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TRACKWAY AND HANGER FOR A SLIDING DOOR

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1 Claim. (Cl. 16—87)

This invention relates to improvements in sliding doors and particularly to improvements in trackway and hanger construction for supporting the door for slidable movement.

Sliding doors are commonly used in lieu of swinging doors in doorways openings leading from a room into a closet or separating adjacent room areas and particularly where the doorway openings are relatively wide.

Certain of such sliding doors are provided with supporting rollers mounted on the bottom of the door which rollers travel over floor trackways. Other such doors are provided with hangers mounted on top of the door which hangers are received within header trackways to travel therethrough and with floor guide ways within which guide elements mounted on the bottom of the door travel. This invention relates to improvements in the overhead hanger type of door mounting.

An object is to provide an overhead hanger trackway assembly of simple inexpensive construction and which is of such a character that a sliding door provided with my improved hangers may be easily and quickly mounted upon an overhead trackway for slidable movement and equally easily and quickly detached therefrom.

A further object is to provide a hanger and trackway assembly for a sliding door so constructed that the hanger rollers travel with a minimum of friction over the trackway and the trackway is so designed that dust, dirt or the like may be readily removed therefrom.

More particularly an object is the provision of an improved overhead hanger and trackway assembly for sliding doors wherein the door is suitably supported for slidable movement of its hanger along the supporting trackway and the trackway is so mounted that at a determined point or points in its length the door may be readily detached from the trackway but the door is normally so supported thereupon that accidental detachment of the door from the trackway is avoided.

Specifically, the trackway is provided at one or more points along its length with cut outs so related to an overhead door hanger that when the hanger is brought into registration with such cut out the door may be lifted sufficiently with respect to the trackway as to permit lateral displacement of the hanger from the trackway or lateral movement of the hanger onto the trackway.

More particularly, the supporting trackway is generally channel-shaped and one side wall is notched or cut away at one or more points so that at such points the door hanger may be elevated to permit detachment thereof from the trackway but at other points the door hanger cannot be lifted sufficiently to permit such detachment.

Other objects, advantages and meritorious features of the invention will more fully appear from the following claim, specification and accompanying drawings, wherein:

Fig. 1 is an elevation of the assembly shown in Fig. 2 but with the door elevated to permit removal of the hanger from the trackway;

Fig. 2 is an end elevation of a fragment of the upper portion of a doorway opening embodying my invention;

Fig. 3 is an end elevation of a door employing my hanger associated with a trackway as herein disclosed;

Fig. 4 is a fragmentary elevation taken on the line 4—4 of Fig. 3;

Fig. 5 is a view similar to Fig. 2 but showing a modified form of trackway;

Fig. 6 is a view similar to Fig. 3 but showing the same modified form of trackway and with the door elevated for displacement;

Fig. 7 is a view similar to Fig. 4 but taken on the line 7—7 of Fig. 6; and,

Fig. 8 is a cross section taken on the same line as Fig. 3 but showing a trackway provided with two supporting channels.

In Fig. 1 a doorway opening of a size to receive two hanging doors is shown and indicated generally by the numeral 10. An overhead trackway 12 is mounted as a header within such opening. A door 14 carrying an overhead hanger mounted upon the trackway is shown. A second door could be mounted upon the trackway on the opposite side and directly to the rear of the door 14 as shown in Fig. 8. In Figs. 2, 3, 5, 6 and 8 there is shown a portion of a wood header 16 to which the trackway 12 may be secured by screws or the like. Such trackway 12 as shown in Fig. 8 is generally in cross section in the form of an inverted U. The bottom of the U is attached to the header by screws 18 or the like. Each side wall 20 of the U-shaped channel is bent outwardly and upwardly upon itself as shown in Figs. 2, 3, 5, 6, and 8 defining an upwardly open guide channel track adapted to receive the roller of an overhead hanger.

In Figs. 2, 3, 5, 6, and 8 the doors 12 are shown as provided with overhead hangers which may be of the character described in my application Serial No. 432,856 filed May 27, 1954. Each hanger assembly comprises a hanger body 24 which is suitably secured to the door itself. Such hanger body has a leg 26 that projects upwardly therefrom beyond the end of the body proper. A roller 28 is journaled upon an axle 30 which axle is carried by the leg 26. The roller is disposed to overhang the hanger body and the plane of the door and is adapted to be received as shown within the channel 22 of the trackway.

As shown in Fig. 8 such trackway in the form of the inverted U has each of its two side walls rolled over to define the channel track 22. Each channel track 22 may support the door as shown in such figure. These doors will slide relative to each other. It is apparent that any number of parallel trackways and doors supported thereon might be provided. It is also apparent that a single trackway might be provided and a door of a width to close the doorway opening might be mounted on such trackway and such door might slide beyond the margin of such opening to close the opening.

In the first four figures of the drawing the outer side wall 32 of each channel track 22 is notched or cut away as at 34. One of these notches is shown in Fig. 4 opposite a supporting roller 28. The roller 28 has its periphery spaced such a distance above the end of the body 24 of the hanger that when the roller is mounted in the channel track 22 at any point except directly opposite a cut out 34 such roller cannot be displaced laterally out of the channel track. The vertical height of the outer channel wall 32 is such that the door cannot be elevated sufficiently to permit such lateral displacement. This is apparent from Fig. 3. However, when the door has been moved along the track to a point where the roller 28 is brought into registration with such cut out 34 it may be moved laterally with respect to the trackway, moving the roller out of the notch. It is apparent, therefore, that to place a door upon the trackway or to remove
it therefrom it is necessary to bring the roller into registration with a notch. The trackway might be provided with merely one notch or a plurality of them. A door is commonly provided with two hangers and it is apparent that then the roller of each hanger must be shifted through a notch.

The channel track 22 is generally V-shaped in cross section, also as shown. The shape of the wheel 28 is such that its periphery does not bottom in the channel 22 but there is a space between the bottom of the channel and the periphery of the wheel as shown particularly in Fig. 2. The wheel therefore rides on its two opposite sides and on the two opposite sides of the channel track. The amount of friction of the wheel against the channel is reduced over what it would be if the wheel and channel conformed in shape.

In Figs. 5, 6 and 7 is illustrated a modification in the construction shown in the first four figures. The modification resides solely in the formation of the trackway. In the first four figures the outer side wall 32 of the channel track is provided with a notch 34 formed in its upper margin as hereinabove described. In Figs. 5 and 6 the bottom of the channel track is provided with a cut out 36. This cut out is shown as directly through the bottom of the channel track and extending into both side walls. It is of such a depth and width that when the door is elevated the hanger body 24 extends into the notch 36 to such a distance that the roller 28 is lifted above the upper edge of the channel wall 32. At any point except at a notch 36 the door could not be lifted sufficiently to elevate the roller above the edge of the outer side wall 32 of the channel track. Therefore to install a door provided with hangers of the character shown upon a trackway such as illustrated in Figs. 5 and 6, it would be necessary to bring the door hangers into registration with the notches in the trackway. These notches 36 serve another purpose in that they would serve as clean out passageways through which dust or the like might be brushed so as to keep the trackway clean at all times.

What I claim is:

An overhead trackway and hanger assembly for a sliding door comprising, in combination, an overhead channel trackway V-shaped in cross section, a hanger having a body portion and having an arm projecting upwardly from one side of the body, a roller journaled upon the arm overhanging the body of the hanger and with the periphery of the roller spaced above such body, said roller mounted within the V-shaped trackway for rolling movement therethrough and with the body of the hanger supported below and within the plane of the V-shaped trackway, said trackway extending between the roller and the body of the hanger, the outer side wall of the V-shaped trackway provided with a marginal notch located within a portion of the side wall which the roller traverses during its rolling movement through the trackway, said notch being of less depth than the height of the side wall; the vertical distance, when the roller is seated within the bottom of the V-shaped trackway, between the outer bottom surface of the V-shaped trackway and the body of the hanger directly therebelow being greater than the vertical distance between that portion of the periphery of the roller seated against the bottom of the V-shaped trackway and the bottom of the notch and being less than the vertical distance between said portion of the periphery of the roller and the upper edge of an unnotched portion of the outer side wall of the V-shaped trackway.

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