

(No Model.)

3 Sheets—Sheet 1.

M. A. DEES.
MACHINE FOR SAWING LOGS.

No. 555,037.

Patented Feb. 18, 1896.

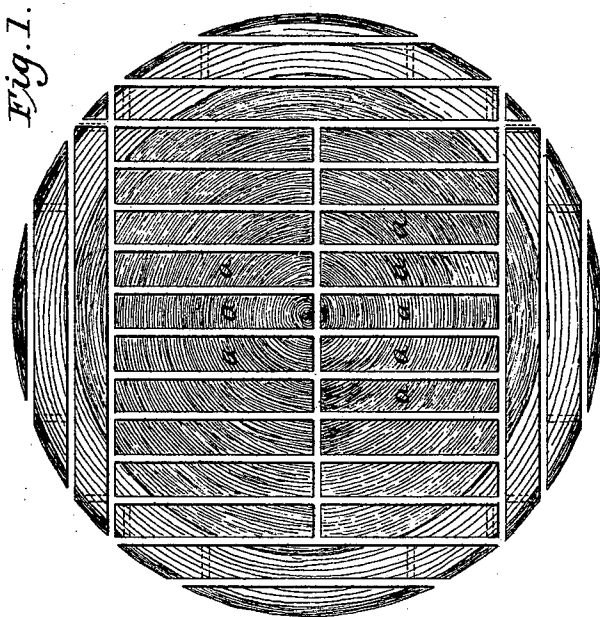
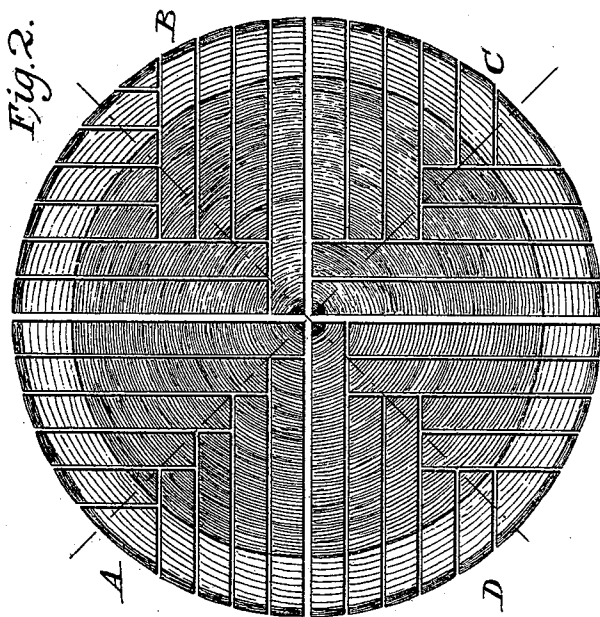
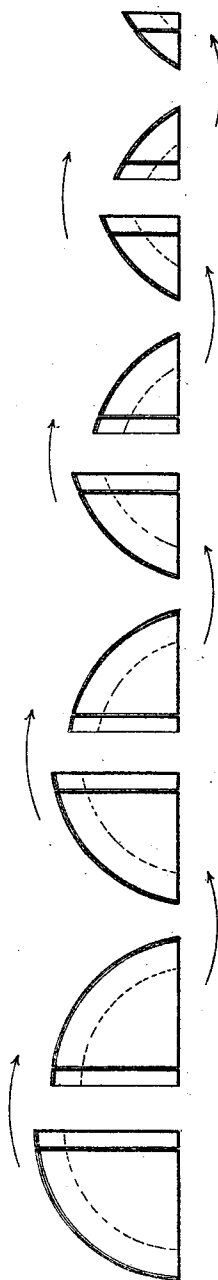


Fig. 3.



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W. W. Hollingsworth

Inventor:

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by J. W. Howard
att'y.

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Fig. 4

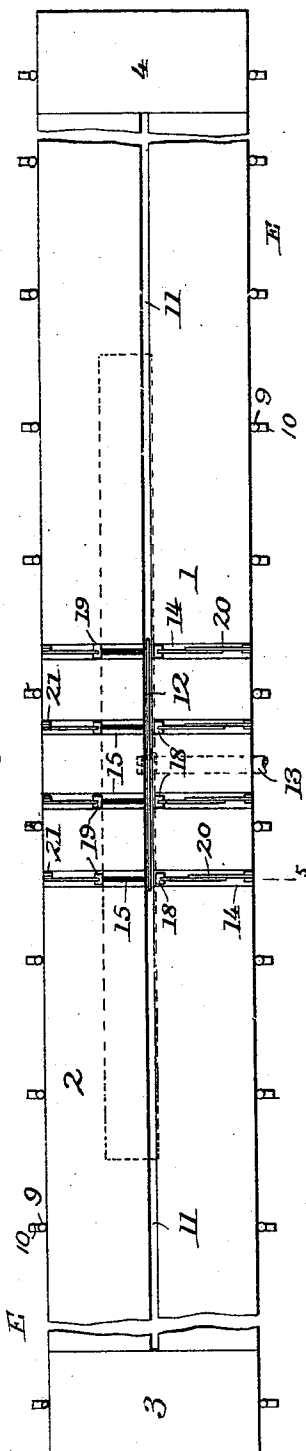
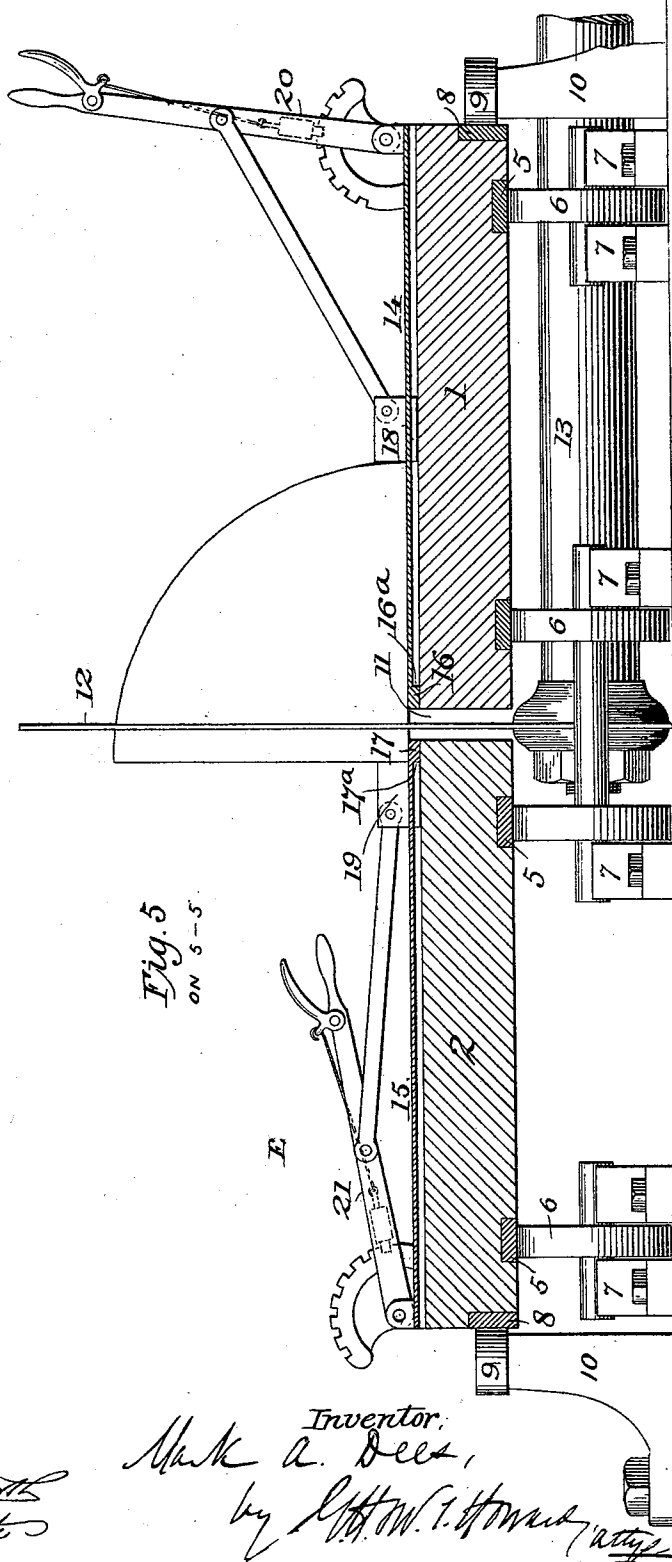


Fig. 5
ON 5-5



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Fig. 8.

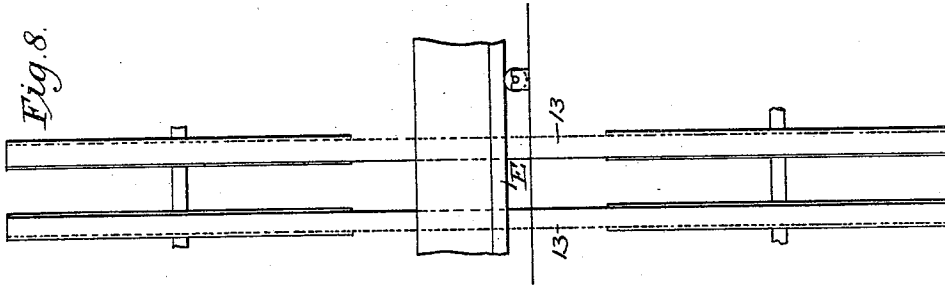


Fig. 7.

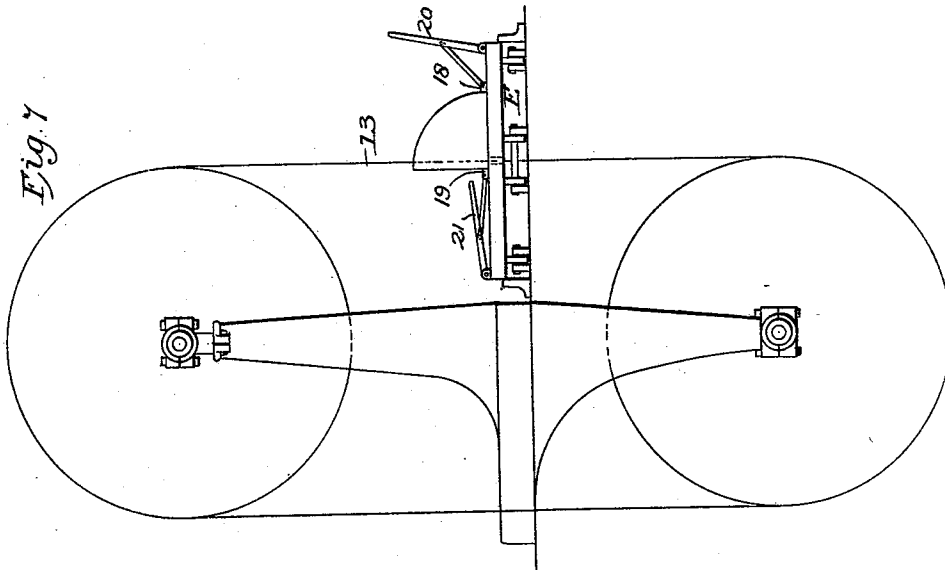
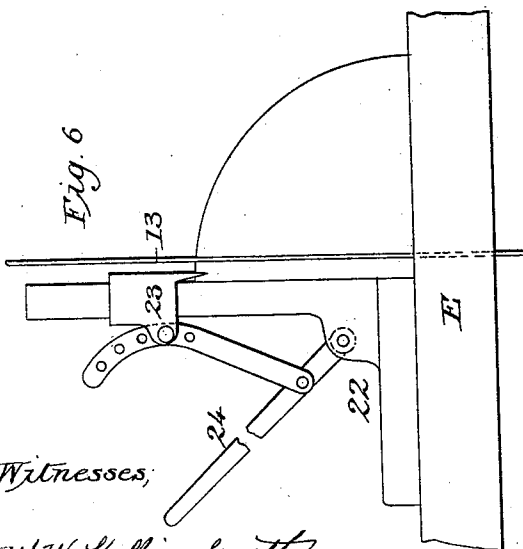


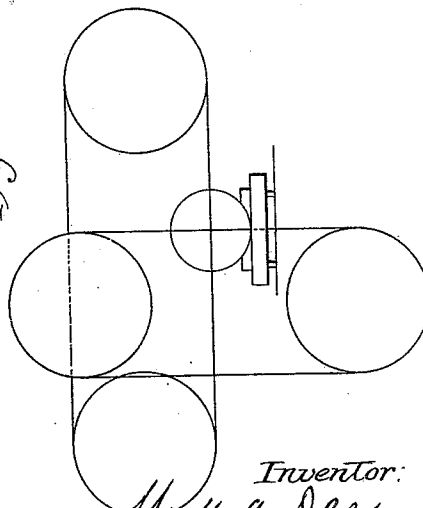
Fig. 6.



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Fig. 9.



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UNITED STATES PATENT OFFICE.

MARK A. DEES, OF MOSS POINT, MISSISSIPPI, ASSIGNOR TO GEORGE H. HOWARD, OF WASHINGTON, DISTRICT OF COLUMBIA, AND ANNIE S. DEES, AGENT AND TRUSTEE.

MACHINE FOR SAWING LOGS.

SPECIFICATION forming part of Letters Patent No. 555,037, dated February 18, 1896.

Application filed May 22, 1895. Serial No. 550,203. (No model.)

To all whom it may concern:

Be it known that I, MARK A. DEES, of Moss Point, in the county of Jackson and State of Mississippi, have invented certain new and useful Improvements in Machines for Sawing Logs, of which the following is a full, clear, and exact specification.

The object of my invention is to saw logs in such way that the entire product is rift-lumber and at the same time reduce the percentage of loss to the minimum. This I do by first quartering the log in any well-known manner, then cutting each quarter into plank by primarily taking a cut from one flat side, reversing the quarter and taking another cut from the other side, and continuing in this way until the entire quarter has been cut up. I use a carriage for cutting the quarters into "rift" that accurately gages the cut and allows the quarter to be easily turned from one straight side to the other.

In the drawings, Figure 1 represents the present method of sawing a log for rift-lumber. Fig. 2 indicates the four quarters of one log, each quarter showing a difference in the mode of cutting. Fig. 3 gives diagrammatic views of a quarter-log, showing the method of sawing. Fig. 4 is a top or plan view of my improved double carriage for sawing quarter-logs into rift-lumber by means of a circular saw. Fig. 5 is a cross-section on the line 5 5. Fig. 6 is a view of one form of head-block and dog which may be used on my carriage. Fig. 7 is a diagram of my double carriage applied to a band-saw. Fig. 8 is a front view of the same with two saws for cutting in opposite directions. Fig. 9 represents in diagram a double-band-saw mill which may be used for quartering a log.

Rift-lumber—that is, lumber in which the grain runs at an angle of not less than forty-five degrees to the side of the plank when viewed from the end—is always the most valuable obtainable from the log, and therefore it has been the desire of all saw-mill operators and lumber-dealers to produce as much from the log as possible. Various methods have been devised to this end, some producing fifty per cent., some sixty per cent., and others as high as seventy-five per cent.

Under my method the entire product of the log is strictly rift-lumber, as will be seen by referring to Fig. 2. Instead of taking a slab and one or two boards from four sides of the log, thus squaring it, as shown in Fig. 1, and thereafter cutting this square into planking, each cut gradually approaching the center of the log, I first quarter the log in any well-known manner on an ordinary sawmill. Each quarter is then placed on my double carriage (shown in Figs. 4 and 5) with one flat side down—say on the right-hand carriage. A cut is then taken off the desired thickness from the vertical standing edge. The quarter is then turned over on the left-hand carriage, so that the vertical side becomes the horizontal and the horizontal side becomes the vertical. Another cut is taken from the now vertical side and the log turned again. This turning is repeated until the quarter is entirely cut up, as shown in Fig. 3. By my method of sawing I greatly lessen the waste by using a much thinner saw in cutting up the quarters than is used to quarter the log. In the old methods the same saw is used to cut up the entire log. As by my method of sawing the logs are not slabbed before cutting into plank, another great saving is made by turning the outer or bark edge of each plank on an "edging-machine," which at once cuts it to the desired width.

In Fig. 2 the quarter A is cut by the method above described of alternately turning the quarter after each cut. I can vary this in several ways without departing from the spirit of my invention, as shown in the quarters B, C, and D. In the quarter B a cut is made, the log is then turned and two cuts are made; another turn and three cuts are made; and a third turn is made, and four cuts entirely reduce the quarter. In the quarter C, first two cuts are made; it is then turned and three cuts are taken off; it is again turned and two cuts are removed, and a final turning and two cuts finish the quarter. In the quarter D one cut is made. After that two planks are cut off after each turn until the quarter is finished.

It is to be observed that a line drawn through each quarter (see Fig. 2) at an angle

of forty-five degrees with the outer edge of the quarter will pass through, or very near, the edges of each plank, and as the grain runs practically at right angles to this line at the edges of the plank rift lumber is produced from the entire quarter. By the old method of sawing only the planks marked *a*, Fig. 1, are classed as rift.

It has been observed that nine-tenths of the defects of timber begin at the center of the log and decrease toward the outside. It is a great advantage, therefore, to get at the center at once, that the character of the timber may be judged before cutting. It is also desirable before taking off a plank to see the side of that plank next toward the center, which can only be done under my improved method.

Again, a large majority of logs have knots. By my method a knot of two inches diameter may be gotten rid of in sawing out two one-inch planks, while in flat sawing it would appear in half the planks sawed.

In carrying out my method of sawing I make use of a carriage E, substantially such as is shown in Figs. 4 and 5. It consists, practically, of two carriages 1 and 2 united by end pieces 3 and 4. Secured to the bottom of the carriages 1 and 2 and running from end to end thereof are flat metal strips or tracks 5, which run on supporting-rollers 6 journaled in bearings 7 secured to the floor of the mill. As the double carriage is moved back and forth by any well-known means, the rollers 6 give it support and an easy movement, as usual. I prefer for various reasons to mount the track on the carriage and the rollers on the floor, instead of in the reverse or usual manner. Rollers 9, mounted on supports 10, which bear against strips 8, guide and keep the carriage in alignment. The rollers 9, if desired, may be omitted and the support itself caused to bear against the strip 8. Between the carriages 1 and 2 a narrow space 11 extends from one end to the other, through which the saw 12 passes. The saw is mounted on a shaft 13, which runs in bearings, all in the ordinary manner.

Upon the top of the carriages 1 and 2 are mounted, respectively, at suitable distances apart, guides 14 and 15, having stops 16 and 17 at their inner ends, as shown in Fig. 5. Gages 18 and 19 are mounted on the guides 14 and 15, and are moved back and forth thereon by means of connecting-links pivoted to the gages and to levers 20 and 21, having their fulcrums in suitable bearings secured to the outer edges of the double carriage E. As the levers are rocked on their pivots, the gages 18 and 19 slide back and forth on the guides 14 and 15, their inward movement being limited by the stops 16 and 17.

The double carriage E being at the end of its backward movement, the operation is as follows: A log having been quartered on another sawmill, one quarter is placed upon the

carriage 1 in the position shown in Fig. 5. The gages 19 having been moved inward against the stops 17 by means of lever 21 and locked in position, the quarter-log is then brought up against said gages and the levers 20 are then moved inward, causing the gages 18, connected thereto, to bear against the lower edge of the quarter-log, forcing it up to the gages 19. The log is then secured by suitable dogs and a plank sawed off by the forward movement of the carriage E. When the double carriage E returns, the quarter-log is turned over onto carriage 2, the gages 19 having been previously moved outward. The gages 18 are then moved inward to the stops 16, and the quarter-log is pressed against the gages 18. The gages 19 are then pressed against the lower outer edge of the log, and a plank is taken off at a right angle to the first plank. This action is continued until the quarter has been wholly cut into planks. This method may be varied by taking off two or more planks from one side or the other before turning, as heretofore described.

The stops 16 and 17 are of such width laterally that the distance between the edges 16^a or 17^a and the saw is equal to the thickness of the plank desired. It will thus be seen that all the planks sawed will be of equal thickness.

Fig. 6 shows one form of head-block and dog which may be employed with my carriage. After the quarter-log has been placed in proper position by the gages the head-blocks 22 are moved inward until the vertical face bears against the vertical face of the quarter. A dog 23, connected by a link to a lever 24, is forced into the wood, securing it with the desired firmness.

It is desirable at times to use a band-saw, as shown in Fig. 7, instead of a circular saw to cut up the lumber, one advantage being that the thinness of the band-saw makes a small kerf. There are other reasons, well known to sawmill-operators, why a band-saw is preferable to a circular saw.

In Fig. 8 is shown a band-saw mill with two saws faced in opposite directions, so that when a cut is made the quarter is turned immediately and another cut taken off on the return movement, thus increasing the capacity of the mill.

Fig. 9 shows two band-saws placed at a right angle to quarter the log at one operation, the horizontal saw being placed about a foot in front of the vertical one.

Having described my invention, I claim—

1. In a sawmill, the combination of two carriages on opposite sides of the saw and rigidly secured together; gages on both carriages; stops to regulate the inward movement of the gages, and means for operating the gages, substantially as described.

2. In a sawmill, the combination of two carriages on opposite sides of the saw and rigidly secured together; tracks on the under side of

the carriages; rollers journaled to the floor for supporting the carriage, and bearings on the outside of the carriages, substantially as described.

5 3. In a sawmill-carriage, consisting of two parts with the saw between them, the combination of a gage or gages on one part capable of a predetermined movement toward the saw and an indefinite movement away from
10 the saw, and a similar gage or gages on the other part, substantially as described.

4. The combination of a sawmill-carriage, consisting of two like parts firmly united together with a space between them for a saw,

similar gages on both parts having a definite inward movement and an indefinite outward movement, and means for moving them in either direction; whereby the material to be cut, supported on one part, is measured by the gage or gages on the other part, substantially as described. 15 20

In testimony whereof I hereto set my hand and seal.

MARK A. DEES. [L. S.]

Witnesses:

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ANNIE S. DEES.