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3,390,486

PIVOTING SHOWER DOOR

Filed Jan. 24, 1966

2 Sheets-Sheet 1

FIG. 1

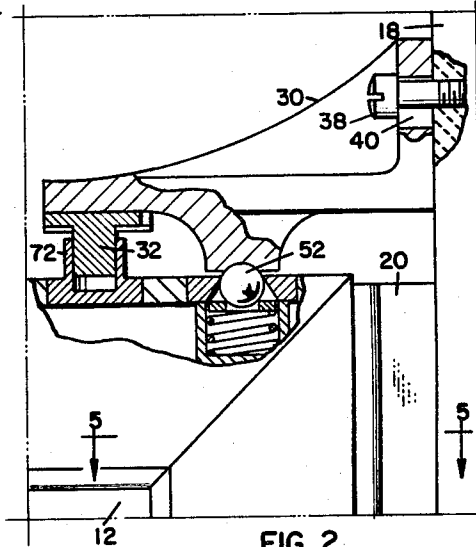
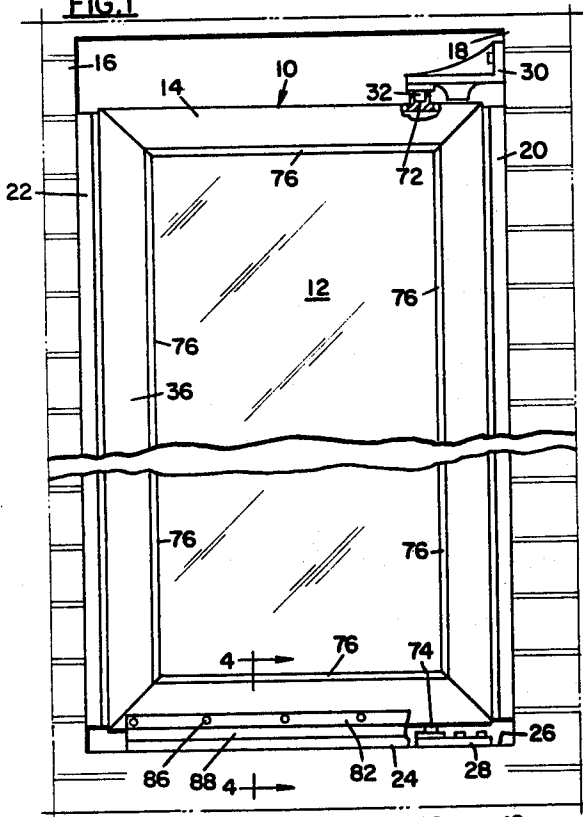


FIG. 2

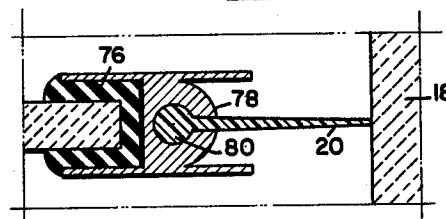


FIG. 5

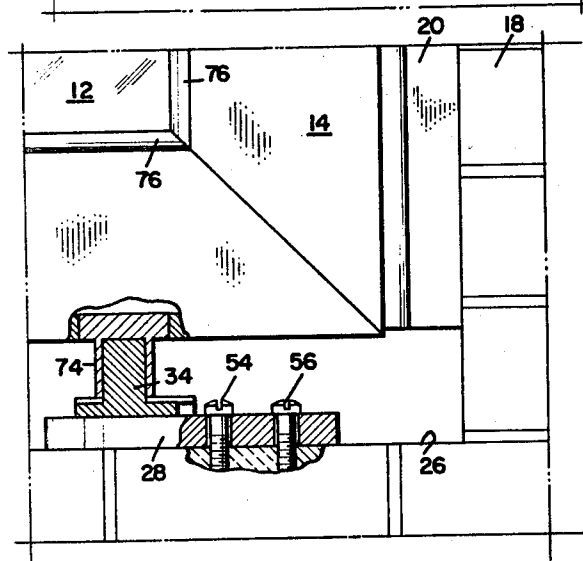


FIG. 3

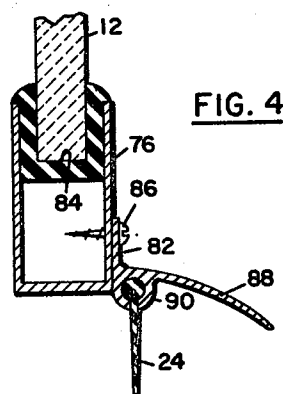


FIG. 4

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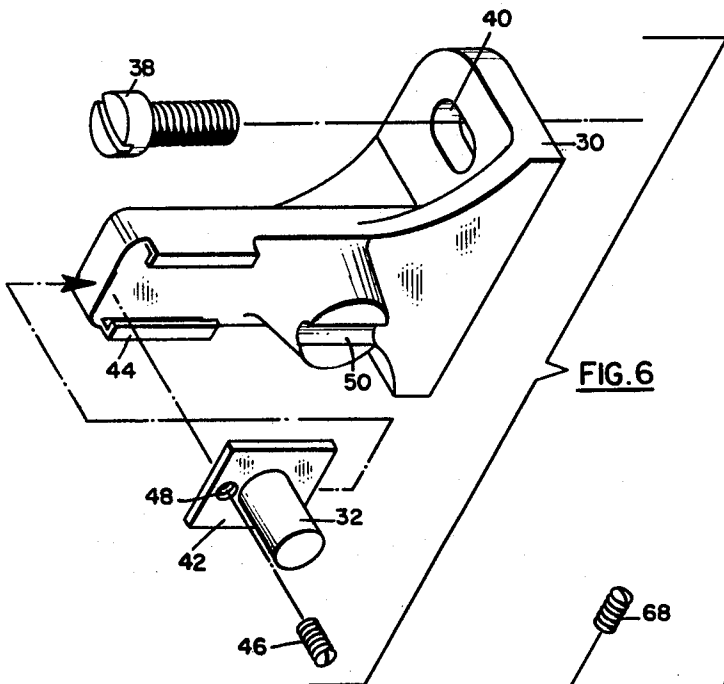


FIG. 6

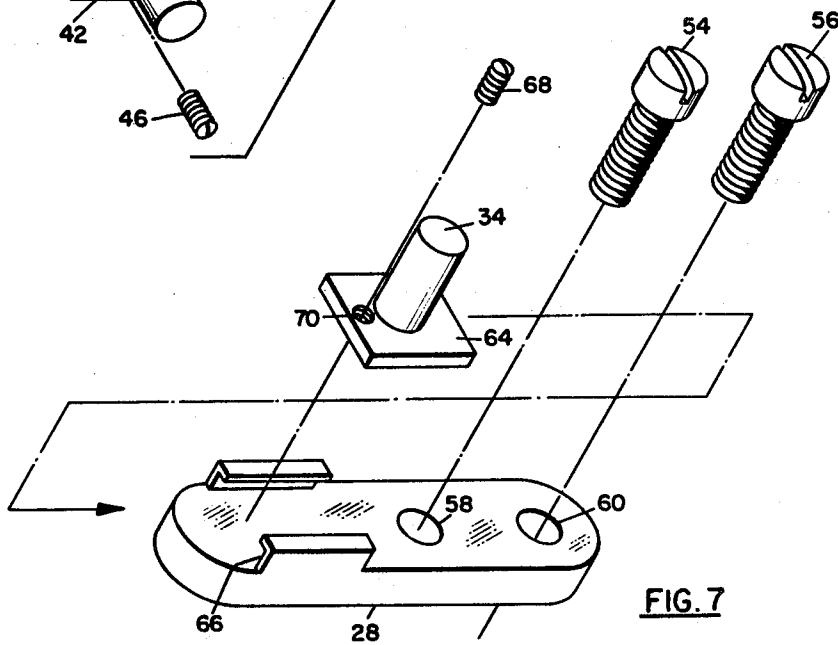


FIG. 7

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PIVOTING SHOWER DOOR
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ABSTRACT OF THE DISCLOSURE

A shower door construction pivoting about an adjustable floor supported pivot pin and an adjustable jamb supported pivot pin, said construction including resilient, water resistant peripheral strips to seal the opening between the door and the enclosing construction.

This invention relates generally to the shower enclosure art and more particularly is directed to a novel door and hinge arrangement for installation upon the fixed shower enclosure construction.

Most shower doors as presently available are constructed of metal and glass and are of the swinging type. Such doors usually are affixed at the pivoted edge thereof by utilizing a piano hinge the full height of the door. The hinge connects the metal frame of the door to the enclosure jamb and is bolted thereto in several places as may be required to adequately carry the weight of the door. This connection is usually waterproofed by employing a vertical metal sealing strip in cooperation with the hinge. In the usual case, the free edge of the door swings against a vertical metal strike plate which is bolted to the other door jamb. The strike plate serves as a positive door stop and in addition provides a method for sealing the free edge of the door against water leakage. A spring biased latch may also be utilized in conjunction with the strike plate to keep the door in the closed position if desired.

The prior art doors of construction similar to that set forth above have been widely employed and have proven they are both functional and efficient. However, despite the popularity of the present devices, all of the doors that are now in use suffer from certain common deficiencies that the instant invention seeks to correct. Specifically, the present installations are all relatively costly due to a number of obvious reasons. Firstly, the length of piano hinge is a costly item and this may be entirely eliminated in accordance with the instant invention. More important however, is the cost of the installation itself. At present, two workmen must be employed and they must perform several important operations. The hinge must be affixed to the edge of the door and the cooperating metal sealing strip must be bolted to the jamb to receive the free leaf of the hinge. The metal strike plate must also be bolted to the opposite jamb. Care must be exercised at all stages of the installation to assure that all parts are in proper alignment. After the various metal strips and seals have been positioned, the workmen next have to carefully place the door and adjust it for proper operation. The adjusting and aligning operations can become quite critical and consume considerable periods of time. It is thus seen that the present method and materials are time consuming and expensive resulting in a significant end cost to the ultimate user.

It is therefore an object of this invention to provide an improved shower door of the type set forth.

It is another object of this invention to provide an improved shower door featuring unique top and bottom brackets for pivoting operation.

It is another object of this invention to provide an improved shower door incorporating adjustable mounting hardware to permit in place alignment adjustments.

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It is another object of this invention to provide a unique shower door incorporating peripheral, flexible water sealing strips.

It is another object of this invention to provide an improved shower door construction capable of full 180 degree swinging operation when mounted upon one jamb of a shower enclosure stall.

It is another object of this invention to provide an improved shower door assembly including a top bracket incorporating door retention facilities.

It is another object of this invention to provide a novel shower door construction that is inexpensive in manufacture, simple in operation and maintenance free when in use.

Other objects and a fuller understanding of the invention will be had by referring to the following description and claims of a preferred embodiment thereof, taken in conjunction with the accompanying drawing wherein like reference characters refer to similar parts throughout the several views and in which:

FIG. 1 is a front elevational view of a shower door installed in accordance with the present invention.

FIG. 2 is an enlarged side elevational view, partly broken away to expose the operating portions, of the top bracket.

FIG. 3 is an enlarged side elevational view, partly broken away to expose the operating portions, of the bottom bracket.

FIG. 4 is a cross sectional view taken along line 4—4 of FIG. 1.

FIG. 5 is a cross sectional view taken along line 5—5 of FIG. 2.

FIG. 6 is an enlarged, exploded, perspective view of the top bracket.

FIG. 7 is an enlarged, exploded, perspective view of the bottom bracket.

Although specific terms are used in the following description for the sake of clarity, these terms are intended to refer only to the particular structure of my invention selected for illustration in the drawings and are not intended to define or limit the scope of the invention.

Referring now to the drawings, I show in FIG. 1 a shower door 10 constructed and installed in accordance with the instant invention. The door comprises a heavy plate glass body 12 carried within a supporting aluminum frame 14 in any well-known, suitable manner and stands between the right and left door jambs 16, 18 of a shower enclosure stall. Right and left sealing strips 20, 22 and a bottom sealing strip 24 of thin, flexible, waterproof material such as vinyl or rubber peripherally fill the voids between the door 10 and the right and left enclosure jambs 16, 18 and between the bottom of the door and the floor 26 when the door is urged to its closed position to render the enclosure substantially waterproof. The door 10 is carried by the lower bracket 28 and the upper bracket 30 and swings about the bracket connected upper and lower pivot pins 32, 34 upon manual operation of the door through the use of the handle 36. As constructed and supported, the door is completely free to swing either inwardly or outwardly in accordance with the desires of the user.

As best seen in FIGS. 2 and 6, the upper bracket 30 secures to the door jamb 18 by tightening suitable bolts 38 through the openings 40 which are vertically elongated to permit limited height adjustment upon installation. The upper door pivot 32 depends from a widened shoulder 42 and horizontally slides within the track 44 which suspends from the unsecured end of the upper bracket. A set screw 46 turns within the threaded opening 48 which is provided in the pivot shoulder 42 and secures the pivot 32 in any desired position as may be required to properly

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align the door 10 within the enclosure opening. A receiving socket 50 downwardly projects from the bracket intermediate its ends and cooperates with a door supported bullet catch 52 to align the door in its closed position as hereinafter more fully set forth.

As best seen in FIGS. 3 and 7, the lower bracket 28 secures to the floor 26 by tightening suitable bolts 54, 56 through the openings 58, 60 in any well known manner suitable for use with the floor construction being employed. The lower door pivot 34 rises above a supporting shoulder 64 and horizontally slides within a track 66 which is integrally formed in the bracket 28. A lower set screw 68 turns within a threaded opening 70 which may be drilled and tapped in the shoulder 64 and acts to secure the pivot 62 to the bracket 28 in any desired position as may be required to properly align the door 10.

Referring now to FIGS. 2 and 3 it may be observed that the top member of the door frame 14 carries an upwardly projecting bearing 72 in overlapping engagement with the upper pivot pin 32. Similarly, the bottom member of the door frame carries a downwardly projecting bearing 74 in overlapping engagement with the lower pivot pin 34. The door 10 may be turned upon its bearings 72, 74 about the upper and lower pivots 32, 34 either inwardly or outwardly and is free to circularly turn through almost 270 degrees unless stopped short by exterior obstructing construction.

The vertical members of the door frame are preferably fabricated from aluminum extrusions having a generally U shaped section facing inwardly to receive to glass 12 and its retaining gasket 76. Vertical sockets 78 outwardly project from the frame members to receive the flexible sealing strips 20, 22 therein. As best seen in FIG. 5, the sealing strips are fabricated with rounded base portions 80 sized to engage within the socket 78 and are a sliding fit therein.

A horizontal lower sealing member 82 interiorly secures to the lower frame member 84 of the door utilizing a series of sheet metal screws 86 and integrally carries a drip skirt 88 and a horizontal socket 90. The rounded base 92 of the bottom sealing strip 24 horizontally slides within the socket 90 to seal the bottom opening between the floor 26 and the door 10 and to prevent the passage of any moisture not deflected by the drip skirt 88.

In order to use my invention, the door 10 should be assembled as indicated and the sealing strips 20, 22, 24 should be urged within their respective retaining sockets. The lower bracket 28 should then be properly positioned within the door opening and then firmly affixed to the floor 26 utilizing bolts 54, 56 which may be toggle bolts, expansion bolts or any other bolt suitable for use with the type of floor construction employed.

The upper bracket 30 can then be affixed to the door jamb 18 by employing bolts 38 in their usual manner. The bracket should be positioned to permit the depending pivot pin 32 to just clear the upper door bearing when the bracket is elevated so that the bottom of the elongated slots 40 contact the bolts 38. When the bottom bearing 74 has been positioned over the lower pivot pin 34, the upper bracket 30 may be lowered until the pivot pin 32 seats within the door supported bearing 72. The bolts 38 should then be firmly affixed and thereby secure the bracket at the correct elevation for easy door operation. Once the brackets 28, 30 have been positioned and affixed and the pivot pins 32, 34 have been operably placed within the bearings 72, 74 the horizontal alignment of the door may then be adjusted by urging the upper and lower shoulders 42, 64 along the respective tracks 44, 66. When the door 10 has been aligned in the brackets to swing properly, the pivot pin positions can be firmly set by tightening the upper and lower set screws 46, 68.

Although I have described my invention with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that numerous changes in the details of construction and

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the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereafter claimed.

What is claimed is:

1. In a pivoting shower door assembly for use in association with a stall shower, the combination of

(A) a door,

(1) the said door having a rigid, peripheral construction;

(B) a portion of a top pivoting assembly carried by the top of the door construction;

(C) a portion of a bottom pivoting assembly carried by the bottom of the door construction;

(D) an upper bracket carrying a second portion of the said top pivoting assembly,

(1) said upper bracket affixed to one jamb of the said stall shower and

(2) means to vertically adjust the height of the said upper bracket;

(E) a lower bracket carrying a second portion of the said bottom pivoting assembly,

(1) said lower bracket affixed to the floor of the said shower stall,

(2) said lower bracket being affixed to lie in the same vertical plane as the said top bracket;

(F) top alignment means to adjust the horizontal alignment of the said top pivoting assembly;

(G) bottom alignment means to adjust the horizontal alignment of the said bottom pivoting assembly;

(H) sealing means to seal the junctions between the sides and bottom of the door and the said shower stall and

(I) latch means to retain the door in the closed position,

(1) said latch means operatively, releasably connecting the top of the door and the said upper bracket.

2. The invention of claim 1 wherein the means to vertically adjust the height of the said upper bracket comprise a pair of vertically elongated slots, said slots each being sized to respectively receive a bracket securing bolt, and the said slots being of sufficient length to permit the second portion of the pivoting assembly to be lifted out of engagement with the said first portion of the upper pivot assembly when the bracket is lifted to its uppermost position.

3. The invention of claim 1 wherein the said top alignment means include horizontal track means depending from the said upper bracket, spaced shoulders carrying the said second portion of the top pivoting assembly and cooperating with the said track means, the said shoulders having sliding engagement within the said track means and a set screw cooperating between the said second portion of the top pivot assembly and the bracket thereby fixing the second portion in the track means in a selected position when the desired aligned position has been achieved.

4. The invention of claim 1 wherein the said bottom alignment means include horizontal track means carried above the said lower bracket, spaced shoulders supporting the said second portion of the bottom pivoting assembly and cooperating with the said track means, the said shoulders having sliding engagement within the said track means and a set screw cooperating between the said second portion of the bottom pivot assembly and the bracket thereby fixing the second portion in the track means in a selected position when the desired aligned position has been achieved.

5. The invention of claim 1 wherein the said sealing means include continuous strips of waterproof, flexible material affixed to the sides and bottom of the door, the said strips being constructed of width sufficient to fill the opening between sides and bottom of the door and the said shower stall.

6. The invention of claim 1 wherein the said latch means include a socket depending from the said upper

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bracket, the said socket being positioned intermediate the wall contacting section of the bracket and the portion of the bracket carrying the portion of the upper pivot assembly.

7. The invention of claim 1 wherein the said latch means include a socket depending from the said upper bracket and a cooperating bullet catch imbedded in the said door and having its spring-biased ball projecting above the top of the door, the said ball engaging said socket to hold the door in the closed position.

8. The invention of claim 1 wherein the portion of the top pivot assembly carried by the door includes an upwardly facing hollow cylindrical bearing and the portion of the top pivot assembly carried by the upper bracket includes a depending pivot pin, the pin having a diameter to operably fit within the bearing.

9. The invention of claim 1 wherein the portion of the

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bottom pivot assembly carried by the door includes a downwardly facing, hollow cylindrical bearing and the portion of the bottom pivot assembly carried by the lower bracket includes an upright pivot pin, the pin being constructed to a diameter to operably fit within the bearing.

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