

March 19, 1963

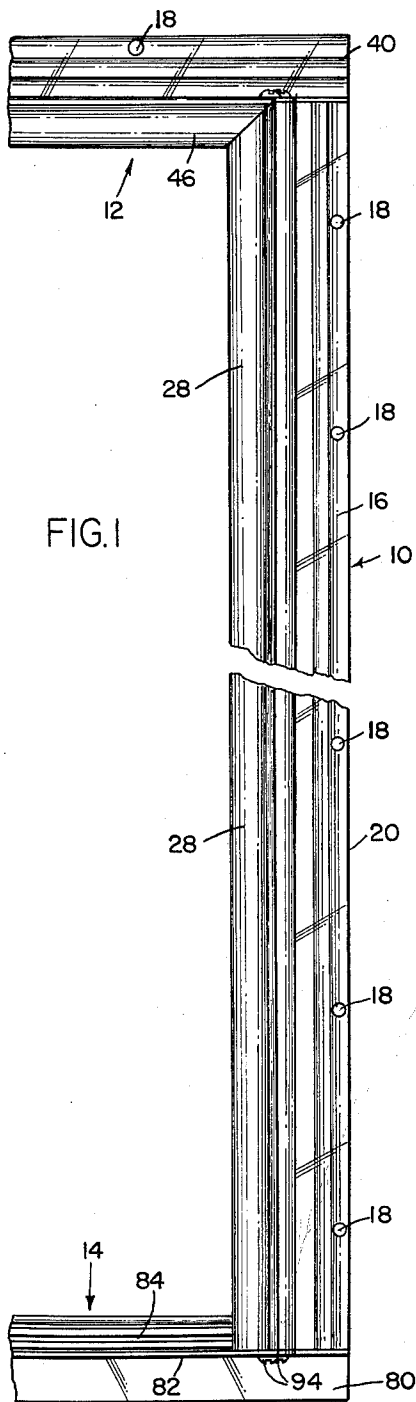
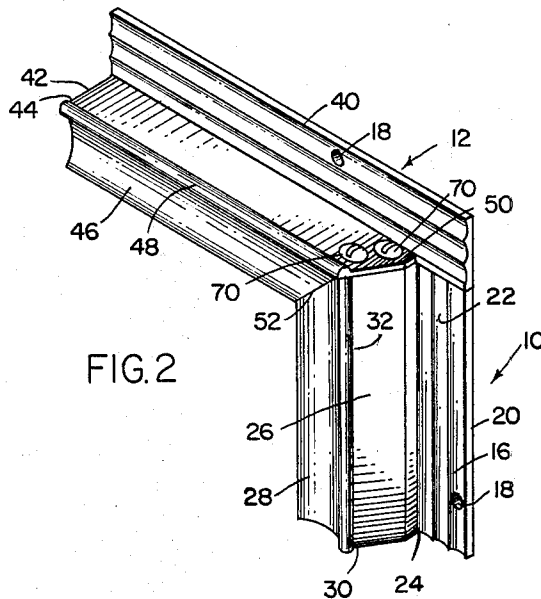
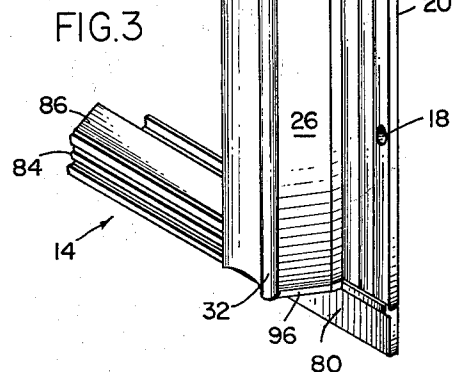
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3,081,852

WINDOW FRAME FOR STORM SASH

Filed Jan. 23, 1961

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

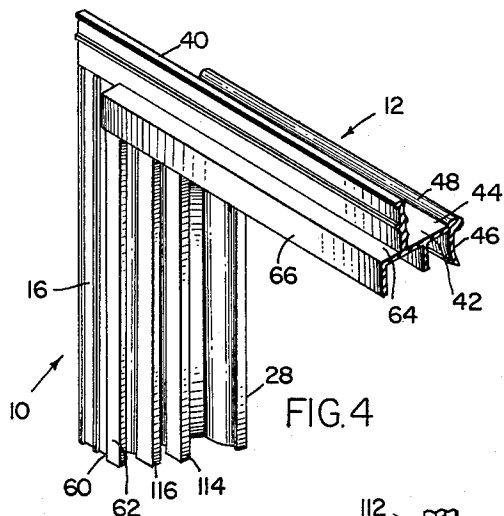


FIG. 4

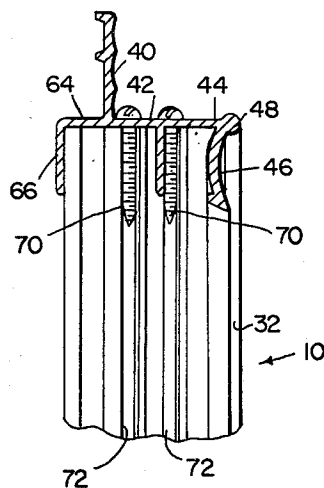


FIG. 5

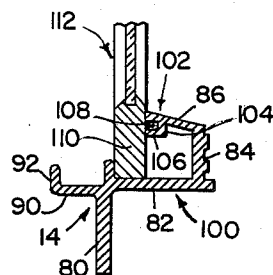


FIG. 8

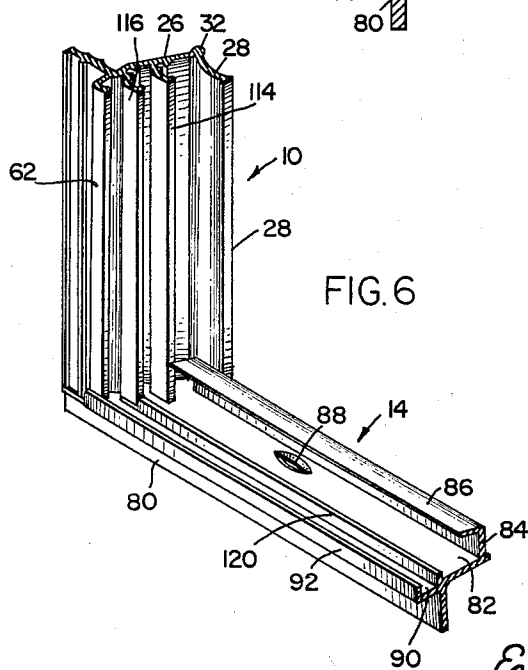


FIG. 6

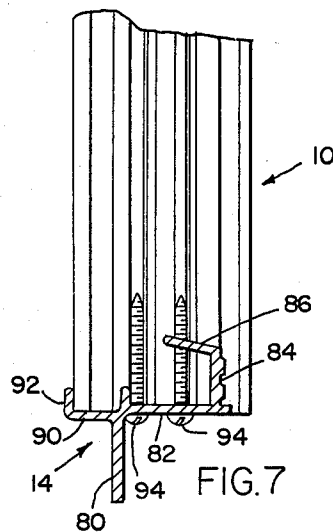


FIG. 7

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1

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WINDOW FRAME FOR STORM SASH

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2 Claims. (Cl. 189-75)

This invention relates to storm windows and more particularly comprises a new and improved storm window frame suitable for use with a wide variety of storm sashes.

In recent years the use of aluminum storm windows has increased markedly. In promoting the sale of aluminum storm windows little is required to demonstrate their obvious benefits. However, resistance is often encountered by home owners who find the aluminum windows to be unattractive. In an effort to meet this type of resistance, storm window manufacturers have recently directed a large part of their research efforts to find more attractive and appealing shapes for their product while at the same time improving their performance.

The primary object of my invention is to provide an attractive aluminum storm window of improved construction.

A more specific object of my invention is to provide a storm window frame having an attractive configuration and which functions in an improved manner over the frames of the prior art.

To accomplish these and other objects, my storm window includes many new features. Among these are the combination mitered and lapped joints formed at the connections between various parts of the frame. Lapped joints are formed at the connection between the plates of the side and top frame members to provide maximum rigidity and weather protection. These plates define the depth of the window frame itself, which depth is required to provide room for the sashes. The panels which extend about the sides and top of the frame to define an outer face for the assembly are connected with mitered joints so that the panels form a continuous unbroken face for the frame all in a single plane. A lapped joint is also formed between the plates of the side members and the sill of the bottom member of the frame to lend rigidity to the frame assembly. The panels of the side members extend to the plane of the sills to present a continuous and unbroken face for the assembly from one end of the sill, about the frame, to the other.

A ridge is formed on the bottom member of the frame which extends upwardly from the outer edge of the sill. The ridge is capped by a strip which is spaced above and generally parallel to the sill. The ridge and strip add rigidity to the bottom member and define a seat for the upper sash of the storm window when it is lowered to a fully open position. Beneath the strip in the sill are drain holes which permit any water that collects on the sill outside the bottom sash to drain freely from the frame outside the dwelling upon which the window is mounted.

As still another important feature, the storm frame of my invention includes a channel formed at the inner edge of the strip of the bottom member. The channel houses a piece of weather stripping that extends across the entire bottom of the frame. The weather stripping carried in the channel at the inner edge of the strip bears against the lower part of the sash frame when the sash is in a lower or closed position.

These and other objects and features of my invention will be better understood and appreciated from the following detailed description of two embodiments thereof, selected for purposes of illustration and shown in the accompanying drawing, in which:

FIG. 1 is a fragmentary front elevation view of a storm window frame constructed in accordance with my invention;

2

FIG. 2 is a fragmentary perspective view of the upper right corner of the frame shown in FIGURE 1;

FIG. 3 is a fragmentary perspective view of the lower right corner of the frame shown in FIGURE 1;

FIGURE 4 is a fragmentary perspective view of the other side of the corner assembly shown in FIGURE 2;

FIG. 5 is a fragmentary side view partly in section of the corner assemblies shown in FIGURES 2 and 4;

FIG. 6 is a fragmentary perspective view of the other side of the corner assembly shown in FIGURE 3;

FIG. 7 is a fragmentary side view partly in section of the corner assemblies shown in FIGURES 3 and 6; and

FIG. 8 is a view similar to FIGURE 7 showing a modification of my invention.

The storm window frame shown in FIGURE 1 includes a side member 10, a top member 12 and a bottom member 14. It is to be recognized that the frame is completed by a second side member disposed on the left side of the frame as shown and which forms a mirror image of the side member 10 illustrated.

The side member 10 includes a vertically extending flange 16 having holes 18 formed along its outside edge 20 through which screws may extend to secure the side member 10 to the outside of the casing of the permanent window on the dwelling to receive the storm window. The outer surface 22 of the flange 16 is provided with a scalloped face to enhance its appearance.

Extending outwardly from the inside edge 24 of the flange 16 is a side plate 26 which provides the window frame with depth to enable it to house the sashes. The side plate 26 is not exactly normal to the flange 16 but rather forms an angle slightly in excess of 90 degrees with the flange 16 on the outside of the frame. A panel 28 is joined to the outer vertical edge 30 of the side plate 26 along a bead 32 and is generally parallel to the flange 16. The panel 28 extends from the edge 30 of the side plate 26 in the direction of the center of the frame. The outer face of the panel 28 is concaved to create a picture frame appearance.

The top member 12 is provided with a flange 40 coplanar with the flange 16 of the side member 10. The flange 40 of the top member extends in a horizontal direction along the outside of the casing of the permanent window (not shown) and is also provided with holes 18 through which screws may extend to secure the top member in place. The outer surface of the flange 40 is provided with a scalloped face to conform with the ornamentation of the flange 16 of the side member.

A plate 42 extends outwardly from the bottom edge of the flange 40 and is oriented in a horizontal plane, and extending downwardly from the outer edge 44 of the plate 42 is a panel 46 having an outwardly concaved face identical to that of the panel 28. A bead 48 extends along the junction of the plate 42 and the panel 46 and forms a continuation of the bead 32 of the side member 10 when the top and side members are assembled together.

It will be noted in FIGURE 2 that the end 50 of the plate 42 of top member 12 is cut at an angle to conform with the outer surface of the side plate 26 of member 10. When the two parts are assembled, the end 50 of the plate 42 overlaps the top edge of the side plate 26 to form a lapped joint. This type of connection prevents light from passing through the joint and forms a tighter seal between the two plates.

Unlike the lapped joint between the plate 42 and side plate 26, a mitered joint 52 is formed between the panels 28 and 46 of the side and top frame members. The mitered point 52 is necessary to preserve the smooth continuous appearance of the panels. It will be noted in the drawing that the concave surfaces of the two panels form a continuous trough-like cross section about the

entire storm window frame. This unity of design could not be achieved if the two panels were joined together in overlapping relationship.

In FIGURES 3 and 4 it will be noted that a rib 60 extends inwardly from the inside edges 24 of the flange 16 of side member 10, generally perpendicular to the plane of the flange. Along the inner edge of the rib 60 a lip 62 is formed which is disposed generally parallel to the panel 28. Thus, the panel 28 and the lip 62 together define the overall depth of the window frame. The lip 62 and more particularly its inner surface forms a face for the frame when viewed from the inside of the dwelling upon which the storm window is mounted.

A rib 64 is formed as a continuation of the plate 42 on the top member 12 and extends inwardly in the plane of the plate 42 from the lower edge of flange 40. A lip 66 extends downwardly from the inner edge of the rib 64 to form a face for the frame along its top. The lip 66 overlaps the upper end of the lip 62 on the side member 10 as is clearly shown in FIGURE 4.

The side member 10 and the top member 12 are secured together by means of screws 70 which extend through the end 50 of the plate 42 of top member 12 and lie in tubular cavities 72 formed on the inner face of the side plate 26 of side member 10. These tubular cavities 72 are clearly shown in FIGURE 3. The diameter of the screws 70 is somewhat in excess of the diameter of the tubular cavities 72 so that when the screws 70 is somewhat in excess of the diameter of the tubular cavities 72 so that when the screws 70 are turned in the cavities a firm and positive lock is formed to retain the top and side members together. The lapped joint between the plates 42 and 26 of the top and side members, respectively, permit the members to be secured in this manner. No additional fastening means is provided to retain the panels 28 and 46 in the relationship shown in FIGURE 2.

The bottom member 14 includes a horizontally extending flange 80 oriented in a vertical plane coincident with the plane of the flanges 16 and 40 of the side and top members 10 and 12, respectively. The flange 80 in the ordinary installation of the storm window rests upon the sill of the permanent window. The upper edge of the flange 80 is connected to the sill 82 of the storm window frame. It will be noted in FIGURES 3 and 6 that the sill 82 extends beneath the lower end of side plate 26 of side member 10 to form a lapped joint therewith virtually identical to the lapped joint formed between the plates 42 and 26 at the upper corner of the frame. A ridge 84 extends upwardly from adjacent the outer edge of the sill 82 and lies substantially in the plane of the panels 28 and 46. While substantially in the plane of the panels 28 and 46, the ridge 84 is overlapped by the lower ends of the panels 28 on each side of the frame as suggested in FIGURES 1, 3 and 6. An inwardly extending strip 86 is secured to the upper edge of the ridge 84 and is inclined upwardly in a direction inwardly of the frame to form a shed for water running down the inside of panel 28. The strip 86 overlies the outer portion of the sill 82 and along that portion of the sill drain holes 88 are formed to carry off any water which may collect on the sill 82.

A rib 90 substantially coplanar with the sill 82 extends inwardly from the top edge of the flange 80 and supports an upturned lip 92 coplanar with the lip 66 of top member 12. It will be noted in FIGURES 6 and 7 that the lip 92 overlaps the lower portion of the lip 62 of the side member in the manner of the lip 66. The side member 10 and the bottom member 14 are secured together by means of screws 94 which extend through the end 96 of the sill 82 and register with the cavities 72 formed on the inside of the side plate 26.

The strip 86 and the ridge 84 perform several functions. First, these members add considerable stiffness to the sill 82 which results generally in an improved and

more sturdy frame. Secondly the strip 86 serves as a stop for the lower edge of the upper sash (not shown) disposed within the frame. Thus, even when the upper sash is lowered its bottom edge will not lie directly on the sill to block the drain holes 88. Thirdly, the strip 86 serves as a shed to direct much of the water that flows down the inside of the panel 28 of the side member, outwardly of the frame.

In FIGURE 8 I show a slight modification of the bottom member 14. In this modification those parts identical to the parts of the bottom member 14 shown in FIGURES 1-7 bear the same numerals. Basically, the bottom member 100 shown in FIGURE 8 includes all of the elements of the bottom member 14. Thus, the bottom member 100 includes a flange 80, a sill 82, a ridge 84, a strip 86, a rib 90 and a lip 92. In addition, the bottom member 100 carries a channel 102 defined in part by the strip 86. The channel 102 is further defined by the walls 104 and 106. It will be noted in FIGURE 8 that the channel 102 carries a length of weather stripping 108 that extends across the entire width of the bottom member 100. It will also be noted that the strip 108 bears against the outer surface of the bottom 110 of the frame of the sash 112. Thus, when the sash 112 is closed and rests on the sill 82 in the manner shown, a seal is formed along its bottom by the weather stripping 108 disposed in the channel.

Although the manner in which the sashes are assembled in the frame of my invention does not form part of the present invention, one manner of assembling sashes within the frame is set forth to afford a better understanding of my invention. In FIGURES 3, 4 and 6 the reader will note that the rear or inner face of panel 28 and the inner faces of tracks 114 and 116 provide three stepped bearing surfaces along which sashes may move. The innermost sash which normally bears screening will ride on the inner face of track 116 while the lower glass sash will ride on the track 114 and the upper glass sash will ride on the inner face of the panel 28. As suggested above, when the upper sash is lowered, its downward movement is limited by the top surface of the strip 86. When the lower sash is closed its bottom edge is disposed immediately behind the ridge 120 extending upwardly from the sill 82 and the strip 86 bears against the outer side of the bottom of the sash frame. The lip 92 extending upwardly from the inner edge of the rib 90 of the bottom member 14 bears against the bottom of the inner face of the bottom portion of the screen sash.

From the foregoing description, it will be appreciated that the manner in which the top and side members are connected provides the frame of my storm window with a smooth and unbroken outer face visible from the street. The lapped joints which serve as the physical connections between the bottom, side and top members provides a frame with maximum rigidity. Thus, an attractive window has been devised without sacrificing performance.

Because numerous modifications may be made of my invention without departing from its spirit, I do not intend to limit the breadth of my invention to the specific embodiments illustrated and described. Rather, it is my intention that the scope of this invention be determined by the appended claims and their equivalents.

What is claimed is:

1. In a window frame for a storm sash, a horizontally extending top frame member having a flange disposed in a vertical plane and adapted to be secured to a permanent window casing, a plate forming part of the top member disposed in a horizontal plane and extending outwardly from the bottom edge of the flange, said plate terminating at its side edges inwardly of the ends of flange, a panel oriented in a generally vertical plane and extending downwardly from the outer edge of the plate, a vertically extending side frame member having a flange coplanar with the flange of the top member and abutting

against the bottom edge of the flange at its end beyond the side edge of the plate of the top member, a side plate forming part of the side member and turned outwardly from the inside edge of the flange of the side member, the top of said side plate abutting against the lower surface of the horizontal plate of the top member, a panel 5 turned inwardly toward the center of the window frame from the outer edge of the side plate and generally coplanar with the panel of the top member, the top of the panel of the side member abutting against the side edge of the panel of the top member and forming an angled mitered joint therewith, a rib disposed in a generally horizontal plane and extending inwardly from the bottom edge of the flange of the top member, a similar rib disposed in a vertical plane and extending inwardly from the inside edge of the flange of the side member, a lip 10 extending toward the center of the frame from the inner edge of the rib of the side member, another lip extending downwardly from the inner edge of the rib of the top member, said lips lying in generally the same plane and with the adjacent ends of the lips overlapping and in engagement with one another, fasteners extending through the plate of the top member and engaging the side plate of the side member for holding the top and side frame members together, a horizontally extending 15 bottom frame member having a flange coplanar with the

flanges of the top frame member and the side member and forming a horizontally extending continuation of the flange of the side member, a sill forming part of the bottom member connected to the bottom member flange and disposed in a generally horizontal plane, a ridge 5 forming part of the bottom member and extending upwardly from the outer edge of the sill across the width thereof and generally coplanar with the panel of the side member, the end of the ridge being overlapped on the outside by the bottom of the panel of the side member, a strip extending inwardly from the top edge of the ridge of the bottom member and overlying a portion of the sill and generally parallel thereto, and means securing the side member and bottom member together.

2. A window frame as defined in claim 1 further characterized by the panel of the side member extending downwardly to the plane of the sill of the bottom member.

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