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SMALL SAWMILL IMPROVEMENT
PRACTICAL POINTERS TO FIELD AGENCIESSCALE BOARDS

The usual type of indicator on small mills to guide setting the log so that desired thicknesses may be cut consists of an immovable pointer fixed to the set shaft bracket or to the bolster of the headblock and a scale on the base of the sliding knee. A variant has the pointer fixed to the sliding knee and the scale on the bolster. Greater speed and accuracy can be had on such mills by installing a scale board that indicates at a glance not only the distance of the face of the knee from the saw but also the cant width required to subdivide without waste into a series of boards of a given thickness or in combinations of different thicknesses. This equipment is especially helpful on mills where the sawyer operates the networks.

Scale boards may be bought from manufacturers of small sawmills, or home-made ones may be constructed. To make a scale board use an S4S board about 9/16 inch thick by 4 feet long of any non-warping, light-colored wood. The width of the board will depend upon the number of thickness variations customarily sawed. For any series of thickness variations use a width one inch greater than the number of variations. In the sample (fig. 1A), four are indicated; so a board 5 inches wide is satisfactory. Lay off the graduations on the board as follows:

(1) About 7 inches below the top of the board draw a straight line across the face and at right angles to the edge.

(2) Draw lines parallel to the edge of the face the full length of the board at 1-inch intervals from the edge (in the sample four lines divide the face into five columns).

(3) Starting from the line 7 inches from the top, mark off one-inch intervals in the first or left-hand column.

(4) In the second column from the left, cross line the intervals for inch boards by marking the first bar the actual thickness required for the green board -- 1-1/8 inches in the example. The succeeding cross lines in this column include the required green board thickness plus saw kerf -- 1-3/8 inches in the example, based on a 1/4-inch kerf. If the kerf were 9/32 inch, these succeeding cross lines would be spaced 1-13/32 inches apart.

(5) For the other columns, follow the same procedure, namely, the first cross line marks the actual thickness desired for the green piece, and succeeding ones include the kerf thickness as well.

The sliding marker can be a metal or wood housing that fits the board without binding, yet is not so loose as to tilt. The top should lie at right

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† Maintained at Madison, Wisconsin in cooperation with the University of Wisconsin

*See outline in Small Sawmill Improvement Working Plan, March 1930, for explanation of indexing system proposed

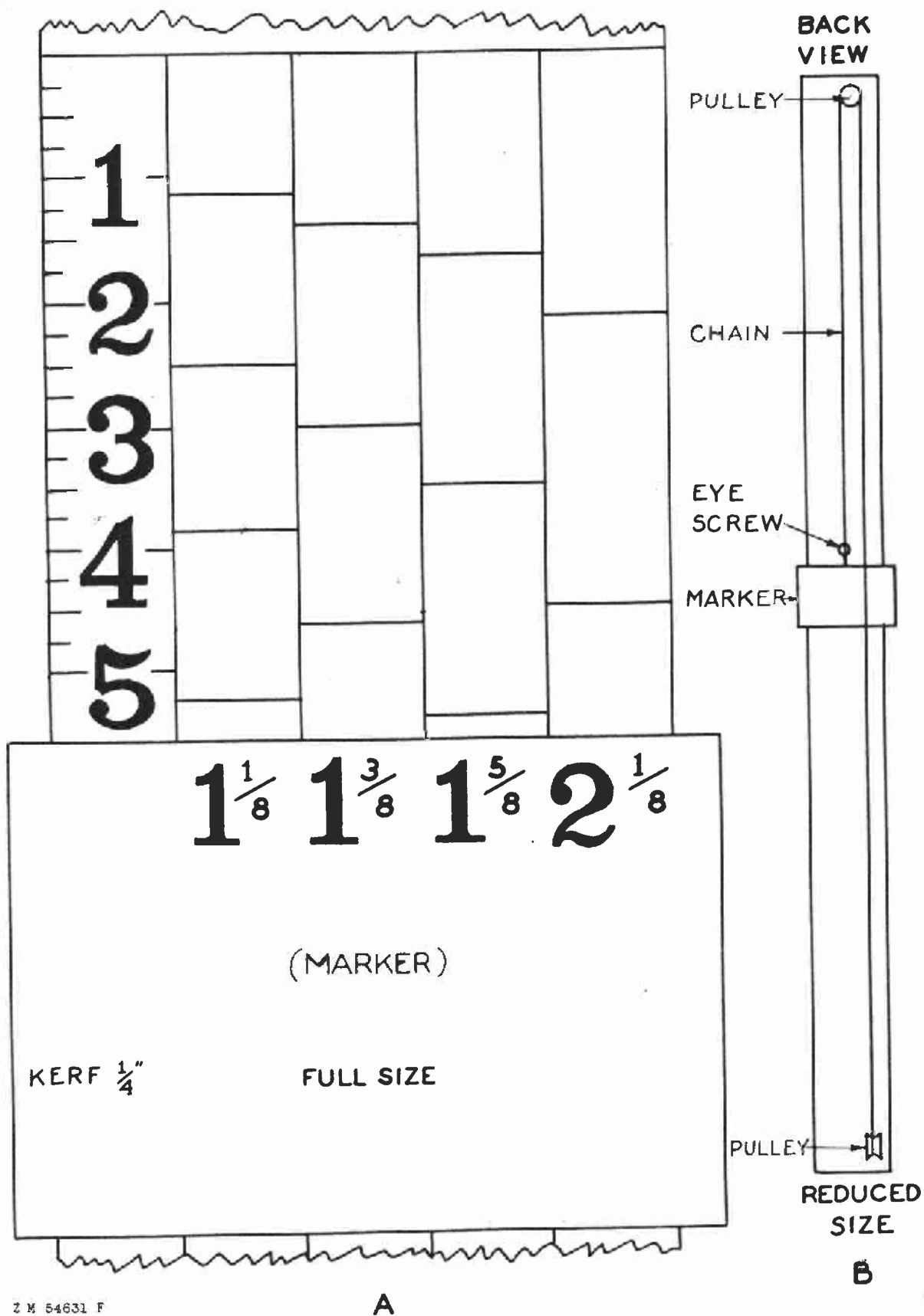
angles to the edge of the graduated scale board. It should have sufficient weight to hold the small chain taut (fig. 1B). At the top edge, divide the face of the marker into columns corresponding to those on the board and paint in the actual board thickness represented for each column (1-1/8", 1-3/8", 1-5/8", 2-1/8" in the example).

Anchor the board firmly to the bed of the carriage in position where it can be conveniently read, usually between the networks and the front head-block and anchored to the longitudinal bed piece of the carriage that is the farthest from the sawyer. It must be rigidly fixed. Attach a light chain to an eye screw centered in the back of the marker, pass it over a small pulley at the top of the board and the one near the bottom (fig. 1B) through the hole in the board, and fix it to the base of the sliding member of the head-block near the front, so that when the face of the knee is 1 inch from the saw line and the chain is taut the marker hangs at the 1-inch bar shown in the left-hand column of the board.

For mills cutting box lumber from small logs (12 inches d.i.b. or less) to get complete utilization where markets take thicknesses of 4/4", 5/4", 6/4", and 8/4", a table showing thickness combinations that give complete utilization by 1/4-inch intervals can be added to the marker. This enables the sawyer to slab to his minimum at two opposite faces, and, as he continues to "live saw" to determine the combinations of thicknesses he can cut from the cant without waste by referring to the table (table 1).

Table 1.--Thickness combinations that give complete utilization by 1/4-inch intervals. Kerf assumed to be 1/4 inch

Distance : from : saw line :	Thickness combinations	
	(1)	(2)
Inches :	Inches	Inches
2-1/2 :	1-1/8-1-1/8	:
2-3/4 :	1-1/8-1-3/8	:
3 :	1-3/8-1-3/8	: 1-1/8-1-5/8
3-1/4 :	1-3/8-1-5/8	:
3-1/2 :	1-5/8-1-5/8	: 1-1/8-2-1/8
3-3/4 :	1-3/8-2-1/8	:
4 :	1-1/8-1-1/8-1-1/8	: 1-5/8-2-1/8
4-1/2 :	2-1/8-2-1/8	:
:	:	:



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Figure 1.--Scale board