Dec. 7, 1965 A. SKOLLERUD 3,221,784

MORTICING JIG

Filed Aug. 1, 1963 4 Sheets-Sheet 1

Fig. 1

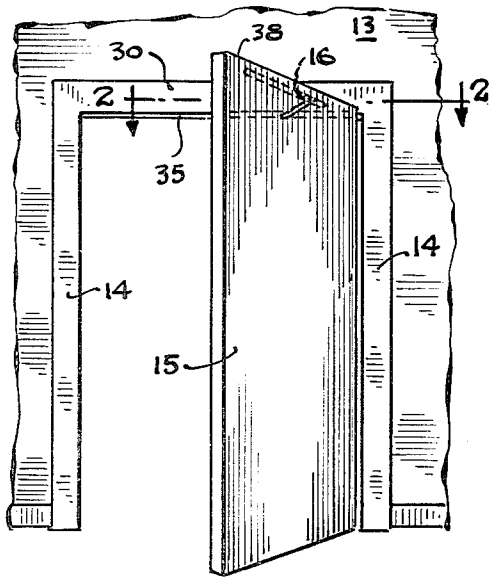


Fig. 2

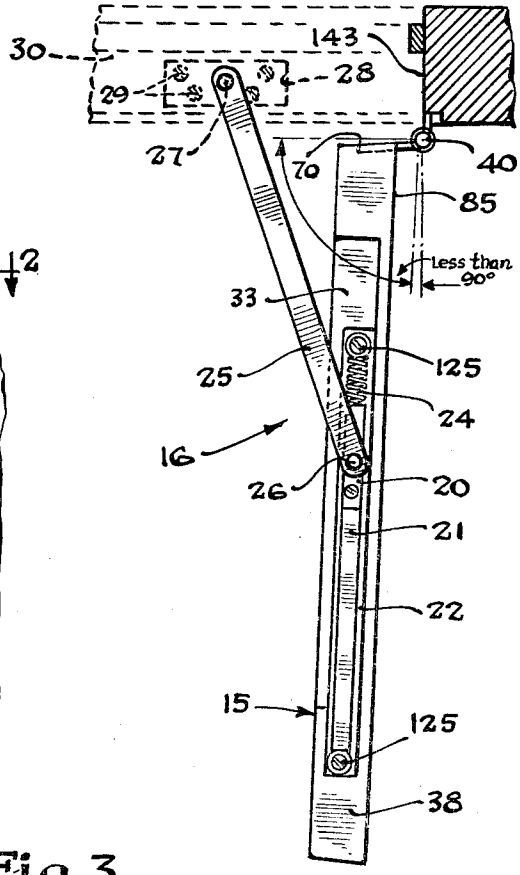
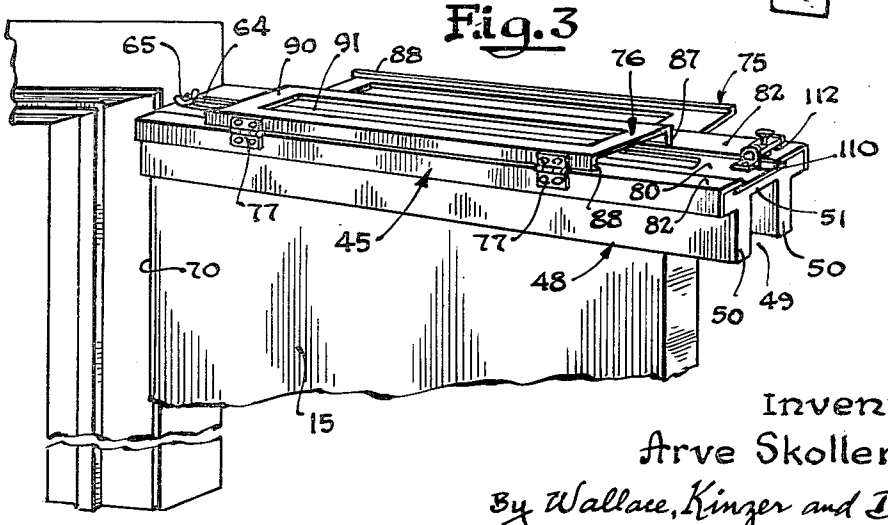


Fig. 3

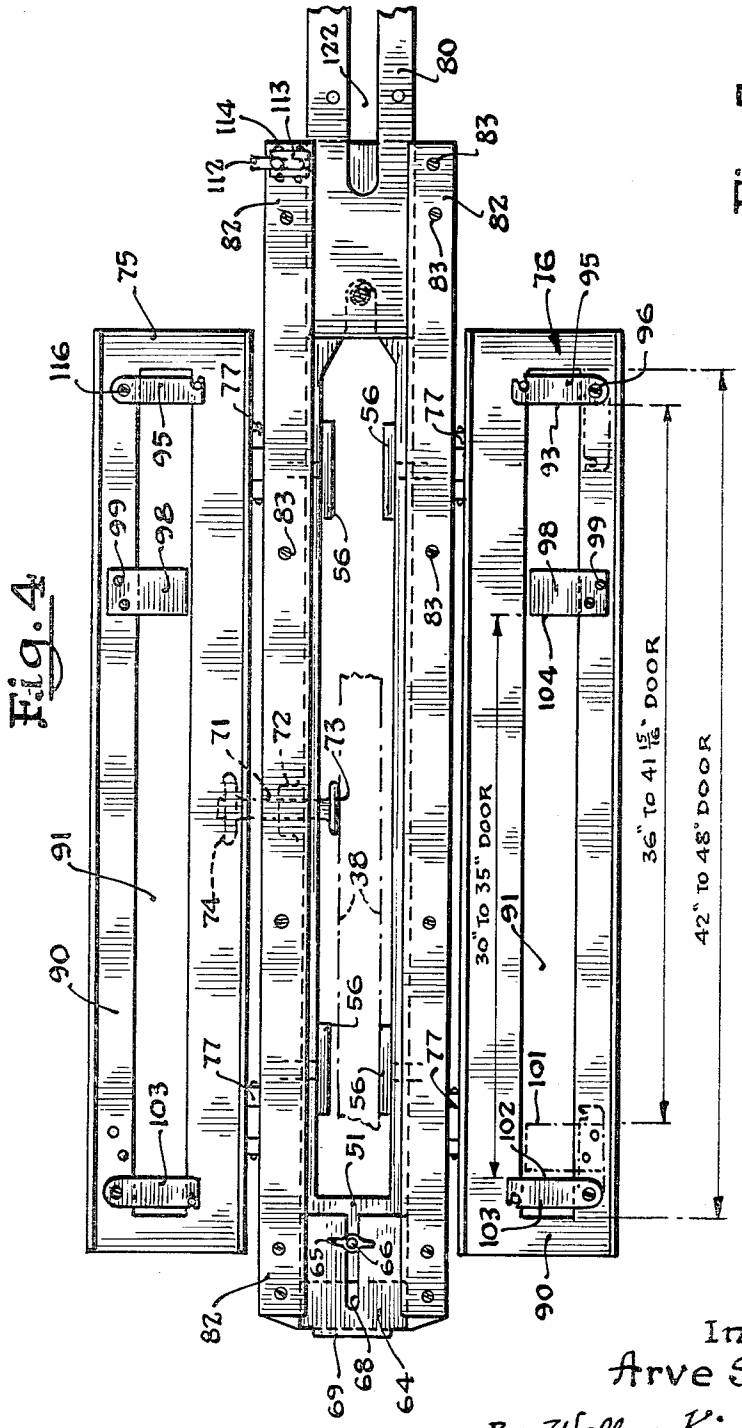


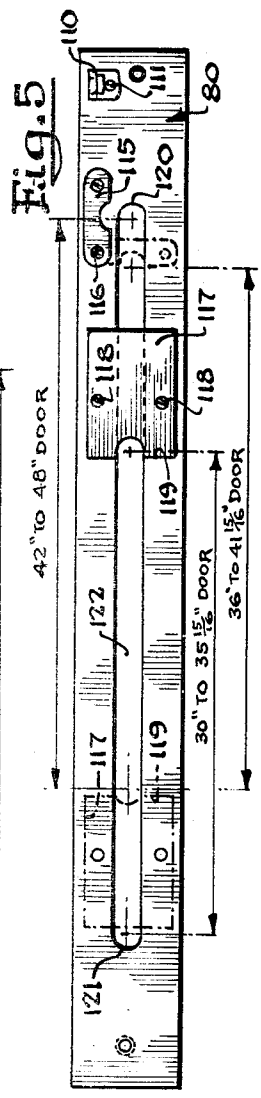
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MORTICING JIG

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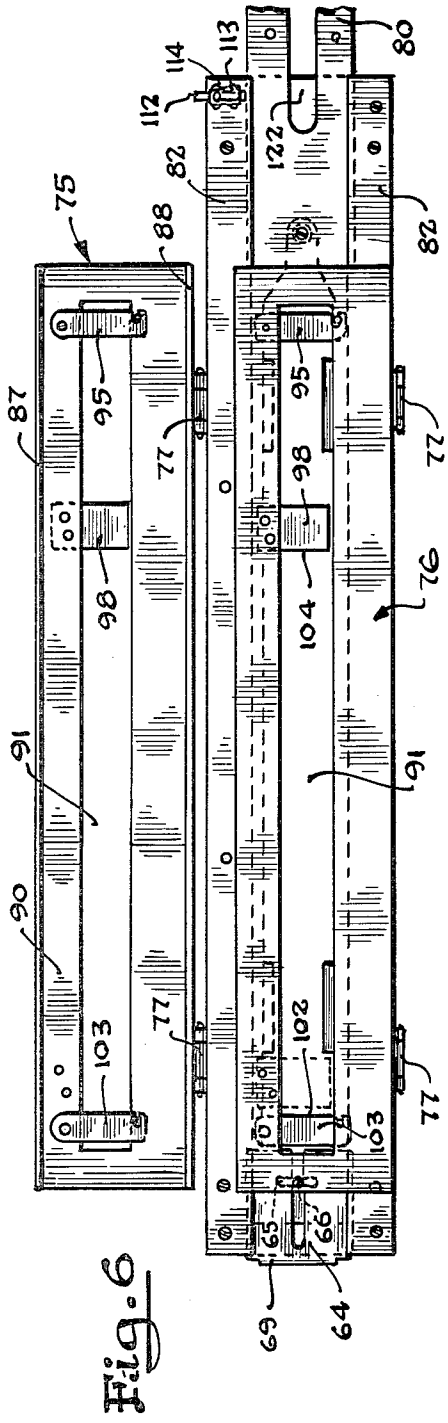


Fig. 6

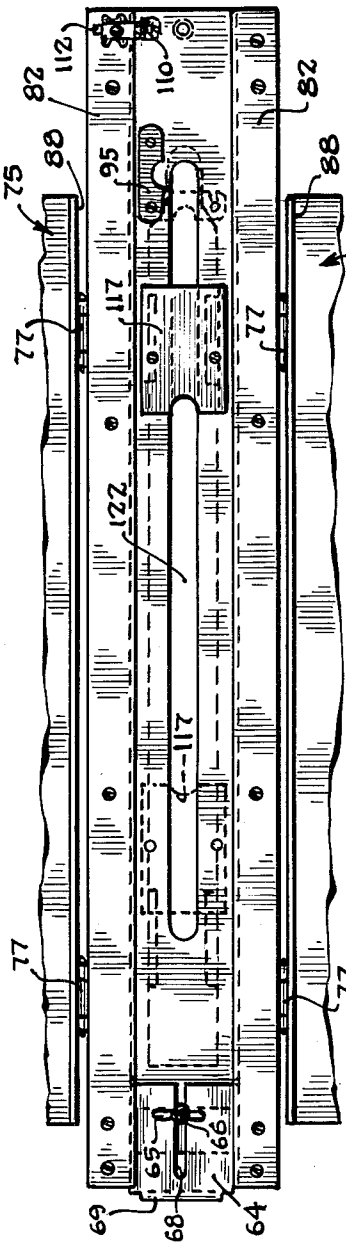


Fig. 7

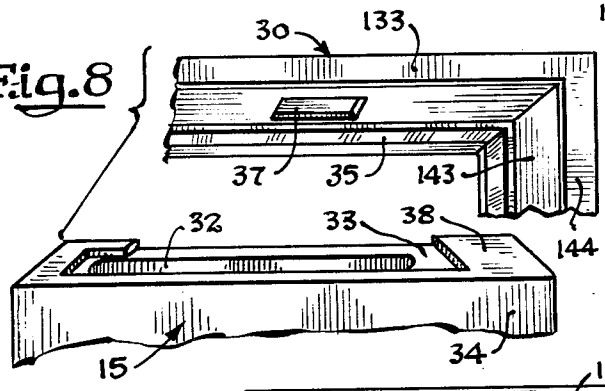
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MORTICING JIG

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Fig.8



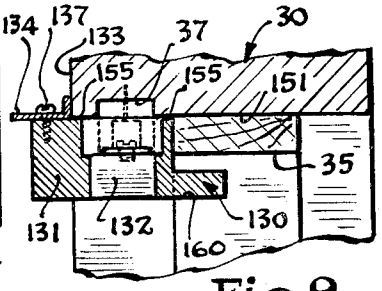


Fig.9

Fig.10

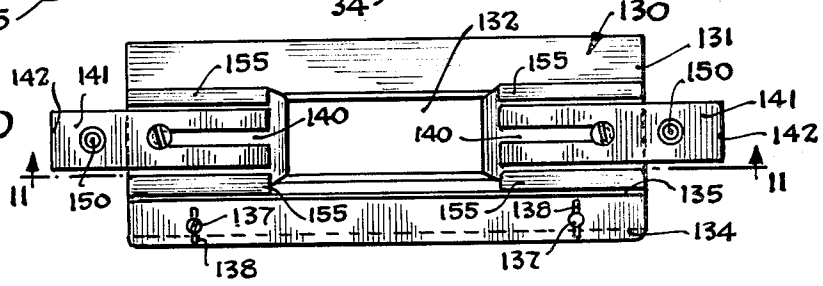


Fig.11

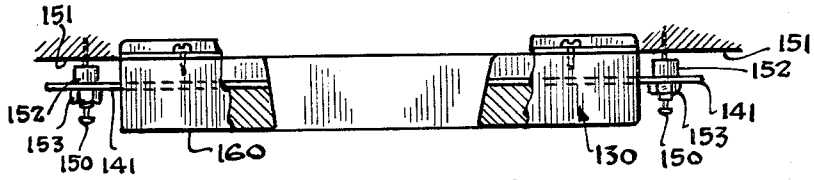
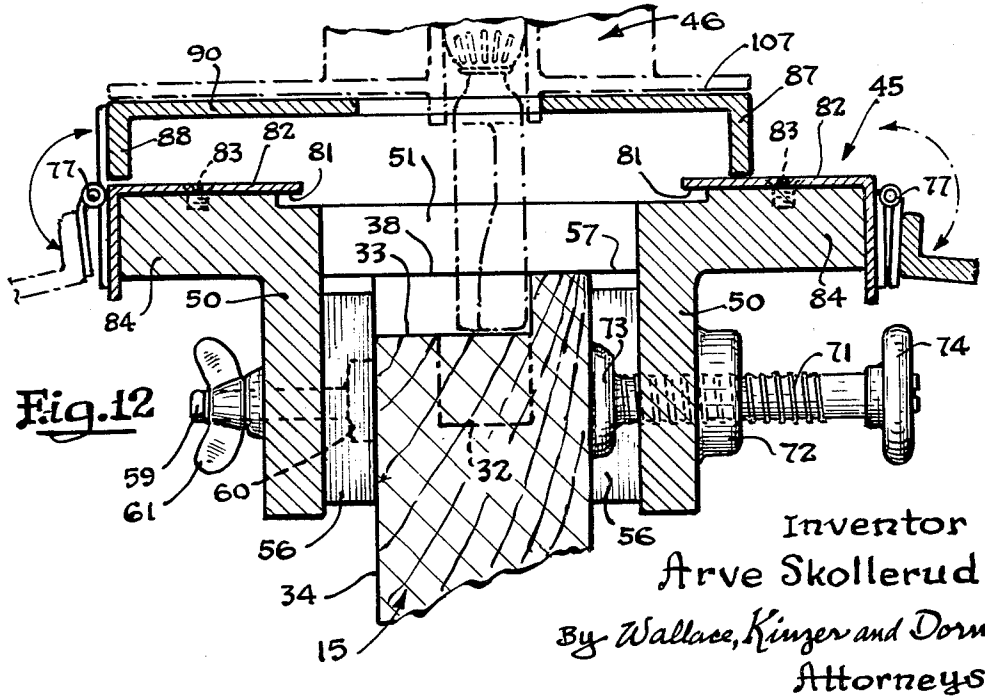


Fig.12



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United States Patent Office 3,221,784 Patented Dec. 7, 1965

3,221,784

MORTICING JIG

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Filed Aug. 1, 1963, Ser. No. 299,390
4 Claims. (Cl. 144—144.5)

This invention relates to a morticing jig apparatus for guiding a router or cutter to accurately locate a plurality of cuts being made in the top of a door preparatory to receiving a hidden door stop and holding mechanism.

The morticing jig of the present invention is adopted for use by carpenters for on-the-site cutting of slots in the top of a door and also in a door jam bracket at the top of the door jam so that a friction slider type of door stop will be entirely concealed when the door is closed. The door stop, to which the present morticing jig has particular applicability includes a fixed bracket mounted on the top of the door and an arm extending therefrom to a friction slide carried within a rectangular guiding frame therefor. This type of door stop can be commercially purchased from the Glynn-Johnson Corporation and is commonly employed because of its sturdy construction, capability of being concealed when the door is closed, and facility of holding the door open at any given position. While this type of door stop is a most desirable type of door stop, greater installations thereof are curtailed since the door stop must be precisely located and is almost exclusively installed on the site by the carpenter. Since a carpenter takes two hours, on the average, to install one of these door stops, the door stops are being used less frequently because of the labor costs. Most of the installation time is spent in laying out the cuts to be taken since to be effective the friction slider and its guiding frame must be accurately positioned in at least three dimensions on the door. Also to assure that the rod connecting the friction slider to the door bracket does not bind and is properly positioned relative to the door in the open and closed position of the door requires additional locating of a cut in the dimensions on the door jamb. Accordingly, it is an object of the present invention to reduce the amount of time required for installing a hidden door stop. In practice, installation of approximately four a day have been increased to in excess of thirty per day when employing a morticing jig apparatus constructed according to the present invention.

To conceal a connecting rod when the door is closed, it is necessary to cut a slot in the side of the door which moves inside the door jamb and abuts against the door stop in the interior of the door jamb. For a reversely swinging door, that is, for example, a left-hand swinging door versus a right-hand swinging door, the slot for concealing the connecting rod must be milled in the opposite edge of the door. Further complications arise due to the fact that doors are normally built in three ranges of sizes and each range of door sizes requires a different set of dimensions for proper installation of the type of door stop herein employed. Accordingly, another object of the present invention is to enable a carpenter to employ the same morticing jig for either right or left-hand swinging doors and also for any one of a plurality of different sizes of doors requiring differently located cuts therein.

The cuts made in the door and in the jamb bracket are normally made with a router having a guide thereon which determines the depth of the cut being made. With the types of cuts necessary for a friction door stop, it has heretofore been necessary to adjust the router to a plurality of cutting depths for different ones of the cuts being made. A further object of the invention is to eliminate the need for adjusting the router when taking different depths of cuts by having the guiding surfaces on the morticing jig located at different predetermined heights

with respect to the depth of the cut needed so that the router can be retained at one setting for all the cuts.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings which, by way of illustration shows preferred embodiment of the present invention and the principles thereof and what is now considered to be the best mode contemplated for applying that principle. Other embodiments of the invention embodying the same or equivalent principles may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings:

FIG. 1 is a perspective view of a door with a concealed door stop mounted thereon;

FIG. 2 is a plane view taken along the line 2—2 in FIG. 1 in the direction of the apparatus showing the door stop mounted in position at the top of the door for holding the door in an open position;

FIG. 3 shows the door with the morticing jig mounted thereon;

FIG. 4 is a plan view of the morticing jig with the first cut guides in their positions and the second cut guide in its non-effective position;

FIG. 5 is a plan view of the second cut guide;

FIG. 6 is a plan view of a first cut guide positioned over the top of the door;

FIG. 7 is a plan view of the second cut guide in position over the top of the door;

FIG. 8 is an exploded perspective view showing the first and second cuts in the door;

FIG. 9 is a sectional view showing the mounting of a door head jig in position on the door head;

FIG. 10 is a plan view of the door head jig;

FIG. 11 is a sectional view taken along the line 11—11 of FIG. 10 showing the door head jig mounted on the door head;

FIG. 12 is an enlarged sectional view showing the router making the first cut in the door.

Referring now to the drawings, and in more particular to FIG. 1, there is shown in perspective a wall 13 having a door jamb 14 mounted therein on which is pivotally mounted a swinging door 15. The door 15 is shown in FIG. 1 being held in an open position by a concealed door stop mechanism 16 shown in phantom line in FIG. 1. The door stop mechanism employed herein is of a friction slider type of door stop and is adapted to be fully concealed by the door 15 and the door jamb 14 when the door 15 is closed. When the door 15 is open to the position shown in FIG. 2, a friction slider 20 frictionally engages the bottom 21 of a friction slider guide 22 and resists rotation of the door in a clockwise direction as shown in FIG. 2. When the door 15 is fully open, the friction slider 20 is in engagement with a shock absorbing spring 24 supported in one end of the friction slider guide 22. The spring 24 is engageable by the friction slider 22 and is compressed thereby to prevent the door from being suddenly halted or jarred when it is moved to its fully open position. The friction slider 20 is adapted to be moved within the friction slider guide 22 by a connecting lever 25, which has one end mounted on a pivot pin 26 on the friction slider 20, and which has the other end secured to a pivot pin 27 on a mounting bracket or plate 28. The mounting bracket 28 is secured by wood screws 29 to the door head or door jamb bracket 30 of the door jamb 14.

In order to conceal the door stop mechanism 16 when the door is closed, the friction slider guide 22 is positioned within a recess or cut 32, FIG. 8, in top of the door and the connecting lever 25 is positioned within the cut or

recess 33 which extends to the side 34 of the door which abuts against the door stop 35 within the door jamb 14. The supporting plate 28 for the connecting lever 25 is mounted in a cut or recess 37 formed in the door head 30 so that it is positioned above the top of the door 38 when the door 15 is closed.

To assure that the friction slider 20 moves rectilinearly within the slider guide 22 without binding and to assure that the friction slide 20 abuts against the shock absorber 24 when the door is fully opened, the connecting lever 25 must have its end portions accurately positioned with respect to the door jamb 30 and the door 15. To this end, the position and depth of each of the slots or cuts 32, 33 and 37 are accurately dimensioned with respect to the center of a pivot hinge 40, the length of the connecting lever 25, the amount of slider 22 movement, and the amount of recess of the mounting bracket 28. As will be brought out more fully hereinafter in discussion of the morticing jig 45, a large number of dimensions must be maintained if the door stop is to function properly.

For the purpose of accurately locating the cuts 32 and 33 in the door 15, the morticing jig 45 is mounted on top of the door 15, FIGS. 3 and 5, for guiding a power driven router 46, FIG. 12, which is to mill the cuts cuts 32 and 33.

The morticing jig 45, FIG. 3, has a frame member 48 having a central opening or channel 49 between a pair of depending legs 50. The legs 50 of the morticing jig are joined at their opposite ends by a central web 51, which web 51 forms the upper boundary for the channel 49 in which is received the top of the door 15.

The frame 48 is preferably of a light weight casting or formed from extruded metal parts such as from aluminum. The morticing jig is preferably of light-weight construction and can be easily lifted by a carpenter and placed on the top of the door, that is, with the top of the door being placed within the channel 49 of the morticing jig 45. In this position, two pairs of opposed shims 56, FIG. 12, on the legs 50 engage the sides of the door 15 and lower surface 57 on the web 51 will be resting on the top surface 38 of the door. The shims 56 are secured to the legs 50 of the frame 48 by bolts 59 having a head 60 fitted within a complementary recess in the shims 56. The bolts 59 extend through apertures in the legs 50 and are secured at the outer sides of the legs 50 by wing nuts 61 threaded on the ends of the bolts 59.

In order to center the morticing jig 45 on doors having a different thickness, the carpenter merely unscrews the wing nut 61 from the bolt 59 and replaces one set of shims 56 with another set of shims 56 of a thickness corresponding to the width of door then being worked upon. The channel 49 is of course wide enough to accommodate the thickest door.

One of the critical distances that formerly had to be measured by a carpenter before making the cuts 32 and 33 in the top of the door was from the center line from the hinge 40 at the butt end 70 of the door 15. To eliminate the need for making a measurement and to properly position the jig 45 in a longitudinal direction on the door, the morticing jig 45 carries an end stop 64, FIG. 4, which is slidably mounted within a groove in the morticing jig 45. The end stop 64 is secured in position on the jig 45 by a wing nut 65 threaded on a bolt 66 carried within the web 51. As better seen in FIGS. 4 and 7, the end stop 64 has a central slot 68 in which is disposed the bolt 66, and thus the slot 68 permits the end stop 65 to be slidably moved in a longitudinal direction along the morticing jig 45. The end stop has a downwardly turned flange 69 thereon capable of being abutted against the rear edge 70 (FIG. 2) of the door 15. When the jig 45 is positioned on the door 15 with end stop 64 against the end 70 of the door 15, the jig 45 is positioned so that slots 32 and 33 are accurately cut with respect to the end 70 of the door 15 and to the center of the butt hinge 40. Because of the different lengths of the doors being cut, it is necessary to have three separate sizes of end stops 64, only one of which is shown in the drawings.

With the rear end 70 of the door abutted against the end stop 69, the shims 56 in contact with the sides of the door, and with the undersurface 57 of the web 51 in engagement with the top surface 38 of the door, the morticing jig 45 is properly positioned with respect to the three different dimensions of the door for the various cuts to be made by the router 46 The carpenter secures the morticing jig to the door by turning a handle 74, FIGS. 4 and 12, which turns an attached screw member 71 through a threaded boss 72 fixed to a leg 50 of the frame 48. The screw member 71 carries at its inner end a resilient washer 73 which is pressed against the side of the door 15 to lock the morticing jig 45 in position so that it remains in proper position during the ensuing cutting operations.

After the morticing jig 45 has been secured in the proper position on the door 15, a right hand guide 75 and a left hand guide 76, each of which are pivotally mounted on the morticing jig 45 by a pair of hinges 77, are pivoted outwardly to the position shown in FIG. 4 and a second cut slidable guide 80 is moved rightwardly as seen in FIG. 4 to an ineffective position in order to expose the top 38 of the door. As best seen in FIG. 12, the second cut guide 80 rests on shoulders 81 formed on the upper and inner surfaces of the frame legs 50 and the first cut guide 80 is guided within opposed channels formed by the shoulders 81 and a pair of angle shaped flanges 82 secured, respectively, by fasteners 83 to horizontal legs 84 of the frame 48. That is, the second cut guide 80 slides within the grooves formed between the overhanging portion of the angle plates 82 and the shoulders 81 of the legs 50 and within these same grooves at the opposite end of the jig 45 slides the end stop 64 as previously described.

When the morticing jig 45 is in the position shown in FIG. 4, the morticing jig 45 is prepared for the positioning of either the right guide 75 or the left guide 76 over the top of the door 38 preparatory to taking the first cut by the router 46 in the top 38 of the door 15. As heretofore explained, the first cut 33 extends across the top surface 38 of the door and into a portion of the side 34 of the door, FIG. 8, which abuts against the door stop 35. Thus, the direction in which the door swings determines whether or not the first cut extends into the left or right side of the door 15. The door 15, as shown in FIGS. 1 and 2, is termed a left hand swinging door and the first cut therein is made when using the guide 76 which is also termed a left-hand guide or template for the first cut.

The carpenter swings the left-hand guide 76 about the hinges 77 so that the left-hand guide 76 assumes the position shown in FIG. 6. The guides 75 and 76 are identically constructed of channel shaped members having legs 87 and 88 joined by a central web 90. When a guide 75 or 76 is pivoted about the hinges 77 into a guiding position, the legs 87 and 88 rest on the upper surface 85 of the opposed angle plates 82. The central web 90 has formed therein an opening 91 which is the shape of the first cut 33 for each of a first range of door sizes. For each of the three ranges of door sizes, the length of the opening 91 must be varied so as to obtain three different lengths of cuts 33 necessary for different doors. For the largest range of doors, namely, doors having a longitudinal dimension from 42 to 48 inches, the full length of opening 91 is utilized.

For the second range, namely 36–41⅞ inch doors, the length of the opening is effectively shortened by the interposition of stops 95 and 98 in the opening 91. The stop 95 is pivotally mounted on a pin 96 on the under side of the web 90 and is rotatable to the phantom line position when it is desired to utilize the full length slot. For the second range of door sizes, the stop 98 is secured to the bottom side of the web 90 by fasteners 99 in the phantom line position (FIG. 4) at the left hand end of

the web 90. Thus, the length of the slot extends from the inner edge 101 of stop 98 to the inner edge 93 of the pivoted stop 95.

For the smallest range of door sizes, namely, from 30" to 35⅞", the first cut 33 is reduced in size to extend between stops 98 and 103, as positioned in FIG. 4. The stop 103 is pivotally mounted on the underside of the web 90 and can be pivoted from the phantom line position to the full line position for the smallest range of doors. For the smallest range of doors, the length of the slot 91 extends from edge 102 of stop 103 to the edge 104 of the stop 98, as shown in the positions of FIG. 4.

The top surface of the web 90 is entirely free of all obstructions and is a smooth flat plane for supporting the router 46 as the carpenter moves the router 46 thereacross while the guide 107 is moved along the sides of the opening 91 in the channel. In the illustrated example, the smallest length cut is being made and it extends from the edge 102 of the stop 103 to the edge 104 of the interior stop 98. The depth of the cut 33 from the top surface 38 of the door 15 is ¼" and the router bit extends 1 7/16" beneath its guide 107, the distance between the top of the channel 90 and the reference surface 57 of the web being 1 3/16". Thus, the router cuts a ¼" deep cut when the router guide 107 is resting on the top surface of the web 90 of the left guide 76.

After the first cut 33 has been made, the left guide 76 is swung outwardly to the position shown in FIG. 4 and the slide 80 is moved leftwardly to bring a fixed catch 110 secured thereto by a fastener 111, FIG. 5, opposite a slide 112 on a latch member 113 secured by fasteners 114 to the angle plate 82. When the opening in the catch 110 is opposite the slide 112, the operator positions the slide 112 through the opening in the catch 110 to secure the slide 112 in the position shown in FIG. 7.

For the purpose of supplying three different lengths of second cuts 32, the slide 80 is provided with a pivotal stop 115 pivoted on the slide 80 by a pin 116 and with an interior stop 117 capable of being positioned either in the full line position shown in FIG. 5 by fasteners 118 or in the phantom line position at the left end of the slide 80 as shown in FIG. 5.

For the largest range of door sizes, the stop 117 is placed in a dotted line position shown in FIG. 5, and the pivotal stop 115 is placed on the full line position shown in FIG. 5 so that the length of the slot 122 extends from the surface 119 of the stop 117 in the phantom line position to the end of the slot 120.

For the 36–42" range, the slot 122 extends from the surface 119 of the stop 117 in the phantom line position of FIG. 5 to the pivotal stop 115 which is secured in the phantom line position shown in FIG. 5.

For the smallest range of door sizes, the interior stop 117 is in its full line position and the slot 122 extends from its surface 119 to the left end 121 of the slot 122. The stops 117 and 115 are of less thickness than the thickness of the angle plates 82, and hence, are beneath the plane of the top surfaces 85 of the angle plates 82. Thus, even with the stops 115 and 117 on the slide 80, the router 46 can be placed on the top of the angle plates 82 and moved thereacross with obstruction. Also as apparent from FIG. 12, when the right and left guides 75 and 76 are pivoted to their outward and ineffective positions, they do not interfere with the sliding movement of the guide 107 across the outer surfaces 85 of the angle plates 82 during a routing operation.

The depth of the second cut from the top surface of the door 38 is ⅞" and hence extends downwardly 5/8" deeper than the first cut which terminates the ¼" depth from the top surface of the door. The necessity for readjusting the router 46 has been eliminated as the top surface of the angle plate 82 is 9/16" above the reference surface 57 on the underside of the web 51 which is in engagement with the top surface 38 of the door 15. Since the router bit extends 1 7/16" below the guide 107, the router bit extends ⅞" into the top of door without necessitating a re-adjustment of the router 46.

The first and second cuts 32 and 33 having been made, the slider guide 22 is positioned in the second cut 32 and is secured in the cut-out 32 by cut screw type fasteners 125, FIG. 2. The guider slide 22 has a depth of 5/8" and when positioned within the recess 32 is flush with the top surface of the first cut 33. The morticing jig 45 also assures that the bottom surface 125, FIG. 12, is level with respect to the top surface of the door 38 so that the slider guide 22 is held level as is the friction slider 20. If the slider guide 22 were not level or not properly centered on the door 15, the slider 20 on the end of the lever arm 25 would tend to bind within the slider guide 22 as it moves within the slider guide 22. As previously pointed out, it is necessary to have the mounting plate 28 properly positioned with respect to the door stop 35 carried in the door head 30 and with the center line of the hinge 40 so that the lever arm 25 is properly positioned in the cut-out 32 when the door is closed and is capable of pivoting to the desired position to hold the door open when it is in the position shown in FIG. 2.

For the purpose of locating the recess 37 in the doorhead 30, FIG. 8, a separate doorhead jig 130 is provided. The doorhead jig 130 has a unitary body member 131 in which is a central opening 132, FIG. 10, which closely approximates the size of the mounting plate 28. For all three ranges of door sizes the mounting plate 28 has the same dimensions and hence the opening 132 is the same size, but as will be hereinafter explained, the location of the recess 37 is different with respect to the outer surface 133 of the doorhead 30. To assure proper positioning of the recess 37 from the outer surface 133 of the doorhead 30, the frame 131 of doorhead jig 130 carries thereon a slide 134 having an upstanding flange 135 adapted to be abutted against the surface 133 of the door to locate the opening 132 of doorhead 132 with respect to the outer surface 133 of the doorhead 30. The slide 134 is adjusted in any one of three different positions by loosening the screw type fasteners 137, FIG. 10, extending through elongated slots 138 in the base of the slider 134. The frame 131 of the doorhead jig 30 is scored with three distinct markings (not shown) and the leading surface of the flange 135 is moved to be aligned with one of the markings before the screw fasteners 137 are tightened to fasten the slide 132 in a given position for a given size of door.

The body 131 of the doorhead jig 130 has a pair of open ended grooves 140, FIG. 10, therein which are adapted to receive a pair of opposed slidable guides 141. When making the recess 37 shown in FIG. 8, the right hand guide 141 would have its end surface 142 abutted against the inside surface 143 of the door jamb 144 and would thereby determine the position of the opening 132 with respect to the surface 143 of the door jamb and to the end 70 of the door 15. It should be noted from FIG. 2, that the center of the hinge 40 is also aligned with the surface 143 of the door jamb 30 and that the butt end of the door 70 will also be aligned therewith when the door 15 is in its closed position.

For each of the three different ranges of doors, the doorhead jig 130 employs a separate set of slides, which are of increasing length for the larger size doors, so that the recess 37 extends farther outwardly from the surface 133 of the door jamb for the larger size doors. The pair of guides 141 enable the door head jig 130 to be used for either right or left-hand doors since either slide can be abutted against a surface 143 of a door jamb 30. Also, the guides 141 serve to secure the doorhead jig 130 to the door jamb 30 as the guides 141 carry nails 150 that can be driven into the under surface 151 of the door head 30 to hold the door head jig 130 in proper position while a router is being employed to cut the recess 37.

The nails 150 are slidable supported within a cylinder collar 152, FIG. 11, fastened by a nut 153 to each end of

the slides 141. The nails 150 have collars thereon (not shown) which prevent the nails from sliding through the collars 152 and dropping out of collars.

After the carpenter has abutted the flange 135 against the outer surface 133 of the doorhead 30 and has abutted the end 142 of a slider 141 against the surface 133 of the door jamb 144, the carpenter hammers the nails 150 forcing them upwardly into the door head to secure the door head jig 130 in its proper position.

In this position, FIG. 9, the upper surfaces 155 on each side of the guide channels 150 are in engagement with the lower surface 151 of the door head so that the bottom surface 160 of the door head jig 130 is positioned at a predetermined depth from the bottom surface of the door head 151. The router 46 is repeatedly moved across the lower surface 160 to cut a recess 37 that is the exact depth needed, namely, the depth of the mounting plate 28, without changing the router 46 from its setting used when cutting he cuts 32 and 33.

To add in the understanding of the invention, a brief description of the employment of morticing jig apparatus 46 will be given in conjunction with doors of the 32"–36" range.

With a door open to the position shown in FIGS. 2 and 3, the carpenter adjusts the end stop 64 on the morticing jig 45 to a predetermined position and tightens the wingnut 65 to locate the cuts 32 and 33 from the butt end 70 of the door 15, which end will be in engagement with the downward flange 69 of the end stop 64. The carpenter then raises the morticing jig 45 upwardly and places the channel 49 over the upper portion of the door 15 so that the web 51 of the channel 98 rests on the top surface 38 of the door 15 and so that the shim blocks 56 are in engagement with the sides of the door. After assuring himself that the downwardly turned flange 69 of the end stop 64 is in engagement with the butt end 70 of the door 15 and that the reference surface 57 on the flange 51 is in engagement with the top surface 38 of the door 15, the carpenter turns the handle 70 to turn the threaded member 71 to compress the resilient washer 73 tightly against the side of the door 15 to hold the morticing jig 45 in proper position for making the cuts.

The first cutting guides 75 and 76 are rotated outwardly to the position shown in FIG. 4 and the second cut guide 80 is moved outwardly so that it is no longer positioned beneath the first cut guides 75 and 76. In the example shown, the left hand guide 76 is shown to be positioned over the top of the door. With the router set at a depth of 1 1/16", the carpenter places the guide 107 of the router 46 into engagement with the upper surface of the web 90 of the guide 76 and begins to trace the opening 91 in the guide 76. The length of the opening 91 for the smaller size doors extends from the surface 102 on a pivotal stop 103 to the surface 104 on an interior stop 98 (full line position of FIG. 4). The router 46 makes a cut that has a width of the opening 91, a depth of ¼", and a length equal to the distance between stops 98 and 103. After the first cut, the left side guide 76 is pivoted outwardly and moved over the first cut guide 33 is the second cut guide 80. The catch 110 on the guide 80 is moved into alignment with the slide 112, and the slide 112 is moved into the catch 110 to lock the second cut slide 80 in proper position for the second cutting operation.

For the smallest range of doors, the second cut 32 extends from the left end surface 121 of opening 122 to the surface 119 of the interior guide 117, positioned as shown in full lines of FIG. 5. The guide 107 of the router 46 is held in engagement with the unobstructed flat planar surface 85 of the angle guides 82 during the second cutting operation. The guide 107 traces the opening 122, above described. The second cut is of the proper predetermined depth, 7/8", without necessitating a re-setting of the guide plate 107 with respect to the router 46 since top surfaces 85 of the angle plates 82 are positioned at a predetermined distance from the reference surface 57 in engagement with the top surface 38 of the door 15.

To locate the recess 37 within the door head 30, the carpenter places the slider 135 to its innermost position and fastens the screws 137 to lock the slider 134 in alignment with scribe marks for the smaller range of doors. The carpenter slides the guides 141 to a proper position and locks them in their channels 140 so that the opening 132 is at a proper distance from the end surface 142 of the guide 141 which is abutted against the surface 143 of the door jamb 144. The carpenter places the flange 135 of the slide 134 against the outer surface 133 of the door head 130 and places the upper surfaces 155 of the guide channel 140 in flush engagement with the surface 151 of the door head 30. A few light taps on the nails 50 drive them upwardly into the under surface 151 of the door head and secures the door head jig 130 in proper position preparatory to the routing operation.

Without changing the depth setting of the router 46, the carpenter lifts the router 46 upwardly and places its cutting tool within the opening 132 and places the guide 107 against the lower surface 160 of the jig 130. A proper depth of cut or recess 37 is obtained without necessitating a resetting of the guide 107 of the router 146. After finishing the cutting operation, the door head guide 130 is removed from the door head 30.

The slider guide 22 then can be within the second cut out 32 and the mounting plate 28 is placed in the recess 37 and both are secured thereto by their respective fasteners. The arm 25 is ¼" thick, which is the depth of the first cut and the first cut is of sufficient length and width to receive the lever arm 25 when the door is closed thereby affording a concealed door stop mechanism when the door is shut.

From the foregoing it is believed to be readily apparent that the present morticing jig is capable of accurately locating a pair of cutouts in the top of the door without the necessity of changing the depth of the setting of a router and that the cut-outs are properly located in three different dimensions. Likewise it should be apparent that the morticing jig 45 is not only capable of being used for right and left hand swinging doors but also is capable of use on doors having sizes within three distinct ranges.

In view of the simplicity of operation it should be readily apparent that the foregoing morticing jig readily solves the problem of increasing the rate of installation of this type of concealed door stop mechanism while permitting these door stops to be custom fitted on site to a particular door and door jamb irrespective of whether it is a right-hand or left-hand swing and for different door sizes.

Hence, while I have illustrated and described the preferred embodiments of my invention, it is to be understood that these are capable of variation and modification, and I therefore do not wish to be limited to the precise details set forth, but desire to avail myself of such changes and alterations as fall within the purview of the following claims.

I claim:

1. A morticing jig for guiding a router during the milling of a plurality of cavities in a door for reception of a door stop mechanism, said jig determining the depth and configuration of the cavities and the location of the cavities in relationship to the three dimensions of the door, said jig comprising; frame means having a channel positionable over the top of said door; means on said frame means for engaging the sides of the door to locate said frame means with respect to the sides of the door; said frame means having a reference surface thereon in engagement with the top surface of the door and serving as a reference surface to determine the depth of the cavities within said door; an end stop means on said frame means for engaging one end of the door and thereby lo-

cating said frame means with respect to the end of the door; a first guiding means being pivotally mounted on said frame means and rotatable into a position over the top of the door, said first guiding means having an aperture therein configured to the shape of said first cavity and having a guiding surface thereon for guiding said router, said guiding surface being spaced from said reference surface by a predetermined distance; a second guiding means slidable into position over the top of said door and having an aperture therein configured to the shape of a second cavity, and; guiding surface means on said frame means spaced at a predetermined distance from said reference surface for guiding said router during said second cut so that said router can be maintained at the same depth adjustment and can produce the proper depths of cavities from the top of said door.

2. The morticing jig of claim 1 wherein said first guiding means is adapted for doors opening in one direction and having an alternative first guiding means pivotally mounted on said frame means for movement into position over the top of the door to guide said router for milling cavities in the top of the door for doors being opened in the opposite direction.

3. The morticing jig of claim 1 adapted for use with a plurality of ranges of door sizes wherein one range of door sizes receives cavities configured to the size of the apertures in said first and second guiding means and wherein additional range of door sizes receiving cavities of a smaller configuration, said first and second guiding means having positionable stop means thereon being positionable into the apertures to reduce the size and configuration of the milled cavity and to guide said router in making cavities for said second range of door sizes.

4. The morticing jig of claim 1 wherein the means on said frame means for engaging the sides of the door to locate said frame means with respect to the sides of the door includes a series of different size shims, said end stop means includes a plurality of various length slides removably secured for different ranges of doors, said first guiding means has a plurality of stops adjustably positioned thereon to change the configuration of said first cavity for each of the different ranges of door sizes, and said second guiding means has a plurality of adjustable stops thereon for changing the size and configuration of said second cavity for a different range of door sizes.

References Cited by the Examiner

UNITED STATES PATENTS

2,827,712	3/1958	Roberts	33—197
2,843,940	7/1958	Zern	33—197
2,869,245	1/1959	Bork	144—27 X
2,927,378	3/1960	Godfrey et al.	144—27 X
3,082,800	3/1963	Soss	144—27
3,130,760	4/1964	Juneman	144—144.5

FOREIGN PATENTS

823,215	12/1951	Germany.

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