Nov. 13, 1951 O. L. HERRON 2,574,641

WINDOW CONSTRUCTION

Filed Jan. 2, 1947 2 SHEETS—SHEET 1

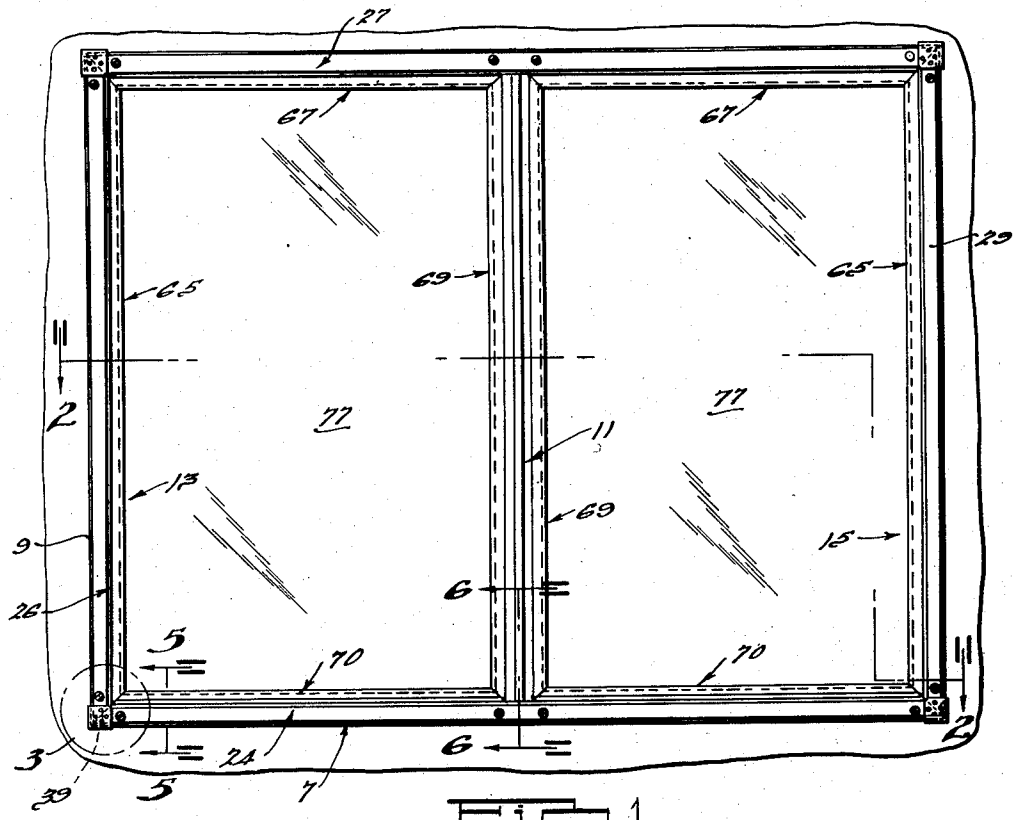


Fig. 1.

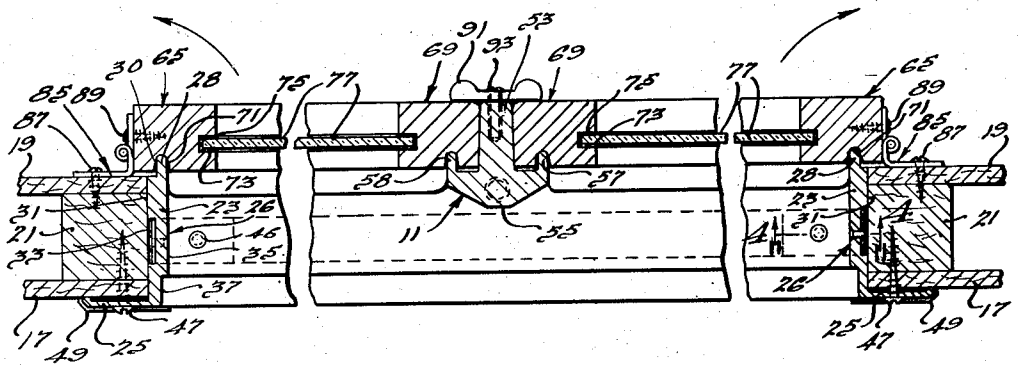


Fig. 2.

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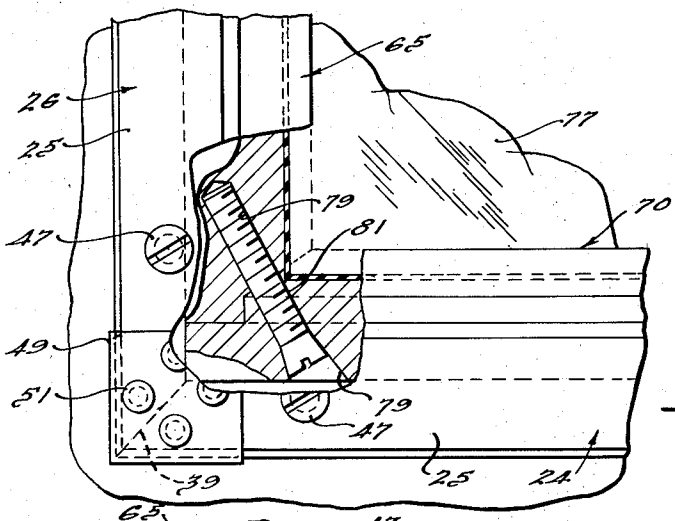


Fig. 3.

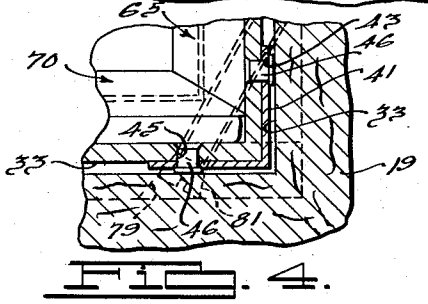


Fig. 4.

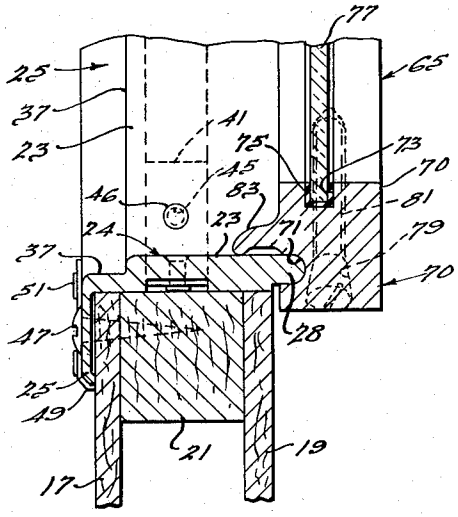


Fig. 5.

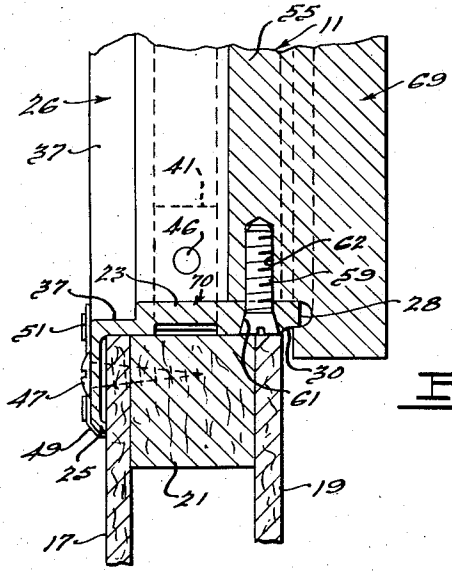


Fig. 6.

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WINDOW CONSTRUCTION

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1 Claim. (Cl. 189—69)

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This invention relates to a window construction, and more particularly to a window construction in which the window sash swings horizontally.

The principal objects of this invention are to provide an improved type window frame which can be cheaply manufactured and easily assembled and then positioned in the assembled form in a wall window opening; to provide a window frame constructed from a plurality of identical extruded metal elements; to provide an improved type window sash in which the glass can be quickly and easily inserted; to provide an improved type window sash formed from extruded metal elements; to provide a window construction of the aforementioned type in which the sash will be effectively sealed against the window frame when in the closed position; to provide a window construction for use in a trailer or the like in which the air flow in and out of said trailer may be accurately controlled; to provide an improved type window construction of the aforementioned type adapted to receive a conventional window screen thereon; and to provide generally an inexpensive window construction of the horizontally swinging type.

These and other objects of this invention will become apparent from the following detailed description taken in conjunction with the accompanying drawings in which:

Figure 1 is a side elevational view of the construction of this invention;

Fig. 2 is an enlarged view partially in elevation, and partially in section taken along the line 2—2 of Fig. 1;

Fig. 3 is an enlarged view of the structure illustrated within the circle indicated at 3 in Fig. 1, partially broken away and in section;

Fig. 4 is a sectional view taken along the line 4—4 of Fig. 2;

Fig. 5 is a view partially in section and partially in elevation taken along the line 5—5 of Fig. 1;

Fig. 6 is an enlarged view partially in section and partially in elevation taken along the line 6—6 of Fig. 1.

Referring now to the drawings, it will be seen that the window construction of this invention includes a generally rectangular window frame indicated at 7 adapted to be inserted in a wall window opening 9 and having a center post generally indicated at 11 extending vertically through the center thereof. The window frame 7 is adapted to receive a pair of window sashes generally indicated at 13 and 15, and hingedly connected to a wall so as to swing horizontally

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into a closed position, in sealing abutment with the window frame 7 and center post 11, as will be hereinafter described.

As seen in Fig. 2, the wall in which the window frame 7 is mounted, comprises an outer wall portion 17, an inner wall portion 19, and a filler trip 21 surrounding the window opening 9 beveen the walls 17 and 19.

The window frame 7 comprises four identical frame elements 24, 26, 27 and 29, each of which is identical in construction, so that similar numbers will apply to like parts of each. Each frame element is formed from extruded metal such as aluminum, and each includes a body portion 23. The front edge of the body portion 23 is formed with an attaching flange 25 which extends at right angles thereto. The opposite edge of the body portion 23 is formed with a projecting bead 28 which extends rearwardly in the plane thereof. The outer face of the bead 28 is cut back as at 30 from the outer face 31 of the body 23, for a reason which will be hereinafter brought out.

Intermediate the front and rear edges of the body 23 the outer, or wall abutting, face thereof is provided with a longitudinally extending groove 33 which extends the entire length thereof. The forward edge of the inner face 35 of the body 23 is cut back to form a notch 37 which extends longitudinally the length of the body and which is adapted to receive one side of a window screen as will be hereinafter described.

The opposite ends of each of the frame elements are mitered as at 39 so that the frame elements 24, 26, 27 and 29 may be placed together to form a rectangular window frame. In order to secure each window frame element to its adjacent element, an angle bracket 41 is provided, one leg of which is inserted in the groove 33 of one element and the opposite leg thereof is inserted in the groove 33 in an adjacent frame element as seen in Fig. 4. The bracket 41 is provided with an aperture 43 in each of its legs, which when the bracket is inserted in the grooves, becomes aligned with an aperture 45 extending through the wall of the body 23 in the center of the groove 33 of each element. Rivets 46 are then inserted in the apertures 45 and 43 and bucked so as to secure the bracket 41 to both the adjacent elements it ties together. As can be seen in Fig. 4, the groove 33 is of a sufficient depth to receive the bracket 41 therein and also to receive the rivet 46 so that neither the rivet nor the bracket will protrude beyond the outer face 31 of the body 23 and therefore the bracket and rivet will not interfere with the positioning

of the completed window frame within the wall window opening 9.

The completed window frame 7 formed by the frame elements 24, 26, 27 and 29 can then be inserted within the wall window opening 9. The attaching flange 25 of each element is secured to the wall by means of screws 47 as seen in Figs. 1 and 2. In order to cover the mitered joint 39 formed at each corner of the window frame a thin cover plate 49 is provided which fits over each attaching flange corner and is secured to the adjacent attaching flanges by means of countersunk screws 51.

The center post 11 is secured to the window frame prior to its installation in the wall opening 9. This is accomplished by securing the center post to the window frame elements 24 and 27, substantially at their center as will be described hereinafter. The center post 11 is also made of extruded aluminum or the like and comprises a vertical leg 53 which is tapered inwardly and rearwardly so that the rear edge thereof will be of a slightly smaller width than the forward edge. Extending transversely across the front edge of the vertical leg 53, along its entire length, is a head portion 55, the opposite sides of which are formed with rearwardly extending vertical beads 57 and 58, which are parallel to the center leg 53. The lower end of the center post 11 is secured to the frame element 24 by means of a screw 59 which, as can be seen in Fig. 6, is inserted through an aperture 61 in the body portion 23, adjacent the bead 28, and threadably received in a vertical tapped aperture 62 in the bottom of the head portion 55. The upper end of the center post 11 is similarly secured to the upper window frame element 27. The aperture 61 in each frame element is countersunk so that the head of the screw 59 is completely received within the body 23 so as not to protrude and interfere with mounting the frame 7 in the wall window opening 9.

The two window sashes 13 and 15 are identical in construction and similar numbers will apply to like parts of each. Each of the window sashes comprises four elements 65, 67, 69 and 70. The elements 65, 67, and 69 are identical in construction although different in length, and each is of a generally rectangular shape, with a groove 71 formed in the front face thereof adapted to receive the bead of the respective frame elements, or center post, which it engages, as will be hereinafter brought out. Each element likewise is provided with a groove 73 in the center of its inner face in which is received any conventional sealing material 75 to seal a window glass 77 therein.

The three window sash elements 65, 67 and 69 may be formed from a single extrusion, bent to form the three sides of the sash, or they may be constructed of separate extruded elements, connected together at their corners in a manner such as illustrated in Fig. 3. As illustrated therein, the ends of each of the elements 65, 67 and 69 are mitered to form miter joints when their ends are in an abutting relation. An angularly extending aperture 79 is provided in each element, adapted to threadably receive a screw 81 therein to rigidly secure the adjacent corners of the elements together. The aperture 79 of one of one of the two adjacent elements is countersunk to receive the screw head therein, so that the screw head will not project from the sash.

The lower window sash element 70 is identical in construction with the other elements, with the exception of a projecting bead 83 formed above the groove 71 in the front face thereof, for a use which will be hereinafter described.

In order to assemble each sash 13 and 15, the three elements 65, 67, and 69 are first assembled and the window glass 77 is then inserted therein through the open lower end. The bottom element 70 is then assembled with the glass and other sash elements so that its recess 73 receives the bottom edge of the glass 77 and its corners are in an abutting relation with the opposite window sash elements 65 and 69. The bottom element 70 is then secured to the adjacent elements by means of screws 81 threaded in the angular apertures 79 as previously described.

When each of the window sashes 13 and 15 have been completely assembled as described, they are hingedly connected to the inner wall 19 adjacent opposite sides of the wall window opening 9. This may be done by means of any conventional hinge, but in the embodiment illustrated in the drawings, a pair of single hinges 85 are provided one at the top, and one at the bottom of each sash. One leg of each hinge is secured to the inner wall 19 by means of screws 87 and the opposite leg is connected to the outer face of the sash element 65 by means of screws 89. The hinges are secured to the wall 19 in such a position that the grooves 71 along the front face of each sash element will engage their respective beads on the window frame elements and center post. It will be noted that the grooves 71 in the window sash elements 65 are cut back slightly so as to permit the beads 28 on the frame elements to be received in, and disengaged from the grooves, without binding, during opening and closing of the window. It further will be noted that the groove 71 formed in the element 69 of the window sash 13 receives the bead 58 of the center post 55 therein, and the groove 71 in the element 69 of the window sash 15 receives the bead 57 on the center post. Each of the window sashes 13 and 15 is similarly hinged to the wall on opposite sides of the opening 9 so as to open inwardly away from the wall, and close so as to engage the center post 11 on opposite sides of the leg 53. The taper of the vertical leg 53 permits the inner abutting face of the respective window sash members 69 to close and open without binding.

The bead 83 formed on the lower sash member 70 is adapted to slide over the body 23 of the window frame element 24 to prevent the ingress of water, dirt or the like through the bottom sill of the window construction.

It will thus be seen that both the window sashes 13 and 15 open inwardly and, as a result, if the window construction is used on a trailer or the like, the flow of air into the trailer can be controlled by opening one window or the other in accordance with the direction of the wind.

Any suitable lock means can be provided for securing the window sashes in a closed position against the window frame and center post, but in the embodiment illustrated in the drawings, for purposes of illustration, a conventional wing nut 91 is shown as pivotally connected to the vertical leg 53 of the center post by means of a screw 93, to hold the window in a closed position.

The notch 37 cut in the inner face of each window frame element adjacent the attaching flange 25 thereof defines a recess around the entire window frame into which a conventional

window screen (not shown) may be inserted and secured.

While only one particular embodiment of this invention has been illustrated and described, it is to be understood that it is not to be restricted thereto, and that it is intended to cover all modifications thereof which will be apparent to one skilled in the art and which come within the spirit and scope of the appended claim.

What is claimed is:

In a window construction a wall having a finished window opening therein, a window frame comprising a plurality of interconnected window frame elements of generally L-shaped cross section, each of which includes a generally flat body portion adapted to be disposed at right angles to the plane of the window opening, a bead formed along one longitudinal edge of the body portion, and an attaching flange formed along the opposite longitudinal edge of the body portion and extending at right angles thereto, said flange, when said body portion is disposed as above stated, being disposed parallel to said window opening overlying said wall structure adjacent said window opening for attachment to said structure, said window frame being adapted to be inserted into said window opening and secured to said wall, a window sash hingedly connected to said wall adjacent said window opening and adapted to close against said window frame elements, said sash having a continuous groove formed along one face thereof adapted to receive said bead on said window frame elements when said sash is closed

against said frame elements, and another bead formed on said window sash adjacent the lower edge thereof and above said groove, said another bead extending along and engaging said body portion of one of said frame elements when said window sash is closed against said frame elements.

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