J. M. Connel

Sash Balance.

No. 111,728. Patented Feb. 14, 1871.

FIG. 1.

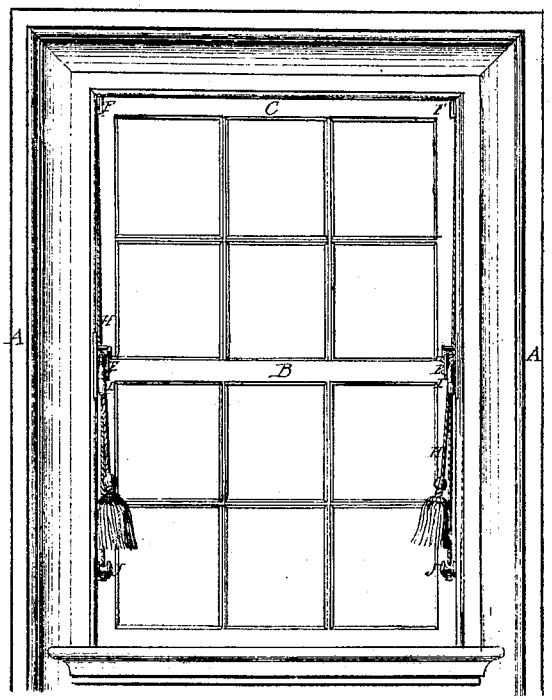


FIG. 2

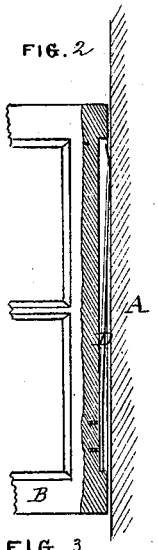


FIG. 7

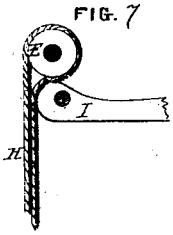


FIG. 6

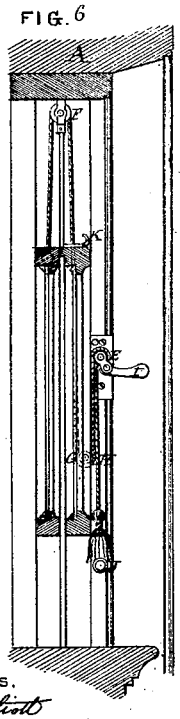


FIG. 5

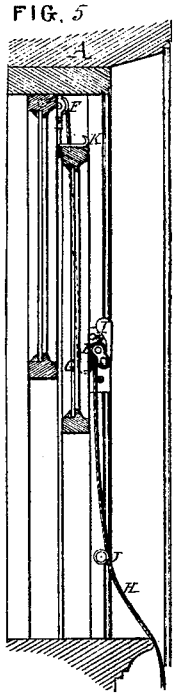


FIG. 4

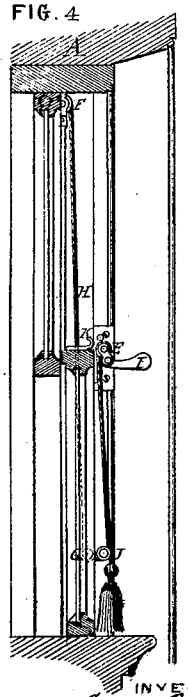
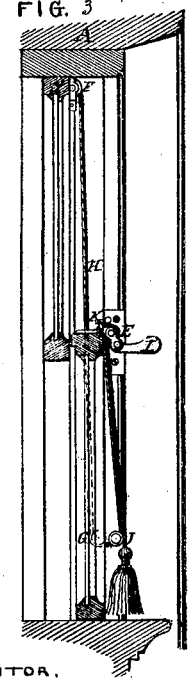


FIG. 3



WITNESSES.

H. G. Elliott

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INVENTOR.

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United States Patent Office.

JAMES M. CONNEL, OF NEWARK, OHIO.

Letters Patent No. 111,728, dated February 14, 1871.

IMPROVEMENT IN SASH-BALANCES.

The Schedule referred to in these Letters Patent and making part of the same.

I, JAMES M. CONNEL, of Newark, in the county of Licking and State of Ohio, have invented a new and useful Sash-Adjuster, of which the following is a specification.

Nature and Objects of the Invention.

My invention is designed to provide an efficient and easily-manageable means of raising and lowering the sashes of a window, and maintaining either or both in any desired position, so that the ventilation of the apartment may be effected either at top or bottom of the window, or, by a partial raising of the lower and lowering of the upper sash, the heated and impure air may escape at top, while fresh air is admitted at bottom, and consists in a combination of cords, pulleys, a clamping device, and suitable pins or hooks, arranged as hereinafter described, so as to admit of operating both sashes or either independently, or locking both the sashes when required.

Description of the Accompanying Drawing.

Figure 1 is an interior elevation of a window with my adjuster attached.

Figure 2 is an elevation, partly in section, of the lower sash and frame.

Figures 3, 4, 5, and 6 are sectional views of the window-frame and sash at different elevations, the adjuster being partly in elevation.

Figure 7 is a detached view of the central or main pulley and eccentric detent on an enlarged scale.

In the several figures similar letters indicate corresponding parts.

General Description.

A A is the window-frame;
B, the lower; and
C, the upper sash.

A spring, D, of suitable material, is set in a slot or gain in the edge of the lower sash, and secured thereto by screws or pins, so that it may have a bearing at all times against the window-frame A. This spring should be of sufficient power to sustain so much of the weight of the lower sash as is not counterbalanced by the upper sash, and may, if preferred, be attached at its middle, so that both its ends will bear against the frame.

The counterbalancing is effected through the fixed pulleys E E and F F, movable pulleys G G, and cord H. The pulleys E E are fixed to the window-frame at top of the lower sash F F, at top of the upper sash, and G G within the lower sash, near its middle or lower part, so as to move with it.

A cord, H, is fastened at each side to the top of the upper window-sash, passing over the pulley F, thence downward through a slot or gain in the window-sash B, and around the pulley G in the lower sash B, thence upward and over the pulley E, and downward, where it may terminate in a tassel or other ornamental device, serving as a means for pulling the same and raising the sash or sashes thereby.

I I are eccentric detents pivoted on the stationary frame, serving to compress the cords H against the pulleys E and prevent the latter from turning by an ordinary pull on the cord.

J J are knobs or pins around which the cords may be passed to adapt them to raise the upper sash without raising the lower, or in order to lock the upper sash in its upper or closed position.

K K are hooks which, in connection with the pins J J, serve to lock the lower sash down to prevent entrance from without.

Operation.

Fig. 3 represents the sash in its closed and secured position, the running part of the cord H being carried over the hook K, partially relieving the pulleys E E, while the detent I has a bearing against that part of the cord which remains in contact with the pulley. The detent, when down, tends by its gravity to remain in the position shown in figs. 3, 4, 6, and 7, but may be thrown over by hand or by draft on the cord so as to rest on the back stop, as shown in fig. 5, in which position it exerts no pressure on the cord.

In fig. 4 the cord is shown released from the hook K, but, being still compressed by the eccentric detent I, it is prevented from moving. By throwing the detent back, as shown in fig. 5, the cord is permitted to move freely.

It is preferable to have a cord, with its fixtures, on each side of the window, as previously described, so that, by pulling equally on each, all tendency to irregularity of movement or jamming is obviated.

The lower sash may be thus elevated, as shown in fig. 5, until its further upward movement is prevented, either by contact with the window-frame A above, or by the pulleys E and G being brought too near the same level to afford further purchase for the cord, or it may be stopped at any point and there rest.

Unless it be desired that the lower sash alone shall be elevated and the upper one entirely closed, the simultaneous movement of both is preferable, requiring less labor and in general affording a better ventilation. This is effected by simply depressing the upper sash, the downward movement of which causes the upward movement of the lower one, though acting through the medium of the movable pulley only to half the extent which it is itself depressed, or nearly in the position shown in fig. 6.

The upper sash, when open, may be readily closed, if desired, by simply passing the cords around the

pins J and drawing upon them, the pins affording a stable point of draft.

Ready means of effecting any desired relative adjustment of the two sashes will soon occur to any one using the device or acquainted with the principles of its operation.

The use of single stationary pulleys for the upper sash lessens the amount of cord required to operate the device, and the use of double pulleys for the lower lessens the power required to raise it, while the combination of the two upon the same cords, aided by the springs, causes them to counterbalance each other, so that either or both rest securely in any position in which they may be placed.

Claim.

The following is what I claim as new:

The combination, with the sashes B C, of cords H, pulleys E F G, and pins or hooks J and K, arranged as herein described, for the purpose of operating either or both the sashes, as desired, or locking the same, substantially as explained.

J. M. CONNEL.

Witnesses:
H. C. ELLIOTT,
W. ALLEN.