Dec. 16, 1969 K. W. WATSON 3,483,586

ADJUSTABLE HINGE DEVICE

Filed March 25, 1968

FIG. 1

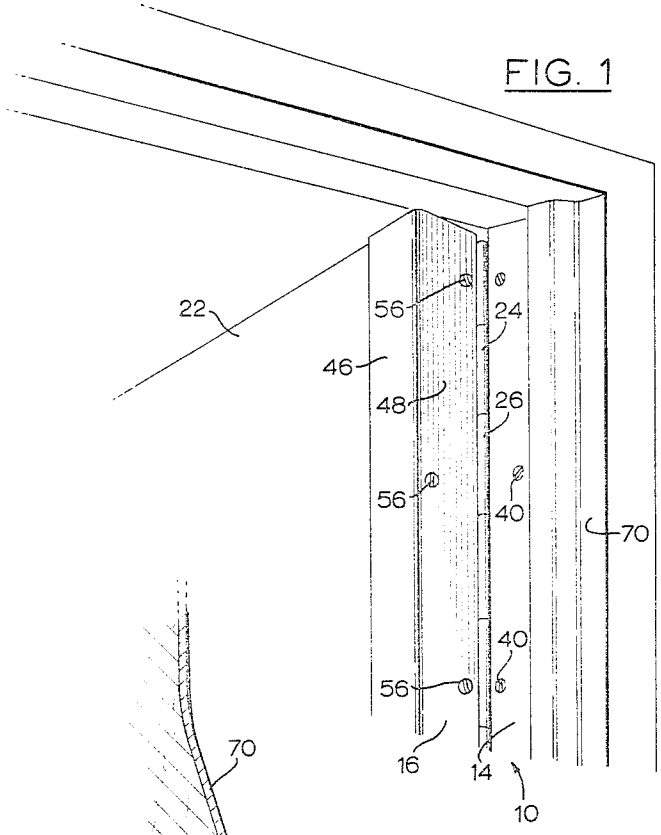
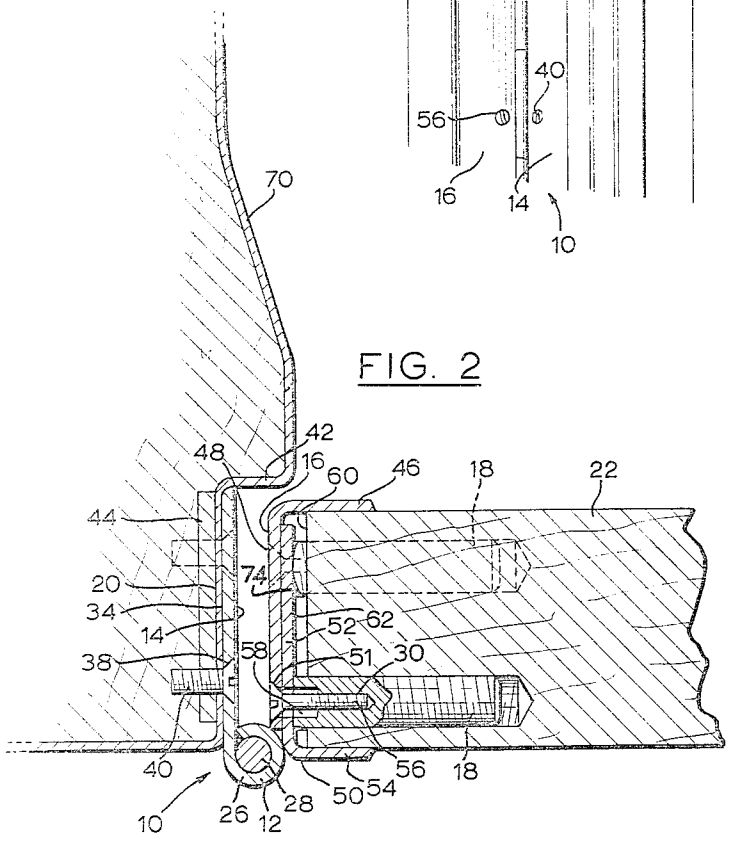



FIG. 2




INVENTOR.
KENNETH WATSON

BY

Agent

United States Patent Office 3,483,586
Patented Dec. 16, 1969



3,483,586

# ADJUSTABLE HINGE DEVICE

Kenneth William Watson, 352 Lake Promenade, Toronto 14, Ontario, Canada

Filed Mar. 25, 1968, Ser. No. 715,733
Int. Cl. E05d 7/04
U.S. Cl. 16—131 3 Claims

## ABSTRACT OF THE DISCLOSURE

A hinge device for pivotally attaching a door to a frame, the device having a hinge and a number of externally threaded studs. One of the leaves of the hinge is fastened to the frame by machine screws and the other leaf is attached to each stud by passing a machine screw through a countersunk hole in the leaf into a threaded opening in the stud. Each stud is secured in an aperture in the inside surface of the door to fasten the leaf to the door. A recess is formed in each stud to permit adjustment of the stud within the aperture so that the distance between the inside surface of the door and the leaf attached to the studs can be adjusted, thereby permitting adjustment of the distance between the door and the frame to compensate for seasonal expansion and contraction of the door.

This invention relates to hinging devices and is particularly directed to a hinging device which permits adjustment of the distance between the edge of the door and the jamb.

Hinges are known in which are incorporated means for adjusting the distance between a door and jamb to compensate for seasonal expansion and contraction. The adjustment means of one such hinge is contained in an elongated box fastened to the hinge. Another means employs two hinges, the leaf of one being sandwiched between the leaves of the other.

Such hinges have certain obvious disadvantages. The elongated box of the first described hinge gives a door to which it is attached an irregular, unattractive appearance, inasmuch as the box is positioned in an exposed surface of the door. In addition, the box may constitute an obstruction. The second described hinge is relatively expensive, inasmuch as two hinges are required and one hinge must be mortised to either the door or the jamb.

It is accordingly an object of the present invention to provide an adjustable hinging device which is hidden from view between the edge of a door and a jamb.

It is a further object to provide a hinging device which requires only one hinge and is inexpensive and simple of operation.

It is a further object to provide a hinging device which furnishes a continuous corner guard to the vulnerable inside corner of the door when the door is open. Such a hinging device, therefore, is peculiarly adaptable to use in a hospital, where doors are normally of brittle plastic lamina and the frames are of metal, and where the inside corner of the doors are subject to impact by beds which are constantly being moved from room to room.

The above objects may be accomplished by providing an adjustable hinging device adapted to be attached to a first and second planar body comprising: two pivotally interconnected leaves; and a plurality of studs, each stud being externally threaded and having a threaded hole, and at one end thereof, a recess to permit adjustable positioning of each stud in an aperture in the first planar body, each leaf having holes to receive screws, the screws received by one leaf attaching the leaf to the second planar body, each of the screws received by the other leaf adapted to be threadably received in the threaded stud hole, thereby securing the leaf to the first planar body when the studs are positioned in apertures in the first planar body.



A fuller understanding of the invention may be had by referring to the following description and claims taken in conjunction with the accompanying drawing, in which:

FIGURE 1 is a perspective view of the adjustable hinging device shown attached to a door and jamb; and

FIGURE 2 is a sectional view, partly in elevation, of the hinging device in a closed position as mounted on a door and jamb.

Like reference characters refer to like parts throughout the description of the drawings.

As illustrated, the adjustable hinging device indicated generally by the numeral **10** comprises hinge **12** having leaves **14** and **16** and studs **18** (two of which are shown in FIGURE 2). Hinging device **10** is shown mounted to jamb or planar body **20** and door or planar body **22**.

Leaves **14** and **16** are formed with barrels **24** and **26** respectively. Barrels **24** and **26** interlock in the usual manner and receive pintle **28** which pivotally interconnects leaves **14** and **16**.

Countersunk holes **38** are staggered along the length of leaf **14**. Leaf **14** is positioned in mortise **42** and is fastened therein by machine screws **40**. As shown, the door frame **70** is constructed of sheet metal. To provide extra support to frame **70** about jamb **20**, a strip of metal **44** is attached to the inside of frame **70**. Screws **40** thus pass through holes **38** and are threaded into engagement with frame **70** and strip **44**, thereby retaining surface **34** of leaf **14** in firm abutment with jamb **20**.

Leaf **16** is formed in the shape of an L having limb **46** positioned at approximately right angles to limb **48**. Angle **50** having limbs **52** and **54** is so fastened to leaf **16** that facing surfaces of limbs **48** and **52** abut. Thus, as shown in FIGURE 2, leaf **16** and angle **50** combine to form a channel and are adapted to contain an edge of door **22** and provide a guard continuous from bottom to top of door **22**.

Countersunk holes **51** are formed in leaf **16** and angle **50** to admit machine screws **56**. Holes **51** are staggered along the length of leaf **16** and angle **50**.

Each stud **18** is externally threaded and is adapted to be snugly received in apertures formed in door **22**. Stud **18** is drilled and tapped at the end portion to form threaded holes **30** for the threadable admission of screws **56**. Studs **18** are so arranged in door **22** that holes **51** will coincide with threaded holes **30** in studs **18** when door **22** is in the desired position with respect to leaf **16**. Screws **56** may be passed through holes **51** and be threadably received in threaded holes **30** of studs **18**. Recess **58** is formed at the end of each stud **18** and may be hexagonal in shape to admit a hexagonal key or may be in the shape of a rectangular groove to permit turning of stud **18** by means of a screwdriver. Preferably, stud **18** is a socket or Allen set screw having a hexagonal shaped aperture. To admit screw **56**, the end portion is drilled and tapped. Rotation of the socket set screw is accomplished by means of a hexagonal or Allen key.

To attach hinging device **10** to door **22** and jamb **20**, holes are first drilled and tapped in jamb **20** and strip **44** to coincide with countersunk holes **38** in leaf **14** and screws **40** are passed through holes **38** and into firm threaded engagement with jamb **14** and strip **44**. Door **22** is then inserted between limbs **46** and **54** and adjusted until the desired distance of door **22** from the ground and the frame portion above door **22** is achieved. Studs **18** are then inserted into door **22** so that threaded holes **30** coincide with holes **51** in leaf **16** and angle **50**. Studs **18** are inserted into door **22** by rotation thereof. Screws **56** are

then passed through holes **51** and into firm threaded engagement with studs **18**. It will be seen that as screws **56** are threaded into threaded holes **30**, angle **50** and leaf **16** approach face **74** of studs **18** until surface **62** of angle **50** firmly abuts face **74**, at which time no further rotation of screws **56** is possible without damage to their threads.

When it is desired to adjust the distance of door **22** from surface **62** of angle **50**, it is merely necessary to rotate studs **18** until the distance between face **74** and face **60** of door **22** equals the required distance between surface **62** and face **60**. To rotate studs **18**, screws **56** must first be removed. Door **22** may then be removed from between limbs **46** and **54** to provide access to studs **18**. Preferably, however, holes **51** are sufficiently large to admit an implement into firm abutment with the walls of recess **58** for rotating studs **18**; thus it is not necessary to remove door **22** from between limbs **46** and **54** to adjust studs **18**. After adjustment of studs **18**, screws **56** are reinserted into studs **18** and rotated until faces **74** of studs **18** and surface **62** abut.

It will be understood that modifications can be made in the embodiment described and illustrated herein without departing from the scope and purview of the appended claims.

What I claim as new and desire to protect by Letters Patent of the United States is:

**1.** Adjustable hinging device adapted to be attached to a first and second planar body comprising: two pivotally interconnecting leaves; and a plurality of studs, each said stud being externally threaded and having a threaded hole and, at one end thereof, a recess to permit adjustable positioning of said stud in an aperture in said first planar body, each said leaf having holes to receive screws, the screws received by one said leaf attaching said leaf to said second planar body, each of the screws received by the other said leaf adapted to be threadably received in said threaded stud hole, thereby securing said leaf to said first planar body when said studs are positioned in apertures in said first planar body.



**2.** Adjustable hinging device adapted to be attached to a jamb and to a door having a top and bottom comprising: first and second pivotally interconnected leaves; and a plurality of studs, each said stud being externally threaded and having a threaded hole and having a recess at one end thereof to permit adjustable positioning of each said stud in an aperture in said door, each said leaf having holes to receive screws, the screws received by said first leaf attaching said first leaf to said jamb, each of the screws received by the second said leaf adapted to be threadably received in said threaded stud hole, thereby securing said second leaf to said door when said studs are positioned in apertures in said door, said second leaf having two limbs, one disposed approximately normal to the other to receive a corner of said door, said second leaf further extending from the top to the bottom of said door to provide a continuous protecting surface.

**3.** Adjustable hinging device as claimed in claim **2**, further comprising an angle fastened to said second leaf, said angle and said second leaf, when considered together, being channel-shaped and adapted to receive an inside edge of the door to which said second leaf is mounted.

**References Cited**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 1,431,197 | 10/1922 | Vissering | 16—131 |
| 2,373,955 | 4/1945 | Fuller | 16—131 |


BOBBY R. GAY, Primary Examiner

DORIS L. TROUTMAN, Assistant Examiner