg	Robinson Cunningham Haines & Co m and d.....	
Beck C F.....	Monroe	Ballou & Co sash doors etc.....	Otsego
Eisenman F A sash doors etc.....		Leighton S m and d.....	
Noble W A.....		Benson C B m and d.....	Otter Lake
Root & Stevens sash doors etc.....		Frisbie A H m and d.....	Ovid
Scranton J P.....		Sowers Geo D & Co m and d.....	
Shaub Phillip.....		Robinson & Miller p m.....	Owosso
Terry M G.....		Woodward L E.....	
Dowling H P & Co p m.....	Montague	Freeman G W & Co m and d.....	Palmyra
Ferry Dowling & Co m and d.....		Bathwick & Stevens m and d.....	Pavillon
White F H & Co m and d.....		Sager John m and d.....	
Weston Bros m and d.....		Everett J C sash doors etc.....	Paw Paw
Moore & Ferguson m and d.....	Monterey	Freeman & Stinson m and d.....	
Cook Pendleton & Jones s m.....	Morley	Brown S A & Co m and d.....	Pentwater
Gummer J & Son m and d.....		Nickerson & Calester m and d.....	
Gerrish E W.....		Sands & Maxwell s m.....	
Hugh W p m.....		Stringer Frank m and d.....	Perrinsville
Fowler Benj m and d.....	Moscow	Huckley John m and d.....	Perry
		Woodworth W H m and d.....	Pewamo
		Cone & Cutter m and d.....	Pierston



McConnell W & Sons m and d.....	Pierson	Green D W.....	St. Charles
Pangham & Borden m and d.....		Kimberley C S.....	
Quincy & Bromley sm.....		Guernsey Chas.....	St Claire
Stone & Seeley m and d.....		Jenks B W.....	
Taylor & McMullen m and d (Wood Lake).....		Paw T & F.....	St Joseph
Walter & Bro m and d.....		Holcomb & Evans m and d.....	St Louis
Wensel & Bro sm.....		Brooks & Adams m and d (Detroit).....	Salzburg
Keeler S S & Co m and d.....	Pigeon Creek	Laderach Bros m and d.....	
Adam F E & Co m and d.....	Pine Grove Mills	Malone & Gardiner m and d.....	
Clements S N m and d.....		Root Bros sm.....	
Everest & Wise m and d.....		Smith C M & Co m and d.....	
Paris P G m and d.....	Pine Plains	Thompson Wm m and d.....	Sand Creek
Paris S A m and d.....		Avery O W m and d.....	Sand Lake
Lantz John m and d.....	Pine River	Baird & Farnum sm.....	
Wood & Maxon m and d.....	Pittsford	Beaver, Miller & Co m and d (Ft Wayne Ind).....	
Richardson J C m and d.....	Plainfield Kent Co	Carr J M m and d (Union City Ind).....	
Topping M & Sons m and d.....		Dickinson Jerome m and d.....	
and staves.....	Plainsfield Livingston Co	Hafley P sm.....	
Bennett C H.....	Plymouth	Hart M & S m and d.....	
Ward David m and d.....	Pontiac	Helmer Geo W sm.....	
Ayers Learned & Co m and d.....	Port Austin	Pangborn & Borden sm.....	
Haskells & Spaulding m and d.....	Port Crescent	Roberts & Driggs m and d (Grand Rapids)	
Wood J L & Co m and d.....		Stone & Seeley m and d.....	
Avery & Murphy m and d.....	Port Huron	Twichell C B.....	
Batchelor J F & Son m and d.....		Ware E & Co.....	
Bunce Z W & Son m and d.....		Wilkins W L m and d.....	
Fish A & H m and d.....		Mercer & Slater m and d.....	Saranac
Harrington D B m and d.....		Moffat A J m and d.....	
Haynes J m and d.....		Meore H D m and d.....	Saugatuck
Hibbard W B & Co m and d.....		The Saugatuck Lumber Co m and d.....	
Howard & Son m and d.....		Abbott Chas m and d.....	Scio Township
Jenkinson W staves.....		Bathwick & Stephens m and d.....	Scott
Johnston John & Co m and d.....		Collingham J m and d.....	Sebewa
Sanborn & Co m and d.....		Friend J m and d.....	
Skinner T S m and d.....		Ambruster & Weimer m and d.....	Sebewaing
Skinner & Ames m and d.....		Dunn J & Sons m and d.....	Seville
Wells F L.....		Blanchard J C & Co m and d.....	Sheridan
Bergen P P staves.....	Portland	Fargo D F & Co m and d.....	
Bowser, Griffin & Co sash doors etc.....		Stearns J D m and d.....	Smyrna
Dille J staves.....		Beckwith & Co.....	South Bay City
Erskine E J m and d.....	Port Sanilac	Braddock A C & Co pm.....	
Thompson T & J S m and d.....		Dunham & Whipple.....	
Prentiss Geo H m and d (Detroit).....	Prentiss Bay	Miller A & Co m and d.....	
Quimby J L m and d.....	Quimby	Stevens A & Co m and d.....	
Quimby J L m and d.....	Quincy	Watrous Bros & Co sm.....	
Hawley Martin.....		Watrous M & Son m and d.....	
Wilbur R W m and d.....		Byer G W & Co m and d.....	South Haven
Exelby Jesse m and d.....	Ridgeway	Wilson S P m and d.....	
Fritz F m and d.....	Riga	Ann Arbor Lumber Co m and d.....	South Saginaw
Pack, Jenks & Co m and d.....	Rock Falls	Briggs & Co sm.....	
French Geo m and d.....	Rockford	Bundy & Martindale sm.....	
Porter Dennis m and d.....		Bundy & Yeoman m and d.....	
Molitor A & Co m and d.....	Rogers City	Curtis & Eastbrook m and d.....	
Ayer A B m and d.....	Romeo	Boice & Kearny m and d.....	Spring Lake
Andre Alex.....	Saginaw City	Cutler & Savidge m and d.....	
Arnold & Fulsom (Albany N Y).....		Marada & Maxwell m and d.....	
Barnard & Binder m and d.....		Monroe Boyce & Co m and d.....	
Blanchard C N m and d.....		Sisson & Seymour m and d.....	
Burnham, Still & Co.....		Cross, Wright & Co m and d.....	Standish
Butman Myron.....		Bennett J E m and d.....	Stanton
Butman & Rust.....		Bock Wm m and d.....	
Chapin A B & Bro.....		Burham & Wales sm.....	
Curtis L B.....		Case G F sm.....	
Gould E F.....		Gardner D M sm.....	
Green & Harding.....		Gilbert A m and d.....	
Hardin & Batcock pm.....		Stevens W H m and d.....	
Heather & Allison m and d.....		Turner Bros & Co sm.....	
Jerome T & Co.....		Wells & Patchin sm.....	
Ketchum D B sm.....		Withey & Buckaloo m and d.....	
Nester Bros.....		Wood & Gilbert m and d.....	
Newton & Smith.....		Francisco & Marcy m and d.....	Stanwood
Payne A B & Co m and d.....		Stephens, Mellen & Tackles m and d.....	Stephens P O
Potts & Prieur.....		Stronach Lumber Co m and d.....	Stronach
Rust Amasa.....		Johnson, Packard & Austin m and d.....	Sturgis
Rust Eaton & Co.....		Wallace Z H & J S sash doors etc.....	
Rust & Hay.....		Harris Myron m and d.....	Talmadge
Sturtevant, Green & Co m and d.....		Cameron J C & Co m and d.....	Tawas City
Swift & Lockwood m and d.....		Laidlaw James m and d.....	
Williams Geo F & Co m and d.....		Schram E L sm.....	
Wright, Tipton & Co m and d and p m.....		Aldrich J A m and d.....	Tekonsha
Wright & Wetherell m and d.....		Mc Cann Thos m and d.....	Three Oaks
Willie Bros sm.....		Brownell & Dexter m and d.....	Three Rivers
Bentley H J m and d.....	St Charles	Crosett & Pugh m and d.....	
Campbell D J.....		Jackson Geo A & Co m and d.....	
Freeman & Co.....			

Wilcox, Arnold & Co m and d.....Three Rivers  
 Stone & Shirts m and d.....Trent P O  
 Whitney Bros m and d.....  
 Barton D m and d.....Tryone  
 Patterson Jas m and d.....  
 Stone A T m and d.....  
 Tucker John B m and d.....Union City  
 North T & J E m and d.....Vassar  
 Martin H R m and d.....Vermontville  
 Squier M L m and d.....  
 Perry E m and d.....Vernon Isabella Co  
 Bell & Starkey m and d.....Vernon Shiawassa Co  
 Brand J C staves.....  
 Sayers Bros m and d.....  
 Martin, Mc Allister & Lawton m and d.....Verona  
 Puddock & Ballantine m and d.....  
 Heartt Wm A m and d.....Wahjameja  
 Goodrich Enos m and d.....Watertown  
 Sutherland J m and d.....Watervleit  
 Curtis & Walker m and d.....Wayne  
 Arnold & Catlin p m.....Wenona  
 Litchfield E C m and d (New York City)....  
 Sage H W & Co m and d (New York City)....  
 Hetfield & Pluter m and d.....Wheeler  
 Peck & Beckenridge m and d.....  
 Dawson Geo m and d.....Sault de St. Maria P O  
 Norris & Perry m and d.....  
 Seymour Henry W m and d.....

Alley J & Co m and d.....Whitehall  
 Bowen A B & Co m and d.....  
 Cone & Green m and d.....  
 Cook John P & Son m and d.....  
 Cook Leitch & Co m and d.....  
 Dalton & Bro m and d.....  
 Farnum H T m and d.....  
 Franklin G W m and d.....  
 Heald Avery & Co m and d.....  
 Hedges & Green m and d.....  
 Johnson & Hageman s m.....  
 Staples & Covell m and d.....  
 Weston Bros m and d.....  
 Luscomb & Pierce m and d (Milwaukee). White River  
 Campbell & Co m and d.....White Rock  
 Haviland J B & Co m and d.....Whitewater  
 Schofield & Rickard m and d.....  
 Wixom & Sibley m and d.....Wixom  
 White B m and d.....Woodbridge  
 Taylor & McMullen m and d.....Wood Lake  
 Shafter David G m and d.....Worth P O  
 Fullmore & Scovill m and d.....Ypsilanti  
 Parsons Bros d.....  
 Burt W R & Co m and d.....Zilwaukee  
 Bliss A T & Bros m and d.....  
 New York & Michigan Lumber Co.....  
 Rust Eaton & Co m and d.....

## CHICAGO.

Adams & Lord, d 368 Lumber street.....Chicago  
 Allen & Bartlett d Ladin s of West 22d.....  
 Avery Murphy & Co d s w cor Fisk.....  
 Avery Thos M d Canal n w cor Fulton.....  
 Barton & Jones d Lumber cor 12th.....  
 Babcock W S d 400 Lumber.....  
 Basse & Bruse d Elston av n e cor W Division  
 lon.....  
 Batcheller & Slaight d Throop st cor 22d.....  
 Bateson Alex d 347 Archer av.....  
 Beidler J & Bro d Loomis cor 22d.....  
 Benton Geo C d Union s w cor 22d.....  
 Bigelow Bros d Fisk n 22d.....  
 Bishop & Lull d Throop n 22d.....  
 Boardman Packard & Co d 94 Lumber st.....  
 Bradley Shepard & Smith d 752 Clark st.....  
 Burdick & Mead W 22d cor blue Island av.....  
 Bush & Hill m and d 242 S Water st.....  
 Bushnell, Walworth & Reed m and d 562  
 Lumber st.....  
 Calkins & Fisher d 213 Archer av.....  
 Chapin & Foss d 214 S Canal st.....  
 Charnley Bros & Co m and d 238 S Water st  
 Chicago Lumber Co m and d 242 S Water st  
 Crumb Bros d Division cor Elston av.....  
 Chase & Pate d 511 Archer av.....  
 Clark Saml D d 70 LaSalle st.....  
 Combs Park & Co 22d st cor May.....  
 Curtis & Skinner d 96 N Canal st.....  
 Cutler Savage & Co m and d 236 S Water st  
 Davis & Mason m and d 236 S Water st.....  
 Davis & Murray d 481 Archer av.....  
 Dean Bros d Fisk s of 22d.....  
 Derickson & Sons d Ladin cor W 22d.....  
 Dodge E J & Bro d 111 W 12th.....  
 Driscoll P F d Halsted.....  
 Eggleston Hazelton & Co m and d 236 S Wa-  
 ter.....  
 Elder Fred d North Branch cor Division.....  
 Eldred E & Co d Polk s e cor Beach.....  
 Elkins & Cook d 381 Lumber.....  
 Esroger B Beach and Canal.....  
 Fauntleroy & Co d 22d s e cor Morgan.....  
 Ferry & Bro m and d w end 18th st bridge  
 Fisher C C d 514 Lumber.....  
 Fisher John & Sons d Robert w end of Hu-  
 ron.....  
 Ford River Lumber Co m and d office 242 S  
 Water yard W Throop s of 22d.....  
 Foster Thos d 15 W 22d.....  
 Fox & Howard d Ashland av cor Hickory.....  
 Franz L & Son d 24th n e cor Butler.....  
 Garden City Mfg Co d 22d cor Morgan.....

Gardiner John D & Co m and d 520 Lumber..Chicago  
 Gifford Ruddock & Co m and d room 7, 242  
 S Water.....  
 Goss & Phillips Mfg Co m and d Clark s w  
 cor 12th.....  
 Goldie W d Eighteenth s e cor Canal.....  
 Goodman J B & Co d Room 1 261 Randolph  
 Goodman W d 250 S Water.....  
 Goodrich W H d 84 Market.....  
 Gray A R & Co m and d 22d cor Throop.....  
 Graves D F d Throop n 22d.....  
 Gunderson Senit T m and d 238 S Water.....  
 Grusendorf & Mueller d foot of Lessing.....  
 Hannah Lay & Co d 76 and 78 Lumber.....  
 Hannah Lyman & Co d 80 Main.....  
 Hartman & Graham d 238 S Water.....  
 Harvey T W d Morgan cor 22d.....  
 Hatch Holbrook & Co d 265 Archer av.....  
 Hempstead & Beebe d 14 Chicago av.....  
 Higbee Chas E d 242 S Water.....  
 Hillard Churchill & Co d Cologne cor Joseph  
 Hipple & Lestmann d 61 Hawthorne av.....  
 Holt Balcom & King m and d (Oconto Wis)  
 246 S Water.....  
 Houghteling W D & Co m and d 250 S Wa-  
 ter.....  
 Holmes & Co d 83 Grove.....  
 Holden H N d Markets e cor Jackson.....  
 Horn W H d 234 S Water.....  
 Hubbard & Wood d 236 S Water.....  
 Hutt & Johnson d E Grove N 20th.....  
 Irish Buellen & Co d 234 S Water.....  
 Jones D H & Co m and d Room 16, 242 S  
 Water.....  
 Jenkins & Murphy d 22d cor Ladin.....  
 Johnson A B d 148 Kingsbury.....  
 Kelley Wood & Co 22d s e cor Center av.....  
 Ketchum Stephens & Co d 258 Sherman.....  
 Learned S J d Center av s of 22d.....  
 Long J Henry d 904 S Halsted.....  
 Loomis & Davis d 394 Fifth av and Fisk.....  
 Leveland R A & Co d Lumber cor of 22d..  
 Loveland & Spencer d 22d cor Lumber.....  
 Lowell & Barker d foot of Fisk.....  
 LUDINGTON WELLS & VAN SCHAICK m and d  
 offices 244 S Water, yards Loomis N 22d and  
 I C R R.....  
 McLaren d cor Franklin and S Water.....  
 McDonald & Roe d Taylor s w cor Sher-  
 man.....  
 McMullen & Officer d Throop s w cor  
 Lumber.....  
 Martin S K d 438 Lumber.....

Mears Bates & Co m and d 52 Beach.....Chicago	The Kirby Carpenter Co m and d Loomis nr 22d.....Chicago
Mears C & Co m and d 58 Kingsbury.....	Thompson H & Co d Quarry bet Archer av and the river.....
Mendon & Winter d Throop s of 22d.....	Truesdell Glendon Room 6 242 S Water.....
Menominee River Lumber Co m and d office 260 S Water.....	Turner E H & J S d 84 and 86 Lumber.....
Merrill & Skeele d 345 Lumber.....	Waldo John d 120 N Canal.....
Meyer C J L d 25 W Ohio.....	Waldo Waters & Co d 7 N Canal.....
Minard Ira & Co d Loomis N 22d.....	Walshburn Edgar d 195 8th.....
Munro Robbins & Co d W 12th cor Lumber..	Weed A & Co W Chicago av.....
Nelson Bros d Grove n w cor 22d.....	Wilce Stephens & Co p m 22d and Troop..
N Ludington Co m and d office 242 S Water	White Swan & Co m and d 252 S Water.....
Noble & Little d Canal n w cor Carroll av..	Whitbeck H Company m and d 257 W 22d head of Fisk.....
Norris Lumber Co d 165 W 22d.....	Whitcomb R S d 714 W Washington.....
North Branch Lumber Co d 40 Front.....	Wheelock Sylvester d foot of Fisk.....
Palmer Fuller & Co d W 22d cor Union.....	White Geo E d 122 N Sansamon.....
Park & Soper d 775 S Canal.....	White Joseph d 126 N Union.....
Pearson, J N d 60 Lumber.....	White Rowell & Co d 34 W Chicago av.....
Perry Pearson & Co d S end Sherman N 12th.....	Wolf Kauf & Essroger d Sebor bet Canal and Beach.....
Peshigo Co m and d N Water N pier.....	Woodruff W N & J F d Grove foot of 19th..
Phillips & Browne m and d Room 2 238 S Water.....	
Pillsbury Bradley & Co d Main n e cor Colloger.....	
Pond & Soper d W 22d cor Loomis.....	
Porter & Co m and d Room 1, 261 Randolph	
Porter & Fuller d 140 Beach.....	
Quail Robt F & Co d Throop s of T22d.....	
Richards-Norris & Co d W 22d cor Laflin..	
Rietz Chas & Bro d 27 N Canal.....	
Roberts & Hull m and d 245 S Water.....	
Robinson Geo G & Co d Hawthorne av n of gas works.....	
Ryer-on Martin & Co m and d Room 4 242 South Water.....	
Ryan Young & Co m and d 236 S Water.....	
Sawyer W d 133 LaSalle.....	
Schulenburg & Boeckler m and d Main cor Colloger.....	
Spalding Jesse m and d 250 S Water.....	
Sheriff John & Son d Beach cor Thylor.....	
Shoemaker & Howell d Troop N 22d.....	
Soper Br inard & Co d Polk cor Beach.....	
South Branch Lumber Co d 22d cor Loomis	
Starrett & Bro d W 12th s w cor Lumber..	
Stephens & Clarke Archer av cor Quarry..	
Stevens Plowdon d 924 S Halsted.....	
Street & Chatfield d Rocket w end of Huron	
Terry & Bro d w end 18th st bridge.....	
The B L Anderson Co m and d Fisk cor 22d	

## COMMISSION.

Barker Cyrus A 252 S Water.....
Bell Robt L Room 2, 252 S Water.....
Bickford R K & Co 240 S Water.....
Blanchard Borland & Co 242 S Water.....
Brown W Room 5, 242 S Water.....
Calkins W W Room 1, 238 S Water.....
Carter Artemas 240 S Water.....
Deming Chas & Co Room 3, 233 S Water.....
Ewer & Aarhaus 238 S Water.....
Frazer Jas Room 16, 242 S Water.....
Goodenow & Hinds 234 S Water.....
Irish Bullen & Co 234 S Water.....
Long John 238 S Water.....
Loomis John & Co 2 Franklin.....
Marsh & Goodrich 252 S Water.....
Meglade W Room 2, 238 S Water.....
Mueller W Room 5, 242 S Water.....
Prettyman W B 236 S Water.....
Rice Ed B Room 4, 252 S Water.....
Ripley W 238 S Water.....
Schulenburg Albert 234 S Water.....
Simpson Ruddock & Co 238 S W.....
Southworth W L 234 S Water.....
Williams Thomas 238 S Water.....

## IOWA.

Steelwalt W d.....Abbott	Parker & Upton (hardwood mill).....Bertram
Carton & Co d.....Ackley	Wise J K d.....Blairtown
Rath John d.....	St John Jas d.....Bloomfield
Beymer G W d.....Afton	Eutler & Meek d.....Bonapart
Farnsworth D (hardwood saw mill).....Agency City	Kerr, W B d (agent).....
Parkinson B d.....Ainsworth	Carr Chas W d.....Boone
Gilbert, Hedge & Co d (Burlington Ia).....Albia	Nowlin Bros d.....
Pattin U L d.....Albion	Lloyd & Stickney d.....Brighton
Taylor & Bro d.....Alden	Memer, John d.....
Johnson W W d.....Algona	Burdick A (hardwood mill).....Bristol
Putnam F L d.....	Morris J W d.....Brook
Wilson John & Co d.....	Conklin & Newcomb d.....Brooklyn
Chambers Bros & Co m and d (Muscatine Ia).....Allerton	Holmes T J & Son d.....
Madigan M d.....Altona	Small W E & Son d.....
Lamb C & Son m and d (Clinton Ia).....Ames	Cass H d.....Buffalo
Jones & Bradley (hardwood mill).....	Schuh L & Co m and d.....
Markham M A d.....	Cook W E & Co s m and m and d.....Burlington
Benton W S d.....Amamosa	Berry W S & Co m and d.....
Blackburn John S (hardwood mill).....Arcola	Carson & Rand m and d.....
Bowers & Blimyer (hardwood mill).....Auburn	E D Rand & Co m and d.....
Bryant & Sharp (hardwood mill).....Augusta	Dickie J & J m and d.....
Ainsworth & Waterman d.....Avoca	Duncan & Hosford m and d.....
Lowrick T d.....	Gilbert, Hedge & Co d.....
Goodsell & Bro d.....Bedford	Joy E & Co.....
McConville H & Co.....	Millard Frank & Co d.....
Henry Jas P d.....Belle Plaine	Nairn, Gillis & Co p m.....
Lamb & Son m and d (Clinton Ia).....	Parsons F T & Co d.....
Wilson J D d, agent.....	Winter D & Co p m.....
Brown M R m and d.....Bellevue	Seeley & Shaw d (McGregor Ia).....Calmra
Strasser & Schleck p m and d.....	Anthony & McLoskey m and d.....Camanche
	Grafton W H (hardwood mill).....Cambridge

Green J L d.....	Carroll	Pelan & Randall m and d.....	Dubuque
Hatch & Wingate d.....	Casey	Robison J M m and d.....	
Whitmore E O & Co d.....		Weston Burch & Co m and d.....	
Ford & Zeising d.....	Cedar Fall	Wheeler & Warner d.....	Dunlap
Lamb, Bing & Co d.....		Dyer Henry d.....	Dyersville
Green & Rowley d.....	Cedar Rapids	Krapfl A d.....	
Lamb C & Son m and d (Clinton Ia)...		Twogood C d.....	
Dyer d.....	Center Point	Brown Doty & Co d.....	Eagle Grove
Boyles & Co d.....	Centerville	Puckitt Daniel d.....	
Gilbert, Hedge & Co d (Burlington).....	Chariton	Getchell & Son d (Des Moines).....	Earlham
Andrews & Harrison, sash, doors, etc.....	Charles City	Harper Geo d.....	Earlville
Grimmeis H, sash, doors, etc.....		McGavie E J & Bro d (Keokuk).....	Eddyville
Mitchell & Fletcher d.....		Sage E T & Co d.....	Eldon
Parker & Gennels p m.....		Hall & Conger d.....	Eldora
Smith, Stephen d.....	Chelsea	Dimond & Winden m and d.....	Elgin
Archer Jas d.....	Cherokee	Sutter Lewis & Co d.....	
Hixon & Fisher d.....		Froarque Daniel m and d.....	Elk River
Hobart & Snyder d.....		Tomblin D M d.....	Emerson
Hull J M & Son d.....	Chillicothe	Pond E G (hardwood mill).....	Emmitsburg
Osgood & Kimball d.....	Clarinda	Wilson J J & Co d.....	
Rucktschell Geo d.....	Clayton	Hedges J S & Co d.....	Fairfax
Schumaker A & Co.....		Phipps J W d.....	
Woodford & Johnson d.....	Clear Lake	Doty N S d.....	Fairfield
Clinton Lumber Co m and d.....	Clinton	Rand E D & Co m and d (Burlington).....	
Curtis Bros & Co sash, doors etc.....		Whitmore Seth d.....	Farley
Joice & Smith sash, doors etc.....		Gabelman Fred d.....	Farmington
Lamb C & Son m and d.....		Lyman G F d.....	Fayette
Young W J & Co m and d.....		Duckworth Cook & Co m and d.....	Floris
Graves W H d.....	Colesburg	Blowers & Clark (hardwood mill).....	Forest City
White & Redow.....		Shori N d.....	Ft. Atkinson
Baldwin & Maxwell d (Iowa Center).....	Colo	Brown H C d.....	Ft. Dodge
Hobbie & Bro d.....	Columbus Junction	Conway Owen d.....	
Hoyt & Burdick d.....	Conover	Keefer Plough & Co d.....	
Seely & Shaw McGregor Ia.....		Atlee Saml J & Co m and d.....	Fort Madison
Reymer A M & Co d.....	Corning	Gibbs E A d.....	
Johnson H L & Co.....		Kasten Chas d.....	
Waldon Allen d.....	Corydon	Inkman & Felix d.....	
Green Thos & Son d.....	Council Bluffs	Miller N B & Co.....	
Hammer Lewis d.....		Wilson John d.....	
Hoagland Geo T & Co d (Hannibal Mo)		Blauflus F d.....	Franklin Center
Young & Co d.....		Baelton A m and d.....	Fulton
Fleming W J d.....	Cresco	Frank J m and d.....	
Rand E D & Co m and d (Burlington Ia).....	Creston	Slipps John & Bro m and d.....	
Rand E D & Co m and d (Burlington Ia).....	Cromwell	Woodford & Wells d.....	Garnaville
Easton J S d.....	Dallas Center	Rinehart & Horton d.....	Gilman
Cable G W & H d.....	Davenport	Marrs & Lambert d.....	Glen Roy
Davis L S m and d.....		Tattleon O d.....	
Kirk F, sash, doors, etc.....		Millis & Atkins d.....	Glenwood
Lindsay, Phelps & Co m and d.....		Hankins & Ruggles d.....	Glendon
McClelland, T W sash, doors, etc.....		Park C B & Co d.....	Grand Junction
Priece, Horby & Kehoe m and d.....		Clark S H d.....	Grand Mount
Benwick Wm m and d.....		Jansen C d.....	
Roberts & Rohrbach, sash doors etc.....		Barnum, Case & Co d.....	Green
Schrock & Mueller m and d.....		Craver & Steele d.....	Grinnell
Skinner W J d.....		Davis & Kelsey d.....	
Flemming W & J d (McGregor Ia).....	Decorah	Hobart Chas & Son d.....	
Atwood & Wolcott d.....	Delaware	Benson, P T d.....	Guthrie
Knowles J d.....		Floete Chas d.....	Guttenbergh
Chandler M d.....	Delmar	Goetz, Adam d.....	
Dupuis M d.....		Luck B H d.....	
Wineier & Warner d.....	Dennison	Phelan & Zimmerman m and d.....	
Carver Young & Co d.....	Des Moines	Wikoff A H d.....	Hamburg
Collins & Shyrock d.....		Smith H J & A J d.....	Hampton
Getchell & Son d.....		Smith W P & Bro d.....	
Gilchrist J K & W H d.....		Lane & Hollister d.....	Honey Creek
Heath H R sash doors etc.....		Flusher A H hardwood mill.....	Horton
Sypher R W d.....		Eckhart Z d.....	Independence
Getchell & Son (Des Moines Ia).....	De Soto	Ingram, Kennedy & Day m and d	
Buckley John d.....	De Witt	(Dubuque Ia).....	
Butterfield Thos F & Co d.....		Kinyon S C d.....	
Kettering & English p m.....		Newman S d.....	
Allen & Boss d.....	Dexter	Stout Z & Co d.....	
Mark J G d.....		Winnegar & Manny d.....	
Elerich James d.....	Dowd's Station	Zinn E d.....	
Dow & Graves d.....	Dowville	Chase & Hube d.....	Ionia
Lockman & Elliott d.....	Drakesville	Baldwin & Maxwell d.....	Iowa Center
Carr Austin & Co sash doors etc.....	Dubuque	Musser R & C d.....	Iowa City
Clarke & Scott m and d.....		Porter J W d.....	
Dubuque Lumber Co m and d.....		Rittermeyer F X d.....	
Iowa Lumber Co m and d.....		Carlton J H & Bio d.....	Iowa Falls
Ingram Kennedy & Day m and d.....		Hoag, Zeno d.....	
Knapp Stout & Co m and d.....		Richardson J C hardwood mill.....	
Langworthy S M d.....		Yerger A d.....	Jefferson
Lumbert E R & Co d.....		Moore & Hoyt m and d (Dubuque Lumb Co).....	Jessup
Lumbeck H & Co sash doors etc.....		Taylor Thos d.....	



Hayward d.....	Kellogg	Chambers Bros & Co m and d.....	Muscantine
Andrews J H d.....	Keokuk	Eckle & Patton d.....	
Hosmer & Baldwin m and d.....		Garlock John S d.....	
Mc Gavic & Co d.....		Hershey & Irvine m and d.....	
Magoun & Co d.....		Hoch E d.....	
Scroggs J W d.....		Kirk W T p m.....	
Tabor & Co m and d.....		Musser P M & Co m and d.....	
Wells, Felt & Spaulding m and d.....		Stine S G d.....	
Marshall Joshua m and d.....	Kirkville	Union Lumbering Co m and d.....	
Butterfield & Co d.....	Knoxville	Turner & Bellamy d.....	Nashua
Donley & Garrison d.....		Dillin C D d.....	Neola
Wadsworth Smith & Co hardwood mill.....	Lake Mills	Lockridge W d.....	Nevada
Miller Sam'l d.....	Lamville	Gordon Burt & Weston d.....	Newell
Albert E T & Son d.....	Lansing	Nicholson & Fowler d.....	
Hemingway Barclay & Co d.....		Swazey L T d.....	New Hampton
Johnston S B d.....		McLaren & Meyer d.....	New Hartford
Merrill & Smith m and d.....		Williams E d.....	New Sharon
Klingaman & Felt d.....	La Porte City	Kalbach Isaac & Son d (Oskaloosa).....	Newton
Fleming & Bro d (McGregor Ia).....	Lawler	Atwater & Hoskins d.....	
Zepley & Van Sant m and d.....	Le Claire	Curtis & Manning d.....	
Fairchild R C d.....	Le Mars	Hauson A P d.....	Northwood
Naples & Alline d.....		Eckert & Williams d.....	Norway
Staples Isaac m and d (Stillwater Minn).....		Brown T H d.....	
Reymer A S d.....	Lenox	Harper W L d.....	Oelwein
Cole Warren Jr d.....	Leon	McGathery T K d.....	Ogden Station
Fry Jacob hardwood mill.....	Libertyville	Sylvester F d.....	
Pancoast Joseph d.....		Wheelock & Adams d.....	Onawa City
Auracher G d.....	Lisbon	Elwell John d.....	
Smith P E d.....	Liscomb	Freeland & Cleghorn d.....	
Schofield & Son hardwood mill.....	Little Sioux	Reder Theo hardwood mill.....	Ouslow
Goreham & Pelton d.....	Lost Nation	Spurr C E d.....	Osage
Peterson Aug. d.....	Lowden	Chute & Cotton d.....	
Barnum J H d.....	Lyons	George & Lizotte p m.....	
Buffow G A d.....		Harding G F hardwood mill.....	
Dishrow M A d and sash doors etc.....		Huntington & Griswold.....	Osceola
Joyce & Smith m and d.....		Gilbert Hedge & Co d (Burlington).....	
Langford C E d.....		Rand E D & Co m and d (Burlington).....	Oskaloosa
Magill Chas H d.....		Kalbach Isaac & Son d.....	
Stockwell Ira m and d.....	McGregor	Leighton C d.....	
Daubenberger & Strauer m and d.....		Snyder & Duke p m.....	
Fleming W & J m and d.....		Wray W H d.....	Ossian
Seelye & Phelps m and d.....	Malcom	Flemming W & J m and d (McGregor Ia).....	Ottumwa
Buttles & Vernon d.....	Malvern	Kiser J M d.....	
Moninger Ringland & Summers d.....		Millard J J & Co d.....	
Place A D d.....	Manchester	Thornburg d.....	Oxford
Buckley G R d.....		Wilson J W d.....	Palo
Dyer W d.....		Kettinger A & Co hardwood mill.....	Parkersburg
Manchester Manufacturing Co.....	Maquoketa	Clarneck C d.....	Pella
Bradley Geo T d.....		McGavie E J & Bro d.....	Perry
Calamer Stephen sash doors etc.....		Newport B F d.....	Plainfield
Joiner Bros & Co d.....	Marble Rock	Dean E J d.....	
Shepardson J B d.....	Marengo	Mores W H d.....	Plymouth
Ketchum & Bro d.....		Page L A d.....	Postville
Morrison A J d.....	Marion	Mott J S.....	Prarie City
Alexander J S d.....		Fish & Hammond m and d.....	
Wood Geo F d.....	Marshalltown	McGavie E J & Bro d.....	Quarry
Cunningham D W d.....		Steinbeck Silas d.....	Red Oak Junction
Price A J & Co d.....		Bryson & Son d.....	
Rogers M L d.....		Clark J & Co d.....	
Woodworth & Son d.....	Marysville	Rogers & Son d.....	Ridgeway
Ush Fostrier & Brewer d.....	Mason City	Allen W H & E T d.....	
Lyman W H d (agent).....		Myers & Peck d.....	Rockford
Sprague M A d.....		Emerson & Fay d.....	Russell
Wilson & Herrick d.....	Masonville	Comstock D F d.....	Sabula
Griffin B d.....	Mechanicville	Long E & H M m and d.....	
Armstrong & Co d.....	Mediapolis	Risley & Day m and d.....	
King W W d.....	Melrose	Shaw D & Co m and d (Ean Claire Wis).....	St Ausgar
Funk W O d.....	Millville	Rhames John N d.....	Saylorville
Merrill L & Bros d.....	Minburn	Howe W B d.....	Seuly Station
Gill M & Son d.....	Mitchell	Reeves Bros d.....	Shelby
Brown & Gregory d.....	Mitchellville	Caughran J D d.....	Sheldon
Kimball & Mitchell d.....	Mona	Bradley S S d.....	
Martin S & Co d.....	Monticello	Lane H C d.....	
Burdick E E d.....	Montour	Mykoff Jas d.....	
Smith Thos P & Bro d.....	Morning Sun	Fairfield & Phillips d.....	Shell Rock
Ochiltree H M & Sons d.....	Moulton	Bryson & Son d.....	Shenandoah
Norwood D d.....	Mount Pleasant	Riley & Grant d.....	Sibley
Grove James d.....		Schell Levi d.....	
Ketchum L & Bro d.....		Schuck D M d.....	Sigourney
Ludham Bros p m.....		Brown & Yerger d.....	Sioux City
Rand & Kaster d.....		Hedges & Spaulding d.....	
Schreiner T d.....	Mount Vernon	Rice H B d.....	
Boyd D L d.....		Sanborn & Follett hardwood mill.....	
McClellan & Kirkpatrick m and d.....	Murray Station	Beermaker A d.....	Solon
Wick J E d.....		Anthony N B d.....	Stanwood

Munson T S & Co d.....State Center  
Tuthill J W d.....  
Turner D W d.....Steamboat Rock  
Green B F d.....Storm Lake  
Slutz Theo d.....  
Stuart C d.....Stuart  
Dennis & Averill d.....Tama City  
Hall B A d.....  
Lamb C & Son m and d (Clinton Ia).....  
Culbertson John d.....Tipton  
Johnson Bros d.....Traer  
McCormick Bros d.....  
Smith John d.....  
Hauser & Son d.....Union  
Mossman Alex d.....Urbana  
De Wolf James d.....Vail Station  
Taylor J C & Bro m and d.....Van Meter  
Cadle C F & W L d.....Victor  
Chadbourne A S d.....Vinton  
Stickney & Bros d.....  
Young & Son hardwood mill.....  
Avery Spangler & Co d.....Walnut Station  
Denny J M & Co d.....Washington

McCoughey & Co p m.....Washington  
Sheridan & Hardestz d.....  
Wilson & Wallace d.....  
Allee & Lindley d.....Waterloo  
Ankeny & Lusch d.....  
Beck Newman & Bro.....  
Cobb & Jones d.....  
Cutler W H d.....  
Johnson H M d.....  
Moore M H & Co d.....  
Bodeker & Maas d.....Waverly  
Fairfield C d.....  
Hunt & Holt d.....  
Ewing J & Son d.....Webster City  
Worthington W S d.....  
Hoover B d.....West Branch  
Gordon A d.....West Cedar Rapids  
Deemer J A d.....West Liberty  
Woodward Chas d.....West Union  
Woods Hall & Co d.....Westland  
Seidell & Co d.....Winthrop  
Bush E H d.....Worthington  
Paft D C stove factory.....Yankee Settlement

## MINNESOTA.

Getchell, C. S. & Co., m and d.....Afton  
Olds & Lord, m and d.....  
Pray, R. N., p. m.....  
Seargant, Wm. P., d.....Albert Lea  
Hicks, Wm. E., m and d.....Alexandria  
St. Paul Lumber Co., m and d (see St. Paul).....Anoka  
Washburn, W. D. & Co., m and d (see Minneapolis).....  
Mower, Martin.....Arcola  
Saulter, E. A. D.....Atwater  
Richards, W. d.....Austin  
Gordon & Cooley, m and d.....Barnum  
Easler & Bro., m and d.....Beaver Falls  
Weed & Colson, s. m.....  
Ellsworth, D. d.....Belle Plaine  
Meldal & Sundel, d.....Benson  
Vogel, August, m and d.....  
Brainard & Whitton, d.....Blooming Prairie  
Brainard Lumb. & M'fg Co. m and d.....Brainard  
Brown, H. A., d and d (La Crosse, Wis).....Brownsdale  
Paul, John, m and d (La Crosse, Wis).....  
Gilbert, O. S. d.....Brownsville  
Paul, John, m and d (La Crosse, Wis).....  
Funk, John, d.....Carver City  
Schrumpf, A. D.....  
Grannis, S. S., m and d.....Central Point  
Brown & Brockway, m and d.....Champlin  
Kenny, Chas., m and d.....Chaska  
Nathan, Geo., Stave M'fg.....Chicago City  
Laird, Norton & Co., m and d (Winona).....Claremont  
Morrison, H. B.....Clear Water  
Talbot & Smith, m and d.....Cleveland  
Warde Bros. & Runions.....Cokato  
Pendergast & Chisley, m and d.....Collingwood  
Lucas, Adam, m and d.....Cordova  
Weizell, F.....Dayton  
Perkins, Bro. & Co. m and d.....Dedham  
Parlow, H. C.....Delano  
Frazie, R. L., m and d.....Detroit Lake  
Gill, John, d.....Dodge Center  
Magee, D. T., d.....Dover Center  
Howard, J. D., m and d.....Duluth  
Munger & Gray, m and d.....  
Patterson & McQuade, p. m.....  
Shaw & Ingalls.....  
Welland H. & Bro., m and d.....  
Archibald, J. S. & E. T., m and d.....Dundas  
Hutchins, John, m and d.....  
Houlton & Nickerson, m and d.....Elk River  
Mills, E. P., m and d.....  
Long, G., m and d.....Elysian  
Dunn, E., d.....Eyota  
Jackson & Russell, d.....  
Robson, John, m and d (Winona).....  
Smith, R. R., d.....Faribault  
Sumner, Jesse, d.....  
Turner, J. A., m and d.....  
Walker, H., m and d.....Faxon  
Goodsell & Bro., m and d.....Fergus Falls

Page & Scott, m and d.....Fergus Falls  
Evans, E. E. & Co., m and d (St. Paul).....Fish Lake  
Baldwin, D. E., m and d.....Forestville  
Henry, F., m and d.....  
Mirns Bros.....Glencoe  
Tenney, L. H. & Co. d.....Glyndon  
Pierce, L. E. d.....Grand Meadow  
Dudley, John.....Hastings  
Hersey, Bean & Doe, m and d (Stillwater).....  
Herman, J., m and d.....Henderson  
Garrett, J. M.....Hokah  
Johnson, Thomson & Black, saw and  
stave mill.....Howard Lake  
Smith & Gasper, d.....Janesville  
Hormer, J. W. & Co., stave mill.....  
Wadleigh & Wirks, d.....Kasson  
Carville & Norgren, m and d.....Kingston  
Hall & Thompson, m and d.....  
Grannis, S. S. m and d.....Lake City  
Harding, J. p. m.....  
Hersey, Bean & Doe, m and d (Stillwater).....  
Hulett & Norton, p. m.....  
Humphrey, H. d.....Lake Crystal  
Russell, L. G. d.....  
Coleman, C. L. m and d (La Crosse, Wis).....Lanesboro  
Paul, John, m and d (La Crosse, Wis).....  
Crocker Bros. & Lamereaux, m and d (Minneapolis).....Lansing  
McCall, M. d.....  
Fifield, D. S. & Son.....Le Roy  
Davis, L. B.....Le Sueur  
Paul & Stone, m and d.....  
Butler, Chauncey.....Litchfield  
Leavitt, S. W.....  
Hill, E. G. & Bro. m and d.....Little Falls  
Sherman, W. L. d.....Lyle  
Dean, J. & Co. m and d (Minneapolis).....Madelia  
Faribault & Carney m and d.....Manchester  
Beebe, R. W. d.....Mankato  
Mc Mahill, Geo. d.....  
Tisdale Bros. d.....  
Severance, C. E.....Manterville  
Marsh & Kennedy m and d.....Maple Plain  
Bergman, A. m and d.....Marine Mills  
Sabin & Judd m and d.....  
Walker, Judd & Veazie m and d.....  
Langdon, N. B.....Marshall  
Butler, L. & Co. m and d.....Minneapolis  
Chase, J.....  
Farnham & Lovejoy m and d.....  
Rollins, John.....  
Ross, J. R. sash, doors &c.....  
Gaines, Cook & Co. m and d.....  
Wheaton, Reynolds & Co., sash, doors &c.....  
Ankeny, W. P. & Co. d.....  
Bedford, Boyce & Baker m and d.....  
Clark, F. P. m and d.....  
Copeland, Jesse & Son, p. m.....  
Crocker Bros. & Lamereaux m and d.....

Bray, Wilder, & Co. d.....	Minneapolis	Keller John M m and d.....	St. Paul
Day, L. & Sons m and d.....		Evans E E & Co m and d.....	
Dean, Joseph & Co. m and d.....		Munch, Gustave m and d.....	
Eastman, Bovey & Co. m and d.....		Prince John L m and d.....	
Eldred, W. H. s. m.....		De Cou & Co sash, doors etc.....	
Judd, W. S. m and d.....		Metter & Heritage m and d.....	St Peter
Langdon, R. B. & Co. p. m.....		Snyder, Damsen & Co m and d.....	
Morrison Bros. m and d.....		Mc Clure T C m and d.....	Sauk Center
Pettit, Robinson & Co. m and d.....		Boulter & Burget m and d.....	Sauk Rapids
Russell & Co. p. m.....		Wilder J A d.....	Shakopee
Smith, Parker & Co. p. m.....		Mirns T m and d.....	Silver Lake
Union Planing Mill Co. p. m.....		Harriman S m and d.....	Somerset
Washburn, W. D. & Co. m and d.....		Coleman C L m and d (La Crosse Wis).....	Spring Valley
Ingalls Bros. d.....	Minneka	Paul John m and d (La Crosse Wis).....	
Ingram, Kennedy & Co. m and d (Eau Claire, Wis.).....		Bronson & Fulsom m and d.....	Stillwater
Hitter, F. m and d.....	Monticello	Hersey, Bean & Brown m and d.....	
Douglas, James d.....	Moorhead	Staples Isaac m and d.....	
Avery, Jas. T.....	Morris	Seymour, Sabine & Co m and d.....	
Adams, C. D., stave m'fg.....	Morristown	St Croix Lumber Co m and d.....	
Herchey & Son m and d.....		Proctor J S (Recy. St Croix B Co).....	
Norton R M m and d.....		Matthews S logger.....	
Osterbant Jas m and d.....		Nelson C N logger.....	
Keen & Whitcomb.....	Nicollet	Tozer David logger.....	
Ames, Jesse & Son m and d.....	Northfield	Chalmers & McMillan.....	
Dwinell E C sash, doors, etc.....		Durand E W.....	
Mann Chas W.....		Gaslin David.....	
Stewart S P m and d.....		Mc Kusick, Andersen & Co m and d.....	
Whittle & Curlew m and d.....		Mower Martin.....	
Miller A M m and d.....	N P Junction	Schulenberg, Beckler & Co m and d.....	
Payne J M & Co m and d.....		Ellison, Smith & Co m and d.....	Taylor Falls
Mungerd Grey m and d.....	Oneota	Folsom W H C.....	
Phelps Bros m and d.....	Otsego	Fox P.....	
Frazie R L m and d.....	Otter Tail City	Mc Court J H.....	
Backus Bros.....	Owatonna	O'Brien John.....	
Crocker Bros & Lamereaux (Minneapolis).....		Ingram, Kennedy & Gill m and d (Eau Claire, Wis.).....	Wabasha
Murray A G d.....		Smith Warren d.....	Waseca
Pine City Lumber Co m and d (St. Paul).....	Pine City	Elliot d.....	
Fife W W d.....	Preston	Durr Peter.....	Waverly
Cogel & Betcher m and d.....	Red Wing	Halbrecht.....	
Daniels & Simmons.....		Cole & Laird d.....	Wells
Red Wing Mill Co m and d.....		Coleman C L m and d (La Crosse Wis).....	Whalan
Buttles & Herrick p. m.....	Rochester	Hays W W.....	Willmar
Dodge W H d.....		Paulson John.....	
Gillman N F p. m.....		Robbins A B.....	
Laird, Norton & Co m and d (Winona).....		Gilliland Thos d.....	Windom
Robson John m and d (Winona).....		Hubbs Chas L d.....	
Martin S A m and d.....	Rush City	Coleman C A d.....	Winnebago City
Relley, Short & Co m and d.....		Balcom J & H C.....	Winona
Taylor & Co m and d.....	Rushford	Gage A W & Bro.....	
Foss O p. m.....		Horton & Hamilton d.....	
Parker G B (Agent) d.....	St Cloud	Knight, Bennett & Co m and d.....	
Bridgeman, Coleman m and d.....		Laird, Norton & Co m and d sash, doors &c.....	
Clark N P m and d.....		Langdon A sash, doors etc.....	
Cluck & Mc Clure m and d.....		Robson John m and d.....	
Dam F H sash, doors etc.....	St Francis	Rose O sash, doors etc.....	
Lindsay G W m and d.....		Tucker O C.....	
Woodbury D m and d.....	St. Michael	Youmans Bro & Hodgins m and d.....	
Valbrecht W & Bro m and d.....	St Paul	Crocker Bros & Lamereaux m and d (Minneapolis).....	Worthington
St Paul Lumber Co m and d.....		Sater I N d.....	
Taylor H J & Co m and d.....		Cram Jas sash, doors etc.....	Zumbrota
Anoka Lumber Co m and d.....		Hubbard, Wells Co & m and d.....	
Grant, Mc Caine & Co m and d.....			

## MISSOURI.

Hill & Co.....	Alexandria	Bedford Bogarnus & Co p m and sash factory.....	Bloomfield
Neure F & Son.....		O'Neil Jas saw mill.....	Bolivar
Summers & Scoonover.....	Altenburg	Wilkinson Hiram saw mill.....	Boonsborough
Fielet Rebt & Bro m and d.....		Jones B F d.....	Boonville
Schmidt Jacob m and d.....		Roberts & Lee d.....	
Weinhold Marton.....		Thro J E d.....	
Wyckoff & McFarland d.....	Appleton City	Elliott Lumber Co saw mill and d.....	Bourbon
Thompson J. C. Jr d.....	Arrow Rock	Eales T T d.....	Breckenridge
Garth H C d.....	Aulville	Plumb & Co d.....	
Sparks W W d.....		Bethelm & Kerr d.....	Brookfield
Waterman J C & Co d (Maryville Mo).....	Barnard	Ryner J M d.....	
Phlegan Willis & Balding d.....	Belton	Matlack Geo & Co d (St Louis Mo).....	Brownsville
Scott Geo W & Co d.....		Moore Jas & Co d.....	
Haines Chas saw mill.....	Berger	Eno E B d.....	Brunswick
Moehn Chas saw mill.....		Perry J O d.....	
Nelson & Smith saw mill.....	Bethany	Wilson Peter saw mill.....	Buffalo
Graham Jas saw mill.....	Big Creek	Rogers Francis d.....	Bunceton
Harlow Greenberry saw mill.....			

Pitcher Adams & Cathron	saw mill.....	Burdett	Evans & Brierton	saw mills.....	Hopewell
Warner & Son	d.....	Butler	Waterman Goodsell & Bro	d.....	Hopkins
Pigg D H	d.....	Calhoun	Wiles S S	d.....	Houstonia
James & Sappington	saw mill.....	California	Stratton M	saw mill.....	Humansville
Nieschwitz C F	d.....		Hurd C	d.....	Hunnewell
Ross Geo	d.....		Brookings Jas R	d.....	Huntsville
Matis John H	d.....	Callao	Smothers & Taylor	d.....	
Maupin & Elliott	d.....	Camden Point	Gates & Anderson	d.....	Independence
Steiger Bros	d.....	Cameron	Shorthridge John (agent)		
Burns & Mabon	p m.....	Canton	May Edwinn and d		Ironton
Ellis Wm	d.....		Lilly & Smith	d.....	Janesport
Hampton John P	d.....		Bush & Becker	d.....	Jefferson City
Staples Nelson	p m.....		Eaton Henry	d.....	
Morris James (agent)	d.....	Cape Girardeau	Heinrich Agnes & Son	d.....	
Crouch W S	d.....	Carrollton	Wallendorf M	saw mill.....	
McDonald W	d.....		Redding John S	d.....	Joplin
Beebe H F	d.....	Carthage	Anderson James	d.....	Kansas City
Pl-k & Haines	saw mill.....		Chester Melville & Co	d.....	
McCarthy & Gilbert	d.....		Crawford & Crouse	saw mill.....	
Moore Bros	d.....		Deardorf L	d.....	
Fisher Joseph, jr	d.....	Cedar City	Dubock & Co	d (Hannibal Mo).....	
Street & Bro	d.....	Center Town	Leach & Hall	d.....	
Robinson James & Co	saw mill.....	Chamola	Lovejoy G W	p m.....	
Frank J S	d.....	Chilliothe	Ludwig Thos J	p m.....	
Horne, Harriman & Waples	d.....		Merrill J W	d.....	
Williams E B & Co	d.....		Temple Jas	d.....	Kidder
Tooley & Jacobs	d.....	Clarence	Hammond C G	d.....	Kirasville
Hughes B D	d.....	Clarkville	Sharp L R	d.....	
Carpenter W H	d.....	Clinton	Perkins G H	d.....	Knob Nostor
McAllister & Bowling	d.....	Columbia	Cathers D B	d.....	La Clede
Loehofner & Tegeler	d.....	Cencordia	Quinsberry & Farmer	d.....	La Grange
Morton J W	saw mill.....	Corsicana	Irving & Co	d.....	La Plate
Henderson Wm	saw mill.....	Cuba	Wilson J S	d (agent).....	Lathrop
Lacy Chas C	d.....		Montgomery & Brock	d.....	Lawson
Bradley W J	saw mill.....	Dalton	Vauston & Loop	saw mill.....	Layneville
De Lassus Placide	d.....	De Lassus	Lingsviller John	d.....	Lebanon
Vineyard Jas	d.....		Smith & Appling	saw mill.....	
Angle, Clarke & Co	saw mill.....	Des Arc	Adams Isaac W & Co	d.....	Lee's Summit
Burroughs R & Co	d.....	De Sota	Collins & Anderson	d.....	
Gillet & Gowen	saw mill.....	De Witt	Ballard Patrick	d.....	Lexington
Bowen John R, jr	saw mill.....	Edina	Hale Robert & Bro	d.....	
Sheppard Elijah	saw mill.....	Egypt Mills	Marshall Ben	d.....	
Tandy, Stearns & Dorsay	saw mill.....	Ellenorah	Waples A C	d.....	Liberty
Elston E	saw mill.....	Elston Station	De Forest & Co	saw mill.....	Licking
Lang & Bro	saw mill.....	Farmington	Jones & Granger	saw mill.....	Lincoln
Dougluss & Bro	p m.....	Fredericktown	Carson Geo L	d.....	Louisiana
Kennedy & Thompson	p m.....		Dreyfus Hill & Co	d.....	
Farmer & Jones	d (Pleasant Hill Mo).....	Freeman	Eau Claire Lumber Co	m and d (Eau Claire Wis).....	
Stanchfield L S	saw mill.....	Gads Hill	Edison Nichols & Co	(Clarksville).....	
Lester Eugene W	saw mill.....	Gayose	Freeman & Co	m and d.....	
Birch T E, jr	d.....	Gla-gow	Soward & Dyer	p m.....	
Lewis C H	d.....		Farrar & Bourk	d.....	Macon City
Harrold John S	saw mill.....	Glaze City	Graham F M & Co	saw mill.....	Marquand
Simmons H D	d.....	Gower	Linn & Farrar	saw mill.....	
Hope Geo D	d.....	Greenfield	Whitener & Son	saw mill.....	
Hope Geo D	d.....	Greenwood	Wilkinson W J Jr	saw mill.....	
Hines M O	d.....	Hamilton	Coleman & Stagner	d.....	Marshall
Reddie Geo	d.....		Page C G	d.....	
Allen & Knowl	d.....	Hannibal	Master J S	d.....	Martinsburg
Conlon J	d.....		Tapscott A W	d.....	
Cruikshanks John Jr	d.....		Anderson & Bro	d.....	Maryville
Davis Bockee & Garth	d.....		Waterman J C & Co	d (Barnard).....	
Dorman Uriah	d.....		Goodale L N	d.....	Meadville
Dubach D & Co	d.....		Marks Abe	d.....	
Dulaney & McVeigh	d.....		Woodard & Co	saw mill.....	Mendota
Hannibal Union Works	sash doors etc.....		Coatsworth & Co	d.....	Mexico
Hearne Herriman & Co	d.....		Meyer John	d (St Louis).....	
Hibbert John V	sash doors etc.....		Wright Josiah	d.....	
Hixon G C & Co	d.....		Guthreys & Haynie	d.....	Miami
Miller W H & Co	p m.....		Hill M C	saw mill.....	
Northwestern Lumber Co	m and d (Eau Claire Wis).....		Stanley & Stickler	d.....	Milan
Pinger Chas & Co	d (St. Joseph Mo).....		Carter C O	d.....	Missouri City
Price J B	d.....		Firth Wm	d.....	Moberly
Rowe & Telle	d.....		Hassett Bros	d.....	
Skinner & Co	sash doors etc.....		Petering E H	d.....	
Ure & Co	d.....		Porter W W & J B	d.....	
Farmer & Jones	d (Pleasant Hill Mo).....	Harrisonville	Mathew John L	d.....	Monroe City
Rice John	d.....	Hemetite	Davis W A & B	saw mill.....	Monticello
Lang Geo	d.....	Hermann	Kerr Wm	d.....	Montrose
Hubbard E L	d.....	Holden	Morgan P A	saw mill.....	Morgan's Mills
McMillen Jas	d.....		Bacon F M	d.....	Mound City
Mills T M	d.....		Barber & Herms	saw mill.....	Neosho
Starkey & Christian	d.....		Robinson James & Co	sash, doors etc.....	
Cutter Morgan & Co	saw mill.....	Holt Station	Carey	saw mill.....	Nevada City



Cleland J W d.	Nevada City	Boeckeler A & Co m and d.	St. Louis
Southwick & Goodall d.	New Cambria	Boeckenkamp & Surkamp, cor. 9th and	
Fitzhugh J S d.	New Florence	Monroe sts. d.	
Forrest R W d.	Norborne	Lobsinger, Meegan & Co., Carondelet m	
Johns T R d.	North Springfield	and d.	
Kennedy & Druhe d.		Clear Water Lumber Co m and d.	
Raithel J G d.		Fleitz & Ganahl, 1320 Jackson st. d.	
Berry & Bros.	Omaha	Methudy & Meyer, commission, 23 s.	
Petty J J saw mill.		Main st.	
Potter B T d.	Oregon	Berthold & Jennings, commission, 28 s.	
Carter M S saw mill.	Osage City	Main st.	
Cerny & Vader saw mill.		Beldemeier H W & Co Eastern av d.	
Hollister & Co saw mill.		Williams & Alford, commission, 100 s.	
Maxwell J B d and saw mill.	Osage P O	Main st.	
Hitt B M d.	Osborn	Clement H S commission.	
Armick J F d.	Otterville	Cole & Glass p m.	
Potter & Wharton saw mill.		Cronkhite A H (Wisconsin River Lumber	
Haycox P S saw mill.	Overtown	Co Stevens Point Wis) St James Hotel.	
Williams H d.	Pacific	Davitt John W d.	
Kiser Wm B saw mill.	Palmyra	Druhe W d.	
Ross & Kennedy saw mill.	Paradise	Dryden & Reid d.	
Bower G M d.	Paris	Hill Lemmon & Co m and d.	
Wilson Wesley d.		Hocker & Hengelsberg d.	
Luthey Franklin d.	Parkville	Holmes J A & Co d.	
Harper & Ball d.	Pendleton	Hymers Ed H d.	
Killian J C saw mill.	Perryville	Luthy Jas d.	
Crist Bros d.	Phelps City	McIlvain Robt d.	
Barton J H d.	Pierce City	Matlack Geo d.	
Tribble Andrew d and saw mill.	Platte City	Meyer John, Cass av d.	
Hockaday J N & Son d.	Plattsburg	Mincke G F d.	
Stearns d.		Mississippi Planing Mill Co (Jas Patrick	
Beegle & Meyers d.	Pleasant Hill	Pres't)	
Farmer & Jones d.		Naber Chas d.	
Hope Arthur d.		Nuelle W & Bro m and d.	
Boyce B F & Son sawmill.	Point Pleasant	O'cott Duross & Co p m.	
Barkley David saw mill.	Potosi	Rippe Geo W & Co d.	
Smith Chas D saw mill.		Sterling John p m.	
Smith W D & Bro saw mill.		Wright J C & Co p m.	
Walton & Co d.		Yaege H C South Main st commission.	
Cadle Henry d.	Princeton	Hodges & Sons saw mill.	Salem
Leeper John P d.	Richmond	Wofford C P & Co saw mill.	
Baughner E H saw mill.	Richwoods	Thornton J saw mill.	Saline City
Traub Geo & Co d.	Rockport	Dulaney Thos G d.	Salisbury
Cruesbour Chas d.	Rolla	Wayland Ely d.	
Russell's Mills		Young Geo saw mill.	
Holrah & Machens d.	St Charles	Waterman & Nast d.	Savannah
Smith Job d.	St James	Bloss W & Co d.	Sedalia
Thummell W G d.	St Joseph	Gauss C H d.	
DeClue John p m.		Ritter Richard d.	
Dougherty Ray & Co d.		White & Meyer d.	
Hamilton Bros saw mill.		Warren W d.	Shell Ina
Hoagland Geo T & Son d.		Ralph Jas d.	Shelbysville
Lyon Geo d.		McBride Jr C saw mill.	Silver Lake
Pinger Chas & Co d.		Hendricks & Co saw mill.	South Point
Smith & Swope saw mill.		Ganahl Fidel d.	South St Louis
Waterman & Barnard d.		Lobsinger Meegan & Co m and d.	
Phillip Gruner, Jr., s. e. cor. of 9th st. and		Knott & See p m.	Springfield
Cass Ave d.	St. Louis	McDonald O G d.	Stewartsville
Woerheide & Luehrmann, planing mill, 513		Shapter Wm saw mill.	Taos
Cass st.		Marbes Chas d.	Tipton
Schulenburg & Boeckeler m and d.		Hannesteln W saw mill.	Tuscumbia
Lesley, Garnett & Co., planing mill, 124		Mabrey Thos.	Twin Springs
Olive st.		Willard P G & Son d.	Utica
Parker, Spencer & Co., 3,922 Broadway m		Savage E d.	Vandalia Station
and d.		Mundy W W d.	Verona
Knapp, Stout & Co., Bremen Ave m and d		Lowe W d.	Warrensburg
Patrk Bros. Lumber Co., Bremen Ave d.		Moore & Kinsell d.	
Schuelle & Querl, n. Main st d.		Schowengendt E & Son d.	Warrenton
Philibert & Johannning, planing mill, 1502		Trentman, Uarup & Co p. m.	Washington
to 1518 Market st.		Fletcher W d.	Waverly
Theo. Bloess, Carondelet Ave. cor. Barton		Miller Jacob d.	Wellsville
d.		Allen Jas P d.	Weston
August Leisse, 609 Chouteau Ave. bet. 6th		Wells John B saw mill.	
and 7th sts .... d.		Morse C C d.	Windsor

## NEBRASKA.

Dean, Dennis & Co d.	Ashland	Turner & Hulet d.	Columbu
Wiggerhorn E A d.		Sawyers & Leach d.	Covington
Lyman & Co d.	Beatrice	Caldwell & Slade d.	Crete
Parst & Marsh d.		Graves & Williams d.	Fairbury
Foster N d.	Bell Creek	Jaynes D P d.	Field
Crowell C C & Co.	Blair	Edwards H L d.	Fairmount
Bell John R d.	Brownville	Lyon J F d.	Falls City
Clemans A F.	Coleraine	Rickards & Merrill d.	

Thacker & Davis saw mill..... Falls City  
 Hoagland Geo & Son d (St Jo Mo)..... Grand Island  
 Peck & Meston d..... Harvard  
 Ballard J H d..... Hastings  
 Cox d.....  
 Grannis A B d..... Hebron  
 Tinker E P d..... Humbolt  
 Sullenberger, Newton & Landon, saw mill..... Ionia  
 Hedges & Granger d (Sioux City Ia)..... Jackson  
 Van Alstyne W L d..... Juniata  
 Babcock F C d..... Lincoln  
 Godfrey & Co d.....  
 Grant P J d.....  
 Jones W G & Co d.....  
 Monell & Lashley d.....  
 Noyes E d..... Louisville  
 Moore & Sunderland d..... Lowell  
 Hill W E d..... Nebraska City  
 Monroe & Dillan d.....

Linsabaugh Wm d..... Nebraska City  
 Hoagland Geo T & Son d (St Joe)..... Omaha  
 Young & Co (Clinton Ia) m and d.....  
 Moyer A sash, doors etc.....  
 Turner Chas d.....  
 Foster W M m and d.....  
 Pomeroy & Kennedy d..... Papillion  
 Tisdale F A Jr & Co d..... Pawnee City  
 Gardiner & Robinson d..... Pebbie Creek P O  
 Waterman H A & Son d..... Plattsmouth  
 Faulkner B & Co d..... Schuyler  
 Barrett W B d..... Seward  
 Sorter Isaac B & Son d.....  
 Gray W H & Son d..... Sutton  
 Monell, Lashley & Weed d.....  
 Foster H P d..... Tecumseh  
 Sanders Wm d..... Unadilla  
 Crowell C & Z A d..... West Point

## KANSAS.

Kuney J & Co d..... Abilene  
 Rice & Floyd d.....  
 Gregory & Herrick d..... Alma  
 Channell S P d..... Arkansas City  
 Easley Sherer & Stone d..... Atchison  
 Gillespie G W & Co saw mill.....  
 Hixon G C & Co d (Hannibal Mo).....  
 Jones & Co d.....  
 Lukens David d.....  
 Clark H B d..... Baxter Springs  
 Smith J H d.....  
 Patter E M d..... Belle Plaine  
 Campbell Geo & Alex..... Beloit  
 Holbrook T saw mill..... Blue Rapids  
 Stokes G B d.....  
 Mynant J B d.....  
 Leslie M F d..... Brookville  
 Voorhis A L d..... Bunker Hill  
 Miner S E & Co d..... Burlingame  
 Cross David & Sons saw mill..... Burlington  
 Smith L C d..... Cedar Point  
 Clippinger P & Son d..... Centralia  
 Churchill & Co d..... Chanute  
 Eaton Z A & Co saw mill.....  
 Manlove L d..... Cherokee  
 Brown & Co p m..... Chetopa  
 Officer R W d.....  
 Tyler M S d..... Clay Center  
 Smith G W (agent for Johnson & Bridges)..... Clyde  
 McKircher & Mitchell d..... Colody  
 Allen Bros d..... Columbus  
 Campbell D W d..... Concordia  
 Edwards W C d.....  
 Colton Bros d..... Council Grove  
 McLeon E C d.....  
 Allen F M & Co d..... Edgerton  
 Fauble J M & Co d..... Edwardsville  
 Kuny Southwick & Co d..... Ellsworth  
 Armor Thos saw mill..... Emporia  
 Pierce C F & Co (also at Wichita & Florence).....  
 Lothholz Chas d..... Eudora  
 Clagston & Allen saw mill..... Eureka  
 Raymond M B d.....  
 Pierce Chas F & Co d (Emporia)..... Florence  
 Dorman N d..... Fontana  
 Whare H E & Co d..... Fort Scott  
 Brady A d..... Frankfort  
 Filkins D J.....  
 Thorne W H d..... Fredonia  
 McCoy W d..... Gardner  
 Crane J P d..... Garnett  
 Fliekenger Robt saw mill..... Geary City  
 Patterson J C d..... Girard  
 Dudgeon F A & Co d..... Grasshopper Falls  
 Brinkman G L d..... Great Bend  
 Bunting John d..... Hanover  
 Treat M J R d..... Hays City  
 Bause J P d..... Hiawatha  
 Spear I N d.....  
 Dickey Jasen d..... Holton  
 Williams & Woener d.....  
 Amos John d..... Humboldt

Stevens & Co d..... Humboldt  
 Edwards W C d..... Hutchinson  
 Bradford McCoy & Co m and d (Quincy Ill)..... Independence  
 Culver & Rowe d..... Iola  
 Hunt E S d..... Irving  
 Rogers L F saw mill..... Island  
 Boiler H A d..... Junction City  
 Sickney A C d.....  
 Green M T d..... La Cygne  
 Bruce C & Co d..... Lawrence  
 Groves & Reddington.....  
 Lewis & Allen d.....  
 Lewis & Benson d.....  
 Simpson Bros d.....  
 Angell & Foster..... Leavenworth City  
 Chambers Bros m and d (Muscatine Ia).....  
 Colly & Beckford d.....  
 Ingersoll Jerome d.....  
 Munson & Burrows p m.....  
 Plummer & North saw mill.....  
 Spartley & Taylor saw mill.....  
 Bower & Bradshaw d..... Lenexa  
 Green & Byrne d..... Louisburg  
 Goodnow F d..... Macpherson  
 Haight & Touts d.....  
 Tyler M S d..... Manhattan  
 Richardson & Clark..... Marysville  
 Thomas R A & Co d..... Muscotah  
 Brown S A & Co d..... Neosha Falls  
 Covert Parsons & Cozine d.....  
 Muse Spivey & Co d..... Newton  
 Dorman & Gorsline d..... Olathe  
 Hardin E F & Co d.....  
 McCarthy J N d.....  
 McNabb J A d.....  
 Hunsicker Isaac K d..... Osage City  
 Gittings Louis d..... Osage Mission  
 Mills D C & Bro d..... Oswego  
 McDonald Kemper d..... Ottawa  
 Richmond Bro d..... Oxford  
 Daihl W saw mill..... Ozaukee  
 Thayer J E & Son d..... Paola  
 West A S & Son.....  
 Wallis J A d..... Parkerville  
 Calkins & Fisher d (Chicago Ill)..... Parsons  
 Mixell W d.....  
 Vinneman B & Co d.....  
 Campbell G W d..... Peabody  
 Chenault Bros d.....  
 Edwards W C & Co d..... Peace  
 Blaker & Bro d..... Pleasanton  
 Horr Henry d..... Pomona  
 Ricksecker G V d.....  
 Waterman & Hobbs d and sash doors etc..... Russell  
 Yoxall Sons & Co d.....  
 Marbough & Block d..... Sabetha  
 Turner & Sons d.....  
 McHale P H d..... St Marys  
 Eberhart & Sudendorf d..... Salina  
 Goodnow Frank d.....

Congdon W d ..... Sedgwick City  
 Burnett A H d ..... Seneca  
 Meacham J C d .....  
 Pendleton B H d ..... Solomon City  
 Rogers J C & Co d ..... Spring Hill  
 Bradford McCoy & Co m and d (Quincy Ill). Thayer  
 Reed C d ..... Topeka  
 Tipton Bros d .....  
 Wilder & Eck d .....  
 Pope Clement d ..... Troy  
 Boetcher A F & Co ..... Wamego  
 Prunty Jas L d .....  
 Hoak Thos d ..... Washington  
 Baker A M (agent for Hixon & Co Hanni-  
 bal Mo) ..... Waterville  
 Johnson & Bridges .....  
 Palmer & Orton d ..... White Cloud  
 Taylor & Ortons, saw mill .....  
 Davidson & Switzer d ..... Wichta  
 McClure W P & Co d .....  
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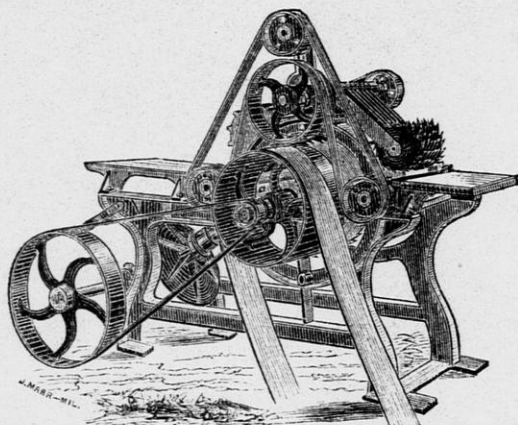
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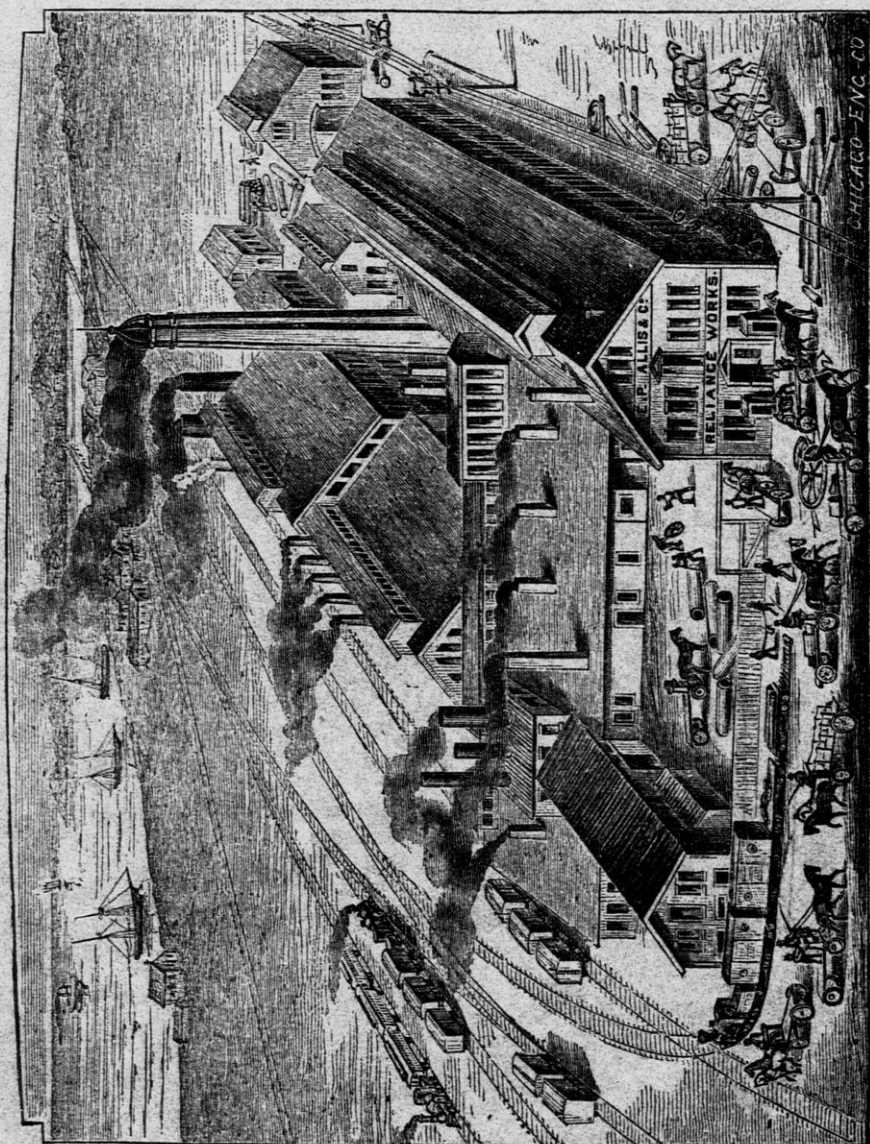
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