

May 21, 1963

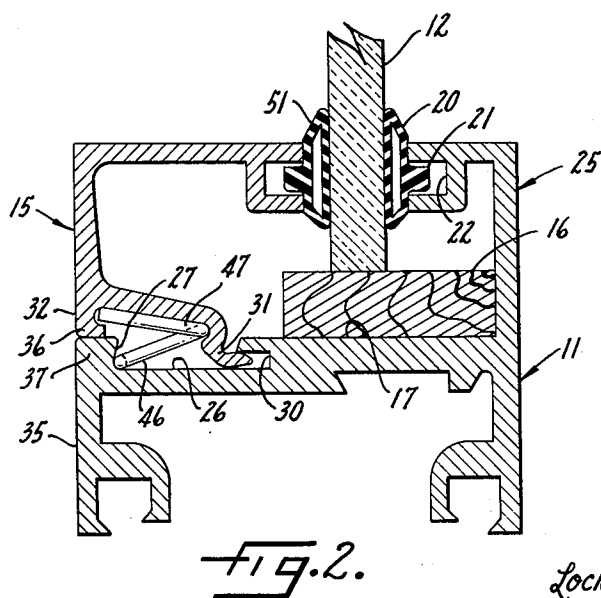
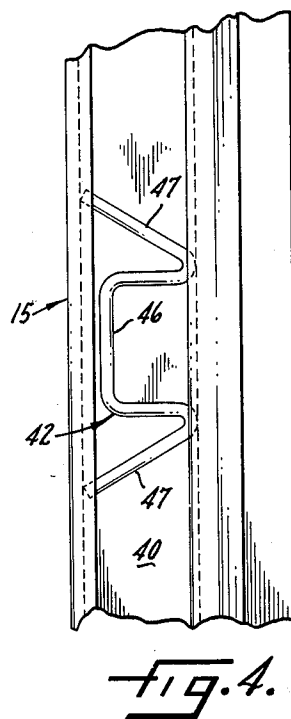
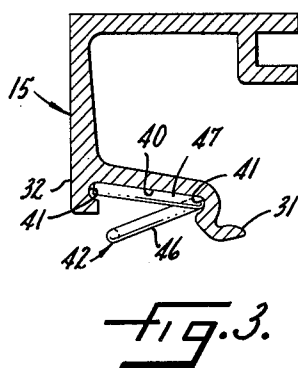
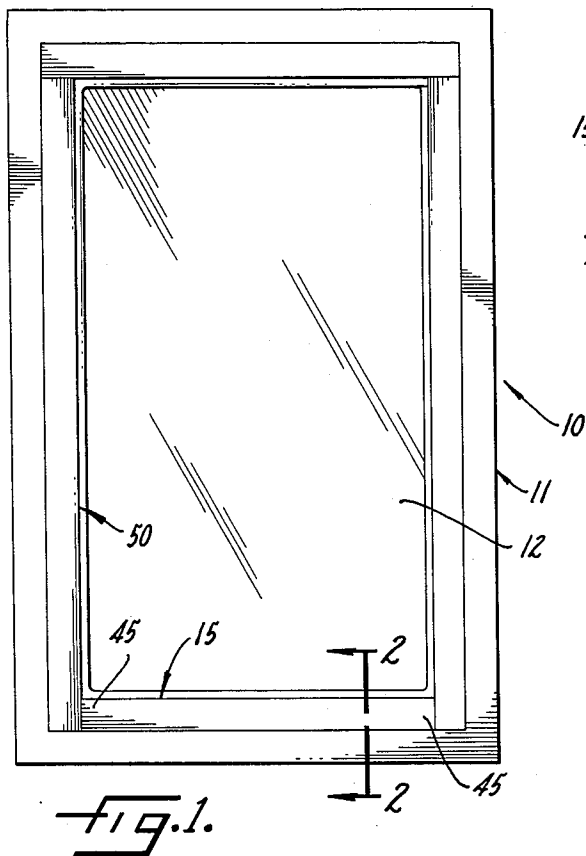
A. B. BROWN

3,090,085

GLAZING STOP

Filed July 26, 1961

2 Sheets-Sheet 1



INVENTOR.
ARVILL B. BROWN

BY
Lockwood, Woodard, Smith & Weikart
Attorneys.

May 21, 1963

A. B. BROWN

3,090,085

GLAZING STOP

Filed July 26, 1961

2 Sheets-Sheet 2

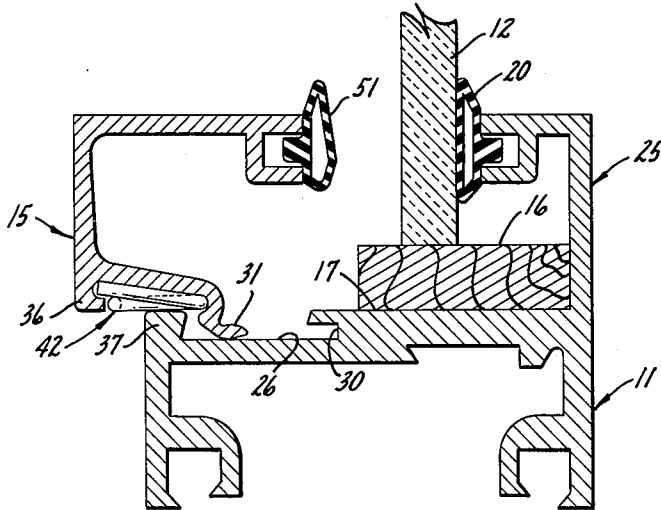


Fig. 5.

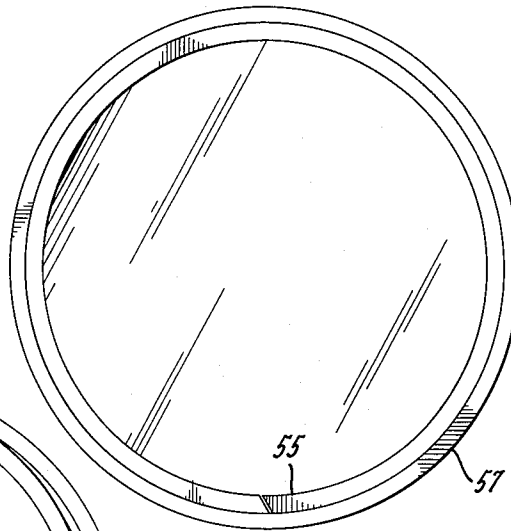


Fig. 6.

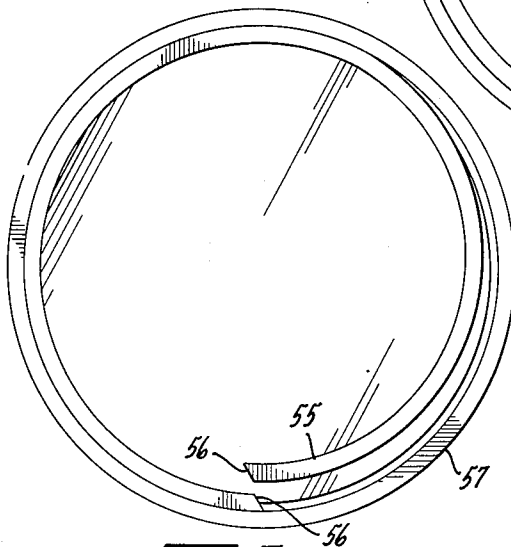


Fig. 7.

INVENTOR
ARVILL B. BROWN

BY
Lockwood, Woodard, Smith & Weikart
Attorneys.

1

3,090,085
GLAZING STOP

Arvill B. Brown, Huntington, Ind., assignor to The Maco Corporation, Huntington, Ind., a corporation of Indiana

Filed July 26, 1961, Ser. No. 126,962
4 Claims. (Cl. 20-56.4)

The present invention relates to improvements in building construction and particularly relates to an improved frame assembly for facilitating the mounting of windows and the like required in such building constructions.

It is desirable in building construction employing metal frame elements for the mounting of windows and the like to provide glazing means which can be quickly assembled and which do not require screws and other visible means of fastening. Known glazing means of this type are not completely satisfactory for various reasons, one of which is that they do not firmly grip the glass or other panel and, thus, do not permit satisfactory glazing. Consequently, one object of the present invention is to provide a frame arrangement permitting a straight-in movement of the glazing stop whereby the glass or other panel is firmly retained in proper position.

A further object of the present invention is to provide an improved glazing arrangement.

Still another object of the present invention is to provide a glazing arrangement whereby a flush, neat appearing structure can be assembled.

Related objects and advantages will become apparent from the following specification, the drawings relating thereto and from the claims hereafter set forth.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims.

FIG. 1 is a front elevation of a rectangular window incorporating the glazing stop of applicant's invention.

FIG. 2 is an enlarged vertical section taken along the line 2-2 of FIG. 1 in the direction of the arrows.

FIG. 3 is a vertical section similar to FIG. 2 of a portion of the structure shown in FIG. 2 and particularly the glazing stop thereof and showing a spring mounted on the glazing stop in a non-stressed position.

FIG. 4 is a bottom view of the structure illustrated in FIG. 3 and showing further details of the spring thereof.

FIG. 5 is a view similar to FIG. 2 but showing a step in the assembly of the structure of FIG. 2.

FIG. 6 is a front elevation of a circular window incorporating the glazing stop of the present invention.

FIG. 7 is a view similar to FIG. 6 showing a step in the assembly of the structure of FIG. 6.

For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the embodiment illustrated in the drawing and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations and further modifications in the illustrated device, and such further applications of the principles of the invention as illustrated therein being contemplated as would normally occur to one skilled in the art to which the invention relates.

Referring now more particularly to the drawings, there is illustrated a window arrangement 10 including a frame 11 which may be composed of extruded aluminum and has a cross section as illustrated in FIG. 2. Mounted within the frame element 11 is a window glass 12 which is retained therein by means of a glazing stop or second frame element 15. The glazing stop 15 is also preferably composed of extruded aluminum and has the cross sectional shape illustrated in FIG. 2.

2

In assembling the frame structure, a board 16 may be supported upon the flat inwardly facing surface or wall 17 of the frame element 11. The window glass 12 is then supported upon the relatively soft wood material 16 and rests against a glazing seal 20 which is tubular in shape and has a projection 21 received in a cavity 22 formed in the frame element 11. The cavity 22 is formed within the distal end of an inwardly directed flange 25 integral with the frame element 11.

Formed within the inwardly facing wall 17 of the frame 11 is an elongated slot or recess 26 which has a forward edge portion 27 sloping somewhat rearwardly and inwardly of the frame element 11. At the rearward edge portion of the indentation 26, there is formed a groove 30 which faces forwardly and opens into the indentation 26. The glazing stop 15 is provided with a hook 31 integral with the stop and proportioned to extend into the groove 30 when the construction is assembled as in FIG. 2. The hook 31 extends along the complete length of the glazing stop 15.

In the assembled relationship of FIG. 2, the forward face 32 of the glazing stop is flush with the forward face 35 of the window frame which provides a neat appearance. Even so, other alternative constructions falling within the scope of the present invention can be conceived wherein these forward faces are not flush. More importantly, the forward portion 36 of the glazing stop is positioned wholly inwardly of the forward portion 37 of the window frame. This arrangement permits a straight-in movement of the glazing stop for securing the window glass 12 in place.

Referring to FIG. 3, the glazing stop 15 is shown as having an outwardly facing indentation 40 with undercut grooves 41 at the longitudinal edges of the indentation. Mounted within this indentation and seated within the grooves 41 is a plurality of springs 42. The springs are spaced along the length of the indentation 40 at suitable intervals and a pair of the springs are located at the ends 45 (FIG. 1) of the glazing stop.

Referring to FIG. 4, the bottom view of the structure of FIG. 3 illustrates in further detail the configuration of a representative one of the springs 42. It can be seen that the spring has a leg 46 which has a U-shape. The spring further includes straight portions 47 diverging from the ends of the U. These straight portions 47 are seated within the grooves 41 and are held in place by tension or stress created as a result of the seating operation. The straight portions 47 also bite into the extruded material to eliminate any sliding action. This effect is particularly important when a glazing stop similar to 15 is used as a vertical member, for example 50 (FIG. 1), because any sliding action of the spring down the indentation 40 is thereby eliminated.

It will be noted from FIG. 5 that the leg 46 and the indentation 40 are so proportioned that the leg may be depressed into the indentation. Thus, the only portion of the glazing stop which projects outwardly of the forward portion 37 of the window frame is the hook 31. This hook is inserted within the recess 26 and the glazing stop is moved directly rearwardly until the hook moves into the groove 30 and a glazing seal 51 resiliently engages the glass 12.

It can be appreciated that this straight-in movement is made possible by the fact that the entire forward portion 36 of the glazing stop and the leg 46 of the spring is positioned inwardly of the forward portion 37 of the window frame. When the stop reaches the position of FIG. 2, the leg 46 of the spring snaps down into the indentation 26 and this locks the stop against forward movement away from the window glass. Because the glazing seal 51 is compressed, the window glass 12 is firmly held in place.

It can be appreciated that in many cases there will be no necessity to remove the glazing stop from the window frame. However, in case of window damage or for other reasons, the glazing stop may be disassembled by inserting a screw driver or similar tool between the stop and the window frame and prying the glazing stop upwardly as viewed in FIG. 2 until the hook 31 is withdrawn from the groove 30. Continued upward movement of the glazing stop will cause the leg 46 of the spring to snap out of the indentation 26. Of course, repeated disassembly of the present arrangement may damage the springs 42. However, these springs are relatively inexpensive and can be easily replaced.

Referring to FIG. 1, the glazing stop 15 is the last stop to be assembled in the window 10. In the particular embodiment illustrated in FIG. 1, the glazing stop is fabricated and glazed in segments such as 15 and 50. In other words, a separate section of glazing stop is used for each side of the window. For the circular window illustrated in FIG. 6, the glazing stop 55 may be a closed loop with a running miter joint formed by surfaces 56 at the ends of the stop. Springs identical to the springs 42 above described would be located around the complete periphery of the stop 55 for mounting it within the window frame 57. Of course, the present invention can be used in various shaped windows such as church windows.

From the above description, it will be obvious that the present invention provides an improved glazing arrangement which can provide an extremely neat appearing construction. More importantly, the glazing arrangement of the present invention results in a firmly mounted window or other panel by reason of the straight-in movement used in its assembly and made possible by its particular novel construction.

While the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character, it being understood that only the preferred embodiment has been shown and described and that all changes and modifications that come within the spirit of the invention and the scope of the claims are also desired to be protected.

The invention claimed is:

1. In a window assembly, a first rigid frame element having an inwardly facing wall and an inwardly directed flange, said wall having a recess therein spaced forwardly of said flange, a window disposed forwardly of and against said flange, a resilient seal received between said flange and window, a second rigid frame element received within said first frame element and against said window, said second frame element having an outwardly facing indentation, a spring mounted within said indentation and having a leg projecting outwardly of said indentation and forwardly into said wall recess, said leg being resiliently depressable into said indentation, the forward portion of said second frame element being positioned wholly inwardly of the wall of said first frame element to permit a direct rearward movement of said second frame element into said first frame element, a rigid hook projecting rearwardly from said second frame element, said first frame element having a forwardly facing groove opening into said wall recess and receiving said hook.

2. In a window assembly, a first rigid frame element having an inwardly facing wall and an inwardly directed flange, said wall having a recess therein spaced forwardly of said flange, a window disposed forwardly of and against said flange, a resilient seal received between said flange and said window, a second rigid frame element received within said first frame element and against said window, a resilient seal received between said second frame element and said window, said second frame element having an outwardly facing indentation, a spring mounted within

said indentation and having a leg projecting out of said indentation and forwardly into said wall recess, said leg resiliently forcing outwardly against said wall and being resiliently depressable into said indentation, the forward portion of said second frame element being positioned wholly inwardly of the wall of said first frame element to permit a direct rearward movement of said second frame element into said first frame element, a rigid hook projecting rearwardly from said second frame element, said first frame element having a forwardly facing groove opening into said wall recess and receiving said hook, whereby said spring tends to pivot said second frame element about the engagement of said hook with said groove and against said window.

3. In a window assembly, a first rigid frame element having an inwardly facing wall and an inwardly directed flange, said wall having a recess therein spaced forwardly of said flange, a window disposed forwardly of and against said flange, a resilient seal received between said flange and window, a second rigid frame element received within said first frame element and against said window, said second frame element having an outwardly facing indentation, a spring mounted within said indentation and having a leg projecting out of said indentation and forwardly into said wall recess, said leg being resiliently depressable into said indentation and the forward portion of said second frame element being positioned wholly inwardly of the wall of said first frame element to permit a direct rearward movement of said second frame element into said first frame element, the leg of said spring being generally in the shape of a U, said spring further including straight portions diverging from the free ends of the U, said second frame element having mutually facing grooves opening into said indentation and resiliently receiving said straight portions for mounting said spring in said indentation, a rigid hook projecting rearwardly from and integral with said second frame element, said first frame element having a forwardly facing groove opening into said wall recess and receiving said hook.

4. In a window assembly, a first rigid frame element having an inwardly facing wall and an inwardly directed flange, said wall having a recess therein spaced forwardly of said flange, a window disposed forwardly of and against said flange, a resilient seal received between said flange and said window, a second rigid frame element received within said first frame element and against said window, a resilient seal received between said second frame element and said window, said second frame element having an outwardly facing indentation, a plurality of springs mounted within said indentation each having a leg projecting outwardly of said indentation and forwardly into said wall recess, said wall recess having a forward face which slopes inwardly and rearwardly for locking said legs within said recess, said legs being resiliently depressable into said indentation and the forward portion of said second frame element being positioned wholly inwardly of the wall of said first frame element, to permit a direct rearward movement of said second frame element into said first frame element, a rigid hook projecting rearwardly from and integral with said second frame element, said first frame element having a forwardly facing groove opening into said wall recess and receiving said hook.

References Cited in the file of this patent

UNITED STATES PATENTS

2,119,685	Peremi et al. -----	June 7, 1938
2,209,536	Owen -----	July 30, 1940
2,220,569	Himmel et al. -----	Nov. 5, 1940
2,646,863	Hinz et al. -----	July 28, 1953