Dec. 6, 1966 W. C. WILLIAMS 3,289,738

WINDOW ASSEMBLY

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Fig. 1

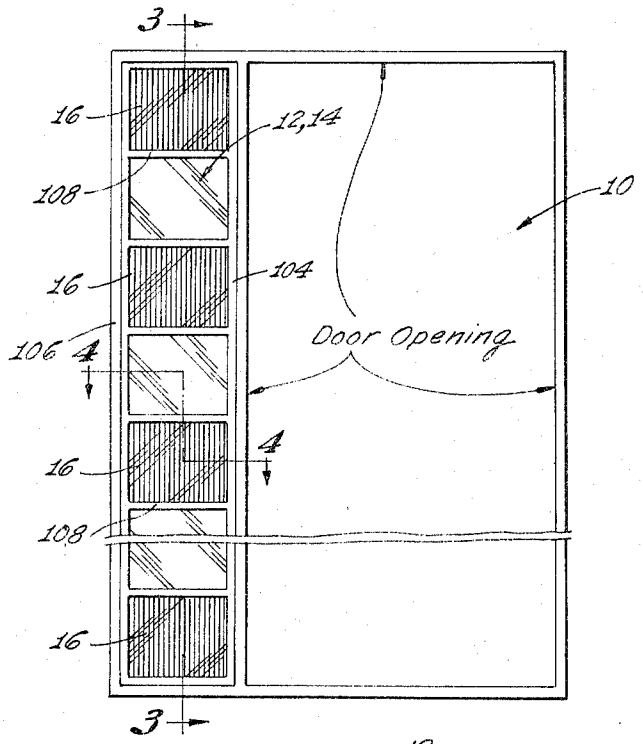
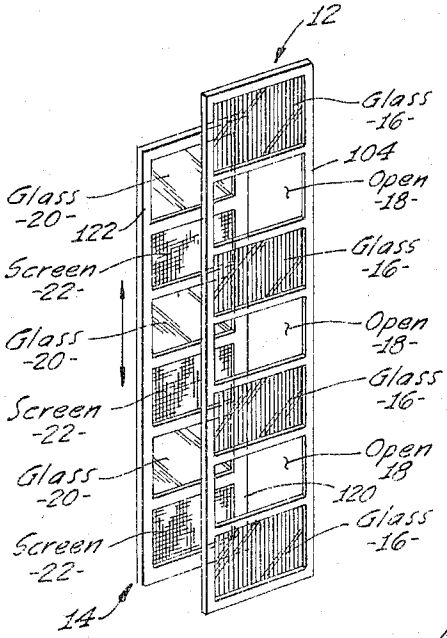


Fig. 2



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Fig. 3

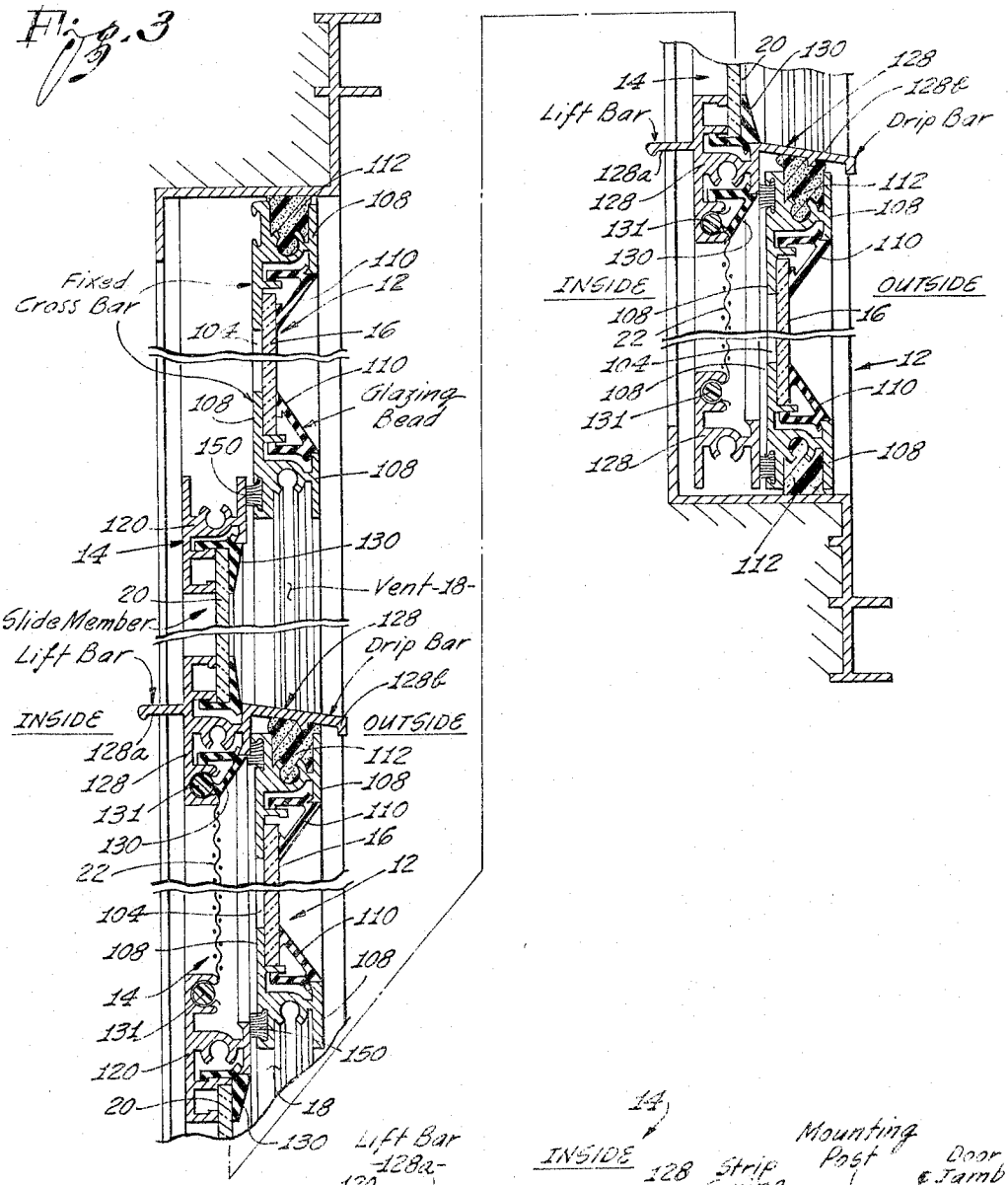
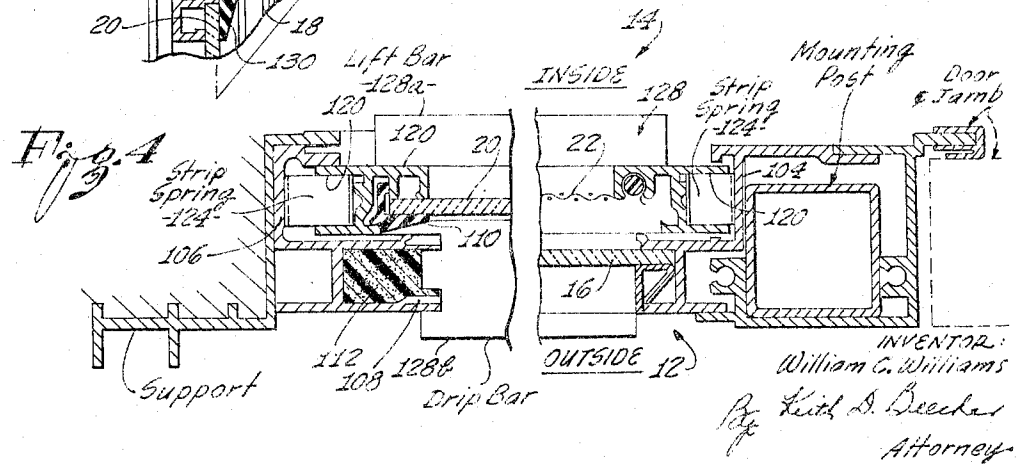


Fig. 4



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3,289,738

WINDOW ASSEMBLY

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5 Claims. (Cl. 160—102)

The present invention relates to an improved unitary slide window assembly which may be used in a vertical or horizontal position, for example, in house trailers, or in other vehicles, or in any of a wide variety of structures.

The window assembly of the present invention is presently contemplated having particular utility, when mounted beside the door of a house trailer, or the like. It will become apparent as the description proceeds, however, that the assembly of the invention has broad application in a wide variety of structures, wherever windows are required, and it may be mounted in a vertical or horizontal position, whichever is desired and as indicated above.

The embodiment of the invention to be described is a unitary multiple-ventilating window assembly which includes a slide unit slidably mounted in a stationary unit. The slide unit is movable in the stationary unit, so that the multiple-ventilating window may be "opened" or "closed". In the particular embodiment to be described herein, the slide unit includes screens which are moved into position when the window is opened.

In the embodiment to be described, the stationary unit is constructed, for example, of extruded aluminum sections. The sections each has an integral construction, as will be described. The slide unit, likewise, is constructed of extruded aluminum sections in the embodiment to be described, and these sections also have an integral construction. It will be understood, of course, that the assembly may be constructed of any suitable material.

In a constructed embodiment of the invention, and in the embodiment to be described, fixed panels are mounted in the stationary unit at spaced positions along its length. These panels, for example, may be composed of glass, or other transparent or translucent materials; or they may be formed of an appropriate opaque material, if so desired.

Further panels are mounted at spaced positions in the unitary slide unit of the embodiment to be described. These further panels, likewise, may be composed of any suitable transparent, translucent or opaque material.

A slide unit is mounted to be moved with a sliding movement in the stationary unit of the embodiment to be described by a direct manual manipulation. The slide unit may be so moved from a position in which its panels extend across the spaces between the fixed panels in the stationary unit, at which position the window is "closed"; to a position in which its panels are moved over the fixed panels in the stationary unit, at which position the window is "open."

Screens may be mounted in the slide unit, as mentioned above, to extend across the spaces between the aforesaid panels thereof. Then, when the slide unit is moved to open the window, the screens are drawn across the respective openings in the stationary unit between the fixed panels thereof.

An object of the present invention is to provide an improved window assembly of the type described above, which is constructed to utilize the unitary sections, and to permit the window to be opened or closed by convenient direct manual manipulation.

Another and more particular object of the invention is to provide such an improved window assembly which provides a mulitple-ventilating controllable structure, and

which may be opened or closed by a simple direct manual slide operation.

In another object of the invention is to provide such an improved window assembly which is rugged and simple in its construction, and which can be manufactured at a relatively low cost and sold at a relatively low price.

A feature of the improved window assembly of the invention is the construction of the stationary and slide units of the assembly of extruded sections, composed, for example, of aluminum, aluminum alloy, or other suitable material, whereby the panels and screens are supported and mounted in a simple manner and without the need for any applied or built-up sections. By the construction of the invention, the screens and panels in the slide unit of the assembly may be supported in uniplanar relationship and can be interchangeable if so desired.

The slide unit in the constructed embodiment of the invention includes transverse bars, or strips, which may be part of the above-mentioned integral extruded construction, and which extend across the slide unit at the respective junctions of the screens and panels. These bars are formed on the inside of the slide member, and they serve as convenient lift bars for manually opening and closing the window.

The slide unit of the aforesaid constructed embodiment of the invention also includes external transverse strips, or bars, which also extend across the slide unit at the junction of the respective screens and panels thereof. These latter bars are positioned to engage resilient weather stripping in transverse portions of the stationary unit so as to provide an effective seal when the window is closed; and the latter strips also serve as effective drip caps to prevent rain, and the like, from dripping into the internal portions of the assembly.

The screens and panels may be held on the slide unit, and the panels may be held in the stationary unit, by usual glazing beads, or other supports, so as to be readily replaceable. In addition, the slide unit rides in guideways in the stationary unit, and it is held against gravitational sliding movement, for example, by resilient bowed spring strips in one or both guideways. The slide unit can be mounted in the stationary unit so as to be readily removable, if so desired.

A further particular object of the invention, therefore, is to provide a multiple-ventilating window assembly of the slide type which is capable of direct manual operation, and which has a rugged unitary construction utilizing extruded sections, for example, which are shaped to support the aforesaid panels and screens.

A further object of the invention is to provide such an improved multiple-ventilating window assembly in which the extruded sections are shaped to receive the aforesaid panels and screens without the need for built-up sections or extraneous mounting brackets of any type.

Other objects and advantages of the invention will become apparent from the consideration of the following description, when the description is taken in conjunction with the accompanying drawings, in which:

FIGURE 1 is an elevational view of the multiple-ventilating window assembly of the present invention incorporated in a vertical position adjacent a door opening;

FIGURE 2 is a perspective schematic representation of the two principal components of the window assembly of one embodiment of the invention;

FIGURE 3 is a sectional view of the assembly taken substantially on the lines 3—3 of FIGURE 1; and

FIGURE 4 is a cross sectional view taken substantially on the line 4—4 of FIGURE 1.

The representation of FIGURE 1 shows a door opening 10 which may, for example, be the door of a house trailer, or the like. In the particular environment of FIGURE 1, the window assembly of the invention is mounted

adjacent the jamb of the door assembly. With such a construction, a window is provided adjacent the door which conveniently can be opened or closed at will.

As best shown in FIGURE 2, the window assembly of the invention includes a stationary frame unit 12 which, as will be described, is constructed of unitary extruded sections; and it also includes a slide unit 14 which, likewise, is constructed of unitary extruded sections, and which is slidably mounted in the stationary unit 12.

A plurality of fixed panels 16 are mounted in the stationary unit 12 at spaced positions along the unit, as shown. Each of the fixed panels, for example, may be composed of glass, or other transparent or translucent material, or they may be composed of opaque material, if so desired. Openings 18 are defined in the stationary unit between successive ones of the fixed panels 16.

A plurality of panels 20 are mounted in the slide unit 14. These panels 20 may, likewise, be composed of glass or other suitable transparent or translucent materials, or they also may be composed of opaque material, if so desired. The panels 20 are mounted on the slide unit 14 at spaced positions along the slide unit, and the intervening openings may be covered, for example, by screens 22.

The slide unit 14 is movable from a first position in which the panels 22 thereof lie behind corresponding ones of the panels 16 of the stationary unit 12, and the screens 22 extend across the respective openings 18 in the stationary unit. When the slide unit 14 is in this position, the multiple-ventilating window assembly is "open."

The slide unit 14 may also be moved to a second position in which its panels 20 extend across the openings 18 in the stationary frame unit 12. When the slide unit is in this second position, the multiple-ventilating window assembly is closed. The slide unit 14 may conveniently be moved from its first to its second position, and vice versa, by a direct manual control. Appropriate transverse lift bars are provided on the slide unit, for this purpose, as will be described.

As best shown in FIGURES 3 and 4, the stationary unit 12 is formed, for example, of extruded sections, composed of aluminum, aluminum alloy, or other appropriate material. The stationary unit includes, for example, a pair of extruded side sections 104 and 106, as best seen in FIGURE 4.

As shown in FIGURES 3 and 4, the extruded side sections 104 and 106 are shaped to provide appropriate supports for the panels 16. For example, cross bars 108 extend across the stationary unit from the extruded section 104 to the extruded section 106. The panels 16 are supported against the cross bars 108 by means of appropriate glazing beads 110. The cross bars 108 also define transverse channels at the lower edge of each of the vents 18. Appropriate resilient weather stripping 112 is positioned in these channels.

The slide unit 14 is also composed of a pair of identical extruded side sections 120. These side sections of the slide member slide in guideways formed by the side sections 104 and 106 of the sash 12. One or more resilient bowed spring strips 124 (FIGURE 4) may be positioned in one or both of the guideways, so as to restrain the slide unit 14 from gravitational movement.

A plurality of transverse bars 128 are mounted on the slide unit 14, and these bars extend from one of the extruded side sections 120 to the other at spaced positions along the slide unit. The bars 128 provide supports for the panels 20 and for the screens 22. The panels 20 are held against the supports by means of usual glazing beads 130, as shown. The screens are held in place by resilient removable screen splines 131 which fit into channels in the bars 128.

Each of the cross bars 128 is formed to have an integral internal section 128*a* extending laterally from plane of the slide member 14 to form appropriate lift bars for the assembly; and each cross bar 128 also has an integral external section 128*b* which, likewise, extends laterally from the plane of the slide member 14. These latter sections 128*b* form drip bars for the assembly, and serve to prevent rain and moisture from dripping into the internal components of the assembly.

The drip bars 128*b* are shaped to engage the weather stripping member 112 when the assembly is closed, so as to provide a positive seal at the lower portion of each vent. A further seal is provided at the upper portion of each vent, by an appropriate resilient member 150 mounted in transverse slots in the cross bars 108.

An important advantage of the present invention is that it can be manufactured on a practical basis to provide a rigid and rugged structure. This is because the stationary and slide units are each formed of a unitary construction, and utilize, for example, extruded sections. As described above, these extruded sections are shaped so that they are capable of supporting the aforesaid panels and screens, without the need for additional applied or built up extraneous sections, as is usually the case with prior art window structures.

The invention provides, therefore, an improved window assembly which is rigid and rugged in its construction and which can be manufactured and sold at a relatively low cost.

While a particular embodiment of the invention has been shown and described, modifications may be made. It is intended to cover all such modifications in the following claims.

What is claimed is:

1. A multiple-ventilating window assembly including: a unitary stationary unit having a frame-like configuration, and including a pair of elongated channel-like side sections and a plurality of cross-bars extending between said side sections at spaced positions in said stationary unit; a plurality of fixed panels mounted in uniplanar relationship in said stationary unit between said cross-bars and defining openings therebetween, said cross-bars individually defining a transverse channel at the lower edge of each of said openings; a strip of resilient weather stripping positioned in each of said channels; a unitary slide unit having a frame-like configuration, and including a pair of elongated side sections slidably supported in said channel-like side sections of said stationary unit and a plurality of transverse bars extending between said side sections of said slide unit at spaced positions therealong; a plurality of further panels mounted in uniplanar relationship in said slide unit between said transverse bars to define openings therebetween, said further panels in said slide unit being located to cover the openings between said panels in said stationary unit when said slide unit is in a first position with respect to said stationary unit and to extend over said panels in said stationary unit when said slide unit is in a second position with respect to said stationary unit; and at least one of said transverse bars of said slide unit having an integral section extending laterally inwardly from the plane of said slide unit to form a means for manually moving said slide unit between said first and second positions with respect to said stationary unit, and said transverse bars having corresponding integral sections extending along the length thereof and extending laterally outwardly from the plane of said slide unit through respective ones of said first mentioned openings selectively to engage the aforesaid strips of weather stripping so as to prevent moisture from entering the assembly.

2. The assembly defined in claim 1 and which includes a plurality of screen members mounted on said slide unit in uniplanar relationship with said further panels thereon and extending across respective ones of the openings in said slide unit between corresponding ones of said further panels.

3. The assembly defined in claim 1 in which said stationary unit is a unitary extruded member, and in which said slide unit is a unitary extruded member.

4. The assembly defined in claim 1 and which includes

bowed spring strips mounted in said channel-like side sections of said stationary unit and bearing against said side sections of said slide unit to restrain said slide unit from gravitational movement.

5. The assembly defined in claim 1 in which at least some of said panels are capable of passing light.

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