

No. 649,766.

Patented May 15, 1900.

W. SCHUCH.  
SASH BALANCE.

(Application filed Jan. 29, 1900.)

(No Model.)

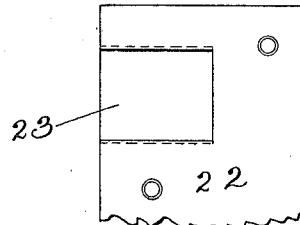
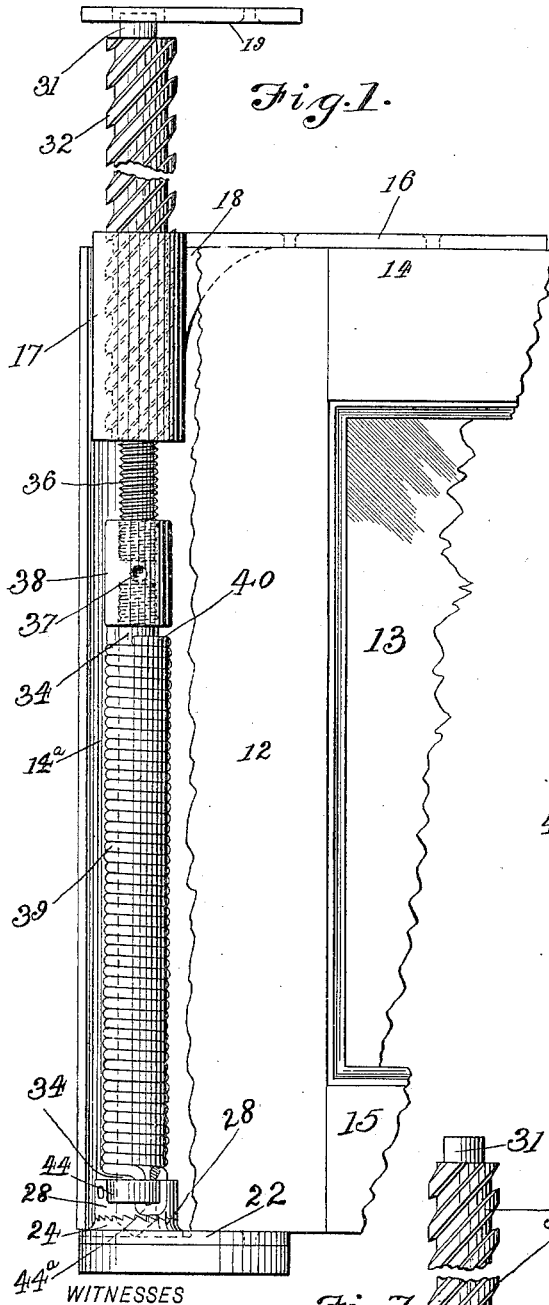


Fig. 2.

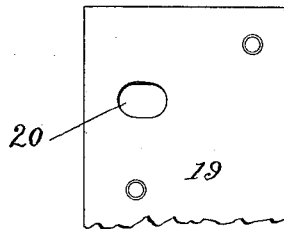


Fig. 3.

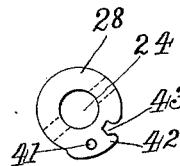


Fig. 4.

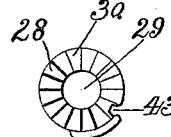


Fig. 5.

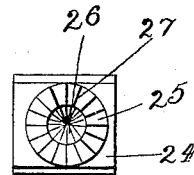


Fig. 6.

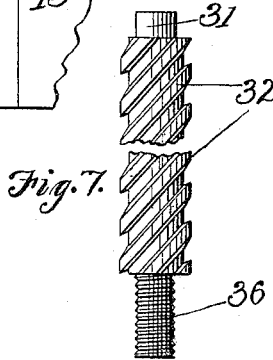


Fig. 7.



Fig. 8.

WITNESSES  
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# UNITED STATES PATENT OFFICE.

WILLIAM SCHUCH, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO  
GEORGE WOLF, OF SAME PLACE.

## SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 649,766, dated May 15, 1900.

Application filed January 29, 1900. Serial No. 3,245. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM SCHUCH, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Sash-Balances, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

10 This invention relates to sash-balance devices for windows; and the object thereof is to provide means for assisting in the raising and lowering of window-sashes, obviating the employment of sash cords and weights.

15 The invention consists in the construction and arrangement of parts hereinafter specified and constitutes improvements upon the construction disclosed in a previous application for Letters Patent, Serial No. 739,362, filed by me in the United States Patent Office December 6, 1899.

In the accompanying drawings, which form part of this specification, and in which like reference characters denote like parts in the several views, Figure 1 is a front elevation of a portion of a window-sash cut away at one side to expose my improved sash-balance device. Figs. 2 and 3 are plan views, respectively, of top and bottom plates which form a part of the construction shown in Fig. 1. Figs. 4 and 5 are respectively top and bottom plan views of an adjusting-head forming part of my improved construction; Fig. 6, a top plan view of a bearing-block forming part of my improved construction, and Figs. 7 and 8 are partial views of further details of construction.

Referring more particularly to the drawings, I have shown at 12 one side of a sash, of which the window-pane is partially shown at 13, and at 14 and 15, respectively, the top and bottom thereof. The extreme edge portion of the sash, at the side 12 thereof, is chambered vertically at 14<sup>a</sup>, and connected with the sash top 14 is a fixed plate 16, provided at its outer end with a vertically-arranged continuous sleeve 17, the connection of which with the plate 16 is reinforced by means of a web 18. The sleeve 17 is directed downwardly within the chamber 14<sup>a</sup>, at the top thereof, and the sash is slidably mounted in

the window-frame (not shown) in the customary or any desired manner.

At 19 is shown a top plate, which in practice is secured to the window-frame, at the top thereof, and is provided with an elongated slot 20, the purpose of which will hereinafter be described.

In the lower portion of the window-frame, a portion of which is shown at 21, I install a bottom plate 22, at one side of which is formed a dovetail groove 23, (shown clearly in Fig. 2,) and a bearing-block 24 is formed at the base to fit the groove 23 and provided with a circular crown 25, which is conically recessed centrally at 26 and provided upon its upper surface with an annular series of radially-arranged teeth 27, all of which is most clearly shown in Figs. 2 and 6.

Upon the bearing-block 24 I superpose an adjusting-head 28, which is circularly bored to register with the recess 26 in the bearing-block 24 and the lower surface of which is provided with an annular series of radially-arranged teeth 30, which operate in connection with the teeth 27 of the bearing-block 24. Pivoted at its upper end 31 in the elongated slot 20 in the plate 19 is a vertically-arranged exteriorly-threaded screw element 32, which operates within and in connection with the sleeve 17, which is similarly interiorly threaded. Pivoted at its lower conical end 33 in the conical recess 26 in the bearing-block 24 and passing through the adjusting-head 28 is a vertically-arranged rod 34, and the rod 34 operates within the chamber 14<sup>a</sup> in the sash side 12, is threaded at the upper end at 35, and connected with the lower end 36 of the screw element 32, which is diminished in size and threaded similarly to the portion 35 of the rod 34 by means of a threaded coupling 37, provided with a side slot 38, whereby it may be manipulated to disconnect the screw element 32 and rod 34 to remove the rod 34 and spring 39 for substituting a new spring.

The screw element 32 and rod 34 are free to turn together in the slot 20 and bearing-block 24.

Imposed upon the rod 34 is a plurally-coiled spring 39, the upper end of which is fixed to the said rod at 40 and the lower end 44<sup>a</sup> of

which is passed through a slot 41 in a peripheral flange 42 upon the adjusting-head 28 and thence passed upward through a vertical groove 43, formed at one side of said flange.

5 The adjusting-head 28 is provided at one side with a slot 44, which is adapted to receive a suitable implement whereby the adjusting-head may be turned upon the bearing-block to vary the tensional potential of the coiled  
10 spring, and it is evident that the coengaging teeth 27 and 30 of the bearing-block 24 and adjusting-head 28, respectively, will prevent inadvertent relative movement of the bearing-block and adjusting-head, maintaining  
15 the coiled spring at all times at the desired tension.

The operation of my improved sash-balance device is similar to that of the construction described in the application initially referred  
20 to, the sleeve 17 operating upon vertical movement of the sash to revolve the screw element 32 and rod 34, and as the spring 39 is fixed against rotation at its lower end and turns with the screw element and rod at its  
25 upper end the torsion thereof is increased as the sash is lowered and the potential thereof consequently increased, whereby the raising of the sash is capable of accomplishment with slight effort, the spring operating to reversely  
30 turn the screw element and rod and assist in raising the sash through the medium of the sleeve 17.

It is understood that the construction shown and described as at but one side of the sash  
35 may be and preferably is duplicated upon the other side thereof.

I do not limit myself to the specific construction and arrangement of parts herein set forth, but reserve the right to vary the same  
40 within the scope of my invention.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The herein-described sash-balance device  
45 comprising a screw member, a rod detachably connected therewith, a coiled spring mounted upon said rod and connected therewith at one end, devices in which one end of said screw member and one end of said rod are turnably  
50 mounted, and a sleeve threaded to fit said screw member, said sleeve, and said rod and screw member being respectively connected one with the window-frame, and the other with the sash, and adjusting devices with  
55 which the free end of said spring is connected, whereby the potential of said spring may be regulated, substantially as shown and described.

2. The herein-described sash-balance device,  
60 comprising a screw member, a rod, a coupling whereby said member and rod are detachably connected at one end of each, a coiled spring imposed upon said rod, and con-

nected therewith at one end, devices in which one end of said screw member is pivoted de- 65  
vices in which one end of said rod is pivoted an adjusting device with which the free end of said spring is connected, and a threaded sleeve which operates in connection with said screw member, substantially as shown and 70 described.

3. The herein-described sash-balance comprising a turnable screw member, a coiled spring detachably connected therewith at one end, and a threaded sleeve which operates in 75  
connection with said screw member, said screw member and said sleeve being mounted one in connection with the window-frame and the other in connection with the sash, and an adjusting device with which the free end 80  
of said spring is connected substantially as shown and described.

4. The herein-described sash-balance comprising a turnable screw member, a coiled spring detachably connected therewith at one 85  
end, a threaded sleeve which operates in connection with said screw member, a bearing-block in which one end of said screw member is turnably mounted and an adjusting-head mounted in connection with said bear- 90  
ing-block, and with which the free end of said spring is connected, said bearing-block and said adjusting-head being provided with cooperating devices whereby said adjusting-head may be locked to said bearing-block, 95  
substantially as shown and described.

5. The herein-described sash-balance comprising a turnable screw member, a coiled spring detachably connected therewith, a rod detachably connected with one end of said 100  
screw member and to which one end of said spring is fixed, a top plate provided with an elongated slot in which the upper end of said screw member operates, a bearing-block in which the lower end of said rod operates, an 105  
adjusting-head superposed upon said bearing-block, said bearing-block and said adjusting-head being each provided with radially-arranged teeth which coengage to lock said adjusting-head upon said bearing-block, 110  
said bearing-block being slidably mounted, and said top plate being suitably supported, the free end of said spring being connected with said adjusting-head, and a threaded sleeve which operates in connection with said 115  
screw member, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 19th 120  
day of January, 1900.

WILLIAM SCHUCH.

Witnesses:

WM. F. QUINN,  
PETER C. FENN,  
JOHN KLINGMANN.