

R. Marquis,
Sash Balance.

N^o 11,556.

Patented Aug. 22, 1854.

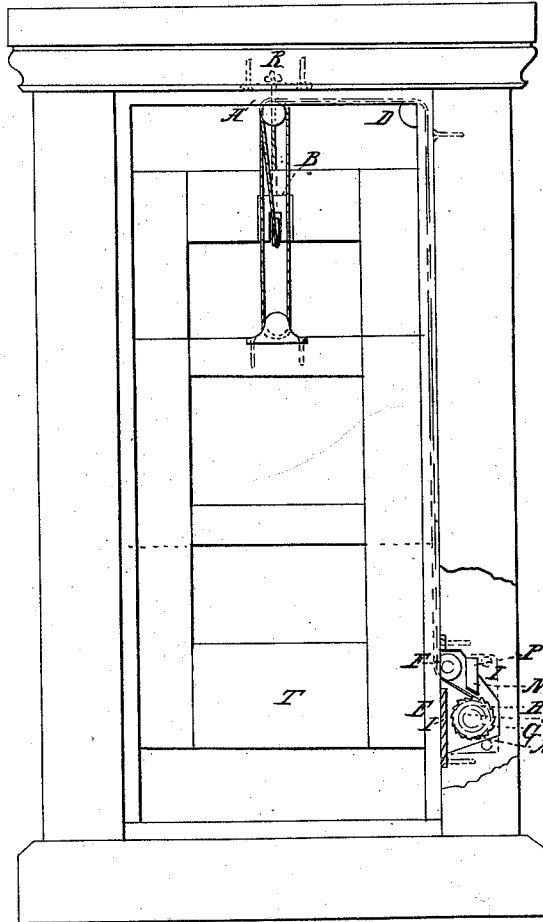


Fig. 1.

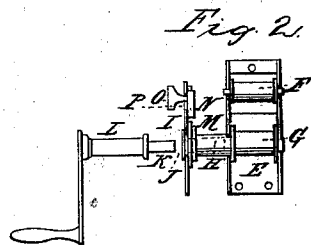


Fig. 2.

UNITED STATES PATENT OFFICE.

ROBERT MARQUIS, OF XENIA, OHIO.

APPARATUS FOR BALANCING AND HOISTING SASH.

Specification of Letters Patent No. 11,556, dated August 22, 1854.

To all whom it may concern:

Be it known that I, ROBERT MARQUIS, of Xenia, Green county, Ohio, have invented a new and useful Improvement in the Mode of Operating Window-Sash; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, forming part of this specification, in which—

Figure 1, is a front view, a portion of the frame being removed to show the windlass movement; and Fig. 2 a transverse section through the latter.

Having observed that where two disconnected cords, are employed to operate or balance window sash,—otherwise than with a weight attached to each,—that there is—in practice—a difficulty in keeping the cords of equal length, and a consequent derangement in effective operation, producing what is generally known as “binding;” I propose—in my present invention—to overcome the difficulty, by such an arrangement of one cord, as shall practically answer all the requirements, to meet which two cords have heretofore been thought necessary.

The mode of application, and manner of operating the sash by means of one cord only, I will now proceed to describe.

Attached to the top of the window frame, is a hanger (A), sustaining two sheaves revolving upon a pivot;—in the front view given in the drawing, one of these sheaves is concealed by the other.—(B) is another sheave,—with suitable bearings for pivot,—let into the under side of the top bar of the upper sash; and (C) another, secured to the upper bar of the lower sash; (D) is also a sheave fastened to the window frame.

In a mortise cut in the window frame, the metallic box (E) is inserted to the depth required to bring it flush with that portion of the frame, against which the sash rubs; revolving within this box upon pivots, is the friction roller (F), and the windlass (G). The axis or pivot (H) of the windlass (G) extends through to the face side of the window frame, (or pilaster as the case may be,) and there has its bearings in the face plate (I); the axis (H) being provided with a square socket (J) for the reception of the tenon (K), of the crank (L), by which said windlass is made to rotate; upon this axis is also secured a ratchet wheel (M),

into the teeth of which the pawl (N) drops by its own weight, and prevents the recoil of the windlass; this pawl may be removed at pleasure by the operator, through means of the small knob (O), which secured to the pawl before mentioned, has the desired amount of motion in the slot (P) cut through the face plate (I).

The mode of reeving the cord through and over the pulleys is as follows: the cord being threaded through a hole made to receive the same, in the bed-plate of the hanger (A); a knot (R) is tied in the end of said cord, by which it is secured; from this point of attachment it descends perpendicularly,—a hole being bored to admit it,—through the upper bar of the top sash, at the center of said sash; when, returning, it is rove over the sheave (B) and passing upward, reeves again over the outer sheave in the hanger (A); from this it again descends, and forms an attachment with the lower sash by reeving through the sheave (C); from whence it is carried up and rove over the inner sheave in the hanger (A); passing from thence horizontally to the sheave (D), it descends to the windlass (G), over the friction roller (F); the end being secured to said windlass.

The sash is operated by the appliances herein described in the following manner. The window being shut,—or in other words both sashes closed,—if it is desired to raise the lower sash, and at the same time to lower the upper one equally, a slight effort applied to raise the lower sash, effects the object; in any position of the lower sash, should you desire to close the upper one, the object is effected by a slight pressure of the hand upon the lower sash,—sufficient only to retain it in the desired position—while with the crank in the other hand you effect the intention. To lower either sash when raised; with one finger lift the button—attached to the pawl as before described,—by which operation said pawl is disengaged from the ratchet-wheel—and reverse the motion of the crank. Thus it will be seen, that with a little practice, the operator can readily adjust the window to suit his pleasure or purpose.

Attached to the window frame at the bottom of the sash, is a small bolt, (S) having a socket (T) in said sash provided for its reception; which bolt, in combination with

the ratchet-wheel, windlass, cord, and pulleys, as before described, secures the window from being opened from without.

The devices heretofore employed for effecting these objects have been practically inoperative from the following causes: The attachments of the suspending cords having been made to the sides of the sash a very slightly unequal winding or stretching of one cord more than the other immediately causes the sash to bind and become immovable. The substance of the sash has to be so much cut away along the side and bottom edges, as materially to impair the strength of the sash, especially in the lower rail, where room has to be made for the sheaves and the winding of the cord; and in the endeavor to avoid this defect, the cords in Brown's apparatus are usually made too slim to be safely relied upon for the support of the sash. The base rail of the lower sash is a less convenient place of winding than the jamb, because it is in some positions too high, and when closed the action of the winch is too circumscribed by the sill especially when the recess is a deep one, as in

large brick or stone houses; so much is this the case that in operating Brown's window it is customary to raise the lower sash some distance by hand before commencing to wind.

I wish it to be understood that I lay no claim to making both sashes mutually operative by means of the same cords which serve to elevate and lower said sashes but—

I claim herein as new and of my invention—

The single cord, which, passing around pulleys at the mid-width of the sashes, is operated by a winch in the jamb, enabling the simultaneous or separate movement of each sash without liability of binding by the unequal expansion of different portions of the cord, or impairing the strength of the sash by the removal of its substance; and for other objects of utility as herein set forth.

In testimony whereof, I have hereunto set my hand before two subscribing witnesses.

ROBERT MARQUIS.

Witnesses:

GEO. H. KNIGHT,
J. H. GETZENDANNER.