

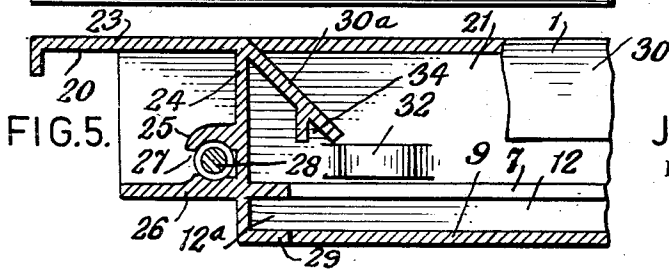
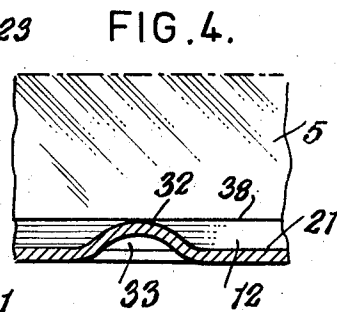
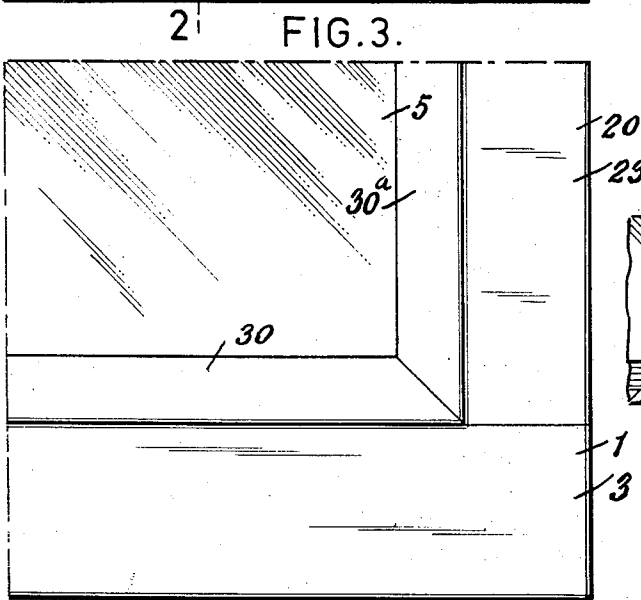
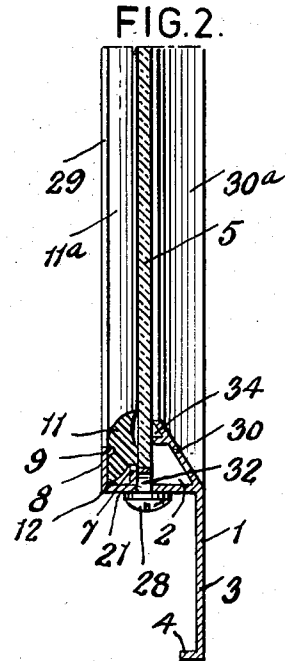
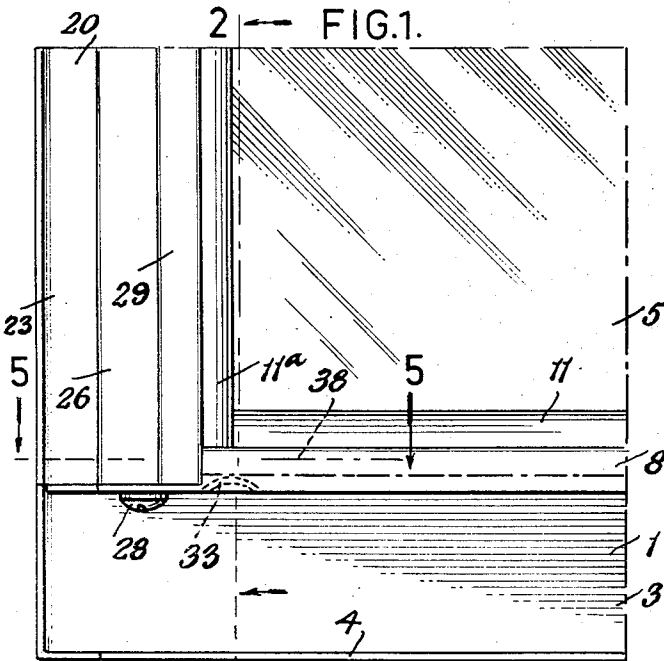
Sept. 16, 1958

J. C. BANCROFT
WINDOW CONSTRUCTION

2,852,113

Filed March 6, 1957

2 Sheets-Sheet 1



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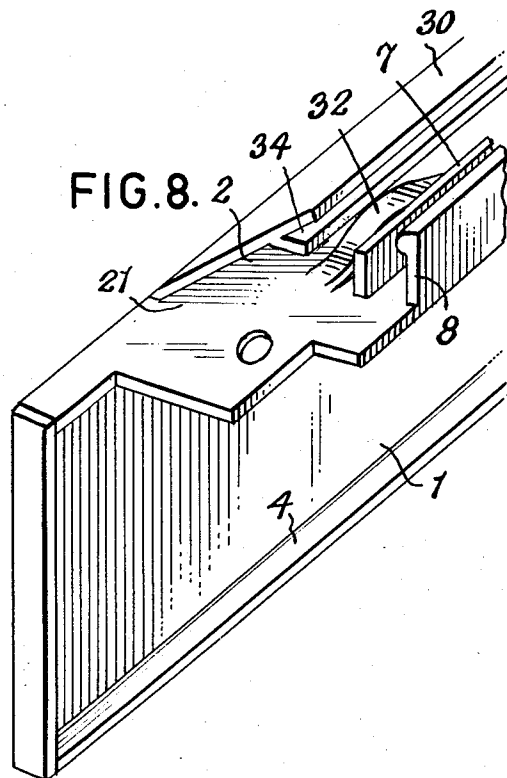
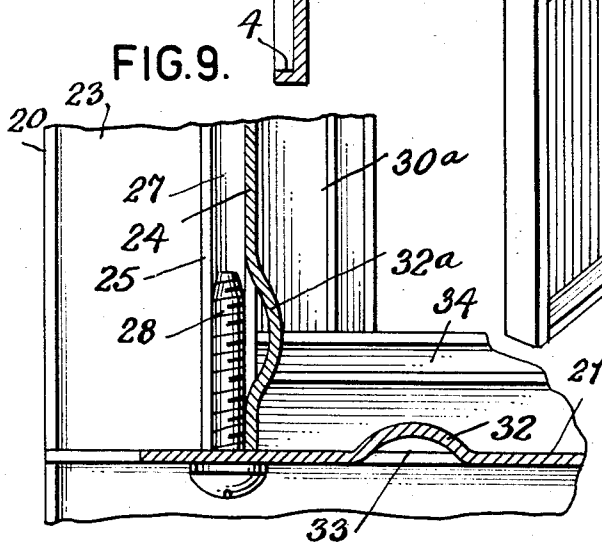
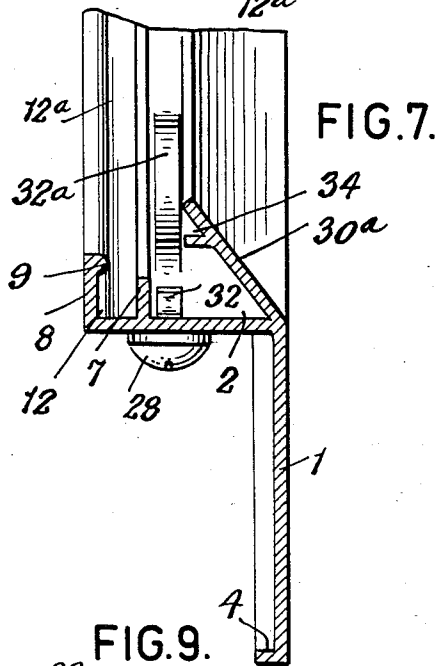
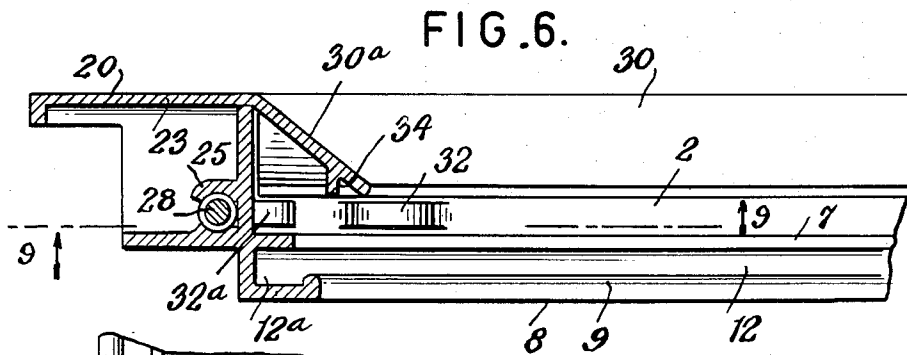
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WINDOW CONSTRUCTION

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2 Sheets-Sheet 2



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2,852,113

WINDOW CONSTRUCTION

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Application March 6, 1957, Serial No. 644,305

3 Claims. (Cl. 189—76)

This invention relates to window construction and applies to windows of various types, and more particularly to those of the so-called "awning" type.

The invention has special reference to means by which panes are mounted in the frames, some of the elements of the present construction being shown in my co-pending application Serial No. 619,530, filed October 31, 1956. The present invention relates particularly to means by which the panes are supported in a frame in a manner to prevent rattle; to absorb shocks; to provide drain openings or so-called "weep holes" in the frame, and to strengthen the frame and particularly at the corners thereof.

It is an object of the invention to provide a frame construction which will enable the glass panes to be installed from the interior of a building or from the inner side of the frame. Through the arrangement herein described, the use of putty or similar glazing materials will be obviated; the panes can be installed in the sashes from inside of the building with the pane-retaining means fitted from the inside, thus avoiding the dangers incidental to using ladders or scaffolding when inserting the panes.

It is an object of the invention to provide a novel means for supporting the panes along their edges, and in a manner to reduce the possibility of rattle or looseness of the panes in the frame, and which means will tend to shock-absorb the panes while providing drainage openings.

It is an object of the invention to provide pane-supporting elements formed integrally with the frame and which will co-operate with weatherstripping of novel formation and with an inclined pane-encompassing flange at the front of the frame, to thereby not only improve the appearance of the frame but also attain a secure mounting for the pane therein.

It is an object of the invention to provide means at the corners of the frame for preventing pivotal movements of the frame elements with respect to one another.

With these, and other objects to be hereinafter set forth in view, I have devised the arrangement of parts to be described and more particularly pointed out in the claims appended hereto.

In the accompanying drawing, wherein an illustrative embodiment of the invention is disclosed,

Fig. 1 is an elevational view of a corner portion of a sash or window frame made according to the invention and looking at the rear of the same;

Fig. 2 is a sectional view, taken substantially on the line 2—2 of Fig. 1, looking in the direction of the arrows;

Fig. 3 is a front elevational view of the portion of the sash or frame shown in Fig. 1;

Fig. 4 is an enlarged detail view showing one of the pane-engaging tongue-like projections;

Fig. 5 is a sectional view with the weatherstripping and pane omitted and taken substantially on the line 5—5 of Fig. 1, looking in the direction of the arrows;

Fig. 6 is a horizontal sectional view of the frame, somewhat similar to Fig. 5;

Fig. 7 is a vertical sectional view at right angles to Fig. 6;

Fig. 8 is a perspective view of an end portion of one of the frame members, and

Fig. 9 is a sectional view taken substantially on the line 9—9 of Fig. 6, looking in the direction of the arrows.

Referring to the drawing, 1 indicates generally the lower member or bottom rail of a sash which can be of any suitable metal type, such as for example, the kind employed usually in awning windows. The frame is preferably, but not necessarily, composed of extruded aluminum, and it includes bottom and top members or rails, both of which can be similar to that shown at 1 and two side rails, one of which is shown in part at 20. The rail or bottom member 1 is provided with a relatively wide outer flange or facing strip 3, reinforced at its lower edge with an intumed flange 4. Extending rearwardly from the upper end of the forward flange 3 and formed integrally therewith is a web 21 arranged at right angles to the flange 3. Said web 21 is provided at its inner end with an upstanding flange 8 located at right angles to web 21 and formed at its upper end with a longitudinal rounded bead shown at 9. At the upper end of the flange 3 is also provided an integrally-formed, angular or inwardly-inclined strip or flange 30 thickened at its upper end and formed with a pocket 34 which forms a continuous lengthy groove into which a plastic sealing compound or a compressible sealing strip can be fitted if found necessary or desirable. Located between the inclined strip or front flange 30 and the rear flange 8, is an upstanding wall 7 and this arrangement results in the formation of a pane-receiving groove 2 located between the inclined front strip 30 and the wall 7. It also results in a rear sealing-strip groove 12, located between the wall 7 and the rear flange 8. The sealing strip fitted in the groove 12 is shown at 11.

The side frame members 20 are each provided with a forward flange 23, a rearwardly-extending web 24 at right angles to the forward flange 23; a rib 25; an angular front flange 30a and a rear flange 26. The rib 25 and the rear flange 26 are shaped to provide a channel 27 between them in a manner to threadably receive a fastening screw 28 which extends through an extended part of the web 21 of the lower frame member or bottom rail and threadably enters into the channel 27 and thus joins the bottom rail 1 and side rail 20 of the frame together at the corners. At its rear, the side frame member 20 is formed with a wall 29 which co-operates with a part of the flange 26 to form a channel 12a to receive a sealing piece or weatherstrip 11a. Said strip 11a is similar to the weatherstrip 11 inserted in the channel 12. This weatherstripping 11 and 11a and its manner of mounting is described and claimed in my said co-pending application Serial No. 619,530 and therefore will not be more fully described herein. The weatherstrips 11 and 11a may be composed of strips of vinyl plastic material or other suitable substance and are held in the grooves 12 and 12a by interlock with the bead 9.

The glass pane 5 has its marginal edge 38 fitted in the grooves 12 and 12a and is thus positioned between the front inclined strips or flanges 30 and 30a and the walls 7 and 26. The web 21 is provided at selected suitable intervals with upwardly-arched tongues 32 constituting resilient supports or spacers for the pane. These arched tongues 32 are formed by being struck out from the material of the web 21 and they cooperate with the weatherstrips in holding the pane snugly and resiliently in the frame and prevent rattle or looseness of fit, particularly since the tongues possess a certain amount of resilience. The formation of the tongues 32 in the manner described,

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namely, by striking the same out of the body of the web 21, also produces apertures 33 beneath or behind each tongue, such apertures 33 serving to form drainage or so-called "weep holes" and avoiding the retention of moisture within the frame. These pane-engaging tongues 32 may be provided wherever required in the bottom, top and side rails of the frame. When the tongues 32 are employed adjacent to opposite ends of the lower frame member and the pane is supported on the tongues, this tends to relieve the central part of the lower frame member of the weight of the pane.

It will be noted in Figs. 6, 7 and 9 that the tongues provided in several of the rails are indicated at 32a. These tongues 32a are so positioned that they project behind the inclined flange 30 of the frame member 1 so that said inclined flange is confined between the tongue 32a and the co-operating inclined flange of the frame member at right angles to that from which the tongue 32a has been struck. This enables tongue 32a to function as a lock and to co-operate with screw 23 in restraining pivotal movement of the vertical frame members with respect to the horizontal frame members.

From the foregoing, it will be apparent that the structure described provides a construction in which the installation of the panes is simple and readily performed from the interior of the building. This result is possible because the weatherstripping 11 and 11a is wholly confined to the inner side of the pane adjacent to its marginal edge, with no part of the weatherstripping arranged against the edge, the pane being supported on the tongues 32 and 32a rather than by the weatherstripping. It results in a sash provided on the outer side with a permanent inclined water deflector arranged around the exterior of the pane, and which adds materially to the appearance of the pane and sash; it mounts the pane in a resilient, weathertight manner and possesses many other advantages apparent to those skilled in this art.

Having described an embodiment of the invention, it is obvious that the same is not to be restricted thereto, but is broad enough to cover all structures coming within the scope of the annexed claims.

What I claim is:

1. In a window frame construction, a sash having a

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frame provided with a pair of co-extensive and side-by-side lengthy channels, one of said channels receiving weatherstripping, the other channel receiving the edge of a pane, the weatherstripping engaging against the rear surface only of the pane adjacent to the marginal edge of the same, the pane-receiving channel having struck-out tongues formed directly out of the frame and engaging against the edge of the pane and spacing the same from the base of the channel, the weatherstripping being insertable in its channel after the pane has been fitted in the frame.

2. In a window frame construction, a sash having a metal frame provided with a pair of separate, parallel channels, the outermost channel having a front, inwardly-inclined flange engaging against a pane fitted into said channel, the rearmost channel containing a weatherstrip operative against the rear face only of the pane adjacent to the marginal edge of the same but not extending against the edge of the pane, the front channel being provided with a plurality of struck-out raised tongues formed directly out of the frame in the pane-receiving channel operative against the edge of the pane to space the same away from the portion of the channel from which the tongues are formed.

3. In a window frame construction, a sash having a metal frame provided with a sash-receiving channel defined by a front, inwardly-inclined flange, said channel having a bottom web slitted to form a raised, upwardly-arched endless spring tongue operative against the edge of a pane fitted into said channel, and a weatherstripping carried by the sash and disposed wholly to the rear of the pane and engaged against the face only of the pane adjacent to its marginal edge.

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