

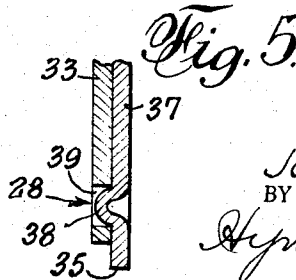
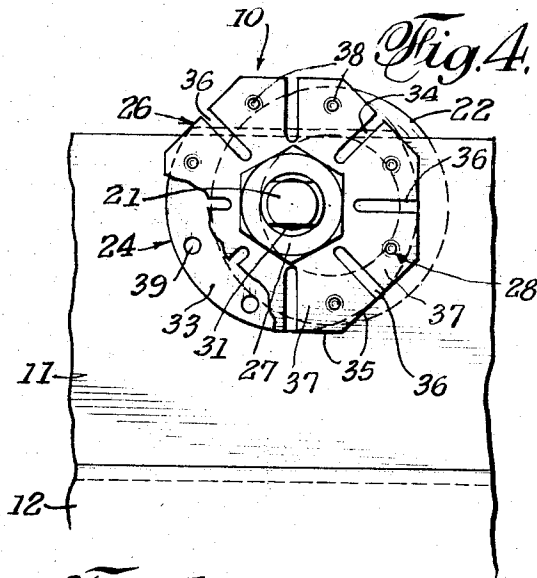
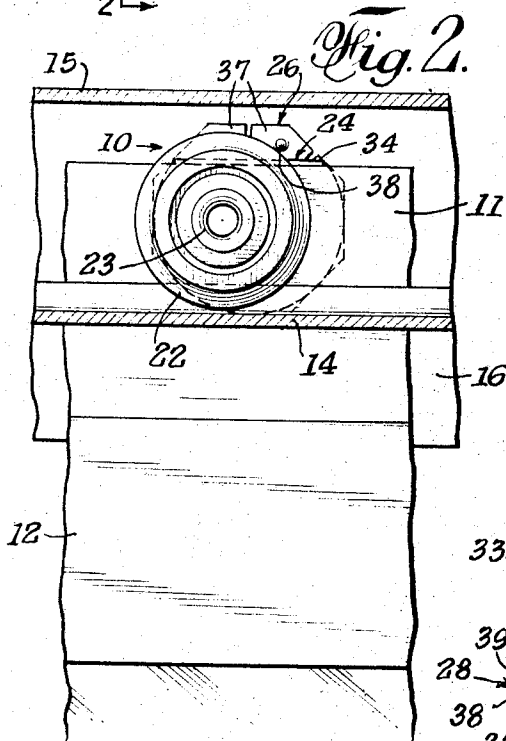
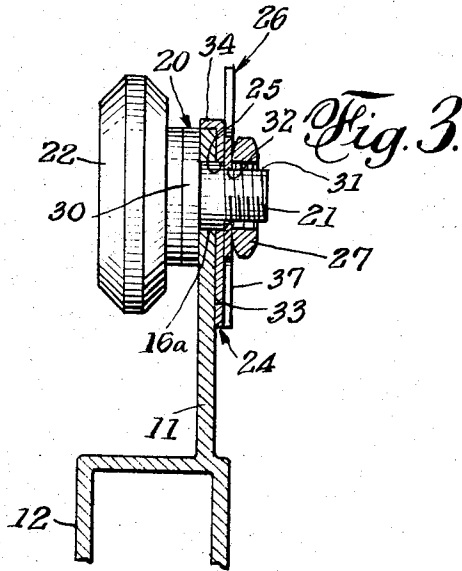
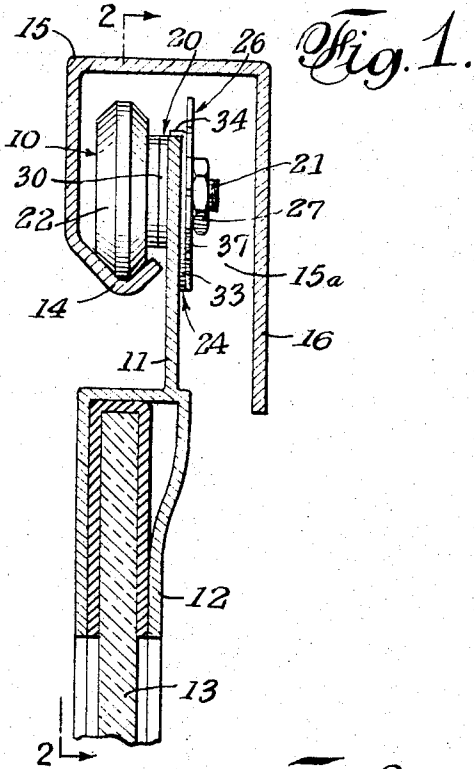
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ADJUSTABLE HANGER FOR SLIDING DOORS

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**ADJUSTABLE HANGER FOR SLIDING DOORS**

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**ABSTRACT OF THE DISCLOSURE**

A door hanger having a fitting with a threaded end rotationally engaged with a top rail of a tub-enclosing door, and an eccentric axle rotationally mounting a wheel supported on a track portion of the head rail above said door. The threaded end of the fitting extends through a plate member that is non-rotationally engaged with the top rail and having a set of circumferentially arranged holes or depressions, and an adjusting member having non-rotative engagement with the mentioned stud and having dimples to engage with said holes or depressions. Adjustment of the latter member by means of wrench-engagement of its periphery effects angular adjustment of the eccentric axle around the axis of said studs and, therefore, the adjusted vertical position of the door relative to the head rail.

This invention relates to adjustable hangers for sliding doors and, while having other applications, is particularly adapted for adjusting sliding tub enclosures up and down to better align them in installed position.

Present hangers usually comprise rollers that may be adjusted only by removing the enclosure to give access to a roller-adjusting nut for loosening and re-tightening thereof. In other structures, the hanger rollers must be completely removed from a hole in one position on the enclosures or panels and placed in another hole to obtain adjustment.

An object of the present invention is to provide an adjustable hanger for sliding tub enclosures that will allow the installer to reach the hanger assembly on the enclosures with a generally conventional single-headed wrench, adjust the hanger rollers thereof up or down, as required, so the enclosures will hang, as desired, from the rail or track with which the rollers are engaged, and all while the enclosures are in hung position.

The invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The above objects are realized in an adjustable hanger assembly that is mounted on the top rail of a vertical enclosure or similar vertical door or panel, the same comprising a roller or other tracking member that is supported from a track, a fitting provided with a threaded axial stud that extends through a hole in said enclosure rail and has one or more flats formed therein and an oppositely directed eccentric projection constituting an axle for said roller, a lock plate having a round hole through which said threaded axial stud projections and which is so engaged with the top enclosure rail as to be held non-rotatively, an adjustment member in flatwise superposition on the lock plate and tightened thereagainst by a nut on the threaded stud, said adjustment member having a polygonal periphery for engagement by the socket of a wrench and having a central hole that fits over the flat-provided portion of the mentioned stud so as to turn the fitting on which said stud is provided when turned by a wrench, to move the axle and the wheel

thereon to any desired adjusted position between top and bottom dead center on a vertical line through the axis of the stud. The adjusted position of the device is retained by spring detents provided in the adjustment member engaged in holes or depressions provided in the lock plate.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description and which is based on the accompanying drawing. However, said drawing merely shows, and the following description merely describes, one embodiment of the present invention, which is given by way of illustration or example only.

In the drawing, like reference characters designate similar parts in the several views.

FIG. 1 is a vertical sectional view showing the present hanger assembly in operative position.

FIG. 2 is a vertical sectional view as taken on the line 2—2 of FIG. 1.

FIG. 3 is an enlarged vertical sectional view of said hanger assembly with the roller thereof in side elevation.

FIG. 4 is a face view as seen from the right of FIG. 3, showing the adjustment and detent means of the assembly.

FIG. 5 is a further enlarged fragmentary sectional view of the detent means.

The present hanger assembly 10 is shown as mounted on the top rail 11 of a tub enclosure 12. Such an enclosure usually has a transparent or translucent panel 13. The rail 11 may be provided on other types of doors or panels than those enclosing bathtubs. The hanger assembly is engaged with and rolls along a track 14 that is here shown as provided on a head rail 15 that, thereby, supports the enclosure 12. The top rail 11 extends upwardly into a space 15a between the track 14 and the front wall 16 of said head rail. A round hole 16a is provided in the enclosure rail 11.

The hanger assembly comprises, generally, a fitting 20 that is rotationally mounted on the rail 11 by means of a forwardly extending round threaded stud 21, a roller 22 on a rearwardly extending eccentric axle 23 on said fitting 20, a lock plate 24 applied to the front face of the rail 11 and through a round hole 25 in which the mentioned stud 21 extends, an adjustment member 26 disposed flatwise against the front of the plate 24 and having non-rotational engagement with said stud 21, a nut 22 on said stud to lock the assembly 10 to the rail 11, and spring detent means 28 to releasably engage the member 26 with the plate 24.

The fitting 20 is shown as having a disc portion 30 that has flatwise engagement with the rear face of the enclosure rail 11 with the stud 21 extending through the hole 16a in said rail. The eccentric axle 23 for the roller 22 extends forwardly from said disc. One or more flats 31, or other keying means on said stud 21, provide for non-rotative engagement in a similarly shaped hole 32 in the member 26. Thus, the fitting 20 and the member 26 are rotationally mounted on the rail 11 so that rotation of said member will cause corresponding adjusting movement of the eccentric axle 23.

The roller 22, preferably of nylon, is freely rotationally mounted on the axle 23 and will adjustably move with the axle accordingly. Said roller is engaged with the track 14, as shown in FIGS. 1 and 2. Thus, the mentioned rotative movement of the fitting will cause the stud 21 to move in an arc around the center of the axle-mounted roller, thereby raising or lowering the rail 11 and the enclosure 12 thereof relative to the track 14 and the head rail 15.

The lock plate 24 is shown as a thin metal plate 33 in which the mentioned hole 25 is provided, and a bent edge 34 engaged with the top edge of rail 11. Said plate 24

is held non-rotationally by said edge 29 while the stud 21 rotates in said hole 25.

The adjustment member 26 is shown as a flat spring plate having polygonal, peripheral edges 35, and is divided by radial slots 36 into a plurality of spring fingers 37. Due to the non-rotative engagement of the stud 21 in the hole 32 in member 26, the socket of a wrench introduced into the space 15a and operated to turn said member 26 in one direction or the other, will turn the fitting 20 correspondingly, and will adjust the position of the roller, up or down on the rail 11, as the case may be.

The nut 27 locks the assembly and causes the member 26, particularly the spring fingers 37 thereof, to press resiliently against the plate 24. Since the detent means 28 comprises an indent or dimple 38 in each finger 37, and a set of registering holes 39 is provided in the plate 33 of the lock plate 24 and in which the dimples fit, as shown in FIG. 5, said detent means 28 firmly, yet releasably, hold the adjusted position of the fitting 20 during all operative movements and positions of the enclosure 12. The dimples 38 may be provided in the plate 33 and the holes 39 in the fingers 37 as a mere reversal of the described construction. The enclosure may be raised or lowered, as desired, merely by turning the member 26, as above mentioned, to shift the dimples 38 to other holes 39 of the lock plate. In the structure shown, the adjustment for four positions of the fitting 20 is shown. Fewer or more adjustments, as desired would require only the provision of fewer or more detents.

While I have illustrated and described what I now contemplate to be the best mode of carrying out my invention, the construction is, of course, subject to modification without departing from the spirit and scope of my invention. Therefore, I do not wish to restrict myself to the particular form of construction illustrated and described, but desire to avail myself of all modifications that may fall within the scope of the appended claims.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. An adjustable hanger for sliding doors having a top rail that extends upwardly into a space that is forward of a horizontal track, said hanger comprising:

- (a) a fitting having a threaded stud rotatively extending forwardly through said door rail and provided with a rearwardly directed eccentric axle,
- (b) a roller on said axle supported on said track for rolling movement therealong,
- (c) an adjustment member having non-rotational engagement with said stud at the front of the rail and having wrench-engageable polygonal peripheral edges for rotative adjustment thereof and of the fitting to angularly move the axle and roller thereon around the axis of the stud accordingly, and
- (d) spring detent means to releasably retain said member in adjusted position.

2. An adjustable hanger according to claim 1 in which the spring detent means comprises:

- (a) a lock plate non-rotatively engaged with the door rail and having a set of detent-receiving holes, and
- (b) a set of dimples formed in the adjustment member in registering engagement with said holes.

3. An adjustable hanger for sliding doors having a top rail that extends upwardly into a space that is forward of a horizontal track, said hanger comprising:

- (a) a fitting having a threaded stud rotatively extend-

ing forwardly through said door rail and provided with a rearwardly directed eccentric axle,

(b) a roller on said axle supported on said track for rolling movement therealong,

(c) an adjustment member affixed to said stud at the front of the rail and having wrench-engageable peripheral edges for rotative adjustment thereof and of the fitting to move the axle and roller thereon accordingly,

(d) said member being divided into radially arranged resilient fingers each provided with a detent dimple directed toward the rail, and

(e) means provided with a set of registering dimple-receiving holes interposed between said adjustment member and the door rail.

4. An adjustable hanger according to claim 3 in which the door rail has an upper horizontal edge, and the last-mentioned means comprises a plate in which said holes are provided and having a bent portion engaged with said edge.

5. An adjustable hanger according to claim 4 in which the mentioned stud is threaded, and a nut on said stud which when drawn up tightly against the adjustment member, imposes friction by the fitting on one side of the rail and by the adjustment member on the plate having the dimple-receiving holes on the opposite side of the rail, said friction cooperating with the detent means to retain the adjustment of the hanger until changed by a wrench introduced into the mentioned space and operatively engaged with the mentioned peripheral edges of the adjustment member to turn the same on the axis of said stud.

6. An adjustable hanger for sliding doors having a top rail that extends upwardly into a space that is forward of a horizontal track, said hanger comprising:

(a) a fitting having a threaded stud rotatively extending forwardly through said door rail and provided with a rearwardly directed eccentric axle,

(b) a roller on said axle supported on said track for rolling movement therealong,

(c) an adjustment member having non-rotative engagement with said stud at the front of the rail and having wrench-engageable polygonal peripheral edges for rotative adjustment thereof and of the fitting to angularly move the axle and roller thereon around the axis of the stud accordingly, and

(d) spring detent means to releasably retain said member in adjusted position,

(e) said spring detent means comprising a lock plate non-rotatively engaged with the door rail and having a set of detent-receiving holes, and

(f) a set of dimples formed in the adjustment member in registering engagement with said holes,

(g) the rail having an upper horizontal edge, and

(h) the non-rotative engagement of the lock plate comprising a bent portion thereof engaged with said rail edge.

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