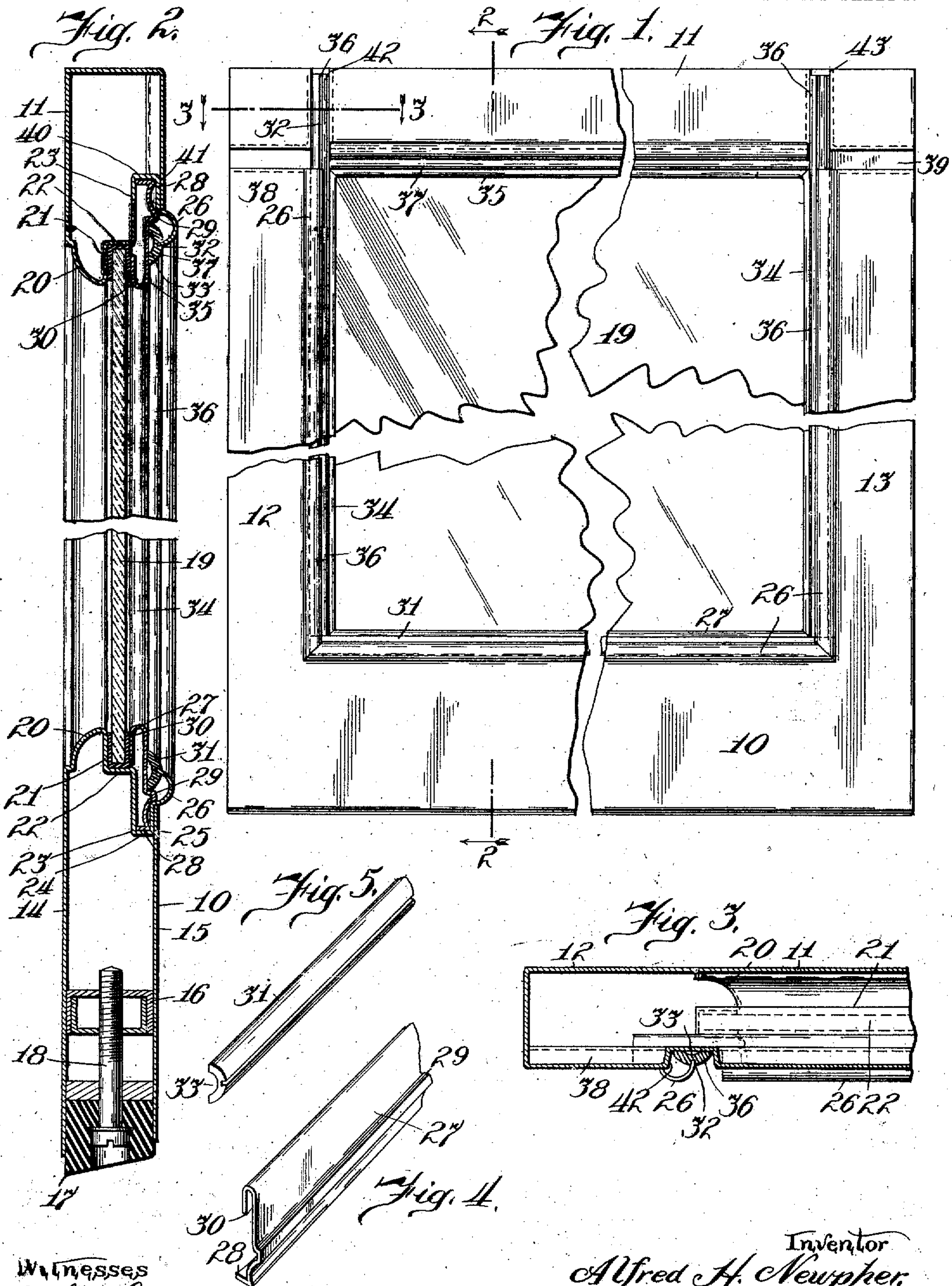


973,547.

Patented Oct. 25, 1910.

2 SHEETS—SHEET 1.



Witnesses  
Milton Lenoir  
E. M. Klatcher

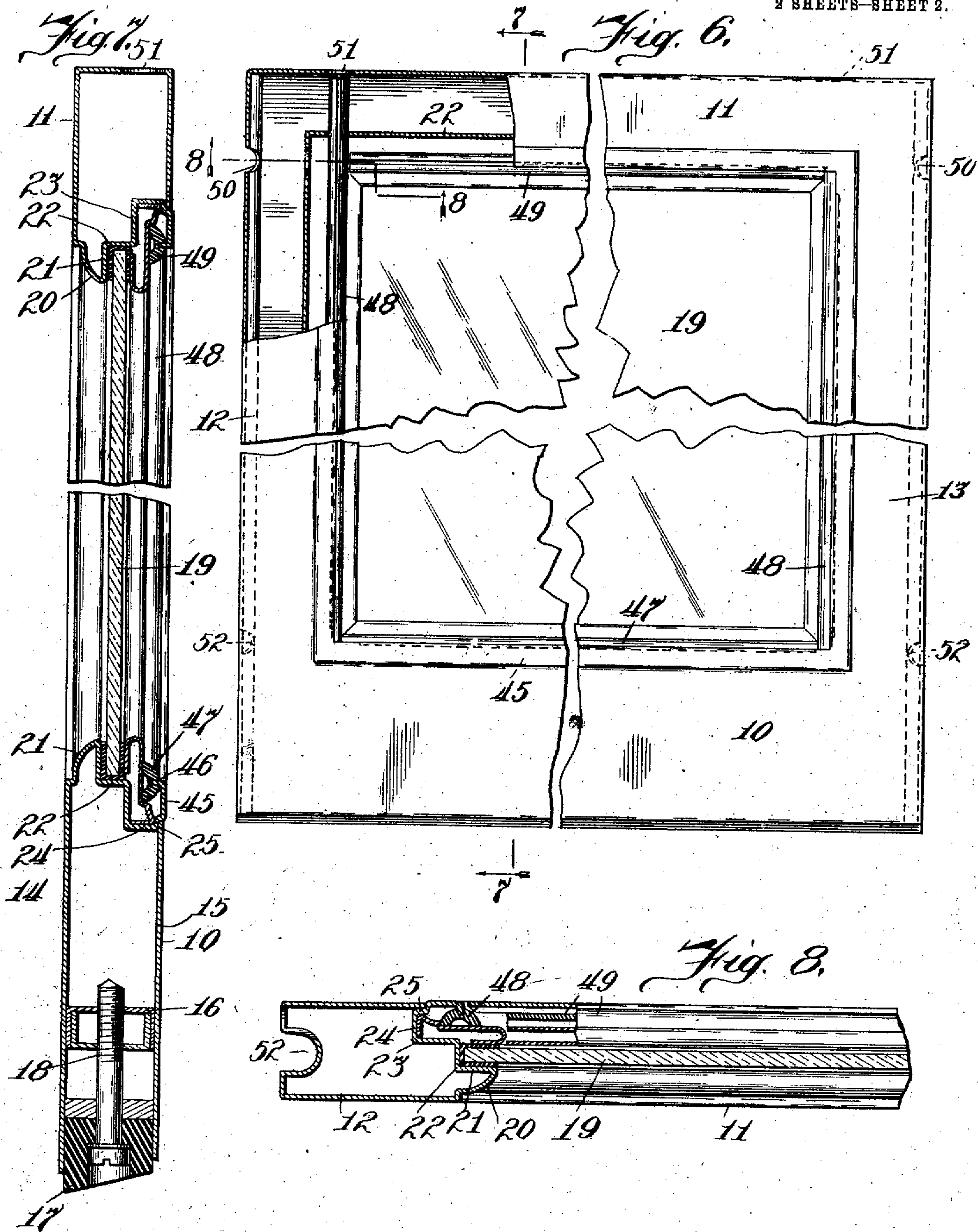
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WINDOW SASH.  
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

ALFRED H. NEWPHER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE ADAMS & WEST-LAKE COMPANY, A CORPORATION OF ILLINOIS.

## WINDOW-SASH.

973,547.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed March 12, 1910. Serial No. 548,894.

*To all whom it may concern:*

Be it known that I, ALFRED H. NEWPHER, a citizen of the United States, and resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Window-Sash, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to means for securing glass within a sash, and more particularly in connection with a sash formed of metal.

The object of the invention is to provide for the convenient entry of the glass into the sash, and for securely yet removably holding it in place.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a detail face elevation of the improved sash; Fig. 2 is a vertical section on the line 2—2 of Fig. 1; Fig. 3 is a detail section on the line 3—3 of Fig. 1; Fig. 4 is a detail of a removable glass-holding strip; Fig. 5 is a detail of a key for locking such strip in place; Fig. 6 is a detail front elevation, partly in section, showing a modified form of construction; Fig. 7 is a sectional view on the line 7—7 of Fig. 6; and Fig. 8 is a sectional view on the line 8—8 of Fig. 6.

The sash comprises the bottom and top bars 10, 11, and the side bars 12, 13, all shown as of sheet metal. The bottom bar is preferably formed of two plates 14, 15, spaced apart and secured together by means of a block 16, a cushioning foot-piece, preferably of rubber, being inserted between their lower edges, as shown at 17, and secured in place by screw-bolts 18 engaging the blocks 16, these screw-bolts and blocks being as numerous as may be required, or the block 16 being continuous from end to end of the bar, as may be desired. The upper portion of one of the plates, as 14, is suitably bent to form a seat for the glass 19 and for receiving the glass-retaining strip, hereinafter described, and the key member for locking this strip in place. To this end the plate 14 is curved inwardly from the upper edge of the bar 10 to form a bead 20, and bent downwardly to form a shoulder 21 against which the face of the glass may rest, thence inwardly to form a seat 22 for the glass, thence downwardly, as shown at 23, and recurved upon itself, as

shown at 24, forming a recess and a shoulder 25 against which the upper margin of the plate 15 may bear and to which it may be soldered. Continuing upwardly the marginal portion of the plate 14 is bowed outwardly, forming a cove 26, the edge of the plate standing in toward the glass but being spaced apart therefrom.

The glass-retaining strip 27 is of elastic sheet metal, preferably spring brass. Adjacent its lower edge it is bent inward, as shown at 28, to form a foot adapted to fit within the recess between the portions 23 and 25 of the plate 14 and rest upon the bottom 24 of this chamber. A longitudinal outstanding rib 29 rests upon the shoulder at the top of the section 25, entering the cove 26. The upper margin of the plate 27 is recurved upon itself, the curvature being inward, forming a depending flange 30 for bearing against the glass.

The key member 31 is a strip of metal approximately half-round, longitudinally grooved along its rounded face, as shown at 32, to receive the edge of the plate 14, which constitutes the upper margin of the cove 26. The key 31 is also longitudinally grooved in its flat face, as shown at 33, thus providing a pair of feet which bear against the outer surface of the glass-retaining strip 27 and above the rib 29 thereof.

The top bar 11 and side-bars 12, 13, differ from the bar 10 only in that they are preferably formed of a single sheet of metal, the outer edges of these bars being closed, the elements 16, 17 and 18 of the bottom bar not being present.

The glass-retaining strips 34 of the side-bars and 35 of the top bar, and the keys 36, 37, are of the same form as the members 27 and 31.

In the construction illustrated in Figs. 1 and 2, of the drawings, the side-bars 12 and 13 are channeled across their inner faces, as shown at 38, 39, to permit the entry of the upper key 37, the parts 40, 41, corresponding with the parts 24 and 25 being apertured in line with these channels. The inner face of the top bar is correspondingly channeled and apertured, as shown at 42, 43 to permit the entry of the vertical keys 36.

In assembling the parts, the frame of the sash is first constructed entire. The retaining strip 27 and key 31 are inserted in the bottom sash-bar, and the lower edge of the



glass 19 is then forced into place, preferably a binding 44 of rubber being first applied to it. The retaining strip 35 is now inserted in connection with the top bar, and the key 37 is forced in longitudinally through one of the channels 38, 39. The length of this key is such that its ends terminate at the inner edges of the channels 42, 43. The retaining strips 34, one at either side, are now inserted and the keys 36 are forced in endwise from above through the channels 42, 43. These keys preferably are of such length as to extend to the upper margin of the top bar 11. The glass is now securely held in place by spring pressure of the retaining plates supplemented by the spring pressure of the coved portions 26 of the plates of which the several rails or bars are formed. The glass can, of course, be removed by reversing the operations performed in assembling.

In Figs. 6, 7 and 8, the same general construction is followed as in Figs. 1 to 5. In lieu, however, of the coved portions 26, the upper margin of the plate 14 and corresponding portions of the plates of which the side and top bars are formed, are offset outwardly, as shown at 45, and continued upwardly in the same plane as the plate 15 of the bottom bar and corresponding portions of the side and top bars, its upper edge being bent inwardly, as shown at 46. The keys 47, 48 and 49 are of less thickness, and the side and top bars, instead of being channeled, are apertured, as shown at 50 and 51, to permit the entry of the top and side keys. As illustrated at 52, the outer side bars may be longitudinally channeled.

I claim as my invention—

1. In a window sash, in combination, a bar having a longitudinal shouldered seat for a plate of glass, an instanding flange facing the shoulder, a resilient plate adapted to be interposed between the flange and a plate of glass occupying the seat, and a key interposed between the flange and the resilient plate.

2. In a window sash, in combination, a bar formed of sheet metal wrought to tubular form, the inner margin of the bar having a shouldered seat for a plate of glass and a channel at the opposite side of the seat from the shoulder, a flange projecting from the outer wall of the channel and having its margin directed inward, a resilient retaining strip fitted within the channel and

projecting beyond the flange, and a key rod interposed between the edge of the flange and the retaining strip.

3. In a window sash, in combination, a bar formed of a sheet of metal wrought to tubular form, the inner margin of the bar having a shouldered seat for a plate of glass and a channel at the opposite side of the seat from the shoulder, a flange projecting from the outer wall of the channel and having its margin directed inward, a resilient retaining strip fitted within the channel and projecting beyond the flange, and a key rod interposed between the edge of the flange and the retaining strip and having a longitudinal groove for engagement by the flange.

4. In a window sash, in combination, a bar formed of sheet metal wrought to tubular form, the inner margin of the bar having a shouldered seat for a plate of glass and a channel at the opposite side of the seat from the shoulder, a flange projecting from the outer wall of the channel and having its margin directed inward, a resilient retaining strip fitted within the channel and projecting beyond the flange, and a key rod interposed between the edge of the flange and the retaining strip and having its inner face longitudinally grooved.

5. In a window sash, in combination, a bar formed of sheet metal wrought to tubular form, the inner margin of the bar having a shouldered seat for a plate of glass and a channel at the opposite side of the seat from the shoulder, a flange projecting from the outer wall of the channel and having its margin directed inward, a resilient retaining strip fitted within the channel and projecting beyond the flange, and a key rod interposed between the edge of the flange and the retaining strip and having its inner and outer faces longitudinally grooved.

6. In a window sash, in combination, top, bottom and side bars each having a shouldered seat for a plate of glass, a flange facing and having its edge directed toward the seat, resilient retaining plates inside the flanges, and key rods fitting between the flanges and the retaining plates, certain of the sash bars being transversely recessed to permit the entry of the key rods.

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Witnesses:

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