No. 776,177. PATENTED NOV. 29, 1904.

H. C. GEORGE.

WINDOW.

APPLICATION FILED JULY 1, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1

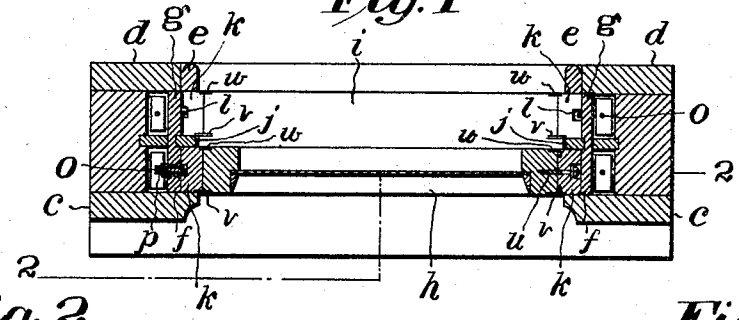


Fig. 2

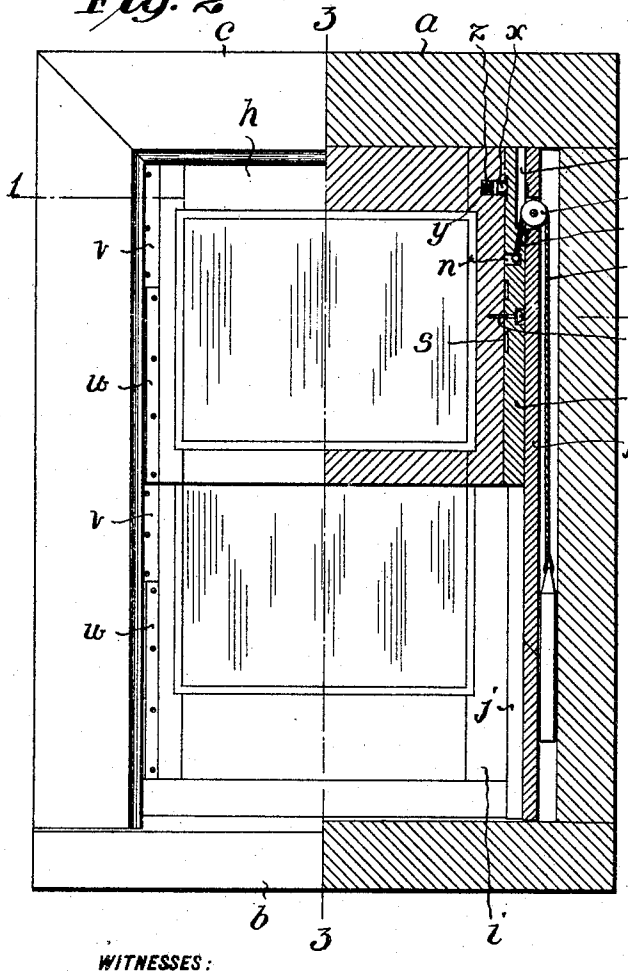
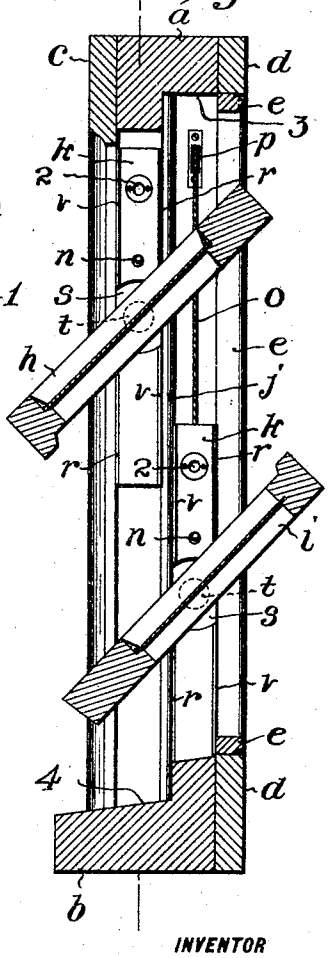


Fig. 3



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4

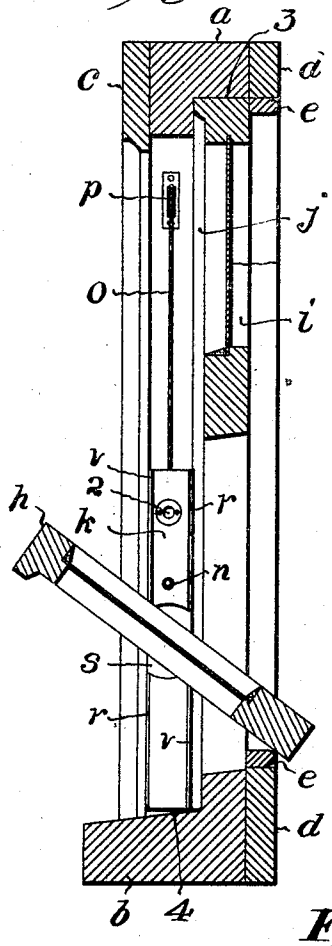


Fig. 5

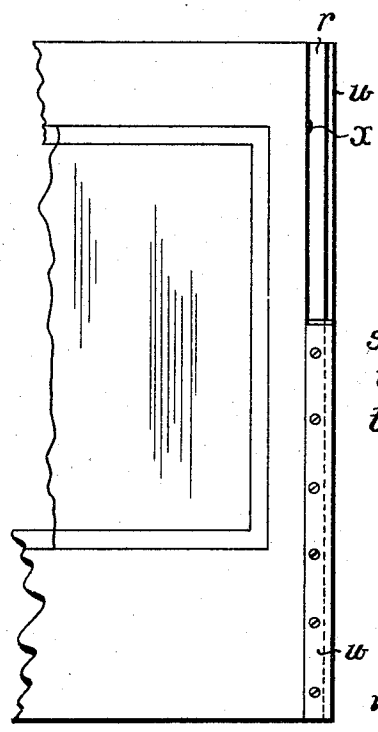


Fig. 6

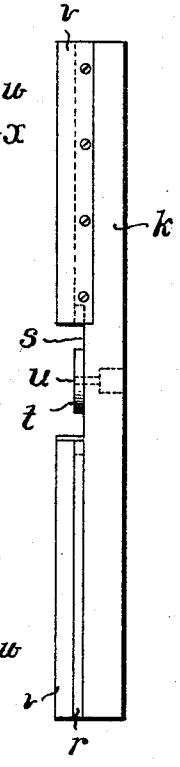


Fig. 7

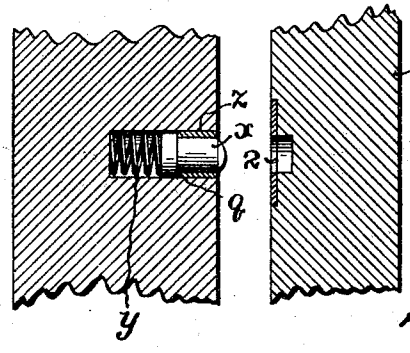


Fig. 8

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No. 776,177. Patented November 29, 1904.

UNITED STATES PATENT OFFICE.

HENRY C. GEORGE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO WILLIAM H. BERKELBACH, OF PHILADELPHIA, PENNSYLVANIA.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 776,177, dated November 29, 1904.

Application filed July 1, 1904. Serial No. 214,875. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. GEORGE, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Windows, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to windows, and particularly to that class in which counterbalanced sashes in addition to a vertical sliding movement are capable of swinging at an angle.

The invention has for its object to provide a new and superior form of slide or shoe for carrying the sash, to facilitate the attachment of the weighted cord to the sash-carrying member, to lock the sash in its normal vertical position to avoid accidental tilting, to provide a weather-tight joint between the sash and the sash-carrying member, and to enable the upper or outer sash to swing or tilt when moved down to its lowest position.

The invention consists in certain novel features of construction for effecting these purposes, as hereinafter described, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a sectional view on line 1 1, Fig. 2. Fig. 2 is a sectional view on line 2 2, Fig. 1. Fig. 3 is a sectional view on line 3 3, Fig. 2, with window-sashes swung open. Fig. 4 is a section similar to Fig. 3 with the relative position of the window-sashes changed. Fig. 5 is a detail side view of a portion of the sash. Fig. 6 is a detail side view of the shoe. Figs. 7 and 8 are detail sectional views, respectively, of the locking-pin on the sash and the pin-engaging orifice in the shoe.

a indicates the head of the window-frame; *b*, the window-sill; *c*, the outside casing; *d*, the inside casing; *e*, the sash-beads of the inside casing; *f*, the pocket-strips of the outside pockets containing the weights for the upper or outer sash *h*; *g*, the pocket-strips of the inside pockets containing the weights for the lower or inner sash *i*, and *j* the parting-beads between the pocket-strips *f* and *g*.

The parts specified constitute the essential parts of an ordinary window in which the stiles of the upper sash slide in the grooves between the outside sash and the parting-beads and the stiles of the lower sash slide in the grooves between the parting-beads and the sash-beads of the inner casing. In my invention, however, the window-sashes are attached to shoes *k*, which slide in the aforementioned grooves, one of these shoes being illustrated in Figs. 2 and 6 and the construction of which I shall now describe.

The shoe is of substantially the length of the sash which it sustains and of a thickness somewhat greater than the depth of the groove in which it slides. The window-sash is pivoted to the shoe at *u*.

l m represent a cord-receiving orifice, of which *l* is a groove in the back of the shoe, and *m* an orifice of less width opening at its top into the bottom of the groove *l* and opening at its bottom into a transverse orifice *n*, formed in the face of the shoe. The weighted cord *o*, which extends in the usual manner from the weight-pocket over the pulley *p*, passes down through groove *l* and orifice *m* into orifice *n*, the cord being knotted at the end to hold it in place. It will be understood from this description that it is a very simple matter to secure the cord to the shoe and that if the cord breaks it can be repaired and replaced with the greatest ease after first swinging the sash on its pivot, so as to give access to the orifice *n*.

To provide a weather-tight connection between the shoe and sash when the latter is closed, I provide the following construction: Preferably midway between the ends of the shoe the same is cut away on its face to form an inset *s*, a circular projection *t* being left to receive the pivot-pin *u* of the sash. The edges of the shoe and sash adjacent to the abutting faces thereof are rabbeted, as at *r*. *v* represents plates secured in the rabbets of the shoe, one plate being secured in the rabbet along one edge of the shoe and extending from the lower end of the inset to the lower end of the shoe and the other plate being secured in the rabbet along the other edge of

the shoe and extending from the upper end of the inset to the upper end of the shoe. *w* represents plates secured in the rabbets of the sash-stile, one plate being secured in the rabbet along one edge of the stile and extending from the lower end of the shoe-inset to the top of the stile and the other plate being secured in the rabbet along the other edge of the stile and extending from the upper end of the shoe-inset to the bottom of the stile. The plates *v* project such a distance beyond the shoe that when the sash is closed the said plates fit into the rabbets in the sash-stile. The plates *w* project such a distance beyond the sash-stile that when the sash is closed the said plates fit into the rabbets in the shoe. The inset *s* is of a depth equal to the width of the rabbets in the shoe that are engaged by the plates *w*.

It will be understood from the foregoing description that when the sash is closed the plates *v* and *w* rest adjacent to each other and close the joint between the sash and shoe. At the same time the sash is free to be swung on its pivot into an open position for ventilation or cleaning by reason of the passage of the plates *w* over the inset in the face of the shoe. The upper and lower walls of the inset are concave, so as to permit the plates to clear the same as the sash is swung into its open or closed position.

To hold the sash in its closed position, I provide an orifice *z* in the stile of the sash, into which I insert a headed pin *x*, backed by a spring *y*, the spring normally holding the head of the pin against the annular shoulder *q* of the orifice. In the shoe I provide an orifice 2. When the sash is closed, the pin when it reaches the shoe is forced back by reason of its beveled point, and then when it comes opposite the orifice immediately springs into the same, holding the sash to the shoe. To open the sash, it is only necessary to exert sufficient pressure to force the pin back against the spring. The pressure necessary to release the sash and force back the pin can of course be accurately regulated.

As before stated, one of the objects of allowing the sash to swing on its pivot is to facilitate the cleaning of the glass. It is usually inconvenient to reach the upper sash. In my window I provide means whereby the upper sash may be moved down and the lower sash moved up, so as to entirely clear each other, permitting the upper sash when lowered to be swung on its pivot. This is effected by recessing the head of the window-frame, as at 3, to permit the lower sash to be moved up above the upper limit of movement of the upper sash and by shouldering or cutting down the outside of the window-sill, as at 4, to permit the upper sash to be moved down below the lower limit of movement of the lower sash. When, therefore, the lower sash is moved up and the upper sash moved down, the latter may be swung on its pivot, and thus readily cleaned.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. The combination, with a window-frame having a vertical guide, of a shoe slidable in said guide, a sash pivoted between its ends on said shoe, rabbets along adjacent corners of the sash and shoe whereby, when the sash is closed, a plate-receiving inset is formed partly in the sash and partly in the shoe, and plates corresponding in dimensions to the inset so formed, one of said plates being secured in the rabbet of one member above the pivot and the other plate being secured in the rabbet of the other member below said pivot, substantially as described.

2. The combination, with the window-frame, having a vertical guide, of a shoe slidable in said guide, a sash pivoted on said shoe, rabbets formed in the outer and inner faces of the sash along the edges thereof, rabbets formed in the outer and inner edges of the shoe along the edges thereof, and plates secured in the rabbets of both the shoe and sash adapted, when the sash is closed, to register with the adjacent rabbets of the other member, substantially as described.

3. The combination, with the window-frame having a vertical guide, of a shoe slidable in said guide, a sash pivoted on said shoe, rabbets formed in the outer and inner faces of the sash along the edges thereof, rabbets formed in the outer and inner edges of the shoe along the edges thereof, plates secured in the outer and inner rabbets of the shoe but extending only a part of the length of the shoe, plates secured in the outer and inner rabbets of the sash but extending only a part of the length of the sash, the plates of each member being adapted, when the sash is closed, to register with the adjacent rabbets of the other member, substantially as described.

4. The combination, with the window-frame, having a vertical guide, of a shoe slidable in said guide, a sash pivoted on said shoe, rabbets formed in the outer and inner faces of the sash along the edges thereof, rabbets formed in the outer and inner edges of the shoe along the edges thereof, a plate secured in the upper portion of one shoe-rabbet, a plate secured in the lower portion of the other shoe-rabbet, a plate secured in the lower portion of the sash-rabbet adjacent to the first-named shoe-rabbet, and a plate secured in the upper portion of the sash-rabbet adjacent to the last-named shoe-rabbet, the plates of each member being adapted when closed to register with the adjacent rabbets of the other member, substantially as described.

5. The combination, with the window-frame having a vertical guide, of a shoe slidable in said guide, a sash pivoted on said shoe, rabbets along the edges of the sash and shoe ad-

jacent to the abutting faces thereof, two adjoining plates, of a combined length equal to the length of the sash, overlapping the joint between the shoe and sash on each side of the same, one of said plates being secured in the sash-rabbet and registering with the shoe-rabbet and the other of said plates being secured in the shoe-rabbet and registering with the sash-rabbet, substantially as described.

6. The combination, with the window-frame having a vertical guide, of a shoe slidable in said guide and having an inset or depression in its face, a sash pivoted to said shoe at said inset, rabbets along the edges of the sash and shoe adjacent to the abutting faces thereof, and plates secured in the rabbets of the sash adapted to register with the rabbets in the shoe and extend alongside said inset when the sash is closed and adapted to extend within said inset when the sash is tilted at an angle, substantially as described.

7. The combination, with the window-frame having a vertical guide, a shoe slidable in said guide and having an inset or depression in its face, a sash pivoted to said shoe at said inset, rabbets along the edges of the sash and shoe adjacent to the abutting faces thereof, plates secured in the rabbets of the sash adapted to register with the rabbets in the shoe and extend alongside said inset when the sash is closed and adapted to extend within said inset when the sash is tilted at an angle, and plates secured in the rabbets of the shoe and adapted to register with the rabbets in the sash, substantially as described.

8. The combination, with the window-frame having outer and inner guides for the two sashes, the head of the frame having a recess in alinement with the inner guide and the sill of the frame being shouldered or cut down in alinement with the outer guide, shoes slidable in the guides, and sashes pivoted to the shoes, whereby the inner sash may be raised and the outer sash lowered to clear the inner sash and permit the outer sash to be tilted on its shoe, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY C. GEORGE.

Witnesses:
M. F. ELLIS,
M. M. HAMILTON.