

Jan. 16, 1968

C. L. EVANS ETAL

3,363,385

WINDOW STRUCTURE AND GLAZING MEMBER

Filed March 15, 1965

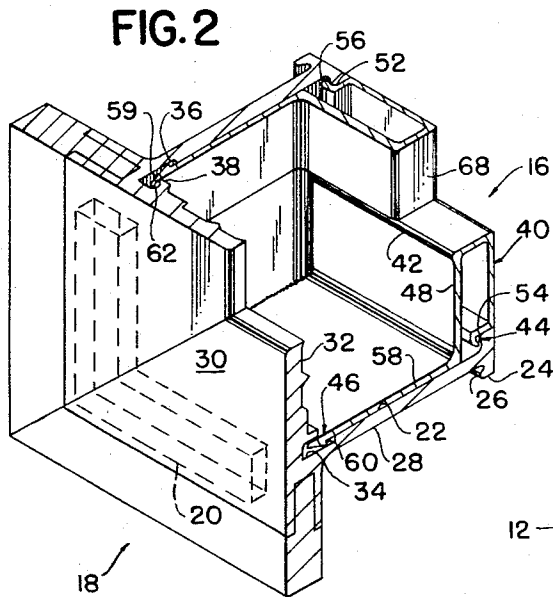


**FIG. 1**

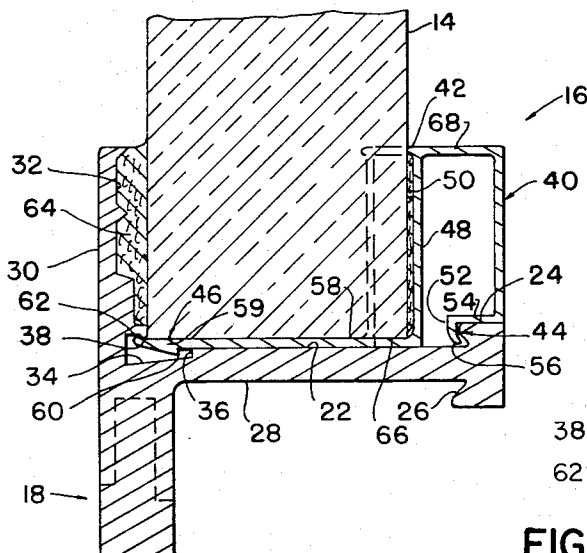
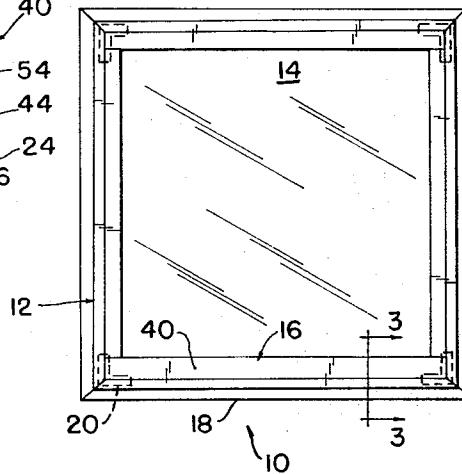


**FIG. 3**

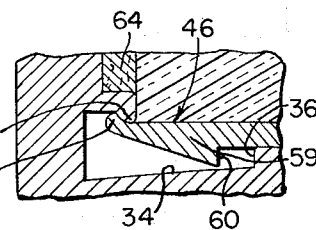


**FIG. 4**

INVENTOR.  
CHARLES L. EVANS  
ALOYSIUS R. LEVAN  
BY *Whittemore,*  
*Nalbat & Belknap*  
ATTORNEYS

1

2

3,363,385

**WINDOW STRUCTURE AND GLAZING MEMBER**  
Charles L. Evans, Buffalo, and Aloysius R. Levan, Depew,  
N.Y., assignors to Fenestra, Incorporated, Chicago, Ill.,  
a corporation of Michigan

Filed Mar. 15, 1965, Ser. No. 439,581

8 Claims. (Cl. 52-498)

The invention relates to building structures and refers more specifically to an inside glazing member for window construction.

In the past glass window panes have usually been held in metal frames by metal glazing members secured to the frames by screws or the like. Where snap-in glazing members have been provided in the past they have generally been constructed of deformable plastic. In addition, prior snap-in glazing members whether constructed of plastic or metal have been rather easily displaced due to pivoting of the snap-in glazing member on application of force on the window pane from the exterior thereof such as might be applied by a high wind.

It is therefore an object of the invention to provide improved window construction including a snap-in metal inside glazing member.

Another object is to provide an improved snap-in metal glazing member.

Another object is to provide an inside glazing member including improved means for securing the glazing member within a window frame.

Another object is to provide window construction including a snap-in glazing member which window construction and glazing member are constructed and arranged to prevent pivoting of the glazing member inwardly of window construction on application of an inward force on a window pane installed by the glazing member.

Another object is to provide window construction including a frame member having a recess therein for receiving the edge of a window pane, a glazing member for securing the pane to the window frame, and means integral with and operable between the frame member and glazing member for securing the glazing member in the recess in the frame member and for preventing pivoting of the glazing member inwardly of the frame.

Another object is to provide a window construction inside glazing member which is simple in construction, economical to manufacture and efficient in use.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjunction with the accompanying drawings, illustrating a preferred embodiment of the invention, wherein:

FIGURE 1 is an elevation view of window construction including a snap-in inside glazing member constructed in accordance with the invention.

FIGURE 2 is an enlarged perspective view of a corner of the window construction illustrated in FIGURE 1.

FIGURE 3 is an enlarged partial section view of the window construction illustrated in FIGURE 1 taken substantially on the line 3-3 in FIGURE 1.

FIGURE 4 is an enlarged section view of the locking structure of the window construction illustrated in FIGURE 1 similar to a portion of the section view of FIGURE 3.

With particular reference to the figures of the drawing, one embodiment of the present invention will now be considered in detail.

The window construction 10 illustrated in FIGURE 1 includes a window frame 12 and the glass window pane 14 secured in the frame 12 by means of the snap-in inside glazing member 16. In accordance with the invention the glazing member 16 is constructed to prohibit pivoting thereof inwardly of the window frame 12 in

conjunction with the individual frame member 18. Displacement of the window pane 14 inwardly of the window frame 12 when the window pane 14 is subjected to pressures due to high winds or the like is thus prevented.

More specifically the window frame 12 includes the individual frame members 18 which are mitered at the corners and secured together by means of connecting brackets 20. The individual frame members 18 each include a recess 22 formed therein by the inner abutment 24 having the reentrant surface 26, the connecting portion 28 and the outer abutment 30 including the surface 32 formed as shown best in FIGURE 3.

A recess 34 is provided within the recess 22 at the junction of the outer abutment 30 and the connecting member 28. Recess 34 formed as shown best in FIGURE 3 includes the abutting surface 36 therein and the camming bead 38 extending thereinto, as best shown in FIGURE 3.

The inside glazing member 16 includes the generally rectangular portion 40 having the glazing bead 42 at one corner thereof and the retaining flange 44 depending from one end thereof. The locking structure 46 extending from side 48 of the rectangular portion 40 is also an integral part of the glazing member 16.

The glazing bead 42, as shown best in FIGURES 2 and 3, is provided to space the window pane 14 from the side 48 of the generally rectangular portion 40 of glazing member 16. Calking compound 50 for sealing between the window pane 14 and glazing member 16 may thus be provided between the glazing member 16 and window pane 14.

The retaining flange 44, as illustrated best in FIGURE 3, includes a part 52 extending perpendicular to the end 54 of glazing member 16 away from the rectangular portion 40 thereof and a part 56 depending from the part 52 outwardly of the end 54 of the rectangular portion 40 of glazing member 16 and away from the side 48 thereof. The retaining flange 44 extends longitudinally of the glazing member 16 for substantially the full length thereof and is received within recess 22 in engagement with the reentrant surface 26 of the recess to prevent movement of the glazing member 16 directly inwardly of the window frame 12.

The locking structure 46 of the glazing member 16 includes the part 58 extending perpendicularly away from the side 48 of the rectangular portion 40 of the glazing member 16 adjacent the end 54 thereof. The glazing member part 58 is terminated in an offset tapered end 59 forming abutment 60 adjacent the abutment 36 in the recess 34 on the frame member 18 with the glazing member 16 and frame member 18 in assembly. The end 59 of part 58 of frame member 18 is terminated with the camming bead 62 extending in the opposite direction from the abutment 60 and adapted to engage the camming bead 38 on the frame member 18 in assembly. In operation the abutment 60 is therefore cammed into engagement with the abutment 36 on application of pressure to the window pane 14 from the outside of window frame 12 as will be considered subsequently.

In installation the frame members 18 connected as shown in FIGURE 1 have calking compound 64 applied to surface 32 thereof and the edge 66 of window pane 14 set in recess 22. The inside glazing member 16 is then coated with calking 50 on side 48 and the part 58 thereof is inserted between the edge 66 of window pane 14 and the connecting portion 28 of frame member 18 until the end 59 thereof snaps into the recess 34 in the frame member 18. The retaining flange 44 is then snapped over the abutment 24 to prevent movement of the glazing member 16 inwardly of frame 12 which is to the right in FIGURE 3. The window pane 14 is now securely fastened to the frame member 18.

Should high pressure be applied to the window pane 14 which would tend to pivot the glazing member 16 about the retaining flange 44, the portion of the side 43 of the glazing member 16 which is closest the connecting portion 28 of the frame member will first tend to move inwardly under the pressure on the window pane 14. The camming bead 62 on end 59 of part 58 of glazing member 16 will, on movement of the lower portion of side 48 of glazing member 16 to the right in FIGURE 3, cam the end 59 of the part 58 of the locking structure 46 downward to insure contact between the abutment 60 on the glazing member 16 and the abutment 36 on the frame member 18.

The glazing member 16 will thus be prevented from pivoting about the retaining flange 44 so that the window pane 14 will be held in position in the window frame 12 even though substantial external pressure be applied against the window pane 14. Further the glazing member 16 is substantially non-collapsible and will resist failure of the calking seal by restraining the pane of glass 14 in a fixed position.

While one embodiment of the present invention has been considered in detail, it will be understood that other embodiments and modifications thereof are contemplated. For example, the glazing member 16 may be used to secure a building panel, other than the glass window pane 14, in a frame 12 and the frame or glazing member may be constructed of material other than the aluminum shown, such as steel or plastic. Also, it will be particularly noted that the end 68 of the rectangular portion 40 may be of different lengths as shown in phantom in FIGURE 3 to accommodate different thickness panels, such as glass pane 14. It is the intention to include all such embodiments and modifications as are defined by the appended claims within the scope of the invention.

What we claim as our invention is:

1. Window construction comprising a window frame including frame members having a first longitudinally extending recess therein which first recess includes an inner and outer abutment surface and a second longitudinally extending recess within the first recess adjacent the outer abutment surface of said first recess including an inner abutment surface, a frame camming bead extending into the second recess, a window pane having edges positioned within the first recess in the frame members and glazing members extending around the edges of the window pane, each having a cross section including a generally rectangular portion, a retaining flange extending outwardly from one end of the rectangular portion and extending into the first recess in the frame members in engagement with the inner abutment surface thereof and locking structure extending from one side and at the one end of the rectangular portion of the cross section of the glazing members and into the second recess in the frame members for preventing pivoting of the glazing members inwardly of the window pane about the retaining flange part of the cross section thereof including a part of the cross section of the glazing members extending between the edge of the glass pane and frame members having a downwardly extending abutment engageable with the abutment surface in the second recess in the frame members which part of the cross section of the glazing members is terminated in an upwardly extending locking structure camming bead within the second recess in the frame members in camming relation to the frame camming bead to cam the abutment on the locking structure of the glazing members and the abutment surface of the second recess into engagement on movement of the window pane toward the glazing members.

2. A glazing member including a cross section having a generally rectangular portion, a retaining flange extending generally outwardly from one end of the rectangular portion of the glazing member and locking structure extending from one side and at one end of said rectangular portion of the cross section of the glazing mem-

ber including a part of the cross section of the glazing member extending perpendicularly away from the one side of the rectangular portion thereof which terminates in an abutment facing in the direction of the rectangular portion of the cross section and extending outwardly of the one end thereof and a camming bead extending in the opposite direction from the abutment on the glazing member cross section.

3. Construction comprising a frame including frame members having a first longitudinally extending, generally U-shaped recess therein which first recess includes an inner abutment surface and a second longitudinally extending, generally U-shaped recess within the first recess extending into the bottom and one side of the first recess, one side of the second recess providing an inner abutment surface, a panel having edges positioned within the first recess in the frame members and separate members extending around the edges of the panels each having a cross section including a hollow rectangular portion, one end of which is open to provide longitudinally extending edges, a longitudinally extending retaining flange extending outwardly from one edge of the open end of the rectangular portion and extending into the first recess in the frame members in engagement with the inner abutment surface thereof and longitudinally extending locking structure extending from the other edge of the one end of said rectangular portion of the cross section of the separate members and into the second recess in the frame members for preventing pivoting of the separate members inwardly of the panel about the retaining flange part of the cross section thereof.

4. Structure as set forth in claim 3 wherein the locking structure includes a downwardly projecting portion within the second recess forming an abutment engageable with the second abutment in the second recess.

5. Structure as set forth in claim 4 wherein the frame members further include a longitudinally extending frame camming bead extending into the second recess and a locking structure camming bead extending upwardly from the locking structure within the second recess engageable with the frame camming bead to cam the locking structure abutment and the inner abutment surface in the second recess into engagement on movement of the panel toward the rectangular portion of the separate members.

6. A glazing member including a cross section having a hollow rectangular portion open longitudinally at one end to provide a pair of longitudinally extending edges, a retaining flange extending outwardly from one edge of the open end of the rectangular portion and a locking portion extending transversely of the sides of the rectangular portion from the other edge of the open end of the rectangular portion away from the rectangular portion and terminated in locking structure.

7. Structure as set forth in claim 6 wherein the locking structure includes a downwardly extending portion forming an abutment facing in the direction of the rectangular portion.

8. Structure as set forth in claim 7 wherein the locking structure further includes a camming bead extending transversely of the locking portion of the glazing member in the same direction with respect thereto as the rectangular portion.

#### References Cited

##### UNITED STATES PATENTS

|           |         |            |          |
|-----------|---------|------------|----------|
| 1,071,394 | 8/1913  | Clarín     | 52—498   |
| 2,304,423 | 12/1942 | Schiller   | 52—498 X |
| 2,342,352 | 2/1944  | Lowry      | 52—502   |
| 2,765,057 | 10/1956 | Stiefvater | 52—498   |
| 2,867,856 | 1/1959  | Cudini     | 52—502   |
| 3,155,205 | 11/1964 | Place      | 189—76 X |
| 3,212,225 | 10/1965 | Neal       | 52—501 X |

DAVID J. WILLIAMOWSKY, *Primary Examiner*.

J. K. BELL, *Examiner*.