J. A. NEAL.

TWIN CIRCULAR RESAWING MACHINE.

APPLICATION FILED DEC. 23, 1918.

1,340,286. **Patented May 18, 1920.**

3 SHEETS—SHEET 1.

Fig. 1.

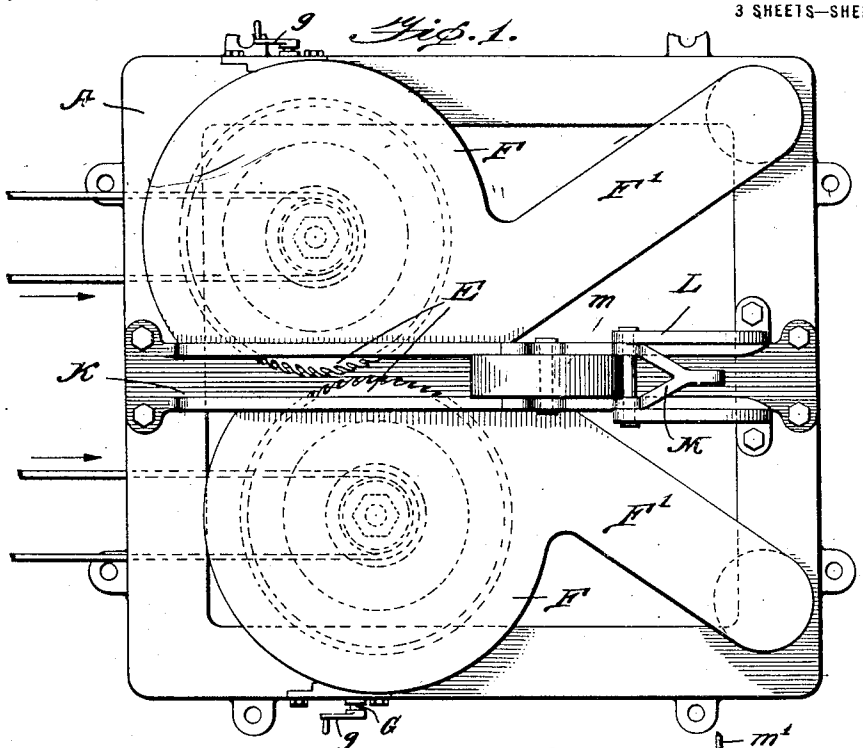
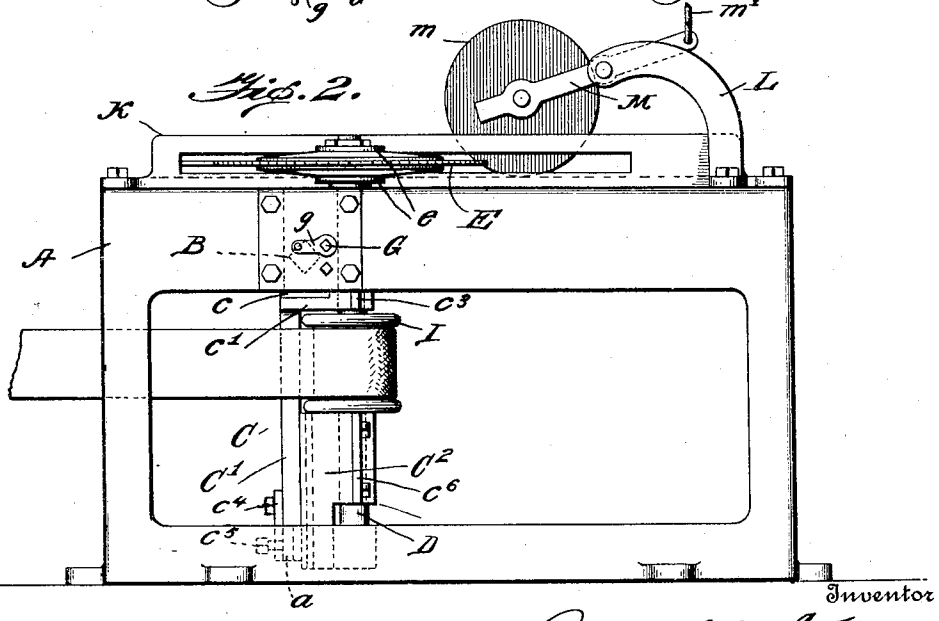


Fig. 2.



Witnesses

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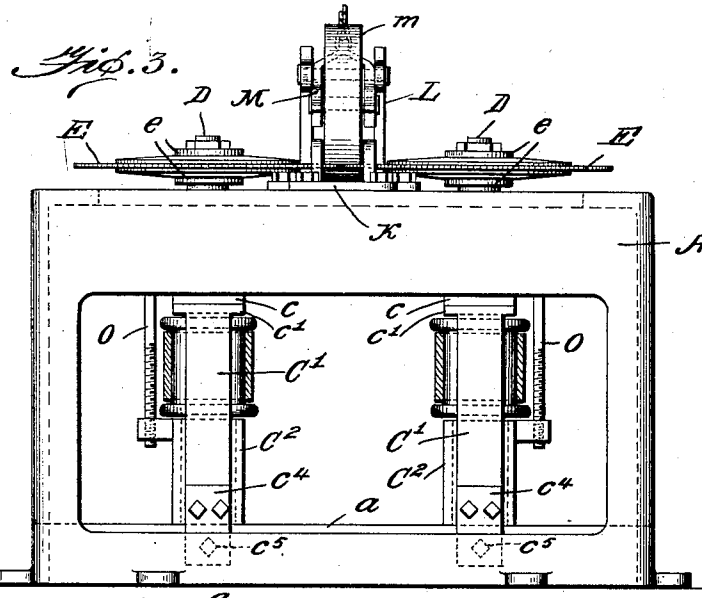
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3 SHEETS—SHEET 2.

Fig. 3.



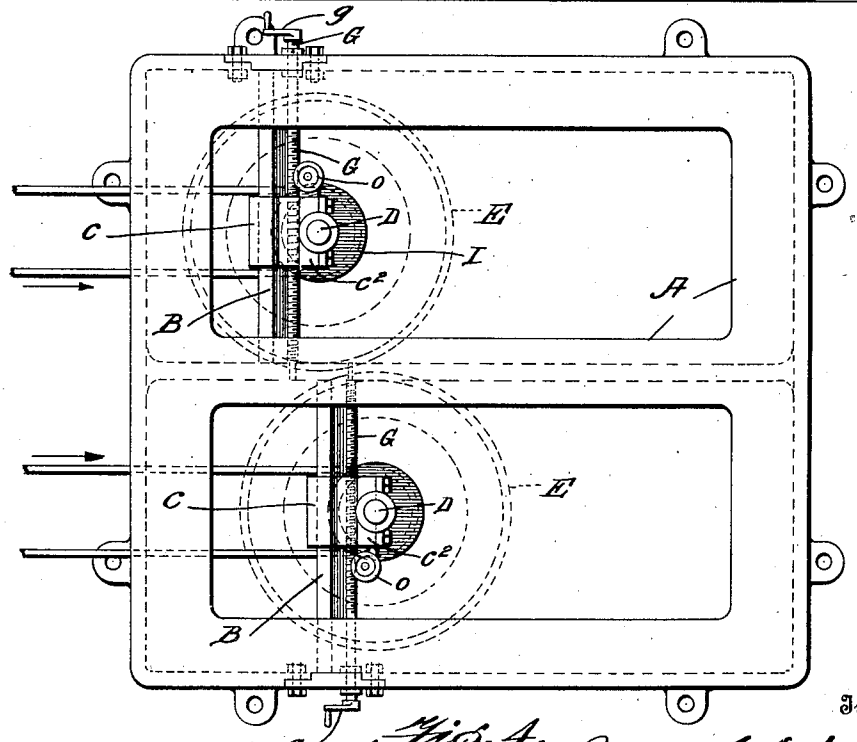


Fig. 4.

Witnesses

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TWIN CIRCULAR RESAWING MACHINE.

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3 SHEETS—SHEET 3.

Fig. 5.

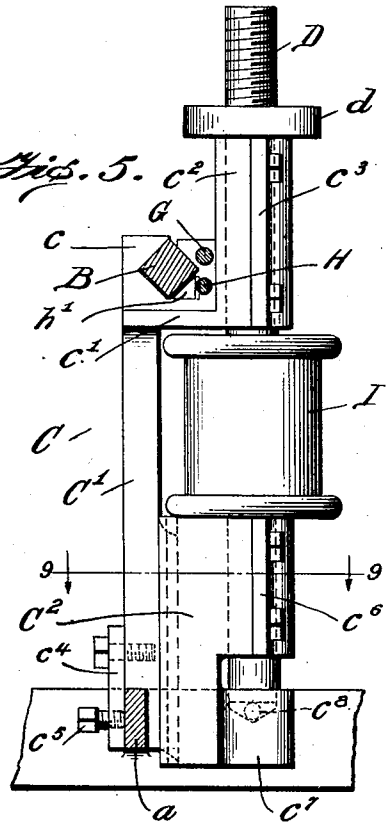


Fig. 6.

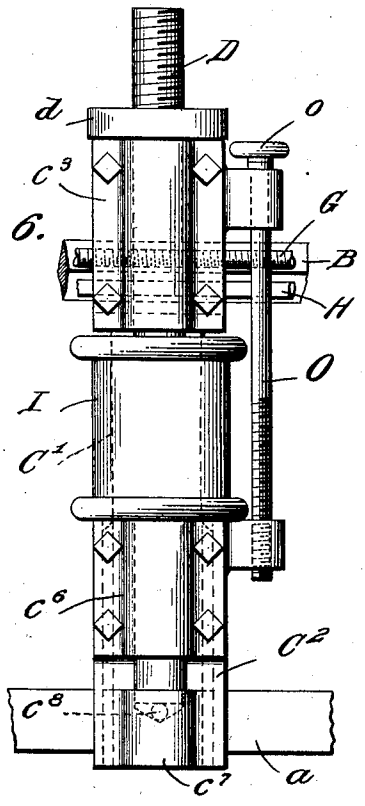


Fig. 9.

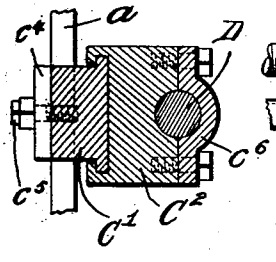


Fig. 7.

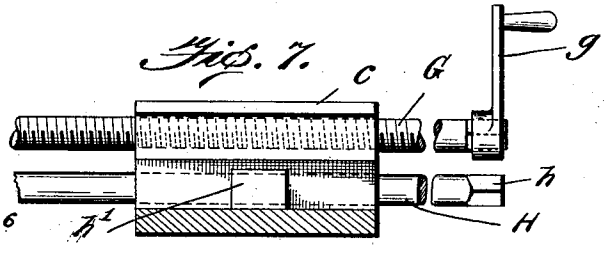
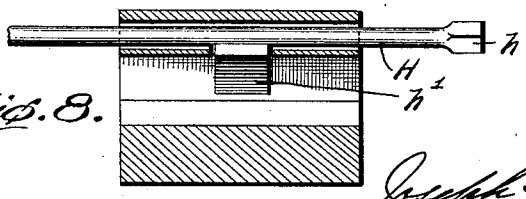


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOSEPH A. NEAL, OF MOBILE, ALABAMA.

TWIN CIRCULAR RESAWING MACHINE.

1,340,286. Specification of Letters Patent. Patented May 18, 1920.

Application filed December 23, 1918. Serial No. 267,965.

To all whom it may concern:

Be it known that I, JOSEPH A. NEAL, a citizen of the United States, residing at Mobile, in the county of Mobile and State of Alabama, have invented certain new and useful Improvements in Twin Circular Resawing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to sawing machines, and more particularly to machines for resawing lumber as it leaves the planing mill.

The primary object of the invention is to provide a simple, efficient and inexpensive machine of the character referred to having reliable and efficient means thereon for adjusting the mandrels laterally of the machine frame and vertically to permit the use of saws of different sizes and the sawing of boards in different widths, either thin or thick as desired.

The invention will first be hereinafter more particularly described, with reference to the accompanying drawings, which form a part of this specification, and then pointed out in the claims at the end of the description.

In said drawings;

Figure 1 is a plan view of a resawing machine embodying my invention;

Fig. 2 is a side elevation of the same;

Fig. 3 is a rear elevation;

Fig. 4 is a plan view, the saws and the hood or cover and saw-dust conveyers being removed;

Fig. 5 is a detail side elevation, and Fig. 6 is a rear elevation of the mandrel supporting frame, with a mandrel journaled therein;

Figs. 7 and 8 are detail sectional views of the lock-and-screw block, and adjusting devices for securing the mandrel frame in place on the main supporting frame, and

Fig. 9 is a detail sectional view taken on the line 9—9 of Fig. 5.

Referring to said drawings, in which the same reference letters or numerals are used to denote corresponding parts in different views, the letter A may denote the frame of the machine, which may be of the form shown or of any suitable construction, and made of either wood or metal with rectangular openings in the top and sides thereof, as shown, to afford easy access to the means employed for adjusting the mandrel frames and saws. About centrally of the main supporting frame, underneath a centrally disposed top plate or frame piece, extending longitudinally of the frame, there is a bar rigidly secured at both ends to the machine frame, to which are rigidly secured the inner ends of cross-bars B, on each of which is secured, by means of a slidable lock-and-screw block c, the upper end of a mandrel supporting frame C. The mandrel frames are shown more clearly in Figs. 5 and 6, and are substantially duplicates, one of the other, so that a description of one only will suffice. These frames each consist essentially of an upright member or standard having an off-set portion or right-angled bend at c^1 with an upward extension or head portion c^2 so as to provide a seat for the lock-and-screw block c. Said extension c^2 is formed with a vertical semi-circular recess therein, and has secured thereto a similarly recessed cover-plate c^3, with the recesses facing, so as to provide a bearing for the vertical shaft or mandrel D, on the upper end of which is secured a circular saw E, which is preferably secured upon the shaft by placing it between two disks or collars e, the lower one of which rests upon a collar d, on the shaft or mandrel D, and by means of a nut screwed on the shaft, the united disks and saw are pressed down upon the collar d so as to provide a firm connection and prevent the saw from wabbling.

The upright member C^1 of the mandrel frame has secured thereto at its lower end, by tongue and groove connection, a vertically slidable member C^2, and at its lower end is recessed to adapt it to fit upon a cross-bar a of the machine frame with its outer edge flush with the outer side of the cross-bar to which it is adjustably secured by means of a clamping device or plate c^4 bolted or otherwise secured to said upright, and carrying a set-screw c^5 which presses upon the bar a, so as to secure the lower end of the mandrel frame in any desired position along the length of said bar a. The lock-and-screw block c is secured upon the seat formed by the offset portion c^1 of the upright member C^1 and has a rectangular opening therein through which passes a cross-bar B of the machine frame, adapting the lock-and-screw block to be slid along said frame bar and secured in any desired position. Said lock-and-screw block has

parallel openings therethrough, one of which is interiorly threaded to receive a threaded adjusting bolt or rod G, which is provided with a suitable handle g for turning it and thereby moving the lock-and-screw block laterally of the machine frame along the cross-bar B. A locking bolt or rod H, of oblong form in cross-section, passes through the other opening in the lock-and-screw block and has an outer square or angular end portion h for the attachment of a handle or other means for turning said locking bolt when it is desired to lock or unlock the lock-and-screw block. A wedge-like device h^1 is interposed between the cross-bar B and the locking bolt H, so that when the locking bolt is turned a quarter revolution it will force the wedge firmly against the bar B and lock the lock-and-screw block thereto. The slidable member c^2 of the mandrel frame has in its rear face a vertical semi-circular recess and has secured thereto a similarly-recessed cover-plate c^6 so as to provide a bearing for the vertical shaft or mandrel in alinement with the bearing at the upper end of the mandrel frame. The shaft D carries a pulley I, for connection with a belt on a power shaft of an adjacent machine, such pulley being arranged in the opening between the off-set head portion of the mandrel frame and the slidable member C^2. The lower end or foot of the mandrel is seated in or rests upon a step box c^7 which in turn is carried by the sliding member C^2 of the mandrel frame, and an anti-friction device or ball c^8 is preferably interposed between the lower end of the shaft and the step bearing. As will be seen, one of the cross-bars to which the mandrel supporting frames are secured is arranged slightly in advance of the other cross-bar, so that the saws may revolve clear of each other when brought to their innermost positions. The saws E are each inclosed in a circular hood or housing F, which may be constructed of sheet metal, with a channeled extension or conduit F^1 for conveying the saw-dust therefrom to a suitable receptacle. These hoods or housings protect the saws and serve to gather the saw-dust and carry the same to and through a sheet metal pipe to any desired place by suction from the planing mill exhaust fan.

The letter K denotes a guide on the machine frame having side plates between which the lumber passes; said side plates having longitudinal slots therein through which the adjacent inner edges of the saws protrude, as shown. At the rear of the machine frame, a standard L has pivoted thereto a forked lever M, in the arms of which is journaled a roller m which is adapted to press upon the board or lumber in its passage through the guide K, and hold it down while being sawed. The free arm of the lever M may be spring-pressed or have secured thereto a rope or chain m^1 for raising the free end of the lever and thereby depressing the roller so as to cause it to bear with greater or less force upon the timber in its passage through the guide.

To raise and lower the mandrel, an adjusting bolt O, having a suitable handle o, is rotatably fitted in apertured lugs projecting laterally from the mandrel frame, the lower end of said bolt O, being threaded and screwed into a threaded aperture in the lower lug, whereby, on turning said bolt O, the mandrel may be raised or lowered for the purpose of raising and lowering the saws, so as to vary the depth or thickness of the boards.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:—

1. In a resawing machine, a main supporting frame having upper and lower cross-bars and a mandrel frame adjustably secured to said cross-bars at each side of said main frame, each of said mandrel frames having a bearing member at its upper end fixed relative to the mandrel frame and having slidably secured thereto below said relatively fixed bearing member a vertically movable bearing member in which the mandrel is journaled, the latter bearing member carrying a step box on which the foot of the mandrel rests, and means for raising and lowering said movable member and thereby raising or lowering the mandrel.

2. The combination, in a resawing machine, of a main supporting frame having upper and lower cross-bars and a mandrel frame adjustably secured to said cross-bars at each side of said main frame, each of said mandrel frames having a bearing member at its upper end fixed relative to the mandrel frame and also having slidably secured thereto below said relatively fixed bearing member a vertically movable bearing member in which the mandrel is journaled, said mandrel being slidably fitted in said upper bearing member, and said movable bearing member carrying a step box on which the foot of the mandrel rests, and means for raising and lowering said movable member and thereby raising or lowering the mandrel; said means comprising a rod screwed into an apertured lug on said movable bearing member and rotatably mounted on said fixed member and provided with a handle for rotating the same.

3. The combination, in a resawing machine, of a main frame carrying an upright mandrel frame, said mandrel frame being provided at its upper end with a shaft bearinng and below said bearing with a vertically movable member, and said member carrying

a step-box containing a ball and a shaft bearing in alinement with said first mentioned bearing, a mandrel journaled in said bearings and having its lower end resting on said ball, said mandrel being slidably fitted in said first mentioned bearing, and means for raising and lowering said movable member and thereby raising and lowering said mandrel.

4. In a resawing machine, a mandrel frame comprising an upright member or standard having an off-set portion or angular bend at its upper end forming an angular seat for a clamping device, a slidably connected vertically movable member on the lower end of said standard carrying a step box on which the foot of the mandrel may rest, said members having alined shaft bearings thereon, and upper and lower clamping devices on said upright member for securing it to upper and lower cross-bars of a main supporting frame with provision for lateral adjustment along said cross bars; said upper clamping device being secured on said seat, and an adjusting device connecting said upright and vertically movable members for raising and lowering said step box and with it the mandrel resting thereon.

5. In a resawing machine, a mandrel frame comprising an upright member or standard having an off-set portion or angular bend at its upper end forming an angular seat for a clamping device, a slidably connected vertically movable member on the lower end of said standard carrying a step box on which the foot of the mandrel may rest, said members having alined shaft bearings thereon, and upper and lower clamping devices on said upright member for securing it to upper and lower cross-bars of a main supporting frame with provision for lateral adjustment along said cross-bars; said upper clamping device being secured on said seat, and an adjusting device connecting said members for raising and lowering said movable member.

6. In combination, a mandrel frame having clamping devices thereon for securing it to upper and lower cross-bars of a main supporting frame with provision for lateral adjustment, one of said clamping devices consisting of a lock block slidably embracing the cross-bar and having openings therethrough extending transversely of the cross-bar, an adjusting bolt screwed into one of said openings, and a locking bolt of oblong form in cross section fitted in the other opening, together with a wedge block interposed between said locking bolt and cross-beam, whereby the mandrel frame may be adjusted and locked to the cross-beam by turning said locking bolt.

7. The combination, in a resawing machine, of a frame having on opposite sides thereof upper and lower cross-bars, and upon each side an upright mandrel frame secured to said cross-bars and having a mandrel journaled therein, a vertically slidable step-box carried by said mandrel frame on which the foot of the mandrel rests, and means for raising and lowering the mandrel, together with means for securing the mandrel frame to and adjusting the same laterally along said cross-bars, said means including a laterally movable block through which the upper cross-bar passes, said block having spaced openings therethrough parallel with said cross-bar, a threaded adjusting bolt secured in one of said openings, and a wedging device secured in the other opening for adjusting and securing said block and with it the mandrel frame in different positions on said cross-bar.

8. The combination, in a resawing machine, of a frame having on opposite sides thereof upper and lower cross-bars and upon each side an upright mandrel frame secured to said cross-bars and having a mandrel journaled therein, a vertically slidable step-box carried by said mandrel frame on which the foot of the mandrel rests, and means for raising and lowering the mandrel, together with means for securing the mandrel frame to and adjusting the same laterally along said cross-bars, said means including a block through which the upper cross-bar passes, said block having spaced openings therethrough one of which is interiorly threaded, an adjusting screw fitted in said threaded opening, and a bolt of oblong form in cross-section fitted in the other opening, together with a wedging device interposed between said bolt and cross-bar for clamping said block to said cross-bar.

9. The combination, in a resawing machine, of a main frame carrying an upright mandrel frame, said mandrel frame being provided with an upper shaft bearing and with a vertically slidable member below said bearing carrying a step-box and a shaft bearing in alinement with said upper bearing, a mandrel journaled in said bearings and slidable vertically through the upper bearing and having its lower end seated in said step-box on an anti-friction bearing, and means for raising and lowering said slidable member and thereby raising and lowering said mandrel.

10. The combination, in a resawing machine, of a main frame carrying an upright mandrel frame, said mandrel frame being provided at its upper end with a shaft bearing and having secured thereto below said bearing a vertically slidable member carrying a step-box and a shaft bearing in alinement with said upper bearing, a mandrel journaled in said bearings and slidable vertically in said upper bearing and having its lower end seated in said step-box, and means

for raising and lowering said slidable member and thereby raising and lowering said mandrel; said means consisting of a perpendicular rod rotatably mounted on the mandrel frame and having its lower portion threaded and screwed into an apertured lug projecting from said slidable member of the mandrel frame.

11. The combination, in a resawing machine, of a main frame carrying a pair of laterally adjustable mandrel frames, one arranged ahead of the other, and each having on its upper end a shaft bearing and having secured thereto below said end a vertically slidable member carrying a step-box and a shaft bearing in alinement with said upper bearing, a pair of mandrels journaled in said bearings and slidable vertically in the upper bearings, each mandrel carrying a circular saw and having its lower end seated in one of said step-boxes, and means for raising and lowering said vertically slidable members and thereby raising or lowering the saws.

12. The combination, in a resawing machine, of a main frame carrying a pair of laterally adjustable mandrel frames, one of said mandrel frames being arranged ahead of the other and each having on its upper end a shaft bearing and having secured thereto below said end a vertically slidable member carrying a step-box and a shaft bearing in alinement with said upper bearing, a pair of mandrels journaled in said bearings and slidable vertically in the upper bearings, each mandrel carrying a circular saw and each having its lower end seated in one of said step-boxes, and means for raising and lowering said vertically slidable members and thereby raising or lowering the saws; said means consisting of perpendicular rods rotatably mounted on said mandrel frames and each having its lower portion threaded and screwed into an apertured lug projecting from the slidable member of the mandrel frame.

13. The combination, in a resawing machine, of a main frame carrying a pair of upright laterally adjustable mandrel frames arranged one ahead of the other and each having at its upper end a rearwardly extending offset portion carrying a shaft bearing and also having secured thereto below and spaced from said offset portion a vertically slidable member carrying a step-box and a shaft bearing in alinement with the bearing on said offset portion, a pair of mandrels journaled in said bearings each carrying a circular saw and each having its lower end seated in one of said step-boxes, and means for raising and lowering said vertically slidable members and thereby raising or lowering the saws.

In testimony whereof I affix my signature in the presence of two witnesses.

JOSEPH A. NEAL.

Witnesses:
MRS. JOSEPH A. NEAL,
MARY J. RASMUS.