June 13, 1961 P. R. FERGUSON 2,987,755

VERTICALLY-ADJUSTABLE DOOR-PIVOT ARRANGEMENT

Filed Sept. 5, 1957

Fig. 1.

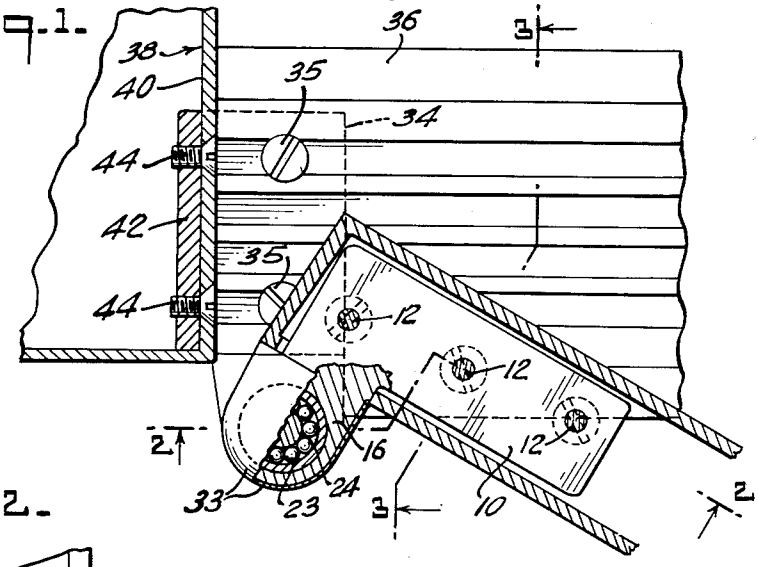


Fig. 2.

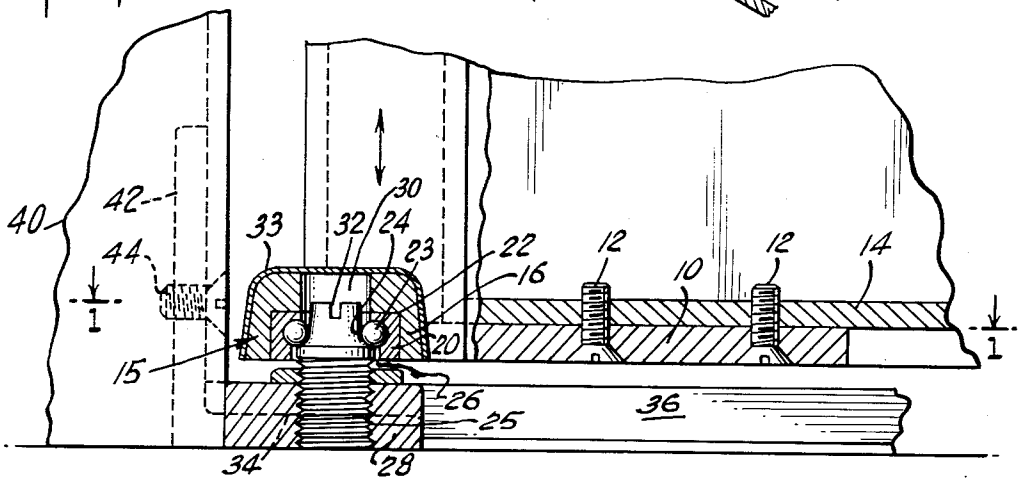


Fig. 3.

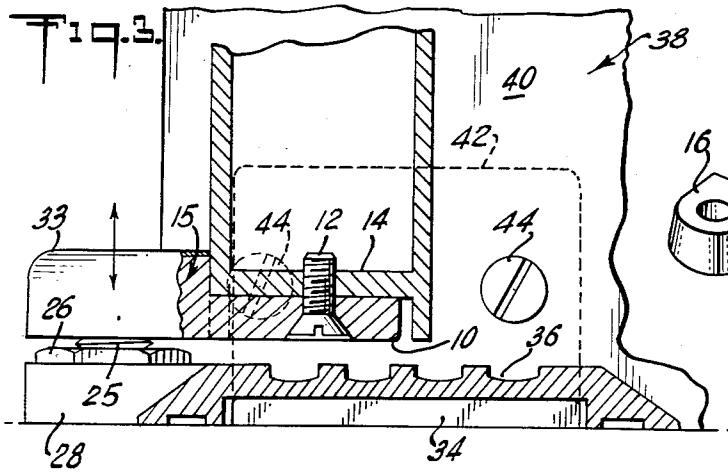
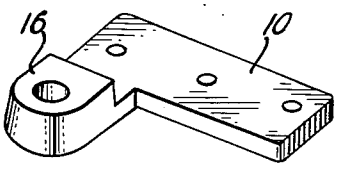


Fig. 4.



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VERTICALLY-ADJUSTABLE DOOR-PIVOT ARRANGEMENT

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This invention relates to vertically-adjustable door-pivot arrangements and to door and doorway constructions embodying the same.

Vertically-adjustable door pivots, to be of maximum value, should be adjustable not only at the time of the installation of the door but also whenever the relative position of the door with respect to its frame or the adjacent flooring changes. However, such adjustment is difficult, complicated, and/or cumbersome in the usual instances where the pivot arrangement is within or under the door, and while such arrangements might be made more easily operable, the resulting complexity of the structure would itself be a drawback to its use.

I have found, however, that by the provision of the pivot means outside the door, the latter may be adjusted at any time with a maximum of ease without the use of a complicated pivot structure.

I have also found that such an arrangement lends itself to the use of a particularly simple means for mounting a part of the pivot means on the door frame, and I have provided such a means therefor.

The invention accordingly comprises the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the constructions hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

FIGURE 1 is a horizontal sectional view, on the line 1—1 of FIG. 2, of one form of arrangement embodying the invention;

FIG. 2 is a vertical sectional view thereof on the line 2—2 of FIG. 1;

FIG. 3 is a vertical sectional view on the line 3—3 of FIG. 1; and

FIG. 4 is a perspective view of the retaining plate.

In the exemplified embodiment of the invention there is provided a retaining plate 10 which is secured by screws 12 to the bottom of the door 14. The plate 10 is formed with a lateral portion which extends beyond the outside of the door (that side toward which the door opens), so as to be readily exteriorly accessible. Such accessibility is desirably provided from the top, as in the exemplified arrangement.

The extension 15 is formed with sleevelike portion 16 containing the outer raceway 20 of a ball bearing 22 comprising balls 23 and an inner raceway 24 on an upper portion of a screw 25 which extends thru an opening 26 in the extension 15 and within the sleeve 16, and is threaded into a base member 28. The sleeve 16 is formed to provide an upper opening 30 for the insertion of a screwdriver adapted to engage a slot 32 on the top of the screw for the adjustment of that vertical position of screw 25, the sleeve 16, of the plate 10, and the door 14 with respect to the base member 28. As will be seen from

FIG. 2, the periphery of the head of the screw 25 is spaced from the walls of the opening 26 at all points except where it contacts the ball bearings. In this manner the lateral extension 16 is tiltably supported, enabling a door attached to the plate 10 to be "leaned" or tilted when it is put in place. This tiltability is increased by the inwardly-and-upwardly sloping wall of the screw head above the balls as shown in FIG. 2. A removable cover 33 for the extension 15 is provided.

The base member 28 may be secured in any desired manner to the structure on which the door is set; but, in accordance with the invention in its more specific aspects, it is formed integrally with a plate 34 which is secured by screws 35 to the threshold 36 which forms part of the door frame 38. The plate 34, in the present instance, extends under a portion of the door jamb 40 and is integral with a vertical plate 42 which is secured to the door jamb by screws 44.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A pivoted door construction comprising a door; a door frame comprising a threshold and a jamb; an element secured to the door; a lateral extension on said element projecting beyond the side of the door; a base member having a portion disposed below said extension, a portion extending beneath said threshold and being overlain thereby, and an upright portion extending behind said jamb from the second-mentioned portion and being covered by the jamb; vertically-adjustable means connecting said extension to said base member; means to attach said member to said threshold; and means to attach said member to said jamb.

2. A door pivot arrangement comprising an element adapted for attachment to a door, a lateral extension on said element, a screw having an upper portion within said extension and accessible from above the same, a ball bearing within said extension and surrounding and supported by said screw and rotatably supporting said extension and said element and adapted to support a door to which said element is attached, said screw having a threaded lower portion for extension into a base member for mounting said screw, said lateral extension, and said element for vertical adjustment.

3. An arrangement as in claim 2 wherein said screw is threaded into a base member formed with a lateral extension adapted to underlie a door to which the first-mentioned element is attached.

4. An arrangement as in claim 3 wherein the last-mentioned lateral extension carries at one side thereof a vertical extension spaced laterally from said lateral extension and adapted to extend along the jamb of said door.

5. An arrangement as in claim 2 wherein said extension is tiltably supported by said screw.

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