No. 611,031. Patented Sept. 20, 1898.

O. FROTSCHER.

WINDOW.

(Application filed Mar. 19, 1897.

(No Model.)

Fig. 1.

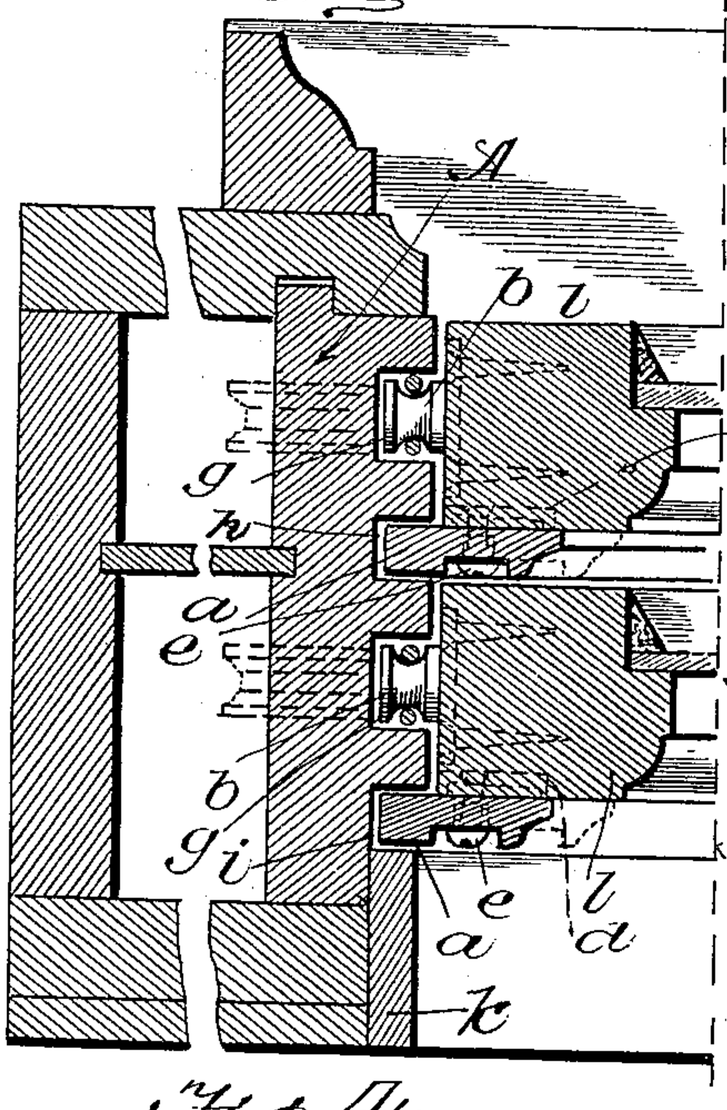


Fig. 2.

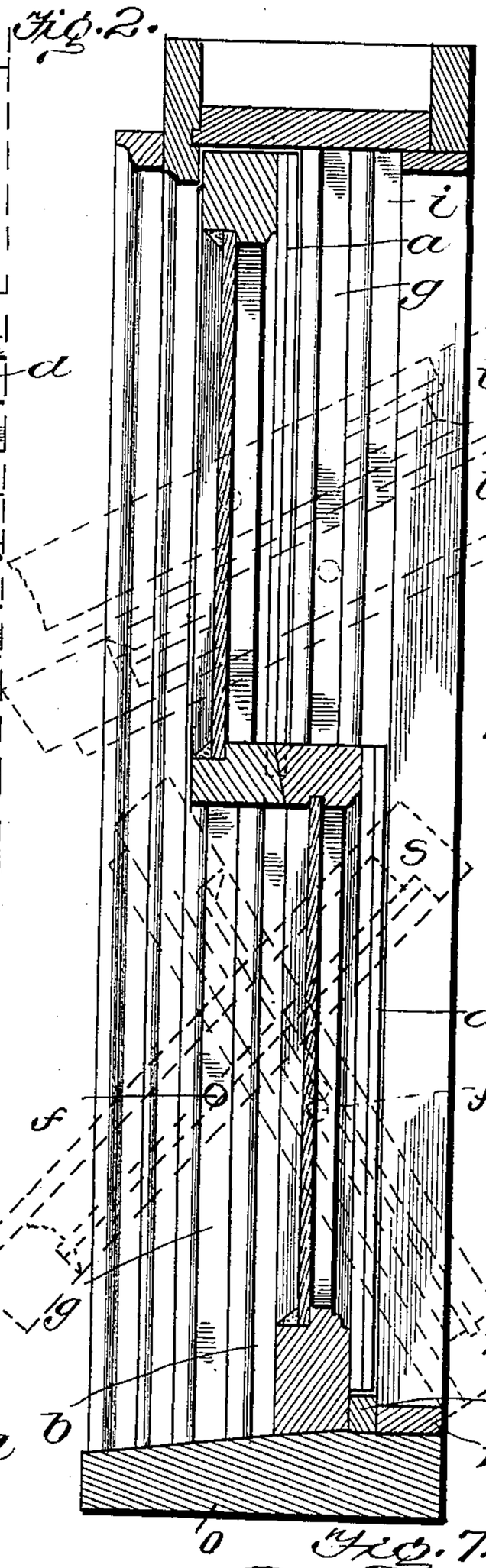


Fig. 3.

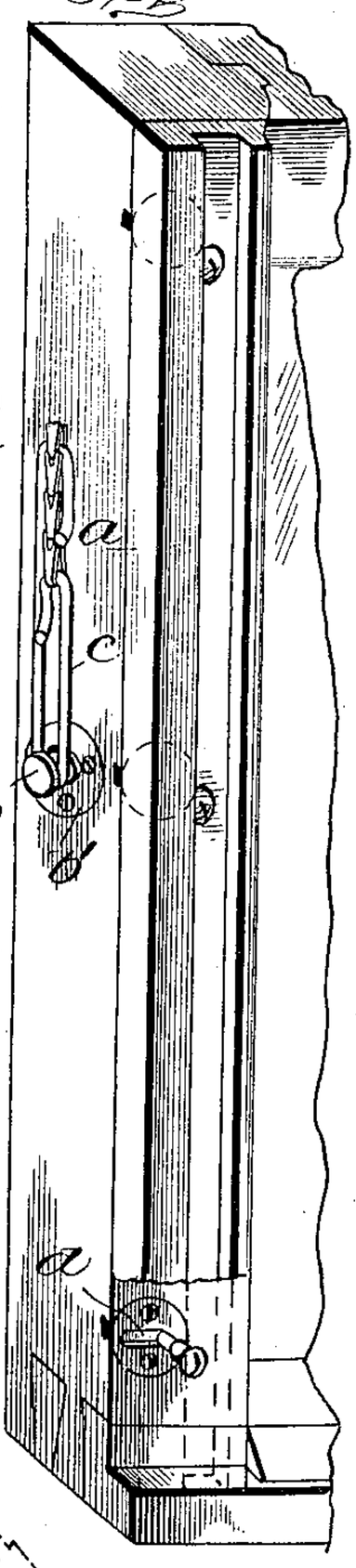


Fig. 4.

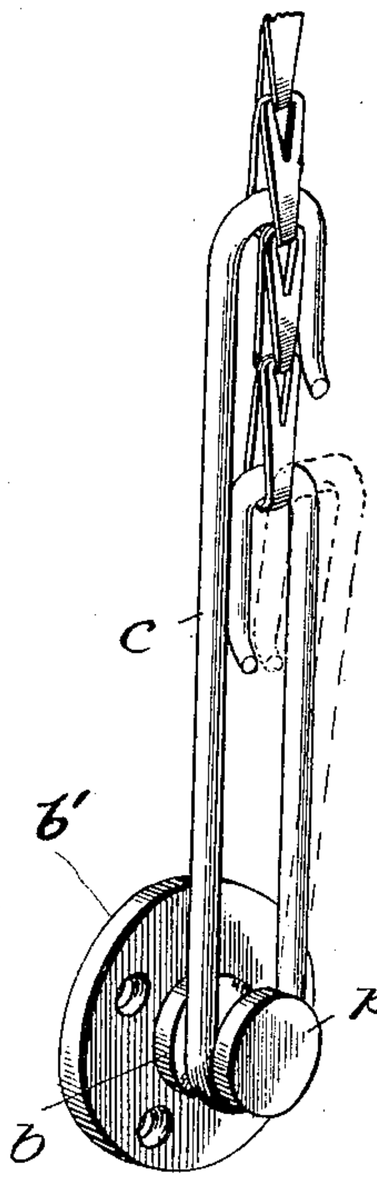


Fig. 5.

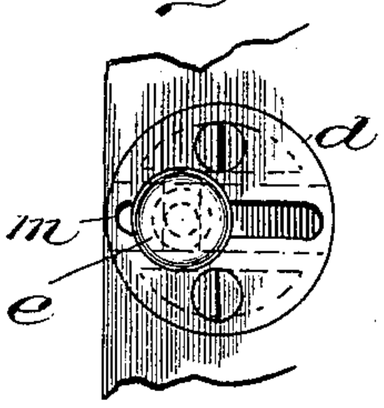


Fig. 6.

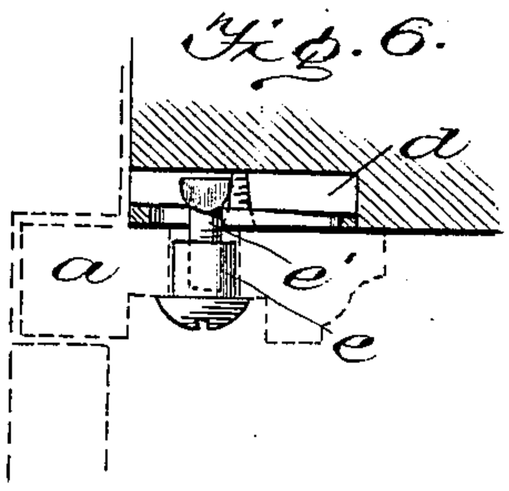


Fig. 7.

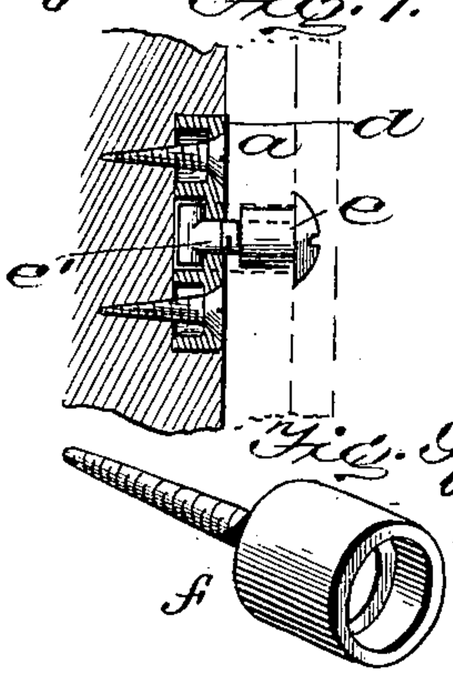
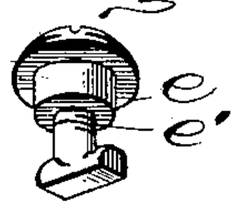


Fig. 8.



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UNITED STATES PATENT OFFICE.

OSCAR FROTSCHER, OF PHILADELPHIA, PENNSYLVANIA.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 611,031, dated September 20, 1898.

Application filed March 19, 1897. Serial No. 628,331. (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 a certain new and useful Improvement in Windows, of which the following is a specification, reference being had to the accompanying drawings.

This improvement relates to that class of windows which are provided with sashes designed to slide vertically when in their normal condition, but may be made to swing on horizontal pivots for cleaning or other purposes when desired. To attain these ends, the invention consists in the peculiar construction hereinafter described, and then definitely claimed at the end hereof.

In the accompanying drawings, Figure 1 shows a horizontal section of part of a window through both sashes, with the upper sash lowered. Fig. 2 shows a vertical section through the center of the window with both sashes in normal position (closed) in full lines and the sashes in various positions turned in dotted lines. Fig. 3 shows an isometric perspective view of one side of the upper sash with the guide-strip shown moved back and represented as partly broken away. Fig. 4 shows a view of a pivot and hanger. Fig. 5 shows a face view of a plate and screw in position in stile of sash with the guide-strip removed. Figs. 6 and 7 show horizontal and vertical sections, respectively, through the center of Fig. 5, with the guide-strip shown in dotted lines. Fig. 8 shows an isometric view of the screw shown in Figs. 5, 6, and 7. Fig. 9 shows a metal stop in the lower part of the grooves in the pulley-stiles.

Referring now to the details of the drawings by letters, A indicates the pulley-stiles, which are provided with three grooves *g*, *g*, and *h* and a rabbet, the latter forming, with the addition of the bead *k*, a groove *i* similar to the groove *h*. All of these grooves extend throughout the length of the pulley-stiles.

The stiles *l* of the sashes B have strips *a* applied to their inner sides, which are made to slide sidewise or laterally into the grooves *h* and *i*, as shown in full lines in Fig. 1 and in dotted lines in Fig. 6, and back on the stiles of the sashes, as shown in dotted lines in Fig. 1 and in full lines in Fig. 3.

To secure and allow the strips *a* to slide back and forth on the stiles of the sashes, a plate *d*, Figs. 1, 3, 5, 6, and 7, is let into the stiles *l* flush with their face in three or more places. The oblong head of a screw *e'*, Figs. 5, 6, and 7, is introduced into a slot *m* of the plate *d*. Holes are bored in the strips *a* (which are grooved on their faces) opposite the screws *e'* in the plates *d*, when the round screw head or nut *e* can be secured on the shank of the screw *e'* in the plates.

The back of the slot *m* in plates *d* is beveled toward the center of the sash, as shown in Figs. 1 and 6, so that the oblong head which holds the screw *e'* and prevents it from turning in the slot *m* will move readily toward the center of the sash and draw the strip *a* tight to the stiles *l* when the strip is moved into the grooves *h* and *i*. The grooved face of the strip *a* serves to allow the screw head or nut *e* to recede back of the face of the strip, which is essential in the case of the upper sash, and also to permit the strip to be grasped by the fingers of one or both hands in withdrawing it from the grooves *h* and *i*.

The upper half of the projection of the meeting-rail of the upper sash is cut away, as shown at the lower part of Fig. 3, to allow the strip *d* to move inwardly. The lower half of the projection, which is close to the stiles of the lower sash, remains to make the sash tight at that point.

The projection of the meeting-rail of the lower sash is cut away entirely to the extent of the movement of the strip *a* in order to permit this strip in the upper sash to be moved in any relative position of the sashes. At the bottom of the lower sash the strip *n* is secured to the sill *o* against the inside bead *k* to fill in the space required by the sliding strip *a*, or the bead *k* may be made wider at the bottom than on the sides and head of frame. In either case the strip *a* is cut off on top of the strips *n* or *k*, Fig. 2.

The pivot *b*, Figs. 1, 3, and 4, is cast with a groove for the hanger *c*, and it has a plate *b'*, which is let into the sash-stile *l* flush with

the wood and secured with screws at the center of gravity. The hanger *c*, Figs. 1, 3, and 4, made of steel wire, is elongated sufficiently to allow it to be sprung onto the pivot *b* over the projection *p*, forming the outside of the groove, as shown in dotted lines in Fig. 4. The part of the hanger *c* on which the pivot revolves may be flattened out somewhat, if found desirable, in heavy sash. At *f f*, Fig. 2, are shown metal stops (shown on a larger scale at Fig. 9) which are secured by a screw in the grooves *g* on both sides of the window just below the pivots in the sashes when they are down, forming a stop on which the pivots rest in turning the sash and keeping it in a horizontal position at the turning-points, preventing wedging. Any other form of a stop may be used for this purpose.

When the guide-strips are in their normal position, the sashes slide in the ordinary manner; but if we withdraw the strips *a* from out of the grooves *i* the lower sash can be turned when in its normal position, as shown in dotted lines *r*, Fig. 2. The upper sash after having been moved downward until the pivots *b* rest on the stops *f* and after the lower sash has been moved upward can be turned, as shown in dotted lines *s*, Fig. 2.

If desired, both sashes can be moved simultaneously, as shown in dotted lines *t*, Fig. 2, or at any other position of height in the frame.

A hanger similar to that here shown is illustrated in my application, Serial No. 625,352, filed February 27, 1897, and no claim is therefore made for it here.

What I claim as new is—

The combination in a window of a sash and a guide-strip, with a slotted plate *d* attached to the sash, having the walls of the slot in the plate increasing in thickness toward the edge of the sash, a screw *e'* having its head between the plate and the sash, and its shank passing into said strip and the nut *e*, all arranged substantially as shown and described.

In testimony whereof I affix my signature, in the presence of two witnesses, this 18th day of March, 1897.

OSCAR FROTSCHER.

Witnesses:

JOSHUA R. MORGAN,

OTTO HEROLD.