(No Model.)

J. H. SHIPMAN.

SASH BALANCE.

No. 500,967. Patented July 4, 1893.

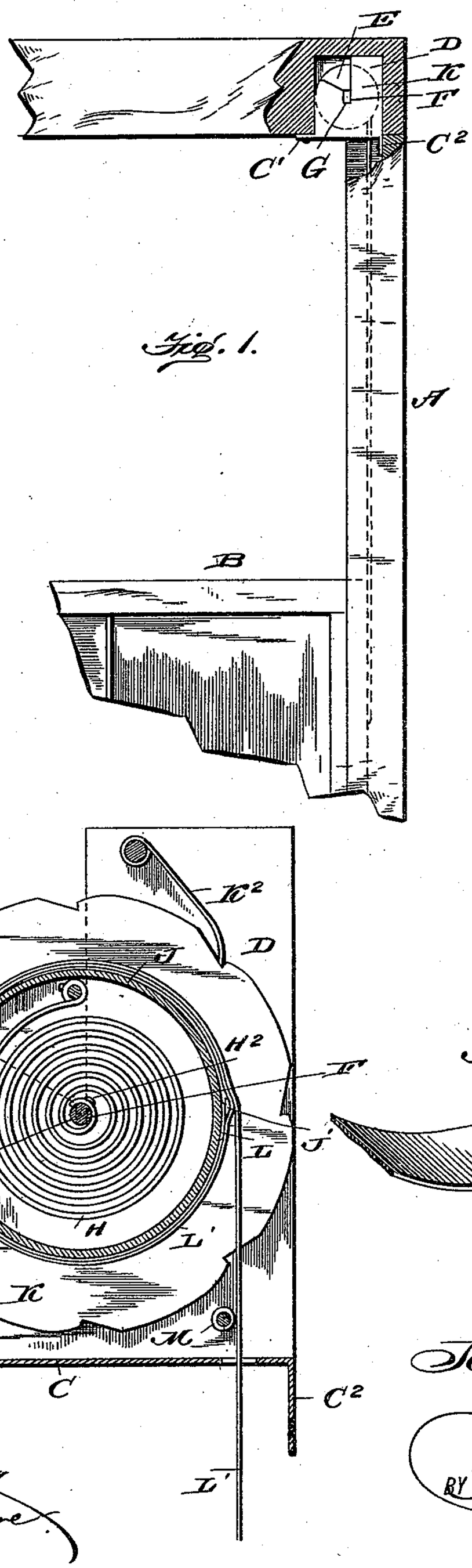
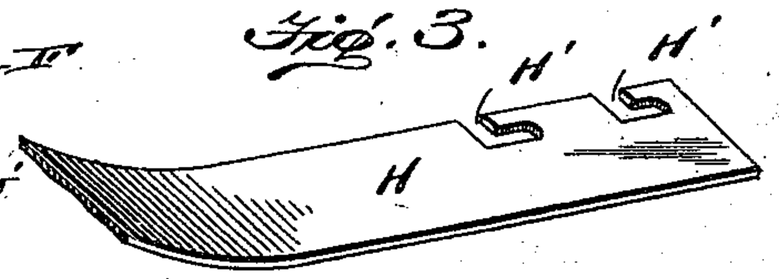


Fig. 1.

Fig. 2.

Fig. 3.



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SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 500,967, dated July 4, 1893.

Application filed January 16, 1893. Serial No. 458,505. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. SHIPMAN, a citizen of the United States, residing at Whippany, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in Sash-Balances; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in sash balances, and the object of my invention is the provision of a device of this character which can be easily and conveniently applied in position and removed when desired.

Another object of my invention is the provision of a sash balance which can be adjusted or made applicable to sashes of any weight by adjusting the tension of the spring as well as to take up the wear on the spring.

Another object of my invention is the provision of a sash balance having a peculiar construction of ratchet which will be reliable in action and secure the sash at any point but which will be easy to release to move the sash, which is very important.

Another object of my invention is the provision of a sash balance which will be light in weight, efficient in operation, simple and durable in construction and inexpensive of production thus rendering the device practical.

To attain the desired objects the invention consists of a sash balance embodying novel details of construction, combination and arrangement of parts for service as herein shown and described.

Figure 1 represents a front view of a portion of a window frame and sash with my device applied to show the application of the invention. Fig. 2 represents a vertical longitudinal sectional view thereof, and Fig. 3 represents a modified form of spring.

Referring by letter to the drawings—A designates the window casing or frame and B designates a sash therein and my sash balance is secured or applied to the frame at the top or head thereof.

The casing or frame of my device may be made of a single piece of sheet metal and consists of the lower or bottom portion C having the horizontal securing ear C′ and the vertical securing ear C^2, which are secured by screws to the casing as shown; the side walls D having the recessed portion E and the angular bearings F for the shaft of the drum. In the angular bearings F is mounted the angular ends of the shaft G, to which is connected one end of the flat spring H, the other end thereof being secured to the drum casing J, carrying the disks K, and the drum is provided with a lug J′ on its periphery to which is connected the ring L on the tape, chain or band L′ which is adapted to be wound and unwound on the drum and passes out of the casing and has the lower end connected to the sash, and said tape preferably bears or runs against a friction roller M secured in the casing which prevents any binding or catching of the cord. From this construction it will be seen that the sash is connected to the tape or band which is secured to and wound upon the drum by the action of the spring and in order to hold the sash at any desired point I form one of the disks K with ratchet teeth K′ adapted to be engaged by the gravity pawl or dog K^2 pivoted in the casing, and the form of the ratchet teeth is peculiar and forms an important feature and it will be noticed that the teeth have the notch formed with the short straight wall *k* against which the end of the pawl engages and the inclined long wall *k′* which extends above the short straight wall and when the tape is drawn upon the pawl leaves the straight wall, rides up on the inclined wall and passes thence along the rounded face k^2 which terminates at the short wall and the pawl falls into and engages the short straight wall. The purpose of this construction is that the ratchet will be caused to quickly and easily move from engagement with the pawl and will permit easy revolution of the drum until the proper point of adjustment has been reached. Then the pawl will fall into the recess and hold the drum, as is evident.

In order to adjust the tension of the spring I provide the end which is connected to the shaft with a series of openings H′ which are open and are adapted to be detachably connected to the screw or stud H^2 on the shaft as will be understood and the spring may

thus be shortened or made longer as circumstances require.

It will be seen that I provide a sash balance which can be easily applied or removed; which will be capable of application and adjustment to sashes of different weight by reason of the adjustment of the tension of the spring; which will sustain the sash at any point and will not bind or stick in the frame; which is simple, durable and inexpensive and consequently practical.

I claim as my invention—

A sash balance consisting of the casing, the drum mounted therein, the spring connected to the shaft and drum, the disks carried by the drum, the ratchet teeth formed on the periphery of one of the disks and having the short vertical wall, the inclined riding face and the rounding periphery, the pawl having the bent end for engaging the short wall as described, the tape or band connected to the drum at one end and to the sash at the other end, in the manner and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH H. SHIPMAN.

Witnesses:
GEO. WALKER JENKINS,
JOHN B. VREELAND.