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3,392,607

BORING AND ROUTING JIG FOR DOORS

Filed Jan. 10, 1966

2 Sheets-Sheet 1

Fig. 2.

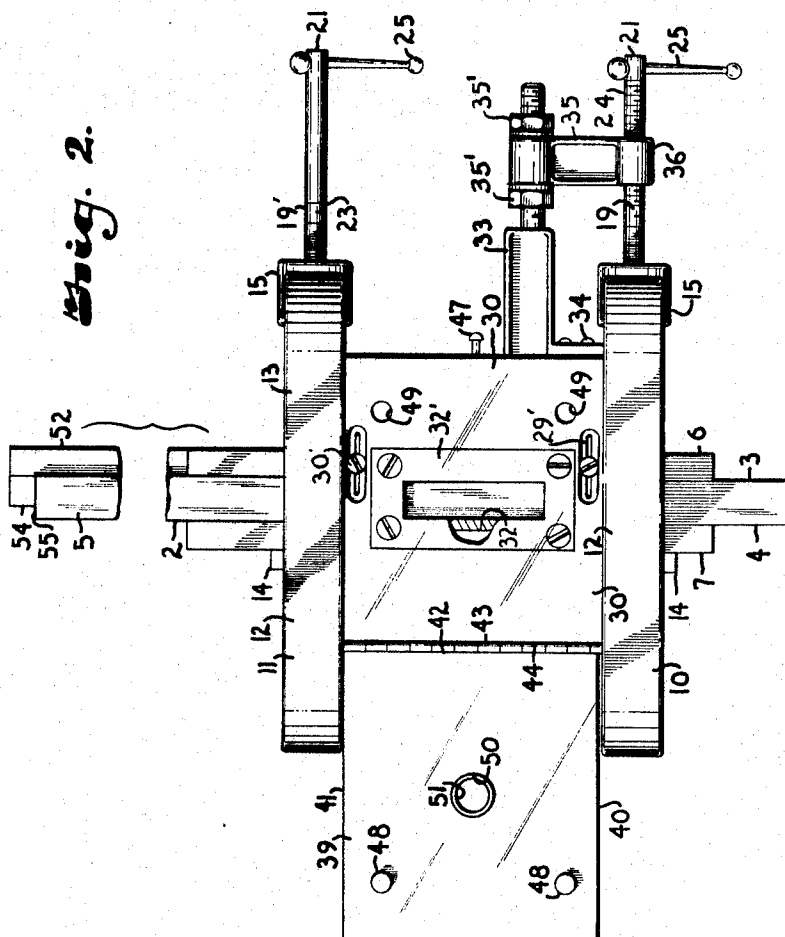
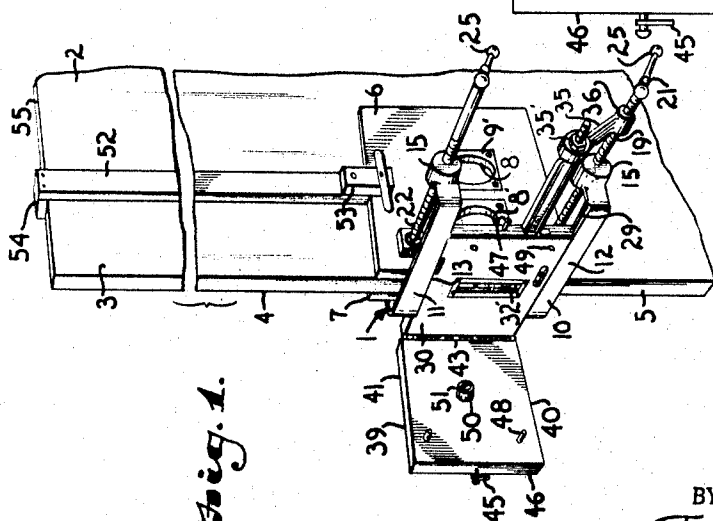


Fig. 1.



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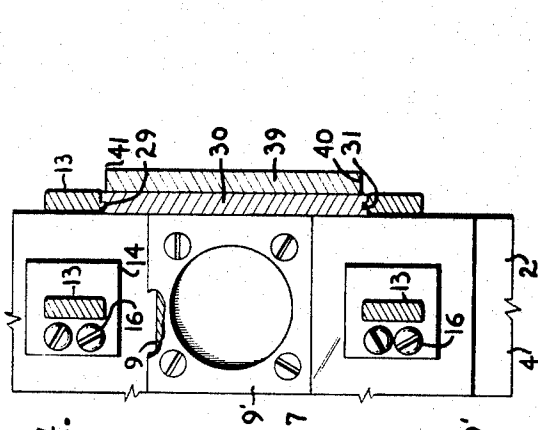


Fig. 1.

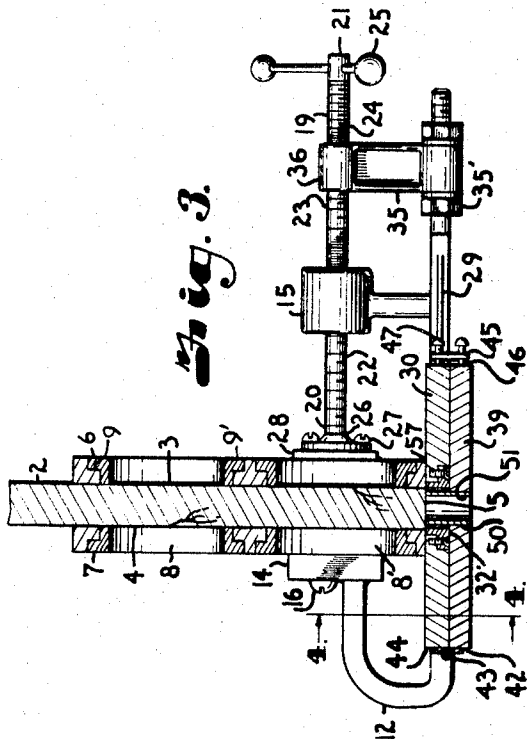


Fig. 3.

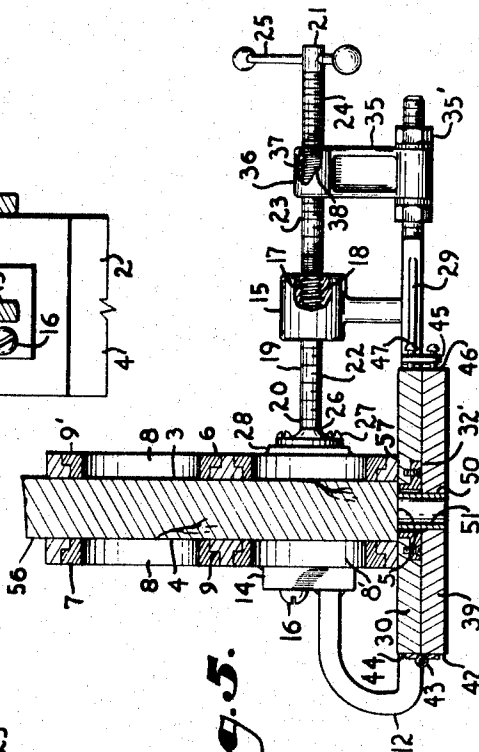


Fig. 5.

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BORING AND ROUTING JIG FOR DOORS

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4 Claims. (Cl. 77-62)

ABSTRACT OF THE DISCLOSURE

A jig for application to doors for positioning of bores and recesses for mounting of door locks thereon, and having opposed boring guide carrying plates for engaging opposite faces of a door panel with one plate connected to foot members of clamps and the other plate connected to an end of screws threaded in a head with an intermediate portion connecting the foot and head extending transversely of the door panel edge whereby the line of the force between the screw members and foot overlies the door faces. The clamping structures being in the form of C-clamps with a third guide plate slidably thereon and connected to a screw portion having a different lead than the first screw for movement of the third plate at half the rate of the movement of the second member in clamping a door so as to center the guide in the third plate relative to the edge of the door, and a fourth guide plate hinged mounted on the third guide plate.

This invention relates to apparatus used for the installation of door latches, locks and the like in door panels and is particularly concerned with guiding structure for boring a passageway transversely through the door panel and routing an intersecting rectangular passageway from the edge of the door panel.

Various jig structures have been suggested as an aid to the carpenter in mounting locking or latching members on door panels, but such structures heretofore have had one or more serious drawbacks, for example, undue complexity, difficulty of proper adjustment and use, and the ability to provide guidance for only a starter bore opening into the side edge of the door panel.

The principal objects of the present invention are: to provide a boring and routing jig of simple construction for use in mounting a lock or latch upon a door panel; to provide such a jig which is easily used even by a relatively unskilled person; to provide such a jig which includes a rectangular guide for the edge of the door panel in addition to an edge starter bore guide; to provide such a jig having a unique structure wherein the rectangular guide opening is automatically centered between the opposite faces of the door panel as the jig is clamped into position; and to provide such a jig which includes a sleeve guide mounted on a hinged plate for directing a boring tool through a rectangular guide opening and into the edge of the door panel without run-out.

Other objects and advantages of this invention will become apparent from the following description taken in connection with the accompanying drawings wherein are set forth by way of illustration and example certain embodiments of this invention.

FIG. 1 is a fragmentary perspective view illustrating a boring and routing jig embodying this invention clamped to a door panel with a hinged plate member pivoted outwardly exposing a rectangular guide opening.

FIG. 2 is an end elevation of the jig, particularly showing additional details of construction.

FIG. 3 is a cross-sectional plan view through the jig and door panel showing the hinged plate member in face-to-face relation with the rectangular guide opening forming plate member.

FIG. 4 is a fragmentary cross-sectional view taken on

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the line 4-4, FIG. 3, particularly showing the guide structure for slidably supporting the rectangular guide opening plate member.

FIG. 5 is a fragmentary cross-sectional view similar to FIG. 3 but showing the jig mounted on a thicker door panel.

Referring to the drawings in more detail:

The reference numeral 1 generally indicates a boring and routing jig for use in mounting a lock or latch structure (not shown) upon a door panel 2. The door panel 2 is of any conventional type having opposite faces 3 and 4 and an edge 5 through which a lock or latch will extend after the lock or latch structure is mounted.

The jig includes first and second parallel spaced apart plate members 6 and 7 adapted for respective disposition in spaced apart parallel relation on the respective faces 3 and 4 adjacent the edge 5. The plate members 6 and 7 are formed of a suitable rigid material, such as steel and have openings 8 and 8' extending respectively there-through in mutually aligned relation. The openings 8 and 8' form ledges 9 for receiving a selected tool guide 9' for accurately guiding a cutting tool (not shown) into and through the respective panel faces 3 and 4. The tool guides 9' may vary in both guide opening diameter and location so as to conform to the requirements of most lock structures.

A pair of C-clamps respectively designated 10 and 11 each have an elongated rigid body 12 with intermediate portions 13 adapted for disposition transversely of the door panel across the edge 5 and in spaced apart parallel relation. The C-clamp bodies 12 each have a foot portion 14 and an opposed head portion 15 rigidly secured to the intermediate portions 13 and in spaced apart relation for receiving the door panel 2 therebetween when the intermediate portion 13 is positioned adjacent the edge 5. The foot portions 14 are rigidly secured by means of suitable screws 16 to the plate member 7 in spaced apart positions as illustrated in FIG. 4. The head portions 15 each have a bore 17 therethrough axially aligned with the respective foot portions 14. The head portions 15 have internal screw threads 18 formed in the bores 17.

Elongated shafts 19 and 19' are provided for the respective head portions 15 and have a first end 20 and a second end 21. The shafts 19 and 19' have external screw threads 22 thereon with a lead corresponding to the threads 18 and extending from the first end 20 along a major portion of the length thereof, the screw thread 22 terminating intermediate the ends 20 and 21 at a point 23. External screw threads 24 are formed along a minor portion of the length of the shaft 19, that is, between the point 23 and the second end 21 thereof. A suitable bar 25 extends transversely through the respective ends 21 to permit the rotation of the shafts 19 and 19' by hand.

The threads 22 on the shafts 19 and 19' are respectively engaged with the screw threads 18 in the head portions 15 and the shaft first ends 20 are positioned between the respective head portions 15 and foot portions 14 of the C-clamps 10 and 11. A swivel joint member 26 is rotatably mounted on each of the shaft ends 20 and are secured in spaced apart relation to the plate member 6 by means of screws 27 which are engaged with mounting blocks 28 welded to the plate member 6.

The clamp intermediate portions 13 respectively have elongated guides 29 thereon in the form of a ridge or track directed toward each other in parallel spaced apart relation (FIG. 4). A third plate member 30 is located between the intermediate portions 13 and has suitable grooves 31 on opposed parallel side edges thereof for respectively receiving the guides 29 for slidably mounting the third plate member 30 for movement on the intermediate portions 13 transversely of the plate members 6 and 7. Recessed parallel slots 29' extending through the

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plate member 30 receive screws 30' which are threadedly engaged in the edge of the plate member 6 to lend additional guiding support between the plate members. The third plate member 30 has a rectangular opening 32 therethrough for receiving a selected guide member 32' therein guiding a suitable routing tool (not shown) into the door edge 5 for producing the rectangular opening necessary for receiving the lock or latch supporting portion of the lock structure (not shown).

A rigid arm 33 is secured at one end 34 thereof to the third plate member 30 and extends therefrom transversely of the plate members 6 and 7. A foot member 35 is longitudinally slidable at one end thereof over the free end of the arm 33 and is adjustably secured in position by nuts 35'. The other end 36 of the foot member 35 terminates in a bore 37 coaxial with the shaft 19. The bore 37 has internal screw threads 38 therein with a lead similar to the screw thread 24 on the shaft 19 and engages the threads 24. The shaft threads 22 have a lead twice that of the threads 24 whereupon the rotation of the shaft 19 causes the third plate member 30 to move at one-half the rate of movement of the plate member 6 with respect to the plate member 7 which is secured to the foot portion 14. Thus, after an initial positioning and locking of the guide member 32' by the nuts 35', the member 32' is always maintained in the desired location between the plate members 6 and 7 regardless of the separation distance between the latter plate members caused by the varying thickness of a door panel.

A fourth plate member designated 39 is preferably rectangular and, in this example, approximately equal in dimension between opposite edges 40 and 41 thereof to the corresponding edges of the plate member 30. One edge 42 of the fourth plate member 39 is connected by means of a hinge 43 to one edge 44 of the third plate member 30. The hinge 43 permits the fourth plate member to be selectively pivotally moved into and out of face-to-face relation with the plate member 30 as shown in FIG. 3. A suitable latch hook 45 is mounted on the edge 46 of the plate member 39 opposite the edge 42 and is adapted to engage an anchor pin 47 fixed to the plate member 30 for selectively retaining the plate members 30 and 39 in face-to-face contacting relation. Pins 48 project from the plate member 39 and are adapted to be received in depressions 49 extending into the plate member 30 to insure a predetermined alignment between the respective plate members when they are latched in face-to-face relation.

A bore 50 extends through the plate member 39 in a position which is aligned with the opening of the guide member 32' when the plate members 39 and 30 are in face-to-face relation. A suitable bore sleeve 51 is received in the bore 50 and extends to the plane of the panel edge 5 for guiding a starting drill (not shown) into the edge of the door panel without objectional run-out.

An elongated bar 52 is removably secured at one end thereof to the plate member 6 by means of a mounting block 53. The bar 52 terminates at the other end thereof in a gauge block 54 which is adapted to engage the top edge 55 of the door panel so as to properly position the jig 1 with respect to the top edge 55.

In operation, the bars 25 are rotated in a direction whereby the plate member 6 is separated from the plate member 7 a distance greater than the thickness of the door panel. The jig is then placed on the door panel so that the gauge block 54 engages the top edge 55 and the plate members 6 and 7 are positioned on the respective door panel faces 3 and 4. The jig is urged toward the door panel edge 5 until contact is obtained between the third plate member 30 and the panel edge 5. The shafts 19 and 19' are then rotated in the opposite direction until the plate members 6 and 7 firmly clamp the door panel therebetween. As the shaft 19 is rotated, the plate member 30 moves at one-half the rate of the plate member 6 toward the plate member 7 whereupon the rectangular guide opening 32 attains a position in the transverse center of the

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door panel when the plate members 6 and 7 are each in contact with the door panel. Suitable boring tools (not shown) may then be used to produce a transverse opening through the door panel relying on a selected tool guide 9' for proper positioning and tool guidance.

With the fourth plate member 39 locked into position in face-to-face relation against the third plate member 30, a suitable boring tool (not shown) is used to drill into the edge 5 through the sleeve 51 until intersection is obtained with the transverse opening. The latch hook 45 is then released and the fourth plate member 39 pivoted on the hinge 43 so as to expose the guide member 32'. The bore extending into the edge 5 is then used for starting a suitable routing tool (not shown) to produce the elongated opening necessary for mounting the lock structure, the guide member 32' providing guiding edges for the routing tool.

FIG. 5 shows the jig used on a door panel 56 of substantially greater thickness than the panel 2 and illustrates the automatic positioning of the rectangular opening 32 on the panel edge 57.

Although one form of this invention has been illustrated and described, it is not to be limited thereto except insofar as such limitations are included in the following claims.

I claim:

1. A jig for use in mounting a lock upon a door panel having opposite faces and an edge comprising:

(a) first and second spaced apart tool guide members having adjacent plane surface portions for respective disposition in engagement with said opposite faces of a door panel at the location for a lock,

(b) clamp means having an intermediate portion adapted for disposition transversely of said door panel across said edge, said clamp means having a foot portion and an opposed head portion secured to said intermediate portion and in spaced apart relation and extending therefrom to overlie opposite faces of a door panel for receiving said door therebetween when said intermediate portion is positioned near said edge,

(c) said foot portion being engaged with said first member, said head portion having a bore therethrough with internal screw threads therein having a first lead,

(d) a shaft having first and second ends and first and second portions along the length thereof, said shaft having external screw threads with said first lead extending along said first portion and external screw threads with a second lead one-half that of said first lead extending along said second portion,

(e) said first portion threads being engaged with said head portion threads, said shaft first end being positioned between said head portion and foot portion and rotatably engaged with said second member whereby rotation of said shaft in one direction applies force to said shaft first end and clamp means foot to clamp the door panel between said plane surfaces of the first and second guide members,

(f) said jig including a third tool guide member, cooperative ways on the intermediate portion of the clamp means and the third tool guide member for mounting said guide member for movement transversely of said first and second plate members,

(g) structural means secured to said third member and having a bore coaxial with said shaft, said last named bore having internal screw threads with said second lead and threadedly engaging said shaft second portion whereupon the rotation of said shaft moves said third member at one-half the rate of said second member.

2. The jig as set forth in claim 1 wherein:

(a) said first, second and third tool guide members are plates, and including

(b) removable inserts mounted on said plates having selected size openings therein with tool guiding edges for correspondingly shaped recesses in a door.

3. The jig as set forth in claim 2 wherein:

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- (a) said clamp means comprises a C-clamp, and
- (b) a second C-clamp is spaced from said first named C-clamp and engaging said first and second members.

4. The jig as set forth in claim 3 including:

- (a) a fourth tool guide member, hinge means hingedly connecting said fourth member to said third member for selective pivotal movement into and out of face-to-face relation with said third member,
- (b) said fourth member having a bore extending there-through, and
- (c) a bore sleeve in said fourth member bore for guid-

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ing a boring tool through said third member and into said door panel edge.

References Cited

UNITED STATES PATENTS

1,919,900	7/1933	Moller	77—62
3,082,800	3/1963	Soss	144—27
3,212,366	10/1965	Russel et al.	77—62

10 FRANCIS S. HUSAR, *Primary Examiner*.