

Nov. 29, 1932.

R. B. SHOEMAKER

1,889,112

HANGER

Filed March 19, 1930

2 Sheets-Sheet 1

Fig. 1.

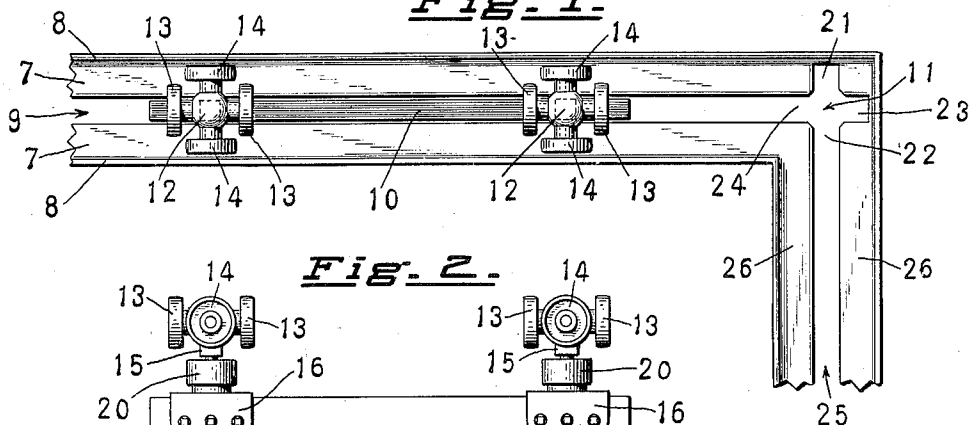


Fig. 2.

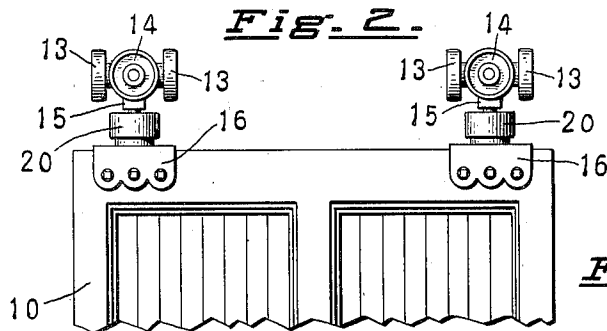


Fig. 4.

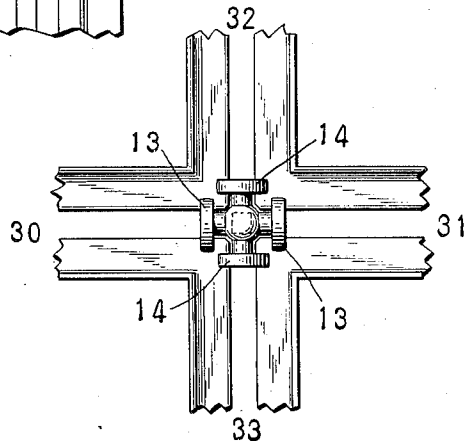


Fig. 3.

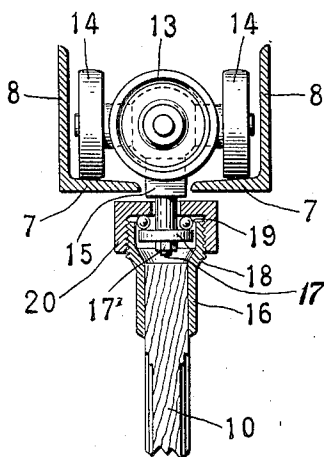
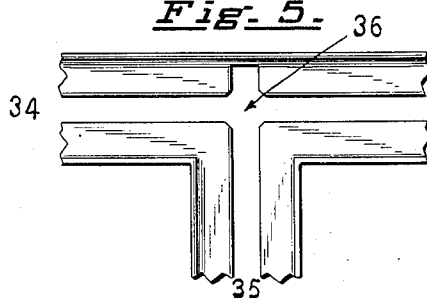


Fig. 5.



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2 Sheets-Sheet 2

Fig. 6.

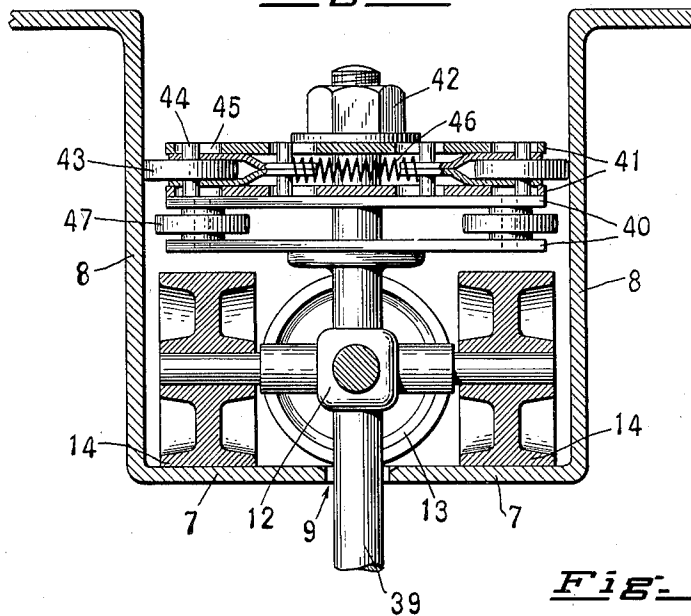


Fig. 7.

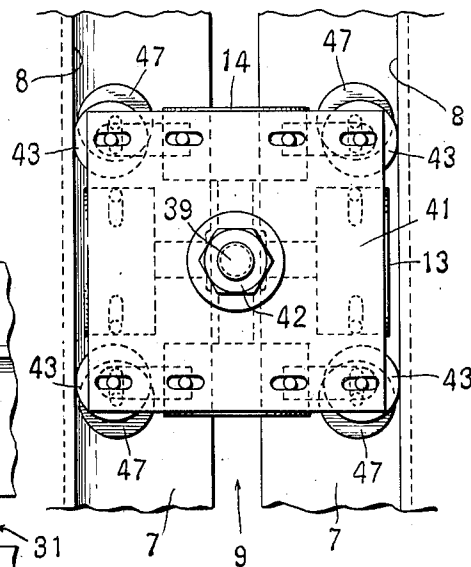
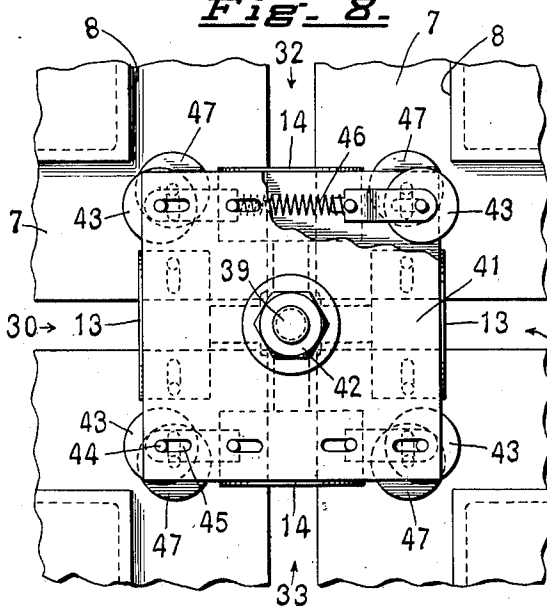


Fig. 8.



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HANGER

Application filed March 19, 1930. Serial No. 437,066.

My invention relates to devices for supporting, handling and/or moving objects such as doors, merchandise, and other materials.

5 The main purpose is to provide a construction by means of which an object can be slid along a track and turned readily to a track extending at an angle to the first track. The object may be a door, window, or other frame-like structure, in fact, any object, piece of merchandise, or material wherein it is desired to transport or move some from one location to another.

15 I have accomplished this object by the use of a hanger having two pairs of rollers arranged with their axes intersecting at an angle corresponding to the angle of the intersecting tracks. These rollers are all of the same diameter in the preferred form and the tracks are provided with horizontal flanges or members spaced apart sufficiently to allow for a non-rotative spindle which is swiveled in a bracket or base member secured to the door or frame which is to be supported. The door may have one or more of these hangers which permit the movement above mentioned. Preferably the hanger is kept in proper alignment by a set of supplementary rollers adapted to coact with the side walls of the supporting tracks.

30 Fig. 1 is a plan view of a fragment of track having two sections at right angles to each other and showing a door with hangers embodying my invention.

35 Fig. 2 is a front view of a fragment of a door with two hangers attached.

Fig. 3 is a transverse sectional view showing one of the hangers.

40 Fig. 4 is a plan view showing the junction between two cross-over tracks and showing a single hanger located at the junction point.

Fig. 5 is a fragmentary plan view of two tracks arranged in T form.

45 Fig. 6 is a transverse sectional view showing the apparatus provided with lateral guiding means.

Fig. 7 is a plan view of the same.

50 Fig. 8 is a plan view showing the same mechanism but with the hanger located at a

point of crossing between two intersecting tracks.

The track sections have horizontal flanges 7 and vertical flanges 8 with a slot 9 between the horizontal flanges. When the object is 55 to be moved in only one plane the problem of support is comparatively simple, but when the track has two portions intersecting, for instance at right angles, a difficulty is encountered in turning the frame, door, or other object 10 from one section of the track to the other.

For instance, in Fig. 1 two track sections intersect at point 11 and it has been found very difficult to design a hanger which would 65 turn readily at right angles. In order to solve this problem I have provided a hanger having a body 12 and carrying two pairs of rollers, such as 13—13 and 14—14, which rollers may have any suitable type of bearings preferably ball bearings of any suitable type. These rollers are all of the same diameter and the pairs are so dimensioned and proportioned that the rollers 14 travel on the flanges 7 and are partially guided laterally by the 75 flanges 8.

From inspection of Fig. 3 it will be seen that rollers 13 are entirely free from engagement with the track.

The hanger may be partially guided by a 80 spindle having a square boss or shank 15 which is more or less loosely guided in the slot 9.

The base 16 of the hanger may be made in any suitable form to support whatever object 85 is to be supported as for instance a chain hoist hook etc. In the form shown the base 16 of the hanger is secured to the upper edge of the frame, door or object 10 and provided with a swivel connection with the shank 15 of the hanger. This swivel connection may be provided in various ways and the form shown is merely intended to be a typical diagrammatic representation. The ball bearing race 18 and balls 19 are secured on spindle 17 90 by nut 17'. A cap 20 screwed onto the upper end of the member 16 holds the ball bearing in place.

When the door frame or other object is slid to the right as viewed in Fig. 1 and the 100

right hand hanger finally reaches the end of the track, the rollers 14 rest in the slots 21 and 22 while the rollers 13 drop into the slots 23 and 24. The right hand end of the door frame or object can then be pulled forwardly with the square shank 15 guided in the slot 25. When the rollers 13 ride up on the flanges 26 the rollers 14 are lifted clear. The swiveling on the hanger shank of the top of the door permits the door to turn while the two hangers are being guided in movements at right angles to each other.

In the track arrangement of Fig. 4 there are four sections 30, 31, 32 and 33 arranged at right angles to each other. It is obvious that when the hanger reaches the intersection it is self-centered and may be moved in any of the four directions as above described.

In the arrangement of Fig. 5 there is a track 34 with a header 35 intersecting it at the point 36. It will be seen that this is not materially different from the arrangement of Fig. 1 and that a hanger may be moved in any of three directions from the intersection 36.

In the preferred form as shown on Sheet 2, supplementary aligning or guiding rollers are provided. In this case the vertical shaft 39 carries at its upper end two pairs of plates 40 and 41 between which are supported a number of spring pressed rollers adapted to coact with the side walls of the supporting track. These plates are held in place by suitable means as for instance a nut 42. Two pairs of rollers 43 are supported between the upper plates and provided with shafts 44 guided in slots 45 so as to permit the rollers to move back and forth from right to left as viewed in the drawings. These rollers are pressed apart by the springs 46.

Another set of rollers 47 is supported between the lower plates 40 and pressed outwardly by means of springs similar to springs 46.

With the parts as shown in position of Figs. 6 and 7, the rollers 43 engage the sides 8 of the guide track or channel so that the carriage will travel smoothly without wobbling.

When the hanger reaches one of the crossings as shown in Fig. 8, the springs force the rollers outwardly so that they are in position to guide the hanger in its movement along either track in either direction without binding on the sides of the flanges. They are, however, in position to occasionally touch the sides of the flanges if the hanger swings unduly.

In moving from the position of Fig. 8 toward the right the rollers 47 will engage the side walls of the tracks and guide the hanger in its movement from right to left. It should be understood, however, that these aligning rollers are merely typical of one form of device for accomplishing the desired purpose.

Variations in details may be resorted to without departing from the principle of the invention.

I claim:

1. A construction of the character described comprising two intersection track sections each having L-shaped angle irons forming a track with a central slot, a hanger having two pairs of rollers with their axes arranged permanently at right angles to each other and adapted to travel in the respective tracks and having a depending shank guided in said slot and a member swiveled upon and supported by said shank.

2. A hanger comprising a body having a depending member with a squared portion and a swivel connector on the lower end, a plurality of pairs of rollers carried by the body above the depending member in fixed relative position with the axes of each pair arranged on the same horizontal plane and at an angle to each other and between the rollers of the other pair.

3. A construction of the character described comprising two intersecting track sections forming a track with a central slot, a hanger having two pairs of rollers with their axes at right angles to each other and with the axis of each pair arranged between the rollers of the other pair, said rollers being adapted to travel in the respective tracks and having a depending shank guided in said slot and a member swiveled upon and supported by said shank.

4. A hanger comprising intersecting track sections having horizontal and vertical flanges, two pairs of supporting rollers having relatively fixed intersecting axes and adapted to travel on the horizontal flanges of the tracks and spring pressed aligning means coacting with the side flanges of the tracks.

5. A hanger construction comprising intersecting track sections having horizontal and vertical guide flanges and two sets of lateral guide rollers, each set comprising four spring pressed rollers, the rollers of one set being laterally movable in a direction at right angles to those of the other set.

6. A construction of the character described comprising two intersecting track sections forming a track with horizontal and vertical flanges and a central slot, a hanger having two pairs of rollers with their axes at right angles to each other and adapted to travel in the respective tracks and having a depending shank guided in said slot, a pair of spring-pressed rollers for engaging one pair of vertical guide flanges, and another pair of spring-pressed rollers for engaging another pair of vertical guide flanges at an angle to the other flanges.

7. A construction of the character described comprising two intersecting track sections each having L-shaped angle irons forming a

track with a central slot, a hanger having two pairs of rollers with their axes at right angles to each other and adapted to travel in the respective tracks and having a depending shank guided in said slot and a member
5 upon and supported by said shank including two sets of spring-pressed alining devices adapted to center the hanger at the track intersection.

8. A two-way hanger adapted to move in
10 directions at right angles to each other, comprising a body portion, two pairs of rollers carried by said body having intersecting axes on the same horizontal plane and being in a
15 fixed position relative to each other, the lowermost surfaces of said rollers being on the same horizontal plane, and a rod depending from said body portion and below the lowermost surfaces of the rollers for supporting
20 an object.

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