(No Model.) 2 Sheets—Sheet 1.

T. JONES.

SASH BALANCE.

No. 380,805. Patented Apr. 10, 1888.

Fig. 1.

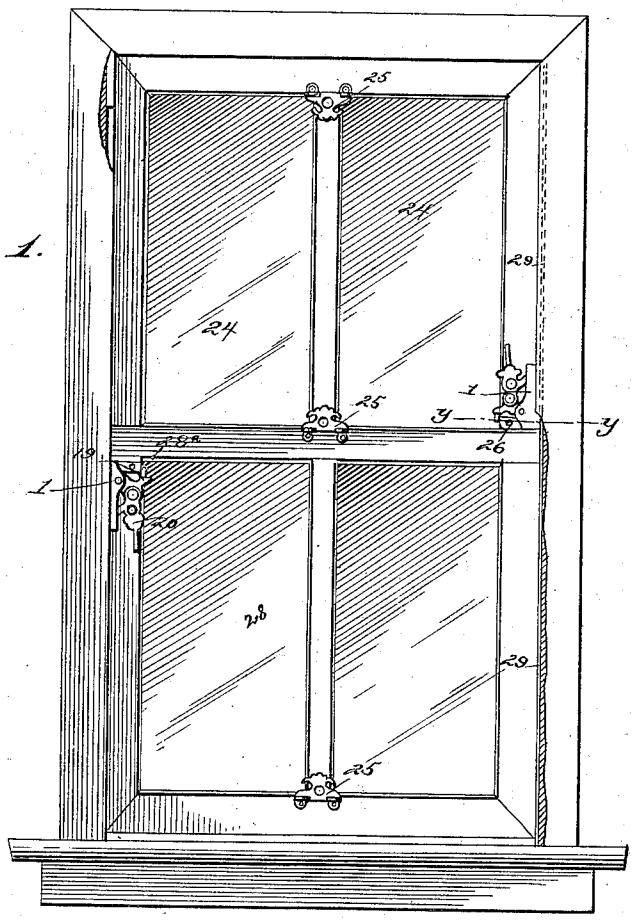
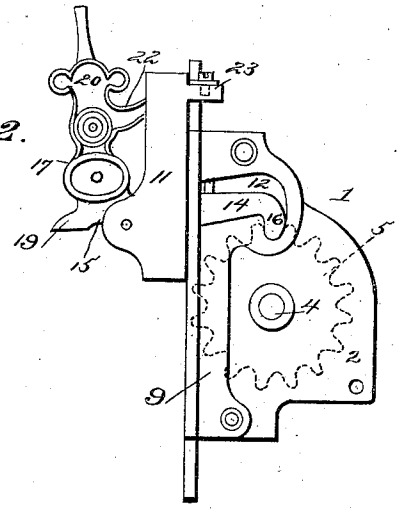


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

T. JONES.

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Fig. 3.

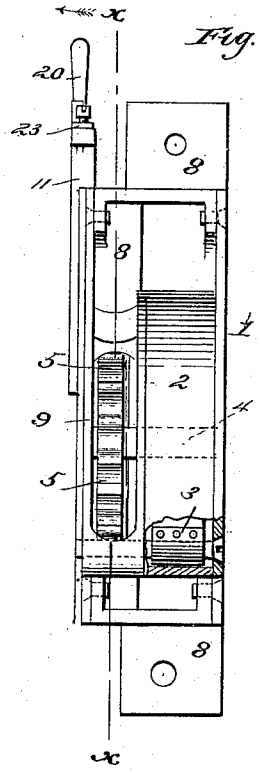


Fig. 4.

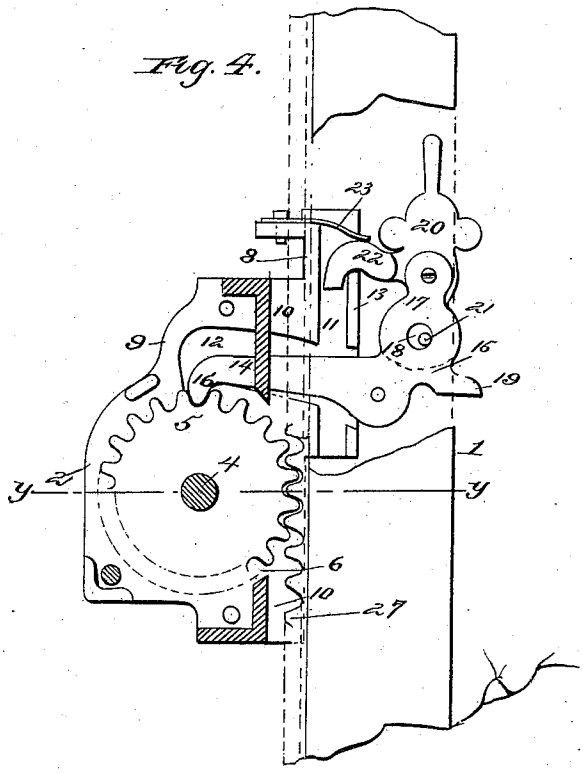
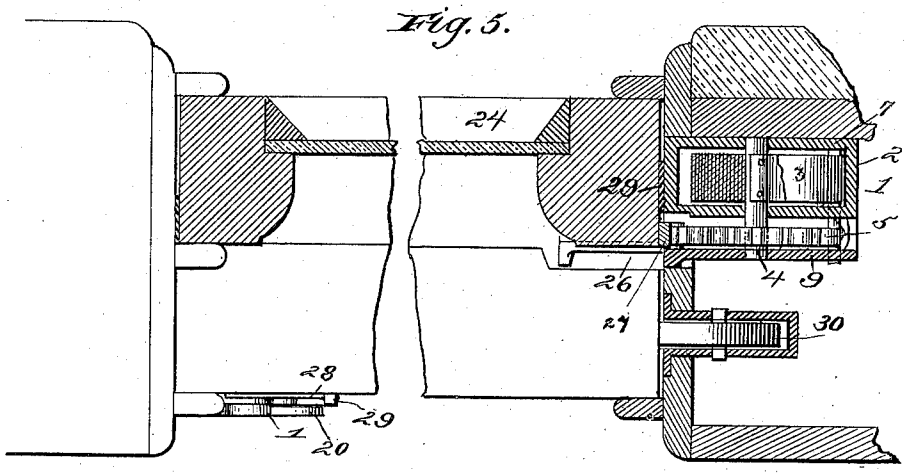


Fig. 5.



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UNITED STATES PATENT OFFICE.

THOMAS JONES, OF DANVILLE, PENNSYLVANIA.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 380,805, dated April 10, 1888.

Application filed November 8, 1887. Serial No. 254,610. (No model.)

To all whom it may concern:

Be it known that I, THOMAS JONES, of Danville, in the county of Montour and State of Pennsylvania, have invented a new and Improved Sash-Balance, of which the following is a full, clear, and exact description.

My invention relates to certain improvements applicable to window-sashes and sash-frames, and has for its object to provide devices whereby a window may be readily opened or closed and retained in any desired position, and whereby the sashes may be so locked in the frame that they cannot be opened from the outside.

The invention consists in the construction and operation of the several parts, as will be hereinafter set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a front elevation of a window having my improvement applied. Fig. 2 is a front elevation of the balance. Fig. 3 is an end view partly broken away. Fig. 4 is a central vertical section partially on line *x x* of Fig. 3, and Fig. 5 is a transverse section partially on line *y y* of Figs. 1 and 4.

The prime object of the invention is to dispense with the use and application of weighted sash-lines and the ordinary sash-fastener.

To this end a frame, 1, is provided, inclosing a box, 2, within which box a spring, 3, of sufficient power to balance the sash is coiled, one end of said spring being secured to the one wall of the box and the other to a revoluble spindle, 4, journaled, respectively, in the sides of the frame 1 and passing through the box. Between the box 2 and one side of the frame 1 is a pinion, 5, cast integral with the spindle or otherwise secured thereto, the said pinion being adapted to project outward through a slot, 6, in the front face of the frame, as illustrated in Fig. 4.

The frame 1 consists, essentially, of two parts—the body 7, made up of the front strip, 8, on one side, and the box 2 and the detachable side piece, 9, attached to the body in any suitable manner and held a distance from the box to accommodate the pinion 5. The front strip, 8, is made to project beyond the frame proper, and is provided in said projecting surface with apertures adapted to receive screws. In the front strip, at its intersection with the detachable side 9, a longitudinal recess or depression, 10, is produced, in which depression the slot 6 is located, through which the pinion extends. The said pinion, however, does not project beyond the face of the front strip, as shown in Fig. 2.

Integral with the upper front edge of the detachable side piece, 9, a lug, 11, is formed, which lug projects forwardly and laterally from the same, and in the side piece, about centrally the lug, a curved slot, 12, is cut, the inner arm of which slot is adapted to register with the spaces intervening the teeth of the pinion.

The lug 11 is provided with a longitudinal rib, 13, which is recessed to admit the passage of an arm, 14, of an angle-lever, 15, pivoted upon the inner face of the lug, which arm or member 14 is fitted to the contour of the slot 12 and adapted to have vertical play therein, and at the extremity of the member 14, upon the inner face, a right-angular projection, 16, is provided, adapted to engage the periphery of the pinion between the teeth, as shown in Fig. 2.

The vertical member 17 of the lever 15 is provided, about centrally the same, with an aperture, 18, and below said aperture with an outwardly-extending horizontal lip, 19.

To the upper outer side of the member 17 a second lever, 20, is centrally pivoted, provided at the lower end and upon the inner face with a pin, 21, entering the aperture 18. The lever 20 is further provided integral with the inner edge near the top with a hook-like arm, 22, adapted to engage the top of the rib 13, upon which arm one end of a spring, 23, is made to bear, the other end being secured to the upper edge of lug 11.

The upper window-sash, 24, is provided centrally the upper rail with a finger-piece, 25, to facilitate lowering the same, and with a metal block, 26, secured to one side rail at the base, which side rail is provided longitudinally the edge at one side the center with a rack, 27, adapted to engage the pinion 5.

The lower sash, 28, is provided centrally at

the top and bottom with a finger-piece, 25, similar to that upon the upper sash, and upon one side piece opposite to the aforesaid side piece of the upper sash with a horizontal block, 28ª, near the top, and in the edge with a horizontal rack placed in similar manner to the rack in the upper sash.

In light windows the sashes are provided with metal binding-strips 29, whereby the said sashes will not wear by contact with the frame 1. In heavy windows a pulley, 30, is pivoted in the frame, as shown in Fig. 5, to facilitate the manipulation of the sash.

In operation, a frame, 1, is inserted in a suitable recess made in the right-hand sashway of the upper sash at a point which will be at the base of the upper sash when raised, and another frame is similarly placed in the left-hand sashway of the lower sash at such a position as to be near the upper portion of the lower sash when said sash is closed, as illustrated in Fig. 1. When it is desirable to raise, for instance, the lower sash, the lever 20 is pulled outward, which angle-lever acting upon the angle-lever 15 causes the member 14 of that lever to disengage from the pinion 5, the said member being held in that position by the arm 22 of lever 20 being held in engagement with the top of the rib 13 by the spring 23. The window can now be easily raised to any desired height. When such height is reached, the lever 20 is thrown inward, which causes the projection 16 upon the lever-arm 14 to enter one of the spaces between the teeth of pinion 5 and hold the window in a fixed position. When the top sash is carried up to a closed position, the block 26, coming in contact with the lip 19 of the angle-lever 15, automatically locks said lever in the pinion, and when the lower sash is closed a like result is accomplished by the block 28ª.

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

1. The combination, with a rack adapted to be secured to the window-sash, of a frame adapted for insertion in the window-frame, provided with a spring-actuated pinion, an angle-lever provided with an arm engaging said pinion, a trip-lever pivoted to said angle-lever and engaging the vertical member of the latter, an arm upon said trip-lever engaging a lug upon the frame, and a spring attached to said lug bearing upon said arm, substantially as shown and described.

2. The combination, with a rack adapted to be secured to the window-sash and a locking-block likewise adapted to be secured to said sash, of a frame adapted for insertion in the window-frame, provided with a spring-actuated pinion, an angle-lever having its horizontal member provided with a projection engaging the pinion, and its vertical member provided with a central aperture and a lip integral with the lower end, a trip-lever pivoted to said angle-lever, provided with a pin entering the aperture of the latter, and an integral curved arm engaging a lug upon the frame, and a spring attached to said lug bearing upon said arm, all arranged to operate as herein set forth.

THOMAS JONES.

Witnesses:
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