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CENTER SUPPORT FOR VENETIAN BLIND
TILT RAILS

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6 Claims. (Cl. 156—17)

This invention relates to center supports for the tilt rails of wide Venetian blinds which are employed to prevent the rails from sagging intermediate the axially aligned pivots at the opposite ends thereof, under the weight of the slats suspended from the rails by the ladder tapes of the blinds.

In modern blinds, the tilt rails are constructed in a manner to be readily detachable from the end supports, in order that the blind may be taken down for cleaning and other purposes. However, the center supports heretofore provided have been unsatisfactory and have been the source of considerable annoyance when removing the tilt rail from its supports.

Due to the wide angle of oscillatory movement about the longitudinal axis of tilt rail through which the rail must be capable of operating, and due to the necessity for the center support to be detachable, the constructions of the center supports previously used or suggested have been complicated and not easily manipulated by the ordinary person in taking down or in rehanging the blind.

The object of the present invention is to provide a center support of simple efficient construction which may be readily released and restored by the most inexperienced or inapt of individuals.

The construction and mode of operation of structures embodied by the present invention will be fully disclosed hereinafter, reference being had to the accompanying drawing, of which:

Fig. 1 is a front elevation of a head rail and tilt rail assemblage employing a center support for the tilt rail in accordance with the principles of the present invention;

Fig. 2 is a transverse section taken on the line 2—2, Fig. 1;

Fig. 3 is a longitudinal section taken on the line 3—3, Fig. 2;

Figs. 4, 5 and 6 illustrate the parts of the support of Fig. 1, separated, in perspective;

Figs. 7 and 8 illustrate modifications of the invention.

The head rail and tilt rail assemblage illustrated in Fig. 1 is of the same general character, except for the center support, as that shown in my prior U. S. Patent No. 2,216,678 dated October 1, 1940.

The head rail is shown at 1, the tilt rail at 2, and the brackets which support the opposite ends of the tilt rail from the head rail 1, are shown at 3 and 4 respectively.

The bracket 3 carries the tilting mechanism including a worm segment 5 which rocks about the longitudinal axis $x-x$ of the tilt rail 2 and is provided with a tongue 6 which projects into a slot 7 in the adjacent end of the tilt rail, whereby the tilt rail may be readily connected to and released from the tilting mechanism.

The bracket 4 at the opposite end of the tilt rail is apertured to receive a retractable pivot 8 operable by the finger release 9 on the tilt rail 2, with the axis of the pivot 8 coincident with the longitudinal axis $x-x$ of the tilt rail.

At its center, the tilt rail is provided with a center support 10, which comprises a fixed element 11, secured to the tilt rail 2; a slidable element 12 carried by the head rail 1; and a mounting 13 for the sliding element 12 which is secured to the head rail 1.

As shown in Fig. 6, the element 11 consists of a vertical substantially semi-circular plate 14 with a right angle foot 15 apertured at 16 for reception of screws 17. The arcuate edge of the segmental plate 14 is provided with a laterally extending flange 18.

The sliding element 12, as shown in Fig. 5, includes a vertical plate 19 having an arcuate recess 20 from the edge of which projects a laterally extending segmental flange 21.

The plate 19 is also provided with a foot 22 which bears flatly against the underside of the head rail 1 and is slidably mounted in the fixed guide member 13 which is secured to the underside of the head rail 1 by screws 24.

The foot 22 of the movable member 12 is provided with a finger grip 25, by which the member 12 may be readily moved, longitudinally of the head rail 1 and tilt rail 2, to and from the position shown in Fig. 1 wherein the arcuate flange 21 of the slidable member 12 underlies and supports the arcuate flange 18 of the fixed member 11 on the tilt rail 2.

As shown in Fig. 2, the flanges 18 and 22 are concentric and are formed on arcs which are swung from a point y which is coincident with the longitudinal axis $x-x$ of the tilt rail 2 and which is coincident with the axes of the worm segment 5 and pivot 8 at the opposite ends respectively of the tilt rail 2, whereby, as the rail 2 is tilted laterally, as seen in Fig. 2, the flange 18 of the element 11 will slide circumferentially on and relative to the flange 21 of the element 12 and support the center of the rail 2.

To prevent upward warping of the rail 2, at and adjacent its center, the fixed element 11 is

provided with ears or lugs 26, 26 which bear against the underside of the flange 18. These lugs 26, 26, as shown in Figs. 2 and 6, are pressed out of the metal of which the vertical plate 14 is formed.

In Fig. 7, the lugs 26a, 26a are in the form of studs welded or riveted in the plate 14a of the fixed element 11a.

In Fig. 8 the element 11b is adapted to slide on the tilt rail 2, and for this purpose the foot 15b thereof is slotted at 16b, 16b to receive screws by which the element 11b may be slidably secured to the tilt rail 2. When using the sliding element 11b on the tilt rail 2, the cooperating member 12 carried by the head rail may be, and preferably is, fixed to the underside of the head rail 1.

From the foregoing, it will be clear that by effecting relative sliding motion of one of the members 11 or 12 with respect to the other of said members in a direction longitudinally of the head rail 1 and tilt rail 2, the cooperating supporting flanges 18 and 21 will be completely disengaged one from the other to release the center of the tilt rail from its support on the head rail; and that by then sliding the pivot 8 of the tilt rail 2 inwardly, by use of the finger grip 9, the pivot pin 8, and consequently the adjacent end of the tilt rail 2, will be completely disconnected from the end supporting bracket 4; and that by sliding the tilt rail 2 bodily, in a direction away from the end supporting brackets 3, the tongue 6 of the worm segment 5 will be completely withdrawn from the slot 7 in the end of the tilt rail, whereby the tilt rail 2 will be completely and entirely separated from its end and center supports. By reversing this order, the tilt rail 2 may be readily restored to its normal operating position on the head rail 1.

It will be understood that in cases where no head rail 1 is employed, the brackets 3 and 4 and the center support member 12 will be attached to the top transverse member of the window frame or other opening at which the blind is used, therefore in the appended claims the reference to the head rail is intended to include either the normal head rail of the Venetian blind proper or the head or top rail of a window frame or other supports for the brackets 3 and 4 and member 12 in lieu of the normal head rail of the blind.

I claim:

1. In a device for supporting the tilt rail from the head rail of a Venetian blind, a pair of transverse members on said rails respectively, a pair of arcuate interengaging flanges on said members concentric to the pivotal axis of the tilt rail, and means for attaching one of said members to its rail for axial movement relative to the other of said members for disengaging said flanges.

2. In a device for supporting the tilt rail from the head rail of a Venetian blind, a pair of transverse members on said rails respectively, a pair of arcuate interengaging flanges on said members concentric to the pivotal axis of the tilt rail, and a guide member secured to one of said rails for slidably securing one of said members thereto for axial movement relative to the other of said members for disengaging said flanges.

3. In a device for supporting the tilt rail from the head rail of a Venetian blind, a pair of transverse members on said rails respectively, a pair of arcuate interengaging flanges on said members concentric to the pivotal axis of the tilt rail, a guide member secured to one of said rails, and a foot on one of said members slidably mounted in said guide member for slidably securing one of said members thereto for axial movement relative to the other of said members for disengaging said flanges.

4. In a device for supporting the tilt rail from the head rail of a Venetian blind, a pair of transverse members on said rails respectively, a pair of arcuate interengaging flanges on said members concentric to the pivotal axis of the tilt rail, a guide on one of said rails, a foot on one of said members slidably mounted in said guide for axial movement relative to said rail, and a projection on said foot for manually operating said slidable member to effect engagement and disengagement of said flanges.

5. In a device for supporting the tilt rail from the head rail of a Venetian blind, a pair of transverse members carried by said rails respectively, an arcuate horizontally overhanging flange on one of said members concentric to the longitudinal axis of the tilt rail, a corresponding arcuate concentric flange and auxiliary horizontally overhanging means spaced radially from said corresponding flange on the other of said members cooperating with the opposite arcuate faces respectively of the flange on the first said member to resist transverse deflection of the tilt rail intermediate its opposite ends.

6. In a device for supporting the tilt rail from the head rail of a Venetian blind, a pair of transverse members carried by said rails respectively, an arcuate horizontally overhanging flange on one of said members concentric to the longitudinal axis of the tilt rail, horizontally overhanging means on the other of said members cooperating with the flange on the first said member to resist transverse deflection of the tilt rail intermediate its opposite ends, and means for slidably supporting one of said members for movement relative to the other of said members parallel to the axis of the tilt rail for engaging and disengaging said overhanging portions of said members.

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