

I. G. STOLP & P. W. BOWDE.

WINDOW SASH.

APPLICATION FILED NOV. 20, 1907.

Patented Nov. 10, 1908.

903,615.

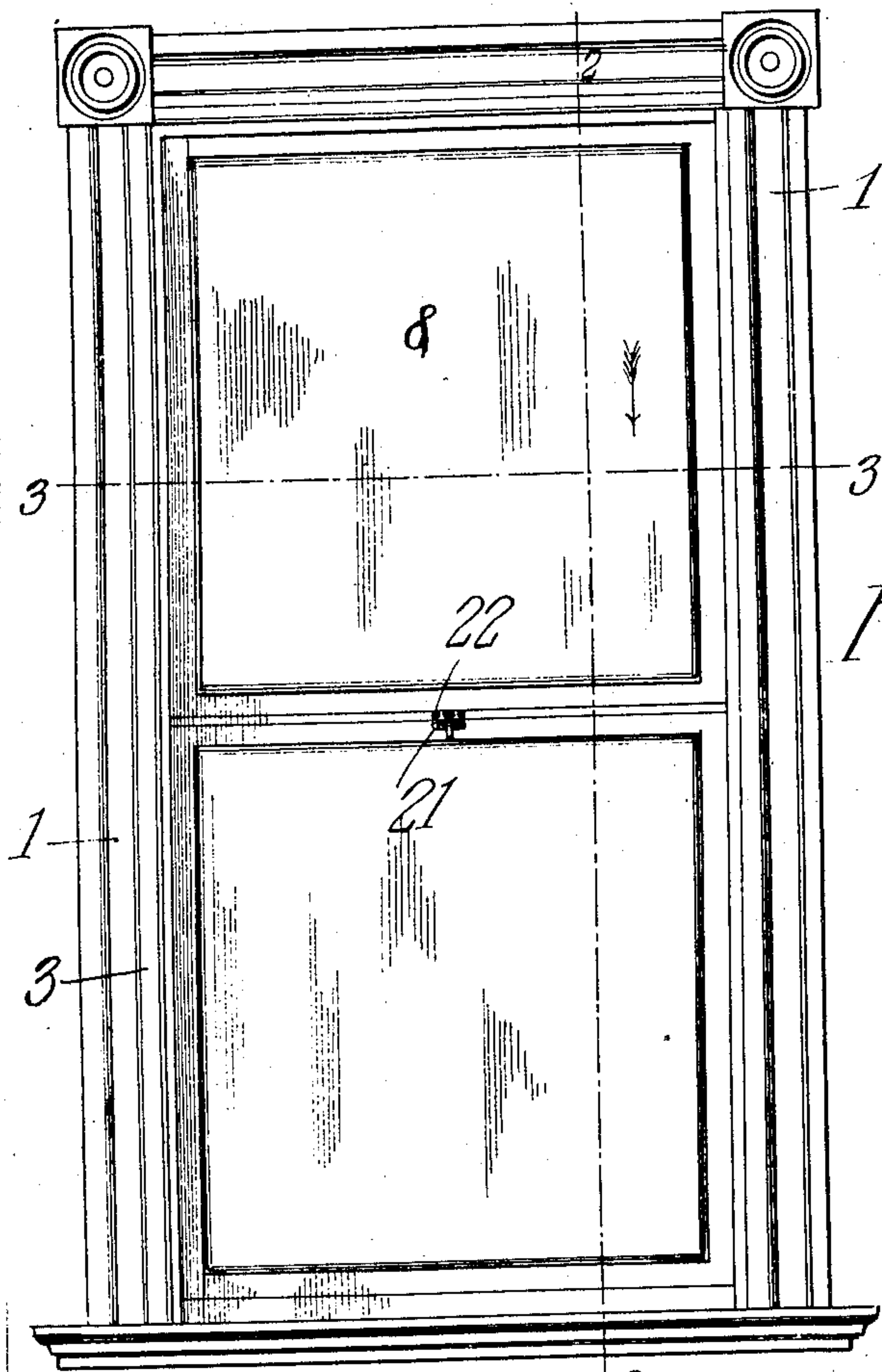


Fig. 1.

Fig. 2.

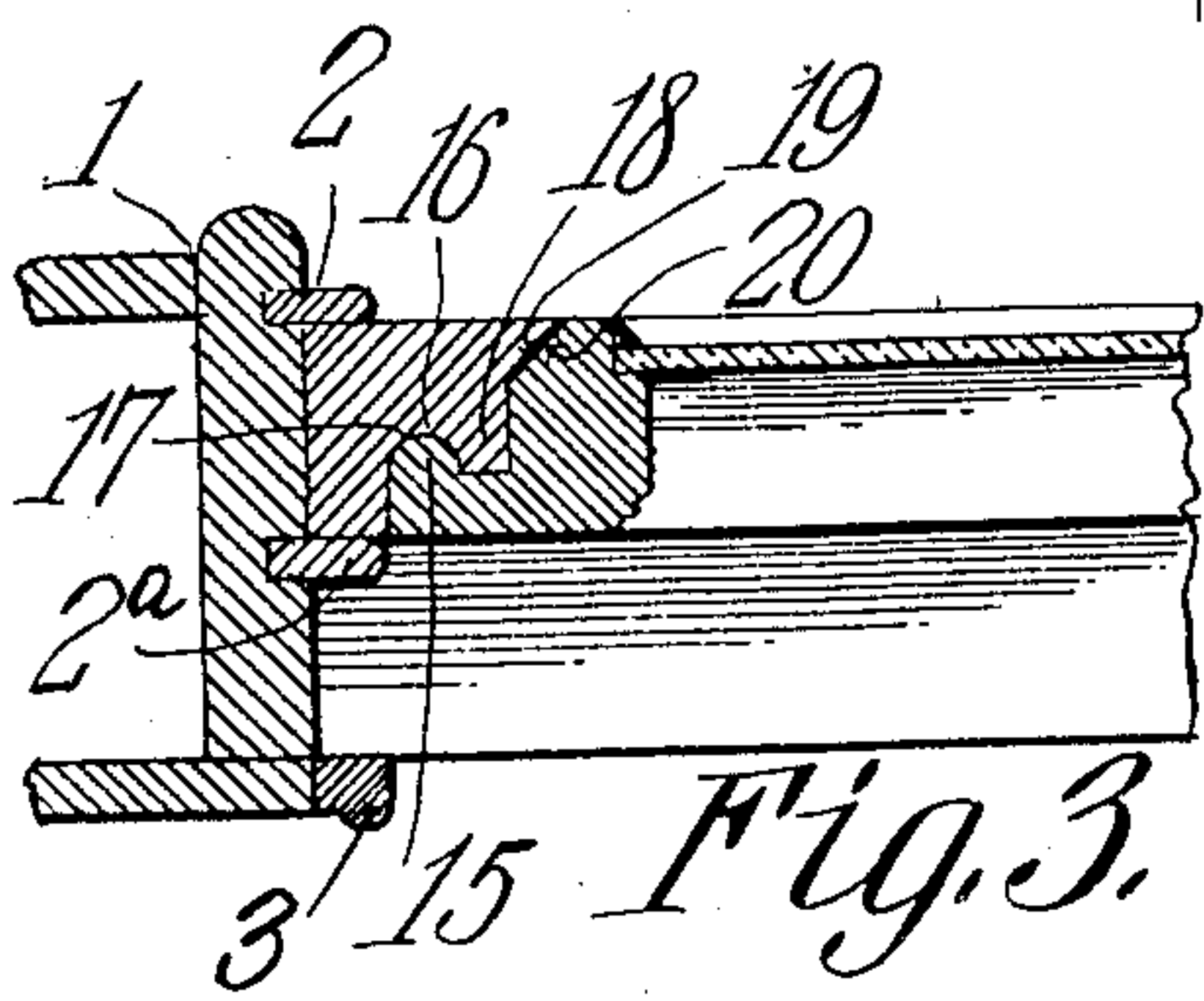
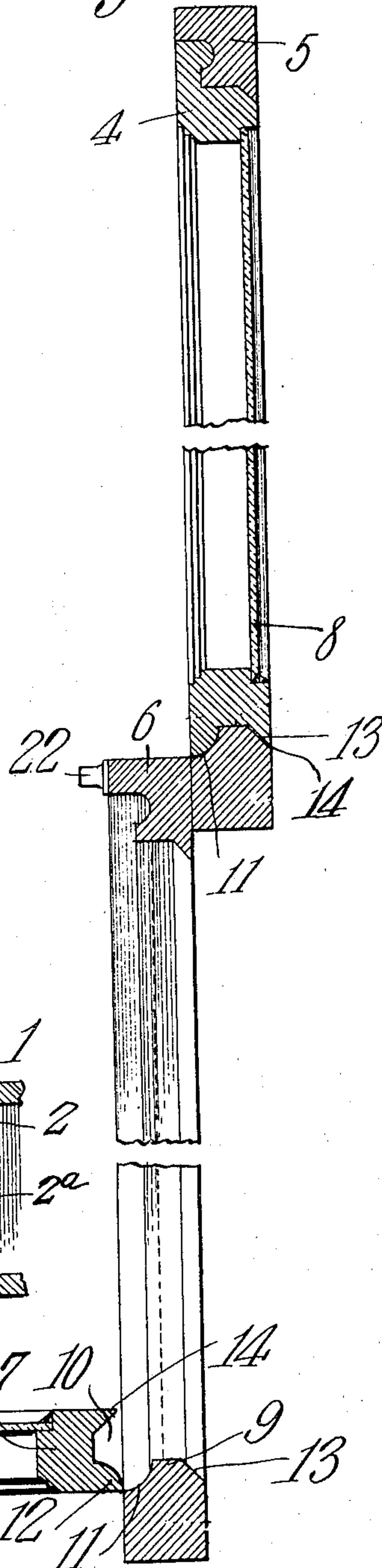


Fig. 3.

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# UNITED STATES PATENT OFFICE.

IRA G. STOLP AND PAUL W. BOWDE, OF WAUKESHA, WISCONSIN.

## WINDOW-SASH.

No. 903,615.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed November 20, 1907. Serial No. 403,097.

*To all whom it may concern:*

Be it known that we, IRA G. STOLP and PAUL W. BOWDE, citizens of the United States, residing at Waukesha, in the county of Waukesha and State of Wisconsin, have invented a new and useful Window-Sash, of which the following is a specification.

The present invention relates to improvements in window sashes and analogous structures, and it has for its object to provide an improved device of this character wherein the glass panel may be readily swung into a position that will facilitate its cleaning, or for ventilating purposes, the sash being composed of a pair of cooperating frames that are so joined that air, as well as water or dampness, is excluded, the frames being so constructed that they cannot be opened from the exterior of the window by unauthorized persons.

To these and other ends, the invention comprises the various novel features of construction and combination and arrangement of parts, which will be hereinafter more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:—Figure 1 is an elevation of a window frame equipped with upper and lower sashes constructed in accordance with the present invention. Fig. 2 represents a section on the line 2—2 of Fig. 1, the lower glass carrying frame being shown in open position. Fig. 3 represents a section on the line 3—3 of Fig. 1.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

In the present embodiment of the invention, an ordinary window frame 1 is employed having three beads 2, 2<sup>a</sup> and 3 at the opposite sides thereof to form a pair of vertical grooves in which the upper and lower sashes operate in the usual manner. The upper sash is composed of a pair of inner and outer frames 4 and 5, while the lower sash is composed of a similar pair of inner and outer frames 6 and 7, the inner frame in each instance being fitted with the glass panel or panels 8, and the outer frame in each case is fitted to operate vertically within the window frame.

In order to permit the glass carrying frame to be removed for cleaning and other purposes and without the necessity of removing the outer sash frame from the win-

dow frame, the sash frames are removably fitted one within the other, the corresponding rails of the two frames being so formed as to provide a tight joint that will exclude air that would cause drafts, and also prevent the entrance of rain when driven against the window during storms. In the present instance, each outer sash frame has a longitudinal rib 9 projecting upwardly from its lower rail, and the corresponding rail of the inner or glass carrying frame is provided with a groove 10, the cooperating rib and groove serving to prevent disengagement of the lower portions of the frame.

In order to permit a relative pivotal or tilting movement between the two frames for the purpose of enabling the glass carrying frame to be removed or adjusted into an open position, it is preferable to provide a concaved recess 11 in the outer frame and at the inner side of the upwardly projecting rib, a rib 12 having a correspondingly curved surface being provided on the inner frame at the inner side of the groove therein and arranged to cooperate with the concaved recess of the outer frame. It is also preferable to provide a slope or inclined surface 13 on the lower rail of the outer frame and at the outer or exposed side thereof, the slope preventing rain from beating in through the joint between the frames. A longitudinal rib 14, which is formed on the lower edge of the inner frame at one side of the groove therein is adapted to cooperate with the slope or inclined surface on the outer frame, so that this rib, engaging at the outer side of the rib 9 on the outer frame, serves to prevent a relative inward movement of the glass carrying frame, while the rib 12, cooperating at the inner side of the rib 9, serves to prevent a relative outward movement of the glass carrying frame, so that when the two sash frames are in cooperative relation, their lower portions are positively held from movement in either direction.

The top rails of the inner and outer sash frames, and the two vertical or side rails, are provided with cooperating ribs and grooves which serve to effectually seal the joint between the frames for the purpose of excluding air and moisture, and they also serve to prevent an outward movement of the glass carrying frame relatively to the outer sash frame, so that the glass portion of the sash may be removed from the inner side of the



window only. In the present instance, the inner or glass carrying frame is provided with a peripheral flange 15 which extends longitudinally of the top and side rails thereof, the inner side of the flange preferably lying flush with the inner side of the cooperating sash frame, and it is provided at its opposite or outer side with a bead 16, the latter and the flange fitting into a correspondingly-shaped groove 17 formed in the top and side rails of the outer sash frame. The outer frame is also provided with an inwardly projecting rib 18 having an inclined surface 19 arranged to cooperate with a correspondingly beveled surface 20 on the circumference of the inner frame, the flange and its bead and the inturned rib serving to break the joint between the two frames sufficiently to render it liquid and air tight and also serving to prevent outward movement of the glass carrying frame relatively to the outer frame.

The glass carrying frame is of such a size that it is capable of swinging freely between the stops of the window frame, and, by tilting the upper end of the glass carrying frame inwardly, the lower portions of the two frames will be unlocked and may be disengaged, the glass carrying frame being placed in any convenient position for cleaning or other purposes. However, the lower portions of the two frames cannot be disengaged until the glass carrying frame has been tilted inwardly.

Any suitable catch may be employed for locking the frames in cooperative relation, a catch 21 being shown in the present instance which is carried by one of the frames and engages a cooperating catch member 22 on the other frame, the catch when locked serving to retain the frames in cooperative relation so that the glass carrying frame cannot be tilted into open position. A catch of the usual or any desired form, may be applied to the sashes in the usual way to prevent sliding movement thereof.

A window sash constructed in accordance with my present invention eliminates the risk of injury incident to the washing or cleaning of windows, as the glass may be readily removed from the window so that its outer surface may be reached without the necessity of climbing to the outside of the window, and the cooperating ribs and grooves of the sash frames serve not only to seal the window to prevent entrance of wind and rain but they also prevent removal of the glass section of the sash from the outer side of the window, a single catch for each sash serving to prevent unauthorized opening of the sash from the outside.

What is claimed is:—

1. A window sash embodying an outer frame adapted to operate in the window casing and having an upwardly projecting rib extending longitudinally of the upper side of its lower rail, the outer side of the said rib being sloped outwardly and its inner side being concave, an inner glass carrying frame having a pair of ribs thereon, one of the said ribs engaging at the outer side of the rib on the outer frame and having an inclined portion cooperating with the slope, and the other rib engaging at the inner side of the rib on the outer frame and having a convex surface thereon cooperating with the said concave portion, and means cooperating with the frames for preventing a relative tilting thereof.

2. A sash composed of an outer frame adapted to operate in the window casing, and a glass carrying frame adapted to removably fit the outer frame, one of the frames being provided with an outwardly projecting flange on its periphery provided with a bead on one of its sides, the other frame being provided with a recess to receive the said flange and bead, and a device for securing the frames in cooperative relation.

3. A sash composed of an outer frame adapted to operate in the window casing, and a glass carrying frame removably fitted therein, one of the frames having an inwardly projecting rib provided with an inclined surface and having a recess adjacent to the rib, and the other frame having a flange adapted to fit the said recess in the other frame and provided with a beveled edge to cooperate with the inclined side of the rib on the cooperating frame.

4. A sash composed of inner and outer frames removably fitted together, the lower rail of the outer frame being provided on its upper side with a longitudinal rib, and the lower edge of the inner frame being provided with a pair of parallel ribs adapted to engage at opposite sides of the rib first mentioned, an inwardly projecting rib on one of the frames adapted to cooperate with a beveled edge of the cooperating frame, and a flange on the frame having the beveled edge and cooperating with a corresponding recess in the other frame.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

IRA G. STOLP.  
 PAUL W. BOWDE.

Witnesses:

C. E. ARMIN,  
 FLORENCE DOLE.