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R. H. WRIGHT ET AL
VENETIAN BLIND RAIL CONNECTOR

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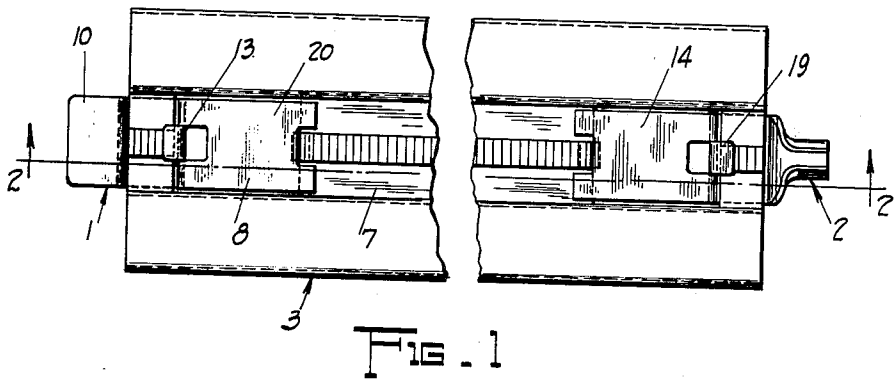


FIG. 1

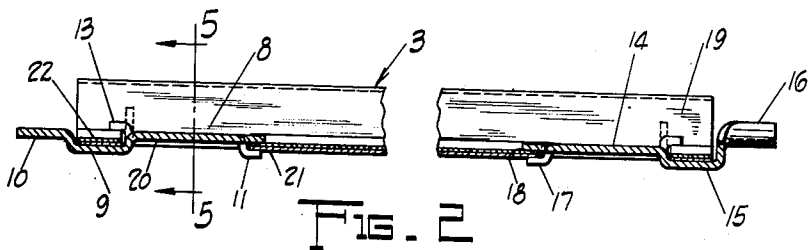


FIG. 2

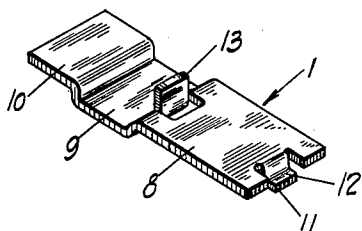


FIG. 3

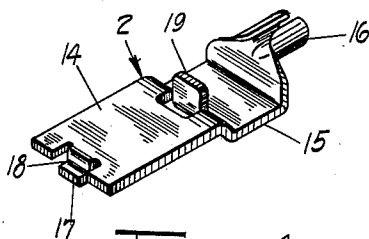


FIG. 4

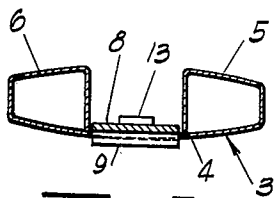


FIG. 5

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UNITED STATES PATENT OFFICE

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VENETIAN BLIND RAIL CONNECTOR

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9 Claims. (Cl. 160—177)

1

This invention relates to Venetian blinds, and more particularly to Venetian blinds constructed of metal or similar material, as contrasted with blinds which use wooden parts entirely. More particularly, this invention relates to certain parts which may be availed of for use in connection with metal tilt rails and bottom rails of Venetian blinds, whether used with wooden slats or other types of slats. In Venetian blinds which use such metal tilt rails and bottom rails as above mentioned, it is desirable to provide the same with simple means for connecting such rails to the tilting device and for supporting the tilt rail in the blind and, therefore, one of the objects of this invention is to provide means suitable for carrying out such purpose.

It is an object of this invention to provide simple connecting means for the respective ends of a metal Venetian blind tilt rail whereby the same may be supported in the Venetian blind assembly.

It is a further object of this invention to provide devices whereby the tilt rail of a Venetian blind may be supported, which devices are easily affixed to a metal tilt rail without the use of separate parts therefor.

It is a further object of this invention to provide connecting means so formed as to be readily fastened at opposite ends of a metal tilt rail, for example, which includes provisions for attaching the same by the use of simple tools and without requiring any great skill on the part of the person using the same.

It is a further object of this invention to provide devices for the purposes described, which may be made of metal stampings or the like, which devices may be produced in great quantities, inexpensively, and which in general have the same configuration whether used at one end of the tilt rail or the other, for supporting the same in a Venetian blind assembly.

With the above and other objects to be hereinafter set forth in mind, in the specification we illustrate the preferred form of our devices in the drawings in which:

Figure 1 is a top view, foreshortened for illustration, showing the supporting connectors in place in a metal tilt rail.

Figure 2 is a longitudinal sectional view taken on about the line 2—2 of Figure 1, illustrating the connecting devices in place, together with the means for maintaining the same in their connected relationship with the tilt rail.

Figure 3 is a view in perspective of the connecting device when formed for use so as to be

2

inserted in a suitable opening in a tilting unit whereby the angular relationship of the tilt rail and slats of the Venetian blind may be adjusted.

Figure 4 is a perspective view of what is known as a pin end connector, showing the rolled-up form of the device at its end, for insertion in a suitable bracket depending from the head bar of a Venetian blind.

Figure 5 is a transverse sectional view taken about on the line 5—5 of Figure 2, showing one form of metal tilt rail or tilt bar, with a connector of our invention in place thereon.

Referring now to Figure 1, it will be noted at the supporting connecting members, namely the tilt end connector designated 1, and the pin end connector designated 2, are shown in their respective positions fixed at opposite ends of a tilt bar or rail generally designated 3. While the construction of the tilt rail or bar may be of different form from that illustrated, a preferred form of tilt rail with which the supporting connecting members of our invention are adapted for use, is more clearly illustrated in Figure 5. The tilt rail generally designated 3 is comprised of a concave body portion 4, of suitable width for the purposes of use in a Venetian blind or the like, having formed integrally therewith the hollow longitudinally extending flange portions 5 and 6. These flange portions, as will be seen upon a consideration of the Figure 5 being referred to, are provided to effect structural rigidity in the tilt rail itself, and the tilt rail is so formed as to have a longitudinally extending flattened portion 7 (see Figure 1), between the hollow flange portions 5 and 6.

It will be clear that this flattened portion may be of any width, as is also true of the hollow flanged portions 5 and 6, consistent with the use of the tilt bar or rail. This tilt bar or rail construction illustrated is supplied to a manufacturer or the like in various lengths and, of course, may be cut off to the proper length for use in a Venetian blind.

In order to support the tilt rail or bar 3 in a Venetian blind, the said tilt bar being used to in turn support ladder tapes or the like for the slats of the Venetian blind, the supporting connectors of our invention are particularly suitable. As will be seen upon a consideration of Figures 3 and 4, the connector 1 is formed so as to include a main flat body portion 8, relatively long and narrow, including an offset section 9 integral with the said body portion 8, the said offset section 9 in turn being integrally connected to a tilt member or unit engaging portion 10.

3

The portion 10 is formed so as to have its surface lie in the same plane as the surface of the body portion 8, the offset section 9 being in a different plane but parallel thereto. The body portion 8 is formed at one end with an offstanding lug 11, integral therewith, the same being formed out of the material which comprises the said body portion 8. This offset lug 11 includes a stop section 12, the surface of the said stop section 12 lying in the same plane as the surface of the offset section 9 previously referred to, as will be more particularly disclosed in conjunction with a description of the devices shown in place as in Figure 2. The body portion 8, as seen in Figure 3, further includes an ear 13, pierced from the said body portion 8, and initially formed therewith so as to stand in perpendicular relation thereto. It will be clear from the previous description that the supporting connector just described includes the portion 10 adapted to be engaged with a co-mating member, usually provided in Venetian blind tilting devices or units.

In order to support the tilt rail 3 at the end opposite the tilt device or unit, the Venetian blind is usually provided with a bracket, fixed to the head bar, and depending therefrom, the said bracket having a suitable opening therein adapted to receive what is known as a pin end connector. As will be seen upon a consideration of Figure 4, we provide such a connector formed substantially as is the connector of Figure 3, for the tilt or tilting device unit end of the tilt rail, the said pin end connector designated 2 including a body portion 14 corresponding to the body portion 8 previously referred to, an offset section 15 and a bracket engaging portion 16. It will be noted that in this particular form of connector the portion 16 is rolled up, and formed so as to provide a substantially round bearing surface adapted to be interengaged with the bracket provided in the Venetian blind as above referred to. This portion is the only part of the device being described which differs from the tilt or tilting unit connector previously described in relation to Figure 3, the offset lug 11 being denoted 17 in this form and having a stop section 18 therewith.

An ear 19, corresponding to the ear 13 previously mentioned; is likewise provided in this form of the connector member. It is believed clear that the supporting connector members disclosed in Figures 3 and 4, are most suitably formed from metal stampings or the like, so as to provide the respective members and portions referred to, in their various relationship. It should be noted that by reason of the provision of the offstanding lugs 11 and 17 of the respective connector members, a space is provided between the stop sections 12 and 18 respectively, and the body portions 8 and 14 thereof, whereby the said stop sections may be engaged with the lower surface of a metal portion or the like in conjunction with the lower surfaces of the metal remaining adjacent the sides of the said lugs for purposes to be more fully hereinafter set forth. It should also be clear that the offset section 9 is offset sufficiently, so as to accommodate a metal section upon the upper surface thereof, whereby the connector as a whole when in place, will remain in a substantially level position with respect to the body portion 8 and the portion 10 thereof. This is also true of the connector member illustrated in Figure 4, the only difference residing in the form of the rolled-up end 16 thereon. Referring now to Figure 2, the devices

4

or connectors of our invention are shown positioned in the tilt rail 3. It will be noted upon a consideration of this figure and also of Figure 1, that these devices are adapted to be emplaced upon the tilt rail by means of the provision of the removal of a rectangular section from the flat portion 7, as indicated at 20. It will, of course, be clear that this rectangular opening is spaced from the end of the tilt rail 3, a sufficient distance to accommodate the device or connector, so that the same will remain in a substantially parallel position with regard to the flattened portion 7 of the tilt rail. The rectangular opening 20 is of such a size as to further accommodate and receive therein the body portion 8 or 14, as the case may be, and the lug 11 in conjunction with the metal portion adjacent thereto, of the body 8, is adapted to interengage with the end 21 of the flattened section 7. When the device or connector shown in Figure 3 is emplaced in the tilt rail as shown in Figure 2, it will be noted that the ear 13 is initially in upstanding position so as to permit the connector 1 to be placed in the rectangular opening 20, as illustrated in dotted lines in the said figure, and by reason of subsequent bending of the ear 13 into the full line position of the said Figure 2, the said connecting device will be firmly affixed to the end of the tilt rail or bar 3 by reason of the engagement of the ear in its flattened condition with the portion 22 of the tilt rail, which lies between the portion 10 and the body portion 8.

It will be clear that the pin end connector 2 may be emplaced upon the opposite end of the tilt rail 3, by provisions similar to those referred to in reference to the connector 1, the lug 17 and ear 19 engaging similar portions of the said tilt rail, as is true of the connector 1 at the opposite end of the tilt rail.

In view of the foregoing description, it will be seen we have described the supporting connector members of our invention, the same being of substantially similar form, however, provided with the necessary shapes at their tilt and pin end bracket engaging portions so as to support the tilt rail in the Venetian blind. It is to be understood that the particular form of tilt rail is not intended to be a limiting factor in our invention, since it is apparent that the connectors disclosed and described may be used with various kinds of tilt rails, and are particularly suited to tilt rails constructed of metal or the like. It is also to be understood that these connectors may be availed of in conjunction with a bottom rail of a Venetian blind, particularly the form disclosed in Figure 4 and denoted as being the pin end connector, when used with what is known as "hold down brackets," to maintain the Venetian blind as a whole in a position in a window or the like. It is further noted that the connector of Figure 4 may likewise be availed of and used at both ends of the bottom rail, when the blind is emplaced in a window, and suitable guide means are provided, adapted to receive therein the rolled-up portion 16 of the connector 2 for maintaining the blind in its vertical relationship during raising and lowering operation of the slats thereof.

In the Venetian blind with which the devices of the invention are used, the tilting device carried by one end of the head rail for cooperation with the section 19 of member 3, and the bracket carried by the other end of the head rail for co-operation with the section 16 of member 2, con-

5

stitute supports for the tilt rail for detachable association of the tilt rail with the blind. The sections 10 and 16 of members 3 and 2 thus constitute support engaging sections of these members.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent of the United States is:

1. A Venetian blind rail of the class described, comprising a body portion, an opening in said body portion and a connector member seated in said opening, extensions at one end of said connector member, said member including lug means having a portion spaced from said extensions, said extensions and lug means engaging the body portion at one end of the opening, and an ear adapted to engage said body portion at the other end of said opening, and a bracket engaging portion formed with said member.

2. A Venetian blind rail of the class described, comprising a flattened section, rectangular openings at opposite ends of said section, a tilt end connector having a body portion seated in one of said openings, a pin end connector having a body portion seated in another of said openings, each of said connectors including a lug having a portion spaced from extensions at one end of the body portion of each said connector engaging the flattened section at one end of each said opening, and an ear member at the other end of each said body portion adapted to engage the other end of each said opening, said tilt end connector being provided with a flattened portion adapted to engage a tilting device, and said pin end connector being provided with a rolled portion for engagement with a pin end bracket.

3. A rail as claimed in claim 2, wherein the ear members of each of said connectors are so constructed and arranged whereby the same may be bent into engagement with the flattened section.

4. An article of manufacture comprising a Venetian blind rail connector including a body portion, an offset lug at one end of said portion, said body portion having an extension at each side of said lug and spaced from a portion thereof, an

6

offset section integral with the other end of said body portion, an upstanding ear formed with said portion at the end opposite said lug and extensions, and a support engaging portion integral with said offset section.

5. An article as claimed in claim 4, wherein the support engaging portion is rolled so as to form a substantially tubular bearing portion.

6. An article as claimed in claim 4, wherein the upper surfaces of the offset lug and offset portion lie in substantially the same plane.

7. An article as claimed in claim 4, wherein the upper surfaces of the offset lug and offset portion lie in substantially the same plane and the upper surfaces of the body portion and support engaging portion lie in substantially the same plane, said first named plane being different from that last named.

8. An article of manufacture comprising a Venetian blind rail connector formed by metal stamping, including a body portion, a downwardly offset lug formed at one end thereof, said body portion having extensions spaced from said lug at said one end, an upstanding ear pierced from said body adjacent the other end thereof, a flat offset section formed integrally and below said body portion and a flat portion integral with said offset portion, said flat portion having its upper surface in the same plane as the upper surface of the body portion aforesaid.

9. An article as claimed in claim 8, wherein the flat portion is rolled up at its side edges so as to constitute a bearing member.

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