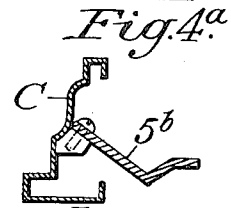
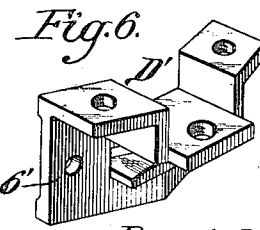
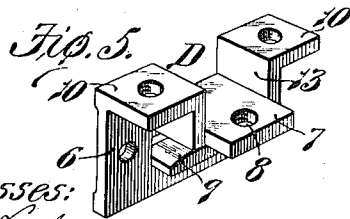
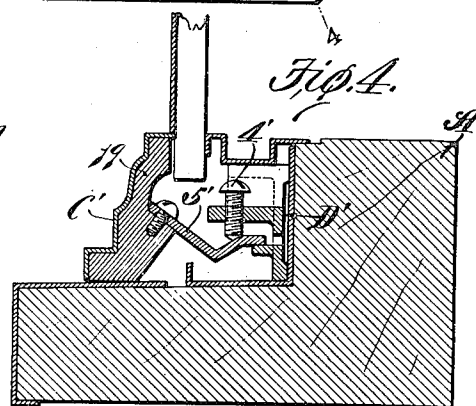
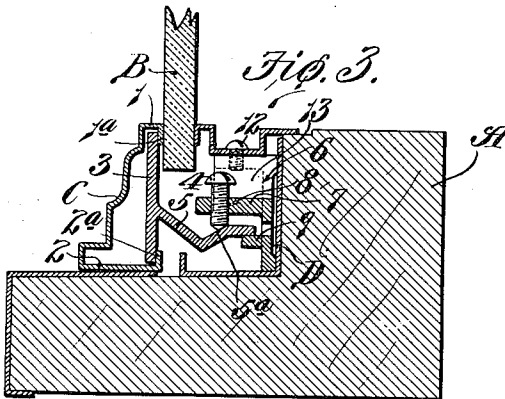
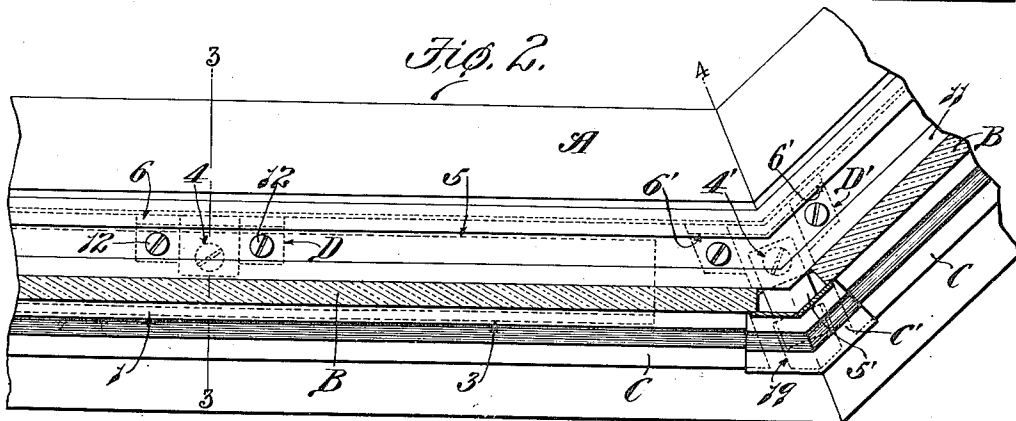
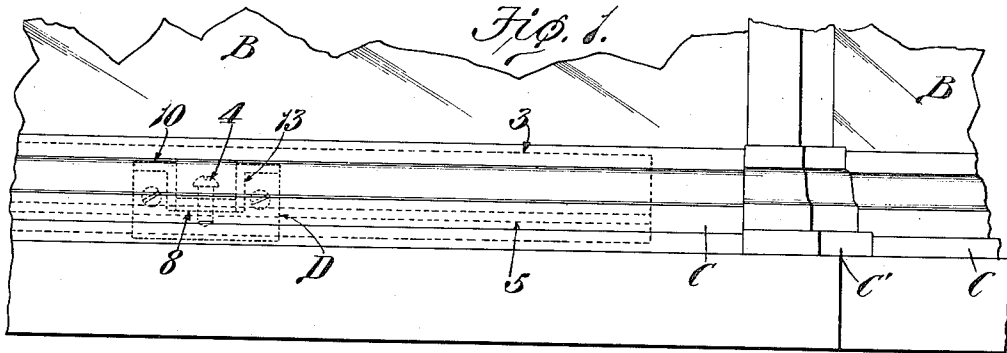


D. J. MURNANE.
STORE FRONT AND SHOW WINDOW.
APPLICATION FILED MAR. 19, 1910.

1,008,982.

Patented Nov. 14, 1911.

2 SHEETS—SHEET 1.



Witnesses:
Geo. R. Radway
Nells L. Chmel

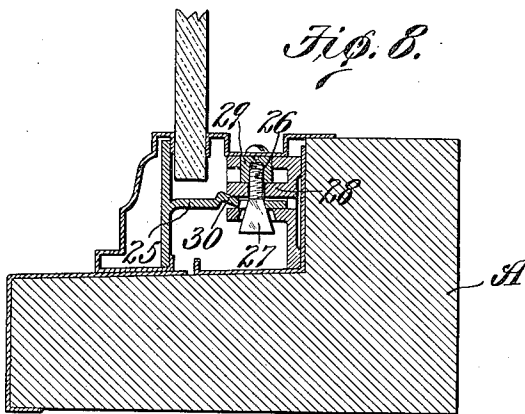
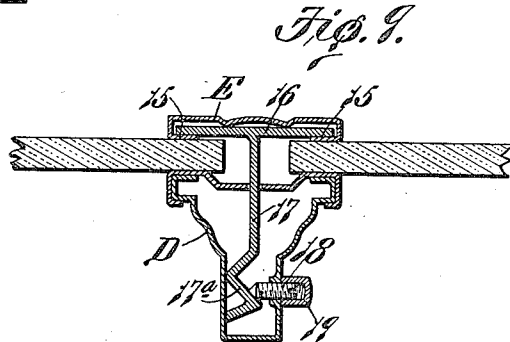
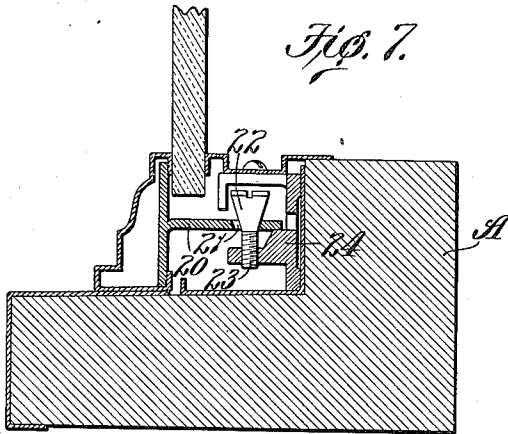
Inventor:
Daniel J. Murnane.
By Paul Bakewell Atty.

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2 SHEETS—SHEET 2.



Witnesses:
Geo. R. Radson
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UNITED STATES PATENT OFFICE.

DANIEL J. MURNANE, OF ST. LOUIS, MISSOURI.

STORE-FRONT AND SHOW-WINDOW.

1,008,982.

Specification of Letters Patent.

Patented Nov. 14, 1911.

Application filed March 19, 1910. Serial No. 550,455.

To all whom it may concern:

Be it known that I, DANIEL J. MURNANE, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Store-Fronts and Show-Windows, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the construction of store-fronts and show-windows, and particularly to show-windows of that type which comprise outside glass-clamping members formed of metal.

One object of my invention is to provide a store-front or show-window of the type above referred to which is so constructed that the means which connects the outside glass-clamping members to the frame in which the glass is arranged is completely hidden, thereby producing a structure in which no fastening devices are visible on the outside of the window for retaining the outside glass-clamping members in position.

Another object is to provide a glass-clamping means that exerts a uniform tension or even clamping pressure on the glass and which is so designed that it can be arranged in position easily and without liability of cracking or breaking the glass. And still another object is to provide a glass-clamping means that consists of an outside clamping member, and means for simultaneously drawing said member into engagement with the glass and with the frame in which the glass is arranged.

Other objects and desirable features of my invention will be hereinafter pointed out.

Figure 1 of the drawings is a front elevational view of a portion of a store-front or show-window constructed in accordance with my invention; Fig. 2 is a top plan view of the parts shown in Fig. 1; Figs. 3 and 4 are vertical sectional views taken on the lines 3-3 and 4-4, respectively, of Fig. 2; Fig. 4^a is a detail view of a piece of molding that is provided with arms which cooperate with the adjustable devices on the frame; Fig. 5 is a perspective view of one of the supporting members on the stationary frame which carries one of the adjustable elements of the means that retains the outside glass-clamping frame moldings in operative position; Fig. 6 is a perspective view of the

supporting member that is adapted to be used in a window construction in which the plates of glass are arranged at an angle to each other; Figs. 7 and 8 are vertical sectional views of slightly modified forms of my invention; and Fig. 9 is a horizontal sectional view of a division-bar embodying my invention.

In Figs. 1 to 4, inclusive, I have shown my invention applied to the sill or lower cross-piece of a glass-supporting frame, and in Fig. 9 to a division-bar, but it will, of course, be understood that the side pieces, the top piece and the transom bar of the frame are constructed in the same manner. Furthermore, while my invention is particularly applicable to store-fronts and show-windows I do not wish it to be understood that my invention is limited to such structures for show-cases and other similar structures that comprise an outside glass-clamping frame could be constructed in the manner hereinafter described.

Referring to the drawings which illustrate the preferred form of my invention, A designates the sill or lower cross-piece of the stationary frame in which plates of glass B are arranged, said plates of glass being supported by blocks or other suitable devices, not shown, such as are generally used for this purpose. A clamping frame is arranged on the outside of the plates of glass B so as to retain them in operative position, and in the construction herein shown said outside glass-clamping frame is composed of a number of pieces of hollow metal molding C, and caps or covers C' that hide the joints between the ends of said pieces of molding. The front face of the molding C can be of any preferred shape or design but the top and bottom walls 1 and 2, respectively, of said molding are provided with vertically disposed flanges 1^a and 2^a that project toward each other, as shown in Fig. 3, so as to form lugs or stops which cooperate with the means that connects the molding to the frame in which the glass is arranged. Said means preferably consists of keys 3 that are adapted to be inserted in the molding endwise so that they will lap over the flanges 1^a and 2^a, and adjustable devices 4 carried by the stationary frame A and cooperating with inwardly projecting legs 5 on the keys 3 to draw said keys inwardly and downwardly and thus cause them to force the

molding C tightly against the glass and against the stationary frame A.

While I prefer to employ keys that are separate and distinct from the moldings for connecting the moldings to the stationary frame, I do not wish it to be understood that my broad idea is limited to this exact construction for if desired the moldings could be provided with inwardly projecting legs 5^b, as shown in Fig. 4^a, for cooperating with the adjustable devices that operate to draw them tightly against the glass and against the stationary frame in which the glass is arranged.

The frame A can be provided with any suitable means for supporting the adjusting devices 4 that cooperate with the clamping keys 3, but I prefer to provide said frame with a plurality of supporting members D that are spaced certain distances from each other, as shown in dotted lines in Figs. 1 and 2. These supporting members D are preferably formed of cast metal, and each member comprises a vertical wall 6 through which fastening devices pass to connect the member to the frame A, a horizontally disposed flange 7 having a screw-threaded opening 8 for receiving one of the adjusting devices 4, and a horizontally disposed flange 9 arranged under the flange 7 for supporting the inner end of the arm 5 on the clamping key 3, the top face of the flange 9 being rounded off slightly to reduce friction between same and the arm 5. Flanges 10 on the upper edge of the wall 6 form a support for a clamping member 11 that bears against the inner face of the glass and which is adjustably connected to the flanges 10 by means of screws 12 so as to enable it to be adjusted to accommodate glass of different thickness. If desired, the flanges 10 and 7 of the supporting member D can be integrally connected together by vertical webs 13, as shown in Fig. 5, so as to produce a strong and rigid structure.

The inwardly projecting leg 5 on the clamping key 3 is so formed that when the screw or adjusting device 4 is moved downwardly into engagement with said leg said key will be drawn inwardly and downwardly simultaneously. In the construction shown in Figs. 3 and 4, the leg 5 is provided with a portion that projects inwardly and downwardly from the key 3, a portion 5^a that projects upwardly from said downwardly bent portion and which is adapted to be engaged by the adjusting devices 4, and a horizontally disposed portion that is adapted to rest upon the flange 9 of the supporting member D.

One of the advantages of a construction of the character above described is that the clamping keys 3 are not subjected to a direct pull when the screws 4 are tightened so that there is not as great a liability of breaking

or cracking the glass as there is in structures in which the clamping members are subjected to a direct pressure produced by the tightening of a bolt or screw. That is to say, by applying the pressure to the legs 5 at an angle to the direction in which they move instead of in a direct line, the clamping members 3 will not force the molding against the glass with sufficient pressure to break or crack the glass. Consequently, a structure of the character above described insures a uniform tension or even clamping pressure on the glass at all points.

Another advantage of my construction is that the outside glass-clamping members are forced tightly against the glass and against the stationary frame in which the glass is arranged, thus producing a tight joint between the frame and the outside clamping members. The fact that a single operation; namely, tightening the screws 4, produces an inward and downward movement of the outside molding simultaneously, is also a very desirable feature for it simplifies the construction of the device and reduces the number of fastening devices to the minimum.

Each of the caps C' which are used for covering the joints between the angularly-disposed pieces of molding of the outside clamping frame C, is preferably formed by two short pieces of molding mitered together and connected to a cast metal reinforcing device 19 arranged inside of same, as shown in Fig. 4, the bottom wall and the upper flanges 1^a of the pieces of molding which constitute said cap being sheared off so that the cap can snugly embrace the glass-clamping moldings over which it is arranged. While I prefer to use a cap of the construction above described, it will, of course, be understood that a cap formed from a single piece of metal or a cast metal cap could be used in place of the one herein shown for the particular construction of the caps which hide the joints between the outside clamping members is immaterial so far as certain features of my present invention are concerned. The reinforcing device 19 on the cap projects inwardly between the adjacent ends of the moldings C, and said reinforcing device is provided with an arm 5' that cooperates with an adjusting screw 4' carried by a supporting member D' which is of practically the same construction as the other supporting members D. The supporting member D' herein shown is slightly different, however, in that its vertical wall 6' conforms to the angle at which the plates of glass B are arranged relatively to each other. When the screw 4' is tightened the cap will be drawn inwardly and downwardly into intimate engagement with the molding. A cap that is constructed in this manner can be manufactured cheaply and

it is also strong and presents a neat and ornamental appearance, the means that retains the cap in position being completely hidden from view. In fact, no fastening devices can be seen from the outside of the window so that the outside glass-clamping moldings present the appearance of being pasted or glued in position, and as said moldings are not marred or defaced by fastening devices projecting through same the entire structure presents a more finished and ornamental appearance than similar structures which have heretofore been in use.

While I have herein used the term "inwardly and downwardly" to indicate the direction of movement of the outside glass-clamping member and the caps which cooperate with same, I do not wish it to be understood that my invention is limited to a structure in which the parts above referred to are moved in the directions mentioned for the outside clamping member which is arranged at the upper edge of the glass will move inwardly and upwardly and those which are arranged at the side edges of the glass will move inwardly and sidewise. Therefore, the broad term "laterally" which appears in some of the claims should be construed as meaning a direction at an angle to the direction in which the clamping member is drawn into engagement with the glass.

In Fig. 9 I have shown a division-bar D constructed in accordance with my invention, said bar performing a similar function to the stationary frame A shown in Figs. 1 to 4 inclusive. The outside glass-clamping member E that cooperates with the division-bar consists of a hollow piece of molding provided with flanges 15 that cooperate with the key 16 which is provided with a leg 17 that projects inwardly into the hollow division-bar. The leg 17 is provided with an approximately V-shaped part 17^a against one side of which an adjusting screw 18 bears, said screw being mounted in a screw-threaded opening in the division-bar. The screw 18 is preferably threaded throughout its entire length so that a cap 19 can be mounted on the upper end of same, and the division-bar is so formed that it acts as a support for the inner end of the arm 17 so as to prevent it from moving laterally when the screw is tightened. When the screw 18 is tightened the lower end of same will bear against one of the inclined faces on the V-shaped part of the leg 17 and thus cause the key to draw the outside clamping molding tightly against the glass.

Instead of providing the leg on the clamping key with an inclined surface against which an adjusting screw bears, as shown in Figs. 3, 4 and 9, the leg 20 of the clamping key can be made straight, as shown in Fig. 7, and provided with an elongated slot 21 for receiving an inverted conical-shaped

head 22 on an adjusting screw 23 which is adjustably mounted in a stationary member 24 carried by the frame A. When the screw 23 is tightened the head 22 thereon will bear against the inner end of the slot 21 in the leg 20 and thus draw the key inwardly and downwardly.

Another slight modification of my invention is shown in Fig. 8 wherein the reference character 25 designates the leg on the key, and 26 designates a bolt that is provided with an approximately conical-shaped head 27 which projects into an elongated slot in the leg 25. The threaded shank of the bolt passes through a flange 28 on a stationary member carried by the frame A, and a nut 29 is mounted on the upper end of the shank above said flange 28 for drawing the bolt upwardly so that the head thereon will engage the inner end of the slot in the leg 25 and thus draw the key inwardly, the downward movement of the key being effected by means of an inclined surface 30 on the leg 25 that bears against the under side of the end portion of the flange 28 on the stationary member.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a window structure, a plate of glass, a stationary supporting frame in which said plate is arranged, an outside clamping frame for retaining said glass in position, and means for simultaneously drawing said clamping frame inwardly against the glass and laterally against the stationary glass supporting frame.

2. In a structure of the character described, a stationary frame, a plate of glass arranged inside of same, an outside clamping member arranged in engagement with said glass and with said stationary frame, and means for simultaneously moving said clamping member inwardly toward the glass and also laterally toward the stationary frame so as to hold said clamping member tightly against the glass and against the stationary frame which receives the glass.

3. In a structure of the character described, a stationary frame, a plate of glass arranged inside of same, an outside clamping member that bears against said frame and said glass, an arm projecting inwardly from said clamping member and provided with an inclined surface that lies at an angle to the glass, and an adjustable device cooperating with said inclined surface for drawing said clamping member into intimate engagement with said glass and said frame.

4. In a window structure, a frame, a plate of glass arranged therein, an outside clamping member arranged in engagement with said frame and glass, an arm projecting inwardly from said clamping member and ar-

5 ranged between the stationary frame and the edge of the glass, and adjustable means on said frame adapted to engage said arm and draw said clamping member into intimate engagement with the glass and with the frame.

10 5. In a window structure, an outside clamping member, a device arranged inside of said member, and means for drawing said device inwardly and also laterally so as to press said clamping member tightly against the glass and against the frame in which the glass is arranged.

15 6. In a window structure, a stationary frame, a plate of glass arranged therein, an outside clamping member arranged in engagement with said glass and stationary frame, a device which is adapted to engage said clamping member and hold it tightly 20 against the glass and against the stationary frame, and adjustable means carried by the stationary frame for moving said device inwardly and toward the frame so as to press the outside clamping member against the 25 glass and against said stationary frame.

30 7. In a structure of the character described, an outside clamping member, a key arranged inside of said member and cooperating with shoulders thereon, an arm on said key having an inclined surface, and an adjustable device arranged at an angle to said key and adapted to engage the inclined surface thereon so as to hold the key in engagement with said clamping member.

35 8. In a window structure, an outside clamping member consisting of a sheet metal molding, a key arranged in said molding and provided with an inwardly projecting arm having an inclined surface, a stationary supporting member having a portion on which said arm rests, and an adjustable device on said supporting member 40 arranged at an angle to the inclined surface on said arm and cooperating with same to move the key inwardly and laterally.

45 9. In a window structure, a frame, a plate of glass arranged therein, an outside clamping member consisting of a piece of sheet metal molding that is adapted to engage 50 said glass and frame, a key arranged in said molding and bearing against flanges thereon, an arm on said key having an inclined surface, and a supporting member connected to said frame and provided with an adjustable device that is adapted to engage the inclined surface on said arm so 55 as to draw the molding tightly against the glass and against the frame.

60 10. In a window structure, an outside clamping frame consisting of pieces of metal molding, caps that cover the joints between the ends of said pieces, inwardly projecting devices on said caps that are arranged between the ends of said pieces of molding, 65 and means cooperating with said devices

for drawing said caps inwardly and downwardly so as to hold them tightly against the molding.

70 11. In a window structure, an outside clamping member comprising two pieces of metal molding arranged at an angle to each other, a cap covering the joint between the ends of said pieces and formed from two short pieces of molding that are mitered together, a reinforcing device on the inside 75 of said cap that projects between the ends of the pieces of molding, and an adjustable device that engages an arm on said cap so as to draw the cap tightly against the moldings. 80

12. A glass-clamping means consisting of an outside glass-clamping member, a key arranged inside of said member and provided with an inwardly projecting arm, and an adjustable device cooperating with said 85 arm for causing the key to exert pressure on said outside clamping member in two different directions.

13. A glass-clamping means consisting of an outside glass-clamping member, a key 90 arranged inside of said member and provided with an inwardly projecting arm, and an adjustable device arranged at an angle to said arm and adapted to engage same, one of said parts having a cam face or inclined surface which causes the key to be 95 drawn inwardly and thus force said outside clamping member tightly against the glass when said adjustable device is actuated.

14. A glass-clamping means consisting of 100 an outside glass-clamping member, a key arranged inside of said member and provided with an inwardly projecting arm that has an inclined surface, a support for the inner end of said arm, and an adjustable 105 device on said support arranged at an angle to said arm and cooperating with the inclined surface thereon to hold said glass-clamping member in position.

15. In a window structure, an outside 110 glass-clamping molding, a key arranged inside of same and provided with an inwardly projecting arm having a cam face or inclined surface, a stationary member having a supporting surface on which the inner end 115 of said arm bears, and an adjustable device on said member arranged at an angle to said arm and cooperating with the inclined surface thereon to draw the outside clamping molding into operative position when said 120 device is actuated.

16. A glass-retaining means, comprising an outside clamping member, an arm arranged on the inner side of said member and projecting inwardly beyond the glass, 125 said arm having an inclined face, and an adjustable device cooperating with said inclined face for moving said outside clamping member in two directions.

17. In a window structure, an outside 130

glass-clamping member, an arm arranged on the inner side of said member and projecting inwardly beyond the glass, adjustable means cooperating with said arm for drawing the glass-clamping member into engagement with the glass, and an inside glass-clamping member that hides said arm and means from view.

18. In a window structure, an outside glass-clamping member, arms arranged on the inner side of said member and projecting inwardly beyond the glass, said arms having inclined surfaces, stationary members arranged adjacent the edge of the glass and on the inside of the opening which the glass closes, devices adjustably mounted in said stationary members and cooperating with the inclined surfaces on said arms to retain said outside glass-clamping member in position, and an adjustable inside glass-clamping member supported by said stationary members.

19. A glass-retaining means comprising an outside clamping member, an arm arranged on the inner side of said member and projecting inwardly beyond the glass, said arm being provided intermediate its ends with an inclined surface, a support for the extreme inner end of said arm, and an adjustable device that is adapted to engage the inclined surface on said arm and thus cause said clamping member to be drawn inwardly and downwardly.

20. A glass-clamping mechanism, comprising an outside glass-clamping member provided with shoulders, a key arranged inside of said member in engagement with said shoulders, an arm on said key that projects inwardly beyond the glass with which the mechanism is used, a stationary member that supports the inner end of said arm, and cooperating means on said arm and stationary member for drawing said glass-clamping member inwardly and also laterally so as to press it tightly against the glass and against the stationary supporting frame in which the glass is arranged.

21. A glass-clamping mechanism, comprising an outside glass-clamping member provided with inturned flanges, a key arranged inside of said member in engagement with said flanges and provided with an arm which projects inwardly beyond the glass with which the mechanism is used, said arm being provided intermediate its ends with an inclined surface, a stationary member that supports the inner end of said arm, and an adjustable device mounted on said member above said arm and adapted to engage the inclined face thereon.

22. In a window structure, an outside clamping member, a stationary member arranged adjacent the edge of the glass and on the inside of the opening which the glass

closes, a part that projects inwardly from said clamping member, cooperating means on said part and stationary member for moving said outside clamping member toward the glass and toward the frame in which it is arranged, and an adjustable inside glass-clamping member carried by said stationary member.

23. In a structure of the character described, a glass-clamping member, a cap arranged in engagement with said member and provided with an arm that projects beyond said clamping member, a support for the end of said arm, and cooperating means on said support and arm for causing the cap to exert pressure on said glass-clamping member in two different directions.

24. In a structure of the character described, a molding, a cap arranged in engagement with the outer face of said molding, a part projecting inwardly from said cap beyond the molding, and an adjustable device arranged at an angle to said part and cooperating with same to retain the cap in engagement with the molding.

25. In a window structure, an outside glass-clamping member which is adapted to be arranged in engagement with the glass and with the frame which surrounds the opening that the glass closes, and means arranged adjacent the edge of the glass and on the inside of said opening for causing said glass-clamping member to exert pressure on the glass and on said frame.

26. A glass-retaining means, comprising an outside clamp, a member that is adapted to be arranged on the inside of the glass and secured in a stationary position, an arm projecting inwardly from said clamp and bearing upon said member, and cooperating means on said arm and stationary member for forcing said clamp against the glass and against the frame in which the glass is arranged.

27. In a window structure, a member that is adapted to be securely connected to the stationary frame in which the glass is arranged, said member being provided with a lug which forms a support for an arm that projects inwardly from an outside clamp, an adjustable device carried by said member and adapted to engage said arm, and wings on said member to which an inside clamp can be connected.

28. In a window structure, a casting provided with a vertical wall having openings for receiving fastening devices, and a pair of lugs projecting forwardly from said wall and arranged one above the other, the upper lug being provided with an opening for receiving a screw-threaded adjusting device.

29. In a window structure, a casting provided with a vertical wall having openings for receiving fastening devices, a pair of

lugs projecting forwardly from said wall and arranged one above the other, the upper lug being provided with an opening for receiving a screw-threaded adjusting device, and wings on the upper edge of said wall provided with openings for receiving devices which connect a member to said wings.

30. In a structure of the character described, outside clamping members, a cap arranged over the joint between said members and provided with an inwardly projecting arm, a stationary member, and means carried by said stationary member and cooperating with said arm for drawing said cap into engagement with said clamping members.

31. In a structure of the character described, outside clamping members, a sheet metal cap arranged over the joint between said members and provided on its inner side with a reinforcing device, an arm on said cap projecting inwardly beyond the object which said clamping members hold in position, a stationary part against which said arm bears, and means carried by said stationary part and cooperating with said arm

for drawing said cap into engagement with said outside clamping members.

32. In a structure of the character described, clamping members, a cap arranged over a joint between said members, a stationary part arranged on the opposite side of said clamping members, and cooperating means on said stationary part and cap for drawing said cap tightly against said clamping members.

33. In a window structure, outside glass-clamping members, a cap arranged over a joint between said members and provided with an inwardly projecting arm, a stationary member arranged adjacent the edge of the glass, and adjustable means on said stationary member cooperating with said arm to draw said cap tightly against said clamping members.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this fifteenth day of March 1910.

DANIEL J. MURNANE.

Witnesses:

WELLS L. CHURCH,
GEORGE BAKWELL.