Nov. 22, 1927. 1,650,496

C. P. DAY

CARRIER

Filed Jan. 21, 1927

Fig. 1.

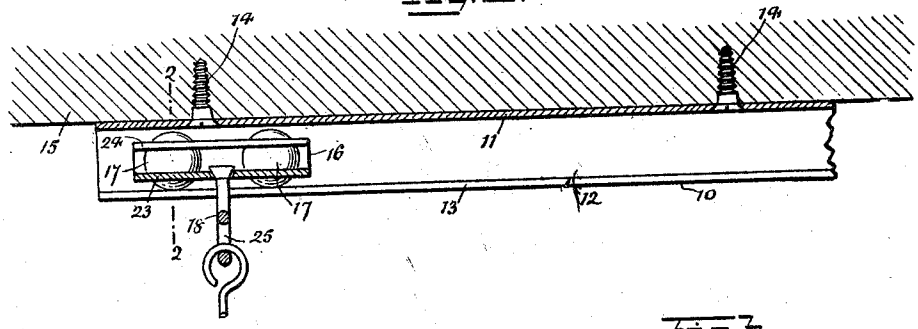


Fig. 2.

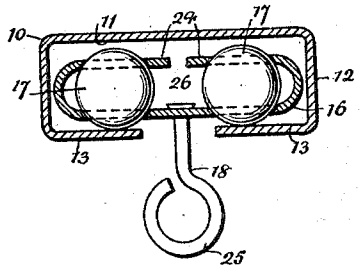


Fig. 3

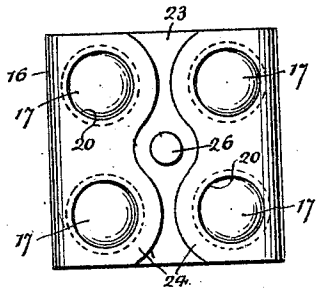


Fig. 5.

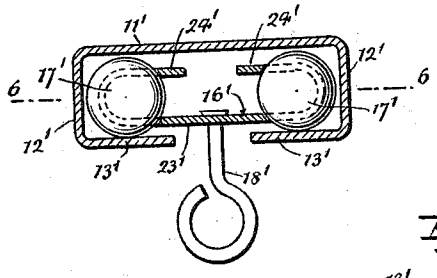


Fig. 4.

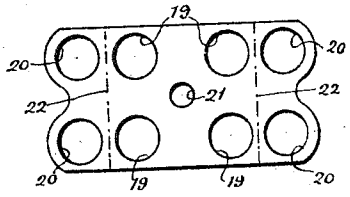
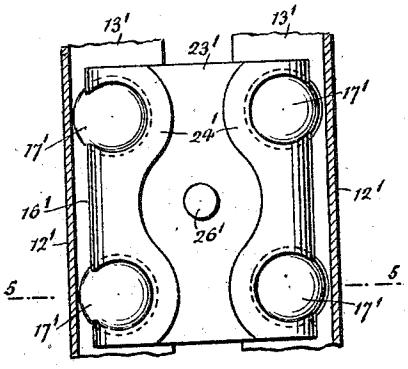


Fig. 6



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UNITED STATES PATENT OFFICE.

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CARRIER.

Application filed January 21, 1927. Serial No. 162,553.

This invention relates to carriers of the type used in conjunction with a track element to slidably suspend curtains, draperies and like window trimmings.

The principal object of the present invention is to provide a carrier embodying structural features, which reduce friction and noise to the minimum, and which permit the carrier to be movable or slidable freely and easily, without possibility of binding or impinging of portions of the carrier against portions of the track element.

Another object of the invention is to provide a carrier of the indicated character embodying anti-friction balls on a carrier body so arranged with respect to the hanger also on the carrier body, to properly adjust itself to the pulling force exerted on the hanger, to the end that the carrier will travel smoothly, and to overcome binding or impinging due to the carrier body moving relatively to the anti-friction balls.

The nature of the invention and its distinguishing features and advantages will appear when the following specification is read in connection with the accompanying drawing, in which—

Figure 1 is a longitudinal sectional view taken centrally through a track element and the carrier.

Fig. 2 is a transverse sectional view on an enlarged scale taken on the line 2—2 of Fig. 1.

Fig. 3 is a plan view of the carrier.

Fig. 4 is a plan view of a blank from which the carrier body is formed.

Fig. 5 is a transverse sectional view through the track element and a carrier embodying a modification of the present invention, the section being taken on the line 5—5 of Fig. 6.

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 5.

Referring now more particularly to the drawings, it will be apparent that there has been shown in Fig. 1 a track element 10 of a divided tubular construction, of angular formation in cross section so as to provide a top wall 11, side walls 12 and bottom portions 13 which provide tracks spaced from each other. The track element is secured by the use of suitable fastening elements, such as the screws 14 which respectively extend through holes in the top wall 11, and take into the head rail 15 for instance of a window frame. A suitable number of carriers are used in conjunction with the track element 10 for slidably suspending a curtain or drapery. In the present instance but one of such carriers is shown, which will suffice to illustrate the present invention. It will be apparent, that each carrier will comprise a carrier body 16, anti-friction balls 17, and a hanger 18; the anti-friction balls 17 and the hanger 18 being carried by the carrier body 16. The carrier body 16 is produced from a blank, shown most clearly in Fig. 4, which is stamped from a single piece of metal. The said blank as stamped, will have openings 19 and 20 arranged in pairs and an opening 21 arranged centrally of the openings 19. The blank is bent on the dot and dash lines 22 so as to provide a plate member 23 and members 24 directed inwardly over the plate member 23 in spaced relationship with respect thereto. This bending of the blank is performed after the hanger 18 has been arranged in the opening 21, which will occur in the plate member 23. The hanger 18 may be of any preferred type, and in the present instance has an eye 25 and a head 26 larger than the opening 21 and forms with the wall portion of the opening 21 a swivel connection. The anti-friction balls 17 are also put in place before the blank is bent, there being one ball 17 arranged in each of the openings 19, so that when the members 24 are directed over the plate member 23, each of the balls 17 will be revolubly retained, as shown most clearly in Fig. 2. It will now be understood that the hanger 18 will be surrounded by the anti-friction balls 17 at points radiating from the axis of the hanger 18. The carrier body 16 as formed, will be substantially square so that it may be arranged in the track element 10 with the members 24 of the carrier body disposed longitudinally or transversely, the result obtained being the same in each case. The balls 17 roll in contact in pairs respectively with the tracks 13, and due to the fact that the hanger 18 is arranged at a central point with respect to the balls, the carrier will be caused to travel smoothly, and without possibility of the carrier body 16 moving relatively to the balls 17, which might set up a binding action on portions of the carrier body with portions of the track element 10, when a pulling force is applied to the hanger 18. The contact of the portions of the carrier body 16 adjacent the side walls 12 of the track element 10, is negligible, when that

occurs. In this form of the carrier, the perimeter of each ball 17 may have rolling contact at two points diametrically opposite each other. This rolling contact, however, occurs at any given time at but one point only, and nearly always occurs in conjunction with the related track 13, but may occur in conjunction with the top wall 11.

In the modification illustrated in Figs. 5 and 6, provision is made for a three-point rolling contact of each of the anti-friction balls. In accordance with this feature, the carrier body 16' instead of having pairs of openings, such as the openings 19 and 20, is provided with irregular openings which extend into the plate member 23' and the members 24'. When the members 24' are directed inwardly over the plate member 23' the balls 17' will be revolubly retained associated with the carrier body 16'. Each ball will be in rolling contact with its related track member 13' when the weight is on the hanger 25'. Any upward movement of the carrier body 16 will cause rolling contact of each ball with the top wall 11' of the track element. When there is any lateral pulling force on the hanger 25' in one direction, there will be rolling contact between the balls at one side of the carrier body 16' and the adjacent side walls 12' of the track element, and at the same time each ball will have rolling contact with its related track 13'. This form of carrier is substantially the same as the other form, except that each of the anti-friction balls is capable of engaging the track element at any one of three points. In each case friction is reduced to the minimum, and binding or impinging of portions is eliminated, and noise is almost entirely eliminated with the modified form of carrier.

I claim:

1. A carrier for the purpose specified, comprising a carrier body consisting of a single piece of material providing spaced retaining portions, a hanger connected with the carrier body, and anti-friction balls revolubly retained in place by said retaining portions and arranged around the hanger, there being a pair of the balls spaced from each other at each side of the carrier body.

2. A carrier for the purpose specified, comprising a carrier body, a hanger swivelly connected with the carrier body, and anti-friction balls revolubly arranged on the carrier body around the hanger, there being a pair of the balls spaced from each other at each side of the carrier body.

3. A carrier for curtains and the like adapted to move within a divided tubular track element, said carrier comprising a carrier body consisting of a single piece of material providing spaced retaining portions, a hanger connected with the carrier body, and anti-friction balls revolubly held in place by said retaining portions of the carrier body, the balls being arranged spaced from each other in pairs at opposite sides of the carrier body, to prevent tilting of the carrier body while in motion along the track element, as the result of a pulling force exerted on the hanger.

4. A track type of carrier for supporting curtains and the like, including a carrier body, and anti-friction balls revolubly arranged on the carrier body, there being a pair of the balls spaced from each other at each side of the carrier body, the perimeter of each ball occurring beyond the carrier body at diametrically opposite points.

5. The combination with a divided tubular track element, of a carrier body movable within the track element, and anti-friction balls revolubly arranged on the carrier body, there being a pair of the balls spaced from each other at each side of the carrier body, the perimeter of each ball capable of engaging the track element at any one of three points thereof in rolling contact.

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