April 3, 1956 C. L. WEBSTER 2,740,173

STORM WINDOW STRUCTURE

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FIG. 1

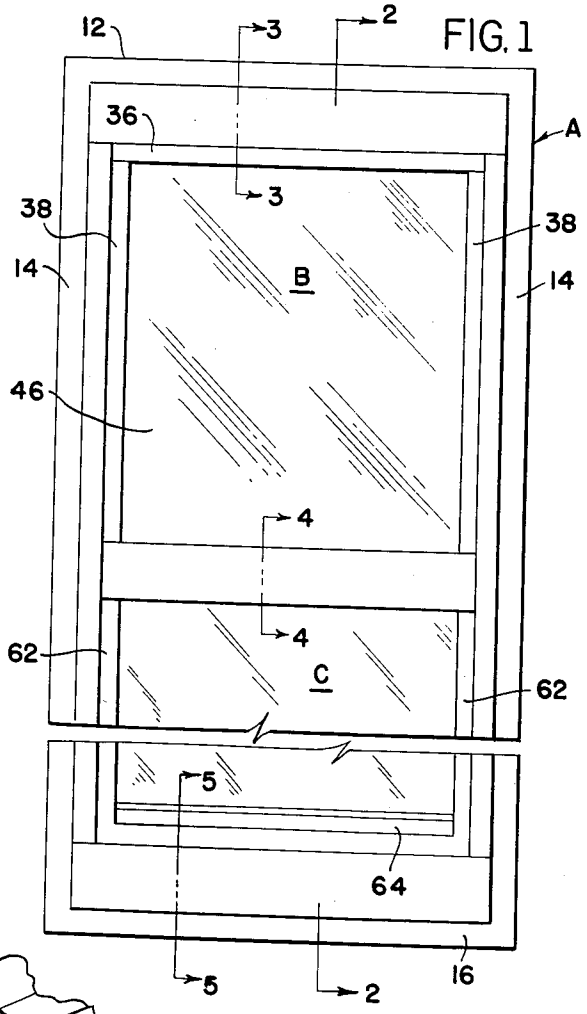
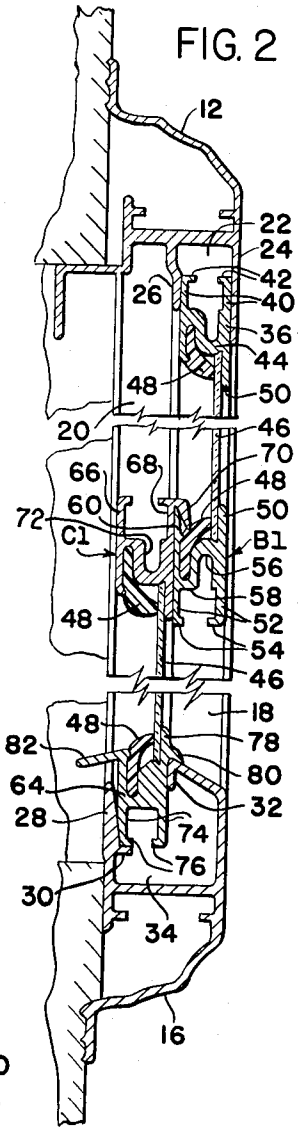


FIG. 2



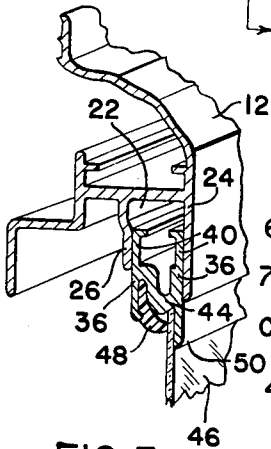


FIG. 3

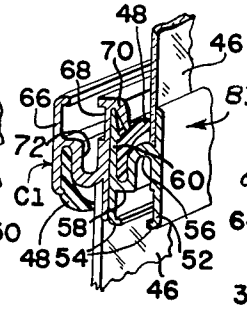
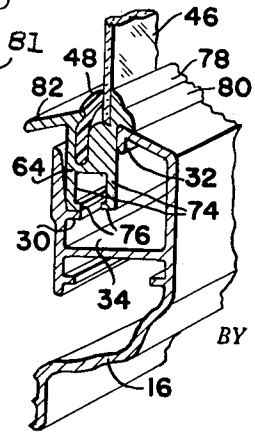


FIG. 4

FIG. 5



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STORM WINDOW STRUCTURE

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1 Claim. (Cl. 20—55)

My invention relates to storm windows, and relates more particularly to double hung storm window sashes wherein the sash is separable and positively sealed at their meeting rail when closed.

Heretofore, it has been found that storm windows suffer their greatest heat loss at the meeting rail between the upper and lower sash. This difficulty arises because the frames of the individual sash are metal, as for example, aluminum extrusions, and a metal to metal contact without gasketing or weatherstripping means does not afford a seal to inhibit efficiently heat losses.

It, therefore, is an object of my invention to construct a double-hung, metal, storm window which will be positively sealed at their meeting rail when the sashes are in closed position.

Another object of my invention is to construct a storm window having separable sashes which will interlock when closed to provide an integrally formed meeting rail seal.

Another object of my invention is to construct a storm window having separable sashes which will not rattle when in a closed position.

Other objects of my invention are to provide an improved device of the character described, that is easily and economically produced, which is sturdy in construction, and which is highly effective in operation.

With the above and related objects in view, my invention consists in the details of construction and combination of parts, as will be more fully understood from the following description when read in conjunction with the accompanying drawing, in which:

Fig. 1 is a front elevational view of a storm window embodying my invention.

Fig. 2 is a sectional view taken along lines 2—2 of Fig. 1.

Fig. 3 is a sectional view taken along lines 3—3 of Fig. 1.

Fig. 4 is a sectional view taken along lines 4—4 of Fig. 1 and showing the interlocking structure of the meeting rail.

Fig. 5 is a sectional view taken along lines 5—5 of Fig. 1.

Referring now in greater detail to the drawing, in which similar reference characters refer to similar parts, I show a storm window construction comprising a frame, generally designated as A, an upper sash, generally designated as B, and a lower sash, generally designated as C. The lower rail of the upper sash B is designated as meeting rail B1 and is provided with an axially disposed acute edge extending the full width of the sash adapted to interfit with a correspondingly shaped V-like groove in the upper rail of the lower sash, designated meeting rail C1. The meeting rail construction will be further described hereinafter.

The frame A is comprised of a channeled lintel member 12, channeled side jamb members 14, and a sill member 16, all being formed of extruded or rolled aluminum or like corrosion resistant metal. Any suitable securing means, such as screws, may be employed for anchoring the frame A to the outside of a window frame.

The side jamb members 14 are so formed as to provide a pair of opposed vertically extending channels or guideways 18 and 20 within which the sash B and C are slideably supported. A channel 22 is formed in the lintel member 12 between an exterior flange 24 and parting strip 26 corresponding to channels 18 in the jamb members. The sill member 18 has a similar channel corresponding to the jamb channel 20 and is formed between a trim strip 28 having a stop lip 30 and a downwardly extending flange member 32. The channel in the sill member communicates with a drip chamber 34 integrally formed in the extrusion.

The upper sash B has a top rail 36 and a pair of side rails 38, each being of identical extruded metal construction, and formed with spaced outwardly projecting flanges 40 having inturned projections 42 adapted to be received within the channels 18 and 22 of the side jamb members 14 and the lintel member 12. The flanges 40 are connected by an uncinated diaphragm 44 which serves as a stop for a glass panel 46 and which forms a recess to retain vinyl stripping 48 for maintaining the glass panel in place against a shoulder 50.

The lower rail of the upper sash, previously designated as meeting rail B1, is a metal extrusion essentially H-shaped in cross-section having spaced downwardly projecting flanges 52 with inturned projections 54. The flanges 52 are connected by an uncinated diaphragm 56 which is generally U-shaped in cross-section having a horizontally extending leg 58. The upper portion of the meeting rail B1 has an upwardly projecting spear-like edge 60 which extends the full width of the sash and is adapted to interfit with a correspondingly shaped V-like groove in the meeting rail C1 of the lower sash.

The lower sash C has a pair of side rails 62, a bottom rail 64, and an upper or meeting rail C1, all being of extruded metal construction. The side rails 62 are identical in construction to the side rails 38 and the top rail 36 of the upper sash B.

The meeting rail C1 is essentially H-shaped in cross-section having upwardly projecting flanges 66 and 68. The flange 68 has an integrally formed and downwardly extending lip 70, which produces with the flange a horizontally extending V-shaped groove to receive the upwardly projecting spear-like edge 60 on the meeting rail B1. An uncinated diaphragm 72 connects the flanges 66 and 68.

The lower sash, bottom rail 64 has spaced outwardly projecting flanges 74 having inturned projections 76 adapted to be received within the channel formed by the trim strip 28 and flange member 32 of the sill. An upwardly extending shoulder 78 having a lip 80 serves to retain the glass panel 46 and also to direct water over the edge of the sill member. In addition, the bottom rail has an integrally formed arm 82 which facilitates the raising or lowering of the lower sash C.

As is apparent from the foregoing description, my invention operates as follows: The upper sash B is slideably supported in channels 18 wherein the upper rail 36 is firmly engaged between the exterior flange 24 and parting strip 26. The lower sash C is mounted within channel 20 and is slid vertically upward until its meeting rail C1 is elevated above the meeting rail B1 of the upper sash B. When the sash C is lowered, the lip 70 of meeting rail C1 overhangs the spear-like edge 60 of the upper sash meeting rail B1, and the lip resiliently indents the vinyl stripping 48 which is supported within the uncinated portion 56. The upper and lower sashes are thereby double-sealed at their meeting rail extending the full width of the sash (1) by the spear-like edge of the meeting rail B1 interfitting within the axially extending groove in

the meeting rail C1 to form a metal to metal seal, and (2) by the lip 70 indenting the stripping 48 to form a metal to vinyl seal.

Although my invention has been described in considerable detail, such description is intended as being illustrative rather than limiting, since the invention may be variously embodied, and the scope of the invention is to be determined as claimed.

I claim as my invention:

A storm window construction comprising a frame, an upper sash slidably supported in a channel of said frame, a lower sash slidably supported in an adjacent channel of said frame, each said sash having extruded metal peripheral rails being H-shaped in cross-section and having outwardly extending flanges connected by an uncinated diaphragm, vinyl stripping inserted within said uncinated diaphragm maintaining glass panels against a shoulder of said rails, the bottom rail of said upper sash and the upper rail of said lower sash being meeting rails, said lower sash meeting rail having a downwardly extending lip on one of said outwardly extending flanges forming with the side of the flange a V-shaped groove adapted to receive a spear-like edge on the upper portion of said upper sash meeting rail, said lip resiliently indenting said vinyl stripping in said upper sash meeting rail.

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