C. T. BRITTAIN.
Sash-Balance.

No. 210,401. Patented Dec. 3, 1878.

Fig. 1.

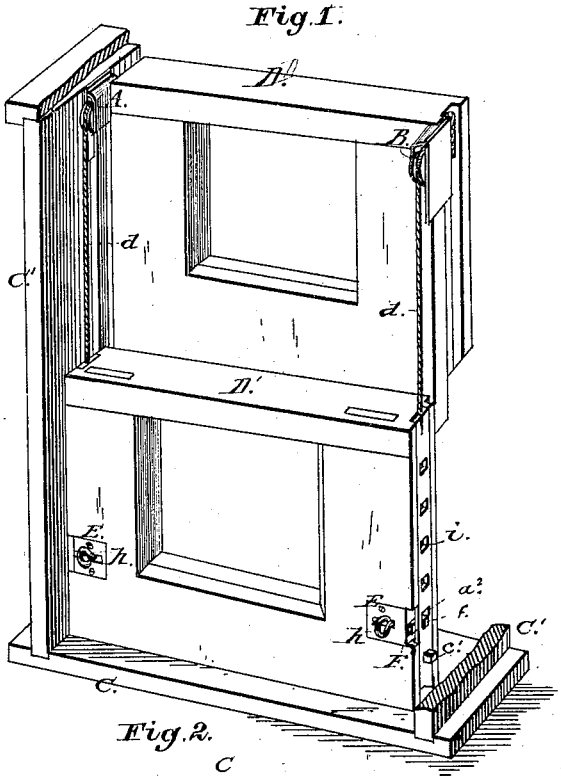


Fig. 2.

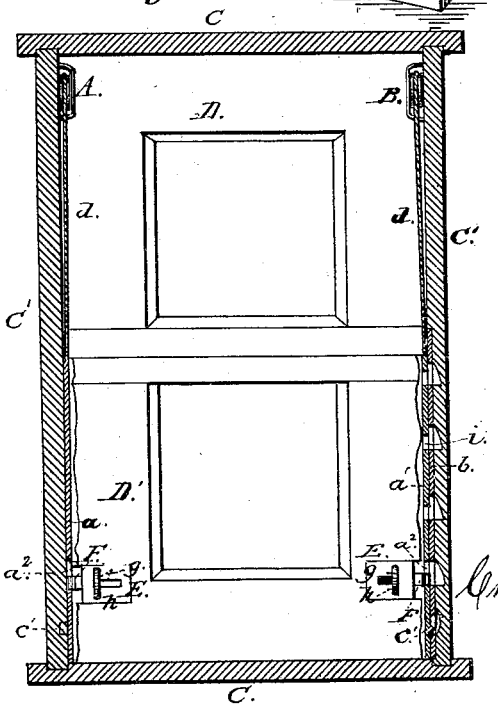


Fig. 3.

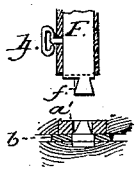
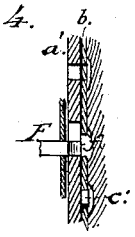


Fig. 4.



Attest:

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Inventor:

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UNITED STATES PATENT OFFICE.

CHARLES T. BRITTAIN, OF BUTLER, PENNSYLVANIA.

IMPROVEMENT IN SASH-BALANCES.

Specification forming part of Letters Patent No. **210,401**, dated December 3, 1878; application filed April 22, 1878.

To all whom it may concern:

Be it known that I, CHARLES THOMAS BRITTAIN, of Butler, in the county of Butler and State of Pennsylvania, have invented a new and useful Improvement for a Sash-Balance, of which the following is a specification:

My invention is an improvement in sash-balances, and has for its object to provide a mechanism by which the sashes of windows may be raised or lowered simultaneously, and locked at given points jointly or separately.

It consists of a set of pulleys secured in the jambs of a window, with cords or ropes passing over them, the ends of which are attached, respectively, to the upper and certain bars which slide in grooves formed in the stiles of the lower sash.

It consists also in notched bolts with heads of a dovetail form, which are pressed out from their cases toward said bars, to which the ropes previously mentioned are attached.

Figure 1 is a perspective view of my device, with one jamb removed or broken away. Fig. 2 is a vertical section, exhibiting the relation of the bolts to the vertical bars. Fig. 3 is a horizontal section through right side of frame, sash, &c. Fig. 4 is a vertical section of bar a^1.

Similar reference-letters denote like parts in all the figures.

Referring to drawings, C is the frame of a window, to the jambs of which are secured pulleys A B, with their axes at the dividing-line between the two sashes. Over these pulleys A B pass ropes or cords, which are fastened to the top of the upper sash, D, and bars $a\,a^1$. The lower sash, D′, has its edges grooved to receive bars or plates $a\,a^1$, which are made of suitable material, preferably metal, and pierced with rectangular openings *i*.

The number of openings in the bar a^1 is limited only by the number of positions that it may be desirable to rest the window at in raising or lowering the same. The plate *a* has but one opening, which is precisely like the lowest one in the plate a^1. The lower opening, a^2, in plate a^1 is elongated, and the lower half of it dovetailed, for a purpose hereinafter to be explained.

Near the lower end of the bar a^1 is a stud, c', which projects outward from said bar toward a plate, *b*, pierced with openings of a shape to suit the stud c', into which it is to fit. Plate *a* is provided with a similar stud. The plate *b* is secured permanently to the jamb C′ of the window. Opposite to the openings in this plate *b* are notches formed in the jamb C′ of the window-frame. In mortises formed in either side of sash D′ are boxes E, forming cases to the bolts F. These bolts have cut from their ends angular notches to form the heads *f*, which are dovetailed to fit the dovetail slots in the opening a^2. Behind the bolts F are springs, which throw said bolts toward the window-jambs C′ C′. Keys *g* are fixed in bolts F, and move with them in slots *h* in the front plates of the boxes E.

Having thus described the various parts composing my invention in their relative positions, their operation may be given as follows: The lower sash being down and the upper one up, the bolt-head *f*, which has a length equal to the thickness of the plate a^1 only, rests with its shoulder against the inner face of plate a^1, and, being seated in the dovetail opening in the lower slot, a^2, it cannot be withdrawn until the sash is slightly lifted to clear the dovetail. When the bolt-head clears the dovetail it is withdrawn until stopped by the limit of the slot *h*. The lower sash may now be lifted independently of upper one, as the bolt will be entirely clear of plate or bar a^1.

To lift the lower sash and lower the upper simultaneously, the force must be applied to the lower sash when the bolt is withdrawn.

The dovetail head of the bolt draws the bar a^1 with it until the stud c' clears the opening in the plate *b*. The bar a^1 moves upward with the lower sash, and the cord *d* allows the upper sash to move downward by its own weight until stopped by the release of the bolt at the desired point. When the bolt is released the dovetail end falls into its corresponding slot and carries back the plate a^1 to secure the sash by the stud c' entering the slot opposite to it, where both sashes are held. By lifting the lower sash until the dovetail is again cleared, the bolt-head may be withdrawn entirely out of plate a^1, when the sash D′ may be lowered independently of the upper, which may remain fixed.

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

1. The plates *a* a^1, having studs *c'*, in combination with plate *b*, or its equivalent, provided with openings to receive stud *c'*, as and for the purpose set forth.

2. The sash D', in combination with bars *a* a^1 and bolt F, incased in box E, as and for the purpose set forth.

3. In combination with a window-frame provided with plate *b*, the pulleys A B, cords *d*, sashes D D', bars *a* a^1, provided with studs *c'* and openings *i* a^2, and bolts F, provided with dovetailed heads *f*, all arranged and operating as described, and for the purpose set forth.

CHARLES THOMAS BRITTAIN.

Witnesses:

S. B. KINSER,

J. F. BRITTAIN.