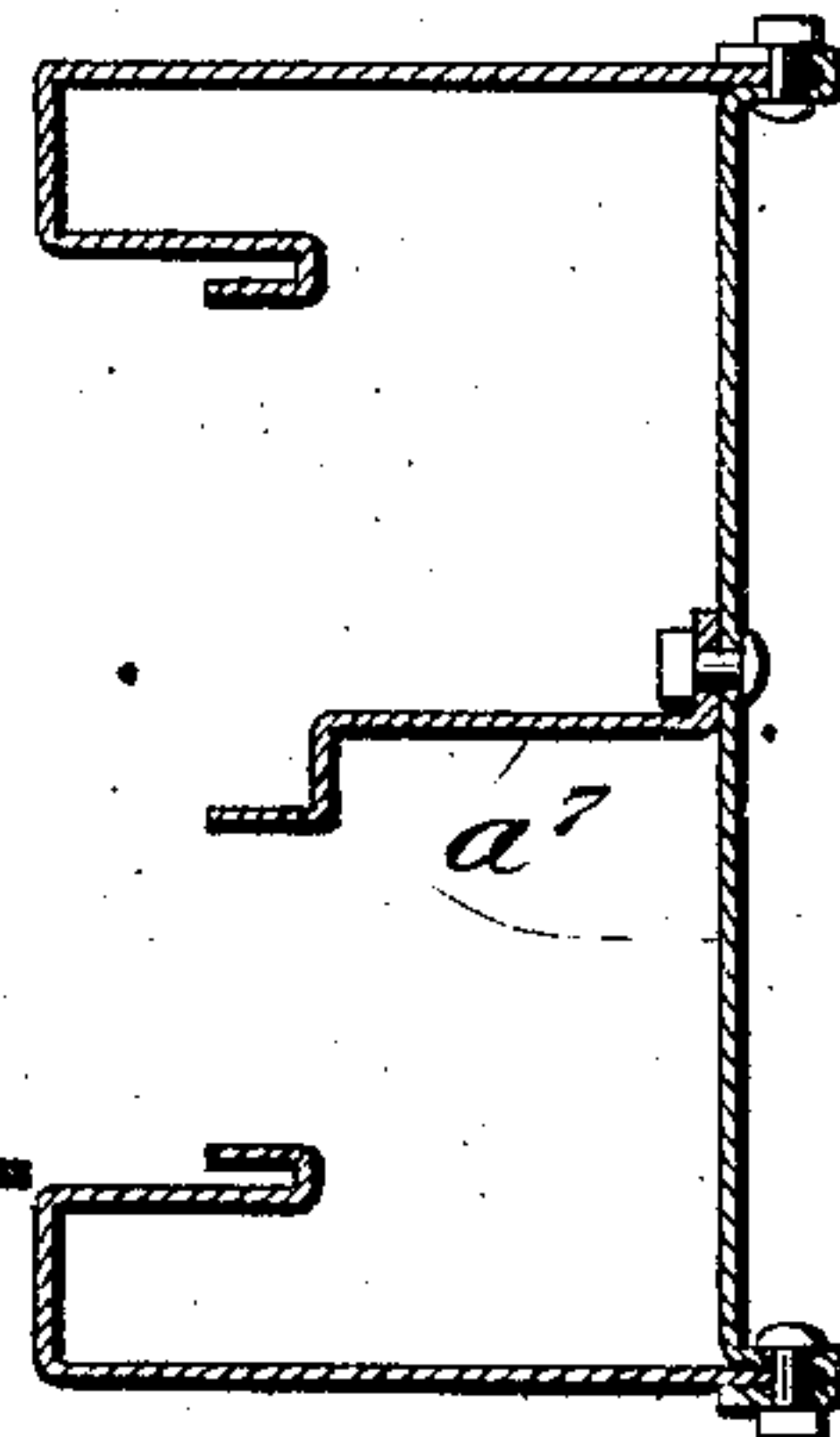
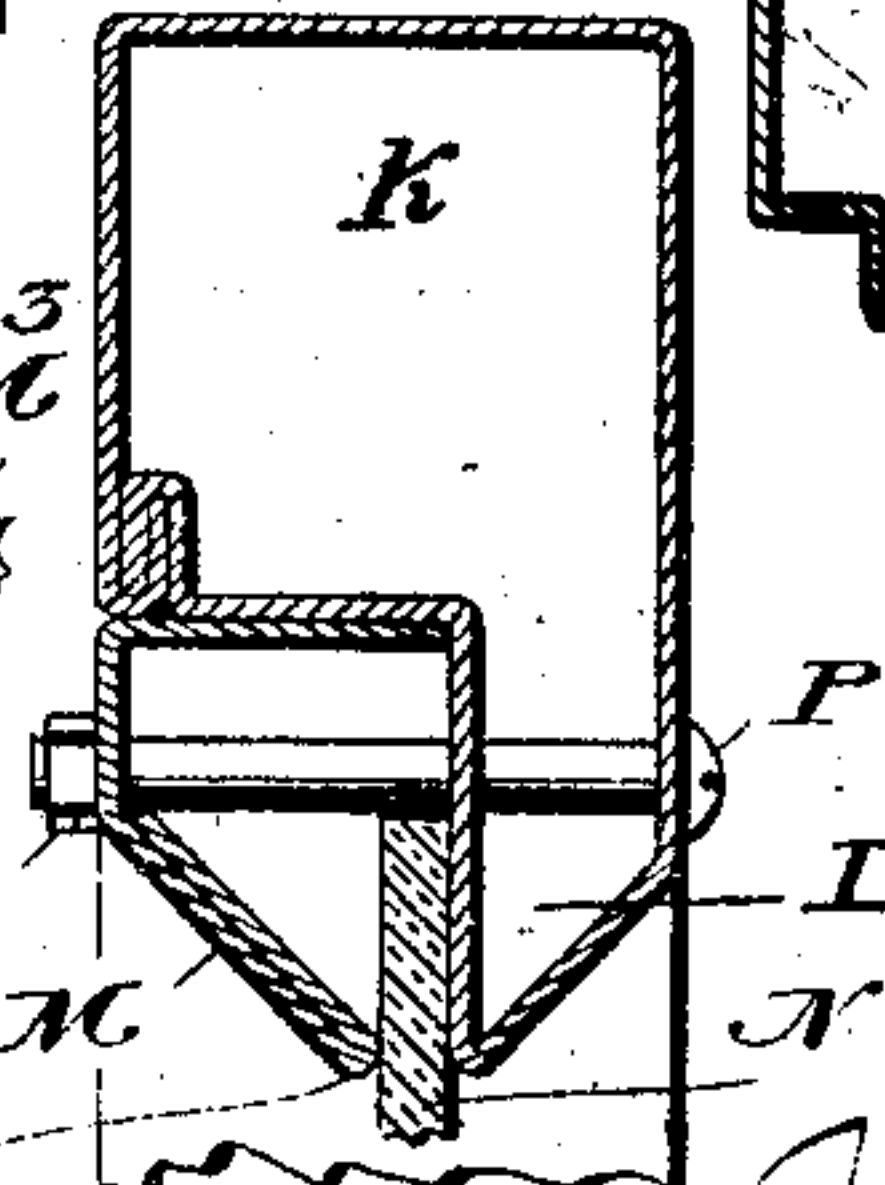
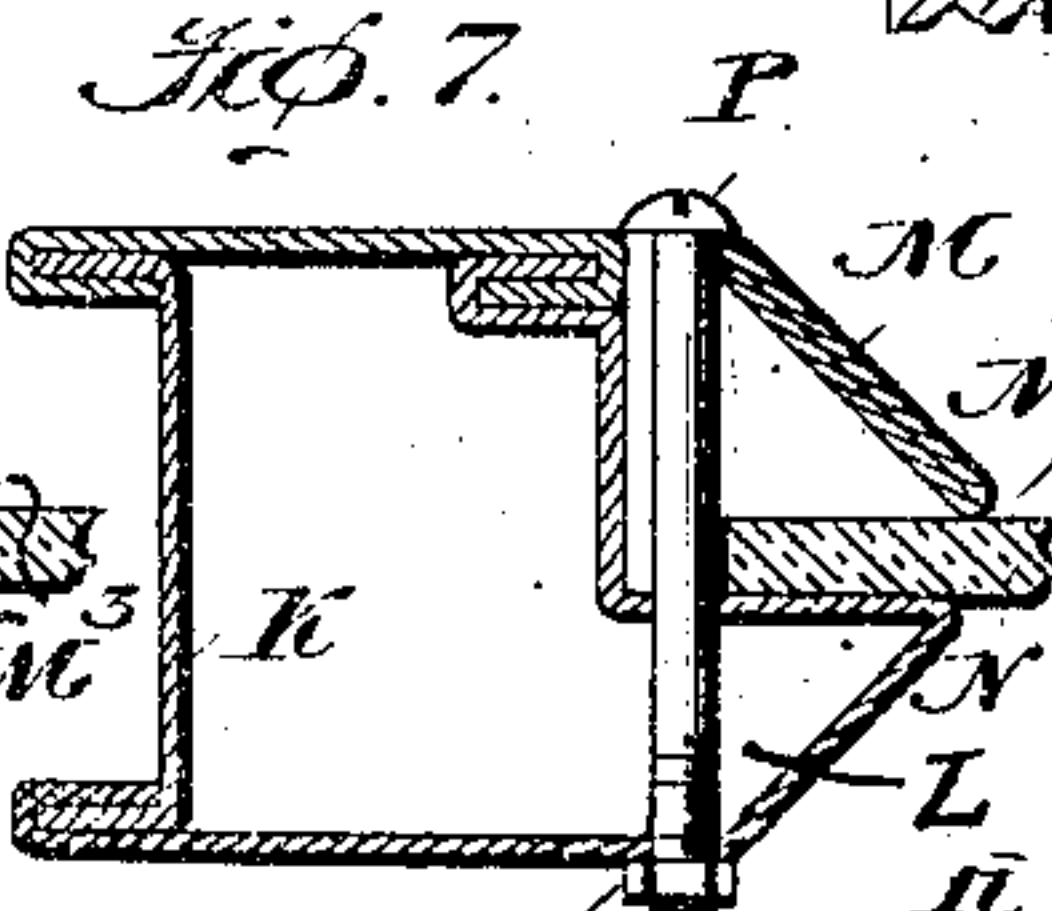
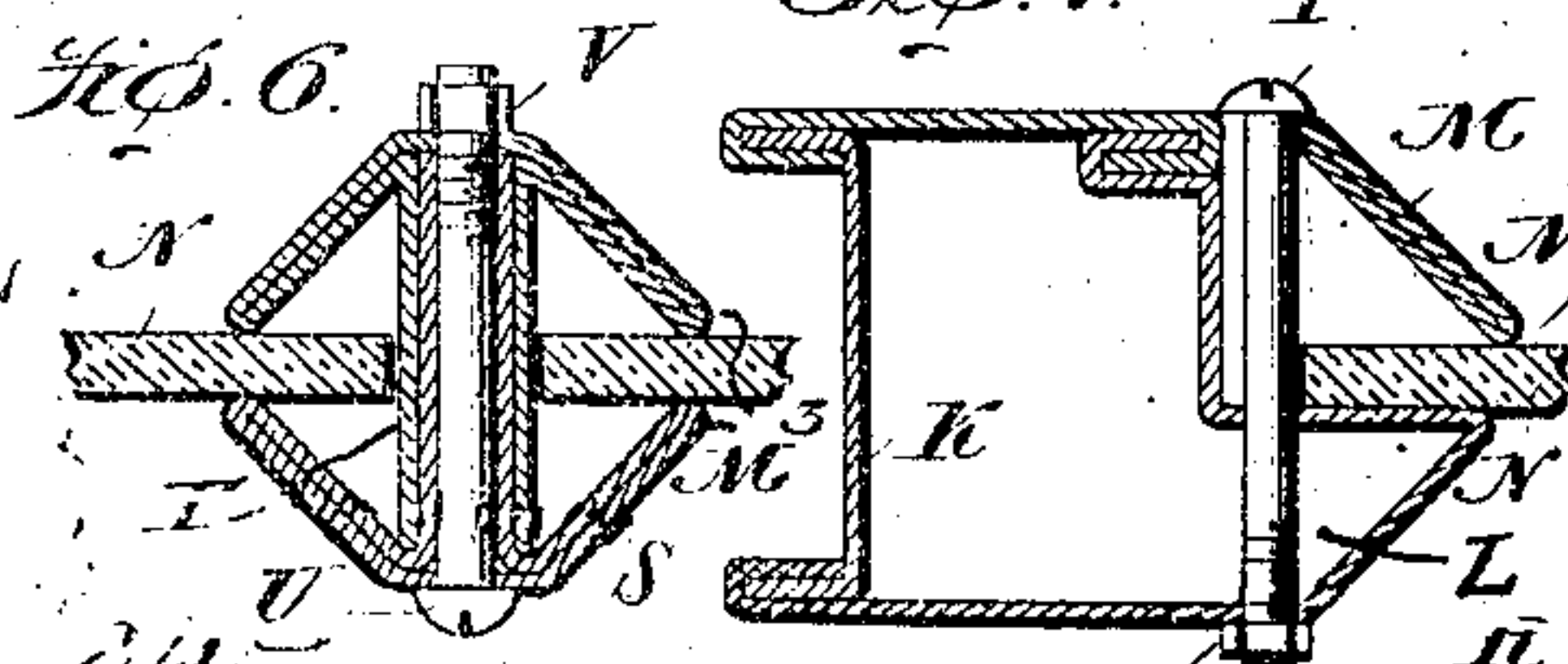
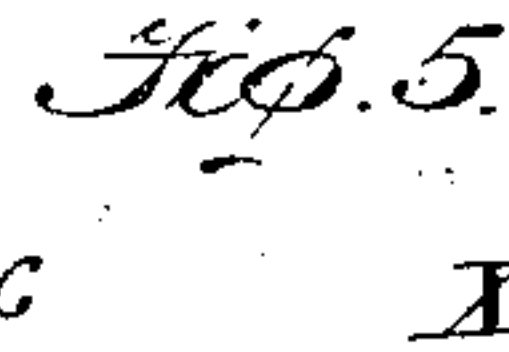
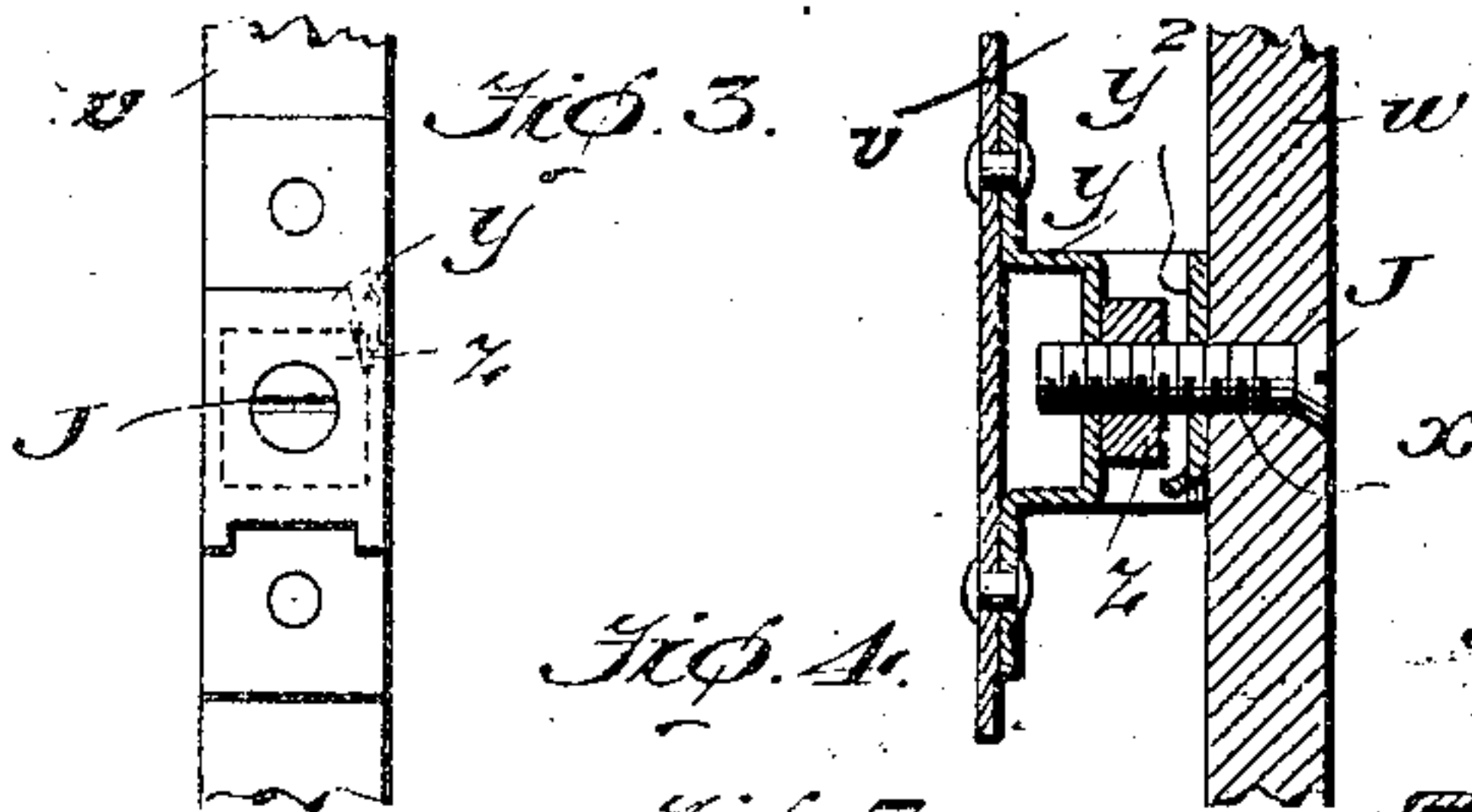
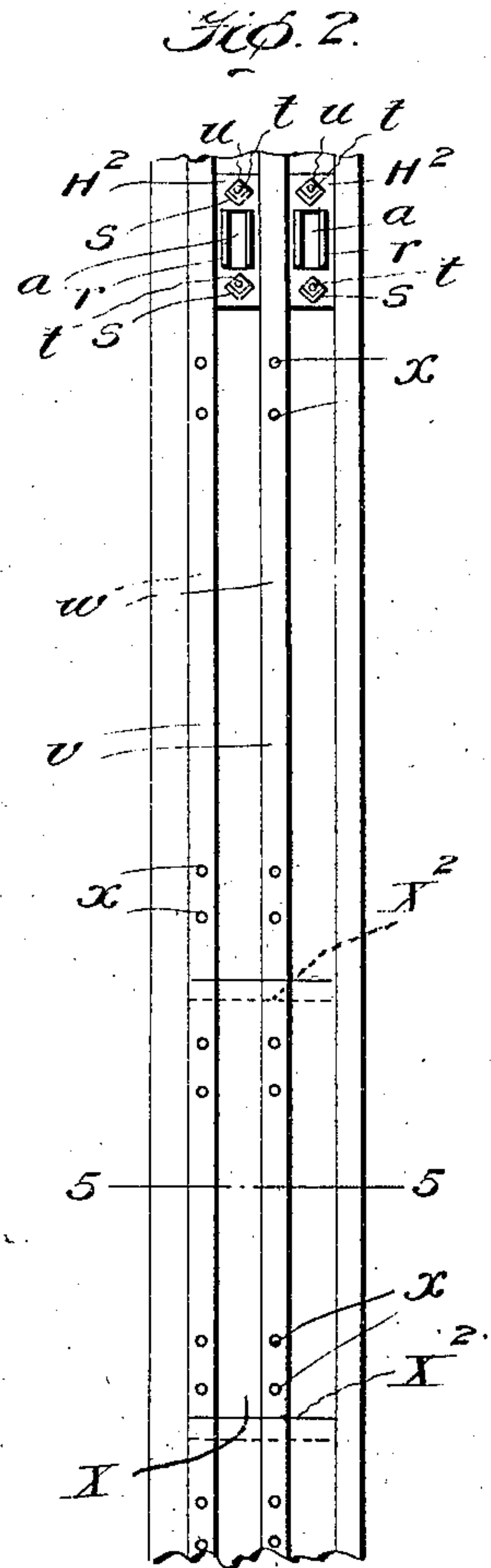
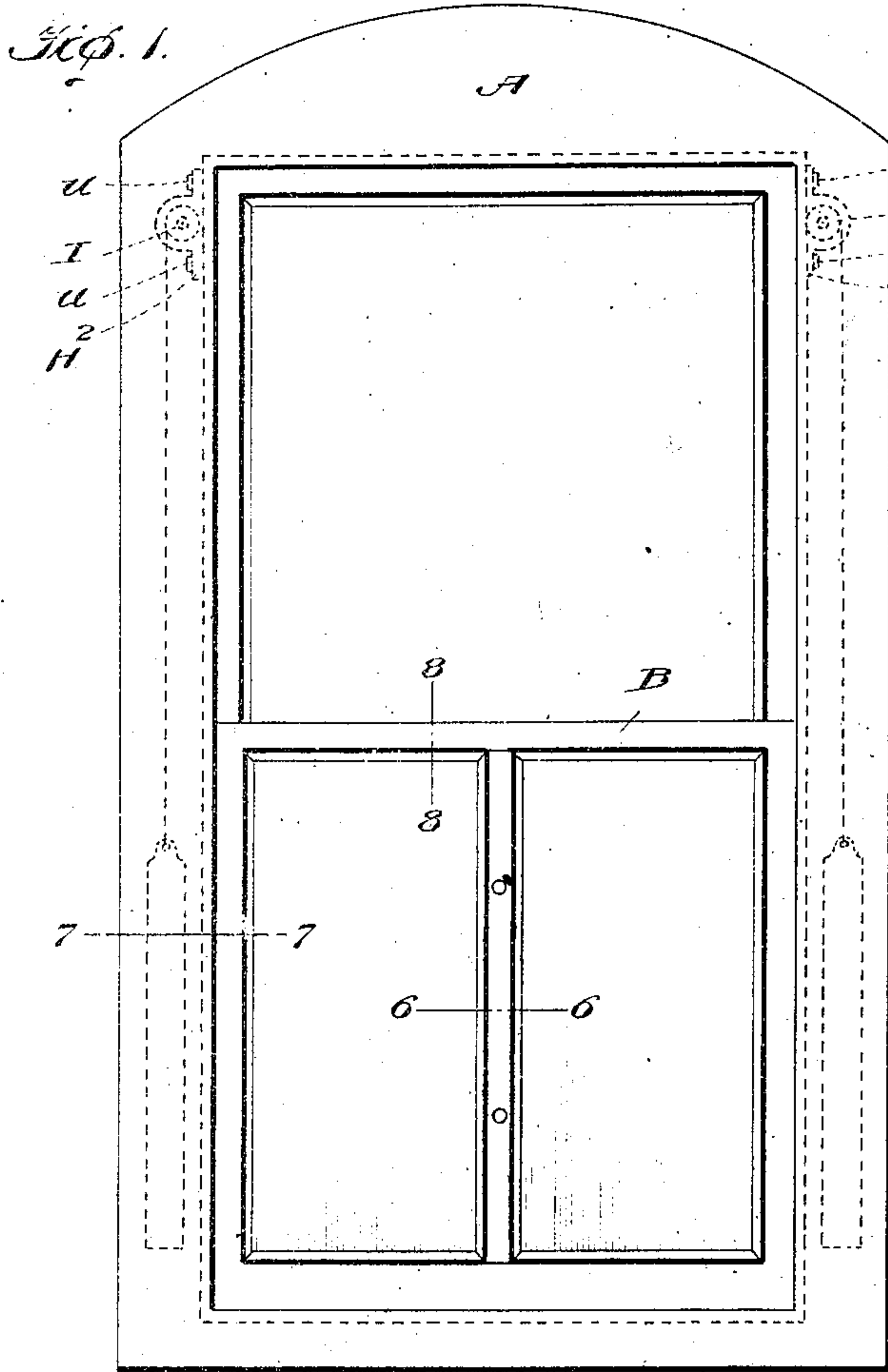


C. J. HOLZER.  
 WINDOW FRAME AND SASH.  
 APPLICATION FILED NOV. 9, 1902.

934,530.

Patented Sept. 21, 1909.



Witnesses  
*[Signature]*  
 W. P. Dealy

Inventor.  
 C. J. Holzer.  
 by James Shubert Attorney.



# UNITED STATES PATENT OFFICE.

CHARLES J. HOLZER, OF NEW ORLEANS, LOUISIANA.

## WINDOW FRAME AND SASH.

934,530.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed November 9, 1908. Serial No. 461,706.

*To all whom it may concern:*

Be it known that I, CHARLES J. HOLZER, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Window Frames and Sashes, of which the following is a specification.

My invention relates to window frames and sashes; and one of its objects is to provide a metallic window frame constructed with a view of permitting ready assemblage of parts, and well adapted to withstand the usage to which such devices are ordinarily subjected.

Another object of the invention is the provision of a sash embodying simple and efficient metallic means for fastening and holding firmly-gripped one or more panes of glass or equivalent material.

Other objects and advantageous features of the invention will be fully understood from the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is an inside elevation illustrating a window frame and a vertically sliding sash constructed in accordance with my invention. Fig. 2 is a view of one side stile of the window frame, showing the outer side of said stile. Figs. 3 and 4 are enlarged, detail views of parts of the side stile hereinafter specifically referred to. Fig. 5 is a transverse section of a portion of the stile, taken in the plane indicated by the line 5—5 of Fig. 2. Figs. 6, 7 and 8 are enlarged detail views of my novel sliding sash, taken in the planes indicated by the lines 6—6, 7—7 and 8—8, respectively, of Fig. 1.

Similar letters of reference designate corresponding parts in all of the views of the drawings.

The window frame A is preferably made of sheet-metal, and its side stiles are constructed in the manner illustrated in Figs. 2 to 5. The stiles being identical in construction a detailed description of the one shown in said figures will suffice to impart a definite understanding of both. The said stile, Figs. 2 to 5, is preferably formed in sections, as shown in Fig. 5, and is provided in its upper portion with openings *a*; and with the said openings *a* are registered openings *r* in a reinforcing plate *H*<sup>2</sup>, which re-

inforcing plate *H*<sup>2</sup> is designed to carry pulleys I, see dotted lines in Fig. 1, and is provided with bolt holes and also with nut rests *s*. The plate *H*<sup>2</sup> is arranged at the side of the stile remote from the sash, and is connected to the stile by bolts *t* which have their heads kerfed and countersunk in the face of the stile and are provided back of the stile with nuts *u* which are dropped into the nut rests *s* after being passed through the openings *a* and are thereby held against turning during the turning of the bolts.

In its inner wall the side stile is provided with vertical grooves *v*, the backs of which are shown in Fig. 1, designed to receive parting strips *w*, preferably of metal; and I prefer to connect the said parting strips to the said wall of the stile in the manner shown in Figs. 2 to 4—that is to say, I provide each parting strip *w* with a plurality of countersunk holes *x*, and I also provide in the grooves *v* of the stile a plurality of nut rests *y* in which are arranged nuts *z* for the engagement of threaded bolts *J*. The nuts *z* are dropped in the holders *y*<sup>2</sup> of the nut rests *y*, and the bolts are turned through the parting strips *w* and into the nuts, and in the event of repairs being necessary, the bolts can be turned out of the nuts and the parting strips, after which the nuts can be pushed out of the holders *y*<sup>2</sup> because of the openings in the bottoms of the holders.

The side stile shown in Figs. 2 to 5 is preferably divided into compartments by a vertical partition *a*<sup>1</sup>, Fig. 5, and the openings of the weight pockets in the stile are closed by a plate *X*, Figs. 2 and 5, which has a corresponding shape in cross-section to the inner wall of the stile and is provided with an upper end flange extending inside of the opening *X*<sup>2</sup> in the stile at the upper end of the opening, and also with a lower end flange which rests outside the opening at the lower end thereof. The plate *X* is normally retained in position by the before mentioned parting strips, and when said strips are removed, the plate *X* may be readily disengaged from the stile to afford ready access to the weight pockets for repairs or for any other purpose.

It will be gathered from the foregoing that the manner of connecting the reinforcing plate *H*<sup>2</sup>, the parting strips *w* and the closure plate *X* is such that there is no liability of said parts casually working loose,



and yet when occasion demands the parts mentioned may be expeditiously and easily disconnected from the stile.

I have shown but one sash B in the window frame, but it is obvious that in practice the window frame will carry two sashes B in the ordinary well known manner.

The sash shown is peculiar in that its upper and lower and side bars each comprise a sheet-metal major section K having a projection L, Figs. 7 and 8, a sheet-metal clamping strip M designed to be arranged at the opposite side of one or more panes of glass N, with reference to the projection L, and having a folded portion the bight M<sup>3</sup> of which is opposed to the glass, and bolts P extending through the projection L and the strip M and equipped with nuts R. Said sash B is also peculiar in that it comprises one or more muntins of the type shown in Figs. 1 and 6—that is to say, a muntin having mitred ends neatly fitting the upper and lower bars of the sash, and made up of members S and T, of sheet-metal, constructed to telescope one in the other, Fig. 6, so as to receive between them panes of glass of different thicknesses, and to be clamped against opposite sides of the panes by bolts U equipped with nuts V. It will also be observed that the members S and T have folded or bent portions the bights M<sup>3</sup> of which are opposed to the glass, such arrangement being advantageous inasmuch as it lessens the liability of the glass being scratched or broken.

The upper bar of the sash is shown in Fig. 8 and one of the side bars is shown in Fig. 7, and by reference to said figures and comparison thereof it will be observed that the side bar K differs from the upper bar K only in that said side bar is preferably formed in three pieces of sheet-metal instead of in one piece.

As will be understood from the foregoing the window frame of my improvements is constructed in such a manner as to facilitate the securing of sashes in the frame and the removal of sashes from the frame when necessity demands, and yet there is no liability of the sashes being casually displaced while the window frame and sashes are in use.

It will also be understood that by virtue

of the construction of the sash frame, a pane or panes of glass may be expeditiously and easily secured therein in such manner that there is no liability of the pane or panes casually working loose, and yet when necessity demands the panes may be readily removed and as readily replaced with new panes.

The construction herein shown and described constitutes the best practical embodiment of my invention of which I am cognizant, but it is obvious that in the future practice of the invention such changes in the form, construction and relative arrangement of parts may be made as fairly fall within the scope of my invention as claimed.

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

1. The combination of a sheet-metal window frame having bolt holes in its side stile, a reinforcing plate arranged against the stile and having bolt holes registered with those of the stile and also having nut rests extending rearwardly and at right angles from its back and arranged at right angles to each other and with their meeting ends slightly below the bolt holes, angular nuts seated between and held against turning by the rests, and bolts turned through the stile and plate and into the nuts.

2. The combination in a window frame, of a sheet-metal side stile having a vertical groove in its inner wall, a plate arranged in the groove and having end portions fixedly connected to the back wall thereof and also having an apertured intermediate portion separated by an intervening space from said back wall, a nut rest carried by and in front of said apertured portion of the plate and having a flange at its lower end, a nut in said rest, a parting strip, and a bolt extending through the parting strip and into the nut in the rest and through the aperture in the intermediate portion of the plate.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES J. HOLZER.

Witnesses:

JOHN OHLER,  
GEO. W. KENDALL.