L. BARTELSTONE.

PLATE GLASS CLAMP.

APPLICATION FILED OCT. 4, 1906.

927,092. Patented July 6, 1909.

Fig. 1.

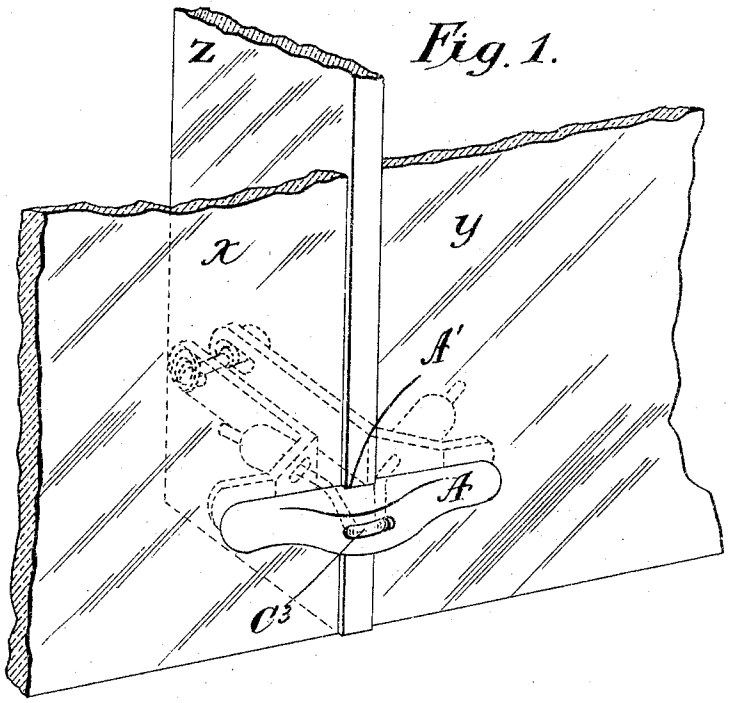
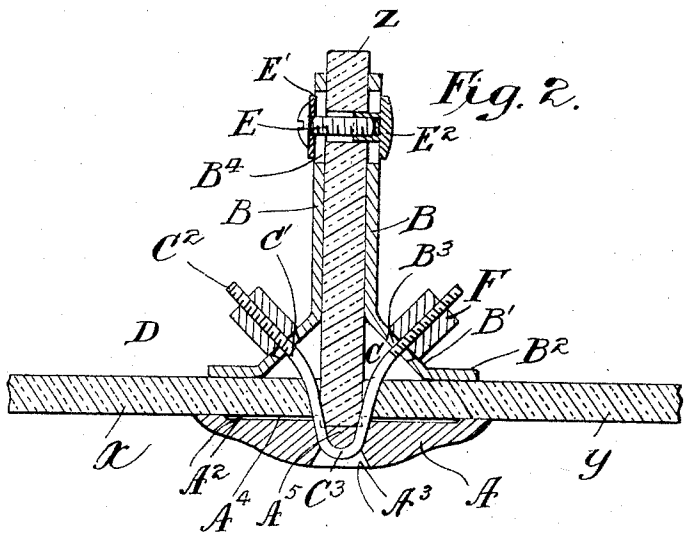


Fig. 2.



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UNITED STATES PATENT OFFICE.

LOUIS BARTELSTONE, OF NEW YORK, N. Y.

PLATE-GLASS CLAMP.

No. 927,092. Specification of Letters Patent. Patented July 6, 1909.

Application filed October 4, 1906. Serial No. 337,361.

To all whom it may concern:

Be it known that I, LOUIS BARTELSTONE, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Plate-Glass Clamps, 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 broadly to constructions in which a plurality of plates, as of glass, are yieldably held together, but since certain eminent advantages prominently appear when it is resorted to for the purpose of bonding together a pair of meeting alined plates and a transverse plate, it will be conducive to clearness to disclose it through its embodiment in such connection.

One object of this invention is to provide a plurality of transparent plates which are so united that the whole will not only be neat and attractive in appearance, but will also be as free as possible from obstructions to the view through the plates.

Another object is to provide a device of the described nature which will be simple in construction, composed of but few parts, and be not only of an inexpensive nature, but capable of being readily applied without unduly cutting away portions of the glass plates.

Another object is to provide a clamping means which may be adjusted so as to yieldably hold together the glass plates and permit the same to have sufficient motion to accommodate themselves to expansion or contraction, warping, vibration and the like, without causing excessive strains to be set up in the fragile glass.

Other objects and advantages will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

Like characters of reference denote corresponding parts throughout all the views, of which—

Figure 1 is a sectional perspective, showing one embodiment of this invention in its application to three plates of glass. Fig. 2 is a horizontal section taken medially through Fig. 1 and showing the arrangement and relationship of the various details and features comprised by the said embodiment.

In the drawings, X and Y represent the front plates of a case, such plates lying in the same plane and having their edges slightly spaced apart. Between the edges of said plates is interposed the edge of a transverse plate Z. While this is the preferable disposition of the glass plates, it will be understood that certain obvious variations may be had, such as a variation in the angular relationship of the plates, and that in some cases the transverse plate will not necessarily extend beyond the edges of the outer plates. The shown construction is, however, that which will ordinarily be preferred, and is regarded as representing substantial improvements over the various obvious adaptations of the same.

Arranged exteriorly of the plates X and Y and preferably straddling the jointure therebetween, is a pressure bar A. This bar will preferably be provided in its inner surface with grooves or recesses A^2, within which is located a suitable cement or adhesive A^4, whose function is to increase the friction and adherence of such bar to the glass plates which it abuts. In case it is desired to have the transverse plate Z lie between the outer plates, it will be preferable to cause it to slightly protrude beyond the outer surface of such plates X and Y in the manner shown in Fig. 1. In this case the bar A will generally be provided with a recess A′ designed to interfit with the edge of the transverse plate, thus forming a sufficient interlocking of the various parts and insuring a permanence of their relative positions.

While the bar A may be otherwise clamped against or caused to abut the plates X and Y, the disclosed means for this purpose will in general be found to be of the greatest practical utility and simplicity. This means comprises a bifurcated or two-legged link C which straddles the transverse plate Z and has each end provided with a suitable means for regulating the tension of such link. A simple form of this link results from forming it of stout though resilient wire having screw-threaded ends C^2 upon which are arranged thumb-nuts F. The bar A will be provided with a bridge A^5 adapted to rest within the crotch of the link, and that the apex C^3 of such link may not be unduly exposed and give to the structure an unfinished appearance, I prefer to provide a comparatively

shallow recess A^3 within which the apex of the link is countersunk.

It will ordinarily be preferable to file away small portions of the abutting edges of the plates in the manner shown, in order that the legs of the link may be as straight as possible, but this is not necessarily essential since the link may be made of flat strips which may pass directly between the meeting edges of the plates.

In order that the clamping action may be made as efficient as possible, and in order that the strains may be properly distributed, I provide interior angle-pieces B B, having each an elongated shank resting against the transverse plate Z, a suitable foot B^2 resting against the corresponding outer plates, and an intermediate connecting portion B′ which is intended and adapted to be abutted by the adjustable nut F. Such connecting portion will preferably be apertured for the passage of the leg C′ of the link.

The shank of each angle-piece will preferably be provided with an elongated aperture B^4 so that transverse adjustment of the angle-piece may be permitted, and such angle-pieces may be secured against the transverse plate Z by means of a double-headed bolt which comprises a member having a threaded shank E and having under the head thereof a washer E′ and a headed member E^2 which provides a shank having a screwthreaded socket. The portions intermediate the heads pass through the elongated slots of the angle-pieces and an aperture in the transverse plate, and are so proportioned and arranged as to freely permit of the aforesaid transverse adjustment.

The application of the hereindisclosed clamping means will be readily understood. The plates will be first placed in the position shown by the drawing, and the bar and link connected therewith will be arranged with the legs of the link passing between the edges of the plates in the manner shown. The angle-pieces having been positioned in the angles or spaces between the transverse and front plates, the adjustable nuts F will be tightened, thereby causing all of the parts to assume a state in which the three plates are yieldably yet firmly clamped against undue movement. Plates Y and Z are clamped between the ends of the pressure bar A and the opposite shoes of the angle-pieces. The transverse plate Z is clamped between the shanks of the angle-pieces and is also positioned by the edges of the outer plates. It will be noted that through the instrumentality of the pliable link, the pressures are properly and uniformly distributed and that undue localization of strains is obviated.

It will be noted that inasmuch as the link may be composed of ductile material, it will possess a considerable degree of pliability, permitting it to conform to various irregularities in setting, and also permitting the plates to settle or vibrate to an appreciable extent without bringing excessive strains upon the same.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

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

1. A device of the class described comprising in combination a pair of edgewise disposed coplanar plates, a plate transversely extending from the jointure of said plates, a bar straddling said jointure exteriorly of said parallel plates, and a link extending from said bar through said jointure and arranged to yieldably clamp said three plates together.

2. A device of the class described comprising in combination a pair of coplanar plates, a transverse plate having a portion interposed between the adjacent edges of said coplanar plates, three clamping pieces each in end abutment with two of said plates, and a link connected to each of said pieces arranged to draw said pieces together to wedge one or more of said pieces between two of said plates and thereby yieldably clamp and hold all of said plates together.

3. A device of the class described comprising in combination a pair of plates arranged with their edges adjacent one another, a pressure bar exteriorly abutting each of said plates, clamping pieces interiorly wedged between said plates, and a tension member connected to said pressure bar having a plurality of legs, each affixed to one of said pieces, retaining said parts in said relation.

4. A device of the class described comprising in combination a member adapted to be held with each end in contact with the outer side of a corresponding one of a plurality of plates located in a given plane, means adapted to be adjustably clamped and wedged to a plate arranged at an angle to said plane on the inner side thereof, and a single connecting piece having a plurality of legs extending between the said member and means and adapted to be adjusted to wedge the plates together.

5. A device of the class described comprising in combination two plates arranged edgewise, a transversely extending plate

having a margin interposed between the same, a piece in contact with the outer surfaces of the first named plates and extending across the outer edge of the transverse plate, a link extending between the edges of the plates and secured to an intermediate part of the outer piece, a plurality of angle-pieces secured to the transverse plate and in contact with a corresponding one of the first named plates, and an adjustable connection between the said link and angle-pieces.

6. A device of the nature disclosed comprising, in combination, a pair of outer plates arranged edgewise, an intermediate plate arranged in the inner angle between said outer plates and having its edge protruding beyond the outer faces of said outer plates, an outer clamping piece straddling the jointure between said plates and having its opposite ends contacting with the adjacent outer plates, the unexposed intermediate face of said clamping piece being recessed intermediate its ends for the reception of the protruding edge of said intermediate plate, and adjustable means secured to said intermediate plate and to said outer clamping piece for coöperating with said outer clamping piece to retain said three plates together.

7. A structure of the nature disclosed comprising, in combination, a pair of outer plates arranged with their edges adjacent one another, a third plate arranged at an angle to said outer plates with its edge adjacent the jointure thereof, a bar straddling the jointure of said outer plates exteriorly thereof, independent right and left hand clamping pieces arranged in the two angles defined by said three plates respectively, said clamping pieces being secured to said third plate, and connecting means for bonding the three clamping pieces together.

8. A glass front structure comprising, in combination, a pair of outer plates arranged with their edges adjacent the jointure between said outer plates, a pair of L-shaped clamping pieces each on an opposite side of said third plate and secured thereto, the foot of each of said L-shaped clamping pieces being arranged to press against a corresponding inner face of said outer plates, an exterior clamping piece straddling the jointure between said outer plates, and adjustable means for connecting the three clamping pieces together.

In testimony whereof I affix my signature, in the presence of two witnesses.

LOUIS BARTELSTONE.

Witnesses:

ARTHUR G. PREVIN,

R. S. BLAIR.