

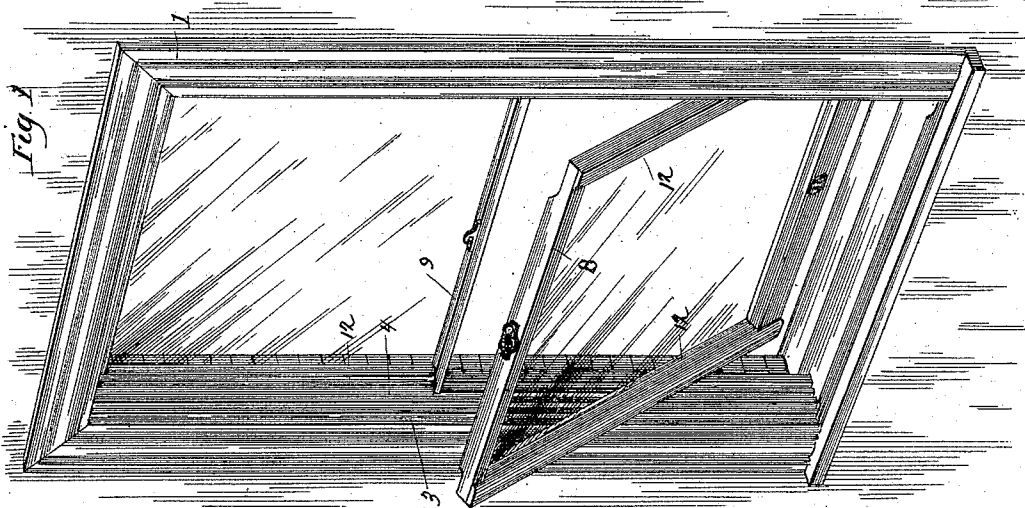
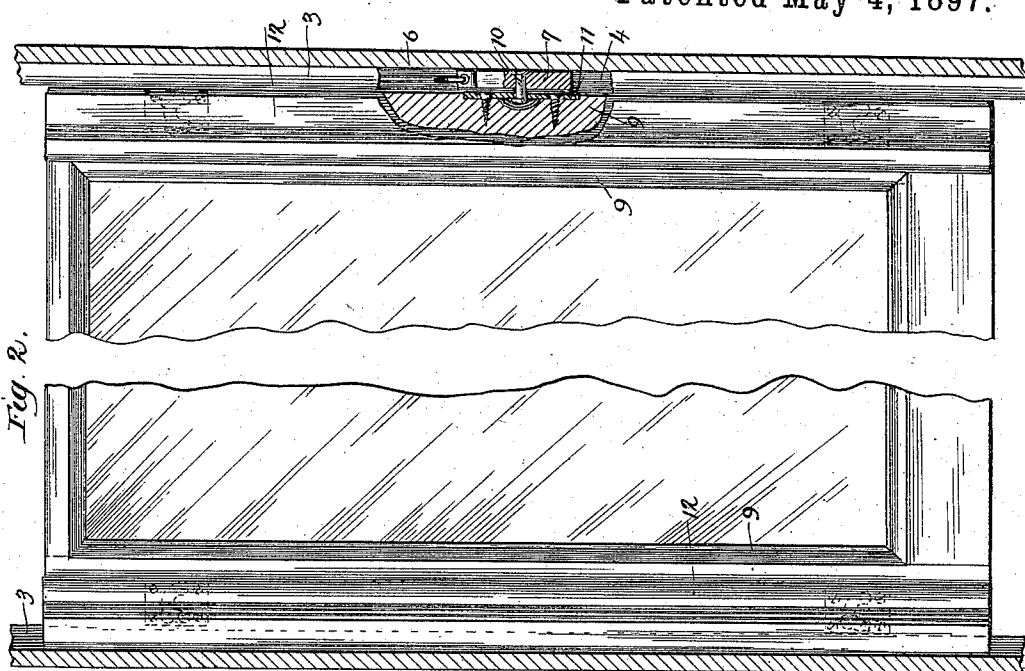
(No Model.)

2 Sheets—Sheet 1.

W. W. RICHARDS & I. BLOCH.
WINDOW.

No. 582,141.

Patented May 4, 1897.



Witnesses:

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

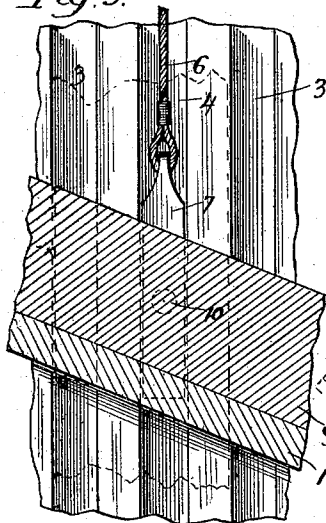


Fig. 3.

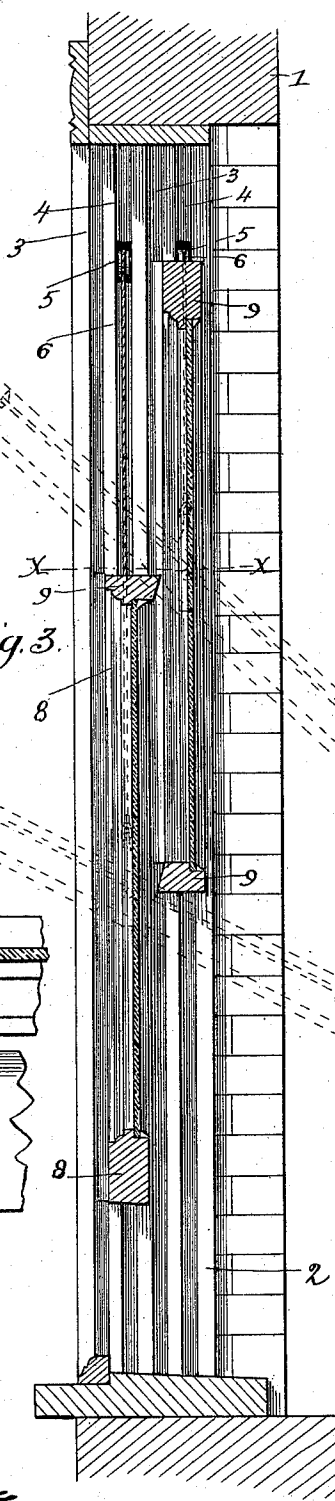


Fig. 6.

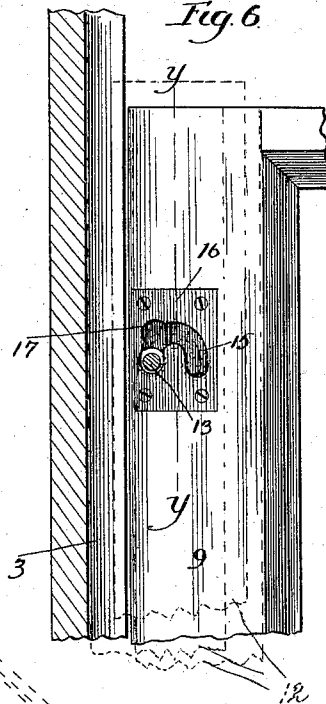


Fig. 7.

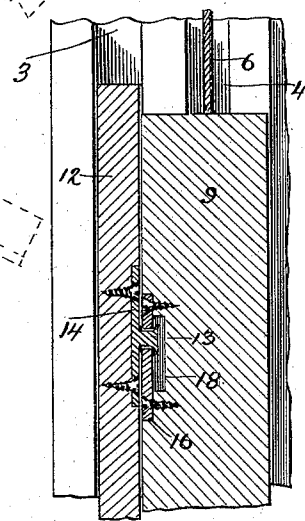
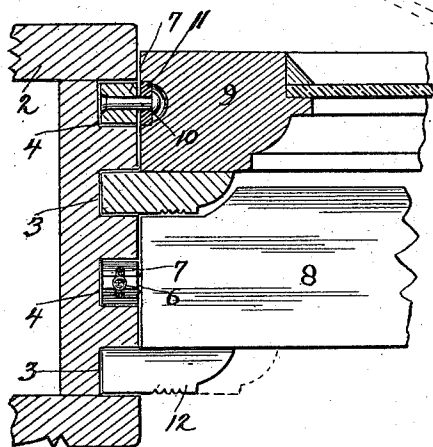


Fig. 4.



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UNITED STATES PATENT OFFICE.

WALTER W. RICHARDS AND ISAAH BLOCH, OF PHILADELPHIA, PENNSYLVANIA; SAID BLOCH ASSIGNOR TO SAID RICHARDS.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 582,141, dated May 4, 1897.

Application filed March 11, 1896. Serial No. 582,773. (No model.)

To all whom it may concern:

Be it known that we, WALTER W. RICHARDS and ISAAH BLOCH, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Windows, of which the following is a specification.

Our invention relates to a new and useful improvement in windows, and has for its object to so construct a window as to permit the sashes thereof to be swung upon horizontal pivots without interfering with the usual method of raising and lowering said sashes, and to so bring about this result as to leave the window as weather and dust proof as usual, or more so.

With these ends in view our invention consists in the details of construction and combination of elements hereinafter set forth, and then specifically designated by the claim.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, we will describe its construction and operation in detail, referring by numbers to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective of a window, showing one of its sashes partly swung open; Fig. 2, an elevation of one sash, the guide-grooves being in section and a portion of the side rail broken away to show more clearly the method of attaching the sash to the sliding shoe; Fig. 3, a central vertical section of the window, showing the sashes in their normal position in full lines and in dotted lines in the positions they may assume when swung upon their pivots; Fig. 4, a section at the line $x x$ of Fig. 3; Fig. 5, an enlarged sectional elevation showing the guide-grooves, one of the sashes sliding therein, and a portion of a sash pivoted to said shoe; Fig. 6, an enlarged elevation of one of the locking-plates, the locking-pin and guide-strip being in section; and Fig. 7, a section at the line $y y$ of Fig. 6.

Similar numbers denote like parts in the several views of the drawings.

In carrying out our invention we provide the ordinary window-frame 1 with a molding 2 upon each side thereof, which is pre-

erably constructed of a single board having two grooves 3 and 4 for each sash, and the usual pulleys 5 are so placed as to aline with the grooves 4, in which latter run the weight-ropes 6 for balancing the sashes, and the outer end of each of these ropes is attached to a shoe 7, adapted to slide within the grooves 4. Each of the sashes 8 and 9 is pivoted to two of the shoes, which run in opposite grooves, by means of the trunnions 10, projecting from the plates 11, which in turn are secured to the edges of the sash by suitable screws and countersunk so as to be flush with the surfaces of said edges, in order that they may not interfere with the movements of said sash. By this arrangement it will be seen that either of the sashes may be swung upon its trunnions and caused to assume any angle, as clearly shown in Figs. 1 and 3.

It is to be noted that each of the sashes is guided laterally by the outer surfaces of the moldings 2 and has no connection with the grooves in said moldings, except by its attachment to the shoes, and is thus left free to swing upon its trunnions. To hold the sashes in a vertical position and cause them to travel longitudinally of the frame, each is provided with two guide-strips 12, which in the construction here shown lie upon the front surface of the side rails of the sashes and parallel with the edges thereof in such manner that when in their normal positions they project within the grooves 3, thereby preventing the sashes from swinging upon their trunnions and at the same time serving the purposes of weather-strips to prevent the passage of air or dust. These strips are attached to the sashes by means of headed pins 13, which project from the plates 14, attached to and countersunk in the inner surfaces of said strips, the pins passing through inverted-U-shaped grooves 15, formed in the locking-plates 16, which latter are secured to and countersunk in the surfaces of the side sash-rails, the heads of the pins engaging with the rear side of the plates, so as to prevent their withdrawal, as readily understood by reference to Figs. 6 and 7. In order to insert the headed pins within the locking-grooves 15, one wall of each of said grooves is broken by a notch 17 of sufficient size to permit the free

passage of the heads of said pins, so that in attaching a guide-strip to a sash it is only necessary to aline the heads of the pins with the notches 17, when the former may be passed
 5 through said notches into engagement with the slots, when by moving the pins to one end or the other of the slots they will be held against displacement. From this it will be seen that a guide-strip may be locked into its
 10 groove by placing the pins in the end of said grooves nearest the molding, from which position it cannot be accidentally displaced; but when it is desired to withdraw the guide-strip from its groove it is only necessary to
 15 slightly lift the same, thereby carrying the pins over the highest points in the grooves and again downward to the opposite ends of said grooves, where they will be retained, thus freeing the strip from the molding, and
 20 when this has been done in connection with the two strips of a sash the latter will be free to swing upon its trunnions, as above described. It is to be noted that each strip is provided with two pins and each side rail of
 25 a sash with a corresponding number of locking-plates. For the accommodation of the heads of the pins when passed through the locking-plates recesses 18 are formed back of each plate, as clearly shown in Fig. 7. The
 30 upper ends of the shoes are preferably reduced in thickness sidewise, so as to permit the attachment of the weight-ropes without interfering with the free travel of the said shoes within their respective grooves.
 35 In practice the sashes of a window constructed in accordance with our improvement when locked longitudinally by the guide-strips may be raised and lowered in the same
 40 manner as the sashes of an ordinary window, and the joints between said sashes and the window-frame are as weather-tight, if not more so, as has heretofore been the case, and yet when it is desired to clean the glass of a
 45 sash this is greatly facilitated by moving the guide-strips inward, as before described, by swinging the sash upon its trunnions, in which case access is had to both sides of the glass from the inside of the room, and another great

advantage had by our construction is that the ventilation of a room is made more complete in that both sashes of a window may be
 50 so swung as to leave a clear space practically the full size of the opening in the window-frame.

While we have shown the guide-strips arranged upon the outer surfaces of the side rails of the sashes, it is obvious that they might be set in grooves formed in the edges of said rails, or that they might be arranged upon the rear surfaces thereof, or that we
 60 might employ more than one of said strips for each rail, the gist of our invention resting in the broad idea of arranging each sash of a window so as to be guided between the outer surfaces of the molding or sides of the casing
 65 and to so connect them to said molding as to permit them to swing upon suitable trunnions, and provide means for locking them longitudinally with the frame and providing for the unlocking thereof, whereby they will be
 70 free to swing.

Having thus fully described our invention, what we claim as new and useful is—

In combination, a window-frame having grooves formed in the side ways thereof, a
 75 sash adapted to slide vertically between said ways, a shoe pivoted to the middle of each side of the sash, said shoes adapted to slide in the grooves of the frame, means for slidably supporting the shoes, guide-strips slidable in the slots of the frame, plates provided with headed pins secured on the guide-strips, plates secured on the sashes having inverted-
 80 U-shaped slots with enlargements in their upper parts in which said headed pins are adapted to slide, whereby the guide-strips are adjustably and removably secured to the sash, as and for the purpose described.

In testimony whereof we have hereunto affixed our signatures in the presence of two
 90 subscribing witnesses.

WALTER W. RICHARDS.
 ISAIAH BLOCH.

Witnesses:

S. S. WILLIAMSON,
 R. M. PIERCE.