

No. 617,482.

Patented Jan. 10, 1899.

J. R. ENGQVST.
WINDOW SASH.

(No Model.)

(Application filed Mar. 21, 1898.)

2 Sheets—Sheet 1.

FIG. 1.

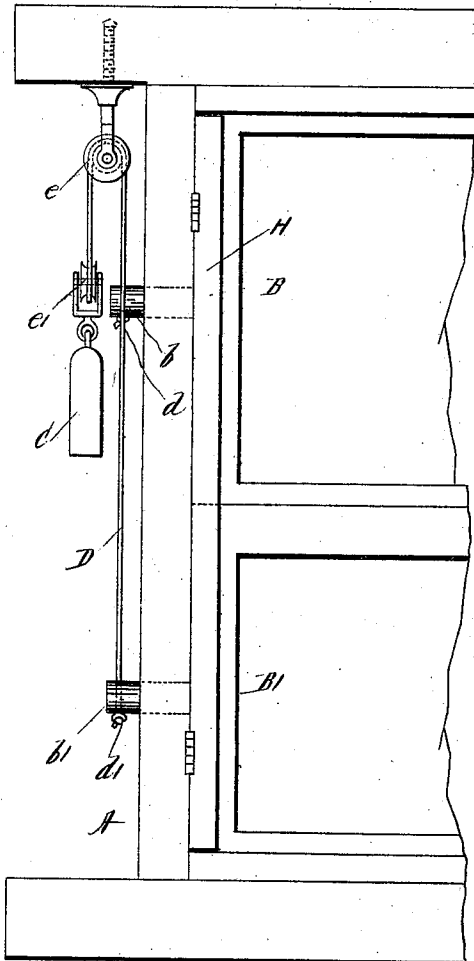


FIG. 2.

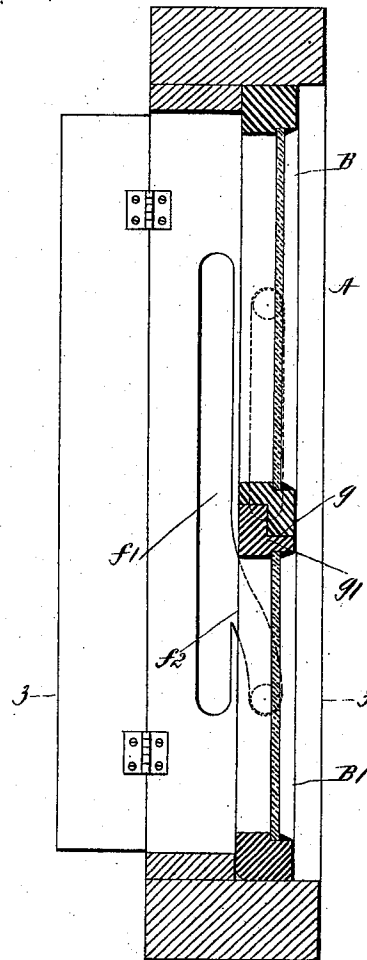
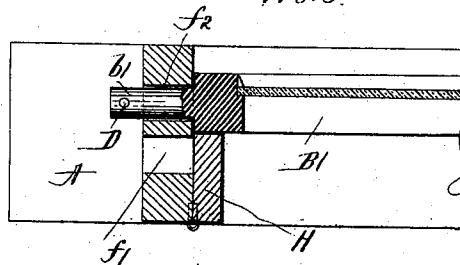


FIG. 3.



WITNESSES

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FIG. 4.

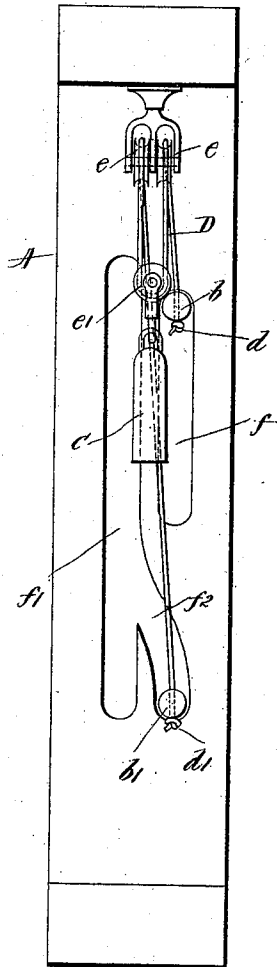
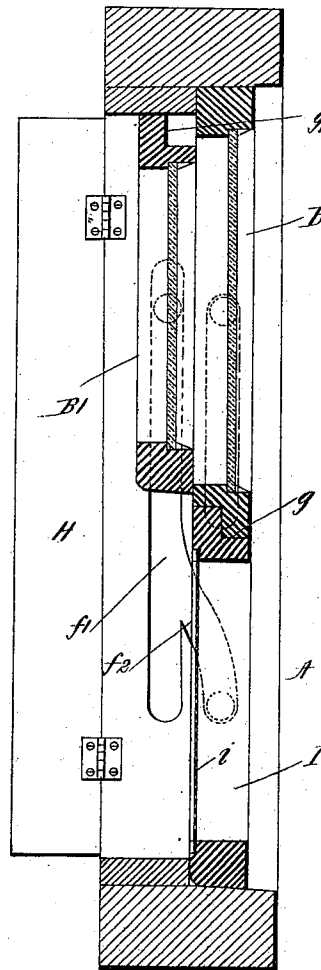


FIG. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

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WINDOW-SASH:

SPECIFICATION forming part of Letters Patent No. 617,482, dated January 10, 1899.

Application filed March 21, 1898. Serial No. 674,628. (No model.)

To all whom it may concern:

Be it known that I, JOHN RUDOLF ENGQVST, a subject of the King of Sweden and Norway, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Window-Sashes, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to means for suspending and operating window-sashes; and it has for its object to provide a simple and improved window-sash mechanism by which the sashes may be more conveniently operated and governed in their various positions and locked.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same letters of reference in each of the views, and in which—

Figure 1 is a side view of a window constructed according to my invention, the casing being open to show the interior mechanism. Fig. 2 is a vertical transverse sectional view. Fig. 3 is a horizontal sectional view taken on the line 3 3, Fig. 2. Fig. 4 is a side elevation showing the balance-weight mechanism which is contained within the window-casing, and Fig. 5 is a vertical transverse sectional view illustrating the arrangement of the mechanism in connection with a window-screen.

Referring to the drawings, A designates the window-casing, B the upper sash, and B' the lower sash. The sashes are pivotally mounted upon end gudgeons *b* and *b'*, respectively, which gudgeons operate in slots arranged in the casing A, whereby the sashes are adapted to swing into open or closed position and also have a vertical sliding movement. A balance-weight C operates in the casing A and relatively governs the sliding operation of the sashes by means of a suspending-cord D, having its ends *d* and *d'*, respectively, connected to the respective gudgeons of the two sashes, which cord also passes over 50 pulleys *e e* at the top of the casing, as shown, and under a pulley *e'* carried by the weight C.

The gudgeons of the upper sash B operate in a straight vertical slot *f*, while the gudgeons of the lower sash B' operate in a straight vertical slot *f'*, arranged in parallel position and extended with relation to the slot *f*, the lower extended portion of the slot *f'* below the slot *f* being provided with an inwardly and downwardly curved extension-slot *f*², projecting in a plane beneath the slot *f*.

The lower edge of the upper sash B and the top edge of the lower sash B' are relatively provided with shoulders, as at *g* and *g'*, respectively, forming an interlocking joint, and when said sashes are in normal relatively-closed position, as illustrated in Fig. 2, they conjointly occupy the entire space between the top and bottom of the casing and are in the same vertical plane, and are therefore locked against vertical movement. When in this normal closed and locked position, the gudgeons of the upper sash B are at the top of the slot *f*, while the gudgeons of the lower sash B' are at the bottom of the extension *f*² of the slot *f'*. To open the sashes, it is only necessary to turn the lower sash in a pivotal movement upon its gudgeons, when the upper sash can also be pivotally moved, and when it is desired to slide said sashes vertically the lower sash can be pivotally turned upon its gudgeons and the latter then slipped up vertically through the slot extension *f*² into the slot *f'*, when said sash may be vertically operated with its gudgeons traveling in the slot *f'*, while the upper sash B is free to vertically slide with its gudgeons traveling in the slot *f*. In their relative sliding movements the sashes are in parallel position, but when they are in closed position they are in the same vertical plane. To provide for locking the sashes in said closed position and to prevent their pivotal or sliding movement, I mount a vertically-extending sash-strip H in hinged position at the respective sides of the window-casing and at the inside of the window, which strips are adapted to be closed against both sashes when the latter are in the same vertical plane, (see Figs. 1 and 3,) and which can be opened, as shown in Fig. 2, to permit of the pivotal and sliding movement of the sashes.

In Fig. 5 I have illustrated an arrangement which is especially adapted for summer, in

which the lower sash is elevated to its position in rear of and parallel with the upper sash, and in its place beneath said upper sash is arranged a supplementary sash I, carrying a screen \bar{i} , which screen-sash can be pivotally operated as desired. The position of the regular lower sash B' and the supplementary screen-sash I in this arrangement can be alternated by sliding the sash B' until its gudgeons pass into the lower end portion of the slot f' , when it may be pivotally turned, while the screen I is pivotally turned and slid upwardly into the position vacated by the sash B'. It will be understood that the sash B' may then be operated to pass its gudgeons into the slot extension f^2 , so that said lower sash comes into its normal position beneath the upper sash B.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the window-casing having vertically-arranged parallel slots, one of said slots being extended in relation to the other slot and provided with a supplementary offset or slot extending to the plane of the other slot, of the sashes having gudgeons mounted and adapted to slide in the respective slots, whereby the sashes may be brought into the same vertical plane or slid into parallel position and also be operated pivotally, substantially as and for the purpose set forth.

2. An improved window-sash mechanism, comprising the casing provided with the longitudinally-arranged parallel slots, one of said slots having an offset or extension projecting to the plane of the other slot, the sashes having gudgeons mounted and sliding in said respective slots, said sashes being adapted to be brought into the same vertical plane or slid into a relatively parallel position, and a locking-strip vertically arranged and hinged to the window-casing and operating to close the main portion of the slot which has the offset or extension, substantially as and for the purpose set forth.

3. The combination with a window-frame the opposite sides of which are provided with two parallel slots, the rear slots on each side being extended downwardly and provided with forwardly and downwardly curved extensions in the same vertical line as the front slots, and sashes having side gudgeons mounted and adapted to slide in said slots, whereby the rear or lower sash may be brought into the same vertical plane with the front or up-

per sash and below the same, substantially as shown and described.

4. The combination with a window-frame the opposite sides of which are provided with two parallel slots, the rear slots on each side being extended downwardly and provided with forwardly and downwardly curved extensions in the same vertical line as the front slots, and sashes having side gudgeons mounted and adapted to slide in said slots, whereby the rear or lower sash may be brought into the same vertical plane with the front or upper sash and below the same, said window-frame being also provided with hinged strips which operate to hold the sashes when they are in the same vertical plane, substantially as shown and described.

5. The combination with a window-frame the opposite sides of which are provided with two parallel slots, the rear slots on each side being extended downwardly and provided with forwardly and downwardly curved extensions in the same vertical line as the front slots, and sashes having side gudgeons mounted and adapted to slide in said slots, whereby the rear or lower sash may be brought into the same vertical plane with the front or upper sash and below the same, said window-sashes being also provided with counterbalance cords and weights, substantially as shown and described.

6. The combination with a window-frame the opposite sides of which are provided with two parallel slots, the rear slots on each side being extended downwardly and provided with forwardly and downwardly curved extensions in the same vertical line as the front slots, and sashes having side gudgeons mounted and adapted to slide in said slots, whereby the rear or lower sash may be brought into the same vertical plane with the front or upper sash and below the same, and a screen-sash having side gudgeons and adapted to be placed in the frame below the upper sash in which position the side gudgeons thereof enter the forwardly and downwardly directed extensions of the rear slot, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 18th day of March, 1898.

JOHN RUDOLF ENGQVST.

Witnesses:

L. M. MULLER,
M. A. KNOWLES.