

Oct. 5, 1926.

1,602,041

J. A. NEAL

HOLDDOWN DEVICE FOR RESAWING MACHINES

Filed April 17, 1925

2 Sheets-Sheet 1

Fig. 1.

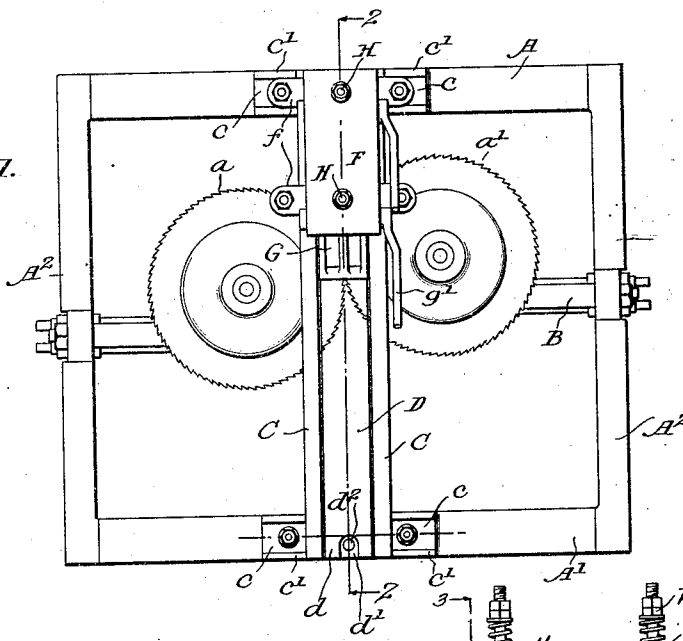


Fig. 2.

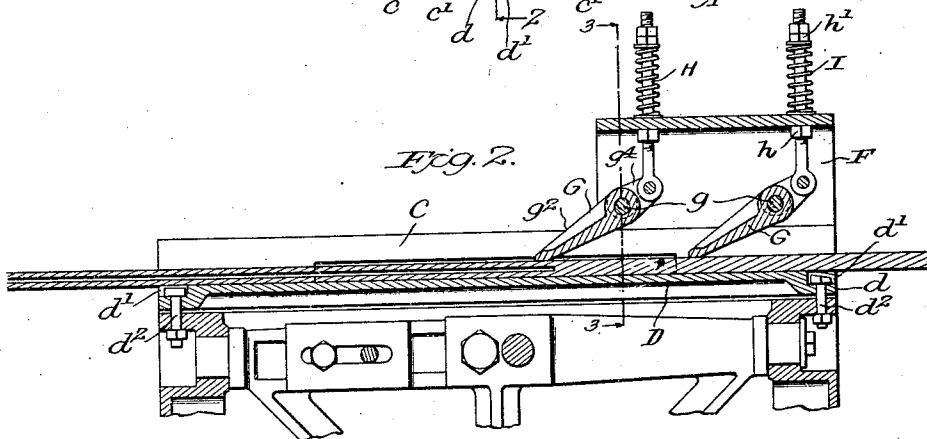


Fig. 3.

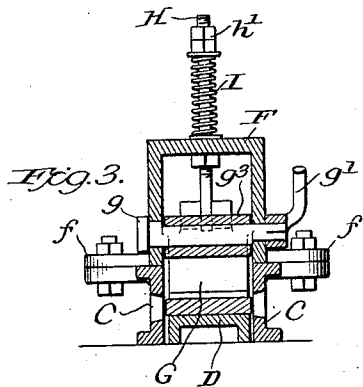
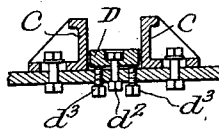


Fig. 4.



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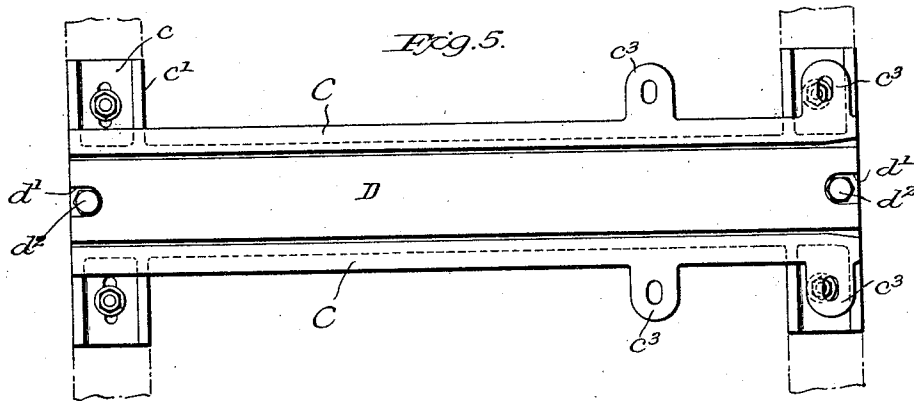
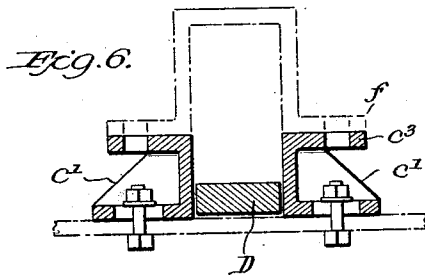
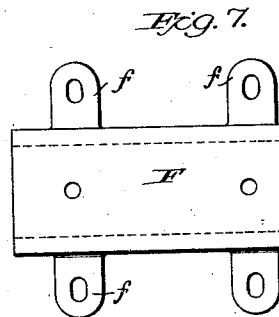
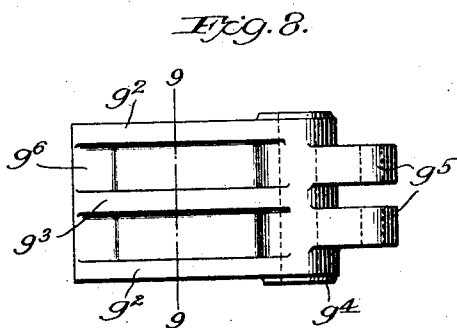
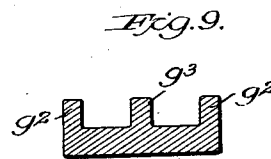
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HOLDDOWN DEVICE FOR RESAWING MACHINES

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2 Sheets-Sheet 2



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1,602,041

UNITED STATES PATENT OFFICE.

JOSEPH A. NEAL, OF MOBILE, ALABAMA, ASSIGNOR OF ONE-HALF TO STOVER LUMBER COMPANY, OF MOBILE, ALABAMA, A CORPORATION OF ALABAMA.

HOLDDOWN DEVICE FOR RESAWING MACHINES.

Application filed April 17, 1925. Serial No. 23,899.

This invention relates to re-sawing machines, and more particularly to means for supporting and guiding the material or stock through the machine in proper position for the action of the saws, together with means for holding the material down upon said supporting means with a yielding and variable pressure; my present invention being an improvement upon the invention for which a Patent No. 1,356,110 was granted to me October 19, 1920, and the objects of the present invention are to improve the construction of the supporting, guiding and pressure-applying means shown in my aforesaid patent, and to increase the efficiency and durability thereof.

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

In said drawings, Fig. 1 is a plan view of a re-sawing machine embodying my invention;

Fig. 2 is a fragmentary vertical sectional elevation of said machine taken on the line 2—2 of Fig. 1, looking in the direction of the arrows;

Fig. 3 is a detail transverse sectional view taken on the line 3—3 of Fig. 2;

Fig. 4 is a detail sectional view showing the means employed for adjusting the sides and bottom of the guide-box;

Fig. 5 is a plan view of the guide-box; the superposed housing for the hold down devices being removed;

Fig. 6 is a detail cross-section of the guide-box and associated parts shown partly in dotted lines;

Fig. 7 is a plan view of the housing for the hold down devices detached;

Fig. 8 is a plan view of an improved form of presser-foot; and

Fig. 9 is a transverse sectional view of the presser-foot taken on the line 9—9 of Fig. 8.

In said drawings, in which the same reference letters are used to denote corresponding parts in different views, I have shown my improvement applied to a re-sawing machine having twin circular saws mounted on a tilting frame B, such as shown in my application Serial No. 13,291, filed March 5, 1925 (now Patent No. 1,584,796), extending across a main supporting frame having

front and rear sides A and A¹ and sides or ends A² secured together at the four corners thereof, in box-like form, as shown in Fig. 1; said sides A² being formed or provided with open-ended slots or guideways about midway thereof in which the ends of the tilting frame B are vertically slidably fitted with provision for adjusting and securing said tilting frame in different positions so as to change the angle of the saws to adapt them to cut the stock on a bevel, or at an angle to a horizontal plane. Said supporting frame is preferably of the form shown, but may be of any suitable construction with or without the tilting frame, and my present invention is not limited in its use to machines of the type shown in my aforesaid application, but may be applied to re-sawing machines of various types. On the main supporting frame are mounted parallel guide bars C, C, having oblong slots therein through which the saws protrude, and formed or provided on the outer side thereof at opposite ends with laterally projecting lugs or flanges c having marginal inclined strengthening ribs c¹ and slots c² in said flanges whereby said guide bars may be adjusted and secured on the supporting frame at different distances apart, to accommodate material of different widths, by means of fastening bolts inserted in said slots and through holes in a subjacent frame bar, as shown more clearly in Figs. 4 and 6. Said guide bars are also formed with laterally projecting apertured lugs c³ on their upper edges at the receiving end of the guide-box for securing thereto a superposed housing for hold down devices hereinafter described. Between said guide bars is secured a vertically adjustable bottom-plate D, on which the material rests and slides through the machine, said bottom-plate consisting preferably of a bar of iron or steel extending from front to rear of the machine frame and having solid end portions and an intermediate portion of channel-iron form; said end portions being of step-like form along a median line as shown in Figs. 2 and 5, to bring the extremities d thereof and the heads of fastening bolts secured to said extremities below the plane of the intermediate and main body portion, so that the heads of said fastening bolts may not obstruct or interfere with the passage of material through the machine. The end por-

tions of said bottom-plate are provided with open-ended slots d^1 in which fastening bolts d^2 are inserted, said bolts passing through holes in a subjacent frame bar and having nuts screwed on the lower ends thereof, underneath said subjacent frame bar, so that the bottom-plate may be raised or lowered and secured in different positions, as desired, to adapt the machine for use in sawing boards varying in thickness; the end portions of the bottom-plate, or the end thereof where the stock enters the guideway, being upheld by set screws d^3 , screwed into a subjacent frame bar. The open-ended slots in the bed plate D adapt it to be easily attached and secured in place by simply engaging the slot at one end with a fastening bolt and then inserting and securing a bolt in the slot at the other end, thus avoiding the trouble and annoyance incident to inserting fastening bolts through apertures in the bed plate at opposite ends and registering apertures in an underlying frame bar, which necessitates proper adjustment and alinement of the apertures at both ends and the insertion of the bolts at opposite ends before either end is firmly secured in place; and to remove the bed plate it is only necessary to remove a single bolt at one end and withdraw the plate from the bolt at the other end. Vertical adjustment of the bottom-plate is accomplished by the co-operative action of the fastening bolts d^2 and set screws d^3 , the bolts drawing the bottom-plate down and the set screws forcing it up, as shown more clearly in the detail view Fig. 4 of the drawings. A housing F carrying hold-down devices G is mounted on the machine frame over the ends of the guide bars C, at the end thereof where the stock or material enters for the action of the saws, and is secured upon the guide bars by means of fastening bolts inserted through apertured lugs f projecting laterally from the lower outer sides of the housing and through the corresponding subjacent lugs c^3 on the upper edges of the guide bars C. In the side walls of said housing F is journaled one or more eccentric pins g , each having an operating handle or lever g^1 attached thereto at one end on the outer side of the housing and each carrying a presser-foot G having a forwardly and downwardly extending portion of substantially the same width as the bottom-plate and of substantially rectangular form with marginal and intermediate longitudinal strengthening ribs g^2 and g^3 and a tubular head portion g^4 , to receive the eccentric pin, and also a bifurcated rearward extension g^5 suitably apertured for connection with pressure-applying means hereinafter described.

The eccentric pin is enlarged at one end and the other end thereof is reduced in size, but concentric with said enlarged end and

protrudes through a hole in a side wall of the casing for attaching an operating handle thereto. The intermediate eccentric portion of the pin passes through the tubular rear end portion of the presser-foot and is of a length equal to the distance between the inner walls of the housing so that the pressure-foot will take a firm hold on the stock the full width thereof. The eccentric pin has a cam-like action adapting it to raise or lower the presser-foot, to accommodate material of different thicknesses, and to hold the presser-foot in raised position, and by turning the pin sufficiently to pass a dead center the presser-foot will be thrown into an inoperative position, which is desirable at times in order to permit the removal of the stock from the machine.

The ribbed construction of the presser-foot serves to combine lightness with strength, and the forward end thereof terminates or merges in a flat toe-piece g^6 connecting the ribs and which is adapted to rest firmly upon and hold the material down upon its support with a yielding pressure as it passes through the machine to the saws, pressure-applying means being provided whereby the presser-foot is adapted to exert a yielding and variable pressure in operating upon different kinds of material; the means shown consisting of a rod or rods H, inserted through an opening or openings in the top of the housing F, each rod having its lower end pivoted to the bifurcated extension g^5 of the presser-foot and having a nut h screwed thereon, on the underside of the housing, and an adjustable nut or nuts h^1 screwed on the free end of the rod, and a coiled or other suitable spring I, placed on the rod between the nut h^1 and the top of the housing so as to exert a force tending to hold the presser-foot down upon the stock; downward movement of the free end of the presser-foot being limited by the engagement of the adjustable nut h with the underside of the top of the housing, and the pressure of the spring being varied by adjusting the nut or nuts h^1 .

While I preferably use a pair of hold down devices, one arranged in advance of the other, to insure a firm downward pressure on the material the full length thereof as it slides through the machine, and a vertically adjustable supporting bar or bed-plate on which the material rests arranged between laterally adjustable guide-bars, it may be desirable in some cases to use a single hold down device, and non-adjustable supporting and guiding means, and I therefore do not desire to be limited in the appended claims to the specific arrangement shown and described.

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

1. The combination, in a sawing machine, of parallel guide-bars and an intermediate bottom-plate or support for the material to be operated on by the saws; said bottom-plate being constructed with an intermediate portion of channel-like form having a smooth upper surface and marginal longitudinal strengthening ribs on the under side thereof and end-portions of step-like form along a median line; said end-portions having open-ended slots therein adapted to receive fastening bolts inserted through holes in a subjacent frame-bar and having the heads thereof fitted in said slots and resting on said end portions of said bottom-plate below the surface of said intermediate portion, and means underneath the bottom-plate for raising the latter in opposition to the downward pull of said bolts.

2. The combination, in a sawing machine, of parallel guide-bars having laterally projecting lugs on their upper and lower edges at opposite ends; said lugs having oblong slots therein to receive fastening bolts, and the lower lugs having substantially triangular strengthening ribs thereon, a housing mounted on said bars and secured to the upper most lugs thereon, and variable pressure-applying means carried by said housing comprising presser-feet of rectangular form rockingly mounted within the housing and of a width approximately equal to the distance between said guide-bars; said presser-

feet having forwardly and downwardly extended portions merging in substantially flat work-engaging toe-pieces and rearwardly projecting bifurcated portions connected with spring-actuated rods depending through the top of said housing.

3. The combination, in a sawing machine, with means for supporting and guiding material through the machine in proper position for the action of the saws, said means including spaced parallel guide-bars, of variable pressure-applying means for holding the material down upon its support; the latter means comprising a presser-foot of substantially rectangular form and of a width approximately equal to the distance between said guide-bars and having an intermediate tubular portion adapted to fit upon a revolvably supported eccentric pin and a forwardly and downwardly extended portion having marginal and intermediate integral longitudinal strengthening ribs thereon and merging in a substantially flat work-engaging toe-piece adapted to normally rest on the material passing through the machine and also having a rearwardly and upwardly extended bifurcated portion adapted for connection with spring-actuated pressure-applying devices supported on a frame structure carrying said presser-foot.

In testimony whereof I affix my signature.

JOSEPH A. NEAL.