

Aug. 15, 1939

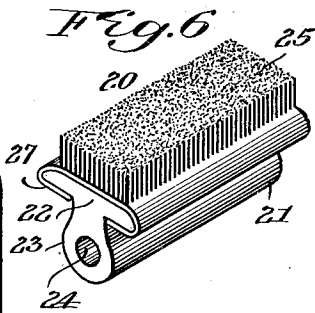
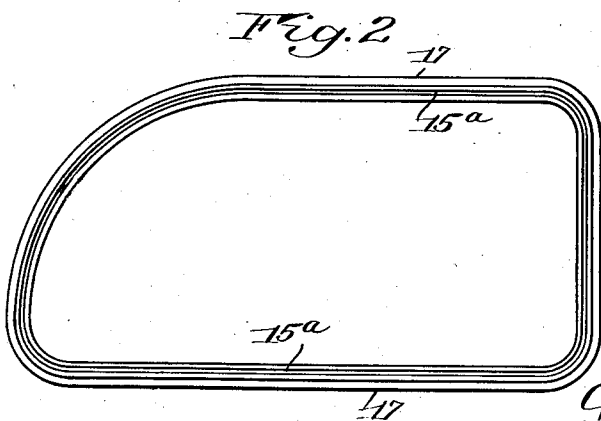
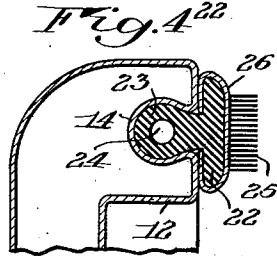
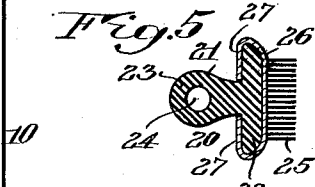
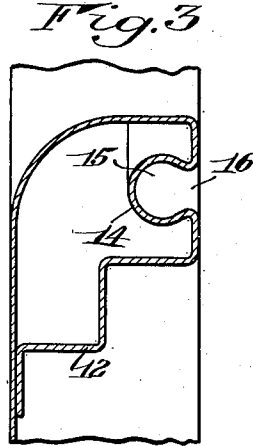
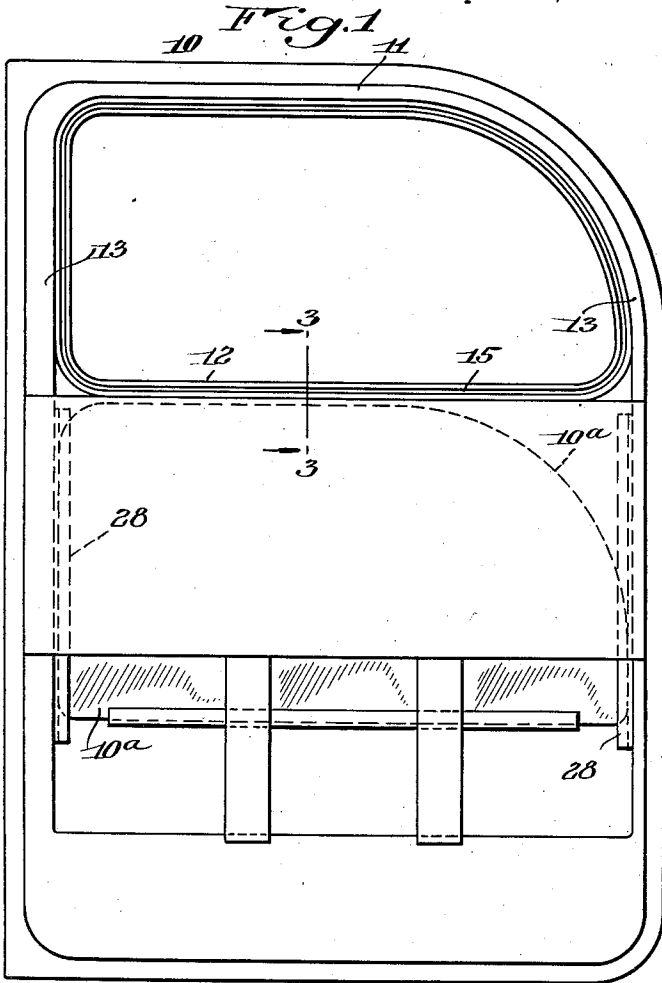
C. P. SCHLEGEL

2,169,504

WINDOW MOUNTING

Filed April 15, 1938

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 8

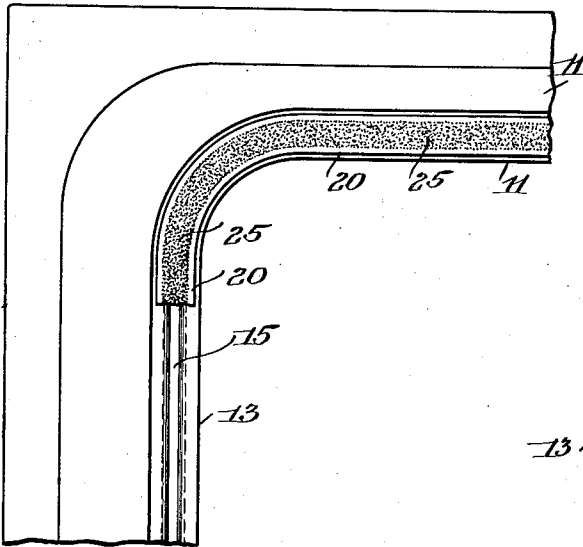


Fig. 7

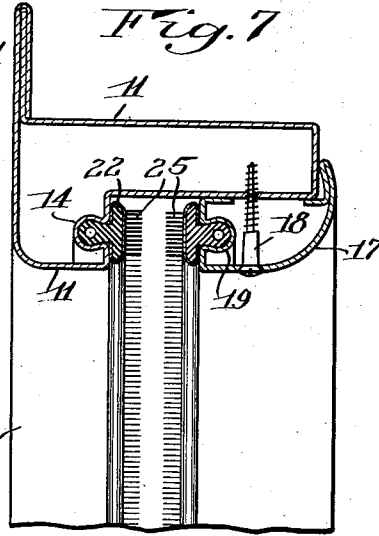


Fig. 9

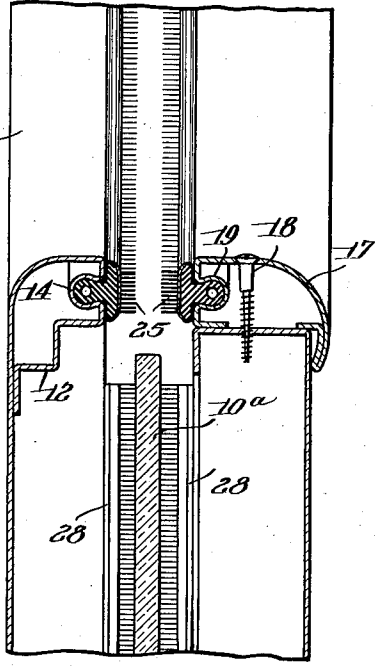
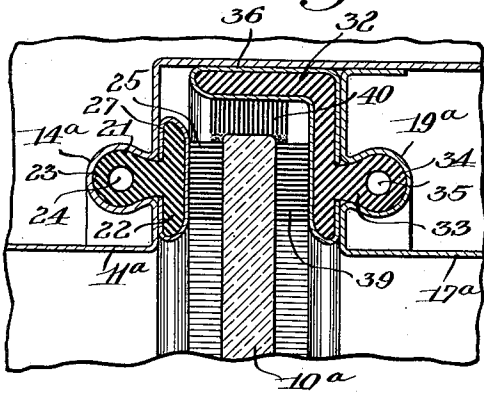
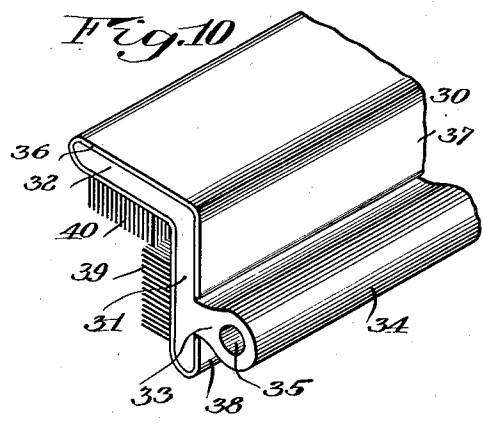


Fig. 10



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UNITED STATES PATENT OFFICE

2,169,504

WINDOW MOUNTING

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Application April 15, 1938, Serial No. 202,280

1 Claim. (Cl. 296—44.5)

The present invention relates to a window mounting construction designed for guiding and protecting windows and other closures, and particularly the window panes of various types of motor vehicles, including automobiles, airplanes, watercraft, and other conveyances.

One object of the invention is to provide an improved runway for a window pane or sash designed to effectively cushion and protect the same and to afford a construction which is comparatively inexpensive to manufacture, easy to install, and effective in use.

A further object of the invention is to provide an improved unitary and efficient mounting strip for maintaining a weather-tight connection between doors and windows, and the frames thereof, and which is particularly designed with a view to facilitating quick and ready application of the same to and removal from said frames without the use of tools or detachable retaining parts for the same.

A further object of the invention is to provide an improved unitary strip of the class described which is serviceable both as a weather strip and as a window supporting and guiding strip and which is capable of being easily bent to different shapes in order that it may be readily made to conform to the contour or curvature of a window pane or the framework thereof.

A further object of the invention is to provide a unitary strip of the class described, having improved securing means formed for ready insertion within and withdrawal from a groove or recess of a supporting member therefor, within which the securing means is firmly held through frictional engagement with the walls thereof.

A further object of the invention is to provide an improved window frame structure, in combination with a flexible guiding and protecting strip for a window, in which arrangement the frame structure is designed to permit the strip to be pressed or snapped into engagement therewith and at the same time shaped to conform to the contour of the window.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claim at the end of the specification.

In the drawings:

Fig. 1 is an elevational view of an automobile door, with the garnish molding and weather strips removed;

Fig. 2 is an elevational of the garnish molding as viewed from the inner side thereof;

Fig. 3 is a fragmentary sectional view substantially on the line 3—3 of Fig. 1, and drawn to an enlarged scale;

Fig. 4 is a similar view with the weather strip shown applied to the frame of the door;

Fig. 5 is a transverse section illustrating one embodiment of the weather strip;

Fig. 6 is a perspective view of the same;

Fig. 7 is a fragmentary vertical section through the door shown in Fig. 1, drawn to an enlarged scale and having the weather strips applied thereto;

Fig. 8 is a fragmentary elevational view of one corner of the door as viewed from the right of Fig. 7 with the garnish molding removed and showing one of the weather strips curved to conform to the curvature of one corner of the window;

Fig. 9 is a fragmentary sectional elevation through the top of the door showing a modified arrangement of weather stripping, and

Fig. 10 is a perspective view of the modified strip shown in Fig. 9.

The same reference numerals throughout the several views indicate the same parts.

The present invention is shown in connection with a door of an automobile of the closed type. The door is designated generally by the reference numeral 10, and is provided with the usual window opening and a window pane 10a for closing the same. The one-piece frame of the window comprises the upper and lower portions 11 and 12 shown in section in Fig. 7, and side portions 13 which are of similar construction. The frame is provided with an inwardly offset continuous channel-like member 14 having a recess or groove 15 with an entrance 16 of less width than the groove, Fig. 3.

The garnish molding comprises a continuous section 17 removably connected with the window frame, preferably by means of a plurality of screws 18, Fig. 7. The garnish molding is also provided with an inwardly turned channel-like portion 19 provided with a groove or recess 15a similar to the groove 15 of the channel-like member 14, and having a restricted entrance corresponding to the entrance 16 of said groove 15.

One form of my improved window mounting strip is shown in cross section in Fig. 5, and is designated generally by the reference numeral 20. It comprises a securing or base section 21 which is substantially T-shaped in cross section and which is preferably formed of rubber, but which may be formed of any flexible or resilient material suitable for the purpose intended. The

section 21 comprises a body portion 22 and a web or shank portion 23, which is substantially the same in shape and size as the recess 15 of the channel 14, within which said web portion is to be inserted as shown in Fig. 4, or in other words is of a size which will cause it to fit snugly within said recess in order that it may be firmly held therein through frictional engagement with the walls thereof.

Moreover the web 23 of the strip is preferably provided with a longitudinally extending bore 24 to increase its flexibility and thereby make it more readily compressible when being inserted within the recess, and more or less expansible whereby it will tend to assume its normal shape when it is moved to final position within the recess as shown in Fig. 4, or within the channel-shaped member 19 of the garnish molding 17, Fig. 7. It will be obvious that the inwardly converging walls of the groove or recess will serve to frictionally retain the strip within the groove, although it may be readily withdrawn therefrom when desired by exerting a pull on one end of the strip in a direction away from the groove.

The cushioning or window engaging portion of the strip may be formed of any suitable flexible or resilient material, but preferably comprises a soft resilient pile surface 25, of relatively long pile fibers interwoven with a strip 26 of heavy fabric, the longitudinal edge portions 27 of which are folded around the opposing edges of the body 22 of the rubber strip 21, as shown in Figs. 4 and 5. The fabric of the cushioning strip may be secured to the body of the rubber strip in any preferred manner as, for example, by stitching or cementing it thereto.

It will be understood that the weather strip-
ping 20 may be formed in relatively long lengths and that each strip will be cut to a length corresponding to the overall length of the groove within which it is to be placed, the ends of the strip being brought into abutting relation within the groove or closely fitted therein. Due to the flexibility of the strip the web portion thereof can easily be pressed or snapped into the groove of the molding. The preferred method of application is to position one end of the strip within the groove and then progressively work toward the other end, bending the strip at the corners or curved portions of the frame to conform to the contours of the same, and continuing until the operation of applying the strip is completed, which operation may be said to constitute a wrapping action. These operations can be rapidly performed without the use of tools or any separate retaining parts for securing the strips in position, they being held within the grooves solely through frictional engagement with the walls thereof. In assembling the strips the one shown positioned within the groove of the outer molding can readily be placed therein before applying the garnish molding to the door. Moreover, the weather strip of the garnish molding can easily be inserted within the groove thereof before attaching said molding to the door frame.

In case the strips become worn and need to be replaced with new ones, the garnish molding can quickly be removed, after which the strips are rendered accessible and can readily be withdrawn from the retaining grooves and new ones inserted therein.

The window glass 10a is guided for movement within the lower portion of the door by the oppositely disposed channels 28, Fig. 1, and may be

elevated and lowered by any suitable lifting mechanism, not shown.

It will be apparent from the present disclosure that the strips 20 serve not only to maintain a weather-tight connection between the frame members of the door and the window glass, but also as a means for cushioning the latter and for preventing rattling of the same.

In the modification shown in Fig. 9, one of the weather strips is the same as that shown in Figs. 5 and 6 and has therefore been given the same reference characters, said strip being shown applied to the groove of an inwardly turned channel shaped member 14a of a frame corresponding substantially to the window frame previously described, the upper rail 11a of which, Fig. 9, is constructed similarly to the rail 11 shown in Fig. 7. The modified form of weather strip is designated generally by the reference numeral 30, Fig. 10, and is constructed for engagement not only with one side of the window pane 10a, but with the edge portion thereof as well, whereby to provide additional means for cushioning the window glass and for more effectively sealing the joint between the window frame and the top and side portions of the glass. To this end the securing portion of the strip 30, which is preferably constructed of rubber, comprises the angularly disposed portions 31 and 32, from the former of which projects a web portion 33 having a thickened portion 34 provided with a bore 35, the thickened portion being inserted within the groove of the channel-shaped portion 19a of the garnish molding 17a shown in Fig. 9, which is similar to the garnish molding 17 of Fig. 7. The angularly disposed portions 31 and 32 of the strip 30 have applied thereto a heavy strip of fabric 36, the longitudinal edge portions 37 and 38 of which extend around and terminate on the outer face of the body portion 31 adjacent the web 33 of the strip, as shown in Figs. 9 and 10. The fabric 36 is provided with resilient pads 39 and 40 opposite the portions 31 and 32 of the rubber strip, respectively, Fig. 10, each pad preferably comprising a pile surface formed of relatively long pile fibers interwoven with the strip. As shown in Fig. 9, the resilient pad 39 engages the window glass at one side thereof while the resilient pad 40 is in engagement with the side edge portion of the glass, the pad 40 being extended along the top of the glass and downwardly at both sides thereof to points adjacent the upper ends of the window guides 28, while the pads 25 and 39 are continuous and extend entirely around the window opening for engagement with the opposite sides of the window frame as shown in Fig. 9. In the modified form of strip shown in Fig. 10 the fabric having the pile surfaces thereon may be secured to the portions 31 and 32 of the strip of rubber by means of cement, or by stitching, as preferred.

It will be understood that the weather strip shown in Fig. 10 is sufficiently flexible to permit it to be readily bent by hand when applying it to the window frame by forcing the web portion 33, 34 within the groove of the channel-shaped portion 19a of the garnish molding 17a, Fig. 9.

While the weather strip has been shown in connection with the window frame of a door of a motor vehicle, it will be understood that it may be applied to the frames of doors or other closures for contacting said doors and closures, or used as a guard or protecting strip for furniture, or employed for other useful purposes as desired.

5 It will also be understood that in such usages a grooved metal strip will be provided for mounting the flexible strip shown in Figs. 5 and 6 and designed for ready application to the supporting element with which it may be desired to connect the same.

10 One of the main advantages of the protecting strip described and claimed herein results from the simplified construction of the same and the ease and convenience with which it can be applied to and removed from the grooved channels, provided for supporting the same. In attaching the strip to the window molding it will be apparent that it can readily be applied merely by wrapping
15 it around the inner portion of the grooved frame and at the same time snapping or pressing the securing portion of the strip within the groove, upon the completion of which operation the strip will conform to the curvature of the molding and
20 will be firmly secured thereto by reason of the expansion of said securing portion into engagement with the walls of the groove.

25 It will be obvious that the application of the strip in this manner can be effected without the use of cement, rivets, bolts, or other separate parts such as are generally employed for securing weather stripping of this kind to the frames of doors and windows. It will be apparent therefore that not only is a considerable saving effected
30 in the present construction by the omission of such parts, but that the time required to apply the weather stripping is greatly reduced thereby economizing in the cost of labor, both in the application to and removal of the weather stripping
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from the door and window frames or other supporting members to which it may be applied.

5 It will be noted, as shown for example in Fig. 4, that when the strip is in position the resiliency of the material tends to confine and press the edges 27 of the fabric between the parts 22 of the rubber strip and the adjacent metal surfaces of the channel. This tends to prevent the edges of the fabric from pulling away from the strip.

10 While one embodiment of the invention has been disclosed, it is to be understood that the inventive idea may be carried out in a number of ways. This application is therefore not to be limited to the precise details described, but
15 is intended to cover all variations and modifications thereof falling within the spirit of the invention or the scope of the appended claim.

I claim:

20 In an automobile window structure wherein the metal frame of the window is formed in a channel shape and is provided with a surface for the reception of window cushioning and weather stripping means and said surface being provided with a groove, a unitary weather stripping comprising an elongated piece of material having a
25 cushiony surface, a securing strip of resilient material having a resilient bead adapted to be pressed into said groove to secure the weather stripping in said channel, said piece of material having its side edges wrapped around the
30 securing strip in such manner that the side edges of said material are confined and pressed between the securing strip and said surface.

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