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G. B. MILLER.
GANG SAW FOR MANUFACTURING LUMBER.

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2 SHEETS—SHEET 1.

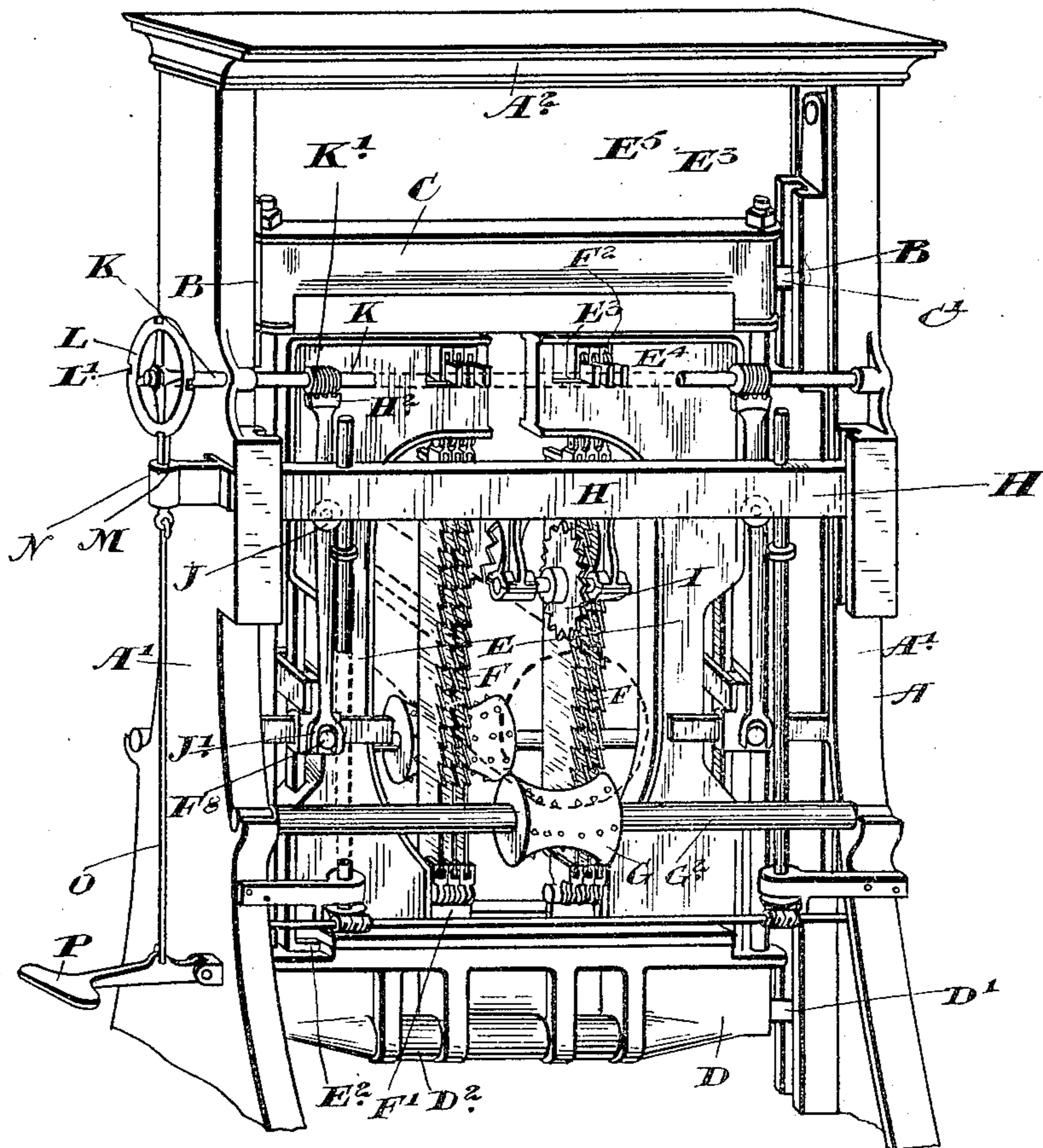


Fig. 1

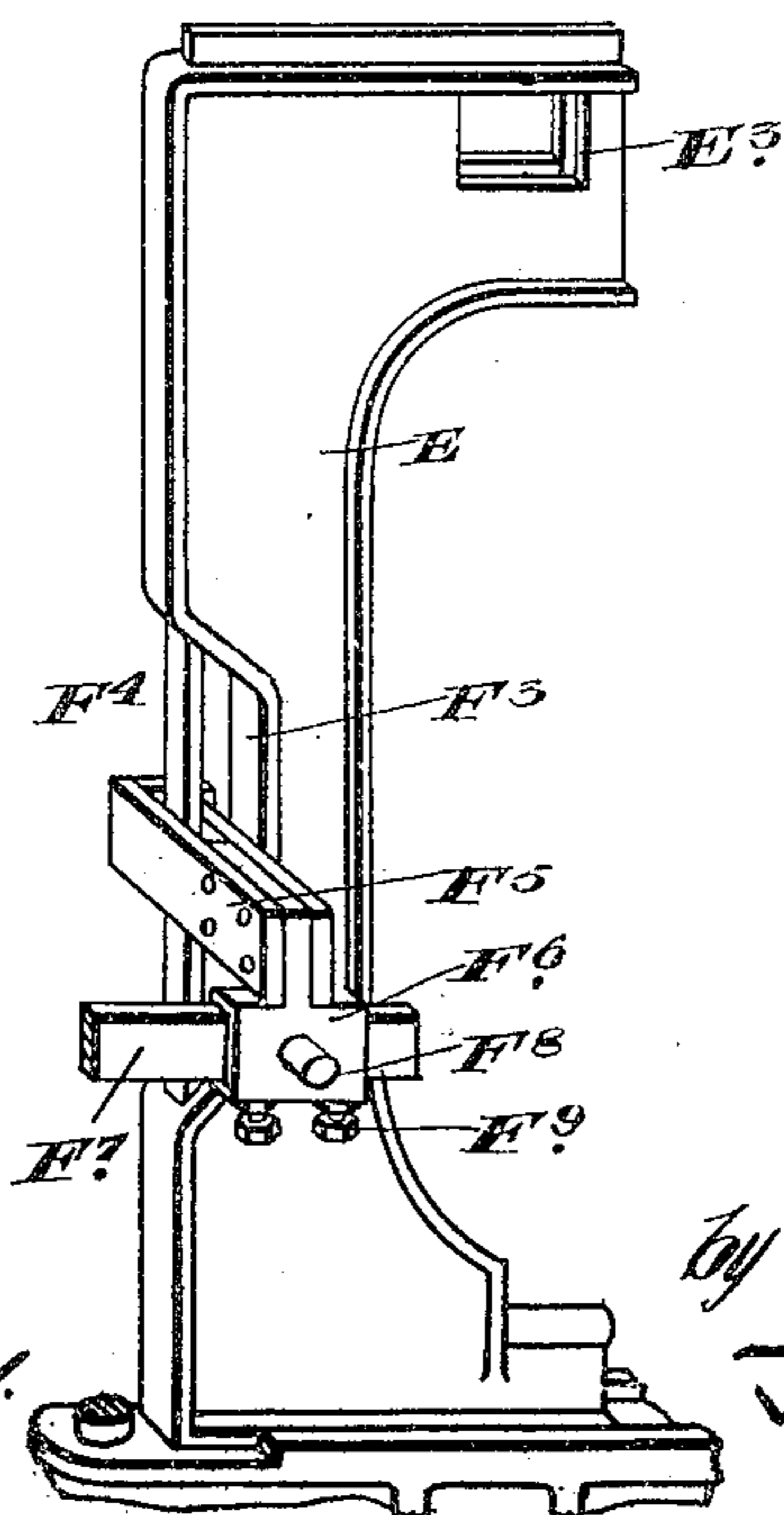


Fig. 2.

Witnesses.

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GEORGE BLAIR MILLER, OF PARRY SOUND, CANADA.

GANG-SAW FOR MANUFACTURING LUMBER.

No. 808,671.

Specification of Letters Patent.

Patented Jan. 2, 1906.

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To all whom it may concern:

Be it known that I, GEORGE BLAIR MILLER, of the town of Parry Sound, in the district of Parry Sound, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Gang-Saws for Manufacturing Lumber, of which the following is a specification.

My invention relates to improvements in gang-saws for manufacturing lumber; and the object of the invention is to devise an efficient, strong, and durable means for holding and adjusting the two sets of saws forming the gang to and from each other to operate on different sizes of logs without stopping the movement of the gangs; and it consists, essentially, of a suitable frame, a sash or gate vertically movable therein, two harps located opposite each other and in suitable guideways in the top and bottom rails of the sash or gate and each carrying a set of saws, a bar located outside of each harp, a straddle-bracket surrounding each bar, laterally-extending guide-bars for the straddle-bracket secured to the standard, a lever pivoted on each side within the press-roll-supporting bar and pivotally connected at the lower end to the straddle-brackets and having a worm-rack on the upper end, and a cross-shaft provided with a worm to engage with each worm-rack and a hand-wheel on the end thereof provided with notches, and a spring-actuated plunger and foot-lever control for the same, the parts being otherwise constructed and arranged in detail as hereinafter more particularly explained.

Figure 1 is a perspective view of a gang-saw machine, showing my improvements. Fig. 2 is an enlarged detail of the bar, showing the connection thereto for laterally adjusting the same. Fig. 3 is a vertical section through the machine. Fig. 4 is a sectional detail of one of the lower feed-rolls.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the frame of the machine, consisting of the standards A' and cross-head A².

B B are guides secured on each side and located within the frame.

C is the head, and D the foot, of the sash or gate, the lugs C' and D' of which extend into

the guideways B, so as to hold the gate in position during upward and downward movement. The gate is driven in the usual manner by means of a pitman, which is connected to the driving-shaft and to the rollers D² on the bottom rail of the gate.

E represents the two harps located one on each side of the lateral center of the machine. The harps E E are provided with top tongues E' E', fitting in a corresponding guideway suitably formed in the top rail, and the harps E are also provided with a substantially T-shaped tongue E² at the bottom, fitting within a corresponding guideway suitably formed so as to retain the tongue in place. I do not describe the particular means of forming these guideways, as there are various mechanical ways of doing the same which would be suitable.

F F are the two sets of saws forming the gang, such saws being suitably carried on the studs F' F' at the bottom, forming part of the harps, and extending through slotted holes E¹² in the top portion of the harps into the openings E³, such saws being secured in position by the keys E⁴, extending through slots F² in the upper ends of the saws.

G G are supporting-rolls for the log, which have a concaved periphery, as indicated, and which are provided with gripping-spikes G', suitably screwed into the rolls, in order to grip the log and hold it in position progressively as it is being fed. The rolls G G are secured on the shafts G² G², which are journaled in suitable bearings in the standards, as indicated.

H represents the bars which support the toothed pressure rolls or wheels I, such bars being located in suitable guideways and being vertically adjustable by a means which it is not necessary here to describe, as it forms no part of my invention.

It will be noticed that the harps E E are so formed as to provide openings, within which the sets of saws F F are located and are free to operate on the logs.

In order to adjust the harps, and consequently the saws, I provide the following simple mechanism: The harps are each provided with a recess F³ on the outer side, which is bridged by a bar F⁴, attached to or forming

part of the harp. F^5 is a straddle-bracket which embraces the bar, being suitably formed and provided with a depending portion F^6 , having an opening through which the bar F^7 extends, such bar being secured to the standard. Of course there is a straddle-bracket on each harp next the standard and a corresponding bracket. J is a lever pivoted on a bracket H' (see Fig. 3) and having a forked lower end J' , through which extends a pin F^8 on the depending portion F^6 . The portion F^6 is secured in position on the bar F^7 by means of the set-screws F^9 . The upper end of the lever J is provided with a rack H^2 , arranged concentric to the fulcrum of the lever, as indicated. There is a lever on each side of the machine pivoted on the bracket H' and connected at the bottom to the depending portion F^6 of the bracket F^5 , as indicated. K is a shaft journaled in suitable bearings in the standard and provided with the worms K' , one worm being necessarily a right-hand worm and the other a left-hand worm. The worms K' mesh with the worm-racks H^2 at the upper end of the lever J . L is a hand-wheel, provided with notches L' , as indicated, and M is a spring-pressed plunger supported in a suitable socket-bracket N , as indicated. The lower end of the plunger is connected by a rod O to a foot-lever P , by which the plunger may be withdrawn from the notches L' in the hand-wheel. It will now be seen by depressing the lever P by the foot and turning the hand-wheel the harps, and consequently the two sets of saws, may be set to or from each other the required distance necessary for cutting the slabs off logs of different sizes, so as to square them up. When the hand-wheel is set, it will readily be seen that the plunger M , extending into the notch in the hand-wheel, will hold the shaft, and consequently the lever, in a proper position, and in order to take up the wear of the bracket on the slide-bar I preferably adjust the set-screws F^9 .

The operation of adjusting the saws, as will be understood by those skilled in the art, can be accomplished in my machine very readily without having to stop the movement of the gates in which the saws are hung, which is an important desideratum.

What I claim as my invention is—

1. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as specified, of the harps provided with the side recess and a bridging-bar for the same and means connected to such bar for adjusting the harps laterally as and for the purpose specified.

2. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as

specified, of the harps provided with the side recess and a bridging-bar for the same, a bracket straddling such bar and provided with a depending portion, a guide-bar secured to the standard and extending through an opening in such bar and means for adjusting the straddle-bracket as and for the purpose specified.

3. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as specified, of the harps provided with the side recess and a bridging-bar for the same, a bracket straddling such bar and provided with a depending portion, a guide-bar secured to the standard and extending through an opening in such bar, means for adjusting the straddle-bracket and set-screws for taking up the wear of the bracket on the supporting-bar as and for the purpose specified.

4. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as specified, of the harps provided with the side recess and a bridging-bar for the same, a bracket straddling such bar and provided with a depending portion, a guide-bar secured to the standard and extending through an opening in such bar, a lever suitably pivoted on the frame and provided with a forked end engaging with a pin on the depending portion of the straddle-bracket and means for tilting each lever simultaneously oppositely as and for the purpose specified.

5. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as specified, of the harps provided with the side recess and a bridging-bar for the same, a bracket straddling such bar and provided with a depending portion, a guide-bar secured to the standard and extending through an opening in such bar, a lever suitably pivoted on the frame and provided with a forked end engaging with a pin on the depending portion of the straddle-bracket, a worm formed on the one end of the lever, a cross-shaft journaled in the frame and provided with worms one a right-hand and the other a left-hand worm engaging with the worm-racks on the end of the lever and means for turning the shaft and holding it in the position to which it is turned as and for the purpose specified.

6. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as specified, of the harps provided with the side recess and a bridging-bar for the same, a bracket straddling such bar and provided with a depending portion, a guide-bar secured to the standard and extending through an opening in such bar, a lever suitably pivoted on

the frame and provided with a forked end engaging with a pin on the depending portion of the straddle-bracket, a worm formed on the one end of the lever, a cross-shaft jour-
5 naled in the frame and provided with worms one a right-hand and the other a left-hand worm engaging with the worm-racks on the end of the lever, a hand-wheel on the end of

the shaft provided with notches and a spring-pressed plunger manipulated to engage such 10 notches as and for the purpose specified.

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Witnesses:

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