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E. C. DITTMAR.

WOOD ORNAMENTING MACHINE.

APPLICATION FILED DEC. 7, 1905.

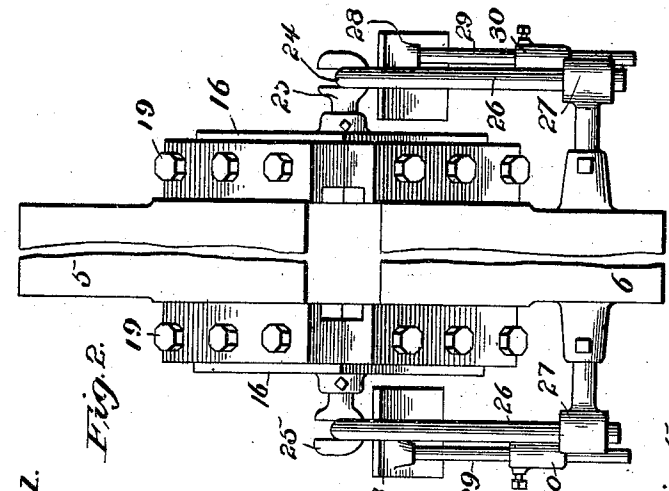


Fig. 2.

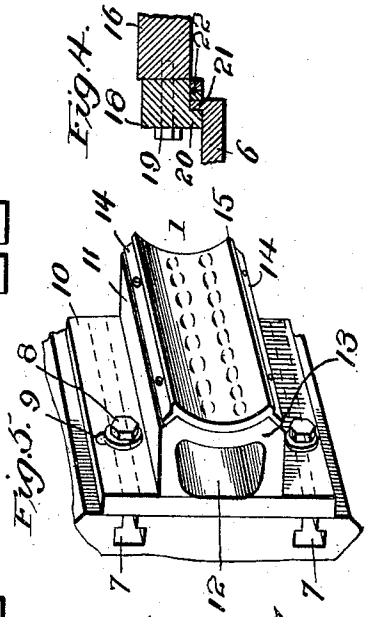


Fig. 5.

Fig. 4.

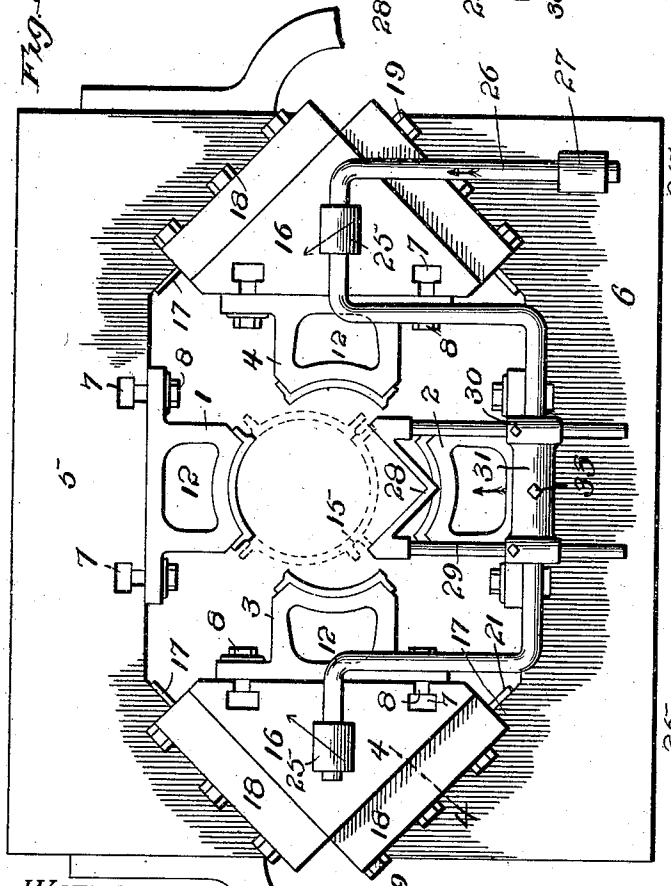


Fig. 1.

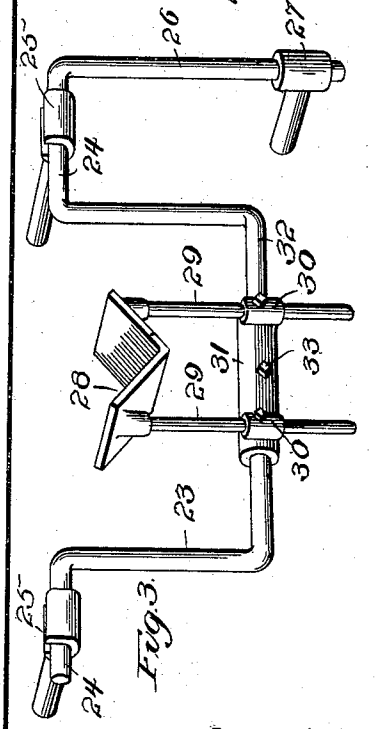


Fig. 3.

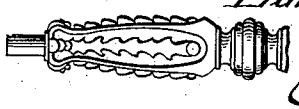


Fig. 6.

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WOOD-ORNAMENTING MACHINE.

No. 841,672. Specification of Letters Patent. Patented Jan. 22, 1907.

Application filed December 7, 1905. Serial No. 290 844.

To all whom it may concern:

Be it known that I, ELMER C. DITTMAR, a citizen of the United States, residing at Williamsport, in the county of Lycoming, State of Pennsylvania, have invented certain new and useful Improvements in Wood-Ornamenting Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an apparatus for ornamenting wood, and particularly to a construction adapted to ornament simultaneously all the different surfaces of an article by compression thereof toward the radial center of the article.

The invention has for an object to provide a plurality of movable dies adapted to approach and compress the entire periphery of the article both radially and tangentially to the center of the work and produce a resultant radial pressure toward its center, and thereby prevent splitting of the material of the article at the sides thereof and permitting an impression of the dies of equal depth upon all of its periphery.

A further object of the invention is to provide an improved construction and arrangement of work-holders adapted to travel with the dies constructed and arranged to support the work in proper position when the several dies of the series engage the same.

Another object of the invention is to provide means for mounting these dies whereby one of the dies is held stationary and the opposite die approaches the same, while the dies at each side travel at a less speed in their movement toward the stationary die and each other.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawings, Figure 1 is a side elevation of the invention. Fig. 2 is an end view thereof with intermediate parts broken away. Fig. 3 is a detail perspective of the work-holder. Fig. 4 is a detail section on line 4 4, Fig. 1. Fig. 5 is a detail perspective of one of the dies and means for mounting the same, and Fig. 6 is an elevation of a portion of the completed article.

Like numerals of reference indicate like parts throughout the several views of the drawings.

This invention contemplates the use of a plurality of dies adapted to approach each other and an article to be ornamented, so as to impress the entire surface of the article, and any desired construction or arrangement of such dies may be used. For the purpose of illustration one form thereof is herein shown and comprises the die 1, stationarily held, while the opposite dies 2 move toward the same, and the side dies 3 and 4, being interposed between the movable and stationary dies, receive a resultant oblique travel from the position shown in full lines in Fig. 1 to that indicated by dotted lines therein. The die 1 is mounted upon a fixed frame 5, and the die 2 is mounted upon a movable frame 6. Each of the die-holders 11 is secured in position by means of undercut grooves 7, from which bolts 8 extend, said bolts being adapted to pass through a laterally-extended slot 9 in the flange 10 of the die-holder 11, by which means the die may be adjusted both longitudinally in the slot and laterally thereof by means of the bolt 8. The holder 11 is preferably formed with a heating-chamber 12, into which any desired heating means may be introduced, and is provided with a segmental or curved face 13, adapted to receive the die, which is of similar shape and is provided with laterally-extending ribs 14, by means of which it is secured to the holder, as shown in Fig. 5. The ribs 14 are located near the edge of the die, so as to permit complete contact between the edges 15 of the dies when in operative position, as shown by dotted lines in Fig. 1.

The side dies 3 and 4 are each mounted upon a triangular carriage 16 in the same manner as the dies 1 and 2, so as to permit similar adjustment thereof. The triangular carriages 16 are interposed between the diagonal faces 17 at each side of the frames 5 and 6, so as to produce a resultant oblique movement of these carriages when the frame members are brought together, as indicated by arrows, upon said carriages, the movement of said carriages upward being at a less speed than that of the lower frame 6 in order to secure a proper and simultaneous engagement of all of the dies with the article to be ornamented. The carriages may be mounted upon the frames in any desired manner—for instance, by means of a gib 18, secured to the carriage by bolts 19 and having a

flange 20, adapted to engage an upwardly-extending rib 21 upon the oblique faces 17 of the frames. Any suitable bearing-strip 22 may be supported adjacent to this rib to form a proper wearing-surface in the movement of the dies.

The work-holder is composed of a U-shaped frame 23, having at its upper portion horizontally-disposed arms 24, adapted to rest in open sockets 25, carried by the carriages 16, hereinbefore described. This permits the necessary travel of the carriages longitudinally of the arms during the lifting movement thereof without producing any lateral travel of the arms. This lateral travel is effectually prevented by means of a depending rod 26, passing through a sleeve 27, secured to the movable frame 6, so as to travel therewith and also upon the rod 26.

The work-rest 28 may be of any desired configuration—for instance, V-shaped, as shown in Fig. 3—and provided with supporting-standards 29, adjustably mounted in sockets 30, carried by a sleeve 31, which is also adjustably mounted upon the lower portion 32 of the work-holder by any suitable means—for instance, a set-screw 33. As shown in Fig. 2, these work-holders are duplicated at opposite ends of the machine.

In the operation of the invention the parts are at rest, as shown by full lines in Fig. 1, when the material to be ornamented is placed upon the work-holder and the lower die moved upward toward the fixed die. The result of this motion transmitted through the frame of the lower die is to cause an inward and upward travel of the carriages carrying the side dies, producing a resultant diagonal movement. The upward movement of the side dies is approximately one-half as rapid as that of the lower die, and the work-holder being mounted for vertical movement with the side dies thus carries the work into proper position beneath the fixed die, while the side dies travel on the work-holder, thus producing a centering device which moves the work to be ornamented in a vertical direction and permits the same to be readily placed in position and removed, while it presents the work in such a position that the dies simultaneously engage the material to produce a resultant radial compression thereof. It will be observed that although there is a difference of speed of the movement of the dies toward the center, yet they meet and engage the work simultaneously.

The construction of the work-holder is such as to permit its ready replacement and removal from the carriages upon which it is supported, while the rest is capable of both vertical and lateral adjustment to be properly centered. The die-holders are also adjustable laterally and longitudinally, as it is essential that they be in accurate position in order to secure a simultaneous action between the parts.

Having now described my invention and set forth its merits, what I claim, and desire to secure by Letters Patent, is—

1. A device for ornamenting wood comprising an expansible and contractible series of ornamenting-dies completely inclosing the periphery of the work when contracted and all acting mutually to sustain the pressure of each other, the movable dies all moving toward a common center, and means for equalizing this movement.

2. A device for ornamenting wood comprising an expansible and contractible series of ornamenting-dies completely inclosing the periphery of the work when contracted and all acting mutually to sustain the pressure of each other, a part of said series of dies being movable toward a common center and toward a relatively fixed die, and means for equalizing this movement.

3. In a wood-ornamenting machine, a movable die member, a work-holder supported thereon, means to prevent a movement of said work-holder laterally of the die and to permit rectilinear movement therewith, and means to permit a travel of said die laterally on the work-holder.

4. In an ornamenting-machine, a plurality of dies adapted when in contact to inclose the peripheral surface of the article to be ornamented thereby, a work-holder supported upon two of said dies to travel therewith toward an intermediate die, and means to permit the travel of the supporting-dies toward and from each other upon said work-holder.

5. In an ornamenting-machine, opposite dies carried by supporting-frames, intermediate dies disposed upon carriages contacting with oppositely-inclined faces of the supporting-frames, means for adjusting said dies laterally and longitudinally of their supporting means, and a work-holder mounted upon the intermediate dies for vertical movement therewith.

6. In an ornamenting-machine, opposite dies carried by supporting-frames, intermediate dies disposed upon carriages contacting with oppositely-inclined faces of the supporting-frames, means for adjusting said dies laterally and longitudinally of their supporting means, a work-holder mounted upon the intermediate dies for vertical movement therewith, and means upon the frame of one of the opposite dies to prevent lateral movement of the work-holder.

7. In a wood-ornamenting machine, a die-holder provided with a curved face, a die having radial ribs extending therefrom and adapted to be secured to said holder at each side of said face, a lateral flange upon the holder at opposite sides of said die, and

means for adjustably securing said flange upon a support.

8. In a wood-ornamenting machine, a die-holder provided with a curved face, a die having radial ribs extending therefrom and adapted to be secured to said holder at each side of said face, a lateral flange upon the holder at opposite sides of said die, an undercut slotted support, and a securing-bolt extending through a lateral slot in said flange from said support.

9. In a wood-ornamenting machine, a stationary member, an opposite movable member each provided with oppositely-inclined faces, triangular carriages at opposite sides of said members engaging said faces, dies supported upon said members and carriages to travel toward and from each other, an open socket extending from said carriages, a work-holder having horizontally-disposed portions to rest in said sockets a depending rod extending from said work-holder, and a sleeve carried by one of the members through which said rod passes to resist lateral movement thereof.

10. In a wood-ornamenting machine, die-supports, a work-holder mounted thereon and provided with a depending U-shaped portion, a sleeve mounted upon said portion for adjustment longitudinally thereon, sockets provided upon said sleeve, a work-rest, and depending standards from said rest adjustably mounted in said sockets.

11. In a wood-ornamenting machine, die-supports, a work-holder mounted thereon and provided with a depending U-shaped portion, a sleeve mounted upon said portion for adjustment longitudinally thereon, sockets provided upon said sleeve, a work-rest, depending standards from said rest adjustably mounted in said sockets, horizontally-disposed arms at the upper portion of said holder, and a depending rod at the end of one of said arms.

12. In an ornamenting-machine, a fixed die, a movable die adapted to travel directly toward the same, opposite side dies constructed and arranged for diagonal movement toward the fixed die, and a work-holder constructed and arranged to travel upward with the side dies at a less speed than the movement of the remaining die.

13. In an ornamenting-machine, a fixed die, a movable die adapted to travel directly toward the same, opposite side dies constructed and arranged for diagonal movement toward the fixed die, a work-holder constructed and arranged to travel upward with the side dies at a less speed than the movement of the remaining die, and means for resisting the lateral movement of the work-holder during the travel of said dies thereon.

14. In an ornamenting-machine, a fixed die, a movable die adapted to travel directly toward the same, opposite side dies constructed and arranged for diagonal movement toward the fixed die, a work-holder constructed and arranged to travel upward with the side dies at a less speed than the movement of the remaining die, means for resisting the lateral movement of the work-holder during the travel of the side dies thereon, and means for adjusting a work-rest upon said holder relative to the fixed die.

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

ELMER C. DITTMAR.

Witnesses:
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L. M. O'BRIEN.