Oct. 16. 1934. T. G. CONWAY ET AL 1,976,773

BUS OR CAR WINDOW CONSTRUCTION

Filed Aug. 24, 1933

Fig. 1.

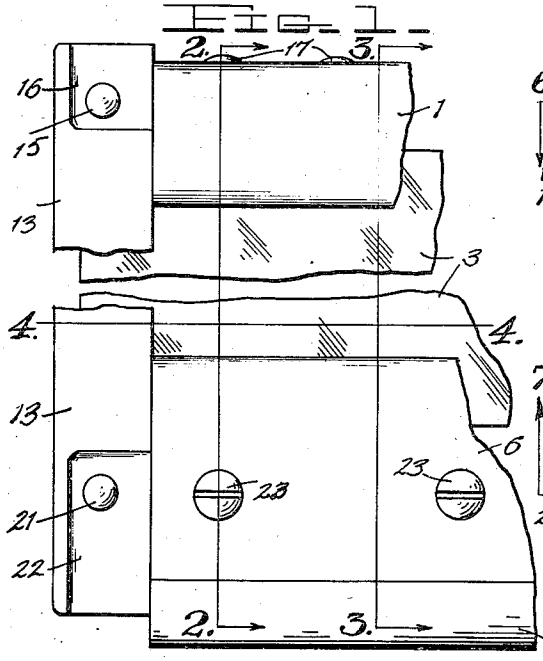
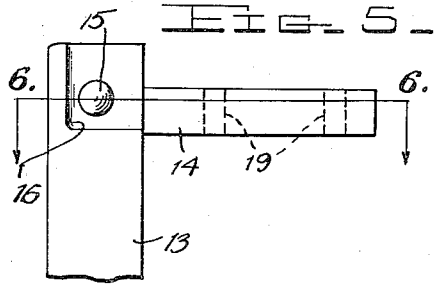


Fig. 5.



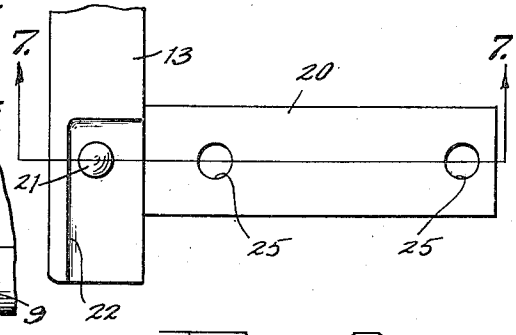


Fig. 2.

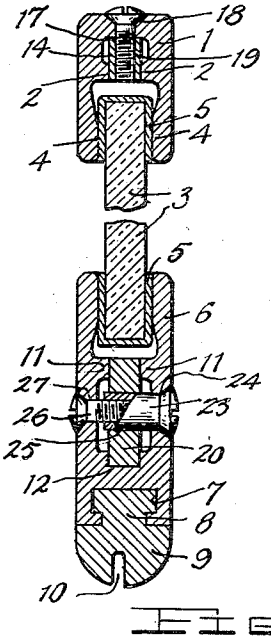


Fig. 3.

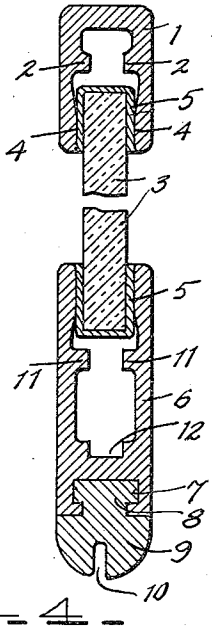


Fig. 6.

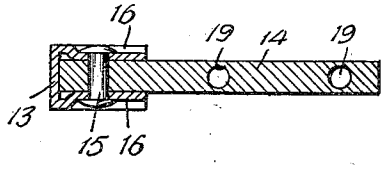


Fig. 7.

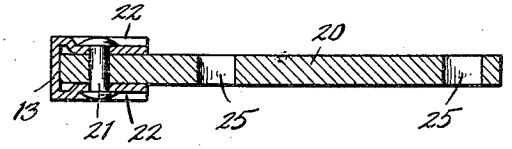
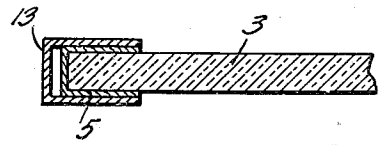


Fig. 4.



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Patented Oct. 16, 1934 1,976,773

UNITED STATES PATENT OFFICE

1,976,773

BUS OR CAR WINDOW CONSTRUCTION

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Application August 24, 1933, Serial No. 686,532

7 Claims. (Cl. 189—76)

This invention relates to bus or car window construction, and more particularly to the top and bottom rails of a window sash, and the means for connecting them to the side straps joining the top and bottom rails together. An object is to provide top and bottom rails into which the glass may be easily inserted and tightly held, and which at the same time will permit of convenient removal of the glass, particularly in the case of broken pieces which do not protrude from the channel sufficiently to catch hold of. A further object is to provide top and bottom channel rails having inherent springiness in their sides, and which at the same time are reinforced longitudinally to prevent bowing when the rails are glazed, it being further proposed to provide such reinforcements which will not detract from the springiness of the sides, and which are further arranged and adapted to limit the depth to which the glass may be inserted into the rails.

With the above and other objects in view an embodiment of the invention is shown in the accompanying drawing, and this embodiment will be hereinafter more fully described with reference thereto, and the invention will be finally pointed out in the claims.

As the construction, according to the invention, is the same at each side of the window sash, only one side will be shown in the illustrated adaptation of the invention.

In the drawing:

Fig. 1 is a fragmentary front elevation, showing the upper and lower corner sections at one side of the window sash.

Fig. 2 is a vertical sectional view, taken along the line 2—2 of Fig. 1.

Fig. 3 is a vertical sectional view, taken along the line 3—3 of Fig. 1.

Fig. 4 is a horizontal sectional view taken along the line 4—4 of Fig. 1.

Fig. 5 is a fragmentary elevation of one of the side straps and the rail attaching bracket tongues at its ends.

Fig. 6 is a horizontal sectional view taken along the line 6—6 of Fig. 5, and

Fig. 7 is a horizontal sectional view, taken along the line 7—7 of Fig. 5.

Similar numerals of reference will be used to denote like parts in the several figures of the drawing.

Referring to the drawing, the top rail 1 is of inverted U-shape in cross section to provide a glass receiving channel and is to be formed of suitable material having slight inherent resiliency. Upon the inner surfaces of each side, and intermediate the upper and lower ends of the channel, longitudinally extending ribs 2—2 are formed and project toward each other, the space between these ribs being less than the thickness of the window sash glass 3, so that they act as limiting stops to limit the depth to which the glass may be inserted in the channel. The sides of the channel are thickened inwardly at the open ends, as at 4—4, to close in tight about the sides of the inserted glass. The four edges of the glass are bound with glazing tape 5, the edges of which are trimmed off flush with the rails after insertion of the glass.

The bottom rail 6 is of substantially the same general form as the top rail, but is of greater height, and within a T-groove 7 in its lower end there is interlockingly engaged the T-rib 8 of a sealing strip 9, of rubber, felt or other suitable sealing material for engaging upon the sill, a slot 10 being formed in its under surface for engaging the weather strip rib of the sill in the usual manner. A pair of longitudinal ribs 11—11 are formed on the inner surfaces of the sides intermediate the upper and lower ends of the channel, and in the base of the channel there is provided a longitudinal groove 12 corresponding in width to the spacing of the ribs and adapted to receive the end rail assembling bracket tongue, as will presently more fully appear.

The vertical side straps 13, only one of which is shown, are in the form of U-shaped channels adapted to receive the vertical taped edges of the sash glass 3. At the upper end a horizontally projecting bracket tongue 14 is secured between the sides by a rivet 15 in spaced relation below the upper end of the strap, the sides being indented, as at 16—16, so that the rivet heads are below the surface of the strap, and the latter may therefore be inserted in a suitable fixed channel of the window frame to have sliding movement therein. The tongue 14 is assembled with the top rail 1 simply by inserting it in the end of the channel between the ribs 2—2, as shown in Fig. 2, and is secured by means of vertically disposed screws 17—17 engaged through counter sunk holes 18—18 in the transverse upper portion of the top rail and screwed into vertically disposed threaded holes 19—19 in the tongue, the screws drawing the tongue up tightly against the under surface of the upper portion of the top rail.

At the lower end of the side strap a second horizontally projecting tongue 20 is secured by a rivet 21 the sides of the rail being indented, as at 22, in a similar manner to the indentations 16—16 at the upper end. The tongue 20 is rela-

tively longer, and wider in its vertical dimension, than the tongue 14, and is assembled with the bottom rail by inserting the same in the end of the channel, the lower edge seating in the groove 12 and the upper edge being disposed between the ribs 11—11, and being secured by a pair of transversely disposed binding screws, each comprising a tubular interiorly threaded screw part 23, engaged in a counter-sunk hole 24 in one side of the rail and in an aligned hole 25 in the tongue, and an externally threaded screw part 26 engaged in a counter-sunk hole 27 in the other side of the rail and screwed into the tubular screw part. The engagement of these transverse binding screws not only secures the bracket tongue firmly in place, but draws the sides of the rails tightly inwardly toward the glass.

The complete assembly of the sash is effected as follows:—

The top and bottom rails 1 and 6 are forced over the glazing tape 5 at the upper and lower edges of the glass, the rails springing open to a slight extent as the glass is forceably inserted, thus insuring a tight binding fit of the glass in the channels. The longitudinal ribs 2—2 and 11—11 not only limit the depth to which the glass may be inserted, but provide a longitudinal stiffening reinforcement which permits the sides to spring outwardly and inwardly, but prevents longitudinal bowing of the rails, so that there is a uniformly tight fit of the rail along the length of the sash. The tendency to bow is particularly pronounced when the sides of the rails are comparatively thin, so that the longitudinal reinforcements are especially advantageous in this case. The side straps 13 are forced over the glazing tape 5 at the side edges of the glass, as shown in Fig. 5, the bracket tongues 14 and 20 being inserted in the ends of the top and bottom rails between the ribs 2—2 and 11—11, and are secured in place by the screws 17 and 23—26, as shown in Fig. 2.

Removal of the glass is very readily effected by disengaging the screws and drawing the rails and straps from the edges of the glass. The tape 5 upon the edge of the glass fits so tightly at times as to hold the glass with sufficient force to make it difficult to remove by pulling, particularly in the case of a broken piece of glass that does not protrude enough to catch hold of. In this case the opening in the rails beneath the edge of the glass permits a drift or pry to be inserted to force the glass out of the channel.

We have illustrated and described preferred and satisfactory embodiment of the invention, but it will be obvious that changes may be made therein, within the spirit and scope thereof, as defined in the appended claims.

Having thus described our invention what we claim and desire to secure by Letters Patent is:—

1. In a window construction, a glass pane, a glass receiving rail of channel form having a pair of spaced sides and a transverse connecting portion, an edge of said glass pane being disposed within said rail between said sides, and longitudinal ribs upon the inner surfaces of said sides, disposed between the edge of said glass pane and said transverse connecting portion in spaced relation to said transverse connecting portion adapted to stiffen said sides longitudinally.

2. In a window constructinon, a glass pane, a glass receiving rail of channel form having a pair of spaced sides and a transverse connecting portion, an edge of said glass pane being disposed within said rail between said sides, and directly opposed longitudinal ribs upon the inner surfaces of said sides, disposed between the edge of said glass pane and said transverse connecting portion in spaced relation to the upper ends of said sides and said transverse connecting portion adapted to stiffen said sides longitudinally, said ribs projecting inwardly beyond the planes of the side surfaces of said glass pane and forming limiting stops to limit the extent of insertion of the glass pane in said rail.

3. In a window construction, a glass pane, a glass receiving rail of channel form having a pair of spaced sides and a transverse connecting portion, an edge of said glass pane being disposed within said rail between said sides and longitudinal ribs upon the inner surfaces of said sides, disposed between the edge of said glass pane and said transverse connecting portion in spaced relation to the upper ends of said sides and said transverse connecting portion adapted to stiffen said sides longitudinally, said ribs being directly opposed to each other and spaced apart a distance less than the thickness of the glass edge and forming limiting stops to limit the extent of insertion of the glass in said rail, the spacing apart of said ribs providing a space adjacent the edge of said glass pane whereby said glass pane may be removed from said rail by pressure applied to its edge through means inserted in said space.

4. In a window construction, a glass pane, a glass receiving rail of channel form having a pair of inherently resilient spaced sides and a transverse connecting portion, said sides adapted to be sprung transversely, an edge of said glass pane being disposed within said rail and gripped at each side by said resilient sides, and longitudinal ribs upon the inner surfaces of said sides disposed between the edge of said glass pane and said transverse connecting portion in spaced relation to said transverse connecting portion adapted to stiffen said sides longitudinally.

5. In a window construction, a glass pane, a glass receiving rail of channel form having a pair of inherently resilient spaced sides, an edge of said glass pane being disposed within said rail and gripped at each side by said resilient sides, each of said sides having a longitudinally extending thickened portion in spaced relation to the lower end adapted to stiffen said sides longitudinally, the relatively thinner portions of said sides between said thickened portions and said lower end providing increased resiliency.

6. In a window construction, a glass pane, a rail of channel form adapted to receive a horizontal edge of the glass pane, and comprising a pair of spaced sides and a transverse connecting portion, and directly opposed longitudinal ribs upon the inner surfaces of said sides in spaced relation to each other and disposed between the edge of said glass pane and said transverse connecting portion, a channel side strap engaged with a vertical edge of the glass, a right angularly projecting tongue at one end of said strap engaged in the end of said rails between said ribs, said ribs engaging opposed sides of said tongue and vertically disposed fastening means extended through said transverse portion of the rail and securing said tongue therein.

7. In a window construction, a glass pane, a rail of channel form adapted to receive a horizontal edge of the glass pane, and comprising a pair of spaced sides and a transverse connecting portion, and directly opposed longitudinal ribs upon the inner surfaces of said sides in spaced relation to each other and disposed between the edge of said

glass pane and said transverse connecting portion, a channel side strap engaged with a vertical edge of the glass, a right angularly projecting tongue at one end of said strap engaged in the end of said rails between said ribs, said ribs engaging opposed sides of said tongue, and fastening means extending between said sides of the rail adapted to draw said sides toward each other to bind said ribs against the sides of said tongue and said sides against the sides of said glass pane and securing said tongue therein.

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