

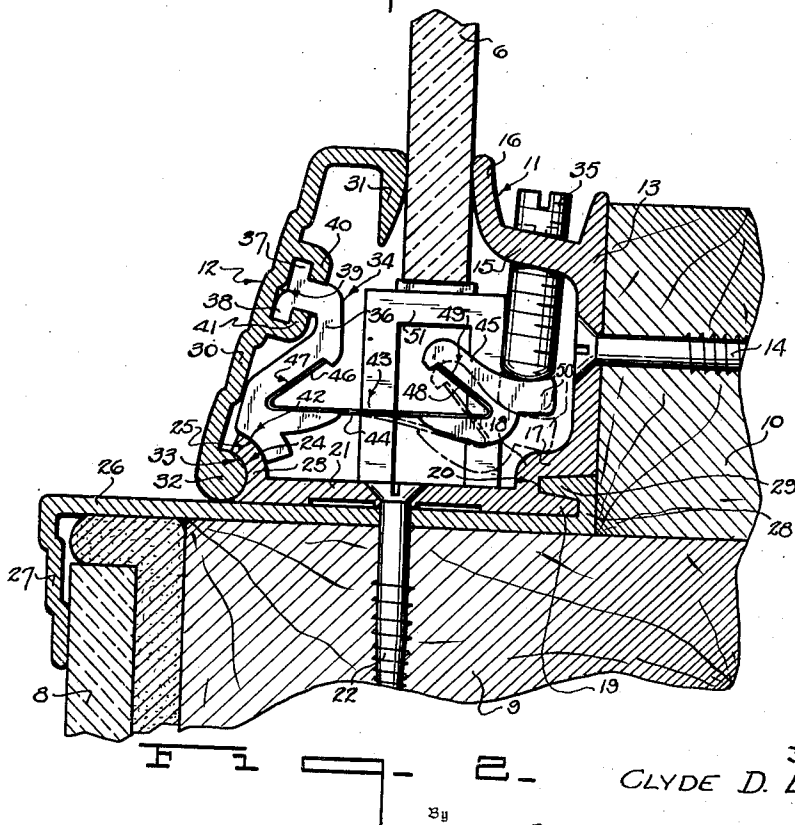
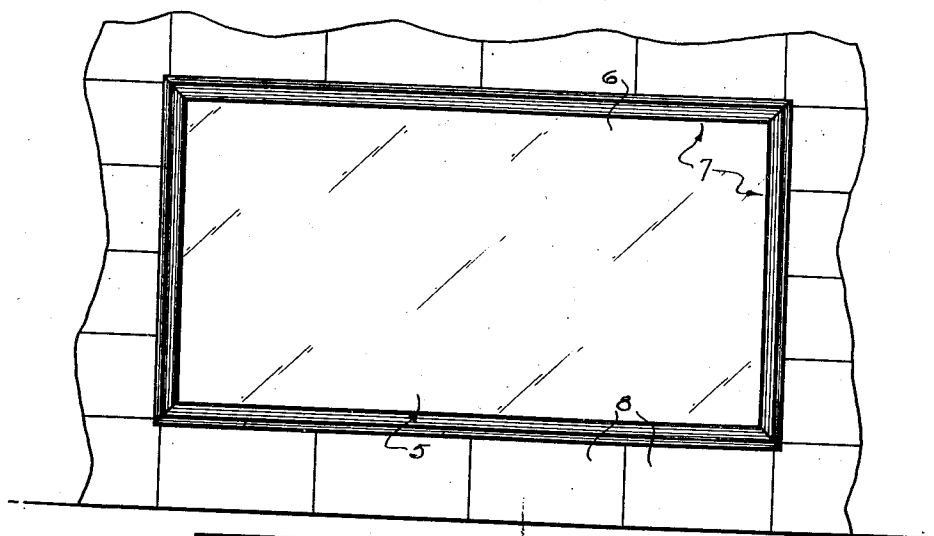
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SASH AND STORE FRONT CONSTRUCTION

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SASH AND STORE FRONT CONSTRUCTION

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The present invention relates to metal sash and store front constructions and has for its primary object the provision of novel and improved means for mounting and retaining a pane of glass in proper adjusted position.

Another object of the invention is the provision of a sash or store front construction embodying inner and outer glass retaining sections of improved construction and arrangement associated with one another in a novel manner and having novel means for connecting the said sections together to firmly clamp the pane of glass in position therebetween.

Another object of the invention is the provision of a sash or store front construction of maximum simplicity, ease of assembly and operation, and embodying clip members or the like associated with the outer section and actuated by adjusting means associated with the inner section to effect the securing of the pane of glass in place.

A further object of the invention is the provision of improved tensioning means embodying a plurality of cooperating clip members and adjusting members, together with positive means for preventing further tightening of said adjusting members when said clip members have caused the sash sections to exert a substantially predetermined clamping pressure upon the glass.

A still further object of the invention is the provision of improved tensioning means for connecting the stationary and movable sash sections together in such a manner that they will exert a resilient cushioned pressure upon the pane of glass while at the same time permitting relative movement between the said sections to take care of vibration and expansion and contraction of the glass and metal sash construction without disturbing the setting of the glass or causing injury thereto.

Other objects and advantages of the invention will become more apparent during the course of the following description, when taken in connection with the accompanying drawing.

In the drawing, wherein like numerals are employed to designate like parts throughout the same:

Fig. 1 is a front elevation illustrating a store front embodying the present invention; and

Fig. 2 is a vertical transverse sectional view through the metal sash construction provided by the invention.

In Fig. 1 of the drawing, the numeral 5 designates in its entirety a glazed opening in which is mounted a sheet or pane of glass 6 supported in the window opening by the metal sash con-

struction 7 arranged at the top, bottom, and sides of said window. The front wall of the building may, if desired, be faced with stone, Vitrolite, or other ornamental slabs or panels 8.

With reference particularly to Fig. 2, the metal sash construction is mounted upon a wooden sill 9 in front of a wooden back stop 10 which is carried by said sill. The sash construction comprises a stationary rear section 11 and a movable front section 12 pivotally associated with one another to clamp the pane of glass 6 in position therebetween. The rear section 11 comprises a vertical back wall 13 which abuts the wooden back stop 10 and is secured thereto by wood screws or the like 14. Formed integral with the back wall 13, adjacent its upper end, is an inwardly directed gutter portion 15 terminating in a substantially vertical lip 16 engaging the inner face of the pane of glass 6. The back wall 13 is provided at its lower end with a forwardly directed ledge 17 terminating at its outer end in a depending web portion 18. Formed integral with the web portion 18 is a rearwardly directed wedge portion 19 cooperating with said ledge portion 17 to provide a rearwardly facing horizontal channel 20. Extending forwardly from the web portion 18 is the horizontal base plate 21 supported upon the sill 9 and secured thereto by screws or the like 22. The base plate 21 is provided at its outer end with an upstanding longitudinally extending front part or flange 23 having the outer and inner arcuately curved concave and convex surfaces 24 and 25 respectively.

The base plate 21 does not contact directly with the wooden sill 9 but instead preferably rests upon a horizontal metal sill plate 26 covering the upper surface of the wooden sill and being also secured thereto by the screws 22. The sill plate 26 may be provided at its outer end with a downturned flange 27 overlapping the outer marginal portions of the adjacent facing panels 8, and at its opposite end with a vertical upstanding leg 28. Formed at the upper end of the leg 28 is a forwardly directed wedge portion 29 snugly received within the channel 20 in the rear section 11. The cooperating wedge portions 19 and 29 form a seal for preventing the seepage of water and moisture between the metal sash construction and the wooden sill and back stop thereby maintaining the said sill and back stop perfectly dry and eliminating dry rot, deterioration, and warpage.

The front section 12 comprises a face piece 30 having the desired profile and provided at its upper end with a lip 31 engaging the outer face

of the pane of glass 6. The face piece 30 is formed at its lower end with a longitudinally extending rib 32 having an inner arcuately curved convex surface 33 adapted to engage the front concave surface 24 of upstanding flange 23 to provide a so-called knuckle-joint. The curved front surface 24 of the flange 23 constitutes a seat or bearing upon which the outer section is adapted to fulcrum to clamp the pane of glass 6 between the lip 31 thereof and the lip 16 of the rear section 11.

The means for rocking the front section 12 on said knuckle-joint to tension said section against the pane of glass comprises clip members 34 associated with the front section and actuated by adjusting screws 35 threaded through the gutter portion 15 of the rear section. Any desired number of clip members 34 may be provided and each comprises a rigid body portion 36 formed with the oppositely directed substantially vertical ears 37 and 38. A channel 39 is formed upon the rear face of the front section 12 by the inturned flanges 40 and 41, and received within said channel behind the flanges 40 and 41 are the ears 37 and 38 respectively of the body portion 36. The body portion 36 of the clip member is formed at its lower end with an arcuately curved concave surface 42 adapted to engage the inner convex surface 25 of the upstanding flange 23 when said clip member is actuated by the adjusting screw 35.

Carried by the rigid body portion 36 of the clip member is a rearwardly extending substantially horizontal lever arm 43 comprising a spring portion 44 and a rigid plate element 45 carried by said spring portion. The spring portion is bent at its outer end as at 46 and secured within a recess 47 in the body portion 36 of the clip member. The opposite or inner end of the spring portion is similarly bent as at 48 and is secured within a recess 49 in the rigid plate element 45. The plate element 45 is engageable by the adjusting screw 35 threaded through the gutter portion 15 of rear section 11. The plate element 45 is also provided with a substantially horizontal lug 50 which is adapted to engage the horizontal ledge 17 of the rear section upon flexing of the spring portion 44. The ledge 17 therefore serves as a positive stop to prevent excessive tightening of the adjusting screw 35.

When installing a light of glass in an opening to be glazed, the metal sill plate 26 is first properly positioned upon the wooden sill 9 and the rear sash section 11 associated therewith and secured by the screws 22 and 14 to the wooden sill 9 and back stop 10 respectively. The pane of glass 6 is then set in place and supported at its lower edge upon a plurality of setting blocks 51 of any desired construction and which are arranged at spaced intervals longitudinally of the horizontal base plate 21 of the rear section. After the glass has been positioned upon the setting blocks 51, with the rear surface thereof in contact with the lip 16 of rear section 11, the movable front section 12 is properly associated with said rear section. This is done by bringing the rib 32 at the bottom of the front section into engagement with the upstanding flange 23 and the lip 31 at the upper end thereof in contact with the outer face of the pane of glass. When so positioned, the lower portions of the clip members 34 will be disposed inwardly of the upstanding flange 23, with the curved surfaces 42 of said clip members being closely adjacent the

curved rear surface 25 of said flange. The lever arms 43 of the clip members will extend rearwardly toward the fixed section beyond the edge of the glass pane.

The adjusting screws 35 are then tightened to engage the rigid plate elements 45 of the lever arms and downward pressure thereon will cause the flexing of the spring portions 44, as indicated by the broken lines in Fig. 2, whereby to urge the lip 31 of the movable front section into yielding engagement with the glass. This action will also bring the curved surfaces 42 of the clip members into engagement with the curved rear surface 25 of flange 23.

In this way, the movable front section will be maintained in firm clamping engagement with the pane of glass 6 to effectively secure the same in place. On the other hand, the spring portions 44 of the lever arms 43 will provide for a certain amount of flexibility and resiliency to take care of vibration and expansion and contraction of the glass and metal sash construction without disturbing the setting of the pane or causing injury thereto. Likewise, the liability of breakage of the glass under severe wind strain and other shocks to which it may be subjected in use will be greatly reduced.

The adjusting screws 35 are adapted to be tightened until the lugs 50 engage the horizontal ledge 17 whereupon further tightening of the said screws will be prevented. The lugs 50 therefore cooperate with the ledge 17 to limit movement of the rigid plate elements 45 and prevent over-tightening of the adjusting screws 35. In this way, the application of excessive clamping pressure upon the glass, such as might result in the breakage thereof, is effectively prevented.

It is to be understood that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. In a sash or store front construction, the combination of a fixed section and a movable section adapted to receive and grip a pane of glass therebetween, said fixed section including a horizontal base plate provided at its outer end with an upstanding flange having a curved front surface while said movable section is disposed in front of said upstanding flange and is provided at its lower end with a curved rear surface engaging the curved front surface of the said flange and adapted to fulcrum thereon, a clip member carried by said movable section and including a spring portion, an adjusting member carried by said fixed section and engaging said clip member for flexing the spring portion thereof to rock the said movable section with respect to the said fixed section to yieldably clamp the pane of glass in position therebetween, and a positive stop means on said fixed section engageable by said clip member for limiting the flexing movement of the spring portion of the said clip member to prevent further tightening of said adjusting member when a substantially predetermined clamping pressure is applied to the glass.

2. In a sash or store front construction, the combination of a fixed section and a movable section adapted to receive and grip a pane of glass therebetween, said fixed section including a horizontal base plate provided at its outer end with an upstanding flange having a curved front

surface while said movable section is disposed in front of said upstanding flange and is provided at its lower end with a curved rear surface engaging the curved front surface of the said flange and adapted to fulcrum thereon, a clip member carried by said movable section and including a spring portion and a rigid portion, an adjusting screw carried by said fixed section and engaging the rigid portion of said clip member for rocking the said movable section with respect to the said fixed section to urge said movable section into yielding clamping engagement with the pane of glass, and a positive stop means for preventing further tightening of the adjusting screw when a substantially predetermined clamping pressure is applied to the glass.

3. In a sash or store front construction, the combination of a fixed section and a movable section adapted to receive and grip a pane of glass therebetween, said fixed section including a horizontal base plate provided at its outer end with an upstanding flange having an arcuately curved front surface while said movable section is disposed in front of said flange and is provided at its lower end with an arcuately curved rear surface engaging the curved front surface of the said flange and adapted to fulcrum thereon, a clip member carried by said movable section comprising a rigid body portion and a spring portion extending from said body portion toward said fixed section beyond the edge of the glass pane, an adjusting member carried by said fixed section and engaging said clip member for flexing the spring portion thereof to rock the said movable section upon the said fixed section to secure the pane of glass yieldably in position therebetween, and a positive stop means on said fixed section engageable by said clip member for limiting the flexing movement of the spring portion of the said clip member to prevent further tightening of said adjusting member when a substantially predetermined clamping pressure is applied to the glass, the rigid body portion of said clip member being disposed inwardly of the upstanding flange on the horizontal base plate of said fixed section and adapted to engage the inner surface thereof upon actuation of the said clip member by the said adjusting member.

4. In a sash or store front construction, the combination of a fixed section and a movable section adapted to receive and grip a pane of glass therebetween, said fixed section including a horizontal base plate provided at its outer end with an upstanding flange having an arcuately curved front surface while said movable section is disposed in front of said flange and is provided at its lower end with an arcuately curved rear surface engaging the curved front surface of the said flange and adapted to fulcrum thereon, a clip member carried by said movable section comprising a rigid body portion and a lever arm extending from said body portion toward said fixed section beyond the edge of the glass pane, said lever arm including a spring portion and a rigid portion, an adjusting member carried by said fixed section and engaging the rigid portion of the lever arm for rocking the said movable section upon the said fixed section into yielding engagement with the glass, and a positive stop means for limiting the movement of the rigid portion of said lever arm to prevent excessive pressure from being applied to the glass, the rigid body portion of said clip member being disposed inwardly of the upstanding flange on the horizontal base plate of said fixed section

and adapted to engage the inner surface thereof upon actuation of the said lever arm by the adjusting member.

5. In a sash or store front construction, the combination of a fixed section and a movable section adapted to receive and grip a pane of glass therebetween, said fixed section including a horizontal base plate provided at its outer end with an upstanding flange having a curved front surface while said movable section is disposed in front of said flange and is provided at its lower end with a curved rear surface engaging the curved front surface of the said flange and adapted to fulcrum thereon, a channel formed upon the rear face of the movable section intermediate the upper and lower ends thereof, a clip member mounted in said channel comprising a rigid body portion and a substantially horizontal spring portion extending toward said fixed section beyond the edge of the glass pane, an adjusting member carried by said fixed section and engaging said clip member for flexing the spring portion thereof to rock said movable section with respect to said fixed section to secure the pane of glass yieldably in position therebetween, and a positive stop means on the said fixed section having a portion raised above the base plate thereof and engageable by said clip member for limiting the flexing movement of the spring portion of the said clip member to prevent further tightening of said adjusting member when a substantially predetermined clamping pressure is applied to the glass.

6. In a sash or store front construction, the combination of a fixed section and a movable section adapted to receive and grip a pane of glass therebetween, said fixed section including a horizontal base plate provided at its outer end with an upstanding flange having a curved front surface while said movable section is disposed in front of said flange and is provided at its lower end with a curved rear surface engaging the curved front surface of the said flange and adapted to fulcrum thereon, a channel formed upon the rear face of the movable section intermediate the upper and lower ends thereof, a clip member mounted in said channel comprising a rigid body portion and a substantially horizontal lever arm extending toward said fixed section beyond the edge of the glass pane including a spring portion and a rigid portion, an adjusting member engaging said rigid portion of the lever arm for rocking the said movable section with respect to the said fixed section to move said movable section into yielding engagement with the glass, and a positive stop associated with the fixed section to arrest movement of the rigid portion of said lever arm to limit the yielding pressure applied to the glass.

7. In a sash or store front construction, the combination of a fixed section and a movable section adapted to receive and grip a pane of glass therebetween, said fixed section including a horizontal base plate provided at its outer end with an upstanding flange having an arcuately curved front surface while said movable section is disposed in front of said flange and is provided at its lower end with an arcuately curved rear surface engaging the curved front surface of the said flange and adapted to fulcrum thereon, a channel formed upon the rear face of the movable section intermediate the upper and lower ends thereof, a clip member mounted in said channel comprising a rigid body portion and a substantially horizontal spring portion extend-

ing toward said fixed section beyond the edge of the glass pane, an adjusting member carried by said fixed section and engaging said clip member for flexing the spring portion thereof to rock said movable section upon said fixed section to secure the pane of glass yieldably in position therebetween, and a positive stop means on the said fixed section having a portion raised above the base plate thereof and engageable by said clip member for limiting the flexing movement of the spring portion of the said clip member to prevent further tightening of said adjusting member when a substantially predetermined clamping pressure is applied to the glass, the rigid body portion of said clip member being disposed inwardly of the upstanding flange on the horizontal base plate of said fixed section and adapted to engage the inner surface thereof upon actuation of the said clip member by the said adjusting member.

8. In a sash or store front construction, the combination of a fixed section and a movable section adapted to receive and grip a pane of glass therebetween, said fixed section including a horizontal base plate provided at its outer end with an upstanding flange having an arcuately curved front surface while said movable section is disposed in front of said flange and is provided at its lower end with an arcuately curved rear surface engaging the curved front surface of the said flange and adapted to fulcrum thereon, a channel formed upon the rear face of the movable section intermediate the upper and lower ends thereof, a clip member mounted in said channel comprising a substantially rigid body portion and a substantially horizontal lever arm extending from said body portion toward said fixed section beyond the edge of the glass pane, said lever arm including a spring portion and a rigid portion, an adjusting screw carried by said fixed section and engaging the rigid portion of said lever arm for rocking the said movable section upon the said fixed section to move said movable section into yielding engagement with the glass, and a positive stop associated with said fixed section for arresting the movement of the rigid portion of said lever arm to prevent further tightening of said adjusting screw and thereby limit the yielding pressure applied to the glass, the rigid body portion of said clip member being disposed inwardly of the upstanding flange on the horizontal base plate of said fixed section and adapted to engage the inner surface thereof upon actuation of the said lever arm by the said adjusting screw.

9. In a sash or store front construction, the combination of a fixed section and a movable section adapted to receive and grip a pane of glass therebetween, said fixed section including a horizontal base plate provided at its outer end with an upstanding flange having outer and inner arcuately curved concave and convex sur-

faces respectively, while said movable section is disposed in front of said flange and is provided at its lower end with an inner arcuately curved convex surface engaging the outer arcuately curved concave surface of said flange and adapted to fulcrum thereon, a channel formed upon the rear face of said movable section intermediate the upper and lower ends thereof, a clip member comprising a substantially rigid body portion received at its upper end in said channel and being formed at its lower end with an arcuately curved concave surface adapted to engage the inner arcuately curved convex surface of said flange; a rearwardly extending substantially horizontal spring member carried by said body portion intermediate the upper and lower ends thereof and a rigid element carried at the free end of said spring member, and an adjusting screw carried by said fixed section and engaging said rigid element for flexing said spring member to rock said movable section upon said fixed section to urge the said movable section into yielding engagement with the glass.

10. In a sash or store front construction, the combination of a fixed section and a movable section adapted to receive and grip a pane of glass therebetween, said fixed section including a horizontal base plate provided at its outer end with an upstanding flange having outer and inner arcuately curved concave and convex surfaces respectively, while said movable section is disposed in front of said flange and is provided at its lower end with an inner arcuately curved convex surface engaging the outer arcuately curved concave surface of said flange and adapted to fulcrum thereon, a channel formed upon the rear face of said movable section intermediate the upper and lower ends thereof, a clip member comprising a substantially rigid body portion received at its upper end in said channel and being formed at its lower end with an arcuately curved concave surface adapted to engage the inner arcuately curved convex surface of said flange; a rearwardly extending substantially horizontal spring member carried by said body portion intermediate the upper and lower ends thereof and a rigid element carried at the free end of said spring member, and an adjusting screw carried by said fixed section and engaging said rigid element for flexing said spring member to rock said movable section upon said fixed section to urge the said movable section into yielding engagement with the glass, said fixed section being provided with a raised horizontal ledge at the inner end of the base plate thereof, while said rigid element is provided with a lug adapted to engage said ledge and to act as a positive stop for preventing further tightening of said adjusting screw when the said rigid element reaches a predetermined position.

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