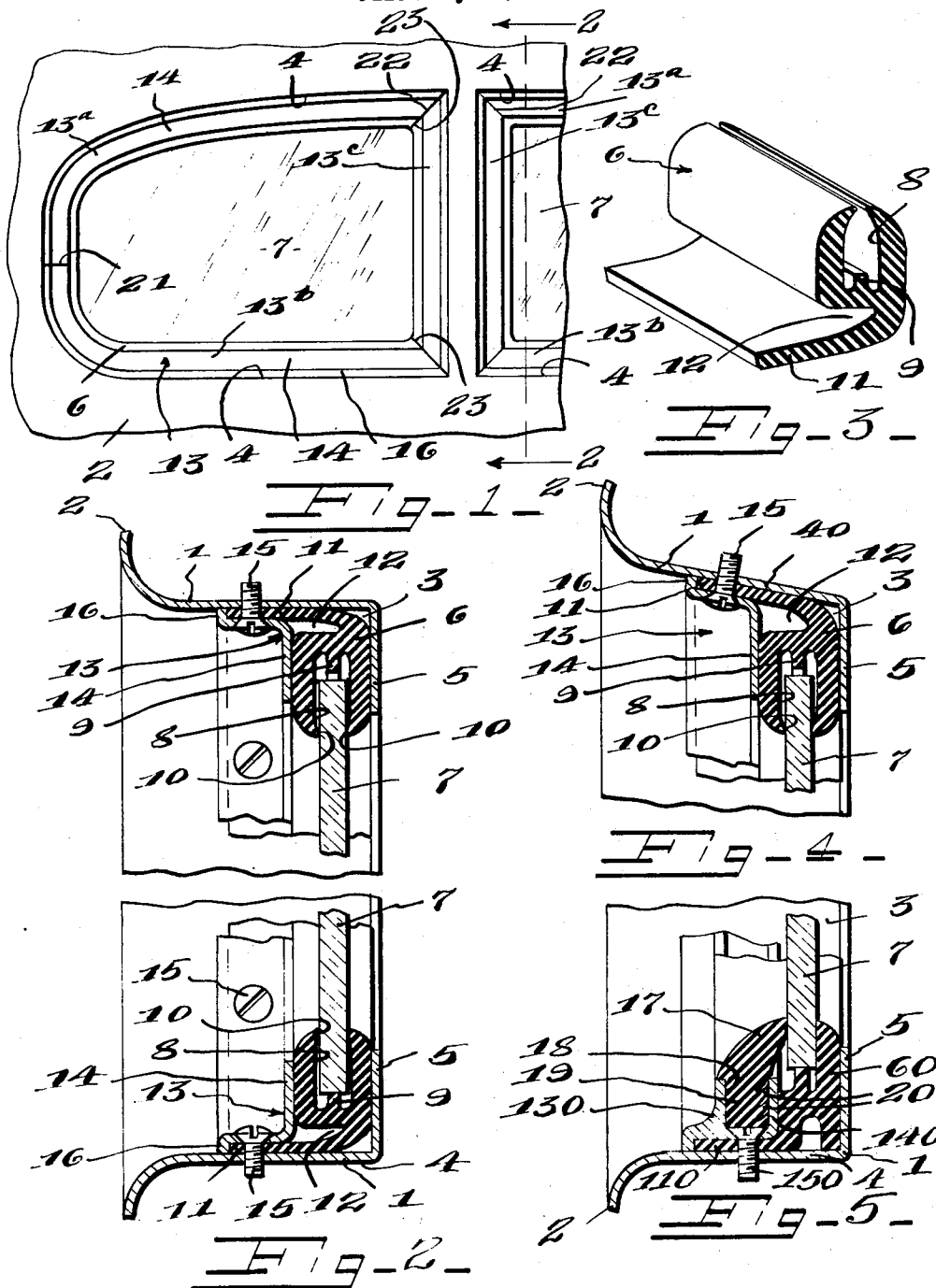


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WINDOW CONSTRUCTION

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WINDOW CONSTRUCTION

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This invention relates to window constructions, and has for its object a window construction for vehicles, and more particularly for windows in which the sashes are fixed or have no sliding opening movement in the window frame, as the windshields and rear windows of buses.

It also has for its object a sash or mounting for the glass panel and a mounting for the sash in the window opening by which the glass panel is relieved of all strains and compressions in edgewise, transverse and oblique directions, and from any holding forces, localized or otherwise, and is air and weather tight, and the sash itself resiliently supported and relieved of strains and compressions at the same time it being conformable to variations, misalignments, etc. in window frames or openings, and further is weather tight, and all regardless of whether the sash is vertical or inclined.

It also has for its object a window structure embodying these features which is quickly installed and readily removed or replaced.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1 is a fragmentary elevation of this window construction, the contiguous portion of the vehicle body being also shown.

Figure 2 is an enlarged fragmentary sectional view on line 2—2, Figure 1.

Figure 3 is an isometric view of the sash frame or tirelike member around the glass panel.

Figure 4 is a fragmentary view similar to Figure 2 illustrating the adaptability of the sash to window openings of different cross-sectional form.

Figure 5 is a fragmentary sectional view of a slightly different form of window construction embodying this invention.

The window construction comprises, generally, a sash resiliently supporting or cushioning the glass panel with an air and weather tight joint between the panel and the sash and having means for resiliently mounting it—the sash—in a window frame, said means conforming to variations and misalignments in the window frame, and further sealing the joint between the sash and the window frame, together with means for securing the sash in the frame without unduly clamping or applying transverse strains to the glass panel at the margin thereof.

1 designates the window frame confining a window opening in the body 2 of the vehicle or other structure. The window frame is usually formed of sheet metal or is part of the metal sheeting of the vehicle body. It is formed to provide a recess 3, angular in cross-section, and having a bottom 4 and one side wall 5. The angle of the bottom wall 4 varies in different structures. In some structures, the bottom wall 4 is at a right angle to the side wall 5 and the sash sets into a right angular corner. In other structures, the bottom wall is inclined or at an inclined angle to the side wall, as shown at 40 (Figure 4). In some situations, the sash is vertical and in others inclined.

6 designates the sash, preferably of resilient material, as rubber, providing a tirelike member or cushion around the glass panel 7. The sash 6 is formed with a channel 8 for receiving the margin of the glass panel 7, and the bottom of the channel is here shown as formed with a rib or cushioning strip 9 for coacting with the edge of the glass panel 7. Also, the sash or tirelike member is tensioned so that the side walls thereof compress toward opposite sides of the glass panel 7 and press on the same at 10, the edges of the side walls at 10 being tensioned inwardly forming lips so that the margin of the glass panel is spaced apart from the surfaces of the sides of the channel, except at the lips 10. The edges of the panel rest, for the most part, on the edges of the ribs 9. By reason of the ribs 9 and the engagement of the side walls of the sash with the glass panel at the edges of the lips 10, the glass has a sort of three point mounting which permits it to tilt or fulcrum on the rib and shift while engaged by the lips 10, into various angles which it may be required to take during vibration or weaving and warping of the vehicle or window frame, and so that the glass panel 7 is relieved of all compressions and strains. The side walls of the sash being resilient conform to or give and take with or follow up the relative shifting of the sash and the glass and cushion it without clamping or subjecting it to strains, at all times. As the glass panels vary slightly in size, the panel is oftentimes spaced apart along one of its edges from the rib 9, as at the top edge, as shown in Figure 2. If the glass should be oversized, the rib 9 may be trimmed off at its edge. Thus, by reason of the construction of the tirelike member or sash, the glass is resiliently supported without edgewise or transverse strains or without excessive clamping force being applied to the sash and the glass.

The means by which the sash or tirelike member is resiliently supported in the window frame, regardless of variations and misalignments in the window frame, comprises a circumferential flange 11 of resilient material, as rubber, this flange 11 being usually integral with the sash and tensioned to press outwardly against the bottom of the window frame 4 or 40 (Figure 4). As here illustrated, the marginal portion thereof extends beyond the plane of the face of the sash, which is the outer face, or the face remote from the side wall 5 of the window frame, and is secured at its margin to the bottom 4 of the window frame. Preferably, in order that this flange may be of maximum width, and hence of maximum resiliency or adaptability, it extends from the side of the sash adjacent the bottom wall 4 with a space at 12 to increase the resiliency between the flange and the edge of the sash or the body of the sash.

The flange 11 is secured to the bottom wall of the window frame by a retaining member 13, this lying against the margin of the flange 11 and, in the illustrated embodiment of the invention, beyond the plane of the outer face of the sash, and having an angular or inwardly extending flange 14 engaging the outer face of the sash 2 without applying very much compression thereto but rather merely snugly fitting against the sash 2. The retaining member is held in position by clamping means acting on the flange 11 in a general direction parallel to the plane of the sash, in contradistinction to in a direction transversely of the sash or in a direction tending to clamp the retaining member against the sash. As here illustrated, screws 15 extend through the retaining member, the underlying margin of the flange 11 and thread into suitable holes in the bottom 4 of the recess of the window frame. The retaining member is formed with a lip 16 covering the edge of the flange 11. Thus the sash with its flange 11 is sealed in the frame and is air and weather tight, and the glass, although yieldingly held without being subject to any strains, is air and weather tight.

In Figure 5 is shown a modification in which the tirelike member or sash 60 is provided with a removable glazing strip 17 of rubber corresponding to the outer side wall of the channel of the sash 6 (Figure 2) against which the retaining strip or flange 14 thereof abuts, and the retaining strip 130 is formed with a channel or groove 18 for receiving the base 19 of the glazing strip 17. The glazing strip is formed with lengthwise corrugations 20 on one side of the base thereof for preventing undue displacement of the glazing strip. This feature forms no part of the invention.

One side 140 of the channel of the retaining member 130 abuts against the sash 60 substantially the same as the flange 14 in Figure 2. Clamping screws 150 extend through the bottom of the channel 18 in which the glazing strip is seated through the underlying portion of the flange 110 on the tirelike member or sash 60 and into the window frame, so that the screws are not visible when the installation is completed. Also, the flange 110 is shown as extending from the side of the sash adjacent the retaining strip instead of the side remote from the retaining strip, as in Figure 2.

The retaining strip in the form of window shown in Figure 1 is made up of three sections 13^a, 13^b and 13^c, the sections 13^a and 13^b being angular to conform to the rounding contour of

the ends of the window frame and abutting together at 21. The section 13^c, which is a straight upright section, is bevelled at its ends at 22 to coact with bevels on the ends of the sections 13^a and 13^b.

The tirelike member for a glass panel of the contour here shown is preferably of two sections or pieces, one piece being long enough to extend around the top, bottom and the end of the glass panel, which has the rounding corners, and the other piece along the straight edge of the glass panel, the sections or pieces of the tirelike member being bevelled and abutted together at their ends at 23.

In assembling the form shown in Figure 2, the sash 6, with the panel therein is placed in the window opening and in so doing, the flange 11 conforms to the bottom 4 of the window frame and also to any variations. The retaining member or the sections thereof are then placed in 20 position, and the screws 15 applied.

In the form shown in Figure 5, the installation is the same with the exception that the glazing strip 17 is placed in position after the retaining strip 130 is secured in position by means of 25 screws 150.

In either form of the invention, the glass is resiliently supported in the sash without being subjected to strains or compressions, but nevertheless is air and weather tight, and the sash itself is resiliently carried in the window frame without transmitting strains or compressions to the panel 7 and is also air and weather tight.

What we claim is:

1. In a window construction, the combination with a suitable frame, angular in cross-section, confining a window opening having a bottom and one side wall; of a sash having means for resiliently supporting a glass panel, the sash being mounted in the frame with one side against said side wall of the window frame, the sash being of resilient material and including a circumferential resilient flange lying on the bottom wall of the window frame and having a portion extending beyond the plane of the other side of the sash, a retaining member lapping said portion of the resilient flange and coacting with the other side of the sash, and clamping members for securing the retaining member to the frame, and a resilient glazing strip carried by the retaining member.

2. In a window construction, the combination with a suitable frame, angular in cross-section, confining a window opening having a bottom and one side wall; of a sash having means for resiliently supporting a glass panel, the sash being mounted in the frame with one side against said side wall of the window frame, the sash being of resilient material and including a circumferential resilient flange lying on the bottom wall of the window frame, a retaining member lapping the margin of the resilient flange and coacting with the other side of the sash, means for securing the retaining member to the frame, the retaining member being formed with an inwardly facing channel, and a glazing strip of resilient material having a base portion in said channel.

3. In a window construction, the combination with a suitable frame, angular in cross-section, confining a window opening having a bottom and one side wall; of a sash having means for resiliently supporting a glass panel, the sash being mounted in the frame with one side against said side wall of the window frame, the sash being of resilient material and including a circumferen-

5 tial resilient flange lying on the bottom wall of the window frame and having a portion extending beyond the plane of the other side of the sash, a retaining member lapping said portion of the resilient flange and coacting with the other side of the sash, and fastening members for securing the retaining member to the frame, the retaining member being formed with an inwardly

facing channel and a glazing strip of resilient material having a base portion in said channel, the fastening members extending through the bottom of the channel of the retaining member and the bottom of the window opening. 5

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