(No Model.)

J. S. HEADEN & C. G. FARMER.

SASH BALANCE.

No. 418,948. Patented Jan. 7, 1890.

Fig: 1.

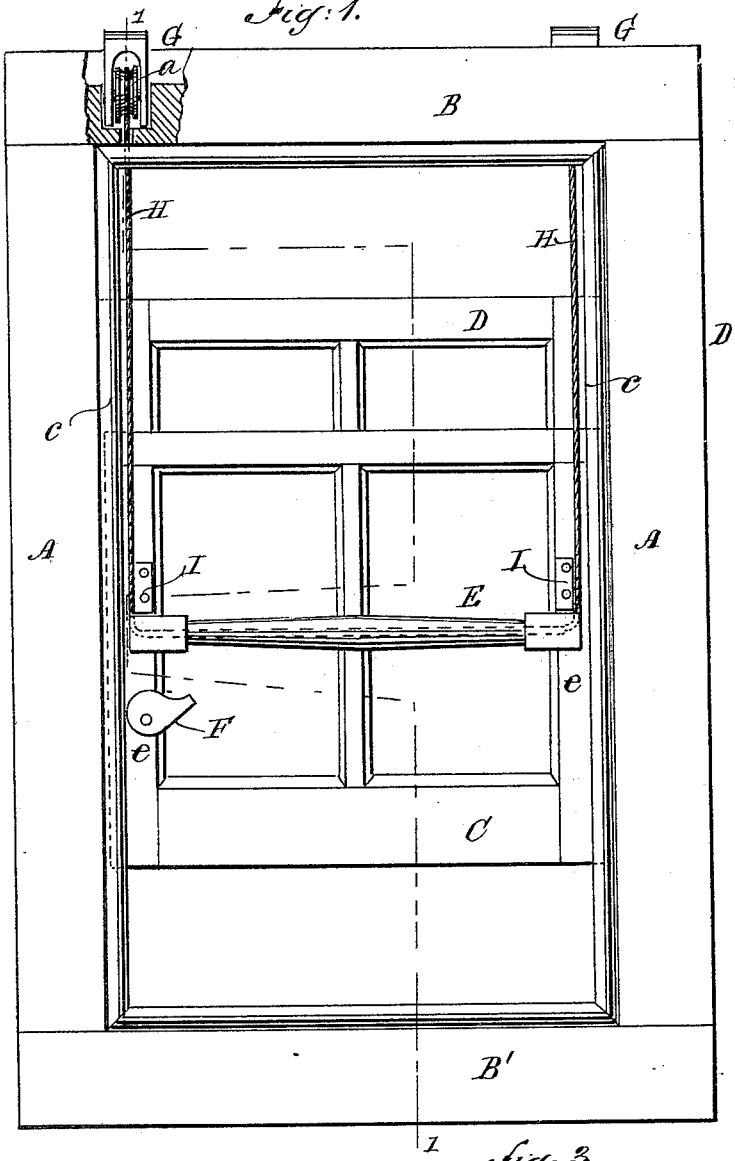


Fig: 2.

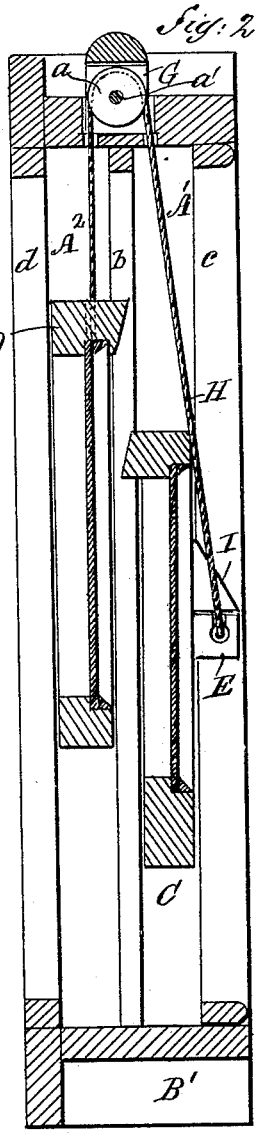
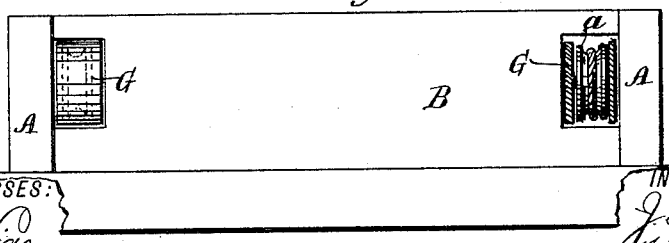


Fig: 3.



WITNESSES:

Chas. Nida

C. Sedgwick

INVENTOR:

J. S. Headen

C. G. Farmer

BY

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN S. HEADEN AND COLEMAN G. FARMER, OF PLEASANT HILL, MISSOURI.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 418,948, dated January 7, 1890.

Application filed October 7, 1889. Serial No. 326,194. (No model.)

To all whom it may concern:

Be it known that we, JOHN S. HEADEN and COLEMAN G. FARMER, of Pleasant Hill, in the county of Cass and State of Missouri, have invented a new and useful Improvement in Windows, of which the following is a full, clear, and exact description.

The objects of our invention are to provide a simple, reliable, and ornamental device whereby the upper and lower sashes of a window may be arranged to counterbalance each other, and thus permit them to be relatively adjusted in the retaining grooves of the frame, so as to lower the upper sash partially or entirely and also correspondingly elevate the lower sash, and which will also permit one sash to be operated independently of the other, as may be desired.

With these ends in view our invention consists in the novel features of construction and combination of parts, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of a window frame and sashes, showing the sash-balance in position thereon, one upper corner of the frame being broken away to disclose interior parts. Fig. 2 is a sectional side elevation of the same, taken on the irregular line 1 1 in Fig. 1; and Fig. 3 is a plan view of the window-frame, partly broken away to show its form of construction.

A A are the stiles, and B B′ the cap and sub-sill, of the window-frame, respectively. The upper sash D and lower sash C are retained in the usual grooves formed by the attachment of the projecting strips *c d b* on the inner faces of the stiles A. (See Fig. 2.)

In horizontal alignment on the cap-piece B of the window-frame bracket-boxes G are inserted in close-fitting socket-apertures made in said piece, as shown at the upper left-hand side of the frame in Fig. 1 and also in Fig. 2. In the boxes G are revolubly supported on transverse pintles *a′* the grooved pulleys *a*, which are in vertical alignment with the side bars of the window-sashes.

On the side bars *e* of the lower sash are secured in horizontal alignment two outwardly and downwardly projecting lugs I, which may be made of wood or metal and have any preferred degree of finish or ornamentation in design.

A transverse handle-bar E, which is of such relative length that it will slide freely between the side strips *c c* of the frame, is carried by the sash-cord H, which cord extends vertically between the lugs I and the strips *c*, passes upward from said bar over the pulleys *a*, and thence downward to a connection at its ends with the top rail of the upper sash, said connection being established by any suitable means.

The handle-bar E is preferably bored longitudinally and axially, so that the sash-cord H may be extended through it and the bar adapted to be adjusted horizontally across the window-sash.

A cam-shaped lock F is pivoted to the side bar of the lower sash C, in proper position for convenient operation, so as to permit a contact of its cam-face with the side strip *c* when it is turned on its pivot to lock said sash in any desired position.

To insure a proper operation of the device, the sashes C D are made of equal weight, and thus adapted to counterbalance each other.

In use, when both sashes are to be secured in closed position, the bar E is made to engage the projecting square shoulders of the lugs I, as shown in Fig. 1, whereupon the lower sash is drawn down, if raised by such an engagement, and is secured in lowered adjustment by means of the cam-lock F. The relative length of the sash-cord H is such that the upper sash D will be elevated fully and the window closed when the parts are adjusted as stated. Should it be desired to lower the upper sash and correspondingly elevate the lower sash, this can be done in an obvious manner, owing to their connection, through the medium of the sash-cord, handle-bar, and the lugs on the lower sash. If desired, other similar lugs may be placed near the lower edge of the lower sash, which when engaged by the handle-bar E will hold the lower sash in elevated position while the top sash remains closed. If the upper sash is to be completely lowered while the lower sash

remains closed, the handle-bar is removed from the lugs I and the sash D gently lowered by elevating the handle-bar.

From the foregoing description it is evident that the temporary connection of the cord H and bar E with the lugs I will adapt the sashes to counterbalance each other, hold one sash up while the other is in closed position, or permit both sashes to be partially opened, a release of the handle-bar from engagement with the lugs rendering the sashes independent of each other and allowing the top sash to be completely lowered, as has been explained.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination, with a window-frame, pulleys journaled at the top of said frame in alignment with the side bars of the window-sashes, and horizontally-aligning lugs on the lower sash, of an axially-bored transverse bar and a cord extending through said bar and thence upward over the frame-pulleys to a connection at its ends with the upper sash, substantially as shown and described.

JOHN S. HEADEN.
COLEMAN G. FARMER.

Witnesses:
T. A. McARTHUR,
W. A. McARTHUR.