

(No Model.)

J. J. TOTMAN.
SASH BALANCE.

No. 519,823.

Patented May 15, 1894.

Fig. 1.

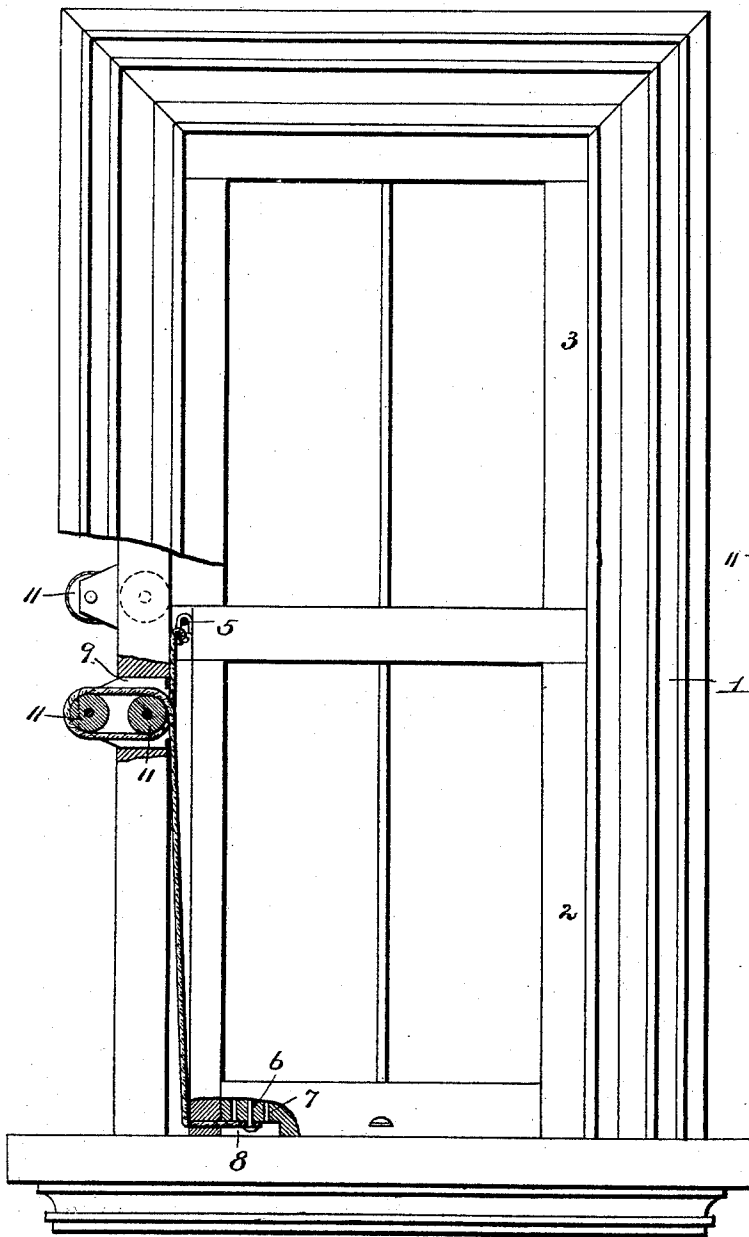
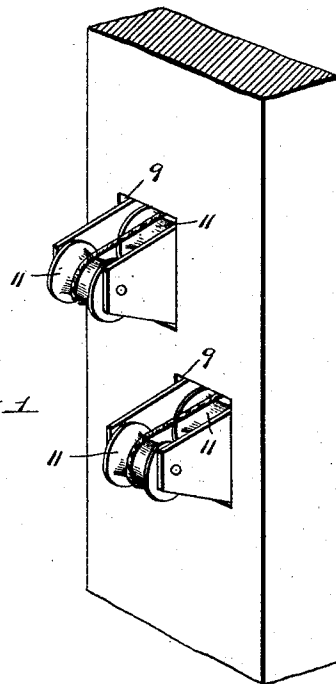


Fig. 2.



Inventor

John J. Totman.

Witnesses

Harry L. Amer.

By *his* Attorneys.

[Signature]

C. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN JOHNSON TOTMAN, OF AMSTERDAM, NEW YORK, ASSIGNOR OF ONE-HALF TO EARL G. WHEELER, OF SAME PLACE.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 519,823, dated May 15, 1894.

Application filed June 6, 1893. Serial No. 476,730. (No model.)

To all whom it may concern:

Be it known that I, JOHN JOHNSON TOTMAN, a citizen of the United States, residing at Amsterdam, in the county of Montgomery and State of New York, have invented a new and useful Sash-Balance, of which the following is a specification.

My invention relates to an improved sash balance, the objects in view being to provide a balancing device consisting of a cord or cords passing around friction pulleys in which the cords shall be concealed from view and protected from the action of rain, snow, &c.

A further object of my invention is to provide a device of the class named in which the sashes can be readily and quickly detached from the frame for purposes of cleaning, repairing, &c.

A further object of my invention is to provide a device which can be applied to a window without mutilation of the sash, and in which one size of device can be attached to any sash.

Further objects and advantages of my invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a front view, partly broken away, of a window-frame and sash provided with balancing devices embodying my invention. Fig. 2 is a perspective view of one side of a sash with the balancing devices arranged in operative relation thereto.

Similar numerals of reference indicate corresponding parts in both figures of the drawings.

1 designates the framework or casing of a window, 2 the lower sash, and 3 the upper sash, all of the ordinary construction. The sashes are provided in their side edges with grooves or channels 4, in which are arranged, at one end, loops 5, to which are attached one end each of the operating cords. These loops are preferably arranged at the upper edge of the lower sash and the lower edge of the upper sash. The opposite ends of the cords are connected to pins 6, which are adapted to be engaged in perforations or sockets 7 in the opposite edges of the sashes; that is in the

lower edge of the lower sash and the upper edge of the upper sash, the portions of such edges being grooved or channeled, as shown at 8, to communicate with the grooves in the side edges of the sashes.

Arranged upon opposite sides of the lower sash, adjacent to the plane of the meeting rail, in suitable recesses 9, formed in the side walls of the casing, are the twin friction rolls 11, arranged with their axes in a common horizontal plane and parallel with each other, the surfaces of the rolls being contiguous, as shown clearly in Fig. 1. The cords which are carried by the lower sash, and which for the greater portion of their lengths lie in the grooves or channels in the side edges thereof, are looped around these opposite twin rollers respectively, whereby, as the sash is raised or lowered, the cords travel freely over the rollers, and when the sash is released the friction between the cords and the rollers is sufficient to support the sash.

The cords of the upper sash travel around corresponding twin rollers, which are disposed upon opposite sides of the casing near the meeting rail of the upper sash.

From the above description it will be understood that the operating cords are concealed at all times within the grooves or channels of the side rails of the sashes respectively, and hence are protected from dampness and thus preserved from the influences of the weather. Furthermore, when it is desired to remove a sash it may be accomplished by withdrawing the retaining pin from its perforation or socket and loosening the opposite end of the cord by detaching its terminal knot from the engaging loop.

When a cord is broken or injured it may be readily replaced inasmuch as the rollers are arranged adjacent to, and are accessible from, the inner sides of the casing.

Thus the advantages of my improved sash-balancing device are, first, that the rollers being arranged in the window-casing may be disposed in any preferred manner, do not detract from the appearance, nor necessitate the cutting of the sash and do not add to the weight of the sash in operation; and second, that less cord is required for each sash than when the cord is fixed to the casing, the

cord is concealed between the casing and that sash to which it is secured and is never exposed to view. And furthermore, each sash is capable of free movement from the top to the bottom of the casing.

5 Having described the invention, what is claimed is—

1. In a sash balancing device, the combination of twin sets of juxtaposed rollers arranged in recesses formed in the casing on opposite sides of each sash, the axes of the rollers in each set being disposed in a common horizontal plane, an operating cord secured terminally to the top and bottom of each sash at each side thereof, arranged between the side edges of the sash and the contiguous surfaces of the casing, and looped at intermediate points, respectively, around said rollers, the sides of the loop being crossed, whereby the portion of the cord which extends from the top of the sash passes under the rollers, then over the rollers and subsequently passes to the bottom of the sash, and means for detachably securing the terminals

of the cords to the sashes, substantially as 25 specified.

2. In a sash-balancing device, the combination with twin sets of juxtaposed rollers arranged in recesses formed in the casing on opposite sides of each sash, of operating cords extending around said rollers and secured, respectively, at their upper and lower extremities to the sashes at their upper and lower edges, one extremity of each cord being connected to the sash by means of a hook engaging an eye upon the sash, and the other extremity of each cord being secured to the sash by means of a pin engaging one of the series of sockets in the sash, whereby the tension of the cord may be adjusted, substantially as specified. 30 35 40

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN JOHNSON TOTMAN.

Witnesses:

HARVEY BOOK,
GEO. C. STEWART.