C. R. Rand,

Sash Balance.

No. 110,159. Patented Dec. 13. 1870.

Fig. 2.

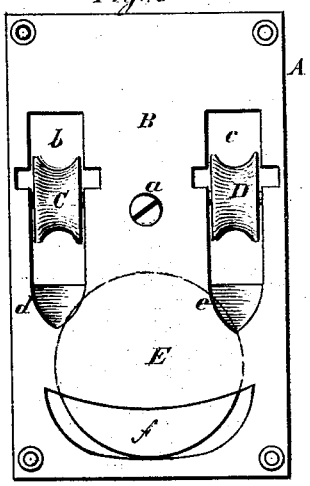


Fig. 1.

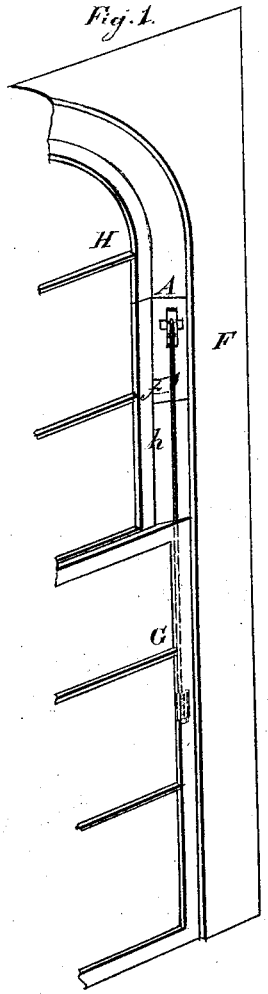


Fig. 4.

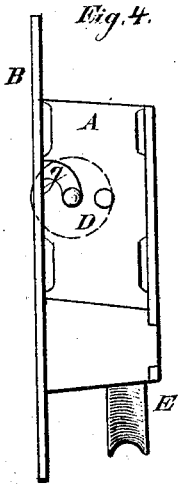


Fig. 3.

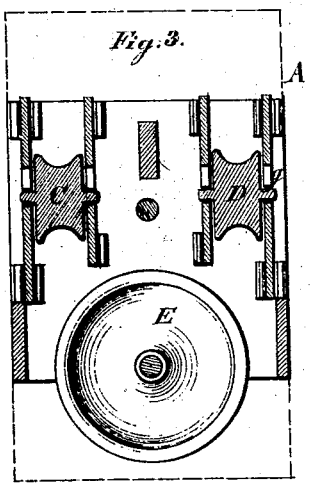


Fig. 5.

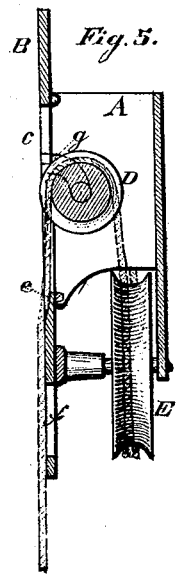
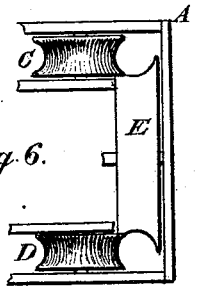


Fig. 6.



Witnesses:

Phil. T. Dodge

W. G. Henderson

Inventor:

C. R. Rand

by Dodge & Munn

his attys

United States Patent Office.

CHARLES R. RAND, OF DUBUQUE, IOWA.

Letters Patent No. 110,159, dated December 13, 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, CHARLES R. RAND, of Dubuque, in the county of Dubuque and State of Iowa, have invented certain Improvements in Devices for Hanging and Balancing Sash, of which the following is a specification reference being had to the accompanying drawing.

My invention relates to devices for balancing sash, and consists of a metal case for insertion into the side of the sash-frame, having openings in its face through which two of its wheels may be mounted or removed, and through which access may be had to all of the wheels in the case about which the cord connecting the sash passes.

In the drawing—

Figure 1 is a perspective view of a portion of the sash and window-frame, with my device inserted therein;

Figure 2 is a front view of my device;

Figure 3 is a longitudinal vertical section of the same, as shown in fig. 2;

Figure 4 is a side view of my device;

Figure 5 is a longitudinal vertical section of the same, as shown in fig. 4; and

Figure 6 is a top plan view.

In constructing my device for hanging and balancing sash I make a metal case, A, of any size desired, and in the form clearly shown in figs. 2 and 4.

The face B of this case is held in place by a screw, *a*, which passes through the same and fastens the parts firmly together.

In this face are two oblong openings, *b* and *c*, parallel with each other, with tapering grooves, *d* and *e*, extending from their lower ends, respectively, as shown in figs. 2 and 5, and also a curved opening, *f*, extending crosswise, as shown, the said opening being arranged relatively, as shown in said fig. 2.

Within the case A are mounted two small pulleys, C and D, and one large one, E; the small ones are inserted through the openings *b* and *c*, their journals entering curved slots, *g*, in the frame of the case, and having their bearings therein, as shown in figs. 3 and 4, and so as to turn at right angles to the face of the case, while the larger one, E, is mounted below and in the rear of the smaller ones, and so as to turn parallel with the face, as shown in figs. 2, 3, 4, 5, and 6, and also so that its groove shall be concentric with the grooves of the smaller pulleys, as shown in fig. 6.

The case A, with its pulleys thus mounted therein, is inserted into the side of a window-frame, F, as shown in fig. 1.

A cord, *h*, is attached at one end to the lower sash G, its other end is passed over the small pulley D, then down around the large pulley E, then up over the small pulley C, and then out of the case and connected to the upper sash H, as partially shown in figs. 1 and 5.

The edges of the sash are provided with a groove in which the cord enters, and in this groove there may be an adjustable block, I, as shown in dotted lines in fig. 1, to which the cord can be attached and thus lengthened or shortened as desired.

The oblong openings allow the small wheels to be taken out at any time for adjusting the cord or for other purposes, while the curved opening permits access to the larger wheel for the purpose of passing and adjusting the cord about it, as desired.

I am aware that three rollers have been arranged in a case inserted in the side of the sash-frame near the line of the meeting-rails of the sash, about which the cords attached to the sash passed; but these I do not claim.

Having thus described my invention,

What I claim is—

A device for balancing sash, consisting of the case A, having the small pulleys C and D and the large pulley E mounted therein, in the relative positions shown and described, and also having in its front face the openings *b* and *c* for the passage of the cord and insertion or removal of the small pulleys, as set forth.

CHARLES R. RAND.

Witnesses:

H. B. MUNN,

PHIL. T. DODGE.