

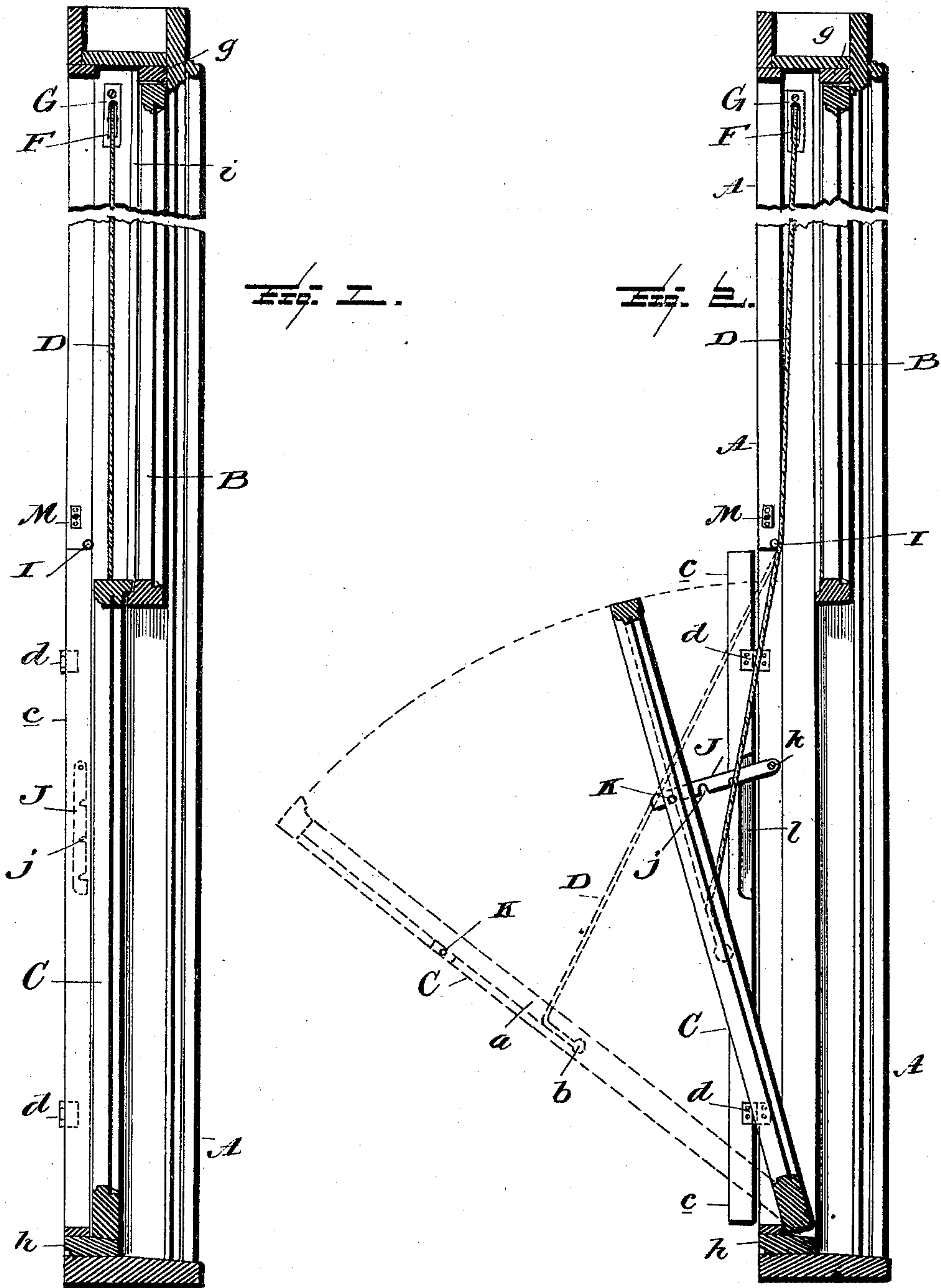
(No Model.)

2 Sheets—Sheet 1.

O. FROTSCHER.  
WINDOW.

No. 509,521.

Patented Nov. 28, 1893.



Witnesses:  
*L. C. Mills.*  
*Thos. E. Robertson*

Inventor  
*Oscar Frotcher*  
By *J. W. Robertson.*  
Attorney

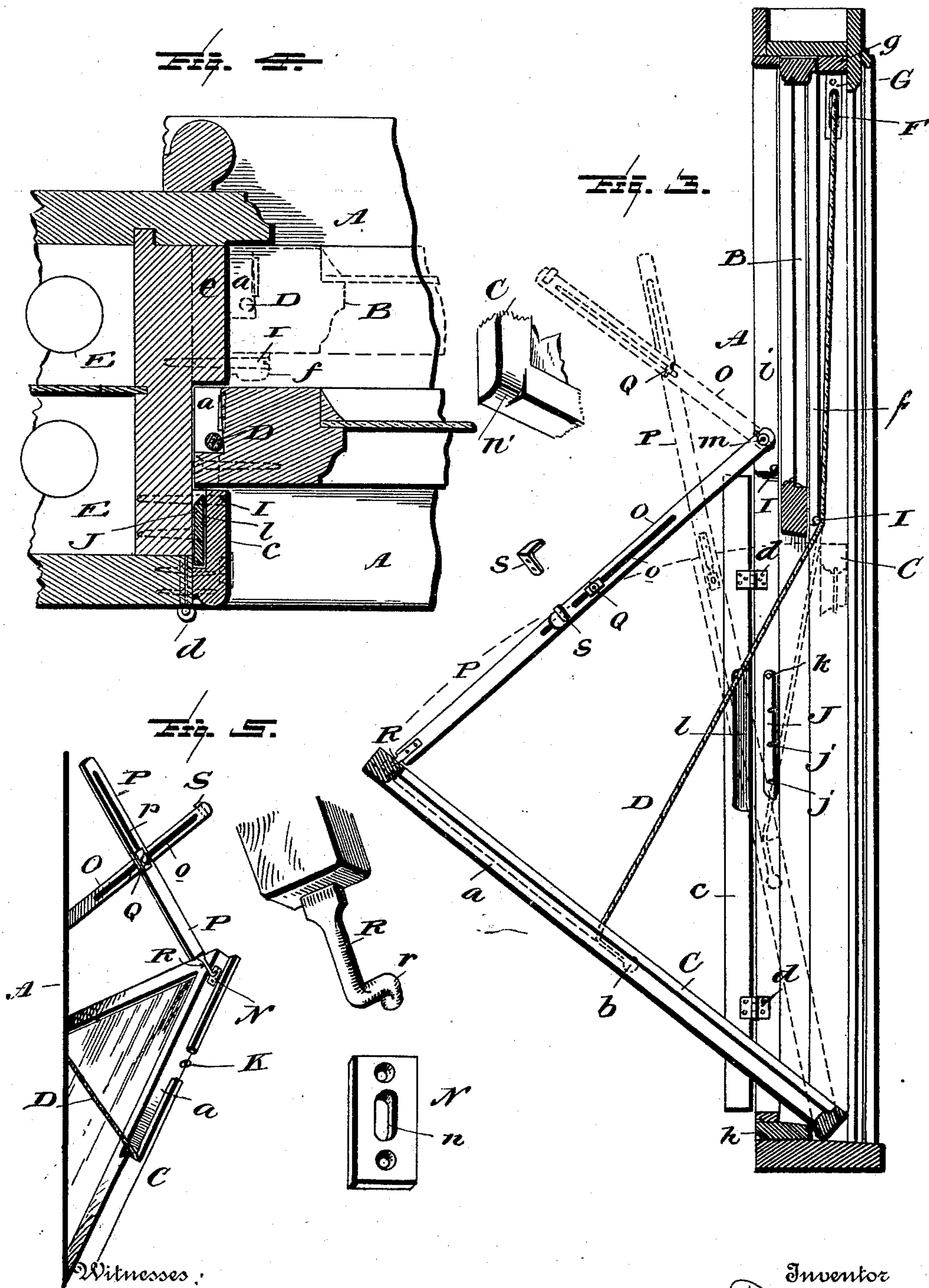
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Attorney



# UNITED STATES PATENT OFFICE.

OSCAR FROTSCHER, OF PHILADELPHIA, PENNSYLVANIA.

## WINDOW.

SPECIFICATION forming part of Letters Patent No. 509,521, dated November 28, 1893.

Application filed April 28, 1893. Serial No. 472,212. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR FROTSCHER, a citizen 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, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in windows of that class in which provision is made for allowing the sliding sash to be swung out or reversed if desired for cleaning or other purposes, and it has for its objects among others to provide  
15 a window of this class which can be cheaply made, easily operated and not liable to get out of order.

It has for a further object to provide simple yet efficient means for holding the sash inclined for ventilation; and for a still further object the provision of means for firmly holding the sash in position for cleaning.

It aims further at certain improvements in the details of construction whereby better results are attained without increasing the cost of construction or interfering with the employment of the window in the ordinary.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a vertical section of a window-frame, with the sashes in position. Fig. 2 is a similar view, with the lower sash shown open for ventilation by full lines, and in dotted lines shown open for the purpose of cleaning. Fig. 3 is a like view with the upper sash open for cleaning, the dotted lines showing the said sash in position for introducing the means  
45 for holding it firmly in place, the attachment being shown by full lines in the position it assumes when extended. Fig. 4 is a horizontal section through one side of the window with the upper sash indicated by dotted lines. Fig. 5 shows in detail the means for holding the sash in its inclined position for cleaning.

Like letters of reference indicate like parts throughout the several views in which they occur.

Referring now to the details of the drawings by letter, A designates the window-frame, B, the upper, and C the lower sash. The sashes are adapted to slide in the ways in the frame and are hung upon the cords or chains D and weights E, the former running over the pulleys F arranged in the pulley stiles G in any well-known way. Each of the sashes is cut away or rabbeted on the sides adjoining the pulley stiles from about the middle or center of its height upward as indicated at  
65 a, preferably toward the outside of the window as shown best in Fig. 4. Below this rabbet is a hole b to receive the cord or chain D which is knotted or fastened in any suitable manner. The lower sash is of usual size and is held in place by a stop-bead c which is divided on both sides of the window at a point somewhat above the top of the lower sash and I hinge them to the frame in any suitable manner as by hinges d as seen in Figs. 3 and 4. The upper  
75 sash is somewhat narrower than the lower one as will be seen from Fig. 4, and the space thus provided is occupied by the projection e which may be integral with the pulley stile, or it may be in the form of a cleat separate therefrom and secured thereto in any suitable manner as indicated by dotted lines in Fig. 4; in either form of construction it serves the same purpose. Making the pulley stile thicker than usual and rabbeting the same  
85 may be found the preferable way. A parting bead f is affixed to this projecting portion and extends from the bottom of the upper sash to the window bead as seen in Fig. 4, projecting about as much as the usual parting strip projects from the frame.

The attachment of the cord or chain to the sash is preferably a little above the center of gravity of the sash so that it will have a tendency to revert to its normal position and at the same time will require but little exertion to hold it in the position for cleaning. The pulleys F are preferably of different sizes, the back pulleys being the thickness of the projection e wider than the front one; by this means the weights will hang in their proper positions in the boxes of the frame.



Against the head of the window frame in the plane of the upper sash I place a strip *g*, and on the sill in the plane of the lower sash I place a strip *h* as seen clearly in Fig. 1; the thicknesses of the two combined being somewhat greater than the thickness of the meeting rails so as to allow the upper sash to move inward as indicated in Fig. 3. These strips may be independent pieces secured to the head and sill, or they may be formed by making these parts of the frame of thicker wood and rabbeting the same; or the whole thickness required may be located at the head of the window instead of part at the head and part at the sill, as may be found most expedient.

With the parts constructed and arranged substantially as above set forth the operation is as follows: The movable portions of the stop-bead are thrown out on their hinges into the position in which the one is shown in Fig. 3; the lower sash can then be brought forward and taken out of the groove or way and can then be reversed on the cords by reason of the cut away portions, for cleaning the outside; when returned to its normal position it can be slid upward inside of its groove or way. The upper sash can then be slid downward and at once brought forward out of its groove or way as seen in Fig. 3. Owing to the sashes being cut away at the sides as indicated at *a* they can be easily reversed without withdrawing them entirely out of the frame, whereas if they were not cut away, it would be necessary to lift the cords out of the grooves in order to draw out the sashes entirely clear of the frame before they could be reversed. The lower sash in order to swing inward more easily should have the outer lower corners rounded off slightly where they are in contact with the cleat or projection in the groove of the upper sash, as shown at *n*; as seen in detail at the right of Fig. 4.

To prevent the rubbing of the chains or cords against the wood in moving the sash inward I secure a screw *I* at the corner of the fixed inside stop bead *i* and also at the corner of the parting strip at the lower end of the same, on both sides of the window; these screws are without projecting heads as seen in Fig. 4.

In order to bring the lower sash inward and hold it in an inclined position as shown in Fig. 2 for ventilation I secure a plate *J* to the pulley stile so that it will hang loosely on either or both sides of the window; this plate is provided with a plurality of notches *j* and is pivoted on a screw or other suitable means *k*, it being covered by the inside stop bead as seen in Fig. 1, which is provided with a recess *l* to receive it as shown in Fig. 3. This plate is beveled on the side of the notches and is adapted to be engaged over a pin or screw *K* secured to the side of the sash and thus the sash can be secured in as many positions as there are notches in the plate. In

bringing the sash in for cleaning this plate must, of course, be disengaged from the pin or screw.

In order to hold and support the sash in an inclined position for cleaning I have provided the following means: At one or both sides of the window I attach to the inside stop bead above the division a plate *M* tapped to receive a thumb screw, and to the side of each sash in the rabbet thereof a plate *N* with an elongated hole *n* as seen best in Fig. 5, where the plate *N* is shown detached. *O* and *P* are bars or strips each provided with an elongated slot *o* and *p* respectively as seen in Figs. 3 and 5, and mounted to slide in these slots is a thumb screw *Q* with a plate upon each side of the said strips to bind them together when the thumb screw is turned in the proper direction. One end of the plate or bar *O* is connected to the plate *M* by a thumb screw *m* while one end of the bar or strip *P* is provided with a casting *R* which has a crook *r* as seen best in Fig. 5 which is adapted to engage the elongated slot of the plate *N*. The operation of this part of the invention is as follows: The strips or bars being loosely connected by the thumb screw in the slots thereof and the thumb screw *m* engaged with the plate *M*, the crook is introduced into the elongated slot *n* of the plate *N* when the sash is brought inward as seen by dotted lines in Fig. 3. The sash is then brought inward to an angle of about forty-five degrees ( $45^\circ$ ), and as the sash is turned to bring it into this position, as soon as the sash is turned from an upright position the crook turns in the slot and becomes so fixed that it cannot be displaced or disengaged until the sash is brought into its former position, parallel with the strip *P*. When the sash has been brought to an angle of about forty-five degrees, as shown by full lines in Fig. 3, the thumb screw is tightened and the sash will thus be held firmly in that position.

*S* is an angle plate or iron secured to one of the bars or strips as seen in Fig. 3, and when the bars are brought into the position in which they are shown by full lines in Fig. 3 it serves as a stop to prevent further movement of the bars and prevents one going beyond the other as will be readily understood from reference to Fig. 3. The crook *r* being in a vertical plane about midway between the plates *N* of the upper and lower sash can be used for either.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages. Parts may be used without the whole. The supporting devices may be used in connection with other constructions of window.

What I claim as new is—

1. The combination with a window-frame, of two sashes of different widths, the upper sash being the narrower and each sash having its edge cut away for a portion of its



length, a projection between the narrow sash and the frame, and a movable stop bead in front of the bottom sash to provide a space below the upper sash for the withdrawal of the sash, substantially as specified.

2. The combination with a window-frame, of two sashes of different widths, the upper sash being the narrower and each sash having its edge cut away for a portion of its length, the sustaining cords attached to said sash near the end of the cut away portion, a projection between the narrow sash and the frame, a parting strip set in front of the upper sash only and a movable stop bead opposite the lower sash, substantially as and for the purpose specified.

3. The combination with a window frame having two sashes hung therein, the sashes and guides for the same being constructed to allow the top of the sashes to swing inward and downward, of a plate on the sill of the frame in line with the lower sash and a plate in the head of said frame in line with the upper sash, said upper sash being narrower than the lower sash and hung on two cords, one on each side, whereby the top of said sash may

swing inward and downward on said cords, under the bottom of the lower sash when the latter is raised, substantially as described.

4. The combination with a sash mounted to swing, of means for holding the same in an inclined position, said means comprising two pivotally and adjustably-connected slotted bars, screws passing through the slots for adjusting them, and means for detachably connecting one of said bars with the sash, substantially as specified.

5. The combination with a window-frame and a sash mounted to swing, of a plate on the sash having an elongated opening and two adjustably-connected slotted bars, one of which is provided with a crook adapted to enter said opening when in one position, and engage with the rear of said plate when turned, substantially as specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 26th day of April, 1893.

OSCAR FROTSCHER.

Witnesses:

JOSHUA R. MORGAN,  
OTTO HEROLD.