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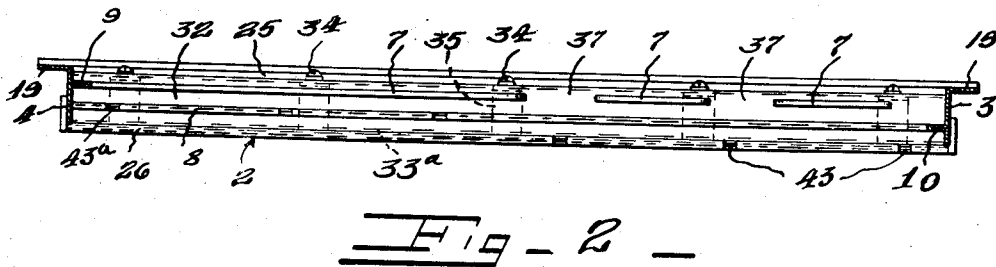
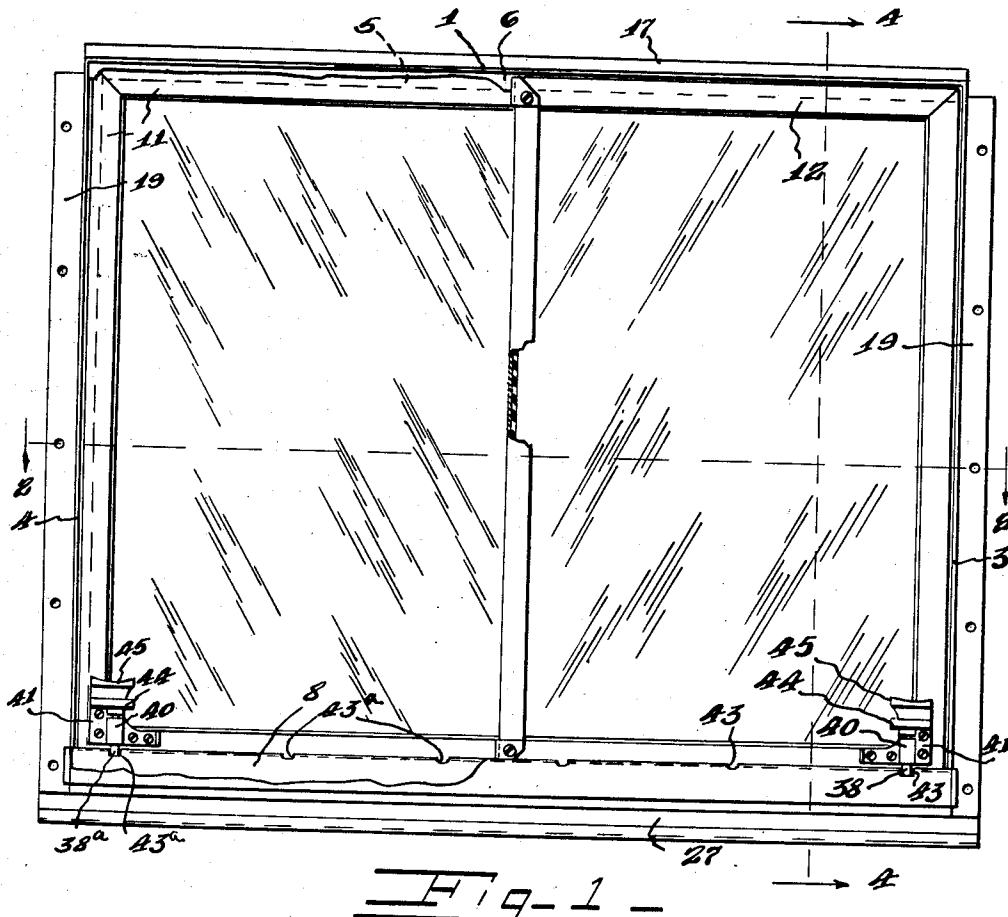
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WINDOW FRAME AND SASH UNIT

Filed July 8, 1935

2 Sheets-Sheet 1



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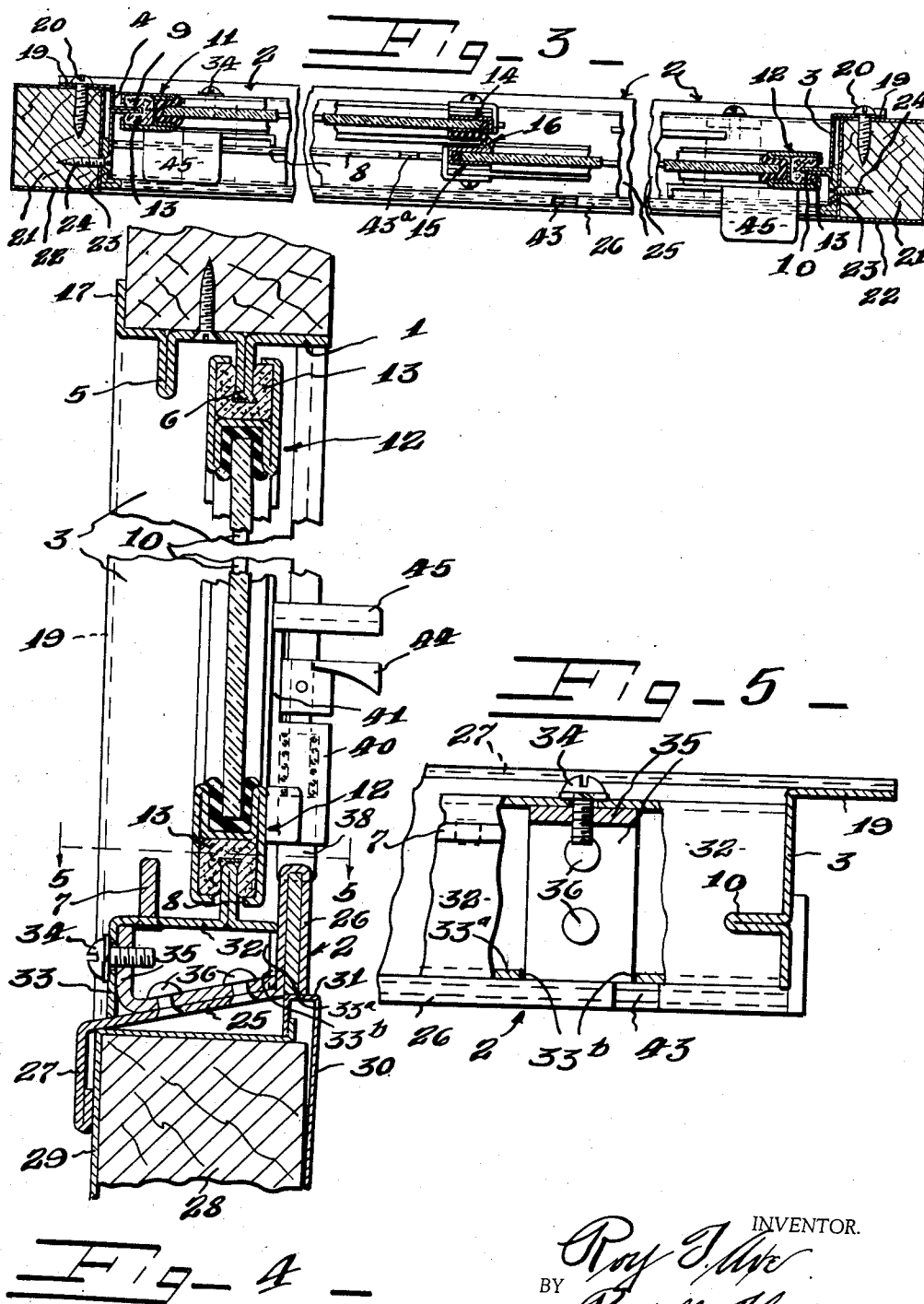
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WINDOW FRAME AND SASH UNIT

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2 Sheets-Sheet 2



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WINDOW FRAME AND SASH UNIT

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Application July 8, 1935, Serial No. 30,233

3 Claims. (Cl. 296-44)

This invention relates to window constructions for motor vehicles, as buses, and has for its object a window embodying complementary sashes for closing a single window opening in which one sash, and preferably both, are slidable endwise relative to each other to partially open the window opening, which window construction is particularly simple and economical in construction and readily installed by the bus manufacturer, it being understood that the window equipment is supplied by one manufacturer, as a unit, and installed in position in the car body by the bus manufacturer.

It further has for its object a window unit construction in which the window frame is slidably interlocked in weather tight relation with both sashes by means of ribs on the frame and grooves in three sides of each sash for receiving the ribs on the top and bottom and upright window frame members.

It further has for its object a particularly simple and efficient means for shifting one sash or each sash to partly open the window opening and for holding it in its shifted position.

It also has for its object a simple and economical construction by which the sash frames which slidably interlock with ribs on the window frame can be readily demounted.

It further has for its object a particularly simple and efficient construction and assembly of a window frame and window of this type.

It also has for its object an arrangement of the guide ribs on the lower frame member of the window frame, whereby water is prevented from accumulating and can run out from the channel between the two parallel guide ribs on the lower window frame member.

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 drawings in which like characters designate corresponding parts in all the views.

Figure 1 is an elevation, partly in section, of this window construction unit.

Figure 2 is a sectional view on line 2-2, Figure 1, the sash being removed.

Figure 3 is a sectional view on the plane of line 2-2, Figure 1, the contiguous portion of the car body and structure being also shown.

Figure 4 is an enlarged, sectional view on line 4-4, Figure 3, the contiguous portion of the car body being also shown.

Figure 5 is a sectional view taken on the plane

of line 5-5, Figure 4, showing the bottom frame member, partly broken away, and also showing one of the upright side members of the window frame in section.

The window frame comprises top member 1, 5 bottom member designated generally 2, and side or upright members 3, 4, the top member being formed with a pair of parallel ribs 5 and 6, the bottom member being formed with similar ribs 7 and 8, and each of the side members being formed with a single rib 9, 10, the ribs 5, 7 and 9 being aligned and the ribs 6, 8 and 10 being aligned. The ribs 5, 7 and 9 constitute one set and form a guide for an outer sash 11 and the ribs 6, 8, 10 constitute another set and form a guide for an inner sash 12, these sashes together filling the opening of the window frame, when closed, and each is formed with grooves extending inwardly into the outer edges of the top rail, one stile and the bottom rail, for receiving the ribs. These grooves are lined with a suitable yielding material 13 which makes the sashes weather tight and holds them from rattling. The ribs 5, 7, and 9 extend into the grooves of the outer sash 11 and the ribs 6, 8 and 10 extend into the grooves of the inner sash 12. As seen in Figure 3, the sash frames overlap each other and the stiles 14 and 15 are in overlapping relation, when both sashes are closed, and also the stiles 14 and 15 have coacting means to close the crevice between the lapping portions, when the sashes are closed.

As here shown, the stile 14 of the outer sash 11 is formed with a flexible resilient weather strip 16 which wipes on the inner face of the stile 15 when the sashes are in closed position. Each sash is slidable horizontally, the outer sash being slidable along the ways or ribs 6, 7 out of and into engagement with the rib 9 and the inner sash 12 being slidable along the ribs 6 and 8 out of and into engagement with the rib 10.

The window frame is formed of sheet metal, the upper frame member 1 being angular in cross section with the ribs 5 and 6 folded up therefrom. The frame member 1 is here shown as provided with an upwardly extending flange 17 which laps the outer side of the frame structure of the car or bus body. Likewise, the upright window frame members 3, 4 are formed of sheet metal with the ribs 9 and 10 folded therefrom and are also formed with outwardly extending flanges 19 which are lapped on the outer faces of the frame structure of the car or bus body and secured thereto in any suitable manner, as by fastening members 20.

As here shown, the contiguous portion or post structure 21 of the car or bus body is shown as sheathed in a sheet metal casing 22 and also a strip 23 is interposed between each upright member 3 or 4 and the frame or post structure 21. The upright members are additionally secured to the frame or post structure by fastening members 24 which extend through the upright frame members 3, 4 and the interposed strip 23 into the frame or post structure 21.

The bottom member 2 of the window frame is also formed up of sheet metal and includes a base or sill portion 25. This includes an intermediate portion inclined out of a horizontal plane and upwardly extending flange 26 at the inner side of the window structure and downwardly extending flange 27 at the outer side of the window structure, thus lapping the frame member 28 around the window opening in which the window frame is mounted. This member 28 is also sheathed in a sheet metal casing 29, one wall 30 of which is formed with a raised flange or bead 31 on which the inner edge of the base or sill member 25 rests.

The lower frame member also comprises an angular strip 32 usually formed of sheet metal and having provided thereon the ribs 7 and 8, which rise from the horizontal portion of the strip 32. The angular strip 32 also has outer and inner downwardly extending flanges 33, 33^a, which rest on the sill member 25, the inner flange abutting against the flange 26 on the base 25 and being formed with notches 33^b which provide passages for the brackets 35 when the strip 32 is being removed and replaced during removal and replacement of the sash, as herein-after described. This angular strip 32 is secured to the base or sill member 25 in any suitable manner, as by screws 34, extending through the flange 33 into upright arms of angular brackets 35 secured, as by rivets 36, to the intermediate part of the sill member 25. The rib 8 is folded up from the strip 32. The rib 7 is interrupted to provide passages 37 and for convenience in forming the rib 7 with the passages 37, said rib is usually formed of separate aligned sections, spaced apart and secured to the strip, in any suitable manner, as by a riveting operation.

The purpose of interrupting the rib 7 constituting the guide for the outer sash is for permitting water to drain from between the guides 7 and 8, when both sashes are closed, it being understood that in wet weather both sashes are ordinarily closed.

In operation, the sash 12 can be opened by sliding it along the ribs 6 and 8 to the left (Figure 1) and likewise, the sash 11 can be opened by sliding it to the right along the ways 5, 7.

To initially assemble the sashes in the frame or afterwards remove and replace them, the strip 32, being detached, is applied to the sashes with the ribs 7 and 8 in the grooves in the bottom rails of the sashes 11, 12. The sashes are slid to overlap sufficiently so that their stiles will clear the ribs 9, 10 or so that the over-all width of the two sashes so overlapped is less than the distance between the ribs 9, 10. The sashes are then tilted to fit the grooves in the upper edges of the top rails of the sashes over the ribs 5, 6. The sashes with the strip 32 applied are moved from tilted into upright position within the frame, the notches 33^b passing astride the brackets 35. The screws 34 are then applied. The sashes 11, 12 can now be slid into normal position, causing the grooves in the outer stiles there-

of to fit over the guide ribs 9, 10. The reverse of this operation takes place in removing the sash. The window frame is fitted to the window opening in the vehicle body until the flanges 17, 19 and 27 abut against the outer face of the vehicle body around the window opening, and the bottom rail 25 rests on the flange 31 and then secured by screws passing through the flanges 17, 19, 27 into the car body.

The sashes are normally held in their closed or any one of a number of open positions in any suitable manner, as by bolts 38, 38^a, suitably mounted in guides 40 formed on base plates 41 which are secured to the lower corners of the sash, the bolt 38 of one sash, as the inner sash 12, coacting with sockets 43 formed in the upper edge of the flange 26 and the bolt 38^a coacting with sockets 43^a in the edge of the guide rib 8 of the sill member 25. These bolts are spring-pressed and have handles 44 arranged in pinch-handle relation to stationary abutments 45 provided on the outer stile of each sash.

Owing to this window construction, and particularly to the guide ribs, the sashes are readily operable and always held against rattling and are always weather tight when closed. Furthermore, the entire unit construction consisting of the frame and sash is particularly economical in construction and readily applied by the car or bus manufacturer.

What I claim is:—

1. In a unit window construction, a frame including top, bottom and side members, the bottom member comprising a sill portion having an inclined intermediate body and an upward flange at one edge of the body and a downward flange at the other end of the body, and a demountable guide strip mounted on the inclined body and having a horizontal top portion and a vertical outer edge portion, the horizontal top portion being formed with a pair of inner and outer parallel guide ribs and the top frame member being formed with a pair of guide ribs vertically aligned with the former ribs, the side members of the frame being formed with a guide rib aligned with one of the bottom and top members, the aligned ribs forming two sets of sash guides, a pair of sash frames complementary to each other filling the opening of the window frame and arranged in lapping relation to each other, each sash frame being provided with a groove in its top and bottom rail and one stile for receiving one set of ribs of the window frame, thereby providing outer and inner sashes, each coacting with different guide ribs on the frames.

2. In a unit window construction, a frame including top, bottom and side members, the bottom member comprising a sill portion having an inclined intermediate body and an upward flange at one edge of the body and a downward flange at the other end of the body, and a demountable guide strip mounted on the inclined body and having a horizontal top portion and a vertical outer edge portion, the horizontal top portion being formed with a pair of inner and outer parallel guide ribs and the top frame member being formed with a pair of guide ribs vertically aligned with the former ribs, the side members of the frame being formed with a guide rib aligned with one of the bottom and top members, the aligned ribs forming two sets of sash guides, a pair of sash frames complementary to each other filling the opening of the window frame and arranged in lapping relation to each other, each sash frame being provided with a groove in its top and bot-

tom rail and one stile for receiving one set of ribs of the window frame, thereby providing outer and inner sashes, each coacting with different guide ribs on the frames, the guide rib on the bottom frame member being interrupted providing passages.

3. In a unit window construction, a frame including top, bottom and side members, the bottom member comprising a sill portion having an inclined intermediate body and an upward flange at one edge of the body and a downward flange at the other end of the body, and a demountable guide strip mounted on the inclined body and having a horizontal top portion and a vertical outer edge portion, the horizontal top portion being formed with a pair of inner and outer parallel guide ribs and the top frame member being formed with a pair of guide ribs vertically aligned

with the former ribs, the side members of the frame being formed with a guide rib aligned with one of the bottom and top members, the aligned ribs forming two sets of sash guides, a pair of sash frames complementary to each other filling the opening of the window frame and arranged in lapping relation to each other, each sash frame being provided with a groove in its top and bottom rail and one stile for receiving one set of ribs of the window frame, thereby providing outer and inner sashes, each coacting with different guide ribs on the frames, and means for sliding the sashes and holding each sash in its shifted position, the holding means for one sash coacting with the upper edge of the upwardly extending flange of the sill portion.

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