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Woodward

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[54] **ADJUSTABLE WIDTH FOLDING DOOR**

[76] Inventor: **Roger V. Woodward,** 11721 S.E. Taylor St., Portland, Oreg. 97216

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[51] **Int. Cl.** **E05d 15/26**

[58] **Field of Search** 160/87, 89, 97, 181, 160/185, 187, 197, 200, 199, 202, 203–206, 210–221

[56] **References Cited**

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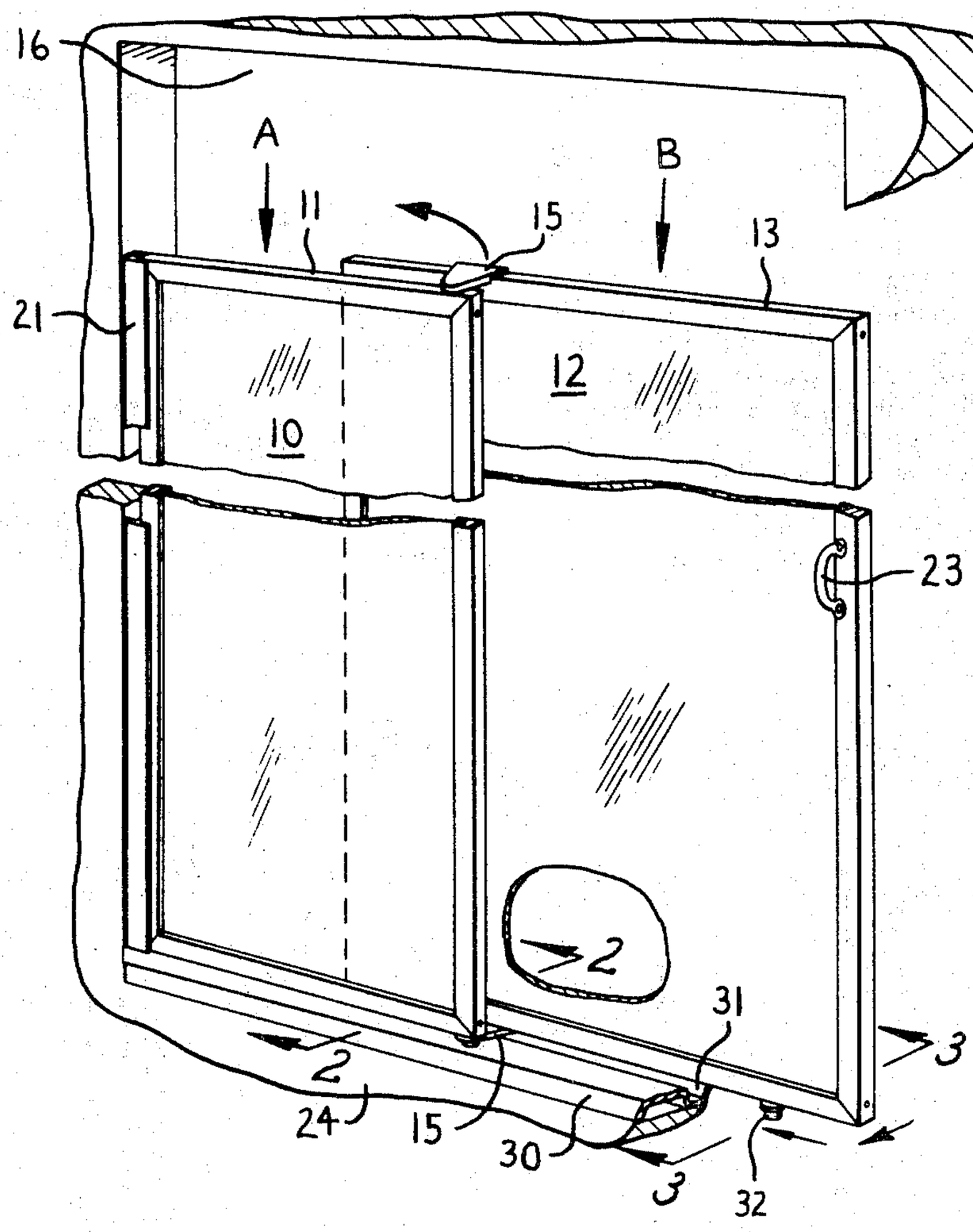
Primary Examiner—Peter M. Caun

Attorney—Lee R. Schermerhorn

[57] **ABSTRACT**

This is a two-panel folding door having one panel hinged to a door jamb and a second panel pivotally connected to the swinging side of the first panel. Special pivot brackets on the upper and lower ends of the second panel have adjustable clamp means to vary the overlap of the two panels according to the width of the doorway opening. Different width adjustments may be made in the top and bottom pivot brackets to fit an opening which is wider at the top or bottom.

6 Claims, 6 Drawing Figures



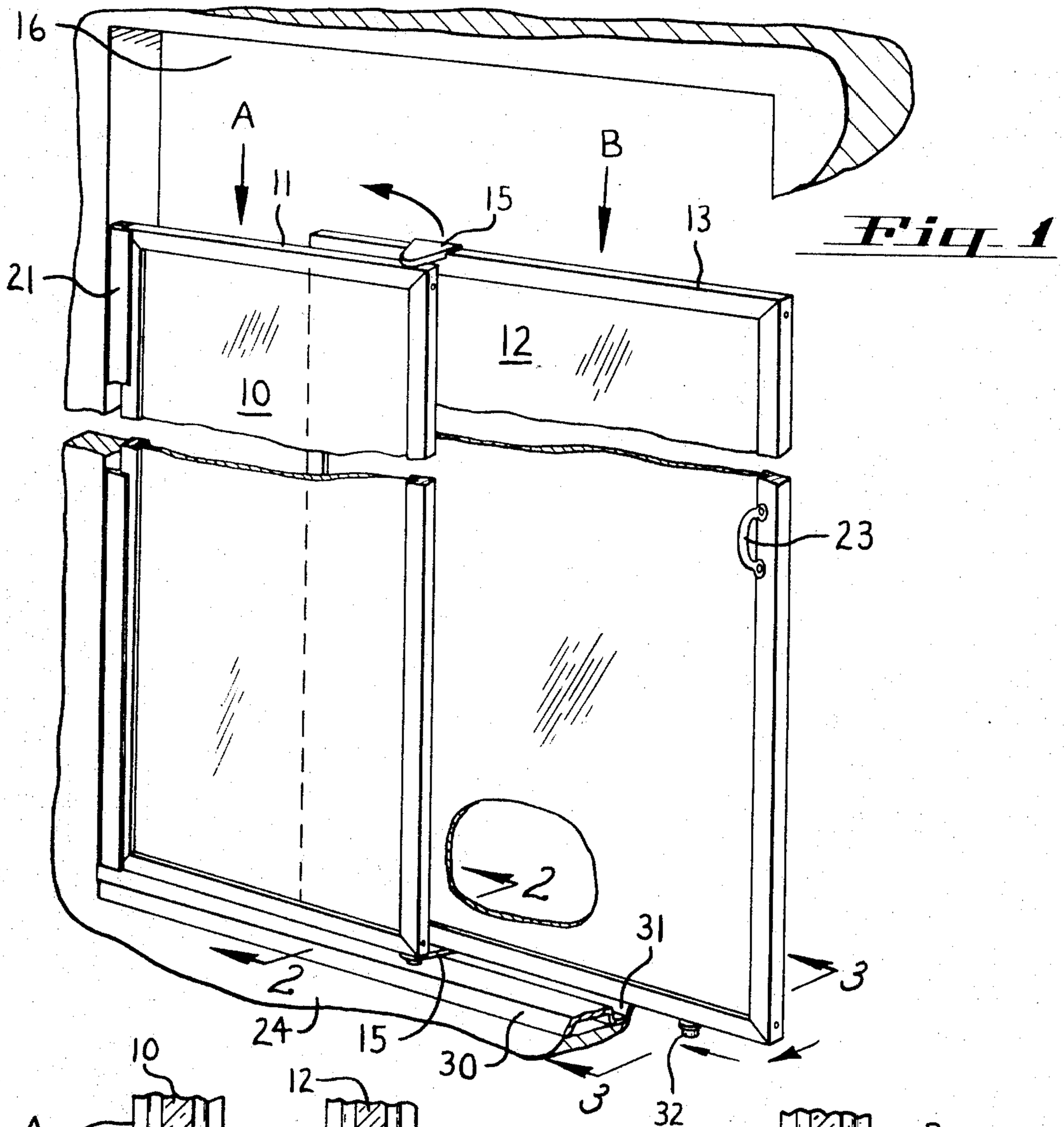


Fig 1

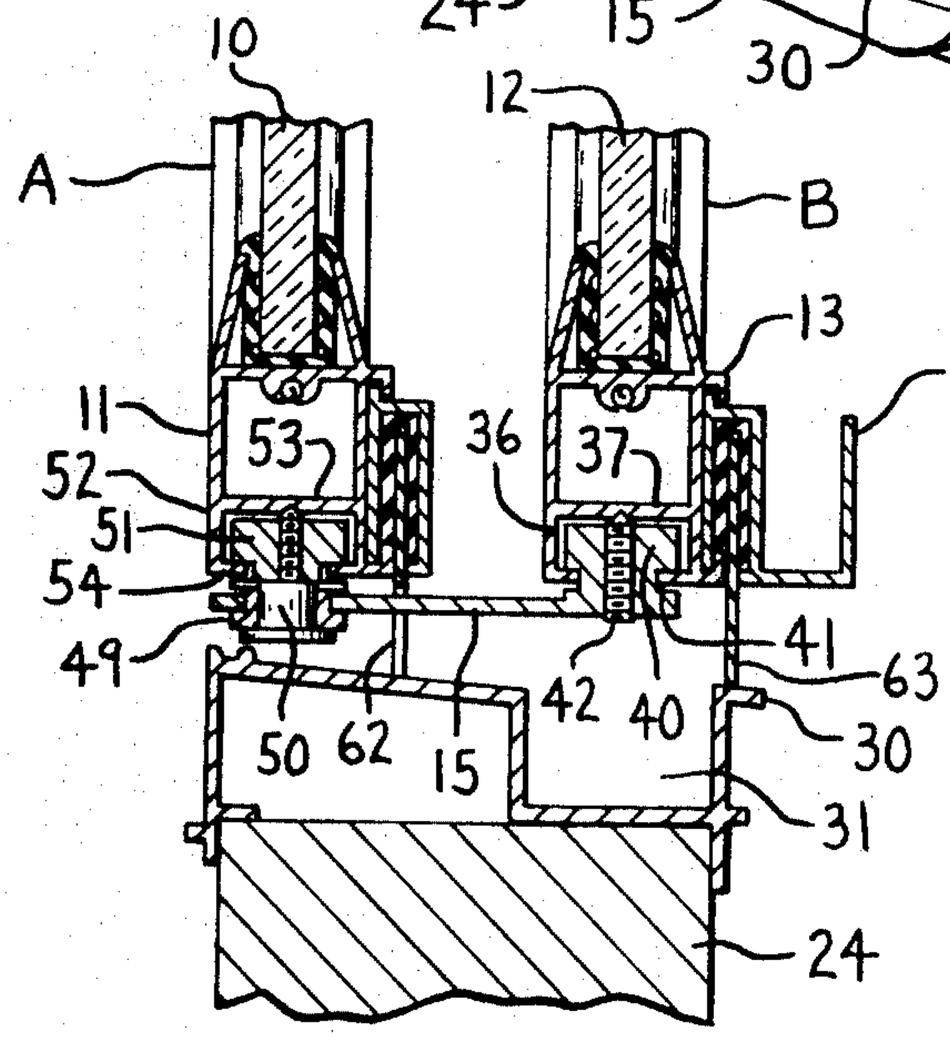


Fig 2

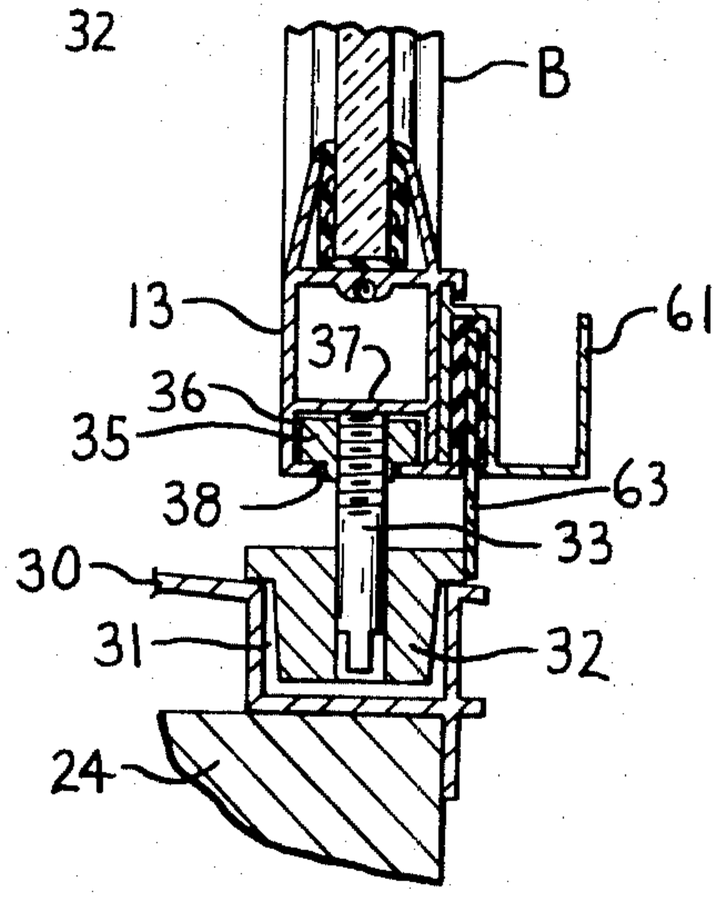


Fig 3

Fig 4

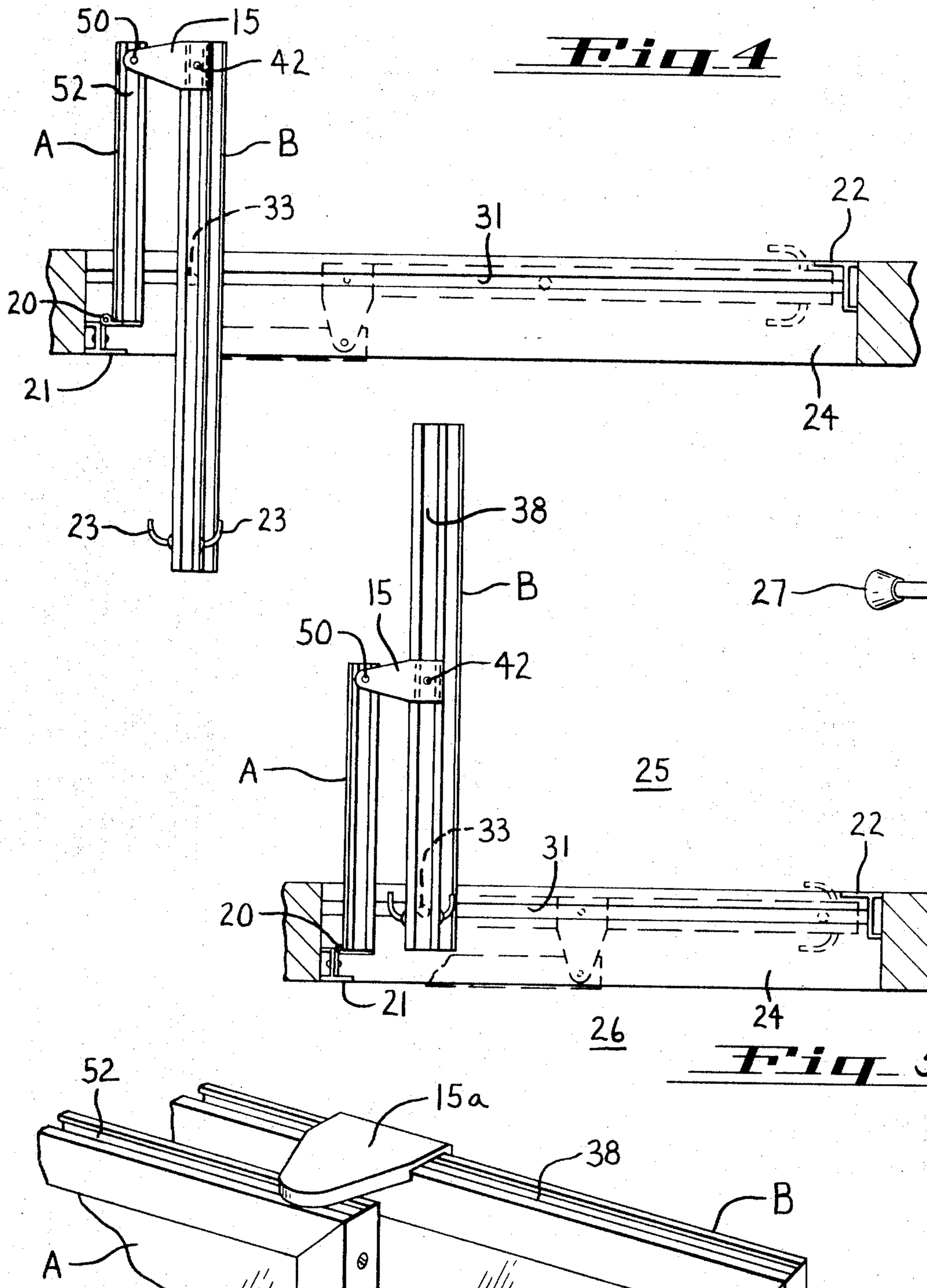


Fig 5

Fig 6

ADJUSTABLE WIDTH FOLDING DOOR

BACKGROUND OF THE INVENTION

This invention relates to an adjustable width door and is of particular advantage in connection with the doors for shower stalls wherein the doorway openings are frequently not of any standard width.

The use of tempered glass for shower stall doors makes it necessary for the supplier to keep in stock a large inventory of different widths of glass panels because tempered glass cannot be cut to fit the opening. It cannot even be drilled for the attachment of hardware or fittings. Adjustable door jambs have heretofore been provided but the amount of adjustment by this means is so small as to afford no substantial relief to the excess inventory problem. On the other hand, it has been the custom of carpenters to make the width of a shower stall opening quite variable to fit the house plans.

Objects of the invention are, therefore, to provide an improved adjustable width door, to provide a two-panel folding door having variable overlap of the panels in closed position of the door, to provide an adjustable width door which may be made wider at its top or bottom to fit between door jambs which are not truly vertical, and to provide an improved pivot bracket incorporating adjustment means for the purposes described.

SUMMARY OF THE INVENTION

The present door has two overlapping panels wherein variable overlap is provided by top and bottom pivot brackets allowing adjustment of one panel relative to the other through a wide range. This permits the use of a few standard sizes of tempered glass panels to fit doorway openings of different widths. It also permits the panels to be adjusted to fit door jambs which are not vertical.

The invention will be better understood and additional objects and advantages will become apparent from the following description of the preferred embodiment illustrated in the accompanying drawings. Various changes may be made in the details of construction and arrangement of parts and certain features may be used without others. All such modifications within the scope of the appended claims are included in the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view, with parts broken away, showing an adjustable width door embodying the invention;

FIG. 2 is a view on the line 2—2 in FIG. 1;

FIG. 3 is a view on the line 3—3 in FIG. 1;

FIG. 4 is a top plan view showing the door in maximum width adjustment;

FIG. 5 is a similar view showing the door in minimum width adjustment; and

FIG. 6 is a fragmentary perspective view showing the top pivot bracket.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The present door comprises a panel A having a glass pane 10 set in a metal frame 11 and a panel B having a glass pane 12 set in a metal frame 13 as shown in FIG. 1. Upper and lower pivot brackets 15 allow the panel B to pivot on the panel A and support the panel B on

the panel A in overlapping relationship as shown. As will presently be explained, the brackets 15 provide for adjusting the amount of overlap to fit the width of the doorway opening 16.

Referring now to FIGS. 4 and 5, one vertical edge of the panel A is pivotally supported by a conventional piano hinge 20 on a door jamb fitting 21. The remote edge of panel B is adapted to close against a door jamb fitting 22 and is provided with inside and outside handles 23. The bottom of the doorway opening 16 is spanned by a raised threshold 24 and, for reference, the numeral 25 designates the inside of the shower stall and the numeral 26 the outside. A shower head 27 is mounted on a side wall adjacent the door jamb 22 so that the spray cannot pass through the gap between panels A and B.

As shown in FIG. 3, the threshold 24 is equipped with a threshold member 30 containing a groove 31. A guide 32 is mounted on a stud 33 for travel in groove 31 when the door is opened and closed. The upper end of stud 33 has threaded engagement with a nut 35 which is slidable in a channel 36 extending along the under side of frame 13. The upper side of channel 36 is closed by a wall 37 and the under side is slotted at 38 to allow sliding adjustment of studs 33 as will presently be described. Stud 33 is adjusted when the door is installed and locked in adjusted position by screwing the stud upward in nut 35 so that the upper end of the stud bears against wall 37 in the manner of a setscrew. This clamps the stud and nut against subsequent movement in channel 36.

As shown in FIG. 2, one end of pivot bracket 15 has an elongated slide portion 40 which is movable along channel 36 and a reduced neck portion 41 which is movable in slot 38. When the door is installed, both upper and lower brackets 15 are securely clamped in adjusted position by a setscrew 42 having a sharpened point which indents itself in wall 37. Slide 40 is of sufficient length to prevent it from rotating in channel 36 whereby arm portions of the brackets 15 project at right angles to the plane of panel B.

The projecting end of the arm of each bracket 15 carries a bushing 49 to receive a pivot pin 50. The upper end of pivot pin 50 has threaded engagement with a nut 51 which is contained in a channel 52 in the frame 11 of panel A. When pin 50 is screwed into nut 51, the pointed upper end of the pin indents itself into wall 53 to secure the pin and nut in fixed position. Channel 52 has bottom flanges at 54 to contain the nut and assume the thrust reaction on pin 50 when it is tightened as a setscrew. The upper pivot bracket 15 is preferably covered by a cap 15*a* to present a neat appearance as shown in FIG. 6.

The door hardware in FIGS. 2 and 3 further includes gutter 61 on panel B and flexible seal strips 62 and 63 on the lower edges of both panels A and B to confine the water inside the shower stall.

FIG. 4 shows the maximum width adjustment to fit a wide doorway. In this case, the brackets 15 are secured by setscrews 42 at the extreme ends of channels 36, the overlap of panels A and B being limited substantially to the width of bracket 15.

FIG. 5 shows the minimum width adjustment wherein the brackets 15 are clamped by setscrews 42 approximately at mid-length in the channels 36. Approximately half the width of panel B overlaps on the inside of panel A when the door is closed, as shown in broken

lines. Jamb strip **22** may be equipped with a suitable catch to hold the door closed, if desired.

In order to obtain the greatest possible range of width adjustment, the panel B is preferably about twice as wide as panel A. When brackets **15** have been adjusted, the guide stud **33** in FIG. **3** is shifted in channel **36** so that the door will fold properly in open position as shown.

If the jamb member **22** is not parallel with jamb member **21**, leaving the opening **16** wider at the top or bottom, the door may still be made to fit the opening by appropriate adjustments of the pivot brackets **15.** If the opening is wider at the top than at the bottom, the upper bracket **15** is secured by its setscrew **42** somewhat to the right of the lower bracket as the parts are viewed in FIGS. **1, 4** and **5.** If the doorway is wider at the bottom than at the top, then the lower bracket **15** is fixed in a position to the right of the upper bracket.

Thus, the present construction allows the use of tempered glass doors in openings which vary through a wide range in width without requiring the usual large inventory of glass panes in different sizes. The same adjustments adapt the panels to fit openings which are wider at the top or bottom while using glass panes that cannot be cut to fit the contours of the opening. A stock of four different width sizes of tempered glass and two different sizes of metal frame kits will make door panels to fit any opening from 20 inches to 36 inches wide. All metal cutting is done at the factory.

The present door construction is also of advantage for other purposes such as closets and cupboards and the like and is in no way limited to glass doors.

Having now described my invention and in what manner the same may be used, what I claim as new and desire to protect by Letters Patent is:

1. An adjustable width folding door comprising a first panel having a hinge on one vertical edge thereof for mounting the door on a jamb member, a pair of vertical pivot means on the top and bottom horizontal edges of said first panel adjacent the opposite vertical edge of the panel, a pair of pivot brackets pivotally connected to said pivot means, a second panel having sliding adjustment on said pivot brackets alongside said first panel in overlapping relation thereto, and means in said pivot brackets securing said second panel in adjusted position on said pivot brackets.

2. A door as defined in claim **1** including a vertical guide member having sliding adjustment along a horizontal edge of said second panel, and means for securing said guide member in adjusted position.

3. A door as defined in claim **1** including a pair of channels extending along the upper and lower horizontal edges of said second panel, and slide members on said pivot brackets slidable in said channels, said securing means in said pivot brackets comprising setscrews engaging said channels.

4. A door as defined in claim **3** including a nut slidable in one of said channels, and a vertical guide stud for said second panel having threaded engagement with said nut.

5. A door as defined in claim **3,** said channels being incorporated in a frame on said second panel.

6. A door as defined in claim **5,** said panels comprising glass panes.

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