

Sept. 27, 1949.

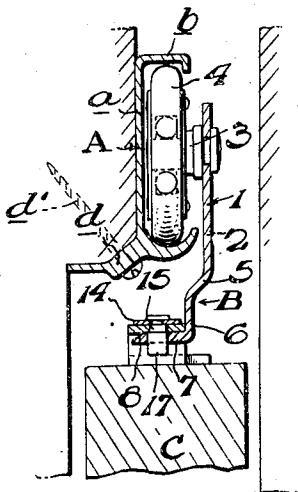
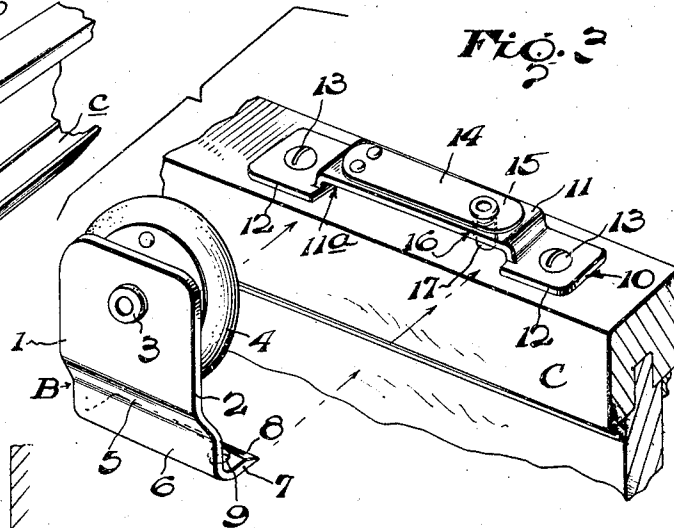
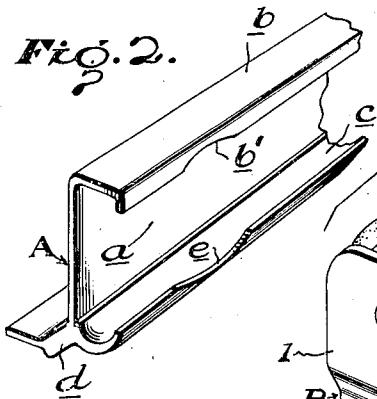
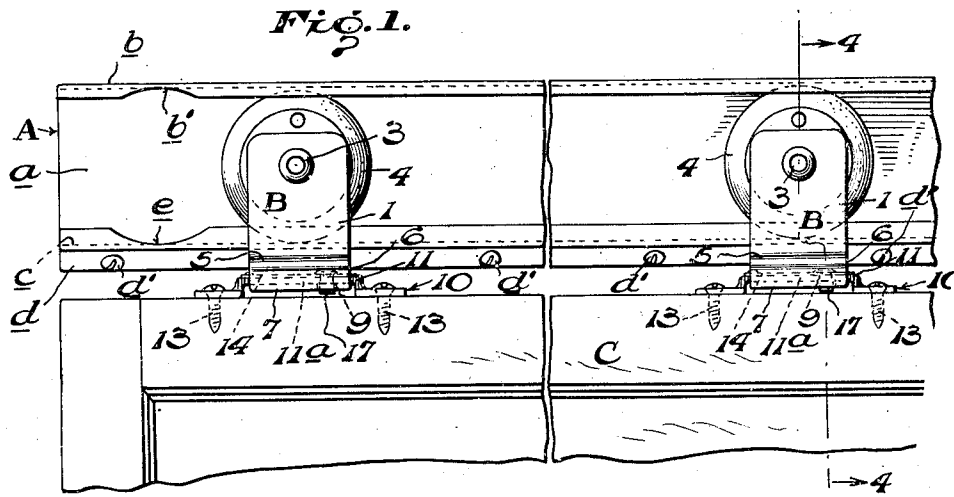
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2,482,855

DOOR HANGER

Filed April 16, 1946

2 Sheets-Sheet 1



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FIG. 5.

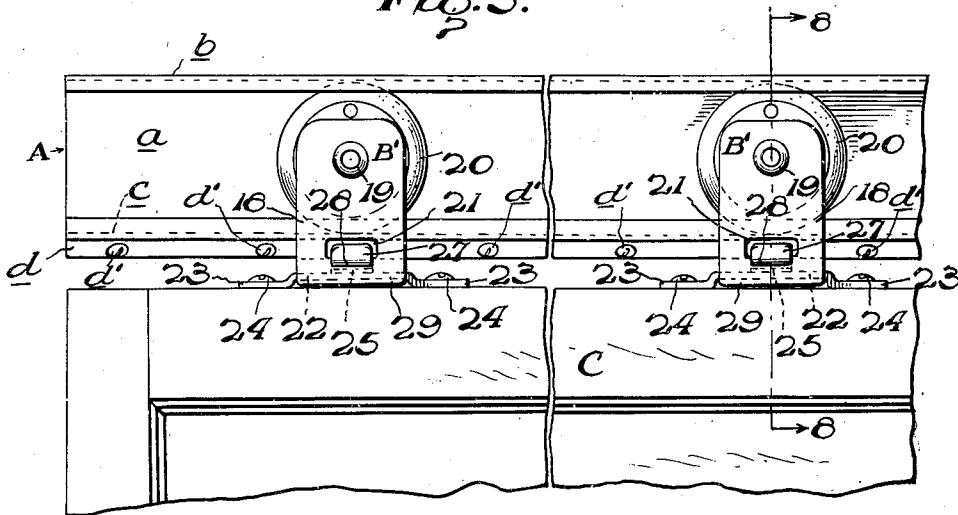


FIG. 6.

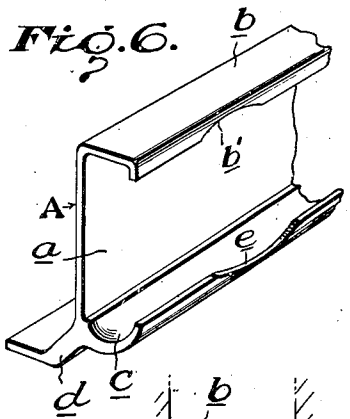


FIG. 7.

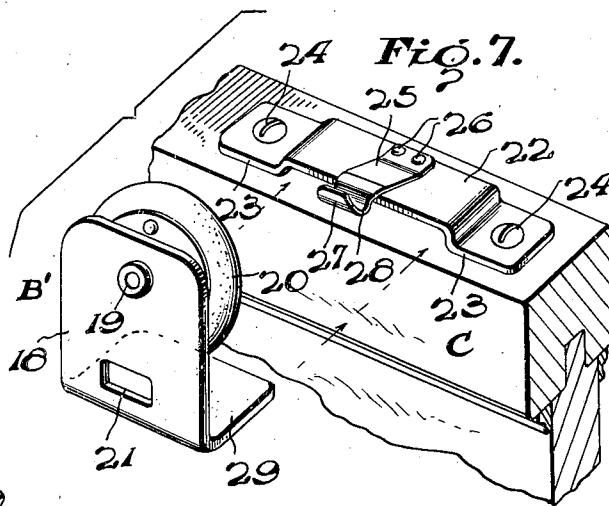
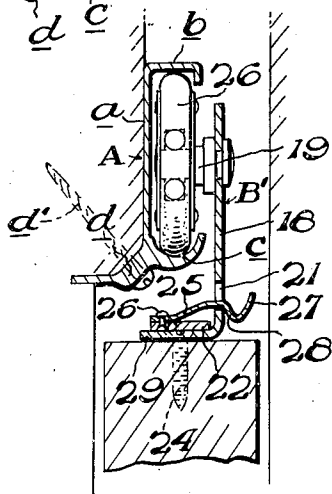


FIG. 8.



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DOOR HANGER

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14 Claims. (Cl. 16—89)

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This invention relates to hangers for sliding doors, and more particularly to a novel two-part construction which lends itself to convenient manufacturing practices, thereby making possible quantity production, and which is easily and readily assembled and installed on a track and door.

One of the objects of the invention is to provide a door hanger assembly including a roller bracket having a keeper opening and an attaching plate carried by the door, said plate being provided with a spring-actuated latch for releasably engaging the keeper opening in such a way that the bracket and plate may be readily engaged to prevent accidental displacement in use and, which, on the other hand, may be readily separated when desired, for the repair or replacement of parts, or to remove the door.

Another object is to provide a hanger assembly which although removable, when required, will not jump the track when in use, and which will not bind upon relative sliding movement between the door and the track.

A further object is to provide a novel track or hanger rail which is easily installed; strong and durable in use and which can be made of appropriate metals, including the lighter metals now available, without sacrificing strength or stability, while, at the same time, permitting the roller bracket to be readily fitted thereto, after the track is installed, and, which in service, prevents the rollers from jumping the track.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts, hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is a partial side elevation of a door installation embodying the present invention.

Figure 2 is a detail perspective view of the track.

Figure 3 is a perspective view of the roller bracket and attaching plate separated to illustrate the mode of interconnection.

Figure 4 is a vertical cross-sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a view similar to Figure 1 showing a modification of the invention.

Figure 6 is a view similar to Figure 2 showing a portion of the track to one side of the point where the rollers are interfitted therewith.

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Figure 7 is a view similar to Figure 3 of a modified form of the invention.

Figure 8 is a vertical cross-sectional view of the parts shown in Figure 7, in their connected relation.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

Referring to Figure 1 it will be observed that the track is designated generally as A while the hanger assemblies B slidably support and carry a door C.

The track A is preferably in the general form of a channel made of appropriate metal and includes a web portion *a*, an upper angular guard flange *b* and a bottom roller receiving channel or groove *c*. The downturned portion of the guard flange is provided with a notch *b'*, the purpose of which will presently appear. The bottom of the web *a* is also provided in the zone of the groove or channel *c* with a laterally offset securing portion *d* opposite the channel having openings therein to receive screws or other fastenings *d'* for securing the track to the framework. This securing portion serves to reinforce and balance the cross-sectional metal distribution of the entire track element, so as to make it of maximum strength where the load is supported by the fasteners *d'*. The outer bevelled face of the securing portion also makes it possible to insure that the screws are toed in at the proper angle relative to the web *a* which acts as a beam, and, moreover, the screw positions are readily accessible to a mechanic for installation.

As will also be observed from Figure 2 the outer edge of the groove or channel *c* is provided with a cut-away portion or notch *e* which cooperates with the notch *b'* of the guard flange to permit of inserting rollers of the door hanger assembly in the channel after the guard flange *b* has been secured to the top of the doorway. These notches are necessary because the distance between the lower free edge of the guard flange *b* and the upper edge of the roller receiving groove *c* is less than the diameter of the rollers. Thus, when the rollers are confined between the angular guard flange *b* and the groove *c* they cannot accidentally jump the track.

Referring first to the form of door hanger unit B shown in Figures 3 and 4, it will be observed that the same includes a roller bracket 1 having an upright wall portion 2 of uniform width and provided at its upper end with an axle stud 3 for carrying a roller 4. This roller is preferably made of vulcanized fibre or the like to insure quiet ac-

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tion and smooth cooperation between the bracket and the track when the door is in operation, while at the same time tending to reduce friction between the roller of the bracket and the track. The lower end of the wall portion 2 is obliquely offset as indicated at 5 to compensate for the axial thickness of the roller 4 and continues into a substantially second vertical portion 6 which terminates in a laterally offset supporting tongue or flange 7. The edge portions of one corner of the flange 7 are preferably bevelled or chamfered, as indicated at 8 to facilitate engagement of the flange 7 with the attaching plate, as will presently appear. The flange 7 is also provided with a keeper opening 9, thereby providing the roller bracket with an opening which constitutes a part of cooperating means on the bracket and attaching plate for releasably locking the same together.

The attaching plate 10, carried by the upper edge of the door C, is preferably in the form of an elongated metal strip having the medial portion thereof upwardly arched as indicated at 11 with respect to the coplanar ends 12 which are secured to the door by screws or other fastenings 13. This arrangement, relative to the top edge of the door, provides in effect a pocket for receiving the flange 7 of the bracket. One edge of the arched portion 11 is recessed inwardly of the plane of the outer edges of the ends 12 as indicated at 11^a so that the resulting inner corners of the attaching foot portions or ends 12 serve to guide the flat tongue or supporting flange 7 into the pocket. The upper or outer face of the arched portion 11 is provided with a flat spring 14 which carries a latching element or stud 15 projecting through an opening 16 in the arched portion 11, thereby to engage the keeper opening 9 of the hanger bracket when the flange 7 thereof is inserted into the aforesaid pocket. The lower end 17 of the latching stud 15 is preferably bevelled toward the side of the attaching plate which receives the flange 7 to facilitate automatic interengagement of the roller bracket and attaching plate. It will thus be seen that when the flange of the roller bracket is moved into the pocket the roller bracket and attaching plate are automatically interengaged, and, if it subsequently becomes necessary to separate the bracket and plate it is only necessary to insert an appropriate implement between the underside of the flat spring 14 and the upper face of the arched portion 11 and lift the latching stud 15 sufficiently to clear the opening 9.

Referring to the form of hanger assembly shown in Figures 7 and 8 and designated generally as B' it will be observed that the same includes primary elements similar to those found in the form shown in Figures 3 and 4. That is to say, the hanger assembly B' includes a roller bracket having a vertical wall portion 18 provided with an axle stud 19 for receiving a roller 20, while the lower end of the wall 18 is laterally offset at 29 to provide a supporting tongue or flange which cooperates with the attaching plate. The wall portion 18 of the roller bracket is provided with a keeper opening 21 intended to cooperate with spring-actuated keeper means on the attaching plate. As will be seen from Figure 7 the attaching plate 22 is of intermediate arched formation having the co-planar foot portions 23 which may be secured to the upper edge of the door by screws or other fastenings 24. The arched configuration of the attaching plate 22 cooperates with the upper edge of the door to

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provide in effect a pocket for receiving the offset flange 29 of the roller bracket.

The upper or outer face of the arched portion of the attaching plate 22 carries a spring keeper or latch 25 disposed generally transversely of the attaching plate and secured in this position by suitable rivets 26 at one end thereof. The opposite end of the latch element 25 is deformed into substantially transversely troughed or V-shaped formation, as indicated at 27, so that its inner portion 28 provides a locking shoulder when the free end of the latch moves into the keeper opening 21 of the roller bracket. Thus, it will be seen that the interengagement of the roller bracket and the attaching plate is effected by simply moving the tongue or flange 29 of the roller bracket into the pocket formed by the arched portion of the attaching plate and the upper edge of the door until the latch portion 27 passes through the keeper opening 21. When it is desired to separate the hanger assembly, it is only necessary to lift the free end 21 of the latch element 25 with the aid of the thumb or finger, or a suitable tool, if required, thereby to effect the desired disengagement.

From the foregoing it will be apparent that both forms of the invention provide simple and practical means for slidably mounting a door in an overhead track. In practice the track element A is installed in the doorway and the bracket and attaching plate of the hanger assembly are separated. The attaching plates are secured to the upper edge of the door in the desired locations. The roller brackets are then mounted on the track by simply inserting the rollers 4 or 20 into the channel c of the track at the point of the cut-away portion or notch e in the outer edge of the groove. After the hanger brackets are inserted in the groove c they may be shifted along the track to the locations of the attaching plates and the offset flanges of the respective roller brackets may then be moved into the pockets formed by the attaching plates with respect to the door. The spring locking or latching means automatically and effectively holds the roller bracket and attached plate assembled until it is desired to manually effect their separation in the manner heretofore described.

Moreover, while the supporting flange or tongue of the roller carrying bracket fits relatively snugly in the pocket of the attaching plate so that there is no rattle or vibration, nevertheless there is sufficient play between the bracket and the attaching plate to permit slight swivel action desirable to prevent binding of the roller in the track. The benefit accruing from this swivel action is that should the attaching plates be not fixed on the door parallel to the sides of the door, then the wheel might bind in the track groove. By allowing hanger B to swivel slightly, the binding action will not take place due to the fact that as soon as the wheel binds sufficiently, it will align itself properly with the groove, and will remain thus properly aligned, as the groove will thereafter hold and guide the roller in the track. This feature, together with the spring latch and keeper means has been found to provide very satisfactory means for connecting the two parts of the hanger assembly.

It is of course understood that changes in the form and proportion may be resorted to within the scope of the appended claims.

I claim:

1. A door hanger comprising a roller carrying bracket having an opening, an attaching plate

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with means to secure same to a door and including means to engage a part of said bracket, and resiliently yieldable means carried by said plate and insertible in said bracket opening to hold said bracket to said plate.

2. A door hanger comprising a roller carrying bracket including a normally horizontal part having an opening, an attaching plate with means to secure same to a door and including means to support said horizontal bracket part, and resiliently yieldable means carried by said plate and insertible in said bracket opening to hold said bracket to said plate.

3. A door hanger comprising a roller carrying bracket including a normally vertical part having an opening, an attaching plate with means to secure same to a door and including means to support said vertical bracket part, and resiliently yieldable means carried by said plate and insertible in said bracket opening to hold said bracket to said plate.

4. A door hanger comprising a bracket carrying a roller, said bracket having an aperture therethrough, an attaching plate adapted to be engaged with said bracket with means for securing said plate to a door, a member extending into said aperture for holding said plate to said bracket and resiliently yieldable means for holding said member in said aperture.

5. A door hanger comprising a bracket carrying a roller, said bracket having an aperture therethrough, an attaching plate adapted to be engaged with said bracket with means for securing said plate to a door, a member removably extending into said aperture for holding said plate to said bracket and resiliently yieldable means for holding said member in said aperture.

6. A door hanger comprising a bracket carrying a roller, said bracket having an aperture therethrough, an attaching plate adapted to be engaged with said bracket with means for securing said plate to a door and resiliently yieldable means secured to said plate having a member extending into said aperture for holding said plate to said bracket.

7. A door hanger comprising a bracket carrying a roller, said bracket having a normally horizontal portion, said portion having an aperture therethrough, an attaching plate adapted to be engaged with said bracket with means for securing said plate to a door, a member extending to said aperture for holding said plate to said bracket and resiliently yieldable means for holding said member in said aperture.

8. A door hanger comprising a bracket carrying a roller, said bracket having a normally vertical portion, said portion having an aperture therethrough, an attaching plate adapted to be engaged with said bracket with means for securing said plate to a door, and means secured to said plate having a member extending into said aperture for holding said plate to said bracket.

9. A door hanger comprising a bracket carrying a roller, said bracket having an aperture therethrough, an attaching plate adapted to be engaged with said bracket, said plate having an aperture therethrough adapted to register with the aperture of said bracket, means for securing said plate to a door, a member extending into said apertures in registry and resiliently yieldable means for holding said member in said apertures.

10. A door hanger comprising a bracket carry-

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ing a roller, said bracket having an aperture therethrough, an attaching plate adapted to be engaged with said bracket, said plate having an aperture therethrough adapted to register with the aperture of said bracket, means for securing said plate to a door, a member engaged with aperture in said plate and removably extending into the aperture in said bracket when said apertures are in registry and resiliently yieldable means for holding said member in said apertures.

11. A door hanger comprising a bracket carrying a roller, said bracket having an aperture therethrough, an attaching plate adapted to be engaged with said bracket, said plate having an aperture therethrough adapted to register with the aperture of said bracket, means for securing said plate to a door and a resilient strip secured to said plate having a member protruding through the aperture of said plate and extending into the bracket aperture.

12. A door hanger comprising a bracket carrying a roller, said bracket having an aperture therethrough, an attaching plate adapted to be engaged with said bracket, said plate having an aperture therethrough adapted to register with the aperture of said bracket, means for securing said plate to a door and a resilient strip secured to said plate having a pin protruding through the aperture of said plate and extending into the aperture of the bracket.

13. In a door hanger construction including the combination of a track, a bracket carrying a roller for engagement with said track, and a plate for attachment to said bracket and a door, the improvement wherein the bracket is provided with an aperture and said plate is provided with a member extending into said aperture so as to secure the plate and bracket together in attached position and resiliently yieldable means for holding said member in said aperture.

14. A track for a door hanger construction comprising a normally vertical web having on one side an inverted channel-like guard at its upper end and on the same side a groove facing the guard at its lower end, a flanged portion extending diagonally from the web adapted to abut and be secured to a complementary supporting surface.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
455,695	Sumner	July 7, 1891
599,921	Stenhouse	Mar. 1, 1898
699,971	Poschmann	May 13, 1902
923,272	Johnson	June 1, 1909
1,106,992	Thomas	Aug. 11, 1914
1,169,630	Gentzel	Jan. 25, 1916
1,495,712	Nester	May 27, 1924
1,501,798	Morrison	July 15, 1924
1,568,270	Cross	Jan. 5, 1926
1,639,378	Knight	Aug. 16, 1927
1,735,314	Duthie	Nov. 12, 1929
2,322,529	Long	June 22, 1943

FOREIGN PATENTS

Number	Country	Date
410,909	Germany	Mar. 7, 1925
342,089	Great Britain	Jan. 29, 1931