

No. 678,658.

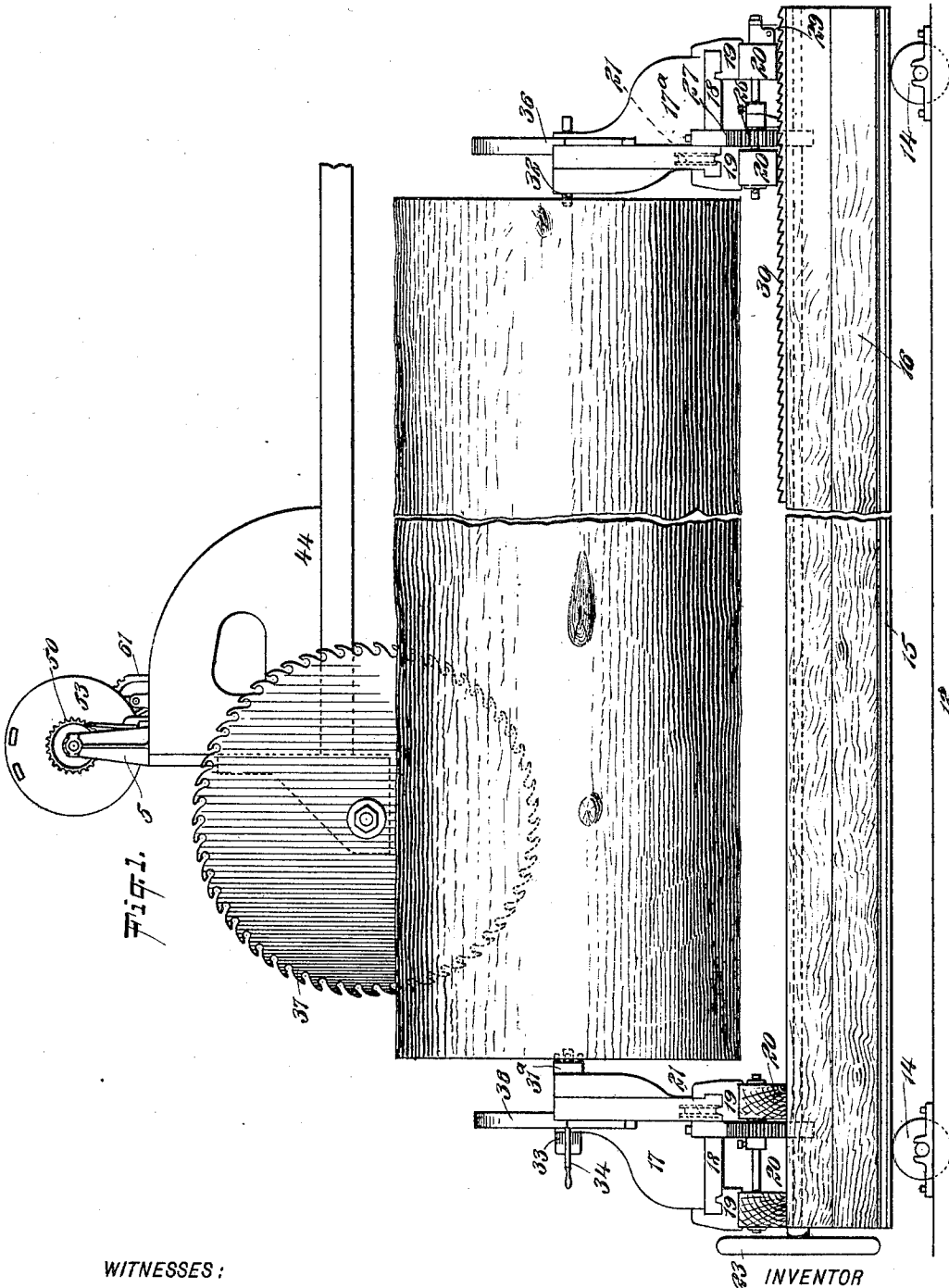
Patented July 16, 1901.

J. L. GRANT.
SAWMILL.

(No Model.)

(Application filed Aug. 17, 1900.)

4 Sheets—Sheet 1.



WITNESSES:

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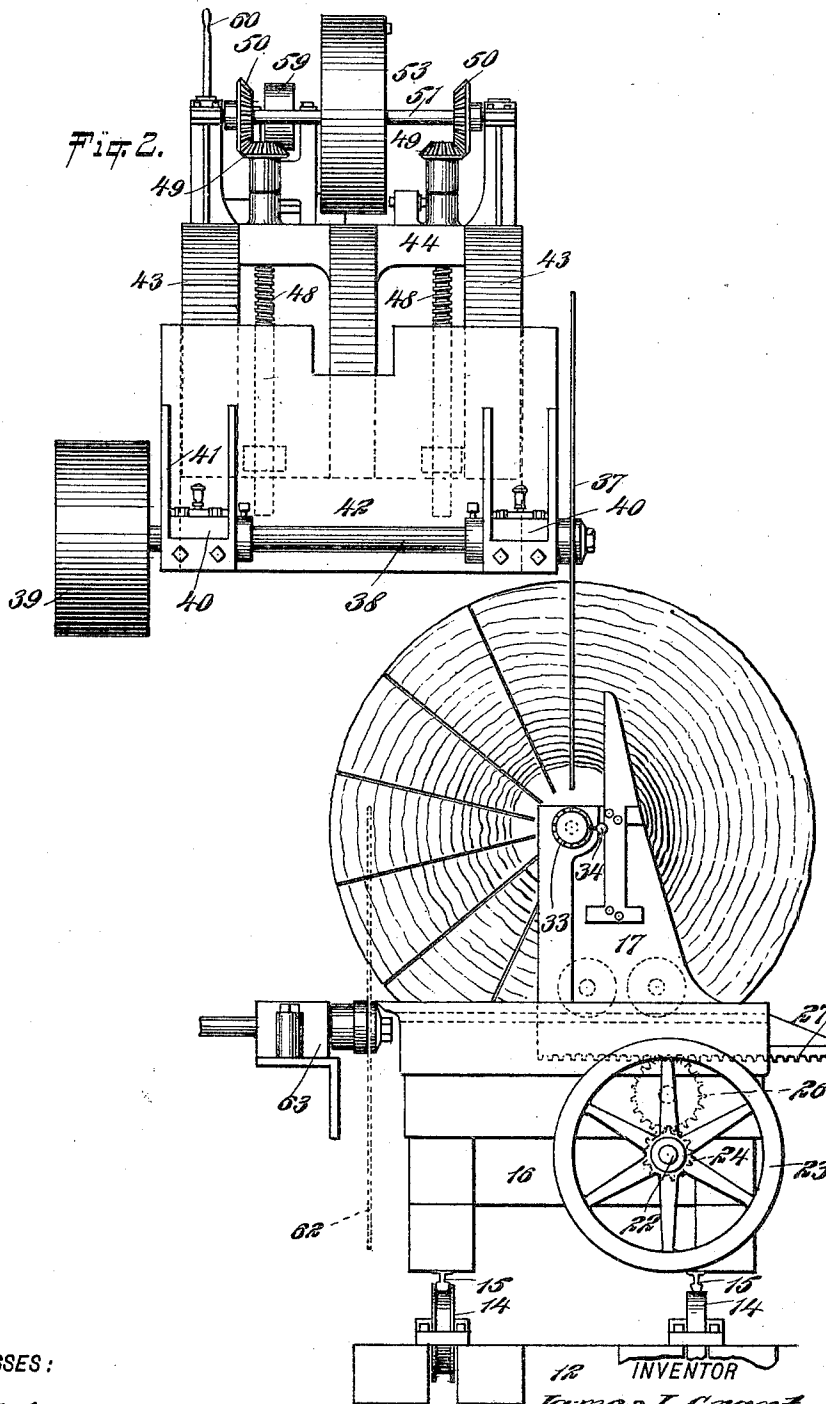
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4 Sheets—Sheet 2.



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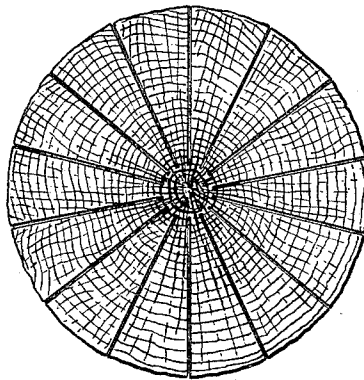
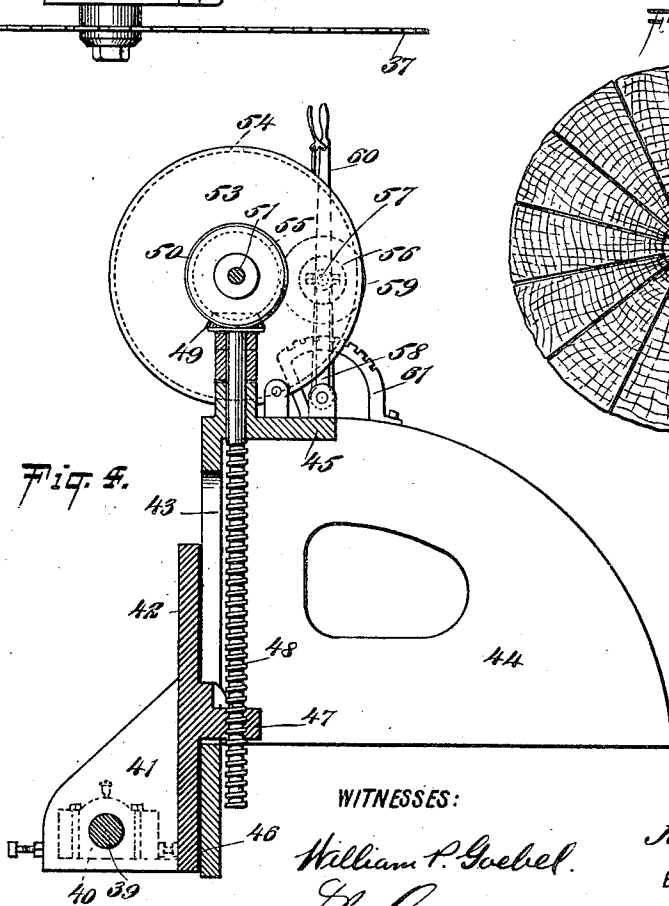
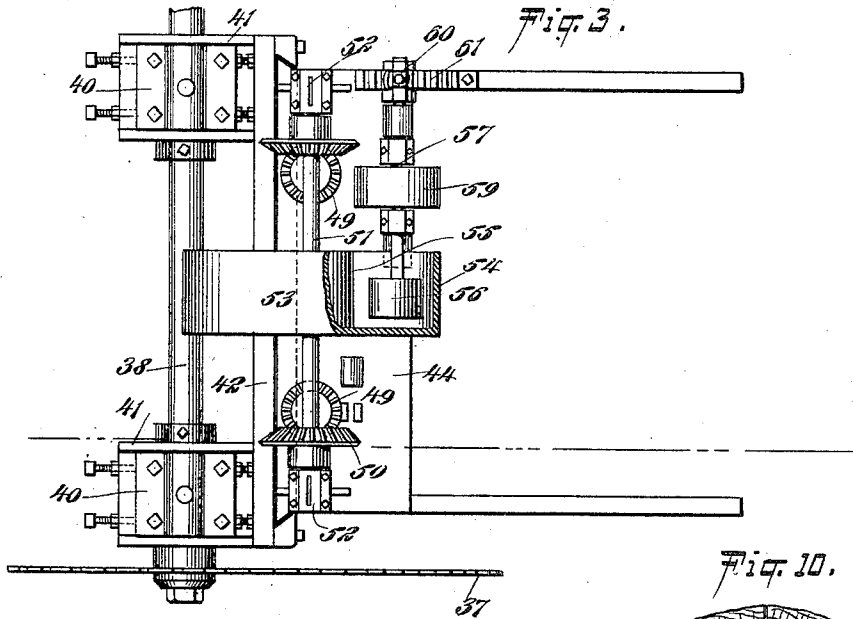
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4 Sheets—Sheet 3.



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SAWMILL.

(No Model.)

Application filed Aug. 17, 1900.)

4 Sheets—Sheet 4.

Fig. 5.

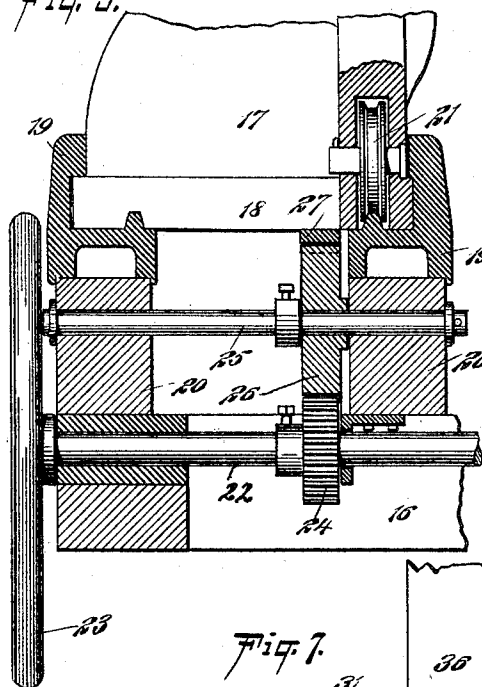


Fig. 6.

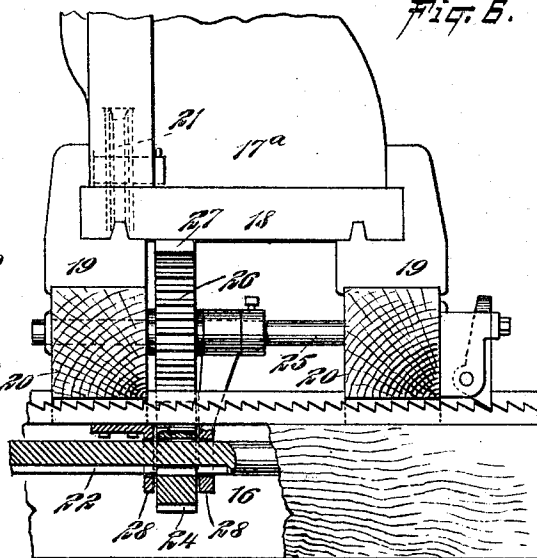


Fig. 7.

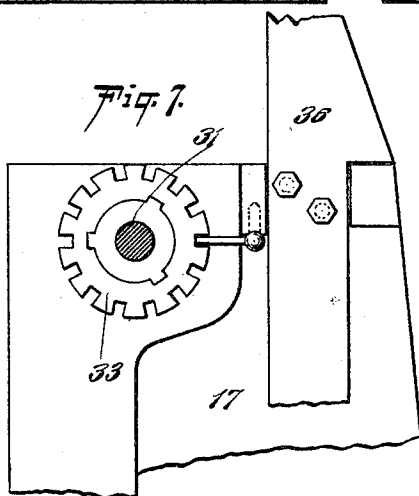


Fig. 8.

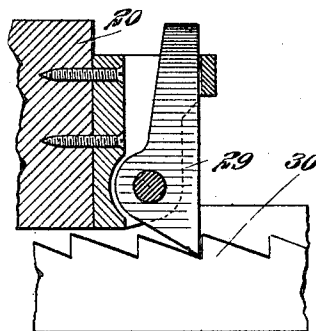
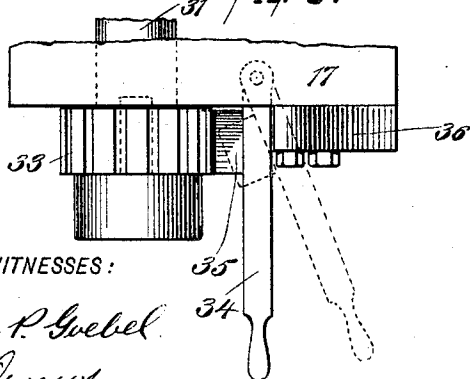


Fig. 9.



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UNITED STATES PATENT OFFICE.

JAMES L. GRANT, OF JOHNSON CITY, TENNESSEE.

SAWMILL.

SPECIFICATION forming part of Letters Patent No. 678,658, dated July 16, 1901.

Application filed August 17, 1900. Serial No. 27,176. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. GRANT, a citizen of the United States, and a resident of Johnson City, in the county of Washington and State of Tennessee, have invented a new and Improved Sawmill, of which the following is a full, clear, and exact description.

The purpose of this invention is to provide a sawmill by means of which quarter-sawed wood may be more effectively produced, to which end I employ a carriage on which a log is held to turn around its longitudinal center and a saw arranged to form radial cuts in the log from the outer surface thereof to a point near its center. With this machine a log may be sawed into fourteen sector-like sections, and by subsequently cutting these up into planks every plank produced will be full broad-figure quarter-sawed.

This specification is the disclosure of one form of the invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the machine. Fig. 2 is a front elevation thereof. Fig. 3 is a plan view of the framing on which the saw is carried. Fig. 4 is a side view of the same. Fig. 5 is a sectional view showing the means for mounting the head-block at the front end of the machine. Fig. 6 is a fragmentary elevation of the means for carrying the head-block at the rear of the machine. Fig. 7 is a fragmentary front view of the front head-block, showing particularly the device for holding the log in the various positions. Fig. 8 is a plan view of the device shown in Fig. 7. Fig. 9 is a detail view of the pawl on the rear head-block; and Fig. 10 is a view illustrating the manner of sawing the log.

The machine is provided with a bed, which is indicated at 12 in Figs. 1 and 2. This bed carries wheels 14, on which the rails 15 of the carriage 16 run. The carriage mounts a front head-block 17 and a rear head-block 17^a, which are duplicates in construction and which are provided with bases 18, sliding on guides 19. The guides 19 are fastened on

foundation-beams 20, which are mounted on the carriage proper. The bases 18 of the head-blocks slide transversely of the carriage, and for relieving the friction of the head-blocks I provide carrying-wheels 21, which are mounted in the head-blocks and run on ribs formed on one of the guides 19 of each head-block. For the purpose of moving the head-blocks on the carriage I provide a shaft 22, mounted in the carriage and running longitudinally thereof. The front end of the shaft 22 is provided with a hand-wheel 23, and at each head-block the shaft 22 carries a pinion 24, the pinions turning with the shafts. Mounted loosely on shafts 25, carried longitudinally of the carriage, and respectively in the pairs of the foundation-beams 20 of the head-blocks are spur-gears 26. These gears mesh with racks 27, fastened to the under sides of the bases 18 of the head-blocks and moving therewith, and are driven by the pinions 24. Revolution of the shaft 22 will cause the gears 26 to be revolved on their shafts 25, and by these means the head-blocks may be moved from one side to the other, said movement being in unison, as will be understood. The foundation-beams 20 of the front head-block (see Fig. 5 and the left-hand end of Fig. 1) are fastened to the carriage, but the foundation-beams 20 of the rear head-block (see Fig. 6 and the right-hand end of Fig. 1) are mounted on the carriage 16 to move longitudinally thereof, so as to carry with them the left-hand head-block 17^a and the attached parts thereof. For facilitating this movement the pinion 24 of the left-hand head-block is splined on the shaft 22 and is held in proper position with respect to the corresponding gear 26 by means of arms 28, attached one to the adjacent beam 20 and the other carried loosely on the adjacent shaft 25. By moving the rear head-block 17^a toward and from the front head-block the machine may be adjusted to the length of the log to be sawed, and for holding the rear head-block in the proper position I provide a pawl 29, which is fastened to the rearmost beam 20, as best shown in Fig. 9, and which works with a ratchet-plate 30, fastened to the carriage.

The front head-block is provided with a

shaft 31, disposed longitudinally of the carriage and mounted loosely in the upper part of the head-block, the shaft carrying at its rear end a head 31^a, provided with a number of prongs adapted to engage in the end of the log, so as to hold the log, as shown in Fig. 1, and so also as to permit the log to be turned around its longitudinal axis. The rear head-block is provided with a center pin 32, with which the other end of the log is engaged. The shaft 31 at the front head-block extends through the same to the front and is provided with a notched wheel 33, preferably formed with fourteen notches, and working with this wheel is a pivoted arm 34, provided with a plate 35, adapted to engage in the notches of the wheel 33, so as to hold the same in any one of fourteen positions. The log is placed in the machine, as indicated in Figs. 1 and 2, and as it is sawed in the manner before explained the log is turned around the centers of the parts 32 and 31, and it is held in the various positions by the stop device 34 35. I provide each head-block with a head-block extension 36, which extensions are fastened to the head-blocks, as shown in Figs. 2 and 7, and extend upward therefrom, so that timber may be placed on top of the head-blocks and against the extensions. Any suitable dogging mechanism (not shown) may be used to hold the timber in place. After the log has been cut into sectors, as explained, the log is broken up and each sector is placed on top of the head-blocks with one face flat against the extensions 36. It is then cut by the saw 37 into planks, which are taken alternately from the radial faces of the sectors of timber, thus producing the quartered effects explained.

The saw 37 is of a circular type and is carried on a shaft 38, which is driven by a belt passing over a pulley 39 from any suitable source of power. The shaft 38 is mounted in boxes 40, which are adjustable transversely of the shaft in brackets 41, carried on a slide 42. This slide 42 is held to move vertically on guides 43, which are carried rigidly by a frame 44, suitably sustained in the position shown in Figs. 1 and 2. This frame 44 comprises a top 45, and it also comprises a skirt-like member 46 at the lower part of its front end, which serves to limit the downward movement of the slide 42. The slide 42 has two internally-threaded lugs 47 formed thereon, in which work screws 48. These screws are mounted to turn in bearings formed in the top 45 of the frame 44, and at their upper ends bevel gear-wheels 49 are fastened. These gear-wheels 49 are meshed with corresponding gears 50, fastened to a shaft 51, which is mounted to turn in boxes 52, mounted on the top 45 of the frame 44. A friction-wheel 53 is fastened to the shaft 51 and comprises a rim 54 and a hub 55, which are adapted to be engaged by a

friction-wheel 56, fast on a shaft 57, carried revolubly in a swinging arm 58, pivoted to the top 45 of the frame 44. The friction-wheel 56 is arranged between the rim 54 and hub 55, and upon swinging the arm 58 the wheel 56 may be made to engage either the rim or the hub of the wheel 53, so that movement of the shaft 57 may be transmitted to the shaft 51 in either direction, causing it to turn the screws 48, so as to move the slide 42 up or down, as desired. By these means the saw 37 may be adjusted toward or from the center of the log, and thus made to cut any desired distance from the axial center of the log, and the machine may also be adjusted to the size of the log operated on. The shaft 57 is furnished with a band-pulley 59, adapted to have a continuously-moving belt run thereover. A hand-lever 60 is fastened to the pivot of the arm 58 and provided with a pawl working with a quadrant 61, fastened to the frame 44. By means of this hand-lever the arm 58 may be thrown to drive the shaft 51 in either direction desired or to hold the friction-wheel 56 in a neutral position. In connection with this apparatus a saw (indicated by the dotted lines 62 in Fig. 2) may be used, such saw being similar to that usually employed in saw-mills. This saw 62 may be carried on any suitable mechanism, part of which is indicated at 63 in the figure referred to. When working with this saw, the timber is placed against the main head-blocks 17 and is held by suitable dogging mechanism, (not shown,) which coacts with the main head-blocks in the usual manner.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A sawmill, having main head-blocks, means carried by the main head-blocks for holding a log to turn around its longitudinal axis, a saw juxtaposed to the main head-blocks and disposed radially of the center of said log-holding means, and head-block extensions carried on the main head-blocks and arranged alongside the saw in approximate parallelism to the plane thereof, for the purpose specified.

2. A sawmill, having main head-blocks, means carried by the main head-blocks for holding a log to turn around its longitudinal axis, a saw juxtaposed to the main head-blocks and arranged above the same, and head-block extensions carried on the main head-blocks and rising therefrom, the head-block extensions being arranged alongside of the saw, for the purpose specified.

3. In a sawmill, the combination with the framing, of a carriage, two head-blocks mounted on the carriage and adapted to carry the log, means for simultaneously adjusting the head-blocks transversely on the carriage, head-block extensions carried on the main head-blocks and rising therefrom, a slide

mounted on the framing above the head-
blocks, a saw supported on the slide, means
forming a connection between the slide and
framing to operate the former, and driving
5 gearing mounted on the framing and serving
to drive said means.

In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

JAMES L. GRANT.

Witnesses:

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FROY W. DULANEY.