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J. A. ANDERLE ET AL  
END BRACE ORGANIZATION FOR VENETIAN BLIND  
HEAD CHANNEL OR THE LIKE  
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3,425,480

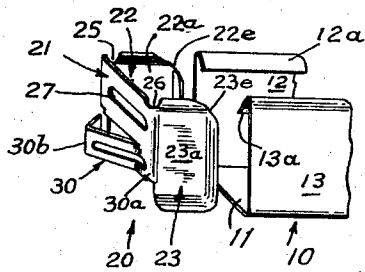


FIG. 1

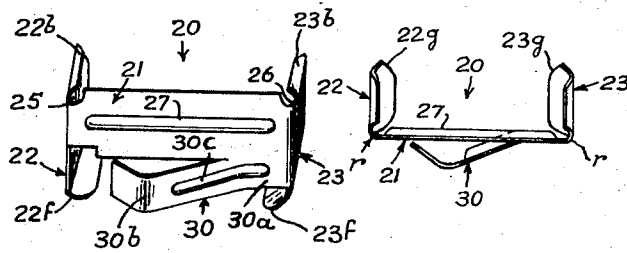


FIG. 2

FIG. 3

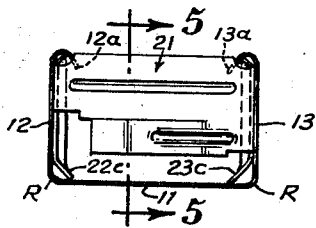


FIG. 4

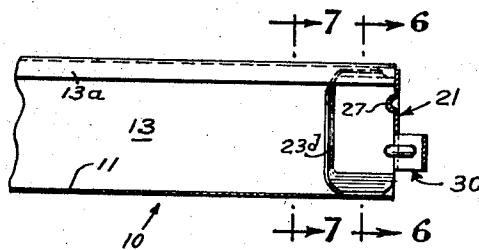


FIG. 5

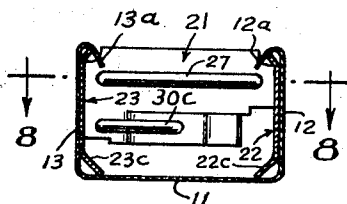


FIG. 6

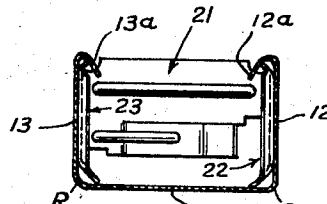


FIG. 7

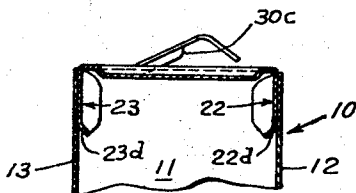


FIG. 8

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**END BRACE ORGANIZATION FOR VENETIAN BLIND HEAD CHANNEL OR THE LIKE**

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7 Claims

Int. Cl. E06b 9/28, 9/38

**ABSTRACT OF THE DISCLOSURE**

A one-piece sheet-metal brace is provided for the end of a sheet-metal Venetian-blind head-channel. The brace has a body which spans between the side walls of the channel and, at the ends of the body, there are legs which span the heights of the side walls. The legs of the brace constitute struts which extend from the bottom of the head channel to top portions of the side walls.

**BACKGROUND OF THE INVENTION**

*Field of the invention*

The bracing of the ends of head channels such as are customarily used at the tops of Venetian blinds and which may be used at the tops of porch shades or other curtains, shades or screens.

*The prior art*

The present invention is an improvement on the end brace and organization disclosed in U.S. patent, Nelson 2,673,608 issued Mar. 30, 1954. In that patent the end brace is suspended from the tops of the channel side-walls, by means of downwardly-bent leg-portions which are telescoped into returned beads at the tops of the side walls. For a reliable tight fit between the downwardly-bent leg-portions and the beads, close manufacturing tolerances are required. Beneath the downwardly-bent portions, the legs are spaced somewhat from the side walls of the head channel. At the very top of the channel, where there is the greatest need for horizontal bracing, the body of the brace is weakened by the formation of a bendable finger to adjustably co-operate with a mounting racket at the end of the head channel.

*Summary of the invention*

The legs of the end race, which are telescoped into the head channel, are of such height as to span the heights of the side walls. In accordance with one feature of the invention the bottoms of the legs are below the level of the body of the end brace. Where the end brace is provided with a bendable finger, the finger is below the body of the brace; and the bottoms of the legs are below the level of the finger. In accordance with other features of the invention the bottom portions of the legs are inclined toward each other, and the top portions of the legs are inclined upwardly-inwardly to free edges. When the end brace has been applied to the head channel the legs of the brace constitute struts which extend from the bottom of the head channel to the top portions of the side walls of the head channel.

*Brief description of the drawing*

FIGURE 1 is an isometric view showing an end portion of a head channel and an end brace of the invention in position to be applied to the head channel.

FIGURE 2 is an isometric view of the end brace shown in FIGURE 1, looking approximately toward the outer vertical face of the body of the brace.

FIGURE 3 is a top plan view of the end brace shown in FIGURES 1 and 2.

FIGURE 4 is an end elevation of the head channel of FIGURE 1 with the end brace of FIGURES 1, 2 and 3 applied thereto.

FIGURE 5 is a vertical section taken on the line 5-5 of FIGURE 4.

FIGURE 6 is a vertical section taken on the line 6-6 of FIGURE 5.

FIGURE 7 is a vertical section taken on the line 7-7 of FIGURE 5.

FIGURE 8 is a horizontal section taken on the line 8-8 of FIGURE 6.

*Description of the preferred embodiment*

Except as may be otherwise indicated, the description hereinafter refers to the particular form of the invention shown in the drawing; it does not necessarily refer to any other form in which the invention may be embodied. The claims, however, do embrace other forms in which the invention may be embodied. The best mode thus far contemplated of carrying out the invention is herein disclosed. Nevertheless the disclosure is by way of illustration and example, since other specific modes are possible, and in some instances it may be feasible to dispense with one or more features of the invention.

A one-piece Venetian-blind head-channel, which is designated as a whole by 10, has a flat bottom 11 and flat side-walls 12 and 13. Each side wall is connected to the bottom 11 by an arc R. At their upper edges the side walls have portions 12a and 13a which extend inwardly and downwardly, these portions being in the form of flanges which extend longitudinally throughout the length of the head channel. The channel is formed of sheet metal of suitable thickness and suitable physical characteristics. The metal usually used in mild sheet-steel which has been galvanized and bonderized, after which it has ordinarily been painted with a suitable paint or enamel which will withstand the forming operations to form the channel from a flat strip of sheet metal.

The end brace, which is designated as a whole by 20, is stamped in one piece from sheet metal of suitable thickness and suitable physical characteristics. A suitable metal is mild steel which has been galvanized to protect against rust. In the alternative, the end brace may be plated with nickel or other rust-resistant metal after it has been formed.

The brace has a generally flat body 21 which stands in a vertical plane and which is of a length to span between the side walls 12 and 13 of the head channel. At the ends of the body are legs 22 and 23 which have flat zones 22a and 23a that extend throughout a large area of the legs and which zones stand in a vertical plane and are perpendicular to the plane of body 21. Each of legs 22 and 23 is connected to the body 21 by an arc r of short radius (FIGURE 3). At the top of the brace and in alignment with the arcs r are moon-shaped cutouts 25 and 26, the cutout 25 extending from the body 21 to the leg 22 and removing metal from both, and the cutout 26 extending from the body 21 to the leg 23 and removing metal from both. The body 21 is stiffened and strengthened by in-pressed rib 27 which is disposed horizontally at about the longitudinal center-line of the body 21 and which extends throughout nearly the entire length of the body 21.

Beneath the body 21 and extending generally lengthwise thereof there is a bendable finger 30, which is connected to the body 21 and the leg 23 by a root portion 30a and which has a nose 30b. This finger is stiffened by an in-pressed rib 30c (FIGURES 6 and 8) which extends longitudinally of the finger 30 and well into the root portion 30a. The end brace 20 having been applied to the head channel 10, the finger 30 may be manually bent to

dispose the nose 30b closer to or farther from the end of the head channel to thereby adjustably co-operate with a mounting bracket (not shown) at the end of the head channel. With each end of the head channel provided with an end brace 20 and a mounting bracket at each end of the head channel, the bendable fingers 30 of the two end braces can be adjusted to co-operate with the two mounting brackets and thereby eliminate or limit endwise lost motion of the head channel 10 with respect to the mounting brackets and also center the blind with respect to the window, as is known in the art.

The legs 22 and 23 (FIGURE 1) are the same except for being of opposite hand. The top portions 22b and 23b (FIGURE 2) of the legs are inclined toward each other, providing the legs with top portions which incline inwardly-upwardly to free edges. The bottom portions 22c and 23c (FIGURE 4) are inclined toward each other, providing the legs with bottom portions which incline inwardly-downwardly to free edges. The vertical edge-portions 22d and 23d of the legs (FIGURE 8) are inclined toward each other, providing the legs with leading portions that are inclined inwardly to free edges.

The legs 22 and 23 are of heights (vertically) to span the heights of the side walls. When the legs 22 and 23 are telescoped into the end of the head channel 10 to the position shown in FIGURES 5 and 8, the bottom free edges of the legs are in firm frictional engagement with the bottom 11 of the head channel and the top free edges of the legs are in firm frictional engagement with the inwardly- and downwardly-extending portions 12a and 13a at the tops of the side walls of the head channel. The flat portions 22a and 23a of the legs contact the inner faces of the side walls 12 and 13 of the head channel, and the bottom portions 22c and 23c of the legs stand clear of the arcs R as is seen in FIGURE 4.

The inwardly inclined vertical edge-portions 22d and 23d of the legs 22 and 23 guide the legs between the walls of the head channel when the end brace is applied thereto. Telescoping movement of the legs is also facilitated by the rounding off of corners. Upper corners of the legs 22 and 23 are rounded off as is seen at 22e and 23e (FIGURE 1). Lower corners are rounded off as seen at 22f, 22g and 23f, 23g, reference characters 22f and 23f appearing in FIGURE 2 and reference characters 22g and 23g appearing in FIGURE 3.

When the end brace 20 is applied to the end of the head channel 10 by telescoping the legs 22 and 23 into the head channel, the top portion of the brace-body 21 contacts the ends of the channel-flanges 12a and 13a and arrests the movement when the legs 22 and 23 have been fully telescoped into the channel (see FIGURES 4, 5, and 6). The bendable finger 30 is below the body 21 of the end brace, and the body of the end brace is uninterrupted where it spans between the tops of the head-channel walls 12 and 13. The bottoms of the legs 22 and 23 are below the level of the body 21 of the end brace and are also below the level of the bendable finger 30. As the brace is applied to the head channel, the inclined leg-portions 22c and 23c at the bottoms of the legs can flex inwardly and upwardly through quite a range to take care of manufacturing variations in the heights of the legs and the effective height of the walls of the head chan-

nel. As is seen in FIGURES 4 and 6 for example, the legs 22 and 23 constitute struts which extend from the bottom 11 of the head channel to the top portions of the side walls of the head channel. Thus the end brace not only supports the side walls of the head channel laterally by means of the brace-body 21 but also supports the channel side-walls vertically by the strut action of the legs 22 and 23.

We claim:

1. A sheet-metal end brace in combination with a sheet-metal head-channel having a bottom wall and side walls, the side walls having portions at their upper edges which extend inwardly and downwardly, the brace having a body spanning between the side walls and having legs at the ends of the body, the legs being sheet-metal members each having a vertical edge that is homogeneous with said body and each having a second vertical edge that is directed away from said body, the legs being telescoped within the channel with the sheet metal of the legs in face-to-face relation with the side walls of the channel and with the upper edges of the legs in engagement with the inwardly-and-downwardly-extending portions at the tops of the side walls, wherein the improvement comprises: the legs of the end brace constituting struts which extend from the bottom of the head channel to the top portions of the side walls of the head channel.

2. The combination as in claim 1 wherein the improvement also comprises: the body of the end brace spanning between the side walls of the head channel adjacent to the top of the head channel, and the bottoms of the legs being below the bottom of the body of the end brace.

3. The combination as in claim 1 in which the end brace has a bendable finger to adjustably co-operate with a mounting bracket at the end of the head channel, and wherein the improvement also comprises: the bendable finger being below the body of the brace, and the bottoms of the legs being below the level of the bendable finger.

4. The combination as in claim 1 wherein the improvement also comprises: the bottom portions of the legs of the end brace being inclined toward each other.

5. The combination as in claim 1 wherein the improvement also comprises: the top portions of the legs being inclined inwardly-upwardly to free edges.

6. The combination as in claim 4 wherein the improvement also comprises: the top portions of the legs being inclined inwardly-upwardly to free edges.

7. The combination as in claim 5 wherein the improvement also comprises: the free edges at the tops of the legs being in engagement with the inwardly-and-downwardly-extending portions at the upper edges of the side walls of the head channel.

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PETER M. CAUN, *Primary Examiner*.