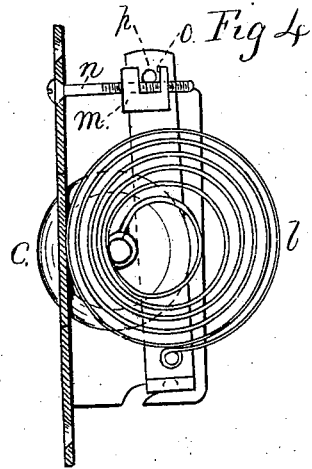
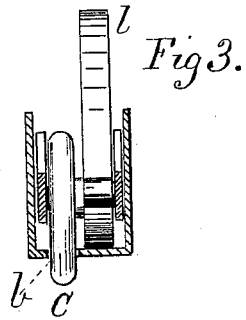
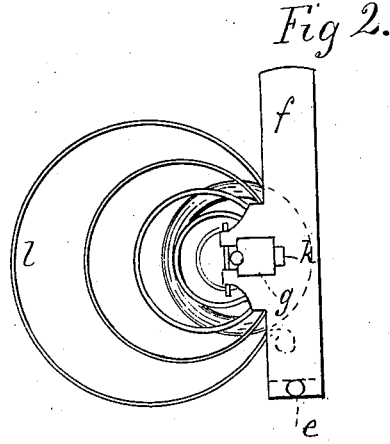
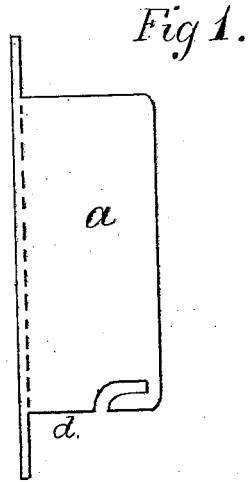


W. J. LEWIS.  
Sash-Balance.

No. 167,677.

Patented Sept. 14, 1875.



WITNESSES:  
B. C. Pole  
Alvin Harris-

William J. Lewis INVENTOR. *WJL*  
Charles S. Whitman ATTORNEY.

# UNITED STATES PATENT OFFICE.

WILLIAM J. LEWIS, OF DENVER, COLORADO TERRITORY.

## IMPROVEMENT IN SASH-BALANCES.

Specification forming part of Letters Patent No. 167,677, dated September 14, 1875; application filed August 4, 1875.

*To all whom it may concern:*

Be it known that I, WILLIAM J. LEWIS, of Denver, county of Arapahoe and Territory of Colorado, have invented a Self-Adjusting Sash-Balance.

The following description, taken in connection with the accompanying plate of drawings hereinafter referred to, forms a full and exact specification, wherein are set forth the nature and principles of the invention, by which the same may be distinguished from others of a similar class, together with such parts thereof as are claimed as new and are desired to be secured by Letters Patent of the United States.

My invention relates to that class of appliances for windows commonly known as sash-balances; and the nature thereof consists in certain improvements in the construction of the same and novel combination of parts hereinafter described—that is to say, my invention relates to the employment of spring-cylinders or rollers upon one or both edges of the window-sash, the periphery of each roll being preferably covered with rubber, and each roller being hung upon an arbor actuated by a spring, and wound upon an arbor against the stress of a coiled spring, in such a manner that, when the sash is put in its casing, the tendency of the spring to rotate the roll creates a stress upon the sash tending to throw it upward. The novel combination of parts constituting the invention is designated in the claims.

In the accompanying plate of drawings, in which corresponding parts are designated by the same letters, Figure 1 represents the exterior of the casing. Fig. 2 is a detached view of mechanism by which the pulley is actuated. Fig. 3 is a vertical section. Fig. 4 illustrates the interior of the casing.

The casing *a* is fitted within a slot cut for its reception in that portion of the frame which is next to the sash, and is provided with an elongated aperture, *b*, for the reception of the projecting portion of the pulley *c*, and curvilinear openings *d*, for the reception of the lugs *e*, which project from and form a part of inner frame-work *f*. The axle of the said pulley *c* has its bearings in the journal-boxes *g*, which are arranged to slide in slots or openings cut in said frame-work *f*, and rest against rubber pieces *h*, arranged at the bases of

the said slots or openings. *l* designates a spiral spring, one end of which is secured to a projecting lug attached to the said frame-work *f*, and the other end of which is secured to the axle of said pulley. When the said spring is wound or coiled upon said axle the force of elasticity developed will cause the said pulley to rotate and exert its force upon the sash of the window in such a manner as to prevent the said window from falling. *m* designates a nut arranged upon the screw *n*, in such a manner that it may be made to travel in or out with facility, by means of a screw-driver applied to the head of the screw, which occupies a position, when the window is raised, immediately beneath the lower sash. The said nut is provided with elongated slots *o*, for the reception of lugs *p*, rigidly attached to the inner sides of said frame-work *f*.

By this combination of parts, as will be obvious to those skilled in the art to which the invention relates, the pulley or roller which is provided with a periphery of rubber will be rotated by the falling sash in such a manner as to cause the spring to be wound up or coiled upon the axle thereof. It will also be obvious that the pressure of the said roller may be accurately adjusted by means of said screw *n*.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a sash-balance containing a spring, the stress of which tends to turn the roll and to raise or support the sash, the combination of the casing *a*, provided with curvilinear openings *d*, the frame *f*, the nut *m*, and the screw *n*, all constructed as described, and co-acting as described.

2. In a sash-balance containing a spring, the stress of which tends to turn a roll, and raise the sash, the pulley *c*, the periphery of which is covered with rubber, in combination with the journal-box *g* and elastic pad *h*, as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of July, 1875.

WILLIAM J. LEWIS.

Witnesses:

H. Y. ANDERSON,  
JAY A. MERRILL.