

J. W. Briggs,
Sash Balance.

N^o 27,947.

Patented Apr. 17, 1860.

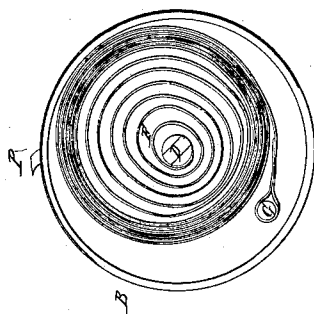


Fig. 3.

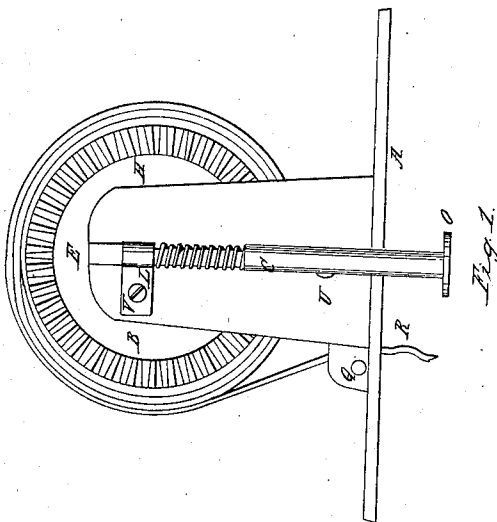


Fig. 1.

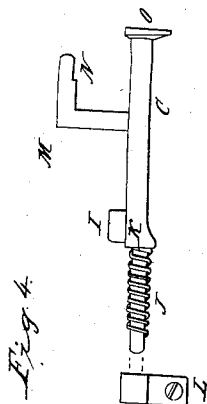


Fig. 4.

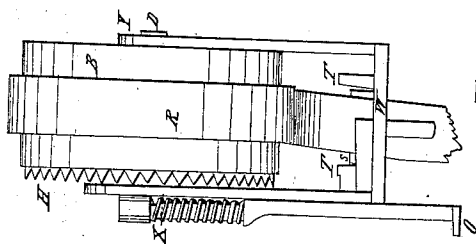


Fig. 2.

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UNITED STATES PATENT OFFICE.

JOSEPH W. BRIGGS, OF CLEVELAND, OHIO, ASSIGNOR TO HIMSELF AND JACOB W. JORALEMON, OF SAME PLACE.

WINDOW-SASH SUPPORTER.

Specification of Letters Patent No. 27,947, dated April 17, 1860.

To all whom it may concern:

Be it known that I, JOSEPH W. BRIGGS, of the city of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and
5 Improved Combined Lock and Sash Balance for Windows; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of
10 reference marked thereon.

The nature of my invention consists in the construction of a combined lock and sash balance, which in its application to the window frame and sash is so perfect, and is
15 attended with so little trouble and expense, that every building may be provided with them. To balance the sash, and securely lock it at any desired point and thereby prevent the sash from being raised or lowered
20 by persons on the outside of the building, without the use of box-frames, weights, cords and pulleys, or racks and pinions, is strongly demanded to supply the wants of the public.

25 In the use of box-frames, weights, cords and pulleys, an extra lock must be provided to lock the sash, and the expense of applying such fixtures to windows is so great that a large majority of the dwellings and other
30 buildings cannot on account of the extra cost be provided with them, and when a coil-spring as a balancing power is used with a rack and pinion, which rack and pinion is provided with a lock by which the sash may
35 be secured at any point, by locking the pinion, which pinion takes effect on the rack which is attached to the sash, the noise produced by the rack and pinion as the sash is raised, or lowered is so annoying as to present a serious objection to the use of such
40 gearing to the windows of many private and public buildings. The care which is necessary to be used in applying cog-gearing to the window frames and sash in order to
45 cause it to work correctly, and the liability of the gearing to get out of order by the shrinking of the lumber used in the construction of window frames and sash, the lumber not being sufficiently seasoned before it is used, often causes the cogs on the
50 rack and pinion to pass without meshing into each other, by the enlargement of the space allowed in the window frame for the

sash, so that when a coiled spring is used as a balancing power, in connection with the
55 rack and pinion, and although a spring catch, or pawl, be used to lock the pinion, and thereby secure the sash, such device is rendered useless, as the sash can be raised or lowered by the cogs on the rack and pinion passing each other, and when the spring
60 catch, or pawl, is let off of the cogs of the pinion, the coil spring will unwind and lose its balancing power. These are the objections used against racks and pinions being
65 used in connection with window frames and sash. In this invention these objections are removed. Instead of a rack and pinion, I use a leather strap to connect the sash with the balancing apparatus, which apparatus is
70 provided with a double acting spring bolt, which bolt secures the power of the coil spring by which the sash is balanced, and also locks the sash, the coil spring, and sash, each being locked independent of the other.
75 This arrangement allows the sash to be imperfectly fitted to the window frame, and if the lock took effect only on the sash, it would not prevent the coil spring from being unwound, and if it locked the coil spring
80 only, it would not secure the sash, as the sash and balancing apparatus are only united by means of a leather strap which strap will not prevent the sash from being raised. By this invention the sash is locked
85 by the lock taking effect in the edge of the sash, and though the lumber shrinks which is used in the construction of the frame and sash, the sash will be securely locked.

When a building is newly painted, and in
90 wet frosty weather, the paint, and the ice, will stick to, and hold the sash so secure, that both hands are required to raise the sash, and I have so arranged and constructed my double acting spring bolt, that the
95 sash and coil spring may each be unlocked, and the bolt secured in an unlocked position, so that both hands may be used to raise the sash, instead of one hand being used to hold the bolt back, and the other only used
100 to raise the sash, and without this device this invention would be very imperfect.

Short springs, or friction rollers may be secured to the sash on the opposite side of the lock, to cause less friction as the sash is
105 raised or lowered.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

Like letters refer to like parts.

5 A, Figure 1, is a metallic frame in which the drum B, and to which the double acting spring bolt, C, Fig. 4, is secured. The drum B is secured to the frame A by means of shaft D, Figs. 2 and 3. This shaft has 10 shoulders formed on each end of it and fits into slots in the frame A as shown at E, Fig. 1, and Y, Fig. 2. On the closed and solid end of drum B a projection X is formed which serves as a hub and forms a 15 bearing for the drum B, on shaft D. A coiled spring F, Fig. 3, is secured within the drum B. The inner end of the coiled spring F is secured to the shaft D, by means of a small stub, which stub is secured to the 20 shaft and passes through a small hole made in the spring. The outer end of the coiled spring F is secured by bolt G, Fig. 3, which bolt is secured at the inner end, to the closed end of drum B, by means of a screw, or by 25 being united. On the closed and outer end of drum B, V shaped teeth H are formed, which teeth assist in forming a lock by which the coil and power of the coiled spring F is secured, and by the power of which 30 coiled spring the sash is balanced. The projection I, on the bolt, C, Fig. 4, takes effect in the V shaped teeth H on the end of drum B, and forms a lock by which the power of the coiled spring F is secured.

35 J, Fig. 4, is a spiral spring. One end of this spring is secured by the shoulder K, on the bolt C, and the other end is held by the socket L, Fig. 4.

The elbow M on bolt, C, Fig. 4, forms a 40 sash lock, and takes effect in the edge of the sash, and by which bolt the sash is supported, when the bolt is in a locked position, which relieves the strap, by which the window sash is attached to the drum B. The 45 shoulder N on the outer end of the elbow M prevents the bolt C from being pushed back by the action of the spiral spring J, when the sash has by any means become so tight in the frame that both hands are required 50 to raise it.

O, Figs. 1, 2, and 4, is a thumb piece on which the thumb is placed and pressed to give action to the bolt, C, when the window sash is to be raised or lowered, by pushing 55 the bolt inward.

P, Fig. 3, is a stub on the drum B, and to which stub one end of a leather strap R, Figs. 1, and 2, is attached. This strap passes through the face plate of the frame A, as shown in Figs. 1, and 2, and over a friction 60 roller S, Fig. 2. The other end of the leather strap R is secured to the sash. The friction roller is secured to the frame A by

a pin Q, Fig. 1, which pin passes through the projections T T, Fig. 2, cast on the inner 65 side of the face plate of the frame A. Slots are formed in the frame A in which the projection I, and elbow, M, on the bolt, C, Fig. 4, moves.

An enlargement of the slot in which the 70 elbow M slides is represented at U, Fig. 1. This slot permits the bolt C to be moved, to cause the shoulder N, on the outer end of elbow M to take effect, by crowding, or pushing, the thumb piece O, down when the bolt 75 C, is in an unlocked position. The bolt, C, Fig. 1, is secured to the frame A at one end by a screw V passing through the socket L into the frame A. The other end of the bolt, C, is secured to the frame A by means 80 of the outer end of elbow M passing through the face plate of the frame A as shown at W, Fig. 2.

The coiled spring is wound up to correspond with the weight of the sash, and one 85 of these machines is required for each sash. The one for the lower sash is placed near the top, and, the one for the upper sash is placed near the bottom of the sash, and each machine is held to the frame by two screws. 90 The strap may be attached to the sash by means of a screw, nail, or stub, and should be secured to the lower edge of the sash. A strip of hoop iron may be secured in the groove in the edge of the sash and under 95 the strap with holes in it a trifle larger than the wire which forms the sash lock, to give strength and additional security to the mode of securing the sash, or holes may be made in the sash and the iron dispensed with. 100 When it is necessary to raise the sash the spring bolt is pushed inward, which unlocks the sash, and also the drum in which the coil spring is secured, and when the spring bolt 105 is let loose the spiral spring will drive the bolt outward and cause the drum, and sash, each to be locked, and if the sash has become so tight by means of being newly painted, or by ice being formed on the sash and frame, or by any means by which both 110 hands may be required to raise the sash, the spring bolt may be pushed in, and a downward motion applied to it, will cause the shoulder on the elbow to hold the bolt back, and both hands may be used to raise 115 the sash, when the bolt may again be let loose and take effect on the drum and sash, and in order to cause the sash lock to operate as perfect as possible, the leather strap passes out from the under side of the drum 120 to the sash. The open end of the drum may be inclosed by a thin metallic substance placed on the shaft.

I do not claim to balance a window sash by means of a coiled spring when said coiled 125 spring is used in connection with a rack and

pinion and the sash being locked by the
action of a spring catch or pawl taking
effect only on the cogs of a pinion; but

5 What I do claim as my improvement and
desire to secure by Letters Patent of the
United States is—

The combination, construction and ar-
rangement of the double acting spring bolt

C, with the frame A drum B coiled spring
F leather strap R and friction roller S sub- 10
stantially as described for the purposes set
forth.

JOSEPH W. BRIGGS.

Witnesses:

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