(No Model.)

J. I. McCARTHY.

SASH BALANCE.

No. 343,190. Patented June 8, 1886.

Fig. 1.

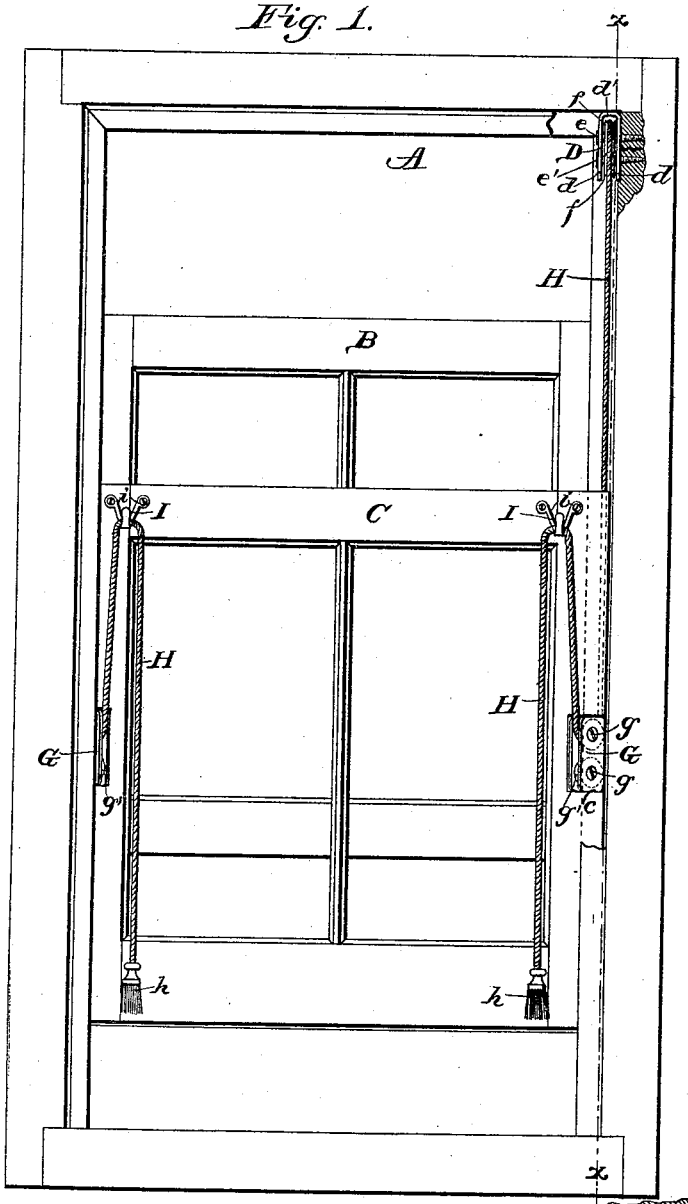


Fig. 2.

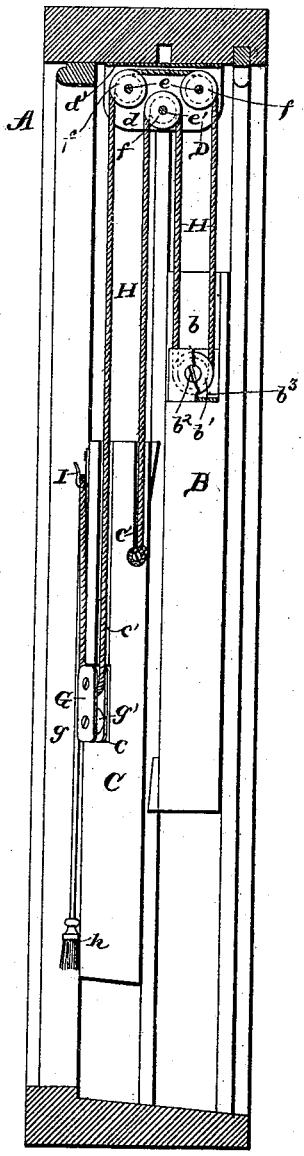
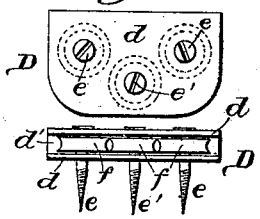


Fig. 3.



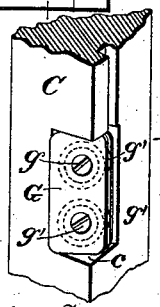


Fig. 4.

Witnesses

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JOHN IRA McCARTHY, OF OLEAN, NEW YORK.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 343,190, dated June 8, 1886.

Application filed February 16, 1886. Serial No. 192,119. (No model.)

To all whom it may concern:

Be it known that I, JOHN IRA McCARTHY, a citizen of the United States, residing at Olean, in the county of Cattaraugus and State of New York, have invented a new and useful Improvement in Sash-Balances, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in sash-balances; and it consists in the peculiar and novel construction and combination of parts, substantially as hereinafter fully set forth, and specifically pointed out in the claim.

The present invention is especially designed as an improvement upon the sash-balance patented to A. B. Hester on June 23, 1868, and numbered 79,118. In this patent a single continuous cord is passed through pulleys on the upper edges or rails of both of the sashes and over pulleys secured to the window frame, all the pulleys being arranged in the middle of the window, and consequently exposed to view. The pulleys on the window-sashes are attached to the upper rails thereof, and the front window-sash carries a pivoted lever that is curved concentric with and bears on the pulley over which one of the free edges of the cord passes, the other end of the cord being attached to the free end of the pivoted lever. This construction is objectionable, from the fact that all of the devices are arranged in the middle of the sash and exposed to view, and they are in the way to obstruct the view from the window, when raising a curtain or other fixtures around the window. Both sashes in this device are suspended centrally—that is to say, the supports therefor are connected to the upper rails at the middle, so that when it has been used upon a sash having a single "light" or pane of glass for some time the upper rail, upon which all the weight and strain comes, is liable to bend and get out of alignment, thus causing the glass to become loose and the said rails to bear against the frame and cause undue friction and wear. The pivoted lever is also objectionable, in that it is necessarily operated each time the sashes are raised or lowered, and it causes undue wear upon the cord and soon rubs it through.

The object of my invention is to overcome the above-named objections, and to provide means whereby the sashes are evenly and uniformly balanced, so that they require but a minimum of power for their successful operation, the device being, furthermore, very cheap and inexpensive of manufacture, and durable and simple in construction.

In the accompanying drawings, Figure 1 is a front elevation, partly in section, of a sash-balance constructed in accordance with my invention. Fig. 2 is a vertical longitudinal sectional view thereof on the line *x x* of Fig. 1. Figs. 3 and 4 are detail views of parts of my invention.

Referring to the drawings, in which like letters of reference indicate corresponding parts in all the figures, A designates the window-frame of the well-known class, and B and C the upper and lower sashes, respectively, of the window.

D designates a bracket, which is made in a single casting, and comprises two parallel plates, *d*, having an intermediate space and connected at their upper edges by a transverse plate, *d'*. One of these castings or brackets is secured to the upper end of the sides of the window-frame at the middle, between the sashes, and these brackets are held in place by screws *e e'*, that pass through properly-disposed openings in the parallel side plates, *d*. A grooved friction-roller, *f*, is mounted on each of these screws *e e'*, the screws *e* and the friction-rollers thereon being arranged at the upper edges and ends of the plates, and the screw *e'* and its roller is arranged between the end rollers and below the plane thereof, as shown in Fig. 3. G designates a similarly-constructed bracket, which is set in a vertical inclined position in one edge of one of the side rails of the lower sash, C, a recessed or cut-away socket or portion, *c*, being provided therefor. One of these brackets is provided in the outer edges of each side rail of the lower sash, and they are secured in place by screws *g*, and on these screws are loosely mounted grooved friction-rollers *g'*, which are arranged one above the other and a sufficient distance apart to allow one end of an operating-cord to pass therethrough. The inner faces of the side rails of the lower sash are grooved longitudinally, as at *c'*, and the similar rails of the upper sash, B, are provided with a wide groove, *b*, and near the lower end of each of these grooves a friction-roller, *b'*, is provided, that is loosely journaled on one of

the screws, b^2, that secures a casting, b^3, flush with the vertical face of the side rail of the sash B.

H designates the operating-cords, one of which is provided for each side of the window, to suspend the sashes at both sides and preserve them in equilibrium. One end of each cord is knotted or provided with a tassel or other ornament, as at h, and it then passes between the grooved rollers g', then up the groove c' to the rollers f on the pins or screws e, and over the same down to the roller b' on the upper sash, B, and then up the window-frame again to the roller f on the pin e', and thence to the other groove, c', in the front lower sash, where it is permanently attached. It will thus be seen that both of the sashes will be suspended at their sides, and that they will counterbalance one another, whereby they can be operated very easily, and they are perfectly hung, so that they will move vertically very steadily and with little or no lateral movement against the window-frame.

I designates hooks, that are secured to the corners of the lower sash, and which are provided with laterally-diverging arms i, having loops at their free ends, through which are passed nails or screws to rigidly secure the device in place.

The operation of my invention is as follows: If both the upper and lower sashes are lowered, and it is desired to raise the upper sash, the ends of the cords H are grasped in one or both hands, and a downward pull is exerted on the cords, which thus elevate the upper sash to its closed position without affecting the lower sash, and when the upper sash is closed the ends of the cords are hooked over and retained by the hooks I at the upper corners of the sash. When the lower sash is to be raised, an upward pull is exerted on the cords, which are elevated above the upper pulley, g', and the cord slides freely over the pulleys on the pins e, e', and b^2 without affecting the upper sash and raises the lower sash, which, when it has been elevated sufficiently, is held in place by securing the free ends of the cords H in the hooks I at the lower corner of the sash C.

I attach especial importance to suspending the sashes at their sides and to the peculiar disposition of the rollers in the brackets D and G and the hooks I, as therein lies the gist of my invention.

I am aware of the patent to J. R. Payson, numbered 18,703, and do not claim the construction therein shown.

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

The combinaton, with the window-frame, of the upper and lower balanced sashes suspended at their sides, a bracket, D, secured to each of the side pieces of the frame and carrying frictional rollers f, arranged as described, a roller, b', mounted in a recessed portion of the upper sash, the brackets G, secured to the lower sash and having two rollers, g', arranged one above the other, and the continuous cords passing over the rollers f, b', and g', and attached at one end to the lower sash, C, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN IRA McCARTHY.

Witnesses:

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W. E. GRISWOLD.