Oct. 10, 1939. C. HATOSSY 2,175,391

AUTOMOBILE WINDOW CONSTRUCTION

Filed Dec. 31, 1938 2 Sheets-Sheet 1

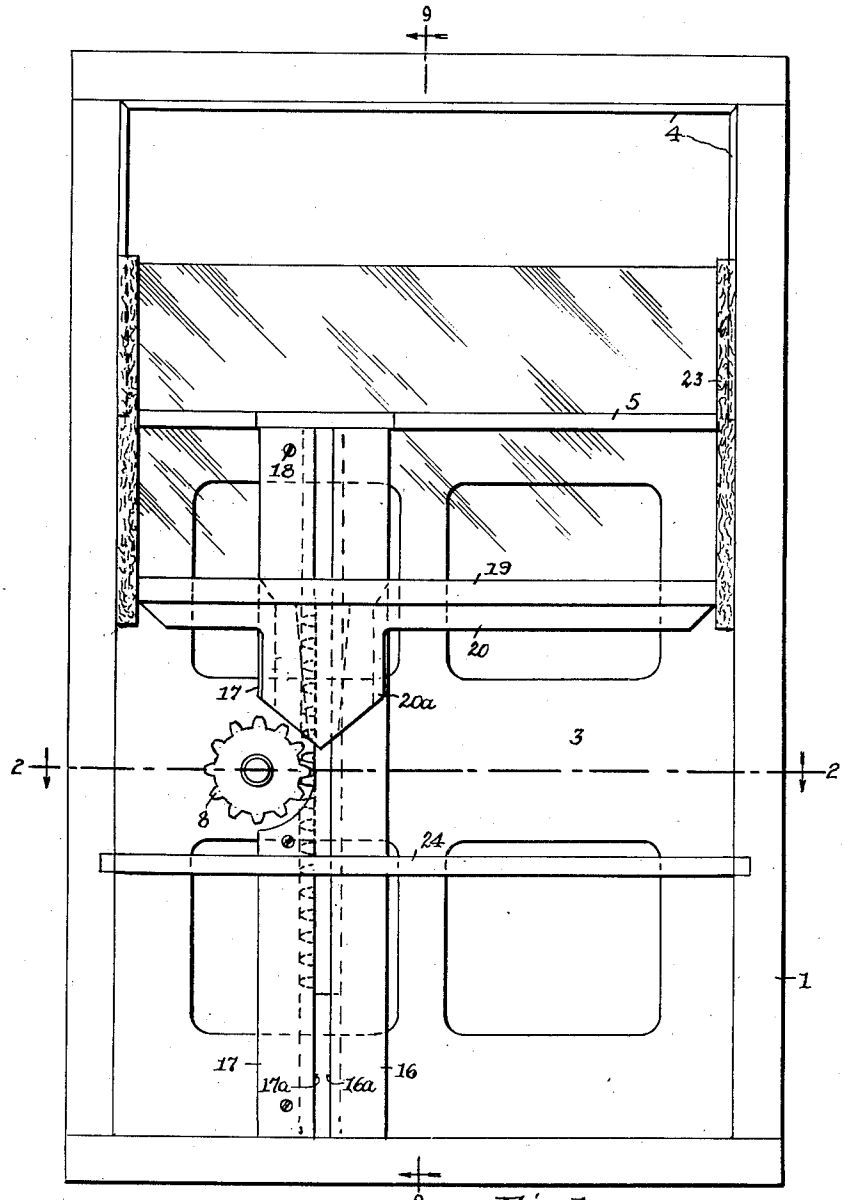


Fig. 1.

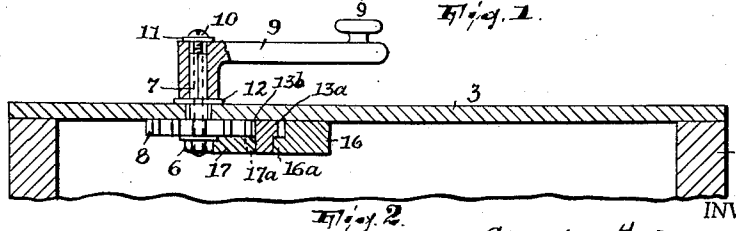


Fig. 2.

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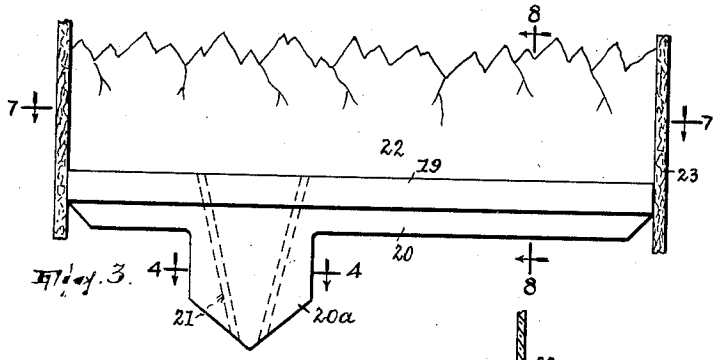


Fig. 3.

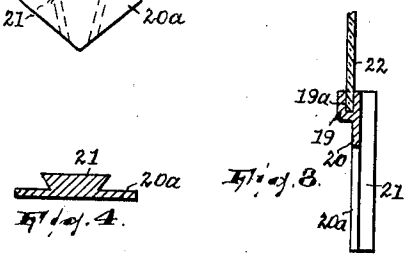


Fig. 8.

Fig. 4.

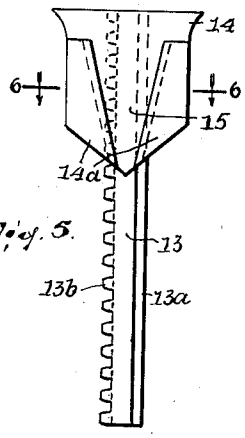


Fig. 5.

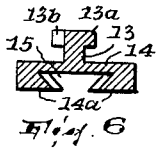


Fig. 6.

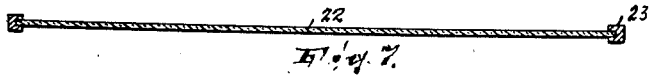


Fig. 7.

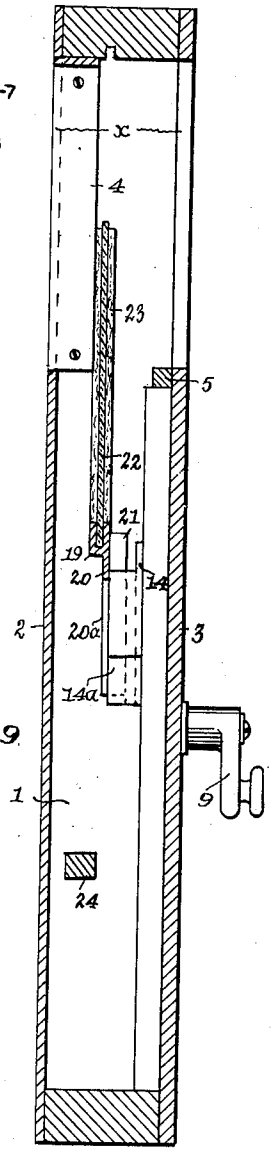


Fig. 9.

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2,175,391

UNITED STATES PATENT OFFICE

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AUTOMOBILE WINDOW CONSTRUCTION

Charles Hatossy, Passaic, N. J.

Application December 31, 1938, Serial No. 248,676

4 Claims. (Cl. 296—44)

This invention relates to elevatory closures, as a glass pane or plate, commonly used in automobile doors. When the pane becomes broken the usual construction of the mechanism for raising or lowering it is such as to make it difficult to replace it, for which purpose, in fact, a panel of the door must be removed. According to this invention a pane-including structure is mounted in a carrier so that when more or less depressed it may be lifted from the carrier and replaced by a new one.

In the drawings,

Fig. 1 is an outside elevation of a door embodying my invention, with the outer panel of the door removed from the frame thereof;

Fig. 2 is a section on line 2—2, Fig. 1;

Fig. 3 is an outside fragmentary elevation of the pane-including structure;

Fig. 4 is a section on line 4—4, Fig. 3;

Fig. 5 is an outside elevation of the carrier;

Fig. 6 is a section on line 6—6, Fig. 5;

Figs. 7 and 8 are sections on lines 7—7 and 8—8, respectively, Fig. 3; and

Fig. 9 is a section on line 9—9, Fig. 1.

Let 1 be the rectangular frame of a door structure, the outside and inside panels of which are shown at 2 and 3, respectively, in Fig. 9, each providing near the top a rectangular window opening x. Molding 4 is secured across the top of the frame and down each stile to a depth corresponding with that of said opening, being here of such width as to reach from the face of the outer plane of the wall 2 appreciably toward wall 3. A horizontal strip 5 forming a cross-member is fixed to the inside of wall 3 flush with the bottom of the corresponding opening.

At a suitable point in wall 3 is journaled the means for raising or lowering the pane structure 1, thus: Secured by a nut 6 on the inner reduced end of a spindle 7 which has a bearing in said wall is a gear 8. On the spindle outwardly of said wall is a handle 9 in any way made non-rotative on the spindle, as by forming the latter square in cross-section and providing the handle with a square bore to fit the spindle. The handle is to coact with gear 8 to exert clamping pressure on the panel so as by incidental friction to hold the pane structure supported at any elevation to which it is adjusted, wherefore the spindle extends short of the outer end of the handle bore and a screw 10 is screwed into the handle, its head acting through a washer 11 between it and the handle to effect the clamping. There is preferably a washer 12 between the handle and panel.

A vertically movable rack-member or toothed carrier whose teeth mesh with the rack is constructed as follows: A strip 13 has longitudinal flanges 13*a*–13*b* in the same plane, flange 13*b* being developed as teeth to mesh with the gear. On the upper end of and projecting forwardly from this strip is a head 14 which has forward vertically elongated projections 14*a*, their inner sides converging downwardly and also diverging, as viewed in plan. Thus the head provides a socket 15 which is dove-tailed in plan and tapers downwardly.

The carrier is to be confined to movement vertically as follows: At its right side its flange underlaps the flange 16*a* of a vertical strip 16 in fixed relation to and at the inner side of panel 3. At its left side its toothed flange underlaps the flanges 17*a* of spaced alined strips 17 which may be secured removably to panel 3 as by screws 18. The space between strips 17 accommodates the gear 8.

The structure including the pane is formed as follows: There is a horizontal bar portion or bar 19 having an upwardly open longitudinal groove 19*a*. This bar projects forwardly with respect to a flange 20 depending therefrom and has a depending web 20*a*. At the back of the bar, flange and web is a tongue 21 which in front elevation and in cross-section conforms in shape to socket 15, in which it is adapted to be received removably. The pane 22 is seated and is secured, as by cementing or otherwise, in the groove 19*a* of bar 19, so that the pane-including structure may be lifted as a unit from the carrier by grasping only the pane. Fitting and preferably cemented to the side edges of the pane are resilient, as felt, sealing strips 23, which wipe both the stiles of the door frame and its molding 4.

If the pane is broken or damaged, the handle 9 and thus the gear are turned to raise the carrier and hence elevate the pane-including structure to about the position shown in Fig. 9, whereupon said structure may be lifted from the carrier for the purpose of replacing the pane with a new one.

In order to prevent said structure from falling to the bottom of the space betwen the panels 2—3 in the operation of removing it, where it would be inaccessible, there is provided a barrier in the form of a horizontal strip 24 supported at its ends in the door-frame stiles, being depressed sufficiently to permit the descent of the carrier to the position in which the top of the pane is about level with the bottoms of the open-

ings x and also arranged to be in the path of such structure as it falls between wall 1 and the carrier.

By utilizing a tongue and socket of tapering form there is not only the advantage that the resulting joint formed will be characterized by absence of looseness of the pane structure in the carrier but the step of entering the tongue into the socket, which at that time must be more or less depressed in the well between the panels and below the openings x, is obviously facilitated.

Absence of looseness characterizes my construction also in this respect, that the parts formed by the carrier and pane structure on the forming of said joint have lapping contact with each other, as by the web 20a with the projection 14a.

The carrier is directly confined against looseness by its strip or shank 13 fitting snugly between the strips 16—17 and receiving snugly between its flange and its head 14 the flanges of said strips.

In short, angular displacement of parts being usually principally responsible for lost motion and consequent rattling, such displacement is by my construction prevented both as to the carrier in its guideway and as to the pane structure in the carrier.

Having thus fully described my invention, what I claim is:

1. In combination, with a door frame structure including stiles and a cross-member connecting the stiles below and spaced from the top of the frame and thereby leaving an opening between itself and such top, said structure having an upright portion between and spaced from the stiles and below the cross-member and providing an up-and-down-extending guideway, of a pane-structure carrier confined by the guideway to move in an up-and-down-extending path and a pane-structure surmounting and removable from the carrier and movable therewith to position to close or leave open said opening, and means, carried by said frame structure and engaging the carrier, for moving the carrier up or down, one of the elements formed by said carrier and pane-structure having an upright tongue and the other a socket extending in an up-and-down direction and receiving the tongue and said elements having upright faces in contact with each other each side of and close to the tongue.

2. The combination set forth in claim 1 characterized by said socket and tongue being downwardly tapering and fitting each other.

3. The combination set forth in claim 1 characterized by one of the elements formed by said portion of the frame structure and the carrier having upright faces in contact with the other element each side of and close to the guideway.

4. In combination, with a door frame structure including stiles, a cross-member connecting the stiles below and spaced from the top of the frame and thereby leaving an opening between itself and such top, a panel extending from stile to stile and from the cross-member downwardly, and vertical spaced parallel strips secured to the inner face of the panel and each of which has a rabbet at the side thereof adjoining the other and adjacent the panel, of a pane-structure, a carrier for the latter having as a fixed part thereof a vertical strip portion occupying the space between the strips and flanges on such strip portion received by the respective rabbets, said carrier being in face to face contact with said strips both sides of said space, one of the elements formed by the carrier and pane structure having an upright tongue and the other a socket extending in an up-and-down direction and receiving the tongue and said elements having upright faces in contact with each other each side of and close to the tongue.

CHARLES HATOSSY.