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M. MAY

3,123,869

SNAP-IN GLASS SETTING CONSTRUCTION

Filed Dec. 19, 1956

FIG. 1.

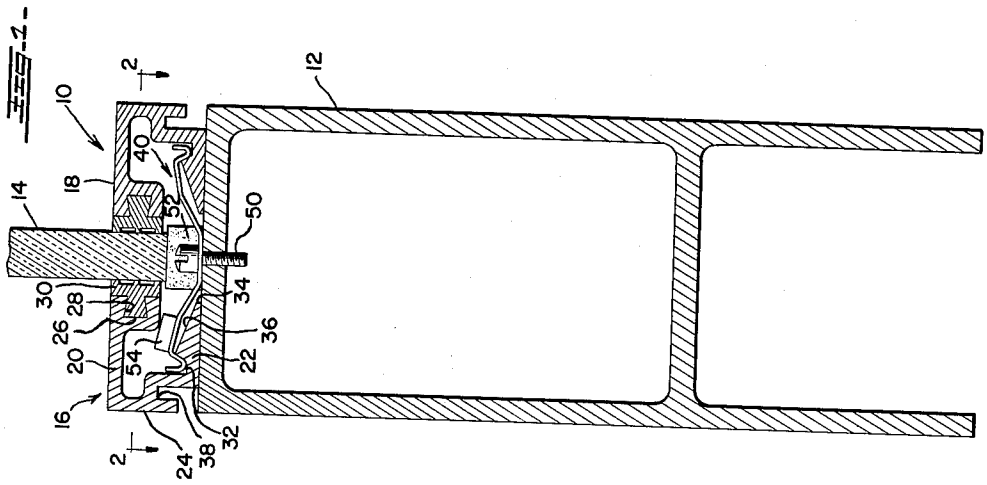


FIG. 2.

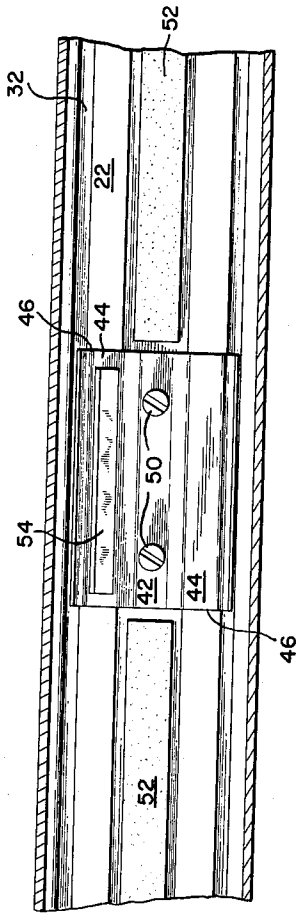
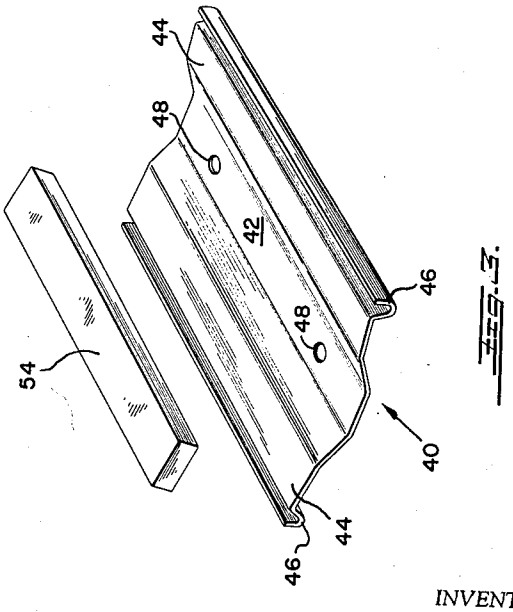


FIG. 3.



INVENTOR
MAURICE MAY

BY Mead, Browne, Schuyler & Beveridge

ATTORNEYS

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SNAP-IN GLASS SETTING CONSTRUCTION

Maurice May, Atlanta, Ga., assignor, by mesne assignments, to Anaconda Aluminum Company, Louisville, Ky., a corporation of Montana

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This invention relates to glass setting assemblies and more particularly to assemblies of the type wherein the edges of the glass sheet are supported between a pair of opposed stop members which are maintained in position by resilient spring clips.

Glass setting constructions of the snap-in type have found increasing employment in applications where appearance and weathering characteristics are of substantial importance. Conventionally, assemblies of this type include a pair of stop members of channel-shaped configuration which are disposed upon opposed sides of the glass sheet. In the usual construction, a spring clip is employed to maintain at least one of the stop members in position by engaging an interior groove upon the stop member, thus permitting the stop member which is maintained in position by the spring to be easily slipped or "snapped" into or out of position. Ordinarily, no permanent fastening means are applied to the resiliently secured stop member since the engagement of the spring clip with the groove is completely adequate to maintain the stop member in position. One example of a construction of this type is found in my prior application Serial No. 523,442, filed July 21, 1955, now Patent No. 2,837,785, of which this application is a continuation in part.

When such resiliently maintained stop members are employed upon the outer side of the glass sheet they are of course subject to removal by unauthorized persons. Such a situation is present in the case where a double armed spring clip is employed to secure both the inner and outer stop member in position. Because this last mentioned construction is somewhat simpler to install, it is sometimes preferred to those assemblies wherein the clip is permanently secured, as by bolting, to one of the stop members.

One of the objects of my invention is to provide a new and improved snap-in glass setting construction wherein both stop members are maintained in position by a resilient spring clip and in which means are provided to maintain a positive engagement between the clip and at least one of the stop members.

It is another object of my invention to provide a new and improved glass setting assembly employing metal stop members in which the stop members on opposite sides of the sheet of glass are quickly and easily assembled upon a support to permit easy and rapid installation of the glass.

It is another object of my invention to provide such a glass setting assembly wherein both stop members may be maintained in position by a common spring clip and in which only one of the stop members may be removed by operating on the exterior of the assembly.

Still another object of my invention is to provide a glass setting assembly in which the stop members may be disassembled from engagement with the spring clip without deforming or marring any of the exposed surfaces.

Other objects and advantages of my invention will become apparent from the following description taken in conjunction with the accompanying drawings.

In the drawings:

FIG. 1 is a vertical cross-section of an assembly according to my invention.

FIG. 2 is a sectional view of the construction shown in FIG. 1 taken on the line 2—2 of FIG. 1.

FIG. 3 is a perspective view of the spring clip and security block of my invention.

Referring now to the drawings, the glass setting assembly of my invention, designated generally by the numeral 10, is shown mounted upon a support or window-frame member 12 to support glass sheet 14 with respect to frame 12. While FIG. 1 is a vertical cross-section, it will be appreciated that a similar cross-section is applicable to the other sides of the glass sheet. As best seen in FIG. 1, the assembly 10 includes two identical stop members 16 and 18 which are respectively disposed on opposite sides of glass sheet 14. Since each of stop members 16 and 18 is identical, a description of one is equally applicable to the other.

Stop member 16 is preferably an elongated extruded aluminum shape which, as shown in cross-section in FIG. 1, includes an upper flange 20, a lower flange 22, and a vertical web portion 24 connecting the flanges 20 and 22. It will be realized that the stop members will extend the entire length of the associated edge of the glass sheet and the individual stop members will be cut to length from stock strips of the extrusions. Along the inner longitudinal edge of upper flange 20, an enlarged shoulder portion 26 is provided to define a mounting channel 28 for a strip of sealing material 30.

The upper surface of lower flange 22 is formed with a seating groove 32 which, as best seen in FIG. 2, extends longitudinally of stop member 16 adjacent the inner wall of vertical web 24. The upper surface of lower flange 22 is beveled upwardly from its inner longitudinal edge 34 to groove 32, the beveled surface being indicated by reference numeral 36.

As best seen in FIG. 1, vertical web 24 is formed with an overhanging flange which defines a slot 38, by means of which the stop member may be extracted from beneath spring clip member 40 to be described below.

The overall construction of spring clip 40 is best shown in FIG. 3. Spring clip 40 includes a flattened base portion 42 from which transverse arms 44 extend as shown in FIG. 3. Downwardly projecting V-shaped lips 46 extend along the respective outer longitudinal edges of the arms 44. As seen in FIG. 3, base portion 42 is provided with suitably located mounting holes 48 for the reception of screws 50 which serve to clamp spring clip 40 to support 12. As can be appreciated from FIG. 2, the longitudinal dimension of spring clip 40 is quite small compared to the length of the stop members and a plurality of spring clips will be employed along each edge of the glass sheet at spaced positions. Cushioning strips 52 are located intermediate adjacent spring plates, and the edge of glass sheet 14 is supported upon the upper surfaces of strips 52, as best seen in FIG. 1.

In order to prevent the removal of the stop member 16, which is assumed to be on the outer side of the glass sheet, a security block 54 is inserted and wedged in the space between the upper surfaces of arm 44 of the spring clip and the lower portion of shoulder 26 on upper flange 20. In its usual form, security block 54 is a box-like block of lead suitably dimensioned to maintain arm 44 in engagement with beveled surface 36 to prevent, when in the position shown in FIG. 1, the withdrawal of the associated lip portion 46 from groove 32.

The cooperation between the various structural elements may be best appreciated from the following description of the assembly procedure.

A first step in assembling the glass setting elements is to affix to the frame of the window or other structure the desired number of spring clips 40. As indicated in the drawings, suitably located holes will be drilled and

tapped in the supporting structure 12 and the spring clips will be fixed thereto by means of the screws 50. The second step in assembly is to then apply the cushioning elements 52 to the frame, this being conventionally done by cementing the elements 52 in place between adjacent spring clips 40. In the next step, the outer stop members 16 are moved into place by sliding the lower flanges into position beneath the spring clips. Beveled surface 36 greatly facilitates this step.

When the outer stop members 16 have been moved into their final position in which lip portions 46 are engaged in grooves 32, a security block 54 is inserted between the upper surface of each arm 44 of the spring clip and the lower surface of its associated shoulder 26. The presence of security block 54 prohibits movement of the lip 46 out of groove 32 and hence stop member 16 is now permanently fixed in position and may be removed only after all of the security blocks 54 have been removed from the position illustrated in FIG. 1. With outer stop members 16 in position, the glass sheet 14 is then moved into position upon the cushioning strips 52 and into engagement with the sealing strips 30 on outer stop member 16. Each inner stop member 18 is then moved into position by sliding its lower flange 22 underneath the associated arm of the spring clip into the position shown in FIG. 1.

Disassembly of the glass setting elements must be performed by performing the foregoing steps in exact reverse order. In order to disassemble the assembly, it is first necessary to remove inner stop member 18. This may be conveniently done by engaging either a conventional screw-driver or a special tool in the slot 38 on inner stop member 18 and prying the stop member outwardly. The resiliency of spring clip 40 is such that a reasonable amount of direct transverse pull allows lip 46 of the spring clip to ride up and out of the notch 32 of the inner stop member 18. With inner stop members 18 removed, glass sheet 14 may be removed to obtain access to security blocks 54. Outer stop member 16 may be removed only after security blocks 54 have been removed.

While I have shown and described in detail a single embodiment of my invention, it will be apparent to those skilled in the art that the described embodiment is capable of modification. Therefore, the foregoing specification is to be considered exemplary rather than limiting and the true scope of my invention is that defined in the following claims.

What I claim is:

1. A glass setting assembly for supporting a sheet of glass on edge on a support, said assembly comprising a pair of elongated channel-shaped stop members, said members being respectively located on opposed sides of said glass sheet and each including spaced upper and lower flanges, the lower flange of each member having an upper surface including a longitudinally extending groove and each lower flange being located upon said support and extending transversely from an inner longitudinal edge parallel to and adjacent said glass sheet to a vertical edge web connecting said lower flange to said upper flange, the upper flange of each member projecting inwardly from said web and including longitudinally extending sealing means engaging a side surface of said glass sheet, a plurality of relatively short spaced spring clips secured to said support between said inner

longitudinal edges of said stop members, said clips having opposed arm portions respectively overlying the lower flanges of said stop members, each of said arm portions having a lip portion resiliently biased into seating engagement with said groove in the upper surface of each of said lower flanges, and blocking means wedged between one of said arm portions and the adjacent upper flange to retain the lip of said one of said arm portions in firm seating engagement with its associated groove, said blocking means being readily removable following removal of the stop member which is opposite from said blocking means.

2. A glass setting assembly for supporting a sheet of glass on edge on a support, said assembly comprising a channel-shaped stop member including spaced upper and lower flanges connected along their outer longitudinal edges by a web portion, said lower flange being located upon said support with the inner longitudinal edge thereof extending along said glass sheet adjacent an edge of said sheet, a relatively narrow V-shaped groove of substantial depth in the upper surface of said lower flange spaced from said inner longitudinal edge, an inherently resilient spring clip fixed to said support, a resilient arm on said spring clip extending from said support over said inner longitudinal edge of said lower flange, a V-shaped depending lip portion on said arm biased downwardly by the resiliency of said arm into seating engagement with said groove in said lower flange, and a blocking element interposed between said arm and said upper flange of said stop member and engaging the upper surface of said arm to prevent withdrawal of said lip portion from said groove, said blocking element being readily removable from between said arm and said upper flange of said stop member when access is had to the interior of said stop member whereby said stop member may be pulled away from said spring clip.

3. A glass setting assembly for supporting a sheet of glass on edge on a support, said assembly comprising a stop member having an upper and a lower flange portion connected along their outer longitudinal edges by a web portion, said stop member being located upon said support with said lower flange portion in engagement with said support, said lower flange having an upper surface beveled upwardly toward said web portion, a longitudinally extending groove located in the upper surface of said lower flange portion adjacent said web portion, a spring clip, means fixedly securing said spring clip upon said support in overlying relationship with said lower flange, a lip upon said spring clip resiliently biased downwardly into clamping engagement with said groove to maintain said stop member in position upon said support, and a metallic block interposed between said upper flange portion and the upper surface of said spring clip to maintain said spring clip in said clamping engagement, said metallic block being readily removable from between said upper flange portion and the upper surface of said spring clip when access is had to the interior of said stop member whereby said stop member may be pulled away from said spring clip.

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