

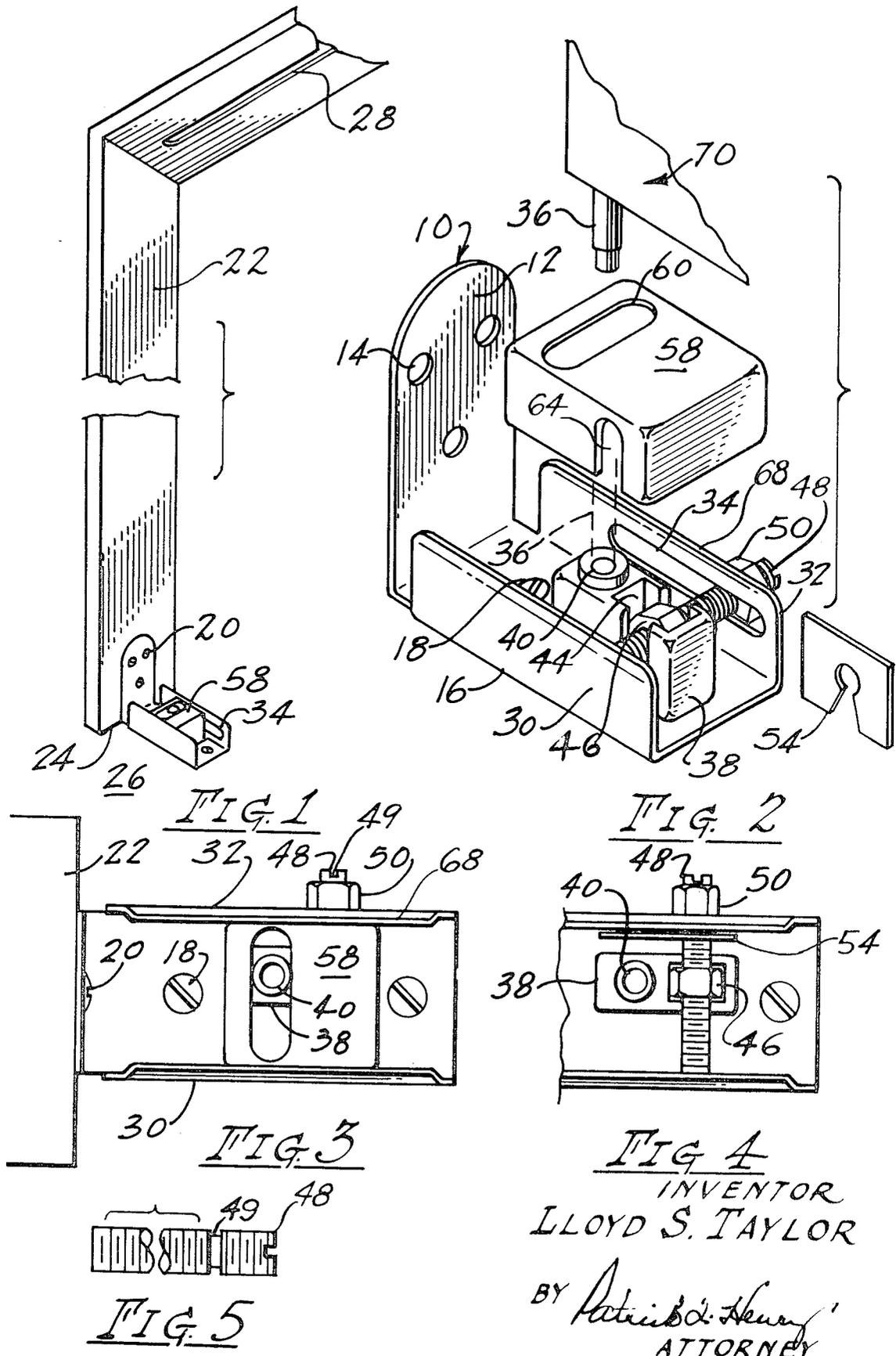
June 15, 1971

L. S. TAYLOR

3,584,332

PIVOT BRACKET FOR FOLDING DOORS

Filed Feb. 13, 1967



INVENTOR
LLOYD S. TAYLOR

BY *Patrick D. Henry*
ATTORNEY

1

2

3,584,332

PIVOT BRACKET FOR FOLDING DOORS

Lloyd S. Taylor, % Float-Away Door Co., 1173 Zonolite Road NE., Atlanta, Ga. 30306
 Filed Feb. 13, 1967, Ser. No. 615,685
 Int. Cl. E05d 7/04, 7/08

U.S. Cl. 16—130

10 Claims

ABSTRACT OF THE DISCLOSURE

A pivot bracket to be fastened near the corner to support the pivot pin in a folding or swinging door and having both longitudinal and lateral adjustment after the door and pivot pin is in place, by means of a sliding block in a channel on the bracket which has a lateral or transversely slidable pivot block carrier movable inside and which has a slot through which the pivot pin extends into the pivot block. A threaded stud provides both longitudinal and lateral adjustment through threaded engagement with the inner pivot block and selective movement in a slot on the channel and a locking nut thereon.

Multi-fold doors usually are suspended in a door opening having a guide means which may be a track. In a type of installation for multi-fold doors which does not use a bottom track or channel it is necessary to support a panel of the multi-fold door near the bottom corner adjacent to the side of the door opening. Such installations can be an extremely vexing and time consuming problem due to the difficulty in aligning the top and bottom edge of the door panel and the bottom edge of the adjacent door panel so as to slide freely and present a proper appearance. It is usually necessary to put the door in the opening and in the top hardware channel and then temporarily install the bottom bracket approximately in position and in one prior art bracket the wood screws or the like are installed in the side of the door opening through slots in the bracket and the pivot pin of the door is seated in a sliding block in a channel on the bracket at the bottom and adjustment is effected by moving the entire bracket along the screws to achieve lateral or transverse position and then moving the pivot block longitudinally to accomplish longitudinal adjustment or vice versa or simultaneously, if possible and sometimes this is a difficult adjustment to make due to the fact that the bracket of the door is out of position originally or may move out of position after one adjustment has been made while an effort is being made to effect the other adjustment and also it is difficult to reach the screws to tighten them in place after adjustment has been made. The present bracket is an improvement in the previous brackets because it provides an easier installation and makes it possible to accomplish those longitudinal and lateral adjustments substantially simultaneously from one single adjustment means that is readily accessible to the installer.

Generally described, without restriction on the scope of my invention as defined in the appended claims, the present bracket is preferably made from strong metal or the like and is substantially L-shaped to be placed at the bottom corner of a door frame with one side of the bracket screwed into the door frame or the other side screwed or otherwise fastened to the floor. The floor side or leg of the bracket is formed with an open channel in which is mounted an adjustment means comprising a hollow nylon block which fits into and slides in the channel and is fitted over a nylon pivot block that has a pivot pin hole formed therein. The hollow nylon block has elongated slot running transversely of the channel through which the pivot pin extends when inserted in the

hole in the pivot block. An elongated threaded adjustment member has one end threadedly engaging the inner nylon pivot block and the other end protruding through an elongated slot formed in the side of the channel with a nut thereon outside the channel and a slotted end to receive a screwdriver. A keeper plate is fitted over the threaded adjustment member of the hollow nylon block. In the operation of the bracket, the door hardware is installed in the top of the door frame and the present corner bracket is installed at the bottom corner and the door pivot pin is seated in the hole in the inner nylon block. The present bracket is approximately aligned vertically and transversely in the door frame to place the door in the approximate position. Adjustment and final alignment is accomplished with the door in place simply by loosening the outer nut on the threaded adjustment member and then by grasping the door panel the hollow nylon block is slid in the channel to the proper longitudinal position and a screwdriver is inserted in the end of the threaded adjustment member to turn frame and move the inner nylon pivot block to the proper transverse or lateral position which can be checked by inspecting the top edge and side edge of the door panel. After the adjustment is accomplished the outer nut is tightened in place to hold the door panel in permanent position.

A primary object of this invention is to provide a support bracket for the pivot pin of a multi-fold door which includes an adjustment means at one location for both lateral and longitudinal adjustment of the pivot.

Another object of this invention is found in the use of a threaded adjustment member for accomplishing both lateral and longitudinal adjustment.

Another object of this invention resides in the arrangement for permanently installing the bracket in place in a door frame and then adjusting the pivot rather than adjusting the bracket itself after installation.

Another important feature of the present invention resides in the support of the pivot pin of the door in such a manner as to move the pivot pin selectively either laterally or longitudinally from a single adjustment giving a selection of small movements.

Another important feature of the present invention is found in the particular adjustment means which allows both fine adjustments and a way of locking the adjustment in place after it has been made so that the bracket does not fall out of adjustment very easily.

An important advantage of the present arrangement is found in the use of a combined adjustment accomplished by means of a single pivot support block which is supported and adjusted from the side of the bracket.

Other and further objects and advantages of this invention will become apparent upon reading the following specification taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective view of a bracket made in accordance with the present invention.

FIG. 2 is an assembly perspective view of the bracket shown in FIG. 1 but with the outer cover dis-assembled showing the pivot support block.

FIG. 3 is a top plan view of the bracket shown in FIG. 1 as viewed installed in a door opening.

FIG. 4 is a top plan view of the bracket shown in FIG. 2 without the cover and with part thereof broken away.

FIG. 5 is a plan view of the adjustment screw member.

Referring initially to the complete bracket shown in FIG. 1 and thence to the other figures of the drawings as the specification unfolds, the entire, assembled and complete bracket is designated by reference numeral 10 and is preferably manufactured from strong metal or the like and generally is L-shaped with a vertical leg or portion 12 having screw holes 14 therein and a horizontal channel

leg or portion 16 also having screw holes 18 in the bottom thereof. As seen in FIG. 1, normally leg 12 would be attached by screws 20 in place on a wood door frame side 22 near the bottom corner 24 thereof at the floor 26. In the prior art brackets it would have been necessary to only temporarily position the bracket in place on the frame 22 whereas in the present bracket it is possible permanently to locate the bracket 10 approximately in position below the top hardware or track 28 and adjustment may be made thereafter as will appear later on in this description.

The channel leg 16 comprises a pair of upstanding channel side members 30, 32 and one of these, 32 in the present disclosure, has elongated slot 34 therein running longitudinally for the purpose of longitudinal adjustment as well appear hereafter.

The pivot pin 36 of the door, which pivot pin 36 is shown in dotted lines in places, is inserted in a pivot block 38 manufactured from nylon or the like and which has a pivot pin bore 40 therein extending vertically there-through. Block 38 has a deep groove, channel or pocket 44 formed therein in which is positioned a hex nut 46 having a threaded adjustment screw member 48 threadedly engaging same. The outer end of the threaded adjustment member 48 fits into and protrudes from the side 32 through the longitudinal slot 34 and is fitted with a nut 50 which may be tightened against the side 32. Member 48 has a circumferential groove or slot 49 interrupting the threads. A flat, small, metal, slotted keeper plate 54 is inserted into groove 49 on member 48 and placed inside the channel 16 and inside the face of housing 58. One end of threaded member 48 bears against a face of channel 30 and the other end of the threaded member 48 is slotted to receive a screw driver so that turning of the slotted end of the member 48 in one direction or the other will drive the entire pivot block 38 laterally away from or toward the side 32 depending upon the direction of rotation of the screwdriver. Movement of member 48 is stopped in one direction by keeper clip 54 and in the other direction by the face of channel 30.

The pivot block 38 is covered by a hollow nylon housing 58 having a transverse slot 60 therein wherein which the pivot pin 36 protrudes when inserted in the bore 40 of the pivot block 38. The pivot pin 36 may be adjusted laterally inside the housing 58. Housing 58 also has slots or opening 64 on each side through which the adjustment member 48 passes. Housing 58 is a cover for protective purposes and to add neatness and stability to the pivot block 38. Channel edges 68 may be bent slightly inward over cover or housing 58 to add stability during movement and neatness of appearance.

It is believed that the operation of the bracket may be gained from the previous discussion. However, by way of summation, a door of common and conventional construction which per se forms no part of this invention has a panel 70 with a pivot pin 36 extending therefrom. The door 70 is positioned with the upper end in the slide groove channel 28 and the top of the door frame 22 and bracket 10 is installed in the lower bottom corner as shown in FIG. 1 and pivot pin 36 is inserted in the bore 40 of the nylon block 38. The door is not yet in substantial alignment for neatness and proper operation in the door frame 22. To accomplish this, the installer manipulates the door panel until the edge is substantially in the desired position while the pivot pin 36 is in place in nylon block 38 and this is possible as long as the nut 50 is loose because the block 38 will slide longitudinally and manipulation of a screwdriver in the slotted end of member 48 will accomplish the lateral adjustment at which time the nut 50 may be tightened to maintain the door properly in place.

While I have shown and described an embodiment of my invention together with a typical use and function this is by way of illustration only and in no way any limitation on the scope since various alterations, changes, elim-

inations, changes, deviations, additions, omissions, substitutions, integrations, separations, segregations and departures may be made in the present embodiment without avoiding the scope as defined in the appended claims.

What is claimed is:

1. In an adjustable corner support for attachment in place near the corner of a door opening to receive, retain and support a movable door member such as a door pivot pin, said support including a support portion extending therefrom, the improvement comprising:

(a) a door support member movable both longitudinally and transversely in said support portion, said door support member normally being fixed in position after adjustment to locate the door in the opening but being movable both independently or simultaneously longitudinally and laterally in said support portion for adjustment,

(b) and adjustment means on said corner support operable selectively both independently or simultaneously to release said door support member for longitudinal movement of said door and to adjust said door support member laterally.

2. The device claimed in claim 1, wherein: said adjustment means supports and attaches said door support member on said support portion.

3. The device in claim 2, wherein: said adjustment means is a threaded member mounted for rotation on said corner support, support portion and said door support member, and means for locking said threaded member which includes a pressure locking means for preventing said threaded member from rotating after adjustment unless unlocked.

4. The device claimed in claim 2, wherein: said support portion includes at least one upstanding member having a slot therein and said adjustment means rests in said slot for adjustment longitudinally therein.

5. The device in claim 1, wherein: said door support member is a three-dimensional member having a bore therein to receive the door member, and having a lateral opening therethrough in which is mounted said adjustment means, said adjustment means being engageable both with said three-dimensional member and a portion of said corner support.

6. The device in claim 2, wherein: said adjustment means extends transversely and laterally on said support portion of said corner support and engages said door support member to move same selectively longitudinally and laterally for adjustment.

7. The device in claim 6, wherein: said adjustment means includes a threaded portion, and said engagement with said door support member is a threaded engagement, and rotation of the threaded portion of the adjustment means causes lateral adjustment selectively in either direction.

8. The device in claim 7, wherein there is a slot in said corner support and said adjustment means is movable selectively in said slot for longitudinal adjustment, and means for locking said adjustment means against movement.

9. The device claimed in claim 2, wherein: said adjustment means includes a threaded adjustment member which is a part of the adjustment engaging both the corner support and the three-dimensional member, said threaded member being movable longitudinally on said support and said three-dimensional member being movable therewith to effect longitudinal adjustment, said threaded member being operable in rotation to cause said three-dimensional member to move laterally in either direction depending upon the direction of rotation of said threaded member.

10. The device claimed in claim 9, wherein: said threaded adjustment member extends through said three-dimensional member and has the inner end thereof engaging a portion of the support to prevent said threaded

3,584,332

5

member from moving and displacing itself laterally, and a keeper member on said threaded member and engageable with said three-dimensional member.

References Cited

UNITED STATES PATENTS

3,251,088	5/1966	Boundy -----	16—130
3,323,163	6/1967	Goodnow -----	16—129

6

FOREIGN PATENTS

911,559	11/1962	Great Britain -----	16—130
---------	---------	---------------------	--------

DORIS L. TROUTMAN, Primary Examiner

5 BOBBY R. GAY, Assistant Examiner

U.S. Cl. X.R.

16—131, 151