United States Patent

Frank et al.

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[54] CHANNEL MEMBER HAVING A REMOVAL SIDE WALL

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[21] Appl. No.: **60,587**

[52] **U.S. Cl.**.....**52/400,** 52/502

[51] **Int. Cl.**.....**E06b 3/62**

[58] **Field of Search**.....52/498, 502, 501, 400, 401, 52/476, 624, 627, 208

[56] **References Cited**

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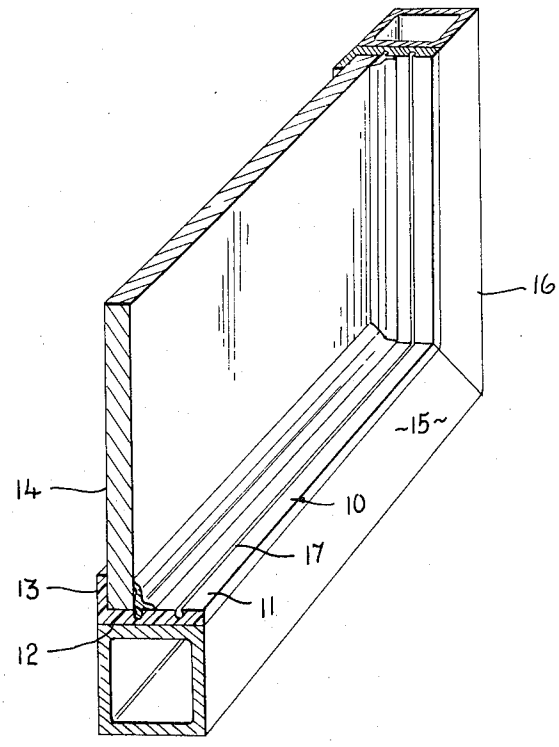
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[57] **ABSTRACT**

A molding strip for removably mounting and securing the marginal edges of a panel to a support structure such as a window, showcase and the like. The underside of the strip is attachable to the support structure, preferably by a pressure sensitive adhesive. The topside of the strip has a permanent flange along one side edge and a removable flange having a bead which fits into a groove formed in the top side, the permanent flange and removable flange forming a channel which receives the marginal edges of the panel. The removable flange can be removed when mounting the panel on the support structure. The removal flange when replaced is biased by the panel to releasably lock the bead in the groove. Several grooves may be provided so that several different thicknesses of panels can be accommodated by a single strip.

8 Claims, 7 Drawing Figures



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SHEET 1 OF 2

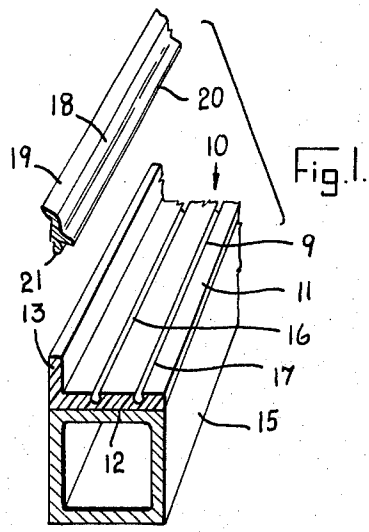


Fig. 1.

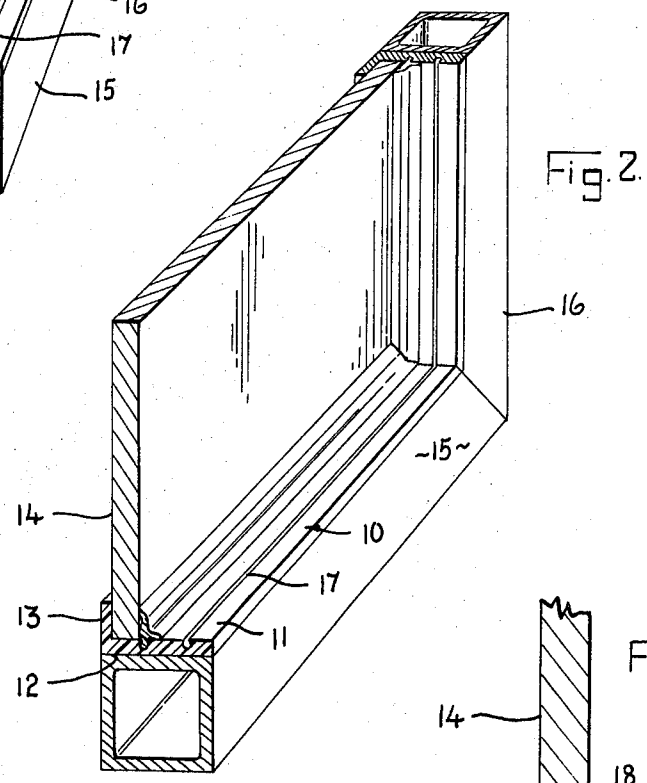


Fig. 2.

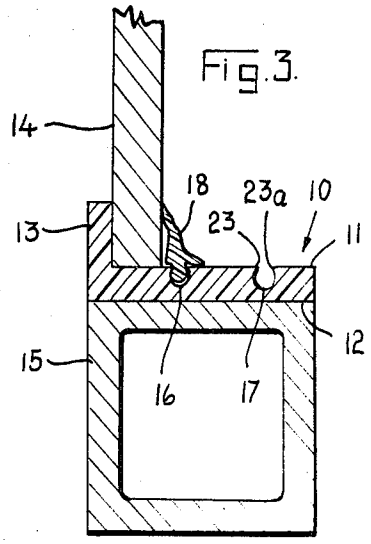


Fig. 3.

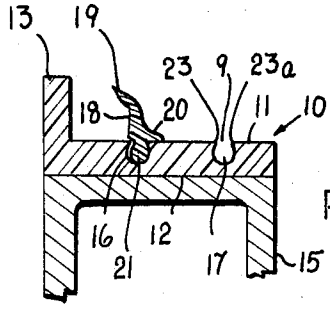


Fig. 4.

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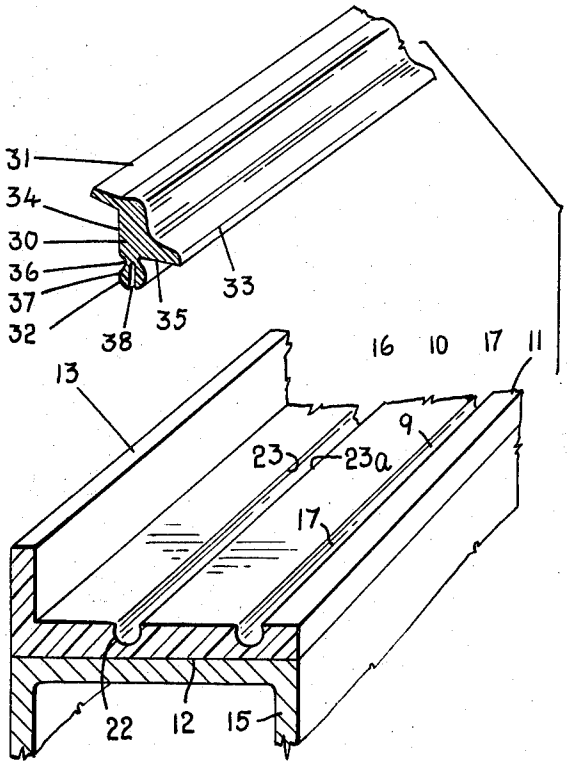


Fig. 5.

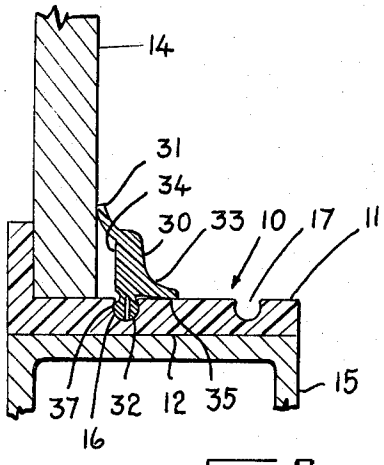


Fig. 6.

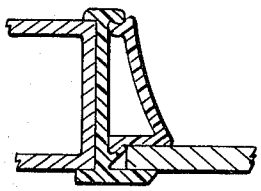


Fig. 7.

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CHANNEL MEMBER HAVING A REMOVAL SIDE WALL

BACKGROUND OF INVENTION

Heretofore, in one form of construction, the support structure for mounting the marginal edges of a panel on the support structure consisted of a frame member having an open channel for the reception of the vertical edges of the panels. One form of such a channel member is disclosed in Mautner's U.S. Pat. No. 2,764,314 dated Sept. 25, 1956 or they may take the form of the channel members disclosed in F.W. Reilly's U.S. Pat. No. 3,276,832 dated Oct. 4, 1966.

In another form, the support structure is made in the form of tubular members of rectangular cross section and the channel members are formed with integrally formed side walls which have oppositely facing channels; one channel being used for attaching the channel member to the support structure and the oppositely facing channel receiving the marginal edges of the panel. One form of such a structure is shown in Parson's U.S. Pat. No. 2,980,285 dated Apr. 18, 1961. Another type of channel member of the same general type, is illustrated in Krauss U.S. Pat. No. 2,580,029 dated Dec. 25, 1951.

One disadvantage of each of the channel members of the prior art resides in the fact that a number of different widths of channel members have to be provided in order to accommodate various thicknesses of the marginal edges of different panels.

Another disadvantage is the difficulty encountered in inserting and removing the panels in the channels when the channels have been attached in place on the support members. To accomplish this assembly or dismantling as required, the upper and at least one vertical channel member is deeper than the bottom and other vertical channel member so that the panel member can be first inserted to the full depth of the deeper channels and then inserting the other two edges in the remaining two channels, or alternatively, the same result can be obtained by cutting the panel so that the channel walls will overlap the marginal edges sufficient to hold the panel in place.

The foregoing disadvantages have been overcome, in part, by another type of molding strip which is made for use on tubular support members. In this type, the molding strip is made of vinyl or other extrudable material having a channel which wraps around the tubular support member and an oppositely disposed channel for the edge of the panel. An alternative modification of this has been employed for glazing, wherein the channel for the glass or other panel is provided with a stepped portion on one side for the edge of the glass. This stepped portion is the same width as the glass thickness and is undercut to provide a groove the full length of the strip. A complemental groove is formed in the opposite wall of the channel. A glazing strip snap-locks into the grooves to hold the glass or panel in place. One of its disadvantages is that each thickness requires to be specifically dimensioned. A drawing of this type has been included and is marked "prior art" (FIG. 7).

OUTLINE OF THE INVENTION

The foregoing and other disadvantages of the prior art channels have been overcome by the present invention which may be briefly described as follows. It consists of a molding strip made of extrudible material such as aluminum, vinyl, etc., in which the channel portion has one fixed rigid wall and a removable wall, the channel portion receiving the marginal edges of a panel. The word "panel" used herein, includes plywood sheets, glass sheets, board, composite sheets, wallboard, etc. The underside of the molding strip is attached to the support structure of, for example, a window frame member, showcase frame member, and the like, preferably by a pressure sensitive adhesive. The removable flange, to be described in detail, is hingedly attached to the topside of the molding strip by means of a bead extending along the bottom portion of the flange, which bead fits into a groove formed in the topside, parallel to the fixed flange. One or more grooves can be provided so that the molding strip can be adjusted to accept the marginal edges of panels having different thicknesses. The beads and the grooves are proportioned so that the beads will snap into the grooves by a slight downward pressure and will be locked therein with sufficient restraint to hold the panel in position under expected normal usage. Because of the flexibility of the removable flange and other features of construction, any groove setting will accommodate a number of panel thicknesses.

DESCRIPTION OF THE INVENTION

The invention will now be described with reference to the molding strip of the present invention which is illustrated in the drawings, comprising:

FIG. 1 which is an exploded view of one embodiment of the molding strip assembly of the present invention;

FIG. 2 is a fragmentary perspective view showing the molding strip attached to a support structure;

FIG. 3 is a cross sectional view through the support structure of FIG. 2, on an enlarged scale to better illustrate features of construction;

FIG. 4 is a view similar to FIG. 3 but with the panel removed;

FIGS. 5 and 6 disclose an alternative construction in fragmentary perspective on an enlarged scale to illustrate an alternative preferred construction; and

FIG. 7 illustrates a prior art structure.

In the subsequent description, the invention will be described with reference to the illustrated embodiments but is is to be understood that this is done by way of illustration and not in a limiting sense. The molding strip may be made of any material which is susceptible to extrusion molding technique but the material must be capable of producing the fine grooves and other elements required by the present invention. It has been found that rigid PVC is one material that is suitable for this purpose.

Referring first to FIGS. 1 to 4, the molding strip comprises a base strip 10 having a substantially flat topside 11 and a substantially flat underside surface 12. Extending along one side edge of the topside is a substantially rigid flange 13 which forms one of the side walls of a channel which removably secures the marginal edges of a panel 14 to a support structure consisting of tubular members 15, 16 which form part of a frame. This base strip is produced by extrusion molding, preferably using rigid PVC.

The other side wall of the channel is constituted by the following structural features. As will be clearly seen in FIG. 1, the topside 11 is formed with two longitudinally extending grooves 16, 17 in spaced apart relationship to each other and to the flange 13 and substantially parallel thereto. Each of the grooves are substantially circular in cross section as will be clearly seen in FIG. 4, the upwardly facing throat 9 being slightly less than the diameter of the groove to provide secure assembly, the throat being defined by lips 23, 23*a*. The snap-on flange comprises a main body portion 18, the upper edge of which terminates in a flexible tip 19 extending forwardly of the body, a rearwardly extending bracing member 20 and a downwardly extending compressible bead 21, the bead being preferably circular in cross section with a diameter less than the diameter of the grooves, but slightly larger than the throat 9.

The use of the molding strip assembly of the present invention will now be described with reference to FIGS. 1 to 4. The molding strip assembly is preferably attached to the support structures 15, 16 by means of a pressure sensitive adhesive applied to the underside 12 of the base strip. It is preferable to use a water-resistant type of adhesive. A panel such as the panel 14 is then placed in position and may be cut to the precise size, with necessary clearances, and this will make for a substantially weather-tight fit between the panel and the base strip.

The next step is to force the bead **21** down into the groove **16**. The flexible tip **19** will press against the surface of the panel **14** and force the bracing member **20** against the topside **11**. This will force the bead **21** against the curved surface **22** and the underneath lip **23** of groove **16**. The bead **21** is thus releasably locked in the groove **20** and will retain the panel in the support structure under normal conditions of use. The snap-on flange can be easily removed by inserting a flat tool between the bracing member **20** and the topside **11**, and then prying upwardly.

The spacing between the grooves **16, 17** will be governed by the standard thicknesses of different panels. It will be quite apparent that more than two grooves can be used, and the number of grooves will depend entirely on the various thicknesses of panels which one may desire to use in conjunction therewith.

The structure shown in FIGS. **5** and **6** illustrates a preferred embodiment. It includes a base strip of the same construction as shown in FIGS. **1** to **5**. Consequently, it is identified by the same reference numbers.

The removable side wall, sometimes called a glazing bead, has been modified and will be particularly described. It comprises a body **30** made of black rigid PVC, a resilient flange **31**, a compressible cylindrical bead **32**, and a resilient bracing portion **33**. The body, in the illustrated preferred embodiment, is shown in its relationship to its intended use with a panel assembly. The body has a flat front face **34** which is substantially vertical to the plane topside **11**. The base line **35** of the bracing portion **33** extends rearwardly at an angle of about 100° to the face **34**. The flange **31** extends outwardly from the face **34**, adjacent the top portion of the body **30** at an angle of about 110°. The length of the flange, in a plane vertical to the face **34**, will be slightly less than the thickness of the panel but sufficient to place the snap-on flange under compression with the brace **33** held firmly against the topside. The bead **32** depends downwardly from the body **30** with its center located so that the periphery lies slightly inwardly from the downward projection of face **34**. As previously stated, the diameter of bead **32** is slightly smaller than slots **16** or **17**, the bead being connected to the body by a neck portion **36** which is approximately of a thickness corresponding to the width between lips **23, 23*a***. The surface of the bead which will face surface **22** of the slots **16** or **17** is provided with a longitudinal rib **37** which will bite into the surface **22** when, with the panel in place, the bead **32** is snapped into the groove adjacent to the panel. To improve the compressibility of the bead, a slot **38** is formed vertically therein as shown.

The embodiments of the invention in which an exclusive property or priviledge is claimed are defined as follows:

1. A molding strip assembly for removably mounting and securing the marginal edges of a panel to a support structure comprising a substantially rigid base strip having substantially flat topside and underside flat surfaces, said underside flat surface being attachable to the support structure, and a substantially upright rigid flange along one side edge of the topside; a first groove in the topside of the base strip spaced from and running parallel to the rigid flange, said groove being substantially circular in cross section with the width of its upwardly facing opening being less than the diameter of the groove; a molding strip body including a snap-on flange hingedly and removably mounted in said groove, said snap-on flange consisting of a substantially rigid main body having on its bottom end a bead of about circular shape in cross section, said bead being removably secured in said groove and having a flexible flange along its top edge, said flexible flange tilting forwardly toward and against a contiguous surface of a panel seated upon said topside flat surface; and a bracing member projecting rearwardly from the main body adjacent to the bead and located to engage the topside surface of said base strip when the bead is in the groove, whereby, when the marginal edge of the panel is secured against the rigid flange by the snap-on flange, the main body is restrained by the flexible flange and the bracing member.

2. The molding strip assembly as defined in claim **1** wherein the tilt of the flexible flange is about 110° relative to the vertical axis of the main body.

3. The molding strip assembly as defined in claim **2** wherein the bracing member is at an angle of approximately 90° to the vertical axis.

4. The molding strip assembly as defined in claim **2** wherein a slot is formed in said bead extending inwardly along a diameter of the bead.

5. The molding strip assembly as defined in claim **1** wherein the bracing member is at an angle of approximately 90° to the vertical axis.

6. The molding strip assembly as defined in claim **5** wherein a slot is formed in said bead extending inwardly along a diameter of the bead.

7. The molding strip assembly as defined in claim **6** wherein the tilt of the flexible flange is about 110° relative to the vertical axis of the main body.

8. The molding strip assembly as defined in claim **1** wherein a slot is formed in said bead extending inwardly along a diameter of the bead.

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