(No Model.)

S. JENKINSON.

SASH BALANCE.

No. 478,160. Patented July 5, 1892.

Fig. 1.

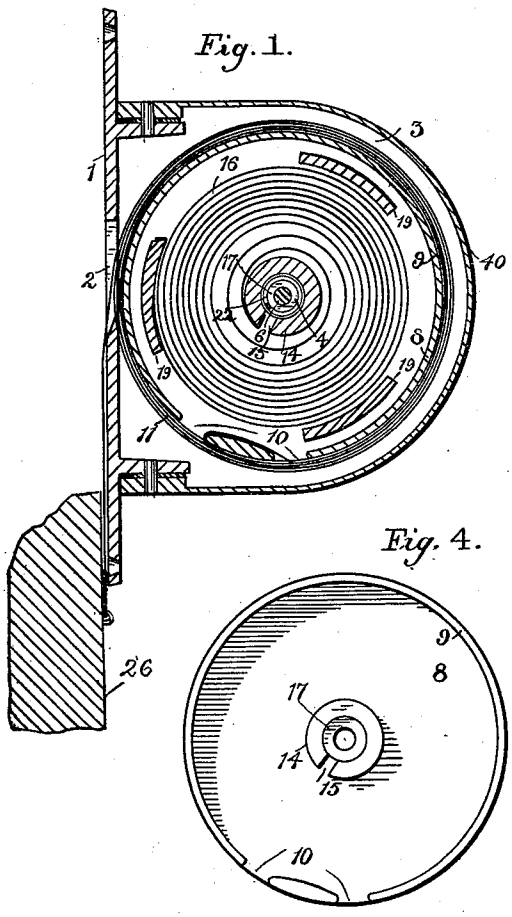


Fig. 2.

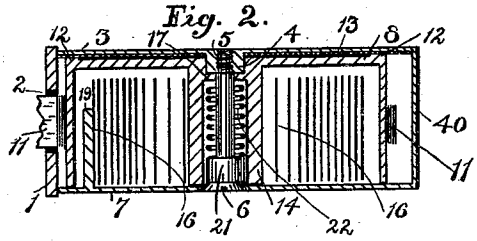


Fig. 3.

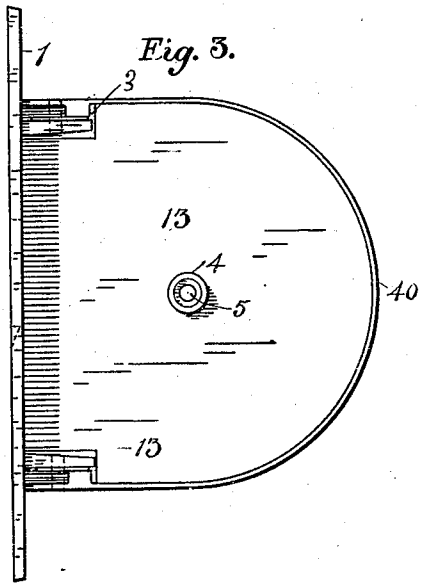
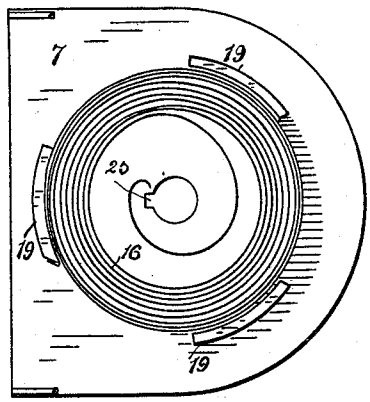


Fig. 4.

Fig. 5.



WITNESSES.

Thomas Durant

Alex. J. Stewart

INVENTOR.

Samuel Jenkinson

BY

Church & Church

his ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SAMUEL JENKINSON, OF ROCHESTER, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE VANDERBILT SASH BALANCE COMPANY, OF CANANDAIGUA, NEW YORK.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 478,160, dated July 5, 1892.

Application filed November 2, 1891. Serial No. 410,574. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL JENKINSON, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Sash-Balances; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures of reference marked thereon.

My invention has for its object to provide an improved spring sash-balance that will be not only cheap and simple in construction, but which may be readily applied to ordinary window-frames and will hold and support the sash in an eminently satisfactory manner; and to these ends the invention consists in certain improvements in construction and combinations of parts, all as will be hereinafter described, and the novel features pointed out in the claims at the end of this specification.

In the drawings, Figure 1 is a vertical sectional view of a sash-balance constructed in accordance with my invention with a portion of a window-frame; Fig. 2, a cross-sectional view of the same; Fig. 3, a plan view of the main casing; Fig. 4, a similar view of the tape-drum; Fig. 5, a view of the cover-plate. Similar reference-numerals indicate similar parts.

My sash-balance is in common with the rest of its class provided with a supporting-frame adapted to be applied to the window-frame, a spring-operated drum journaled thereon, and a cord or tape connected to the drum and window-sash; but not only is the construction different, being materially simplified, but the movement of the drum is governed in an improved manner, whereby the movement of the sash is smooth and easy and the device is not liable to get out of order.

The main casing or frame is provided with the usual face-plate 1, having the tape-aperture 2 and secured to lugs on its rear a plate 3, provided with a hood or semicircular casing 40, in which the spring-drum is contained and protected. The portion 3 I prefer to form in a separate piece and to secure it to the face-plate by rivets or screws, as shown, though it could be formed integral therewith, if desired. On the inner side of the plate 3 is provided a boss or projection 4, provided with a threaded aperture 5 for the central or bearing screw 6, holding the outer plate 7 and drum 8 in place. The drum 8 is provided with a broad rim or surface 9, in which are two apertures 10, forming a means of attachment for the sustaining-tape 11, as usual, and its side next the plate 3 is provided with a flange 12, which bears against the inside of the plate or, preferably, as shown, against a bearing-plate 13, located therein. At the center of the drum is provided a boss or hub 14 around the central aperture, slotted at 15, as shown, for the engagement of the hooked end of the spring 16, which slot also serves as a means of attachment for the winding-key, and inside this boss is an annular collar 17. The outer cover-plate 7 is provided with a series of arms or projections 19, preferably three in number, for confining the spring 16 within the drum, one end of said spring being hooked around one of them and forming the stationary attachment, while the other end engages the slot in the hub 14. This plate rests upon the top of part 3 and is secured in place by a screw 6, having the shoulder 21 and the countersunk head, said screw passing through the plate and the hub of the drum and its reduced end engaging the aperture in plate 3. A spiral spring 22, surrounding the screw and arranged between the shoulder 21 and the collar 17 on the drum, serves to press the flange on the side of the drum into engagement with the bearing-plate 13, creating sufficient friction to compensate for the difference between the weight of the sash and the tension of the spring and cause the sash to move easily and freely. The drum, it will be noted, has a bearing at each end of the central hub on the boss on part 3 of the casing and also on the shoulder on the screw, and is therefore not liable to get out of order. Therefore a single screw suffices for holding the parts together and securing in position the spring 22. If desired, either of these bearings could be made longer and the other dispensed with; but I prefer the arrangement shown.

As the drum is entirely incased by the casing 40 and plate 7, there is no liability of the action of the parts being interfered with by the tape or drum coming in contact with the sides or rear of the aperture in which it is located.

A slot 25 is provided at the side of the aperture in plate 7, so that a key with a spline may be inserted in the slot 15 in the hub of the drum in order to wind the spring up to the desired point before attaching the tape in the usual manner before the application of the screw 6.

Attached to the end of the tape and serving as a means for its attachment to the sash 26 is a securing device, which may consist of an ordinary staple entering the sash, as shown, or any other preferred form of fastening.

It will be noted that the spring is contained within the arms on the plate 7 and that the inner end of the spring is in such position that the drum can readily be placed over the spring and the end secured in the slot before being placed in the casing.

The parts of the device are simple, easily put together, and, as I have found in practice, admirably adapted for the purpose.

I claim as my invention—

1. The combination, with the front plate and the casing thereon, of the drum located entirely within the casing, the tape connected thereto, the cover-plate connected to the casing, having the arms projecting inside the drum, and the spring connected to said plate at its outer end and to the drum at its inner end, substantially as described.

2. The combination, with the front plate and the rearwardly-projecting plate thereon, a second plate extending parallel with the latter, and a screw-pin connecting them and having a shoulder of the drum journaled on the pin and arranged with one of its sides in contact with one of the plates, of a spring for rotating it and a spring arranged between the shoulder on the pin and the drum, substantially as described.

3. The combination, with the front plate and the rearwardly-projecting plate thereon having the central boss, a second plate extending parallel with the other, and a screw-pin connecting the plates, having a shoulder, of the drum journaled on the pin and boss and arranged between the plates, a spring located between the shoulder on the pin and the drum, and a spring connected to one of the plates and to the drum for rotating the latter, substantially as described.

4. The combination, with the front plate, the rearwardly-projecting plate thereon having the central boss, and the screw-pin having the shoulder, of the drum journaled on said boss and pin, a spring arranged between the shoulder on the pin and the drum for pressing the side of the latter into engagement with the plate, and a spring for rotating the drum, substantially as described.

5. The combination, with the front plate, the rearwardly-projecting plate thereon, the screw-pin having the shoulder, the drum having the slotted sleeve or hub, and the collar in it, of the cover-plate having the arms, the spring connected thereto at one end and at the other to the drum, and the spring between the collar on the drum and the shoulder on the screw-pin, substantially as described.

6. The combination, with the front plate, the rearwardly-extending plate, and the drum having the peripheral flange and the central slotted hub, of the cover-plate having the arms projecting inside the drum, a spring connected to one of said arms at one end and to the hub of the drum at the other, and a tape adapted to be secured to the drum, substantially as described.

7. The combination, with the front plate, rearwardly-projecting plate, and cover-plate, of the drum arranged to engage one of the side plates, the spring for rotating it, and a spring arranged to press the drum into contact with the plate it engages, substantially as described.

SAMUEL JENKINSON.

Witnesses:
FRED F. CHURCH,
GEORGE A. GILLETTE.