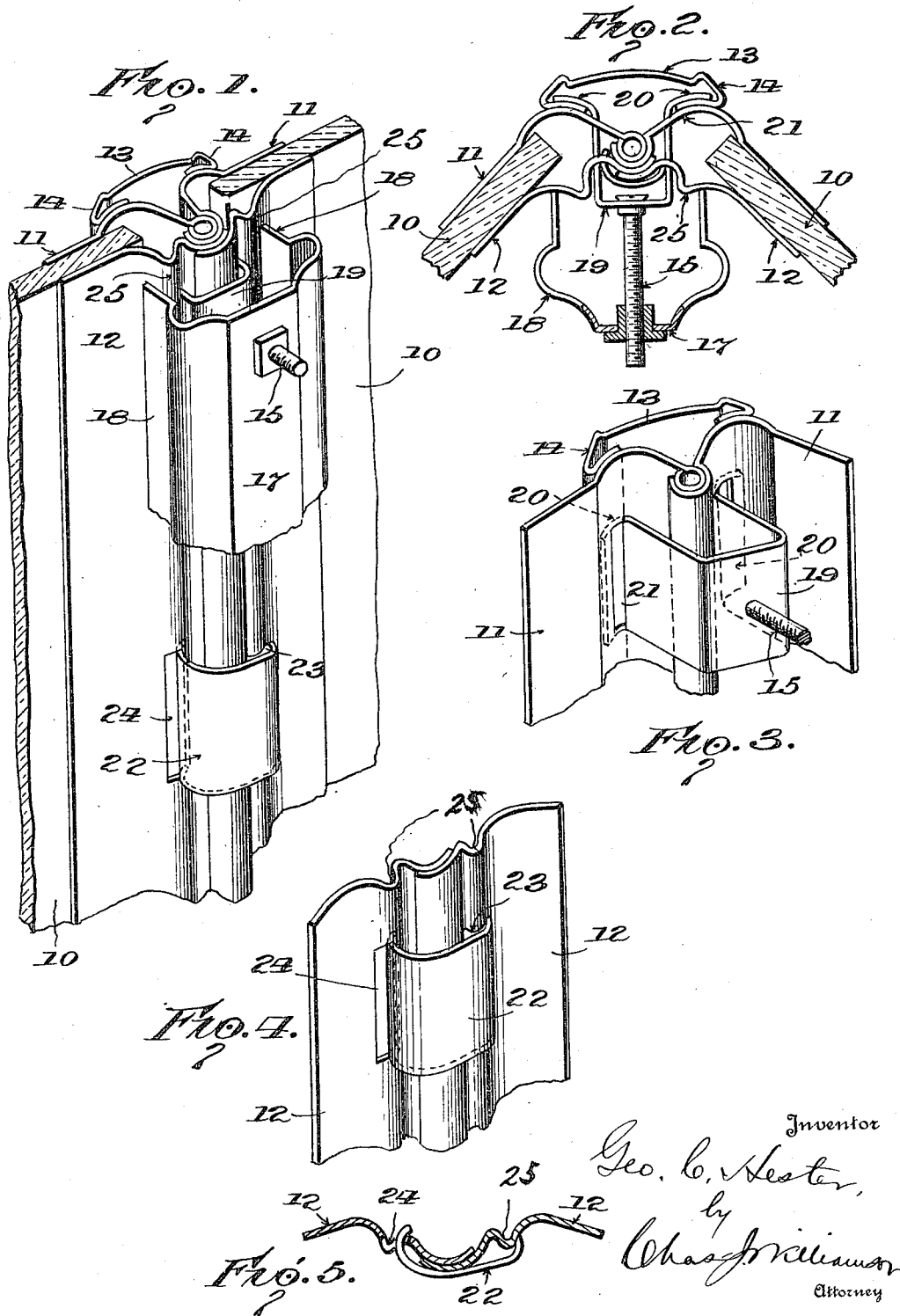


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 CORNER AND DIVISION BAR FOR STORE FRONT CONSTRUCTIONS.
 APPLICATION FILED AUG. 29, 1916.

1,311,398.

Patented July 29, 1919.



UNITED STATES PATENT OFFICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE C. HESTER, a citizen of the United States, and resident of Chicago, in the county of Cook, and in the State of Illinois, have invented a certain new and useful Improvement in Corner and Division Bars for Store-Front Constructions, and do hereby declare that the following is a full, clear, and exact description thereof.

In the well-known plate glass store front construction, what are known in the trade as corner and division bars are employed at the vertical corners and other division points in the front between adjoining plates of glass, to secure them in position thereat. The angles of the plates of glass that form the corners, greatly vary, and while attempts have been made by others to provide a corner bar construction that would be adaptable to various angles, yet as far as I know to the contrary, the attempt has never succeeded, but the present practice is to provide a different corner bar for each angle. This requires a great assortment of corner bar angles, and even then difficulties arise because of failure of a particular corner bar and the glass plate as installed, to accurately agree, through error or carelessness of workman. Such lack of agreement results in failure of proper support being given the glass, and danger of breaking it by forcing an agreement. The object of my invention is to provide a bar construction which will have such flexibility or scope of adjustment that the same bar will suit any angle required, and, if desired, even to the extent of an angle of 180 degrees, so that a great variety of corner bars and separate division bars, as such, is not necessary, but the one construction will serve all purposes and efficiently and with entire practicability meet all requirements. Other objects and advantages of my invention will be understood by those skilled in the art when the embodiment of such invention shown in the drawings, is more fully explained in the following specification, of which said drawings form a part.

In the accompanying drawings—

Figure 1 is a perspective view of a bar embodying my invention;

Fig. 2 is a horizontal section thereof show-

ing the position of the parts when the plates of glass are on an angle;

Fig. 3 is a perspective view of a portion of the outside glass engaging member;

Fig. 4 is a like view of the inside member;

Fig. 5 is a horizontal section through the inside member.

My bar, briefly described, comprises as the necessities of the case require, glass-engaging members in the form of duplicate pairs of vertical rails, between which and the adjacent edges of adjoining plates of glass, clamping bolts or screws are passed, by which the rails of a pair, situated, respectively, on opposite sides of the same plate of glass are caused to exert the desired clamping pressure thereon. These rails are made of sheet metal, such as copper, of sufficient thinness to enable great lengths thereof readily to be bent or shaped into the desired form in cross section.

In the form of my invention shown in the drawings, the inner and outer members of each pair of rails are pivoted to each other on a longitudinal axis and the corresponding parts of the opposite pairs are pivotally connected on such an axis so that the two members of a cooperating pair, which for convenient designation I shall term plates, may be spaced apart a distance corresponding with the thickness of the plate of glass to be engaged thereby, one of which plates 11 is on the outer side of the plate 10, and the other plate 12 is on the inner side thereof, and their pivotal connection with each other and with the corresponding members of the other pair lies in the space between the edges of the two adjoining plates of glass and all four plates being provided with a flat glass-engaging portion which is the outer part of the plate and a concavo-convex curved portion that reaches from the flat, or plane portion to the pivotal connection between the plates which may readily be formed by a more or less complete tubular portion on the inner edge of each plate, the various tubular portions being of different diameter so that one may be applied to the other in a concentric arrangement, the innermost one being a complete round tube. By the pivotal connection thus formed, each pair of plates may

be rocked from a position, such as that shown in Fig. 1 where the two glass plates are in the same vertical plane to the acute angle position shown in Fig. 2, and to any angle desired or necessary.

On the outside there is a vertical rail 13 whose inner face at each side is concavely curved to provide a bearing seat 14 which bears upon the outer convexly curved portion of the outer clamping plate 11, and connected to said rail at intervals are horizontal screw bolts which pass between the adjoining plates of glass 10 and emerge at their free end through holes in an inner clamping bar 17 which is substantially U-shaped in cross section, or branched so as to provide two arms 18, which at their free edges bear against the concave surface of the respective inner plates 12 so that when a nut is applied to said screw bolt 15 and caused to bear against the outer side of the member 17, the bearing edges of the latter will bear against the concave sides of the inner plates 12, and the outer rail will be pressed in the opposite direction against the convex surfaces of the outer plates 11 with the result that the plates of glass will be firmly and strongly clamped between said inner and outer clamping plates no matter what the relative position of the plates 10 be, whether one occupying the same vertical plane, or any angular position between the same and an acute angle.

The connection between the screw bolts 15 and the outer rail is formed by a hollow T-shaped clip 19 formed of sheet metal, the "head" of the T in the form of oppositely projecting flanges 20 overlapping the adjacent intumed concavo-convex marginal portions of the rail 13, while the head of the screw is secured to the base of the stem of the T. The hollow stem of the T straddles the hinge connection between the two plates 11 of a pair, each of said plates being provided with a slot 21 for the passage of one side of the T stem, and this straddling of said hinge connection makes of the clip a connecting means between the pair of outer plates 11 and the rail 13, the connection, of course, being a loose one and serving to enable these members to be handled as a unit. When the nuts on the bolts 15 are screwed up, the bolts pull on the clips 19 and the flanges of the latter press the intumed edges of the outer rail 13 against the convex portions of the outer plates 11.

To connect the pair of plates 12 so that they may be handled as a unit at intervals along the length thereof, a lip 22 is struck out from one of the plates 12, two incisions, or cuts 23 being made at suitable distances apart to free the material at the top and bottom and at one edge, to form the lip, said lip being offset a sufficient distance to pass over and interlock with a contiguous

portion of a hinge-forming edge of the companion plate 12, the latter being provided with a slot 24 to allow the play back and forth of the forward edge of the lip in the rocking of the two plates of a pair upon their hinged connection with each other within such limits as will not result in the disconnection of the two plates 12 of a pair. The lip 22, it will be seen, in reality hooks about that portion of the companion plate 12 which lies between said slot 24, and the plate 12 which carries the lip.

As will be seen by reference to Fig. 2, when the sheets of glass 10 stand at an angle the edges of the arms 18 of the inner clamping bar 17 engage the plates 12 on surfaces that are at such an angle as to result in inward pressure upon the arms 18, so that their free edges spring, or move toward each other. To limit this movement, which if not arrested, might result in inadequate clamping pressure upon the plates 12, I provide upon each plate 12 a stop 25, which may be formed by bending the plate to constitute a rib, or bead situated at the inner side of the arm in position to be engaged by the latter when it is forced, or sprung inward under the conditions named.

An important feature of my invention is the automatic, or self adjustment, or adaptation of the glass clamps to the respective plates of glass on opposite sides of the bar. It is not necessary with my construction to adjust the clamps to suit the angular relation of the plates of glass that are to be secured before applying the same to the glass, and the clamps automatically conform, or adapt themselves to the plates of glass, whatever their angular relationship is, in the act of applying the corner, or division bar thereto.

Having thus described my invention what I claim is—

1. A glass clamping device comprising two pairs of glass-engaging plates that respectively engage outer and inner sides of the plates of glass, the plates of a pair being separate and flexibly connected with each other, and having a connection permitting them to be handled as a unit separate from said flexible connection, and the two pairs being flexibly connected together at a point between the two plates of glass to be held, and means for drawing the outer and inner glass-engaging plates of a pair toward each other to clamp the plates of glass therebetween.

2. A glass clamping device comprising two pairs of glass-engaging plates that respectively engage outer and inner sides of the plates of glass, the plates of a pair being flexibly connected with each other, and the two pairs being flexibly connected together at a point between the two plates of glass to be held, and means for drawing the outer

and inner glass-engaging plates of a pair toward each other to clamp the plates of glass therebetween, comprising a bolt, a clip with which the bolt is connected that straddles the flexible connection between the pair of outer plates, and a bar outside of the outer plates with which said clip is connected.

3. A glass clamping device comprising two pairs of glass-engaging plates that respectively engage outer and inner sides of the plates of glass, the plates of a pair being flexibly connected with each other, and the two pairs being flexibly connected together at a point between the two plates of glass to be held, and the inner pair of plates having a lip and slot connection, and means for drawing the outer and inner glass-engaging plates of a pair toward each other to clamp the plates of glass therebetween.

4. A glass clamping device comprising two pairs of glass-engaging plates that respectively engage outer and inner sides of the plates of glass, the plates of a pair being flexibly connected with each other, and the two pairs being flexibly connected together at a point between the two plates of glass to be held, and means for drawing the outer and inner glass-engaging plates of a pair toward each other to clamp the plates of glass therebetween, comprising yieldable arms that engage the respective inner plates, and a stop to limit the movement of said arms toward each other.

5. A glass clamping device comprising two pairs of glass-engaging plates that respectively engage outer and inner sides of the plates of glass, the plates of a pair being

flexibly connected with each other, and the two pairs being flexibly connected together at a point between the two plates of glass to be held, and means for drawing the outer and inner glass-engaging plates of a pair toward each other to clamp the plates of glass therebetween, comprising a bar having yieldable arms that bear against inclined surfaces on the respective inner plates, and a stop on each of said inner plates adjacent said arm.

6. A glass clamping device comprising two pairs of glass-engaging plates that respectively engage inner and outer sides of the plates of glass, a flexible connection between said pairs of plates, and means to cause the opposite plates of a pair to clamp an interposed plate of glass, said pairs of plates being self-adjusting on the flexible connection between them to conform to the angular relation of the plates of glass.

7. A glass clamping device comprising two pairs of glass-engaging plates that respectively engage outer and inner sides of the plates of glass, all of said plates being pivotally connected to each other on a common axis, means connecting the plates of each pair to enable them to be handled as a unit while permitting rocking movement of the plates upon their pivotal connection, and means for drawing the outer and inner glass-engaging plates of a pair toward each other to clamp the plates of glass therebetween.

In testimony that I claim the foregoing I have hereunto set my hand.

GEORGE C. HESTER.