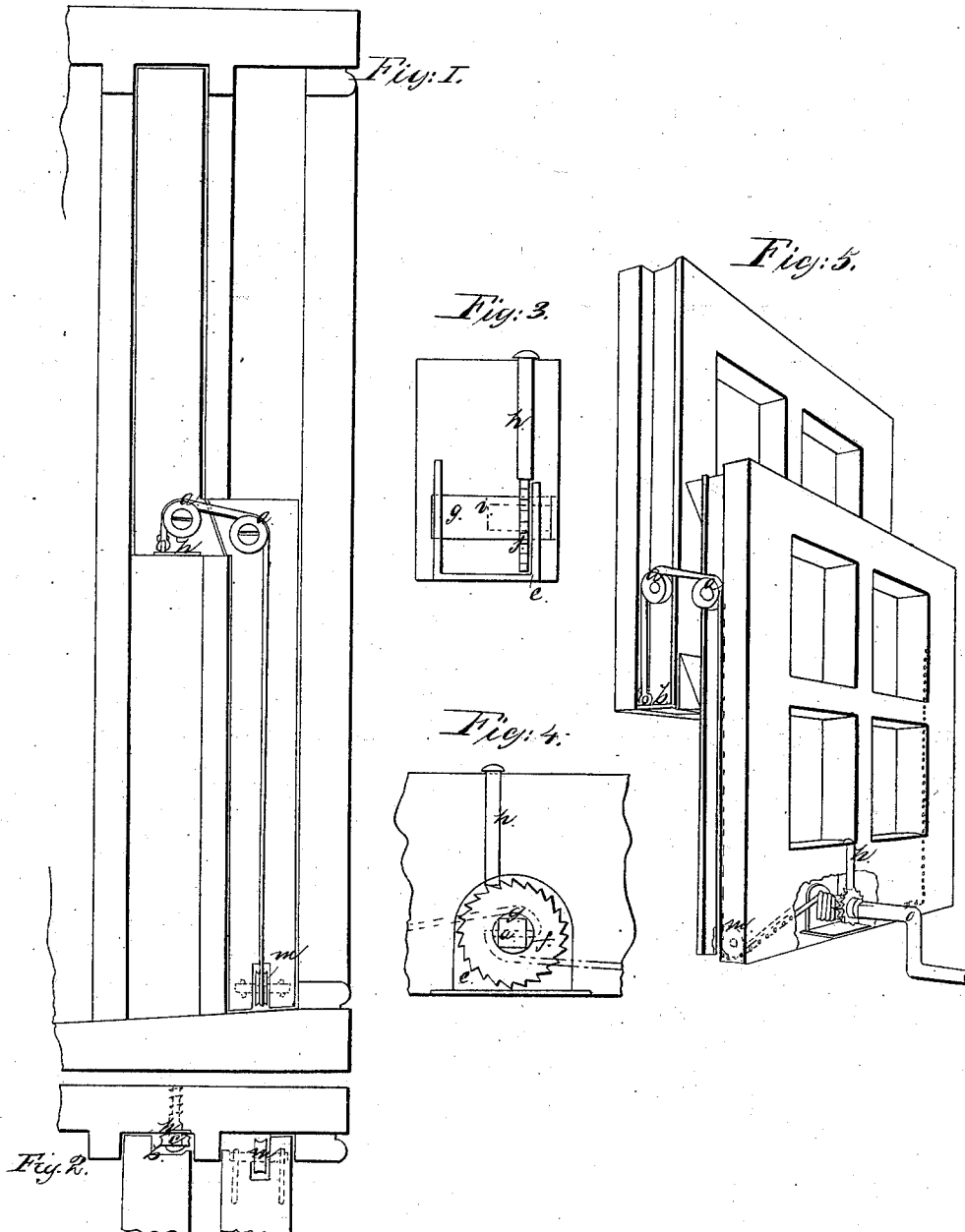


*H. C. Brown,*  
*Sash Balance.*

*N<sup>o</sup> 7,359.*

*Patented May 14, 1850.*



# UNITED STATES PATENT OFFICE.

HIRAM C. BROWN, OF XENIA, OHIO.

## BALANCING SASH.

Specification of Letters Patent No. 7,359, dated May 14, 1850.

*To all whom it may concern:*

Be it known that I, HIRAM C. BROWN, of Xenia, in the county of Greene and State of Ohio, have invented a new and Improved  
5 Method of Hanging 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 drawing, forming part of this specification.

10 The nature of my invention consists in so counterbalancing window sash that either may be raised or lowered by the same cord without running the other sash.

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

I construct my sash and frames in the usual method; and then put four small pulleys in the frames, directly opposite each  
20 end of the meeting rails of the sash as shown by the accompanying drawings at letters *a, a*, Figure 1, and then groove the back edge of the sash stiles next the parting strip as is represented in a section of the stile at *b*,  
25 Fig. 2 so as to make room for the cord and insure the free passage of the sash up and down over the pulleys.

*c*, is the pulley; *d*, is a small plate let in the frame to prevent the screw, that is driven  
30 through them to hold the pulley, from mashing down in the wood by the weight of the sash.

Fig. 3 is a section of the bottom sash rail containing the regulating apparatus.

35 *e*, is an end view of the case for the reception of the ratchet wheel, and the cord when wound up, also to serve as bearings for the axle. *g* is a side view of the axle in its proper place, through which a hole is drilled  
40 at *i* to run the cord through. The oblong shade upon the axle indicates the size and depth of the barrel of the axle for the insertion of a crank handle by which it is turned.

45 *h*, is a pin dropped down through a hole from the top of the sash rail upon the top edge of the ratchet wheel by which the wheel is locked. Fig. 4 is a side view of the same apparatus with its different parts  
50 marked by the same letters as Fig. 3.

The case is represented with the front side left off, to show the ratchet wheel. Upon the face of the ratchet wheel is represented  
55 the manner the cord is passed through the axle, and by the half revolution of the axle is shown the way the cord is wound from

both lower corners of the sash at the same time; its true position would be between the ratchet wheel and the back side of the case; that side of the case is shown by the colored  
60 ground around the ratchet wheel.

*k*, of Fig. 1, also of Fig. 5, is a small plate put on the under side of the meeting rail of upper sash, from which is a small projection  
65 upward having a hole drilled through to which one end of a cord is attached; and as shown at Fig. 1, also at Fig. 5, passes over pulley *a* immediately over the plate, through the parting strip to another pulley (*a*) for the bottom sash, then down the stile to the  
70 friction roller at the bottom corner of the sash, thence to the middle of bottom rail where it passes through a hole in the axle transversely, on to the other corner of the sash where it passes over another friction  
75 roller, up the other stile to pulleys corresponding with those on the other side of the window, and over these, and the end again fastened to another plate similar to the one the other end of the cord is fastened to. In Fig. 5 the  
80 single dotted line above the double dotted line on the left of the case and axle, and the double dotted line on the right of the axle shows the depth of the groove in the bottom edge of the rail that is necessary for  
85 the free rendering of the cord when in operation. It will be readily perceived if additional length of cord at each end equal to the length of the upper sash is made,  
90 that the upper sash will also run down while the lower one remains down. By inserting the crank handle in the band of the axle and turning it around, the cord will be wound on the axle and the top sash will be run up  
95 thereby until the window is closed, and by still continuing to turn the crank, the bottom sash will also be run up and the pin *h*, will of its own weight drop on the ratchet wheel and hold the sash at any point de-  
100 sired. By raising the pin a little with your finger and letting the cord run off the axle, the sash will run down again to its place, where it will hold the upper sash to its place also by letting the pin drop on the ratchet  
105 wheel. In this position they will balance each other, and by raising the lower sash, the upper one will also run down and balance each other at any desired point.

*m* in the bottom sash Fig. 2, also at Fig. 1, is the friction roller. Fig. 5 is a perspective view of its essential parts combined as  
110 when in operation, the front side of case be-

ing left off, the better to show the ratchet wheel and cord, the red line representing the cord as it runs over the pulleys, the red dotted lines showing its continued course  
5 around the sash and over corresponding pulleys in the other side of the window; *o* being the crank handle by which it is operated.

What I claim as my invention and desire to secure by Letters Patent is—

10 1. In connection, the grooves in the sash, the distribution of the several pulleys and friction wheels, and the cord attached to the

bottoms of the sashes instead of their tops, whereby the cord and pulleys are kept entirely out of view.

15

2. The combination of the barrel axle, ratchet wheel and pin, with its case or bearings, or their equivalents, with the cord and pulleys; the whole arranged and operating substantially as herein set forth.

HIRAM C. BROWN.

Witnesses:

I. A. SEXTON,  
JAMES ASLIM.