Oct. 19, 1965 H. B. NEAL 3,212,225

GLASS SETTING ASSEMBLY

Filed Jan. 16, 1963

FIG. 1

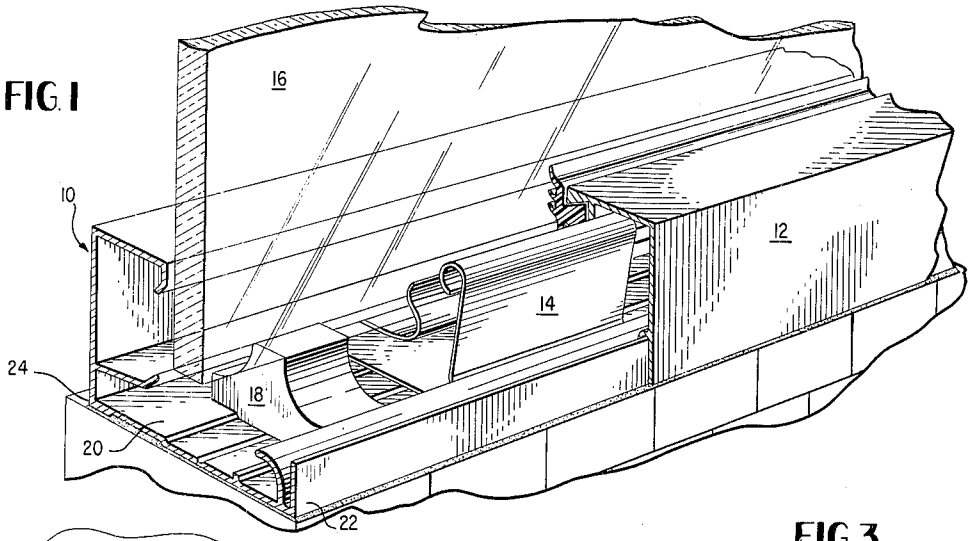
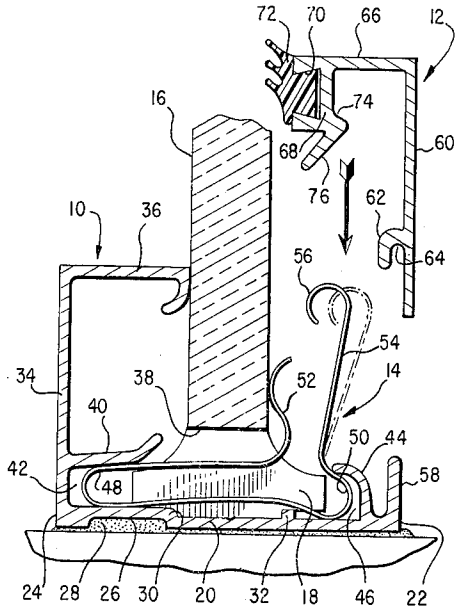


FIG. 3



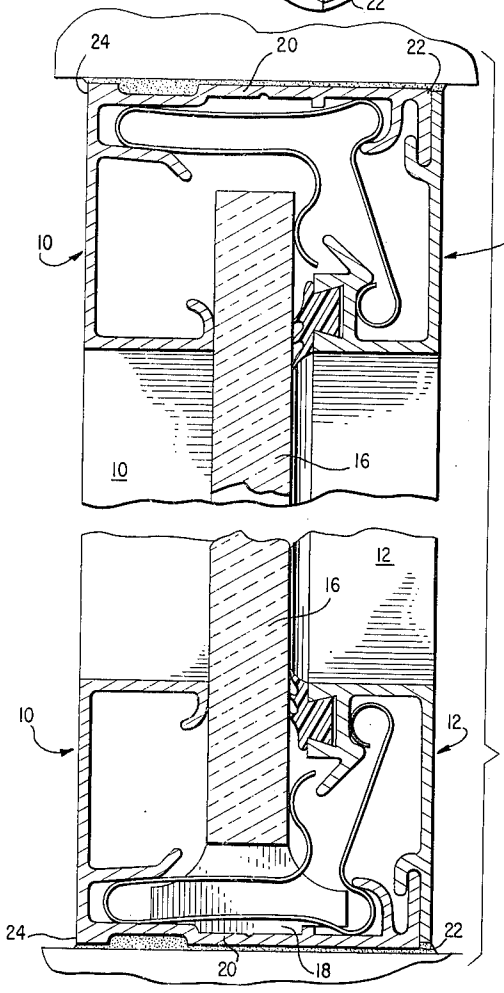


FIG. 2

INVENTOR.
HARRY B. NEAL

BY

Browne, Schuyler and Beveridge

ATTORNEYS

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GLASS SETTING ASSEMBLY

Harry B. Neal, 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 glass setting assemblies of the type wherein two extruded metallic members are employed, one of the members being fixedly mounted to a building frame and the second member being resiliently clipped to the first member to cooperate with the first member in receiving and retaining an edge portion of a glass panel, as in a store window construction or the like.

Glass setting constructions of the type with which the present invention is concerned are frequently referred to as "snap-in" assemblies in that in the installation procedure the final step finds the second member being resiliently clipped or "snapped-in" into its assembled position by the seating of a spring clip member in an internal recess or groove in the second member. In a conventional type of assembly, the second member must be pushed horizontally inwardly to be "snapped-in" place and thus complete the assembly. In other instances, the engagement between the spring clip and the second member is such that it is necessary for the second member to be rotated or moved in a curved path during assembly. Such assemblies suffer the disadvantages that some locations where the assembly is being made do not permit a horizontal push-in of the second member because of space limitations and, where it is necessary for the second member to be rotated or moved in a curved path during the assembly, this is an obvious inconvenience if the second member is of substantial length, as in a store front assembly. Also, in many known assemblies, the glass panel is not secured in position until the second member has been snapped-in place.

A glass setting assembly according to the present invention overcomes disadvantages such as those just discussed in that the second member is moved in a direction parallel to the surface of the glass panel in snapping the second member in place to complete the assembly. This permits the assembly to be utilized even though there is insufficient room to accommodate the conventional type of assembly wherein the second member must be pushed in horizontally from the front in order to be snapped into place. Furthermore, an assembly according to the present invention includes a spring clip constructed and arranged so that the clip can be secured in place with respect to the fixed channel member and will engage and retain the glass panel, for example, prior to putting the second channel member in place to complete the assembly.

It is therefore an object of the present invention to provide a snap-in glass setting assembly of the type referred to above wherein the second member is moved into its final assembled position by movement in a straight line parallel to the surface of the glass panel.

Another object of the invention is to provide a glass setting assembly of the type referred to above wherein the spring clip is resiliently secured in position with respect to the first or fixed channel member and is operable to resiliently retain the glass panel in assembled relationship with the fixed or first channel member prior to the assembly of the second channel member therewith.

Still another object of the invention is to provide a glass setting assembly of the type referred to above wherein a glazing strip on the second channel member is resiliently biased into engagement against the outer surface of a glass panel by the action of the spring clip in resiliently retaining the second member in its assembled position.

The foregoing, and other objects, are achieved in a glass setting assembly wherein the fixed or first member referred to above is constructed with a base web having a pair of facing spring retaining pockets defined by its inner surface. The pockets are adapted to receive and resiliently retain opposed toe and heel portions of a spring clip member which is constructed with one upstanding leg portion adapted to engage the front or other surface of the glass panel, and to resiliently urge the panel rearwardly against the panel locating flange on the first member. On the front or outer edge of the base web, a vertically projecting tongue is adapted to be received within a complementary groove or recess formed in the second channel member.

The second member is assembled in position upon the first member by moving the second member parallel to and in engagement with the front or outer side of a glass panel to seat the tongue of the fixed member in the groove of the second member. A second leg on the spring clip is adapted to be seated within a forwardly facing recess at the interior of the second member which is located inwardly of a rearwardly facing glazing strip assembly. The second spring clip leg not only retains the second member against movement tending to disengage the tongue and groove engagement between the two channel members, but further resiliently biases the glazing strip against the front or outer portion of the glass panel.

The assembly is adapted to be bonded in position in a building frame by bonding the outer surface of the base web of the first member to the frame. The base web of the first member is of substantially uniform thickness and is formed with a laterally offset portion which defines a bonding groove in the outer surface of the base web and, at the same time, forms an inwardly projecting shoulder on the inner surface of the base. This latter shoulder is formed to serve as a glass stop locating shoulder.

Other objects and features of the invention will become apparent by reference to the following specification and to the drawings.

In the drawings:

FIG. 1 is a perspective view of a glass setting assembly embodying the invention with various parts broken away or shown in section;

FIG. 2 is a transverse cross-sectional view taken on a vertical plane adjacent the upper and lower edges of a glass panel supported by the glass setting assembly of FIG. 1; and

FIG. 3 is a transverse cross-sectional view illustrating the method of assembly of the glass setting construction of FIG. 1.

Referring first to FIG. 3, the glass setting assembly of the present invention includes first and second channel members designated generally **10** and **12** respectively, and a plurality of spring clips designated generally **14** which function in a manner to be described in more detail below to maintain channel members **10** and **12** and a glass panel **16** in assembled relationship with each other. In the usual case, channel members **10** and **12** are aluminum or other metallic extrusions which are cut to length in accordance with the dimensions of the window or other opening involved. The glass setting construction shown in the drawings is employed on the top and bottom and both sides of the glass panel, the only difference between the respective sides being the specific dimensions of the sides and the fact that a suitable number of glass stops such as **18** are employed to support the lower edge of the glass panel, these stops being omitted on the sides and top.

Channel member **10** is formed with a base web **20** of substantially uniform thickness and having parallel front and rear edges **22** and **24** respectively. Base web **20** is generally flat, but is formed with a laterally offset portion **26** which defines a bonding compound receiving recess on the outerside of web **20** and improves the bond between base web **20** and the mastic-like bonding compound which is employed to bond channel member **10** in position to the building frame. On the inner side of web **20**, offset portion **26** forms a shoulder **30** which, in cooperation with a projection **32**, is employed to locate glass stops **18**.

A rear wall **34** is formed integrally with base web **20** and projects perpendicularly from rear edge **24** thereof. At the edge of rear wall **34** remote from base web **20**, a forwardly projecting flange **36** is formed to engage the rear or inner surface of glass panel **16** to locate the panel edge **38** in parallel relationship with edges **22** and **24** of base web **20** at a location intermediate edges **22** and **24**.

At a location spaced from base web **20**, a forwardly projecting lip **40** is formed on the interior or forward side of rear wall **34**, lip **40** defining in cooperation with the rearward portion of base web **20** a forwardly opening spring receiving pocket **42**. Adjacent front edge **22**, an integral projection **44** is formed on base web **20** to define a rearwardly facing spring pocket **46** in opposed facing relationship to pocket **42**.

Spring clip **14** is formed with a toe portion **48** and a heel portion **50** which are adapted to be respectively received in pockets **42** and **46** and, when so received, pockets **42** and **46** serve to retain spring clip **14** against base web **20**. A first leg portion **52** on spring clip **14** is formed to engage the front surface of a glass panel **16** to resiliently bias the panel rearwardly against flange **36** of channel member **10**. A second leg **54** projects upwardly from heel portion **50** and is formed at its upper end with a curved rearwardly projecting protuberance **56**.

To locate the second channel member **12** in assembled relationship with channel member **10**, a tongue **58** is formed integrally with base web **20** and projects perpendicularly from front edge **22** of base web **20**. Channel member **12** includes a front web or wall **60** having a projection **62** formed on its inner or rear surface which defines a tongue receiving groove **64** in which tongue **58** is seated when members **10** and **12** are in their assembled relationship. A glazing web **66** projects rearwardly from front web **60** in perpendicular relationship to the front web and, at the rearward edge of web **66** an inwardly projecting enlargement **68** is formed having a recess **70** shaped to receive and retain a vinyl glazing strip **72**.

Enlargement **68** is formed with a forwardly facing recess **74** in which protuberance **56** of spring clip **14** is adapted to be received when channel members **10** and **12** are in their assembled relationship. An inclined surface **76** is formed on enlargement **68** to wedge leg portion **54** of spring clip **14** outwardly away from its relaxed position as shown in FIG. 3 as channel member **12** is moved toward assembled relationship with channel member **10**. When protuberance **56** is seated in recess **74**, leg **54** is located in the broken line position shown in FIG. 3 and thus, with the parts in the assembled relationship as shown in FIG. 2, leg **54** exerts a rearwardly directed resilient biasing force urging glazing strip **72** against the front surface of glass panel **16**.

The assembly and glass panel are installed in the following manner. As the initial step, channel members **10** defining the four sides of the window frame are bonded into position upon the building frame. A suitable number of glass stops **18** are then located on the channel member **10** defining the lower side of the assembly and the glass panel **16** is then moved into position to engage the forward surfaces of flanges **36** on all four sides of the window. A suitable number of spring clips **14** are then inserted into the respective channel members **10** by inserting toe portion **48** into its pocket **42**, forcing the spring

clip rearwardly against the biasing action of leg **52** and forcing heel portion **50** downwardly into alignment with spring receiving pocket **46**. When the heel portion is located against base web **20**, the clip is released and the biasing action of leg **52** forces heel portion **50** forwardly into pocket **46**. When clip **14** is seated in both pockets **42** and **46**, leg portion **52** exerts a rearward biasing action against the front surface of glass panel **16** and, when the necessary number of spring clips have been placed, the glass panel is secured in position independently of the subsequent installation of channel members **12**.

Channel members **12** are installed in the manner illustrated in FIG. 3 by moving the channel member to engage glazing strip **72** with the front surface of the glass panel, and then moving the channel member **12** as a unit perpendicularly toward base web **20** in the direction indicated by the arrow in FIG. 3. As channel member **12** is moved in this direction toward base web **20**, inclined surface **76** engages protuberance **56**, wedging leg portion **54** of the spring clip toward the broken line position of FIG. 3. When channel member **12** arrives at its final location in which tongue **58** is fully seated within groove **64**, protuberance **56** snaps into recess **74**, thus resiliently locking channel member **12** in its final assembled position and, at the same time, resiliently biasing glazing strip **72** into sealing engagement with the front or outer surface of glass panel **16**.

While I have described and illustrated a preferred embodiment of my invention, I wish it to be understood that I do not intend to be restricted solely thereto, but that I do intend to cover all modifications which would be apparent to one skilled in the art, and which come within the spirit and scope of my invention.

I claim:

1. A glass setting assembly adapted to receive and retain an edge of a glass panel comprising a first elongate channel member having a base web with parallel front and rear edges, an integral rear well projecting perpendicularly from the rear edge of said base web, flange means on said rear wall engageable with the rear surface of a glass panel to locate the panel edge in parallel relationship with the edges of said base web, a tongue projecting perpendicularly from the front edge of said base web in opposed parallel relationship to said rear wall, a second elongate channel member having integral first and second webs projecting perpendicularly to each other, means on the inner surface of said first web defining a groove adapted to receive said tongue to locate said second channel member in assembled relationship with said first channel member with the inner surface of said first web disposed in face-to-face relationship with the front surface of said tongue whereby, in said assembled relationship, said first web defines a front wall of said assembly located in spaced parallel relationship to said rear wall, glazing strip means on said second web of said second channel member engageable with the front surface of a glass panel in opposed relationship to said first channel rear wall flange means when said channel members are in their assembled relationship, and spring clip means resiliently retained on said base web and engageable with said second web of said second channel member when said channel members are in their assembled relationships to resiliently urge said glazing means against the front surface of said glass panel and to simultaneously retain said second channel member in said assembled relationship with said first channel member.

2. A glass setting assembly adapted to receive and retain an edge of a glass panel comprising a first elongate channel member having a base web with parallel front and rear edges, a rear wall integral with and projecting perpendicularly from the rear edge of said base web, a tongue integral with and projecting perpendicularly from the front edge of said base web, a second elongate channel member having a front web, means on the inner side of said front web defining a seating groove adapted to

receive said tongue, said tongue and said groove being operable when said tongue is seated in said groove to locate said front web of said second channel member in substantially perpendicular relationship to said base web of said first channel member, means on said base web adjacent the front and rear edges thereof defining a pair of spaced opposed facing spring pockets, a spring clip having a toe portion resiliently seated in one of said pockets and a heel portion resiliently seated in the other of said pockets, said pockets cooperatively retaining said spring clips upon said base web, glazing strip means on said second channel member projecting rearwardly from said front web and having a forwardly facing recess on the inner side thereof, a forwardly facing panel locating flange on said rear wall of said first channel member, a leg portion on said spring clip projecting away from said base web, and means on the end of said leg portion remote from said base web adapted to seat in said recess on said glazing strip means when the tongue of said first channel member is seated in the seating groove of said second channel member for retaining said tongue in seated engagement within said groove and for resiliently biasing said glazing strip means toward said panel locating flange means on said rear wall.

3. A glass setting assembly adapted to receive and locate an edge of a glass panel comprising a first elongate channel member having a base web with parallel front and rear edges, an integral rear wall projecting perpendicularly from the rear edge of said base web, flange means on said rear wall engageable with the rear surface of a glass panel to locate the panel edge in parallel relationship with the edges of said base web at a location intermediate said edges of said base web, means adjacent the front and rear edges of said base web defining a pair of spaced opposed facing spring pockets on said base web, a spring clip having a toe portion resiliently seated in one of said pockets and a heel portion resiliently engaged in the other of said pockets, said pockets cooperatively retaining said spring clip on said base web, a first leg portion on said spring clip located to engage the front surface of a glass panel engaged with said flange means and to resiliently bias said glass panel against said flange means, a tongue on said base web projecting perpendicularly from the front edge of said base web, a second channel member having a front web and rearwardly facing glazing strip means projecting perpendicularly from one edge of said front web, means on the rearward side of said front web defining a seating groove adapted to receive said tongue of said first channel member to locate said second channel member in assembled relationship with said first channel member wherein said front web of said second channel member is in spaced opposed parallel relationship with the rear wall of said first channel member and said glazing strip means is engaged with the front surface of a glass panel in opposed relationship to said flange means, a second leg on said spring clip, and means on said glazing strip means engageable with said second leg of said spring clip for resiliently retaining said glazing strip means against the front surface of a glass panel and for simultaneously retaining said tongue in seated relationship in said groove when said channel members are in their assembled relationship.

4. A setting assembly for a glass panel and the like, the assembly comprising a first elongate channel member having a base adapted to be fixed to the frame of a building, a rear wall projecting transversely from one end of the base and a flange projecting inwardly from the rear wall for engaging one side of a panel to be held in the assembly, a tongue projecting perpendicularly from the front edge of said base in opposed parallel relationship to said rear wall, a second elongate channel member having a front wall opposite to said rear wall and extending toward the other end of said base, and a glazing web projecting inwardly toward said flange from the front wall for engaging the other side of the panel, means on the inner surface of said front wall defining a groove adapted to receive said tongue to locate said second channel member in assembled relationship with said first channel member, and spring means on said base having a leg engageable with asid glazing web for urging said glazing web against the other side of the panel and for retaining said tongue in seated engagement within said groove.

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HARRISON R. MOSELEY, *Primary Examiner.*