May 18, 1954 A. B. EDWARDS, JR 2,678,479

WINDOW CONSTRUCTION

Filed May 19, 1949

Fig. 1

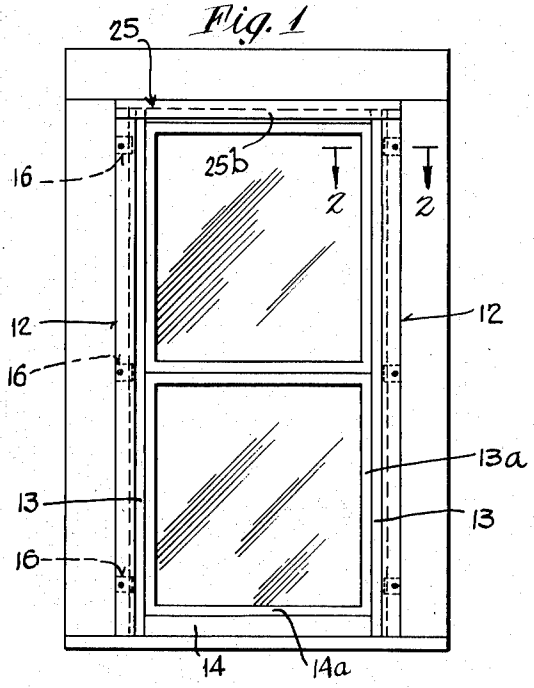


Fig. 2

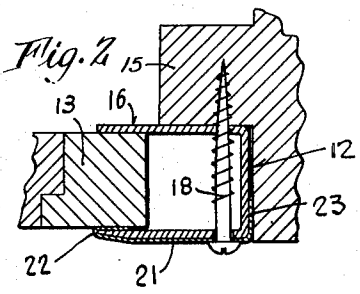


Fig. 3

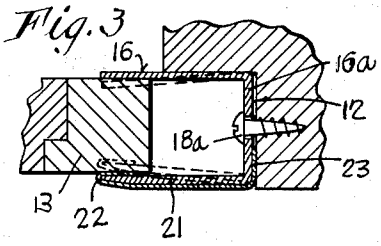


Fig. 4

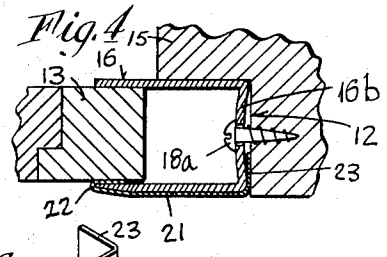


Fig. 5

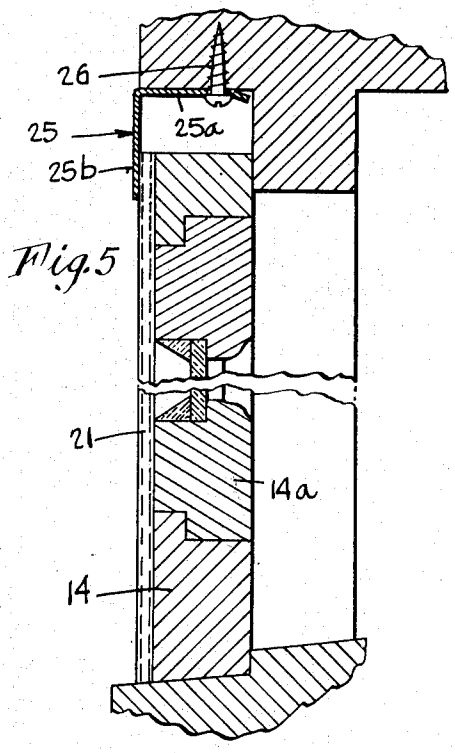
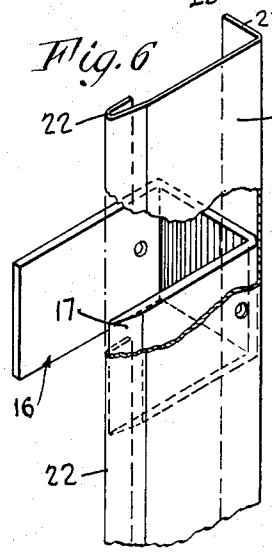


Fig. 6



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WINDOW CONSTRUCTION

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9 Claims. (Cl. 20—69)

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This invention relates to closures for use with storm windows and the like such as are usually installed in window casings on the outside of the conventional window sash. It relates particularly to devices for securing the window units in place and to the flashing or closure employed to seal the space between the side of the storm window unit and the adjacent wall of the window casing or similar adjacent structure. The invention is adapted for use in securing in place any storm window or screen unit such, for example, as the combination storm sash and screen unit described in my copending application Serial #659,080, filed April 2, 1946, now Patent No. 2,589,685, patented March 18, 1952.

Closures for the purpose of securing such units in place and also covering the gap at the side of the unit are usually either of channel or angle shape. Mounting screws are arranged at intervals along the closure strip, passing through holes in the closure strip and anchoring in the wood of the window stop or of the casing. Heretofore the closures have been formed of thin gauge material in order to keep the weight and cost thereof at a minimum. Because of their thin character they can be made to exert little or no clamping action on the sash frame or equivalent member, because any tightening of the mounting screw to effect such clamping action causes the closure strip to buckle and the material to pull in around the head of the screw which is tightened with the result that the storm window unit is not clamped firmly as intended. If the closure strip is made up of material of sufficiently heavy gauge to resist this pulling and deforming, the cost and weight of the closure are increased far beyond that which is feasible. Also, full length heavier gauge material for the closure could not be used to secure this clamping effect because the mounting screw anchored in the wood of the house casing in its normal fashion would not have sufficient strength or holding power to pull down a long length of closure strip of substantial thickness, and clamping action would therefore not be achieved.

An object of the invention is to provide an improved flashing or closure device for fitting the storm window unit to the opening provided in the usual house window casing and to close the space between the storm sash unit and the adjacent wall of the window casing.

A further object is to provide an improved flashing or closure device for storm window or similar installations constructed and arranged to clamp the window or sash frame securely in

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place without requiring any heavier gauge material for the closure strip than has heretore been employed.

A further object is to provide a flashing or closure device of the same light gauge heretofore employed, or lighter gauge if desired, in which the window or sash frame can be securely clamped in place without having any buckling effect on the closure strip.

A feature of the invention is the provision of one or more relatively short clip members of sufficiently heavy gauge material mounted on the casing and arranged to engage the storm or similar unit to clamp the unit firmly in place. The term "clip" or "clip member" is used throughout specification and claims to indicate a short mounting member having a length substantially less than the length of the storm window unit. A light gauge closure strip is mounted on and supported by the clip members for closing the space between the unit and the window casing, or similar member.

On some old buildings, layer after layer of paint has been built up on the window casing to such an extent that at times, the inside corner of the reveal into which the combination unit is to be fitted is filled with paint deposits. This corner might have ¼" thick or more paint deposit continuous around the window. To fit the combination window and conventional closure means into this corner therefore becomes a long and difficult undertaking as it is necessary to chop the hard paint deposits from this inside corner along its full length. A further feature of our invention is that such clearing and chipping of paint need only be done at two or three points for a few inches on each side so as to get the clips seated properly into the corner formed by the side of the casing and the blind stop. It will be readily apparent therefore that the amount of labor required for installation is greatly minimized.

These and other objects and features are accomplished by the present invention.

In the accompanying drawings:

Figure 1 is a front elevation of a closure or flashing constructed in accordance with one embodiment of the invention and installed in a window casing.

Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1, looking in the direction of the arrows, while Figs. 3 and 4 are modifications illustrating different forms of clamping and supporting clip members, also taken on the same line 2—2.

Fig. 5 is a broken sectional view showing the top and bottom portions of the installation, and illustrating one manner of sealing the space at the top of the combination window unit.

Fig. 6 is a perspective view, partially broken away, of the form of the invention illustrated in Figs. 1 and 2.

The illustrated embodiment of the invention is shown in connection with a frame opening or reveal 12 in which a vertical structural member 13 of the combination or window unit 13a is fitted. As illustrated the window unit 13a is supported by having its lower end bear on the outside sill of the house window. Between the two such vertical members 13 (there being one at each side of the house window), a removable "super-sill" or filler board 14 is imposed which rests on the outer sill of the house window. This filler board 14 is so adjusted in height so as to make up for the variations in sill drop which occur between windows of varied construction. This filler board extends full width between the opposite vertical structural members 13 and acts as the base or sill piece on which rests the lower insert panel 14a, either sash or screen, of the combination unit.

In the present invention, the structural members 13, are held in position by securing means which both secures the members in place and supports the closure or flashing strip employed to seal the space between the members and the adjacent structure or casing. In this arrangement the closure strip is freed of all clamping pressure so that no buckling or deforming of the strip takes place. As illustrated in Figs. 1, 2 and 6, a plurality of substantially U-shaped clip members 16 are positioned at spaced intervals along the window casing so as to receive between the side arms of the clips the adjacent edge of the unit or structural member 13. As illustrated, the outside arm of the U may have a tapered edge 17.

The clip members 16 are formed of sufficiently heavy gauge material to securely clamp the window unit in place without deforming the clip members or pulling in the material thereof around the head of the fastening means such as screws 18. A light gauge closure strip 21 is mounted on clip members 16 and extends along the vertical structural members 13 to bridge the space at the side of the unit, for example, between such members and the adjacent window casing. The edges 22 of the strip adjacent the unit member 13 is bent in a U-shape to embrace the tapered edges 17 of the supporting clip members 16 and be pressed thereby into sealing engagement with the frame. Because the clip edges are tapered the strip edge 22 can be bent on a small radius to give a pleasing appearance. The outer edge of the strip has an inwardly directed flange 23 bent substantially at a right angle and positioned between the web of the U-shaped clip members 16 and the adacent window casing 12 so that it is held tightly in place against the casing wall.

The U-shaped clips thus indirectly secure in position the whole combination assembly. In the embodiment shown in Figs. 2 and 6, clamping screws 18 extend through the closure strip 21 and both arms of the U-shaped clip members into the window casing 15 or similar structure. By tightening the screws, the arms of the clips engage and hold the window unit and press the edge of the closure strip 21 into engagement with the unit. The clips in such cases are only of such length as will permit, within the holding power of the screws, the drawing together of the outstanding arms of the clip in such fashion as to clamp the structural member 13 between the arms. The embodiment shown in Fig. 3 does not depend on the mounting screw to increase the clamping pressure as in this form the screws extend through the web, and the clip is preformed with the one or both arms at angles to the web of less than 90°, so that the outstanding arms hold the unit structure in a clinchlike manner because of the spring tension of these arms.

Fig. 3 shows a clip having a flat web 16a, and shows in dotted lines the approximate angle of the arms before positioning the structural member 13 between them.

Fig. 4 shows a clip having an arched web 16b, which acts to press the arms into gripping engagement with the structural member 13 when the holding screw 18a is tightened, tending to flatten the base and bring the arms together.

When the clips of Figs. 3 and 4 are used the window unit is mounted by inserting one edge into the clips and moving it into engagement with the bow of the U. This will permit the other edge of the window to move past the edge of the clips at the other side and the window then moved toward said other clips and in between the arms of said other clips to securely hold the unit at each side.

It will be apparent that the clip members are of sufficiently heavy gauge material to withstand any buckling effect by the screws 18 and, at the same time, support the relatively thin gauge closure strip 21 in position. The strip-supporting arm of each U-shaped bracket securely presses the edge 22 of the closure strip which embraces such arm into sealing contact with the window frame.

It will be understood that the same construction can be employed along the top and/or bottom of the unit. However, as illustrated, in Fig. 5, the space between the top of the combination unit and the casing is closed by a flashing or strip 25 of angle form having one arm 25a secured to the upper face of the casing 12 by screws 26 and the other arm 25b extending downwardly sufficiently to engage the upper edge of the window unit. As illustrated, the upper edge of the end portion of the closure strips 21 at each side of the frame extends inside the arm 25b of the strip 25.

In constructions wherein the clips of Figs. 3 and 4 are employed, the flange or arm 25b is bent into overlapped relation after the unit is inserted into the clips.

It will be apparent that the number of clip members 16 employed along a given side of the combination unit will depend upon the length of the unit and the length of the closure strip 21 to be mounted in place. Although the drawing illustrates three such clips along each side of the installation a larger or a fewer number can be employed. The closure strip 21 can be of even lighter gauge material than has heretofore been possible, thus saving a considerable amount of material, while at the same time the clip members press the edge of the closure strip into sealing engagement with the window frame and secure it in place without any buckling or deformation of the light-weight strip.

The invention can be variously modified and adapted and portions of the improvements can be used without others.

I claim:

1. A closure for sealing the space between a storm window unit or the like and a casing in which the unit is positioned, comprising a mem-

ber of relatively heavy gauge material and of a length less than the unit mounted on the casing and located in said space and having portions to extend over so as to engage and secure a window unit in position; and a separate closure for said space comprising a facing strip of relatively light gauge material supported on said member so as to bridge said space between the unit and casing and extend along the window unit for the full length thereof.

2. A closure for sealing the space between a storm window unit or the like and a casing in which the unit is positioned, comprising a clip member of relatively heavy gauge material mounted on the casing and positioned in said space and having an outer and an inner arm extending over and engaging and holding a window unit in place; and a closure for said space comprising a facing strip of relatively light gauge material supported on the outer arm of said member so as to bridge said space and extend along the window unit for the full length thereof.

3. A closure for sealing the space between a storm window unit or the like and a casing in which the unit is positioned, comprising a member of relatively heavy gauge material mounted on the casing and positioned in said space and having arms extending over and engaging and holding a window unit in place; a closure for said space comprising a facing strip of relatively light gauge material supported on the arms of said member so as to bridge said space and extend along the window unit; and means extending through said strip and said clip member for securing the clip and strip together and to the casing.

4. A closure for sealing the space between a storm window unit or the like and a casing in which the unit is positioned, comprising a U-shaped clip member having an outer and an inner arm and a base connecting said arms, said clip member being adapted to be secured to said casing and positioned in said space and having the base of the U adjacent the casing, and unit engaging arms extending therefrom to engage and secure the unit in place; and a closure strip of relatively light gauge material bridging said space and extending along said unit, one edge of said strip extending around the end of the outer arm of said clip member so that said arm presses said edge of the strip against said unit and the other edge of the strip extends between the base of the U and the casing, and fastening means securing the clip to the casing, said clip clamping the other edge of the strip against the casing.

5. A closure for sealing the space between a storm window unit or the like and a casing in which the unit is positioned, comprising a U-shaped clip member having an outer and an inner arm and a base connecting said arms, said clip member being secured to said casing and positioned in said space with the edge of the unit positioned between and engaged by the arms thereof to hold the unit in position; a closure strip of relatively light gauge material supported on the outer arm of said clip member so as to bridge said space and extend along the unit, one edge of said strip extending around the end of said outer arm; and fastening means for the clip pressing said arm and the edge of the strip into engagement with said unit.

6. The invention as defined in claim 2 wherein said outer arm of the clip member is tapered to the end thereof and the edge of said facing strip is substantially U-shaped to extend around said tapered end.

7. A closure for sealing the space between a storm window unit or the like and a casing in which the unit is positioned, comprising a plurality of U-shaped clip members of relatively heavy gauge material mounted in spaced relation in said casing, each clip member having inner and outer arms adapted to extend over and secure said unit in the casing; a closure for the space between said unit and said casing comprising a facing strip of relatively light gauge material adapted to be supported on the outer arms of said clip members so as to bridge said space and extend along substantially the full length of the window unit with one edge of the strip bearing on said unit; and means extending through said facing strip and said clip members for securing the same to the casing and pressing said clip members into engagement with said unit.

8. A closure for sealing the space between a storm window unit or the like and a casing in which the unit is positioned, comprising in combination a plurality of U-shaped clip members of relatively heavy gauge material positioned in said space, each of said clip members having inner and outer arms which extend over and engage the edge of said unit and a base connecting said arms; a closure strip of relatively light gauge material supported on the outer arms of said clip members so as to bridge said space and extend along the unit; and means extending through the base of each of said clip members for securing said members to the casing.

9. A closure for sealing the space between a storm window unit and the like and a casing in which the unit is positioned, comprising a plurality of mounting members, each comprising a U-shaped clip member positioned in said space and having a base with extending outer and inner arms adapted to overlie the edge of the unit located between and gripped by the arms of the clip, said base being bowed in the form of an arch between the arms; means extending through the arched bows of the clips for securing the clips to the casing and for adjusting the gripping pressure of the arms on the unit; and a closure strip of relatively light gauge material extending along the sides of the unit and supported on the outer arms of the clip members so as to bridge and close said space between the unit and casing.

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