Aug. 1, 1939. W. OWEN 2,167,772

WINDOW CONSTRUCTION

Filed April 8, 1938

Fig. 1.

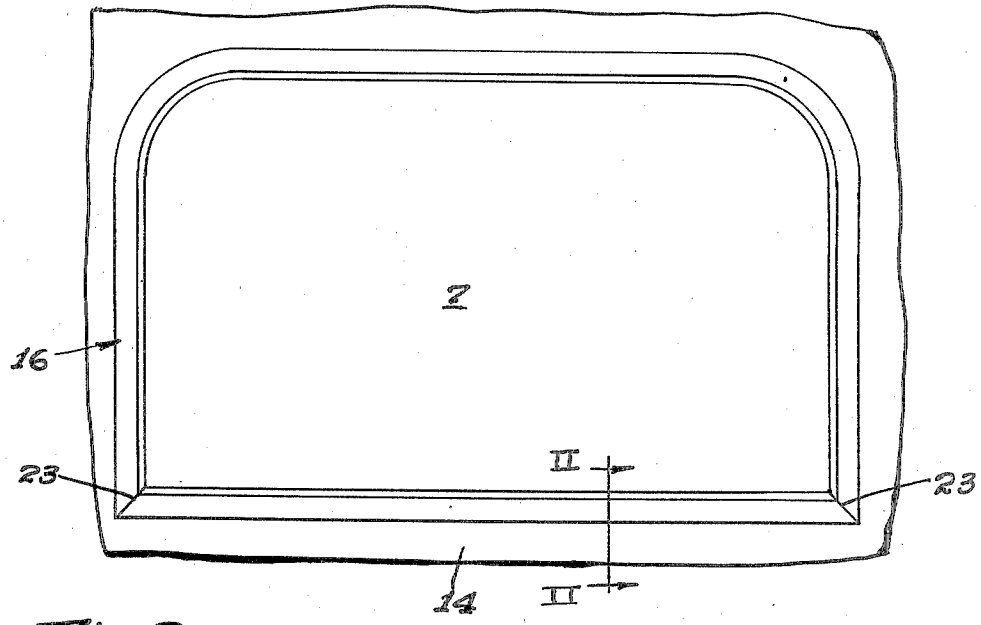


Fig. 2.

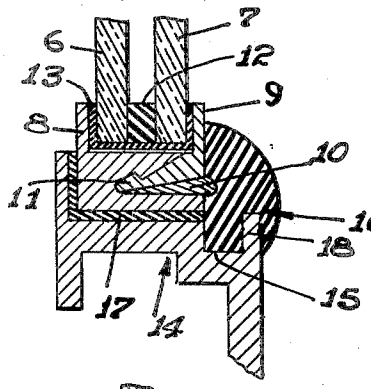


Fig. 3.

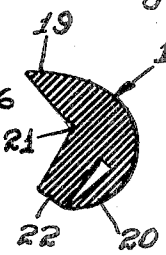
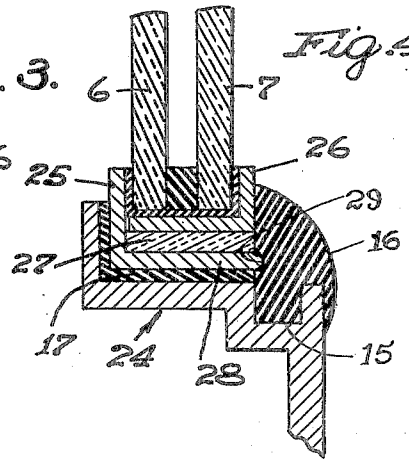


Fig. 4.



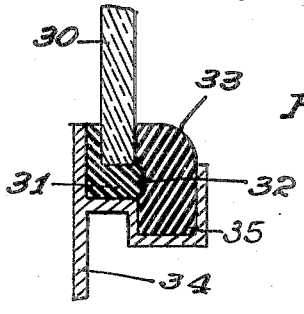


Fig. 5.

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WINDOW CONSTRUCTION

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Application April 8, 1938, Serial No. 200,918

1 Claim. (Cl. 20—56.4)

The invention relates to a window construction of the general type well known in the art employing rubber strips or the like for holding the parts securely in assembled relation, but permitting the ready removal of the glass for replacement or for cleaning the inner faces of the glass panes, in the case of double glazed units. It has for one of its principal objects the provision of an improved construction of the type specified, wherein the rubber strips may be applied and removed very easily without the exercise of any special skill, but which, at the same time, gives the necessary security against displacement due to vibration or loss of resilience. Further objects are the provision of a cheap, simple construction, applicable to a wide range of use and adaptable to existing forms of devices, in which double panes are carried removably in channel frames. Embodiments of the invention are illustrated in the accompanying drawing, wherein:

Figure 1 is a side elevation of a car window embodying the invention. Fig. 2 is a section on the line II—II of Fig. 1. Fig. 3 is a section through one of the rubber strips, showing its shape before its application in the window. And Figs. 4 and 5 are sectional views through modifications, Fig. 5 showing another application of the invention to single glazed units.

Referring to Figs. 1 to 3, the demountable glazing unit in this case comprises the panes 6 and 7. The frame therefor is made up of the two releasably interlocked metal angles 8 and 9, following the construction of the Fox and Stroud Patent No. 2,054,856 of September 22, 1936, the angles being held in locked position, as in the patented structure, by the wedges 10. When the wedges are removed, the angle 9 can be tilted downward, so as to release the hook engagement at 11, thus permitting the separation of the angles and the removal or insertion of the glass panes. The edges of the panes are spaced by the rubber strip 12, and are cushioned in the frame by the usual rubber channel 13.

The glazing frame, as above described, is seated in the sash 14, which is formed with a rabbet to receive it, as shown, such sash being provided forward of the glazing frame with a channel 15, carrying the rubber retaining strip 16. The frame is cushioned in the sash by the rubber angle 17. The flange 18 forming the front side of the channel 15, has its inner edge located, so as to provide a slight amount of clearance with respect to the base of the frame angle 8 to permit insertion of the frame into the sash opening as defined by the edge of the channel. The terms "inner" and "outer" and their variants, as used therein, have reference to locations with respect to the center of the glass panes.

The frame of the glazing unit is held in position by means of the rubber strip 16, which before insertion, has the cross section indicated in Fig. 3, so that when forced into position, the lip 19 will bear strongly upon the face of the frame. The strip, as shown, is provided with a lip 20 which fits over and covers the flange 18, the purpose being to give the construction a better appearance from the front and to add somewhat to its security. The strip is also preferably provided with a longitudinal groove 21 for interlocking with the ends of the wedges 9 which project forward of the face of the frame, as shown, so as to form a locking rib on the frame which adds materially to the security with which the rubber strip is held in its channel 15 in the sash. The thickness of the lip 22 of the strip 16 is such that it must be compressed in forcing it into its channel, so that considerable frictional resistance is provided tending to prevent the accidental displacement of the strip, after it is forced into position. The use of the rib on the frame augments this resistance to accidental displacement, rendering the anchoring of the strip very secure, even after the rubber has lost some of its resistance. While the use of the groove 21 in the rubber is desirable, it is not essential, as the rib will, in any case, perform its locking function by seating itself in the rubber due to the pressure.

The rubber may be applied in one strip extending clear around the window, but is preferably used in two sections in a window, such as that of Fig. 1, the joints being shown at 23, 23. The frame members 8 and 9 and the wedges 10, are also used in sections, the window shown requiring a section for each straight side and one for each curved corner. It will be apparent that the assembly consisting of the glass panes and the metal frame may be readily inserted into the sash and secured by the rubber strips, and on removal of the strips, the frame can be removed from the sash and opened up for replacement or cleaning of the glass by removing the wedges.

Fig. 4 illustrates a modification, in so far as the frame construction and sash construction are concerned, the rubber holding strips being the same in shape and function, as thoss heretofore described. As in the first construction, the sash 24 is provided with a rabbet for carrying the frame and has a channel 15 forward of the frame

and outward thereof for receiving the rubber strip 16. The frame which carries the glass sheet, is a channel made up of the oppositely facing angles 25 and 26, whose base flanges are secured in fixed rotation by a layer 27 of self hardening material, such as sealing wax, sulphur, putty or low fusing metal. In order to provide the locking rib for the rubber strip 16, the base flange 28 of the angle 25 is extended forward past the face of the frame, as shown at 29, so that it performs the function of the end of the wedge 18 in the construction of Figs. 1 and 2.

Fig. 5 illustrates a modification, in which the glazing unit comprises the single glass pane 30. The frame 31 is of rubber which has a recess or rabbet in which the edge of the pane fits. The edge of the frame is extended to the right of the plane of the face of the pane 30, thus providing the rib 32 which interlocks with the rubber holding strip 33. This strip differs primarily from the strip 16 heretofore described, in that it lacks the lip 20. The frame 31 fits into a rabbet in the sash 34, while the rubber strip 33 lies in a channel 35 formed in the sash and located outward of the frame 31 and in front of the plane of the face of the pane 30. The strip 33 functions to hold the frame 31 in the sash in the same manner as the strip 16, the only difference being that the strip 33 engages and holds both the pane and its frame, while the strip 16 engages and holds only the frame of the unit.

The term "sash" as used herein refers to the permanent structure in which the unit is carried. In the case of a car, this may be the portion of the car wall or may be a separate member secured in place in the car wall. Broadly, it is the fixed portion of the wall immediately adjacent and supporting the removable frame in which the glass is mounted.

What I claim is:

In combination in a window construction, a glazing unit, a channel frame carrying the unit and made up of oppositely disposed angles and wedges for releasably locking the angles together having their outer ends projecting out past the face of the frame, a sash having a rabbet in which the frame is seated and provided with a channel lying outwardly of the frame and in front thereof, and a locking means for holding the frame in the sash comprising a compressible resilient strip fitting into said last channel under compression and extending inward past the projecting ends of the wedges and interlocking therewith.

WILLIAM OWEN.