



PUBLISHED
SEMI-MONTHLY.

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

SUBSCRIPTION
\$2.00 PER ANNUM

VOL. 4.

PETERBOROUGH, ONT., AUGUST 1, 1884.

NO. 15.

METHODS OF SAWING TO OBTAIN THE EFFECTS OF SHRINKAGE.

Written for the Canada Lumberman.

Having shown in our previous communication the peculiar action of shrinkage in lumber seasoning; that it is a drawing together of the wood fibres, around the tree, or circumferentially, not radially, and as a consequence boards having the heart at one edge do not shrink in their widths to any appreciable degree, neither do they warp or twist, while boards cut at right angles to this direction or from the side of the log do all their shrinking in the direction of their width, and, unless prevented by mechanical means, invariably warp.

The former, or radial sawing, is technically called rift sawing. The latter, bastard sawing. What is called quarter sawing in New York market reports, in reference to oak flooring, is when the log is first quartered and then the boards sawed alternately from each side of the quarter, the nearest practicable method to true rift sawing.

The question now for consideration is: How to saw the logs in order to obtain the greatest number of boards in or approaching the radial direction. By the usual course of siding down and sawing up stock our boards are generally the reverse of this, or, as shingle makers would say, they are cut bastard. One or two boards in the centre of the stock are radial, but these bring only about 10 in. wide, and have heart in the middle, which is generally a blemish, practically leaves the whole product of the log bastard cut. If this is for rough lumber such as for barn building, sheds, packing boxes, or fencing, where we simply want the highest average widths the log will make, regardless of shrinking or warping, we have attained our object; the log is best sawn to suit the purpose; but if it is for house finishing, for which most of our good lumber is sawn, we have missed our aim. How then shall we secure it? We answer, by directly reversing the usual course in sawing: Instead of leaving as we do a 10 in. stock in the middle of the log when slabbing, suppose that we set our slabbing gang to cut three or four boards out of the middle of the log, leaving two five in. slabbed cants on each side. From the boards which are the widest the log could make we have the best possible cut up lumber for any purpose. The cants can be laid one above the other and run through the ordinary stock gang; or what would be better, to run them through a short stroke, quick revolving gang, specially constructed for that purpose. The saws need not be more than 18 gauge. From these cants we obtain the best flooring and house facings that can possibly be made from the log. By this method no true bastard boards are made, we have sawed from the centre not from the outside. The cut has been principally radial or rift instead of being principally bastard. The shrinking, warping tendency is almost wholly

disposed of, instead of being cut to allow its greatest action. The cost of production may be slightly increased, but the value of the product is much more increased.

Besides this greatly diminished tendency to warp and shrink the lumber will wear much better, or if painted and subjected to wear, or to wet dry conditions, it will retain the paint much longer. Let the reader examine any well worn floor, whether painted or bare, he will find the bastard sawn board worn down, while the radial or quarter sawed boards are high; and if he chooses to carefully observe the wearing action he will find that the continual beating of the wood by the boot heels loosens the fibre, separates the annual growths from one another, particularly where they lie flat or nearly so, to rise up and peel off. On the quarter sawed boards, where the grain of the wood is on edge, the beating action is not nearly so effective, slivers do not rise. I have seen kitchen floors that were generally good, but having a few bastard boards with the heart side up, which is the worst of all positions, for wear; I have seen them from one-half to three-quarters of an inch below the general level of the floor, with the peeling and slivering process continually going on. Painting would stop it just for a short time, then it would begin to rise up in larger patches than before making in the eyes of the tidy housewife a most abominable annoyance. I have known them to make the remark, "I wish all the boards in the floor were like those," referring to some that were quarter sawed, which retained their tight joints and smooth surfaces. If the women all fully understood the points I am now making they would beseege the architect in a body and insist that he place in the specifications for all decent houses: **ALL THE FLOORING TO BE QUARTER SAWED.** There is nothing impracticable in this, lumber can be readily manufactured as I have described: Lot logs of suitable quality and size be selected and boomed separately, then set the gangs as I have pointed out. The output may not be so large, but it would be of much greater value, and if it should fail to bring a corresponding price it will be simply because the purchasers are not yet posted as to its merits.

I have indicated pretty clearly how this rift sawed lumber can be made in gang mills. In circular mills it is not always so easily done. Ripping off heavy cants and afterwards loading them on the carriage, to be resawn into flooring, though quite practicable, is not so convenient. Besides it requires a large saw, which means a heavy gauge, with consequent waste of material to rip up large logs and saw boards out of their centre. If a top saw is employed in the usual way the situation is scarcely improved as the two cuts seldom match, the portion cut by the top saw generally requires to be edged off. But with a new improvement, which I have now ready for the

mill men the top saw is compelled to follow the cut of the lower saw, not only when it runs true, but when it deviates as it frequently does in a moderate degree. With this arrangement we can make a large reduction in the diameter of the principal saw, with a very pleasant reduction in first cost, and, of course, a considerable reduction of gauge: sufficient to obtain by the saving of material a respectable percentage of profit on the whole manufacture. If the plan of resawing the cants into flooring on the circular is considered too laborious there is another alternative: a small circular gang can be placed in the edger, if it possesses the necessary power and feed regulation, &c., &c., cants can be nicely sawed in flooring boards in it. This is no experiment. The Filer & Stowell Co., of this city, whom I have the honor to serve, make the edger which performs the duty.

Of course this method of sawing only approximates true radial or rift sawing, which is for boards of parallel section impracticable. The other method referred to at the beginning of this article called quarter sawing is also only an approximation. By this the log is first quartered, then each quarter is taken separately and sawed up, by cutting boards alternately from each of the flat faces till only a small triangular slab is left. To do this economically requires a special machine. Quarter sawed oak flooring in New York market is quoted about 30 per cent. higher than plain sawed.

For one particular purpose true radial or rift sawing is employed with excellent effect that is in making clapboards or house siding, principally for eastern markets. The original method of making these is by mounting a log four or six feet long, in centres, on a carriage which is made to travel against a thin circular saw which makes its cut directly towards but not quite to the centre. The log is then gipped and moved for the thickness of another clapboard which is similarly cut, and the process continued until cuts are made all around the log, the board being held by the thin edge at the centre. They are then pulled apart, edged and dried and afterwards planed, trimmed and bundled for the market, where they always bring prices greatly in advance of other siding, the style of sawing alone making the difference.

A lumber firm in Manistee, Michigan, H. Eaber & Sons, have been manufacturing this siding by an improved process, having a well designed special machine for the purpose, on which they hold patents in the United States and Canada. There are other firms in the same place also engaged in it. Mr. Albert Cunningham of this city also holds patents and is interested in this class of machinery, and I understand they are arranging with the Wm. Hamilton Manufacturing Company to manufacture under their Canadian patents. As is usually the case the inventor not only supplies a manifest necessity, but leads out and anticipates the

coming want and prepares to meet it, and our progressive trade journals like the CANADA LUMBERMAN announce his improvements and educate the public mind in the onward march of progress.

It is within the memory of young men when the wants of our country were supplied by the mills at the rate of one or two thousand feet per day. Now it is not uncommon to find single circular mills averaging 40 or 50 thousand per day. The progress has been nearly all in the direction of speed, and no doubt we have nearly reached the limit, and, seeing the way our growing timber vanishes, it is high time we paused and considered the question of economy of timber, as well as economy of time. The problem we now have to solve is to make first class timber out of second class logs, and to make more of it than has been heretofore made. The good lumber is often there if we only take the most and skillful way of getting out. Our methods of bastard sawing gives us the knots through all the boards. By the methods we have pointed out it is possible to get considerable good lumber between the knots; but if we cannot escape knots we can get rid of the shrinking, warping and splitting tendency which is an immense gain. Good lumber is still in good demand, it is the common grades that are flat. The object of these articles is to show how the quality may be improved, simply by a change in sawing processes. We think this is accomplished, and should be glad to hear that some of our mill men have made of it a practical demonstration.

W. H. TROUT.

Milwaukee, Wis. July 19th, 1884.

The Forestry Exhibition.

In its first notice of the International Forestry Exhibition, Edinburgh, the *Timber Trades Journal* says of the show of New Brunswick timber:—We are sorry we cannot congratulate the Government of New Brunswick on having sent a representative display, and it is much to be regretted if any false notion of economy has prevented them from voting the necessary funds to have their great forest treasures adequately shown at this important exhibition. From a chat with Mr. E. Jack, in charge of this exhibit, we gathered that the supply of let quality pine in New Brunswick is now very limited, and it is on the hardwoods, such as birch, beech, maple and ash, that his company chiefly rely. We saw some very handsome specimens of these woods, in which there ought to be a larger trade done with this country.

Good Work.

The Ontario Lumber Co.'s mill, of Midland, cut in June 1884.—24 days work,—5,520 logs, making 938,625 feet of lumber and scantling, all made with one circular saw. Also 370,000 pieces of lath.—*Midland Press.*