Jan. 27, 1970 P. R. CHERNO 3,491,487

ADJUSTABLE DOOR FRAME

Filed Aug. 26, 1968

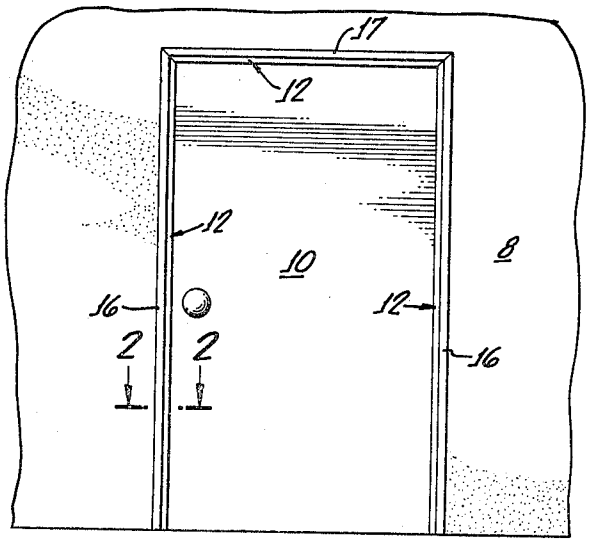


FIG. 1.

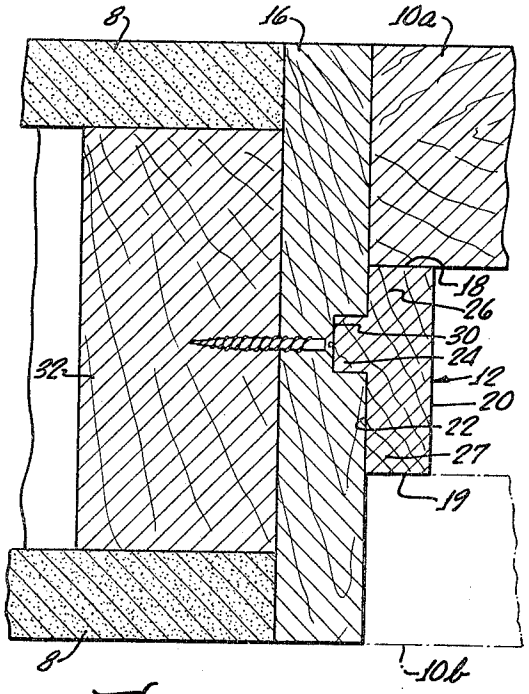


FIG. 2.

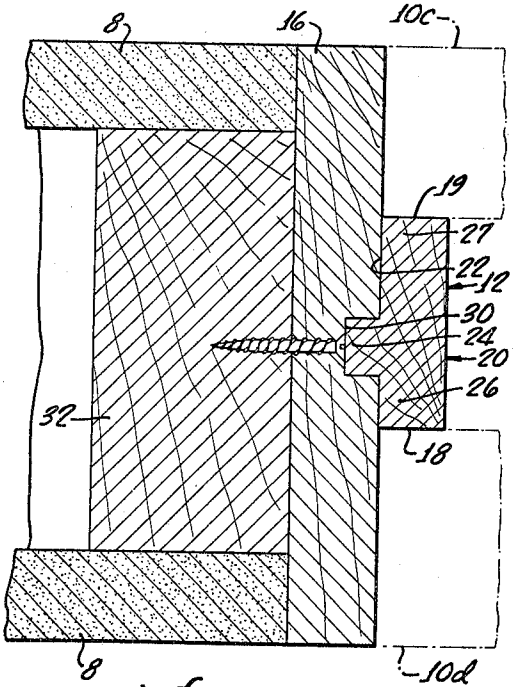


FIG. 3.

INVENTOR.
PHILIP R. CHERNO

BY
FOWLER, KNOBBE
& MARTENS
ATTORNEYS.

United States Patent Office 3,491,487 Patented Jan. 27, 1970

3,491,487

ADJUSTABLE DOOR FRAME

Philip R. Cherno, 730 W. Los Palmas Drive, Fullerton, Calif. 92632

Filed Aug. 26, 1968, Ser. No. 755,326
Int. Cl. E06b 1/06
U.S. Cl. 49—504 2 Claims

ABSTRACT OF THE DISCLOSURE

A door frame adjustable to accommodate doors of different thicknesses. Adjustment is accomplished by inverting a removable stop member in the door frame end-for-end. This adjustment also allows the door frame to be adapted for receiving a door which swings either into or out of the frame. The removable stop member may be mounted in the frame by means of an off-center longitudinally extending tongue on the stop member which is inserted into a corresponding groove in the door jamb.

BACKGROUND OF INVENTION

The use of a variety of door thicknesses in the building industry has required a corresponding multiplicity of door frames and door stops to make the doors fit flush with the door frame edge when installed. This is due to the fact that in the usual installation, the door stop which extends vertically along the jambs and horizontally along the top edge, is an integral part of the door frame side and top members or is a strip which must be nailed in position to custom fit the door with which it is to be used. Typically, each of the vertical door jambs and the top edge are made from a single piece of wood cut to include both the frame member and the stop member. This is accomplished by milling out the exterior side of the door frame member on either side of the stop, thus leaving the stop as a ridge-like protrusion along the entire length of the frame member, spaced by a standard distance from the frame edge for use with a standard width door. The door stop protrusions are intended to abut the door on its two vertical edges and at its top edge when the door is in a closed position. The door stop protrusions are so located that, in the closed position, the side of the door which does not abut the door stops fits flush with the edge of the door frame.

Since the door frame and door stop vertical and horizontal members are one piece construction there is the disadvantage that, once installed, the door frame is adaptable to but one thickness of door since any other thickness would not fit flush with the door frame edge. In addition, the typical door frame will accommodate only a door which swings in one direction because the door will normally be of a thickness which does not allow the stop member to be centrally located on the face of the door frame members. Thus, if the door were hinged so that it abutted on the wrong side of the door stop, it would not fit flush with the outside of the door frame members. For example, the door frame may accommodate a door which is hinge mounted for swinging in but not one which is mounted for swinging out.

Heretofore door frames have been adaptable for receiving different size doors by reversal of the whole door frame which involves extensive modification of the frame itself and the partition on which it is mounted. In the case of custom fitted frames, the stops have been nailed in position to accommodate the individual door but this requires extra time and labor to accomplish.

A more adjustable door frame is needed so that once installed it may be easily adapted for use with doors of different thicknesses mounted for swinging in different directions. The frame should be easily adjustable even after

the jambs and top member are fixed in position in the structure.

SUMMARY OF INVENTION

This invention is directed to a door frame having a removably mounted door stop thereon which is particularly adaptable for use with doors of two different thicknesses, either of which may swing into or out of the door frame and still fit flush with the edge of the door frame. This is accomplished by the use of an off-center longitudinally extending tongue which protrudes from the back surface of the door stop and a mating groove in the door frame which is adapted to receive the tongue.
horizontally inverting the stop member on the horizontal frame member will change the spacing between the edge of the door frame and the surface of the stop which abuts the door. In this manner doors of different thicknesses can be accommodated by the frame for swinging from either the front or rear of the frame.

One feature of this invention is the adjustability of the door frame once installed in a panel.

Another feature of the door frame is the consequential reduction in inventory required by a supplier since one type of adjustable door frame will replace a variety of customary frames. The supplier need only stock a standard frame with grooved jambs and upper cross piece plus a variety of removable tops for doors of different thicknesses.

Another feature of this invention is the simplicity with which the frame can be adjusted for use with different thickness doors with no measuring or aligning of the stop member when the frame is adjusted.

Still another feature of this invention is that it is convenient for the builder to haul fewer frames and removable stops to and from the job locations since they are adapted to receive standard door sizes and one frame can be adjusted for use with swing-in or swing-out doors of two thicknesses.

Another feature of the door frame is the ability to hide the heads of nails or screws which are used to attach the door jamb to the panel or wall on which it is mounted. Since the stop member is placed in the groove after the jamb is installed, heads of nails or screws may be countersunk into the door stop groove and hidden by the door stop.

BRIEF DESCRIPTION OF DRAWINGS

FIGURE 1 is an elevation of the door frame with a door installed for opening into the drawing so that the door stop may be seen at the perimeter of the door;

FIGURE 2 is a sectional view taken substantially along line 2—2 of FIGURE 1; and

FIGURE 3 is a sectional view corresponding to the section in FIGURE 2 but with the door stop inverted end-for-end.

DESCRIPTION OF PREFERRED EMBODIMENT

Referring to FIGURE 1, it will be seen that the door frame assembly of this invention is generally shown installed in a panel or a wall **8** for mounting a hinged door **10**. The assembly comprises three door stop members **12** which protrude inwardly into the door frame from a pair of vertical door jamb members **16** and top member **17** and against which the door **10** abuts when it is in the closed position.

The door stop members **12** are generally rectangular in cross section as shown in FIGURES 2 and 3 and extend for the entire length of the jambs **16** and the top member **17** in conventional manner. Each of the stop members **12** is provided with a pair of door abutting surfaces **18** and **19** which form the opposite ends of the rectangular stop member sections shown in FIGURES 2 and 3. Each of the stops is also provided with a doorway-facing sur-

face **20** which is adapted to be painted or finished to enhance the appearance of the door frame. The opposing surface **22** of the stop member is milled to provide a longitudinally extending, outwardly protruding, off-center tongue **24**. The tongue **24** divides the stop member **12** into a short end portion **26** which spaces abutting surface **18** from the tongue **24** and a longer end portion **27** which spaces abutting surface **19** from the tongue **24**. The tongue **24** protrudes outwardly from surface **22** by a sufficient distance, so that it can fit into a mating groove **30** on the jambs **16** and the top member **17**. The tongue is also sufficiently wide so that it will be strong enough to withstand the shear force of a door closing against either of abutting surfaces **18** and **19**.

The jambs **16** are basically vertically extending side pieces for the doorframe constructed from conventional materials and each having a centrally located, longitudinally extending groove **30** milled therein. The grooves **30** receive the tongues **24** so as to temporarily frictionally retain the stop members **12** in the jambs. The stop members may be permanently mounted in the jambs when the frame is completed by nailing, gluing or otherwise affixing the stop members in place. For example the jamb **16** and the top member **17** may be first mounted in place by attaching the jambs to the wall studs **32** (see FIG. 2) with nails or wood screws and attaching the top member **17** to the jambs. The stop members **12** are then placed in the doorway in the preferred orientation by pressing the tongues **24** in the grooves **30**.

The door jamb **16**, and the door stop **12** are normally made of wood or aluminum which is shaped or extruded in any convenient manner. Any suitable construction material may be used however.

FIGURE 2 shows the door stop **12** mounted on the door jamb **16** with its off-center longitudinally extending tongue **24** oriented so that the longer end portion **27** of the door stop **12** extends toward the viewer as seen in FIGURE 1. As indicated in FIGURE 2, this placement of the door stop will accommodate either a thick door **10**(*a*) hinge-mounted for swinging into the drawing as seen in FIGURE 1 or a thin door **10**(*b*), shown in phantom lines, hinge-mounted for swinging in the opposite direction if such is desired.

FIGURE 3 is a sectional view similar to that shown in FIGURE 2. However, the door stop **12** has been vertically inverted end-for-end so that it is inserted with the off-center longitudinally extending tongue **24** in the groove **30** so that the shorter end portion **26** and abutting surface **18** would face forward as viewed in FIGURE 1. As indicated by the phantom lines in FIGURE 3, this placement of the door stop will accommodate either a thin door **10**(*c*) which is mounted for swinging into the drawing in FIGURE 1 or a thick door **10**(*d*) which is mounted for swinging out of the drawing in FIGURE 1. The most common door thicknesses in the building industry are 1⅜" and 1¾" so that the stop members are preferably formed so that doors of these sizes, when installed, will have their outside face fitting substantially flush with the wall **8**.

It can be seen from FIGURES 2 and 3 that the door stop members **12** are separate and removable from the door jambs **16** and the top member **17** (whose cross section is virtually identical to the jamb sections shown in FIGURES 2 and 3) and that the off-center longitudinally extending tongue **24** on the door stops **12** is frictionally held in the groove **30** on the door jambs **16**. The stop member **12** may be permanently mounted in the groove **30** of the door by any convenient means including nails, screws, or adhesives.

By constructing these member separately and installing them with the groove as shown, the stop member can easily be vertically inverted end-for-end thus shifting its position and ability to receive swing-in or swing-out flush-fitting doors of two different thicknesses without any modification of the frame member itself and without measuring or other difficulty in properly spacing the stop member. The tongue and groove combination will align the stop member such that door of the proper size will fit flush when installed.

The horizontal door frame top member **17** is constructed in a manner similar to the construction of the vertical sections shown in FIGURES 2 and 3. The stop member **12** at the top of the frame is adjusted for different door widths by horizontally reversing it end-for-end in a manner substantially similar to the method discussed for adjusting the vertical stop members **12**.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof.

What is claimed and desired to be secured by Letters Patent is:

1. A door frame comprising a horizontally extending top member and a pair of vertically extending jamb members, said top and jamb members being of preselected width;

an elongated stop member removably mounted on said door frame having a pair of spaced oppositely facing door abutting surfaces and a longitudinally extending tongue protruding from one surface thereof intermediate the door abutting surfaces but off center with respect to the door abutting surfaces, and each of said door frame members having a centrally located longitudinally extending groove therein snugly receiving said tongue for positioning the stop member with the front and rear edges of the tongue engaging the front and rear edges of the groove, said tongue and groove having substantial width such that the tongue can easily withstand the door closing forces without shearing, said stop member being reversible end for end so that either of said door abutting surfaces can be mounted to face toward the front of said door frame or towards the rear of the door frame whereby the frame can be used with two thicknesses of doors or with either swing-in or swing-out doors with said doors being mountable in the frame so that when one side of the door is contacting one of the door abutting surfaces of the stop member, the other side is substantially flush with the edge of the door frame members.

2. A door frame as defined in claim **1** wherein the distance between one edge of the door frame and one of said door abutting surfaces is about 1 and ¾ inches, and the distance between the other edge of the door frame and the door abutting surface on the stop member is approximately 1 and ⅜ inches.

References Cited

UNITED STATES PATENTS

1,806,467	5/1931	Kleinknecht	49—505 XR
1,877,977	9/1932	Rowland et al.	49—380 XR
2,929,446	3/1960	Kuehnlein	49—382 XR

KENNETH DOWNEY, Primary Examiner

PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,491,487 Dated January 27, 1970

Inventor(s) Philip R. Cherno

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 2, line 13, before "horizontally" insert --Due to its off-center tongue, vertically inverting the door stops end-for-end on the vertical frame members and--;
Col. 2, line 26, "tops" should be --stops--;
Col. 4, line 3, "member" should be --members--;
Col. 4, line 11, after "that" add --a--.

SIGNED AND
SEALED
JUN 30 1970

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents