

J. C. M. HAMILTON.
SASH BALANCE.

No. 105,330.

Patented July 12, 1870.

Fig. 1.

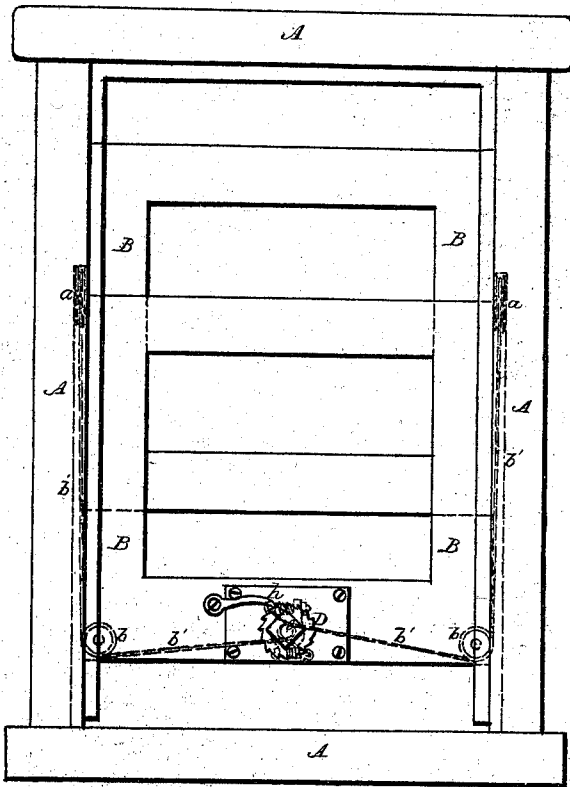


Fig. 2.

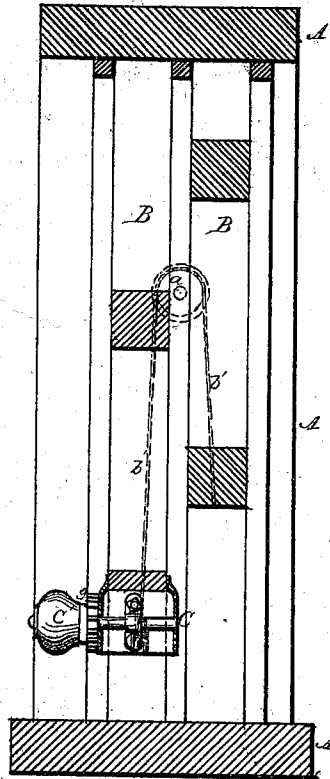


Fig. 3.

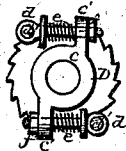
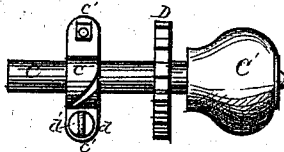


Fig. 4.



Witnesses:
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JAMES C. M. HAMILTON, OF SHAVER'S CREEK, PENNSYLVANIA.

Letters Patent No. 105,330, dated July 12, 1870

IMPROVEMENT IN SASH-BALANCES.

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

To all whom it may concern:

Be it known that I, JAMES C. M. HAMILTON, of Shaver's Creek, in the county of Huntingdon, in the State of Pennsylvania, have invented certain Improvements in Sash-Balances, of which the following is a specification.

The object of this invention is to avoid difficulties heretofore existing in the construction of the contrivances used in adjusting the sash of windows, so that both the cords used in such way shall be made to assume and have the same length from the sash to the center or balance-pulley, and from there to the winding-shaft, and that equal tension shall be had upon both, and the cords never become entangled in winding about the shaft in operation; and

It consists in the peculiar construction and arrangement of the parts that operate to effect the object above stated.

In the drawing—

Figure 1 is a front view of the sash and window-frame, showing the balance-pulleys, guide-pulleys, cord, and adjusting devices, in dotted lines;

Figure 2 is a transverse sectional view of same;

Figure 3 is a transverse sectional view of some of the adjusting devices; and

Figure 4 is a longitudinal view of the same.

A represents a window-frame, which is of the ordinary construction.

B B are the sashes of a window, fitted to slide freely in frame A, in the usual manner.

a a are the balance-pulleys,

b b, the guide-pulleys, and

v v, the cords that are attached to the shaft in the usual way, and pass over the balance-pulleys *a a*, around the guide-pulleys, thence in a guide-channel on the under side of the lower sash, thence to the eye screw-bolts *d d*, to which they are attached.

There is inserted in the bottom rail of the lower sash, by any sure and convenient means, a winding-shaft, C, having its outer turning knob C', nut *g*, and center dividing-wheel *e*, which has lugs *c'* on opposite sides of the center, through which shaft C goes, and to which it is made fast.

In each of these lugs or projections is a hole, to admit the eye screw-bolt *d*.

These eye screw-bolts *d* have eyes *d'* at one end, and in which one end of the cord *v* is attached.

At the other ends of the eye screw-bolts a screw-thread is cut, to receive a square nut, *f*, the eye screw-bolt being so constructed that, by turning the nut in

one direction against the lug of wheel C, the bolt *d* will be shortened in its projection from the lug, and, by turning the nut in the opposite direction, the spiral spring *e*, that embraces the eye-bolt *d*, between the lug and a shoulder or projection on the eye-bolt, the bolt *d* is forced out, so that the eye to which the cord is attached will be further from the lug *c'*, and by which means either of the cords can be so adjusted as that the two cords will have the same length, and an equal tension.

The shaft C may be turned by placing a wrench upon the square nut *g*, that is, between the ratchet-wheel D and hand-knob C', or by the knob C', and when in the proper position, is held in place by pawl *h*, dropping into the teeth of the ratchet-wheel D.

To adjust the length and tension of the cords *v v*, a wrench is applied to nut *f*, on eye screw-bolt *d*, and turned in the direction to make the cord looser or tighter, as may be desired.

This arrangement to adjust the length and tension of the cords is believed to be an entirely new feature, and is very desirable on sash-balances.

The dividing-wheel *e* has another very important duty to perform, by preventing the two cords, in winding upon the shaft C, from becoming entangled together.

As the cords *v v* are attached to the eye-bolts in such manner that, as the shaft C is turned, one cord winds upon the shaft C on one side of the dividing-wheel *e*, and the other cord is made to wind upon shaft C on the other side of the said dividing-wheel *e*, by which means the two cords are prevented from ever coming in contact.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. The eye screw-bolts *d*, in combination with the spiral screw *e*, nut *f*, and lug *c'*, of wheel *e*, constructed and arranged to operate in the manner and for the purpose described.

2. The dividing-wheel *e*, having the lugs *c'*, eye screw-bolts *d*, spring *e*, and nuts *f*, in combination with the winding-shaft C, either with or without hand-knob C', ratchet-wheel D, and pawl *h*, constructed and arranged to operate in the manner and for the purpose described.

J. C. M. HAMILTON.

Witnesses:

JOSEPH JOHNSTON,
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