

Nov. 24, 1964

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3,158,186

HINGE SETTING APPARATUS

Filed Feb. 21, 1963

3 Sheets-Sheet 1

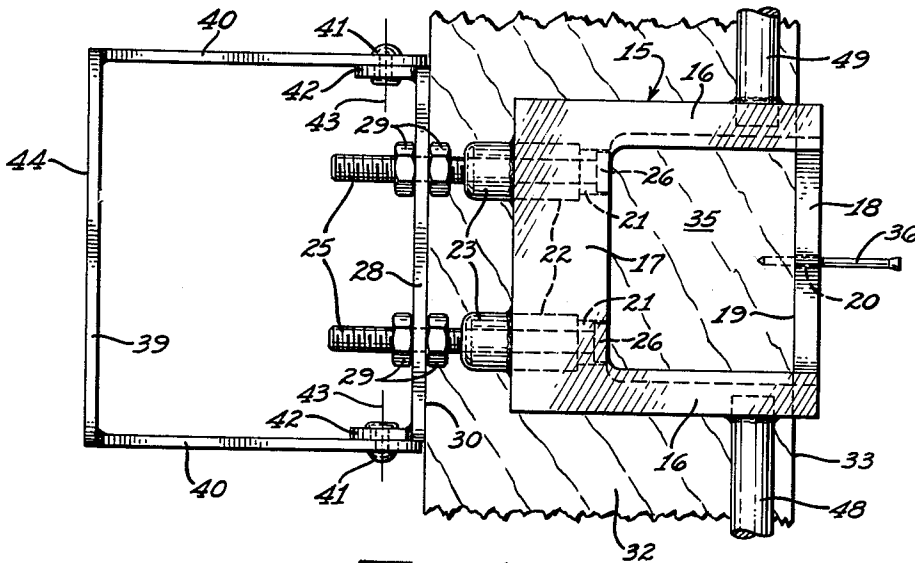


FIG. 1

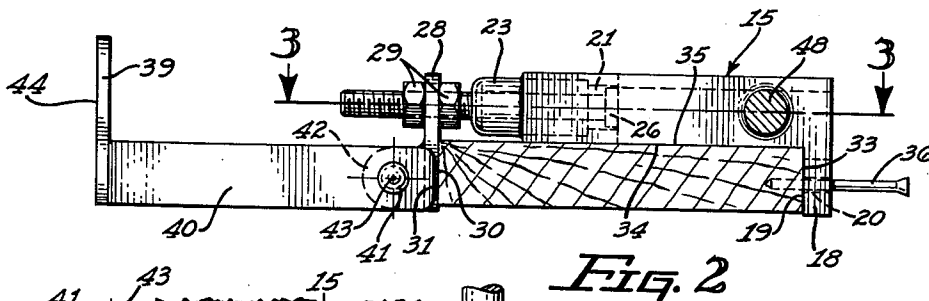


FIG. 2

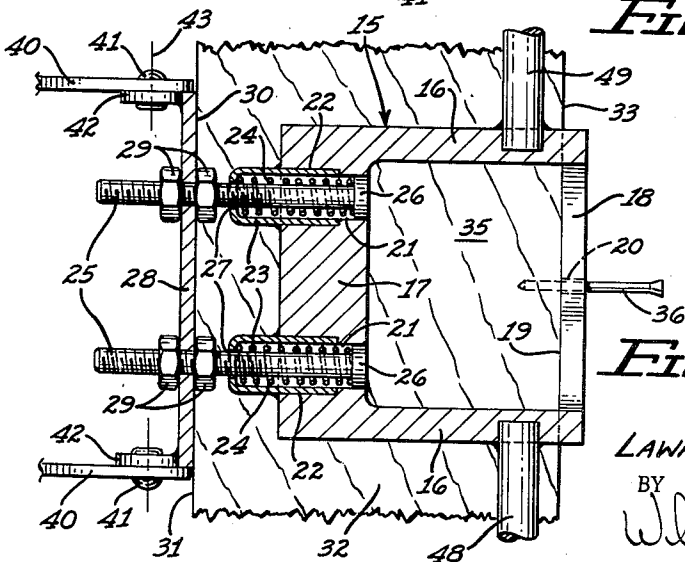


FIG. 3

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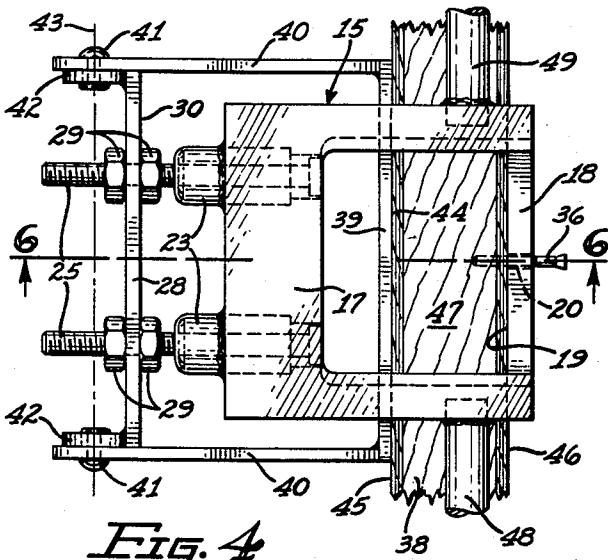


FIG. 4

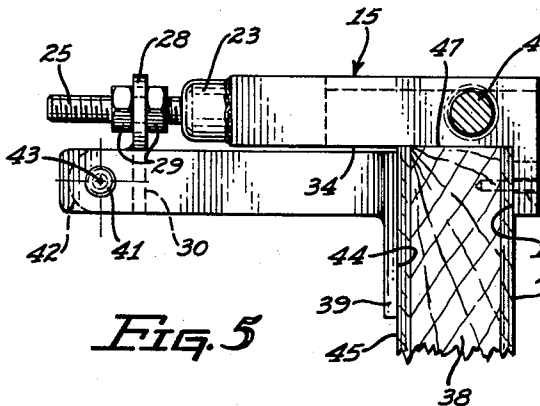


FIG. 5

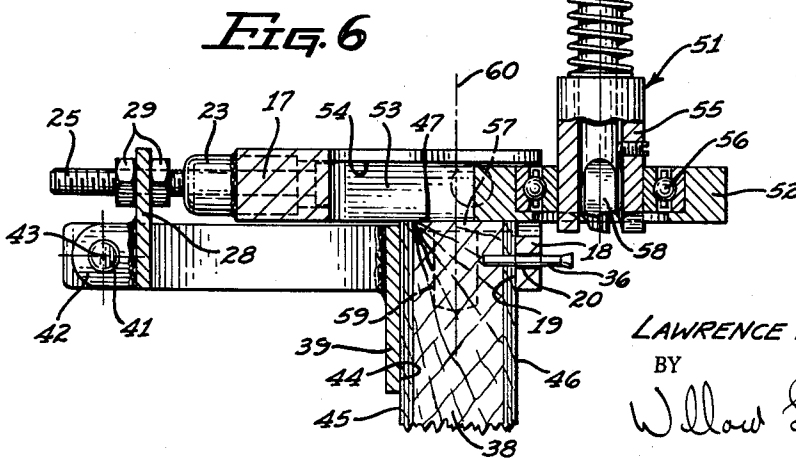


FIG. 6

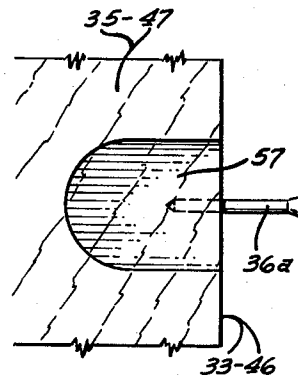


FIG. 9

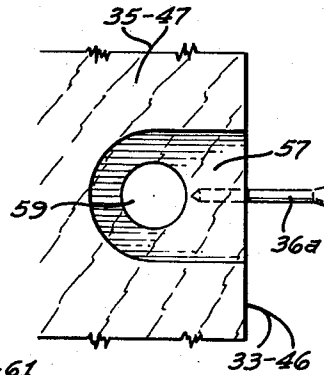


FIG. 10

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3 Sheets-Sheet 3

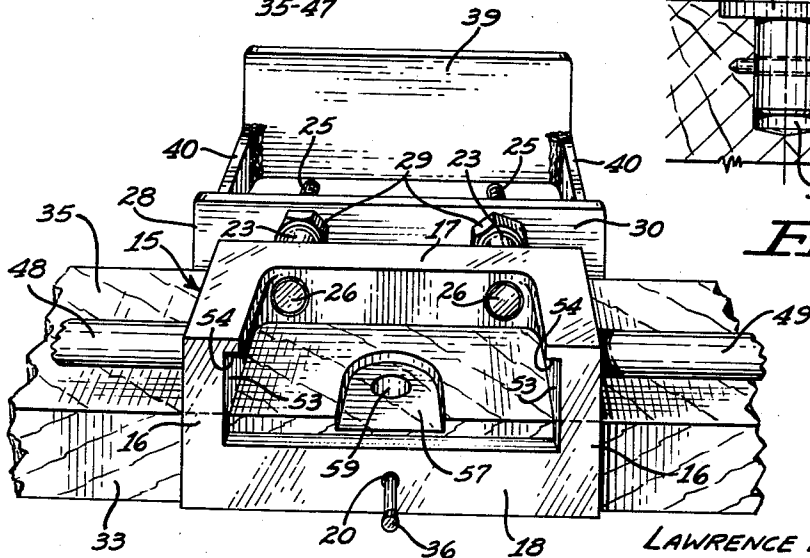
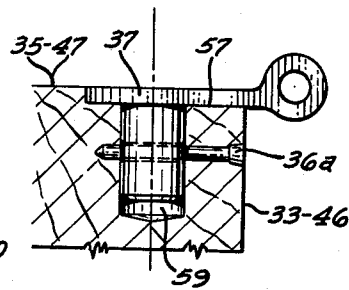
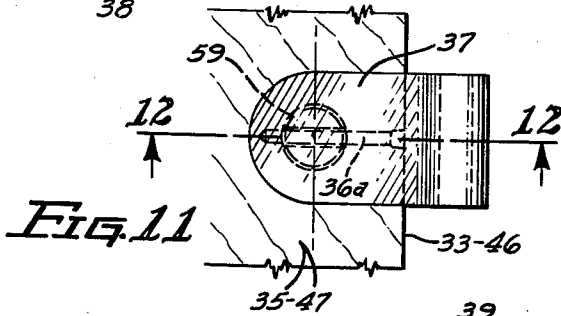
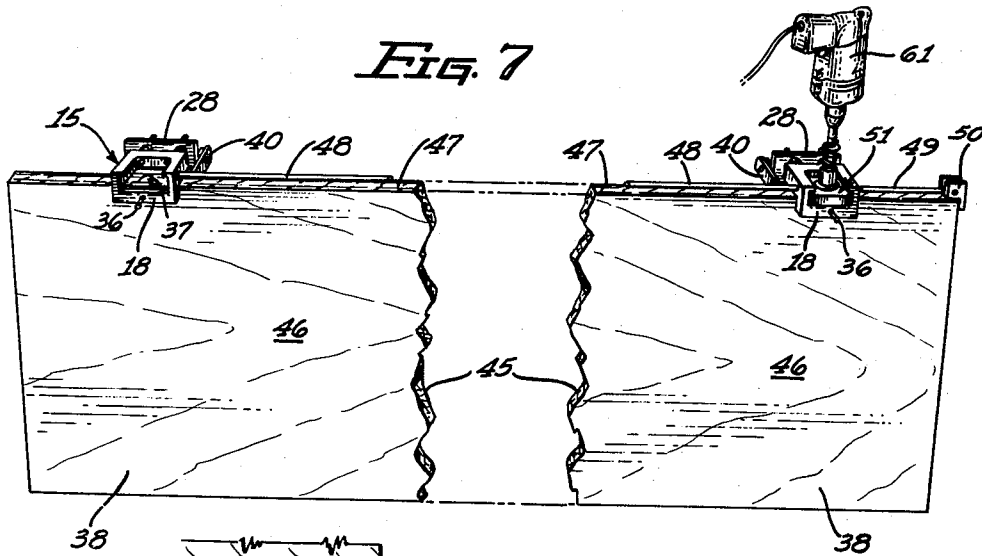


FIG. 12

FIG. 8

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3,158,186

HINGE SETTING APPARATUS

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3 Claims. (Cl. 144-27)

This invention pertains to hinge setting apparatus and is particularly directed to a fixture to facilitate the rabbeting and boring of doors and door jambs for the mounting of hinges for hanging the doors.

This application is related to applications: Serial No. 196,413, filed May 21, 1962; Serial No. 252,645, filed January 21, 1963; and Serial No. 244,481, filed December 13, 1962.

One of the objects of this invention is to provide a fixture to facilitate the accurate and easy cutting of the mounting surfaces for the hinges on doors and door jambs.

Another object is to provide a jig device to provide the rapid and precise guiding of a cutting tool for rabbeting and boring the pilot hole in doors and door jambs.

A further object is to provide a device as described which is universally applicable to a door or a door jamb for accomplishing the prescribed rabbeting and boring operations in a highly efficient manner.

Further features and advantages of this invention will appear from a detailed description of the drawings in which:

FIG. 1 is a plan view of the apparatus incorporating the features of this invention shown applied to a door jamb.

FIG. 2 is a side elevation of the apparatus shown in FIG. 1.

FIG. 3 is a sectional view on the line 3-3 of FIG. 2.

FIG. 4 is a plan view, similar to FIG. 1 but showing the apparatus applied to a door.

FIG. 5 is a side elevation of the apparatus shown in FIG. 4.

FIG. 6 is a sectional view on the line 6-6 of FIG. 4.

FIG. 7 is a perspective view showing a pair of the hinge setting devices applied to a door.

FIG. 8 is an enlarged fragmentary perspective view showing one of the devices applied to a door jamb.

FIG. 9 is an enlarged view showing the rabbeted recess to be formed in the door and door jamb.

FIG. 10 shows the pilot hole formed in the door and jamb members.

FIG. 11 shows the hinge mounted on the finished rabbeted and bored door and door jamb.

FIG. 12 is a sectional view on the line 12-12 of FIG. 11.

As an example of one embodiment of this invention there is shown, FIG. 3, a hinge setting device comprising a main frame 15 comprising the side members 16 integrally connected at one end to the tie block member 17. The other ends of the side members 16 are connected integrally with the locating bar 18 having a laterally extending abutment surface 19 and a locking pin or nail hole 20 formed therein. Formed in the tie block 17 are a pair of guide bores 21 in the outer enlarged portions 22 of which are fixed the spring retainer cylinders 23 containing and engaging one end of the compression springs 24. Tension bolts 25 having heads 26 engaging the other ends of the compression springs and extending outwardly through openings 27 in the spring retainer cylinders, pass through and are adjustably locked to the jamb abutment plate 28 by suitable clamping nuts 29. The jamb abutment plate 28 has a jamb abutment surface 30 adapted to engage the edge 31 of the jamb 32 while spring pressure in the springs 24 firmly holds abutment surface 19 against the other edge 33 of the jamb 32. The locating surfaces 34 on the inner

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faces of the side members 16 and tie block 17 engage the outer face 35 of the door jamb 32. The locating nail 36 is driven through the nail hole 20, in part way, to both mark the jamb 32 for the reception of locking pin 36a, FIG. 11, to finally secure the mounted hinge 37 and to secure the frame 15 to the jamb for the cutting operations.

The device is also adapted to be applied to the door 38, FIGS. 4, 5 and 6. To this end there is provided a swinging door abutment plate 39 having its end integrally connected to the outer ends of the arms 40, the inner ends of the arms being pivotally mounted by suitable rivets 41 to the lugs 42 formed integral with the ends of door jamb abutment plate 28 so as to swing around an axis 43 from the inoperative position shown in FIGS. 1, 2, 3 and 8, to the operative position shown in FIGS. 4, 5, 6 and 7 wherein the door engaging abutment surface 44 of the door abutment plate 39 engages one face 45 of the door 38. The other face 46 and edge 47 of the door is engaged by the abutment surfaces 19 and 34 and the locating nail 36 as described for FIGS. 1, 2 and 3.

Preferably, each of the described units are mounted in pairs on the jamb or door, FIG. 7, in desired spaced position by a suitable spacing rod 48 fixed at its ends to the side members 16 of the frames 15. A locating rod 49 having a suitable lug piece 50, such as shown in co-pending application, Serial Number 244,481, may be utilized for positioning the devices in proper vertical position for the hinges on the jamb and door.

A suitable cutting tool assembly 51, such as shown in co-pending application Serial Number 252,645 may be utilized with this device comprising the tool carriage block 52 which slides between the guide surfaces 53 and 54, FIG. 8, and on the face 35 of the jamb or the edge 47 of the door during the cutting operations. The rabbeting cutter 55 is journaled on the bearing 56 in the tool carriage block 52 to form the rabbet recess 57, FIG. 9. The pilot hole boring cutter 58 forms the pilot hole 59 when moved into the position 60 at the completion of the rabbeting operation, FIG. 10. Suitable drive means 61 may be provided for rotating the cutters 55 and 58 and for axially reciprocating the cutter 58 and sliding the tool carriage block to and from the position 60.

While the apparatus herein disclosed and described constitutes a preferred form of the invention, it is also to be understood that the apparatus is capable of mechanical alteration without departing from the spirit of the invention and that such mechanical arrangement and commercial adaptation as fall within the scope of the attendant claims are intended to be included herein.

Having thus fully set forth and described this invention what is claimed and desired to be obtained by United States Letters Patent is:

1. A hinge setting device comprising in combination:
 - (A) a frame consisting of,
 - (B) a tie block member,
 - (C) side members integrally connected at one end to said tie block member having locating surfaces on the inner faces thereof,
 - (D) a locating bar connected integrally with the other ends of said side members having a laterally extending abutment surface,
 - (E) spring retainer cylinders mounted in outer enlarged portions of guide bores formed in said tie block,
 - (F) compression springs in said spring retainer cylinders,
 - (G) tension bolts extending through said springs parallel to said side members and having heads engaging one end of said springs and threaded ends extending outwardly therefrom,
 - (H) a jamb abutment plate adjustably locked to the outer ends of said tension bolts and having a jamb

- abutment surface facing toward and parallel to said laterally extending abutment surface of said locating bar,
- (I) a swinging door abutment plate having laterally extending abutment surface parallel to and facing said locating bar when said door abutment plate is swung to operative position, 5
- (J) and a pair of arms having their inner ends pivotally mounted on said frame adjacent the ends of said jamb abutment plate and having their outer ends integrally connected to the opposite face of said swinging door abutment plate adjacent the ends thereof. 10
2. A hinge setting device comprising in combination: 15
- (A) a frame consisting of,
- (B) a tie block member,
- (C) side members integrally connected at one end to said tie block member having locating surfaces on the inner faces thereof,
- (D) a locating bar connected integrally with the other ends of said side members having a laterally extend abutment surface, 20
- (E) spring retainer cylinders mounted in outer enlarged portions of guide bores formed in said tie block, 25
- (F) compression springs in said spring retainer cylinders,
- (G) tension bolts extending through said springs parallel to said side members and having heads engaging one end of said springs and threaded ends extending outwardly therefrom, 30
- (H) a jamb abutment plate adjustably locked to the outer ends of said tension bolts and having a jamb abutment surface facing toward and parallel to said laterally extending abutment surface of said locating bar, 35
- (I) a swinging door abutment plate having laterally extending abutment surface parallel to and facing said locating bar when said door abutment plate is swung to operative position, 40
- (J) a pair of arms having their inner ends pivotally mounted on said frame adjacent the ends of said jamb abutment plate and having their outer ends integrally connected to the opposite face of said swinging door abutment plate adjacent the ends thereof, 45
- (K) said locating bar including a locking pin hole extending therethrough perpendicular to said laterally extending abutment surface thereof. 50
3. A hinge setting device comprising in combination:
- (A) a frame consisting of,

- (B) a tie block member,
- (C) side members integrally connected at one end to said tie block member having locating surfaces on the inner faces thereof,
- (D) a locating bar connected integrally with the other ends of said side members having a laterally extending abutment surface,
- (E) spring retainer cylinders mounted in outer enlarged portions of guide bores formed in said tie block,
- (F) compression springs in said spring retainer cylinders,
- (G) tension bolts extending through said springs parallel to said side members and having heads engaging one end of said springs and threaded ends extending outwardly therefrom,
- (H) a jamb abutment plate adjustably locked to the outer ends of said tension bolts and having a jamb abutment surface facing toward and parallel to said laterally extending abutment surface of said locating bar,
- (I) a swinging door abutment plate having laterally extending abutment surface parallel to and facing said locating bar when swung to operative position,
- (J) a pair of arms having their inner ends pivotally mounted on said frame adjacent the ends of said jamb abutment plate and having their outer ends integrally connected to the opposite face of said swinging door abutment plate adjacent the ends thereof,
- (K) a cutting tool assembly movably mounted on said frame comprising,
- (L) a tool carriage block slidable between guide surfaces formed on said side members while moved in sliding contact with the work surface to be machined,
- (M) and a rabbeting and pilot hole cutting tool journaled in said tool carriage block about an axis at right angles to the direction of sliding movement of said tool carriage block.

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