F. G. Ford,

Sash Balance.

No. 35,513. Patented June 10, 1862.

Fig. 3.

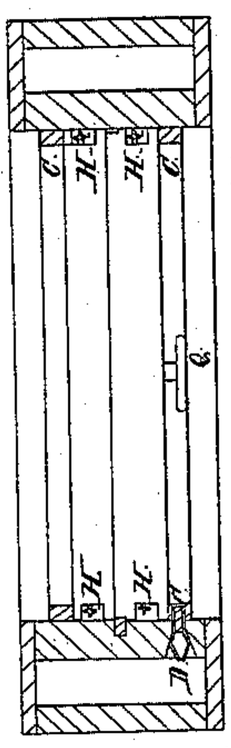


Fig. 4.

Fig. 2.

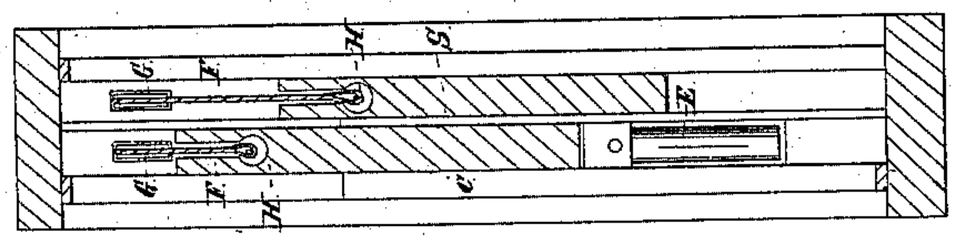
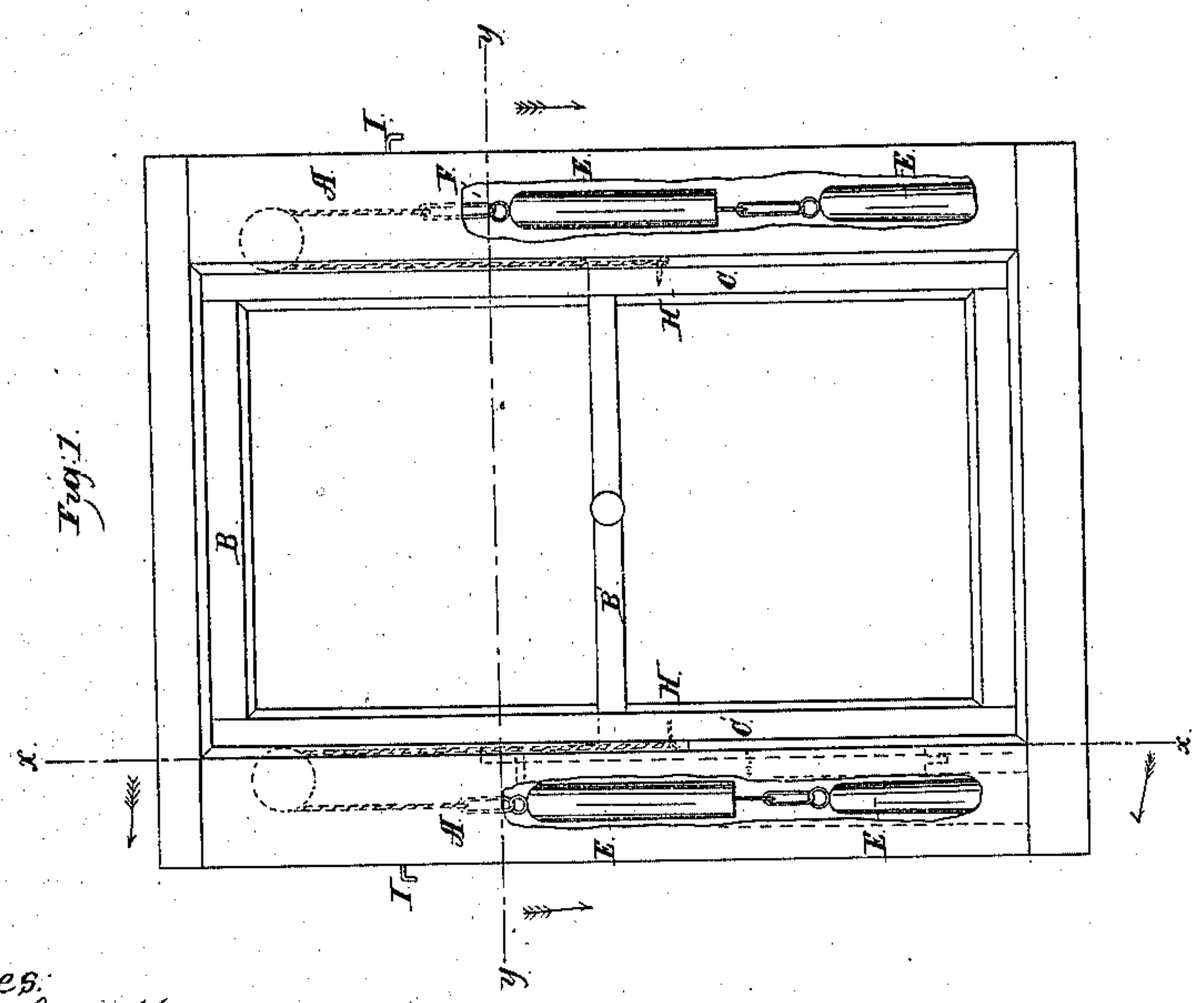


Fig. 1.



Witnesses.
B. Lauberschmidt.
Alexander Knight.

Inventor
F. G. Ford.
Per Munn & Co
Attorneys.

UNITED STATES PATENT OFFICE.

FREDERIC G. FORD, OF NEW YORK, N. Y.

IMPROVEMENT IN WINDOW-SASH.

Specification forming part of Letters Patent No. **35,513**, dated June 10, 1862.

To all whom it may concern:

Be it known that I, FREDERIC G. FORD, of the city, county, and State of New York, have invented certain new and useful Improvements in Hanging and Operating Window-Sash; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front elevation of a window with my improvements. Fig. 2 is a vertical section of the same at *x x*. Fig. 3 is a horizontal section of the same at *y y*. Fig. 4 is a longitudinal section of the fastening.

Similar letters of reference indicate corresponding parts in the several views.

The nature of my invention consists, first, in the use of detachable suspension-weights arranged, as hereinafter explained, so as to admit of the ready hanging and unhanging of the sash; second, in an improved device for securing detachable beads without the use of nails or screws; third, in a fastening of peculiar construction adapted for use in connection with the hanging above referred to.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents the window-frame. B B′ are sashes sliding vertically therein and secured by beads C C′, the former fixed and the latter movable. The movable beads C′ are held below in dovetails of common form and above by spring-catches D, so as to permit their ready removal.

E E are the balance-weights, provided with cords F F, passing over the pulleys G G and connected to the sashes by hooks H H, so that they may be unshipped with ease when the sash is withdrawn from the frame.

I I are hooks on the outside of the frame to hold the cords F F when unhitched from the sash.

K is a nut secured in the lower rail of the upper sash.

L is a socket secured in a corresponding position in the upper rail of the lower sash. M is a screw-bolt adapted to turn freely within the socket L and guided by a pin, N, projecting from the inside of the said socket. At the outer end of the bolt the thread runs out into a latitudinal groove, O.

P is a rigid stem projecting from the rear end of the bolt and formed with a longitudinal slot, *p*.

Q is a socket fitting over the stem P, and provided with a pin, *q*, fitting in the slot *p*, and a milled head, Q′, by which it may be rotated. The pin *q*, fitting in the slot *p*, causes the socket Q and bolt M to rotate together, but permits an independent longitudinal motion between them.

Fig. 4 represents the bolt in its advanced position holding within the nut as when the windows are fastened. By applying the finger and thumb to the milled head Q′ Q, turning the bolt to the left, it is withdrawn completely within the socket L by the thread passing over the pin N, the stem P passing into the socket Q, so as not to necessitate any further projection of the head of the latter. The lower sash may then be raised and the upper sash lowered at will. To fasten the sash in a closed position, the bolt is turned to the right, causing it to advance into the nut until the pin N reaches the groove O, which holds the bolt from advancing farther. Its continued rotation will then draw the sashes firmly together and effectually hold them from shaking or rattling.

To remove the lower sash, it is first elevated sufficiently to clear the horizontal bead at bottom. The bead C′ is then removed, when the sash can be taken out and the cords F unhitched therefrom and hitched over the hooks I I. The parting-strip S, opposite the movable bead C′, being then also taken out, the upper sash may likewise be withdrawn in similar manner. The sashes may thus be removed entirely from their frames for washing, painting, or other purposes.

The edges of the sashes are formed with grooves sufficiently large to receive the cords and admit of the ready attachment and removal of the same, as before explained.

A rigid link, rod, or wire a few inches long at the end of each cord may be more readily hooked to the frame, and would prevent the cord escaping within the frame when released, thus dispensing with the necessity for the hooks I. The fastening D of the movable beads C′ may be modified in various ways; but I have found spring-catches of the form shown, fitting in conical holes in the pulley-stile, at once simple, efficient, and convenient.

Having thus described my invention, the fol-

lowing is what I claim therein as new and desire to secure by Letters Patent:

1. In the described combination with the movable beads C', attaching the suspension-cords F to the sash by means of hooks H, placed in cavities in the edges of the sash, admitting of the ready and complete removal of the sash from the window-frame.

2. Fastening the upper and lower sash together by means of a screw, M O P, guided by a pin, N, in the socket L, so as to be retracted within the socket when the sash is to be raised or lowered, and protrude from the said socket and enter and bind within the nut K when the sash is to be secured, all as hereinbefore explained.

F. G. FORD.

Witnesses:
EDM. F. BROWN,
JAMES H. GRIDLEY.