

March 27, 1951

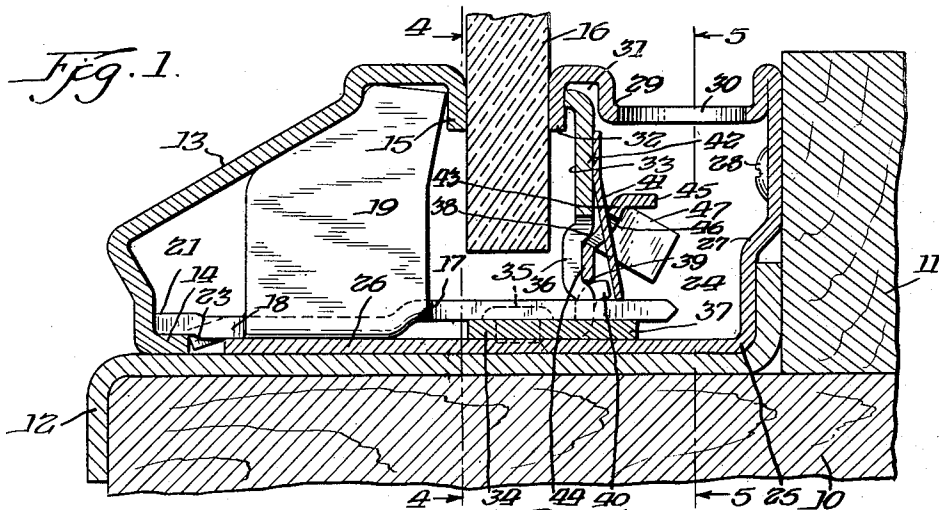
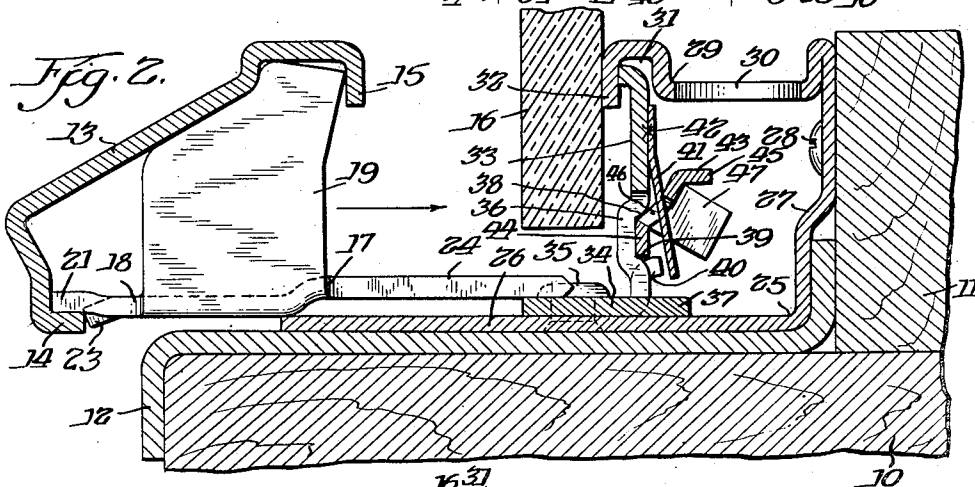
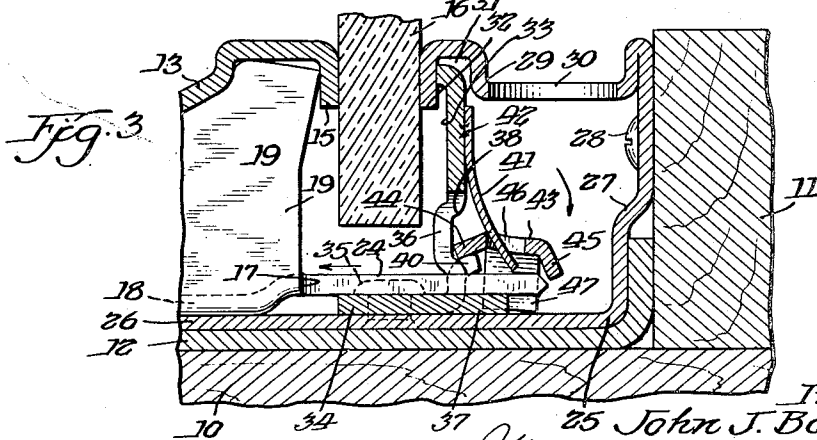
J. J. BOSSHARD

2,546,384

STORE FRONT CONSTRUCTION

Filed Aug. 10, 1946

3 Sheets-Sheet 1



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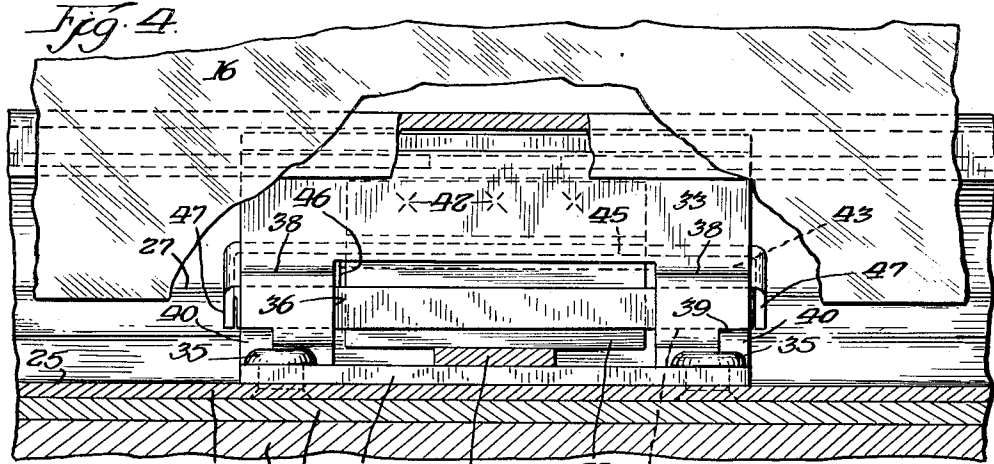
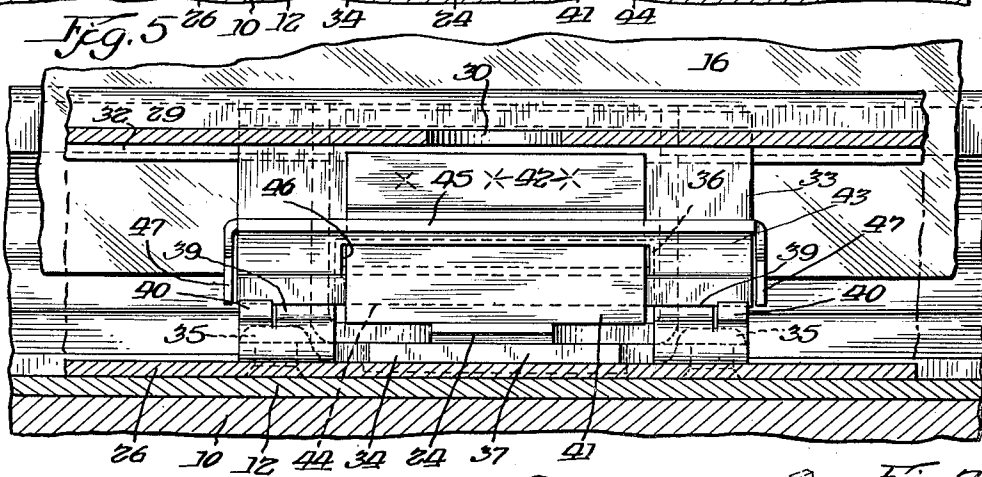
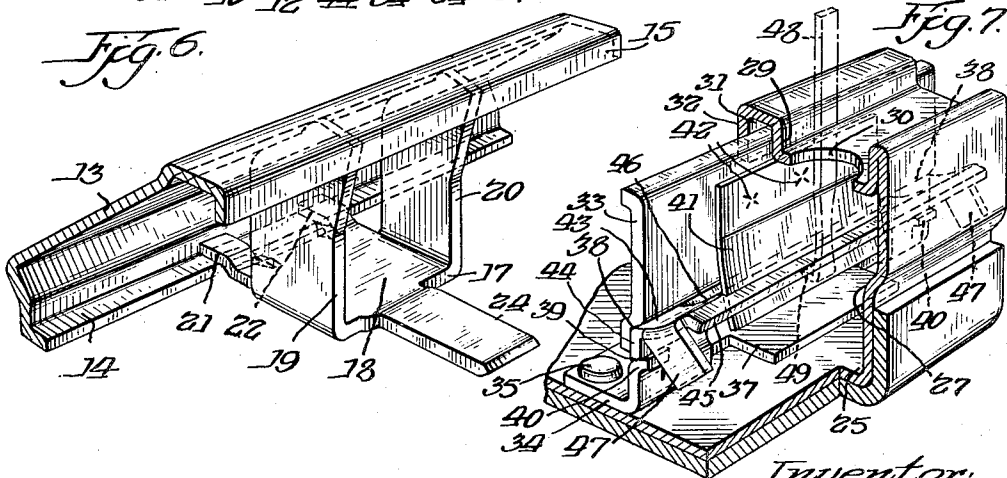
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STORE FRONT CONSTRUCTION

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3 Sheets-Sheet 2



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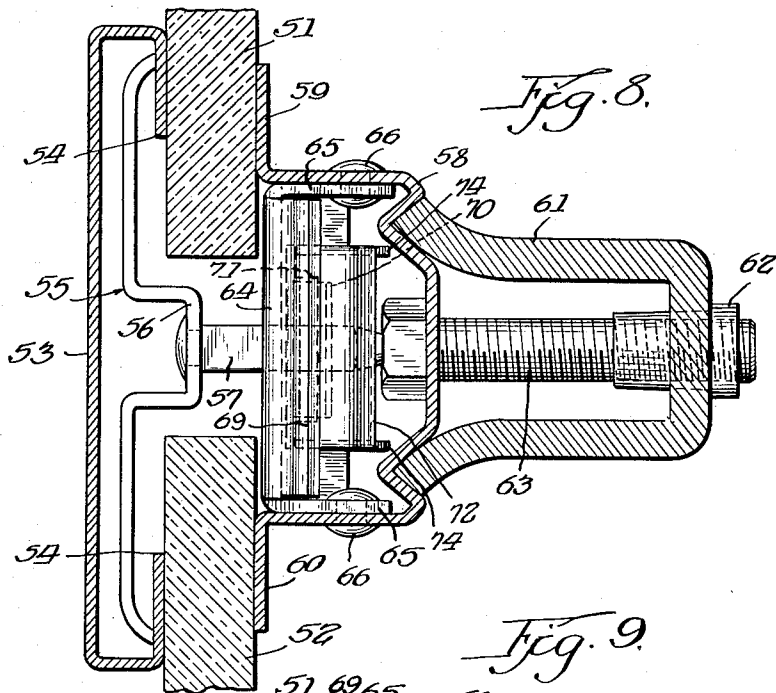
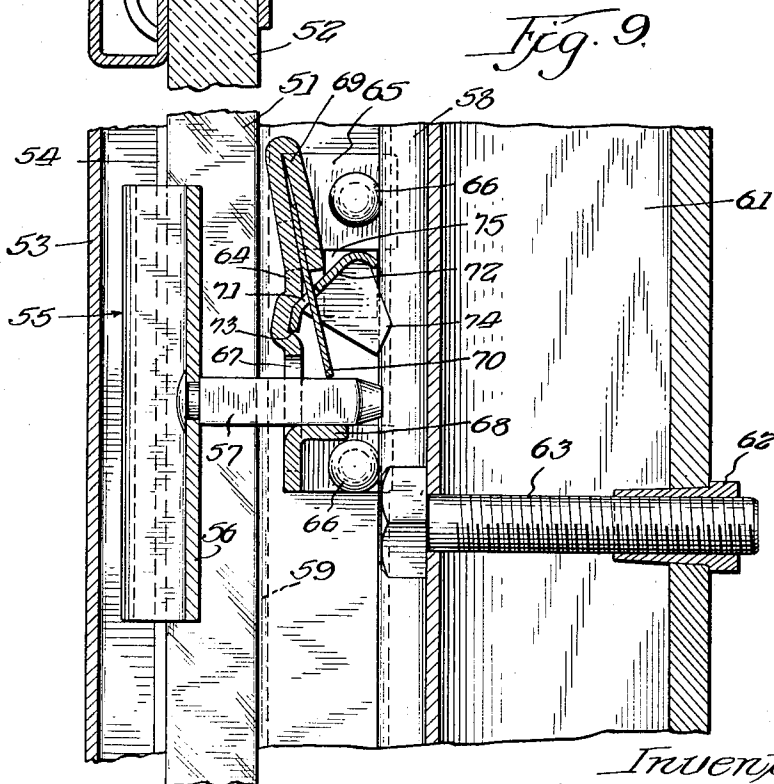
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2,546,384

STORE FRONT CONSTRUCTION

Filed Aug. 10, 1946

3 Sheets-Sheet 3



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## UNITED STATES PATENT OFFICE

2,546,384

## STORE FRONT CONSTRUCTION

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8 Claims. (Cl. 20—56.4)

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My invention relates to a store front construction and has particular reference to the type of construction in which a glass pane is held in position outer and inner holding members in the frame around the building window opening and has for its primary object the provision of a store front construction which can be placed in position without the use of screws, tools or the like by the operator merely pressing the outer holding member into position against the glass pane where it is automatically locked in place and firmly holds the glass pane against the inner co-operating holding member.

Another and further object of my invention is the provision of a store front construction which can be set in position without the use of the usual tools such as screw drivers and the like and which is easily and quickly set by operators from the outside of the store front rather than from the inside as is common in the usual type of store front construction.

Another and further object of my invention is the provision of a store front construction in which various holding members are employed providing a larger window than what has been possible heretofore and which also presents a much more attractive appearance in that the holding members are of materially less height thereby presenting a more attractive mounting than what has been possible heretofore.

Another and further object of my invention is the provision of a store front construction in which the danger of breakage of the glass is minimized because in setting the glass in position the proper method is to push the outer glass pane holding section into position with the hands of the operator by manual pressure exerted upon it which pressure cannot be sufficiently great or sufficiently concentrated to crack or break the glass as is common where the glass pane holding sections are clamped or drawn together by means of screws in the ordinary type of construction.

Another and further object of my invention is the provision of a store front construction in which novel means is used for holding the two pane engaging sections together in such manner that the glass pane is firmly anchored in position when initially installed and which, if after they have been in use, the section becomes loose, by means of manual pressure applied to the outer pane section the outer holding member can be forced into firm position against the glass thereby tightening it so that the glass pane is again firmly anchored in position.

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is the provision of a store front construction in which the glass pane is held in position between the holding frame members around its marginal edges by substantial uniformly distributed pressure applied to the outer member so that the pressure is substantially alike around the entire marginal edges of the glass section which result cannot be obtained through the use of screws which are drawn taut by workmen with screw drivers, particularly when several workmen tighten up the screws resulting in unequal pressure being applied to the screws themselves.

These and other objects of my invention will be more fully and better understood by reference to the accompanying drawings and in which:

Figure 1 is a transverse sectional view through the store front construction embodying my invention showing the parts in normal fixed relation;

Figure 2 is a view similar to Figure 1 showing the parts in expanded position with the outer pane engaging member being in place to be pushed into final position;

Figure 3 is a detailed sectional view showing the outer section in released position with respect to the inner section;

Figure 4 is a view partially in elevation and partially in section of the construction as illustrated in Figure 1;

Figure 5 is a sectional view of lines 5, 5 of Figure 1;

Figure 6 is a perspective view of a portion of the pane engaging member with the holding clip in position therein;

Figure 7 is a perspective view of the inner sash engaging member showing the inner clip with the tool for operating the locking member being shown in dotted position.

Figure 8 is a horizontal section view showing the use of the holding device as used for holding two adjacent panes of glass in position with the building; and

Figure 9 is a vertical sectional view of the arrangement of the parts shown in Figure 8.

Referring now to the drawings and in which like reference characters refer to like parts throughout, the usual window sill 10, is shown having a frame member 11 adjacent thereto with a cap member 12 being provided which is fitted over the face of the sill 10 and extends partially alongside the frame member 11.

An outer glass pane holding member 13 is provided having a base flange 14 in engagement with the cap 12 and resting thereon, the portion

Another and further object of my invention

14 extending inwardly parallel with the plane of the cap 12, the intermediate portion of member 13 being angularly positioned with respect to the portion 14 and having a flange 15 turned at an angle to the intermediate portion of the member 13 for engagement with the outer surface of the glass pane 16, this member 13 being normally cut to proper lengths to span the space alongside the sides, and top and bottom of a window opening.

A clip 17 is provided, preferably made of stamped metal or the like, which has a body portion 18 with wing portions 19 and 20 integrally formed with the body portion 18 and bent at an angle thereto with their edges being of proper contour so they fit snugly inside the outer pane engaging member 13 adjacent its glass pane engaging flange 15. Leg portions 21 and 22 integral with the body portion 18 are provided which lie upon the flange 14 with their ends in abutting engagement with the wall of the member 13 with a wing portion 23 being provided integral with the body portion 18 and between the leg portions 21 and 22 and which when the clip 17 is being formed is bent upward and after the clip 17 is fitted into the member 13 is bent downward to the position shown in the drawings with the end of the wing portion 23 being in abutting engagement with the edge of the flange 14 thereby fixing the clip 17 in the member 13 by frictional engagement therewith against accidental displacement, but may be moved to various spaced positions if desired during the installation of a store front.

Integrally formed with the body portion 18 of the clip 17 is a plug 24 which extends inwardly from the body portion 18 of the member 17 and slightly upward therefrom and spans the space under the glass pane 16 for engagement with other parts of the combination hereinafter described.

An inner glass pane member 25 is shown comprising generally in cross section an open sided rectangular channel section having one elongated wall 26 which rests upon the cap member 12 and a rear wall 27 through which screws 28 pass, by means of which the member 25 is secured to the window frame 11.

A side wall 29 is provided which is fashioned into channel form with openings 30 therein for drainage purposes and also for the inserting of an operating tool hereinafter described, the channel forming a drainage channel for condensation which may collect in the inner side of the window pane and which will drain out through the openings 30 and away from the store front construction.

The inner edge of the wall 29 is U shaped with a channel 31 formed therein and having a flange portion 32 at right angles to the main body portion of the wall 29 for engagement against the inner side of the glass pane 16. The wall 27 is offset slightly at one of its sides so one end of the cap 12 can be reversed behind this wall 27 and the window frame 10.

An anchor designated as a whole as 33 is provided, this anchor 33 extending into the channel 31 at one of its ends which is intumed against one of the faces of the flange 32 and has an outwardly turned portion 34 resting upon and parallel with the elongated wall 26 forming a part of the member 25, and is secured to the wall 26 by means of rivets 35, 35 thus making the anchor 33 substantially a part of the member 25. The anchor 33 has an opening 36 therein produced

by punching out of the wall of the member 33 a section 37 which is bent into alignment with the portion 34 and with the portion 34 forms a base upon which the plug 24 rests. The anchor 33 is offset at each of its ends to produce transverse channels in the end with upper shoulders 38, 38 and lower shoulders 39, 39 being produced with struck out portions from the wall of the member 33 being outwardly turned to form ears 40, 40.

A spring lock member 41 which is preferably welded to the inner face of the anchor 33 at 42, 42 is provided which extends over the upper part of the opening 36 in the anchor 33 and extends only slightly into the path of the plug 24 as it is inserted through the opening 36 in the anchor 33, and engages the top surface of the plug 24 at an angle thereto so withdrawal of the plug is impossible until the lock member is released therefrom.

A latch member is provided having a central body portion 43 angularly disposed edge portions 44 and 45 and wing portions 47 integrally formed with and depending from the central body portion 43 of the latch member at each of its ends, the central body portion having an elongated opening 46 therein through which the spring lock member 41 extends. The edge portion 44 of the latch member is normally supported upon the shoulders 39, 39 and the ears 40, 40 on the anchor 33 and is held in position by the spring locking member 41. The edge portion 44 is approximately the same width of the channel in the ends of the anchor 33 and normally rests against the anchor 33 where the pane engaging members are locked together as when they are separated, as shown in Figures 1 and 2, of the drawings. When the latch member is turned to the position shown in Figure 3, then the distance from the edge of the opening 46 to the edge portion 44 is sufficient so the spring locking member is moved in a counter-clockwise direction out of engagement with the plug 24 and the outer pane engaging member 13 can be removed.

The operation and control of the latching member is shown particularly in Figure 7 where a tool 48 having an angularly disposed end 49 is illustrated in dotted position, this tool 48 is adapted to be inserted underneath the outer edge of the edge portion 45 of the latch member when it is desired to lift the latch into position shown in Figure 2 of the drawings, so the spring lock 41 is free.

When it is desired to release the spring lock 41 from the plug 24, the end of the tool is placed on the top of the latch member adjacent its outer edge and the latch is rotated in a clockwise direction into the position shown in Figure 3 of the drawings until wing portions 47 rest upon the struck out portion 37 the spring 41 is flexed outward sufficient to force its end out of engagement with the plug 24 so the plug 24, including the section 13, can be moved freely in and out, when it is desired to disassemble the store front construction for any purpose.

In fitting the store front construction in final assembled relation, the operator through the use of the tool 48 by hooking it under the outer edge of the latch member rotates this member in a counter-clockwise direction to the positions shown in Figures 1 and 2 of the drawings, thereby releasing the spring lock 41 and enabling this lock member 41 to extend partially in the path of the plug 24. As the outer pane member is pushed into position the plug 24 enters the opening 36 the spring 41 is flexed in a counter-clockwise di-

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rection and slides along the top of the plug 24 as long as this plug is moving inward, but due to the angle of engagement with the plug it is prevented from withdrawal, unless some of the parts are broken. The outer member 13 is pushed up tightly against the glass pane 16 throughout the length of the member 13 and securely locked in position.

The opening 36 is slightly wider than the plug 24 allowing for some latitude in positioning of the member 13. It will be understood that where outer and inner clips are placed in position at the factory and in position for final assembly with the glass in the field.

In Figures 8 and 9 a modified form of structure is shown wherein the glass pane holding members are of a slightly different form than what has been described heretofore and the relationship and combination is somewhat different in that two glass panes 51 and 52 are shown having their edges in adjacent positions with a channel section 53 having inturned edge portions 54, 54 which abut against glass panes 51 and 52 adjacent their outer edges respectively with a clip 55 being provided which has a U shaped central portion 56 and wing portions extending outward therefrom in each direction which are curved at their outer ends for engagement against the faces of the inturned portions 54 of the channel section 53.

A plug 57 is provided which extends through the bottom of the U shaped portion 56 of the clip 55 and between the glass panes 51 and 52 and extends inward into a channel section 58 which has outwardly turned leg portions 59 and 60 turned to parallel position with respect to the faces of the glass pane sections 51 and 52 on the inner sides thereof and to engage against these sections.

The member 58 is adapted in the form shown to be fitted over the open side of a V channel section 61 which can be anchored or secured to a building or wall construction in any desired manner, the section 61 having an internally threaded tubular member 62 mounted therein and within which a threaded member 63 extends which also extends through the web portion of the section 58 so the section 58 can be drawn against the edges of the V shaped member 61 thereby holding the channel section 58 in place in a building structure.

An anchor 64 is mounted in the channel member 58 by means of ears 65, 65 which have rivets 66, 66 therein with an opening 67 therethrough which the plug 57 extends with a turned out portion 68 of the anchor being provided as a seat for the plug 57 with the anchor 64 having a portion 69 folded over in spaced relation with the anchor 64 with a spring 70 mounted between the anchor 64 and the portion 69 and extending downward therefrom through an opening 71 in a latch member 72 which is fitted in a channel 73 formed intermediate the anchor 64 and held in position by the spring 70.

Wing sections 74, 74 are provided at each side of the latch 72 the inner sides of which are adapted to rest against the anchor 64 when the latch 70 is pushed downward in a position to force the spring 70 out of engagement with the plug 57. The spring 70 is of a length sufficient so the plug 57, which is tapered at its end, flexes the spring 70 slightly as the plug 57 is pushed into position, causing the end of the spring 70 to bite into the surface of the plug 57 thereby holding it firmly in position against withdrawal.

An opening 75 is provided in the side wall of

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the member 58 through which a tool can be inserted for the pushing downward of the latch 72 in a clockwise direction thereby flexing the spring 70 away from the plug 57, releasing the plug 57 so that the structure can be disassembled. When it is desired to reassemble the structure or to assemble it initially, the latch 72 is lifted up so that it is loosely held in position by the spring 70 with the spring 70 being in a single plane throughout its entire length, and as the plug 57 is forced into position the spring is flexed to the position shown in Figure 9, thereby providing a secure anchoring means for the plug and clamping the two glass pane sections firmly between the holding members 53 and 58 in position to the building.

It is believed that the construction and operation of this structure will be readily understood from the foregoing description. The combination is very simple in operation in that for the store front construction the clips are spaced in the outer glass pane engaging section either at the plant or the field with the anchor members being spaced in the inner glass pane section member at such points that they are in register with the plug 22 in the outer pane engaging section. As the glass is placed in position the outer pane engaging sections are placed over it and the plugs pushed through the openings 36 in the anchor member 33 and locked therein as heretofore described.

Substantially the same action takes place with respect to the modified form of the device shown in Figures 8 and 9. In this instance the struck out portion 68 of the anchor 64 forms a support for the thrust exerted on the plug 57 by the spring 70 and the end of the spring member 70 engages the plug so that its withdrawal is prevented when once pushed into position. The latch member 72 operates in the same manner as heretofore described.

In places where a permanent locking arrangement is desired in building construction this latch member can be omitted, if desired, although the omission of this member would prevent the disassembling operation without wrecking the various parts of the combination.

While I have described more or less precisely the details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form and the proportion of parts and the substitution of equivalents as circumstances may suggest or render expedient without departing from the spirit or scope of my invention.

What is claimed is:

1. Store front construction comprising in combination an outer glass pane section, an inner glass pane section, a glass pane, a clip fitted into the outer glass pane section having a plug thereon extending toward the inner glass pane section, an anchor member mounted in said inner glass pane section having an opening therein through which the said plug extends, a spring locking member having one end fixed to said anchor member and its free end in frictional engagement with the said plug when in locked position and a latch member whereby the spring locking member is moved out of engagement with the said plug.

2. Store front construction comprising in combination an outer glass pane section, an inner glass pane section, a glass pane, a clip fitted into the outer glass pane section having a plug thereon extending toward the inner glass pane sec-

tion, an anchor member mounted in said inner glass pane section having an opening therein through which the said plug extends, a spring locking member having an end fixed to said anchor member and its free end in frictional engagement with the said plug when in locked position and a latch member whereby the spring locking member is moved out of engagement with the said plug and held in said out of engagement position.

3. Store front construction comprising in combination an outer glass pane section, an inner glass pane section, a glass pane, a clip fitted into the outer glass pane section having a plug thereon extending toward the inner glass pane section, an anchor member mounted in said inner glass pane section having an opening therein through which the said plug extends and having a base portion upon which the said plug rests, a spring locking member having one end fixed to said anchor member and its free end in frictional engagement with the said plug when in locked position and a latch member whereby the spring locking member is moved out of engagement with the said plug, the said anchor member having a base portion upon which the said plug rests.

4. Store front construction comprising in combination an outer glass pane section, an inner glass pane section, a clip mounted in said outer pane section having a plug portion extending toward the inner pane section, an anchor member having a plug receiving opening therein mounted in said inner section and having a base portion extending parallel with the said plug portion and upon which the said plug portion rests, a spring locking member secured at one of its ends to the said anchor member and free at its other end, the said free end being in frictional engagement with the said plug when in locked position, a rotatably mounted latch member having an opening therein through which the spring locking member extends, the said latch member having portions thereon which limit its rotative movement.

5. Store front construction comprising in combination an outer glass pane section, an inner glass pane section, a clip mounted in said outer pane section having a plug portion thereon extending toward the inner pane section, an anchor member having a plug receiving opening therein mounted in said inner section and having a base portion extending parallel with the said plug portion and upon which the said plug portion rests, a spring locking member secured at one of its ends to the said anchor member and free at its other end, the said free end being in frictional engagement with the said plug when in locked position, a rotatably mounted latch member having an opening therein through which the spring locking member extends, the said latch member having wing portions thereon whereby its rotative movement is limited.

6. Store front construction comprising in combination an outer glass pane section, an inner glass pane section having a base portion extending toward said outer glass pane section, a glass pane, a clip mounted in said outer pane sec-

tion having a lug portion integrally formed therewith and extending toward the said inner pane section, and having a supporting portion for the said plug portion secured to the base portion of the inner glass pane section, an anchor member mounted in said inner section, a spring locking member secured at one of its ends to said anchor member and free at its other end and normally in frictional engagement with the said plug when in locked position and a rotatable loosely mounted latch member having an opening therein through which the said locking member extends, the said latch member, when in one position, holding the locking member out of engagement with the plug and when in unlocked position being held in position by the spring locking member.

7. Store front construction comprising in combination an outer glass pane section, an inner glass pane section, a glass pane, a clip mounted in said outer glass pane section having a plug portion integrally formed therewith and extending toward the said inner pane section, a supporting member for the said plug portion, an anchor member mounted in said inner section, a spring locking member secured at one of its ends to said anchor member, free at its other end and normally in frictional engagement with the said plug when in locked position, and a rotatable loosely mounted latch member having an opening therein through which the said locking member extends, the said latch member when in one position holding the locking member out of engagement with the plug and when in unlocked position being held in position by the spring locking member.

8. Store front construction comprising in combination an outer glass pane member, an inner glass pane member, a clip mounted in the outer glass pane member having a plug portion extending toward the inner glass pane member, an anchor member mounted in said inner glass pane member having an opening therein to receive the said plug portion, a base member for the said plug, a spring locking member secured at one of its ends and free at its opposite end and adapted to normally frictionally engage the said plug and a rotatable latch member through which the locking member extends and adapted to disengage the spring locking member from the plug and to hold the said locking member in such disengaged position, the said latch member having wing portions thereon for engagement with the sill whereby the rotative movement of the locking member is limited.

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