M. P. WATKINS.

METALLIC WINDOW.

APPLICATION FILED NOV. 19, 1912.

1,098,652. Patented June 2, 1914.

Fig. 1.

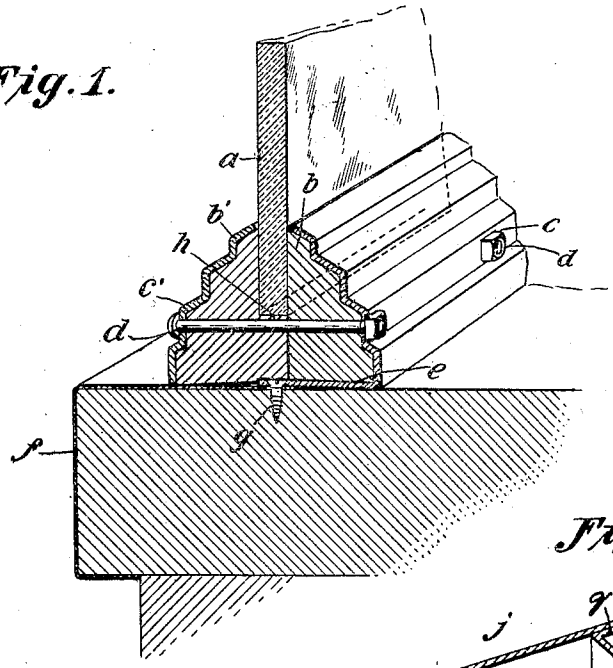


Fig. 3.

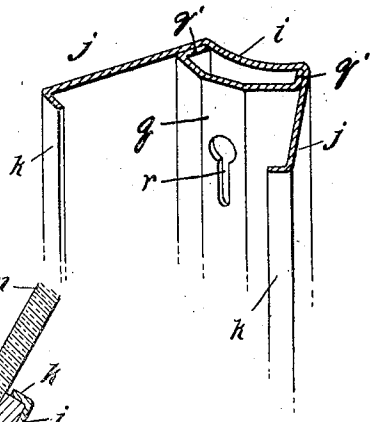
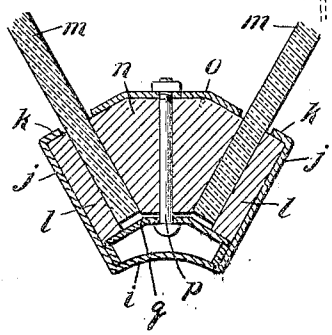


Fig. 2.



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UNITED STATES PATENT OFFICE.

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METALLIC WINDOW.

1,098,652. Specification of Letters Patent. Patented June 2, 1914.

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To all whom it may concern:

Be it known that I, MORTIMER P. WATKINS, a citizen of the United States, and a resident of Roanoke, county of Roanoke, State of Virginia, have invented certain new and useful Improvements in Metallic Windows, of which the following is a full and clear specification, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of the bottom or lower bar of a plate-glass window, showing the manner in which the bar is adapted to receive and clamp the lower edge of the plate and the manner in which I prefer anchoring it to the window sill metal shell or other support or adjacent structure; Fig. 2 a horizontal section showing the invention adapted to a corner bar of a window; and Fig. 3 a detail perspective of a part of the corner bar.

This invention has relation to that modern type of show-window structures in which the sill and other frame members of the window structure are constructed of sheet metal bent into desirable ornamental contours, the edges of the plate glass being incased in sectional sheet metal bars which are suitably fastened to the adjacent frame members and transom bars of the window structure.

The special object of my present invention is to so construct the plate fastening bars that the edges of the plate shall be clamped in such manner as to avoid breakage either by a too tight clamping action or by expansion and contraction of the metal of the bars, these desirable results being obtained without sacrificing the air and water tight characteristics of the joints, as more fully hereinafter set forth.

In the drawing, the reference character *a* designates the lower edge of the plate glass window pane and *b*, *b'* designate respectively inner and outer wood clamping and filling strips which respectively fit within and completely fill sheet metal bars *c*, *c'*. These two wood-lined metal bars are clamped upon the edge of the glass by means of a series of horizontal bolts *d* which extend entirely through the metal bars and the wood linings at a point below the lower edge of the plate. The inner steel bar *c* has its outwardly extending flat base flange *e* fastened to the metal shell *f* of the window sill by means of screws *g* which pass down through the flange *e* and the inner edge of the shell *f* and into the wood portion of the window sill. The wood lining *b* terminates short of the edge of the foot flange *e* and thus affords a sufficiently extensive projecting part through which to pass the anchoring screws *g*. The outer face of the wood lining *b* is flat and is, as stated, at a point back of the screws *g*, while the juxtaposed face of the outer wooden strip *b'* extends close to the outer face of the inner strip and is shouldered at *h* to provide a support or rest for the lower edge of the plate. The outer strip *b'* therefore extends inwardly beyond the screws and rests upon the projecting part of the bottom flange *e*. This outer lining *b'* rests directly upon the projecting part of the flange *e* and upon the shell *f* of the window sill. The lower edge of the steel casing *c'* also rests upon the window sill and is held thereagainst by the weight of the glass and the clamping bolts *d*. As stated, the shoulder *h*, which preferably runs the full length of the bar, is not wide enough to prevent the wood linings being brought upon the opposite faces of the glass plate with a strong clamping action. The upper edges of the metal bars *c* and *c'* terminate short of the clamping faces of the wood linings so that even when the glass is clamped with the utmost tightness the metal bars will not come in contact with the glass.

The essential characteristic of my invention lies in the fact that I provide an all-wood clamping socket for the edge of the glass, the great advantange in this being that I thereby avoid breaking the glass even under the maximum clamping action that the connecting bolts will stand, the fibrous character of the wood providing an ideal cushion. In addition, one of the wood linings is made to serve as a support for the glass by providing a longitudinal shoulder *h* upon its inner face at a point below its clamping face, and it will be observed further that my construction does away with

all rubber and other packing strips, which have been found unreliable in practical use, and that I provide in lieu thereof a substantial mass of wood substance which affords a substantial as well as resilient support for the glass both below its edge and at its sides, thereby not only insuring durability but also the capacity to deaden vibrations and thus protect the plate from being cracked by blows upon the metal bars or adjacent frame structure.

It will be observed further that a feature of importance lies in the manner of fastening the bar to the window sill or other adjacent part of the window. This is accomplished by providing one of the sections of the shell with a bottom flange (*e*) and extending it beyond the wood lining therein to provide an anchoring flange, whereby the portion of the shell which is thus anchored affords a substantial abutment against or toward which the other member of the bar is clamped, this latter member having bearings against the glass along one face and against the window structure along its other face. This construction is a very simple and durable one and besides renders the bar easy to fasten in place on the window structure. It will be understood that although the wood linings are of a substantial thickness I do not rely upon them to any considerable degree to increase the strength of the bar, the necessary strength being obtained from the use of the metal sections, so that virtually my bar is a metal structure. It will be understood that although I have illustrated my bar as applied to the bottom edge of the plate, it is adapted without material change to the top and the side edges of the plate, although of course when used at the top or side edges of the plate the shoulder *h* will not serve as a support for the plate.

In Fig. 2 I have shown my invention adapted to a corner bar. In this form of the device I provide a vertical hollow bar *i* at the outer corner of the structure, and projecting from each vertical edge of this hollow bar is a strip or plate *j* whose outer edge is bent inwardly at *k* to form, together with the bar *i* a longitudinal pocket for a wood lining strip *l*. The inner faces of these two wood linings *l* stand at an angle to each other, this angle corresponding to the angle at which the two glass plates *m* approach each other. The edges of the plates are clamped against these linings *l* by a vertical wooden strip *n* whose outer vertical edge approaches near to the corner bar *i* and whose opposite side edges are beveled to lie parallel with the clamping faces of the wood linings *l*. The inner faces of this bar *n* is covered by a metal bar *o*, this bar being held against the wood strip *n* by a vertical series of bolts *p* which are passed through the bar *o* and the wood strip *n* and the inner wall of the corner bar *i*. It will be understood that the bolts *p* may extend entirely through the bar *i* so that their heads shall engage the outer face thereof, this arrangement probably being preferable owing to the difficulty of inserting the bolts should the heads thereof lie within the hollow bar *i*. It will be observed that the metal parts *o* and *k* terminate short of the adjacent faces of the glass plates so that it will be impossible to so tightly clamp the parts together that these metal parts will come against the glass.

As shown, a convenient way of making the corner bar is to make the inner wall *q* thereof of a separate strip of metal flanged along its longitudinal edges, these flanges (*q'*) having the same angle as the flanges or wings *j* and being soldered against the inner faces thereof. The wings or flanges *j* are preferably formed integral with the outer wall of the corner bar. This structure is simple to make and forms a rigid corner piece while at the same time it gives to the wings *j* sufficient flexibility to yield slightly when the glass plates are clamped in place. As a convenient way of detachably attaching the heads of the bolts *p* to the inner wall *q*, I may provide the same with slots *r* enlarged at one end for the passage of the bolt head.

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

1. A bar for supporting and clamping a window plate, consisting of an inner metal shell having a foot flange *e* adapted at its outer edge for fastening to the window sill, a wood lining strip for said shell having its outer face terminating short of the outer edge of the foot flange to permit the insertion of the fastening devices, an outer shell having its lower edge resting on the window sill and provided with a lining strip, a space being provided between the two lining strips for the reception of the edge of the window plate and the adjacent edges of the shells terminating short of the faces of the plate; thereby providing an all wood clamping socket for the edge of the plate, and a wood support for the plate being provided at the bottom of the socket, and clamping bolts passing through the shell and the lining strips and the wood support, for the purpose set forth.

2. A bar for fastening the edge of a window plate, consisting of an inner shell having a flange adapted to fit against and be fastened to the support, a wood filling strip in said shell having its outer clamping face projecting beyond the upper edge of the shell and terminating short of the outer

edge of the flange, an outer shell having its lower edge resting against the support and provided with a wood filling strip whose inner face projects beyond the inner edge of the shell, the inner edge of this outer filling strip extending over upon the outwardly-projecting foot flange of the inner shell, and clamp bolts extending through the shells and the inclosed wood strips, for the purpose set forth.

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

MORTIMER P. WATKINS.

Witnesses:

J. W. PENN.

G. C. HOLCOMB.