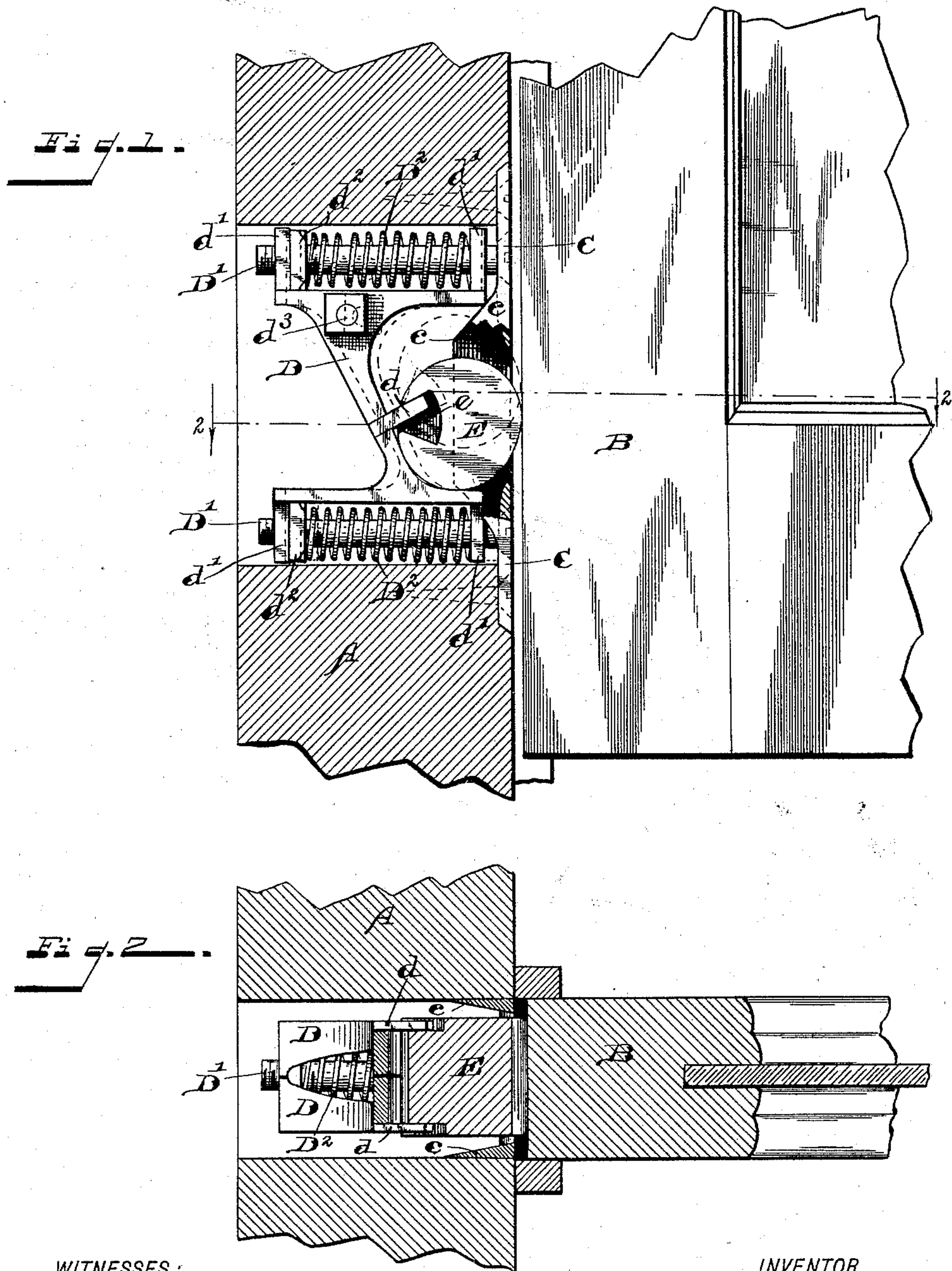


(No Model.)

W. H. DALBEY.
SASH HOLDER.

No. 482,710.

Patented Sept. 13, 1892.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM H. DALBEY, OF INDIANAPOLIS, ASSIGNOR OF ONE-HALF TO
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SASH-HOLDER.

SPECIFICATION forming part of Letters Patent No. 482,710, dated September 13, 1892.

Application filed April 29, 1892. Serial No. 431,148. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DALBEY, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Sash-Balances, of which the following is a specification.

The object of my said invention is to provide an improved construction of frictional sash-balances which embody a roller set into a suitable seat in the frame and adapted to impinge against and hold the sash, whereby a balance of such a character is provided which may be readily and easily adjusted to balance and support sashes of different weights in just the position to which it is adjusted and one which will also act to hold the sash with but slight, if any, return movement, all as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a view of a fragment of a window-frame and window-sash, showing my improved sash-balance in the position in the frame which it occupies when holding said sash, a portion of the supporting plate or frame of said balance being broken out to show the operating parts more clearly, the position which the roller occupies while the sash is being raised being indicated by dotted lines; and Fig. 2 a sectional view looking in the direction indicated by the arrows from the dotted line 2 2 in Fig. 1.

In said drawings the portions marked A represent the window-frame; B, the sash; C, the supporting plate or frame of the balance; D, an adjustable frame attached thereto, and E a cam or friction roller. The frame A and sash B are any ordinary window-frame and window-sash mounted therein.

The supporting plate or frame C is provided with countersunk perforations at its ends, by which it is secured by means of screws in the inner edge of the window-frame, with its face flush therewith. Its central portion is formed open or cut out to permit the roller E to extend through the same against the sash, and rearwardly-extending side wings c are provided throughout the middle portion

of said plate, between which the roller E is contained.

The adjustable frame D consists of an upper and lower horizontal bar connected by a web, which is inclined toward the sash from its upper to its lower end and furnishes a rest and guide for the roller E and serves as the rear wall of the seat in which said roller is mounted. Inwardly-extending lugs *d* are formed on the sides thereof, which engage in notches in the ends of said roller and hold the same in position, as will be presently described. Ears *d'* are formed on the outside corners of said frame D, in which screw-bolts *D'* are mounted, the perforations in said ears being such as to permit said bolts to slide freely therein. Each is provided with a nut *d²* just inside and resting against one ear on each side of said frame, a coiled spring *D²* being interposed between said nut and the other ear around said screw-bolt. Said frame D may be formed in two duplicate parts, as shown, for convenience in casting, and said two parts being secured together by a bolt *d³*.

The roller E is formed somewhat oblong or cam-shaped in cross-section, as shown in Fig. 1, (said figure being made the full size of an ordinary-sized working device,) and is mounted in the seat provided between the rearwardly-projecting wings *c* of the plate C, resting against the inclined rear wall or web of the frame D. In the ends and at the rear side of said roller E fan-shaped notches or recesses *e* are formed, into which the lugs *d* of the frame D extend.

The operation of my said invention is as follows: The sash-balance is set into and secured in position in the window-frame, as shown and described. The roller E is placed in position with its forward face projecting through the central opening in the plate C. The screw-bolts *D'* are then adjusted to secure just that tension of the springs *D²* which will hold the frame D, and through it the roller E, forward with the force required to balance the weight of the sash, which may be determined by experiment or test. The sash being then placed in position will, as will be readily understood, be held at any position desired by the roller E. When it is desired to lift said sash, said roller E rolls

back up the inclined rear wall of its recess, which, together with its oblong shape, acts to withdraw said roller within the recess and immediately relieve the sash of the force which held it and permit its free movement. Immediately upon removing the lifting force from said sash said roller by its own gravity rolls down said incline, which, together with its oblong or cam shape, throws it immediately against said sash and holds it against downward movement after being released. The recesses *e* in the ends of said roller are of sufficient width to permit it to roll to the extent required for the operation, while the lugs *d* therein prevent it from rolling back when the weight of the sash is thrown against it, as might be the case if no engagement were provided between said inclined wall and said roller. By reason of the springs *D*², as will be readily understood, the same balance may be adjusted to a light or heavy sash, so that they will be held with equal security, and but the same amount of force required to pull said sash against their resistance.

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

1. A sash-balance consisting of a supporting plate or frame, an adjustable frame connected therewith, and a friction-roller mounted on an inclined way in said adjustable frame, to which it is connected by means whereby its rotary motion is positively limited, substantially as set forth.

2. In a sash-balance, the combination of the main supporting plate or frame, a frame mounted to slide on guide-pins or parts connected therewith, springs interposed between a bearing-point connected with said main plate and a bearing-point on said adjustable frame, means for adjusting the tension of said springs, and a frictional bearing connected with said adjustable frame and extending through the opening in said main frame to bear against the sash, substantially as set forth.

3. In a sash-balance, the combination of the frame C, the frame D, connected therewith by means of the bolts *D'* and springs *D*², the roller E, mounted against the inclined wall of said frame D and connected therewith by means of the lugs *d*, which engage loosely with recesses in the ends of said roller, substantially as set forth.

4. In a sash-balance, the combination, with the supporting plate and frame, of a roller mounted in a recess therein, said roller being formed oblong or cam-shaped and connected loosely to the frame, whereby its motion is limited and it is held directly against the sash when in use, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 25th day of April, A. D. 1892.

WILLIAM H. DALBEY. [L. S.]

Witnesses:

E. W. BRADFORD,
J. A. WALSH.