(No Model.)

J. W. LYONS.

SASH BALANCE.

No. 278,348. Patented May 29, 1883.

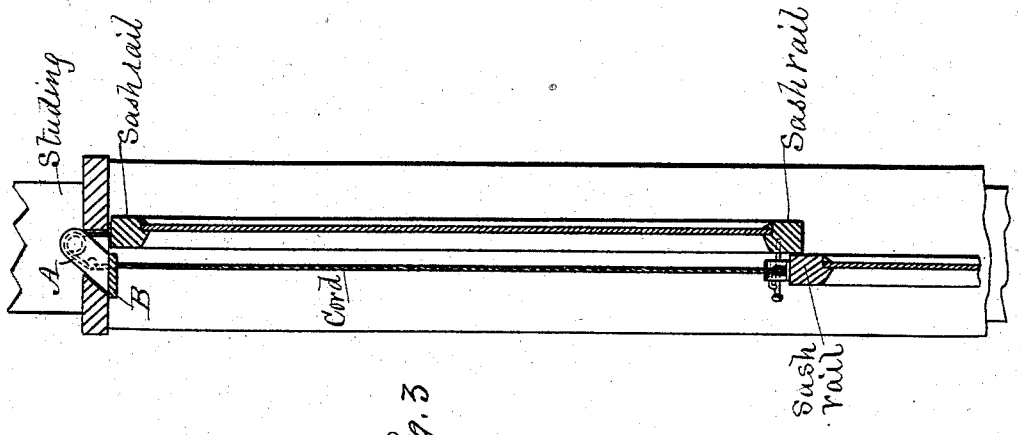

Fig. 3

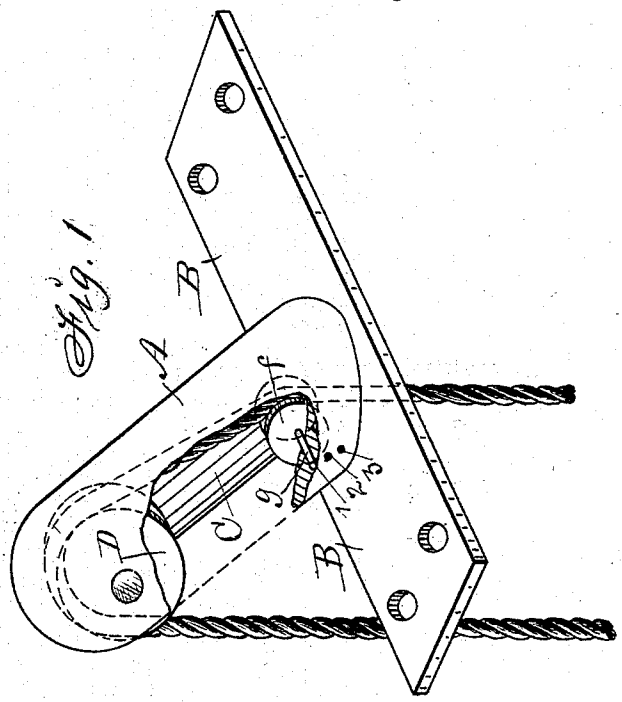

Fig. 1

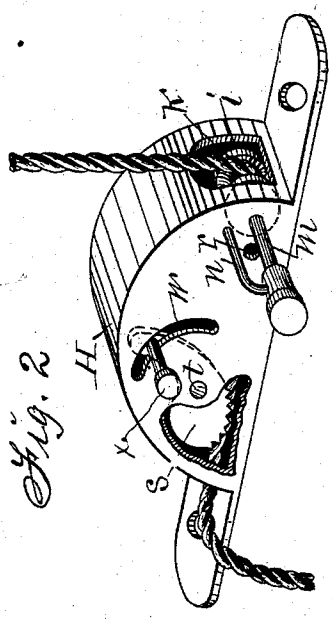

Fig. 2

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UNITED STATES PATENT OFFICE.

JAMES W. LYONS, OF DES MOINES, IOWA, ASSIGNOR OF ONE-THIRD TO D. B. LYONS, OF SAME PLACE.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 278,248, dated May 29, 1883.

Application filed February 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. LYONS, of Des Moines, in the county of Polk and State of Iowa, have invented an Improved Window-Sash Balance and Lock, of which the following is a specification.

The object of my invention is to save time, labor, and expense in applying pulleys and cords and locking devices to windows, and to facilitate the raising and lowering and locking of sashes.

It consists, first, in a pulley-bearer adapted to be fitted and fixed in the top of a frame by simply forming an inclined bore to receive it, in such a manner that it can be fastened by common screws to direct a cord relative to the two sashes; second, in combining a pulley, a locking-bolt, and a cord-holding eccentric in a case adapted to be fixed on top of a sash by means of common screws, all as hereinafter fully set forth.

Figure 1 of the accompanying drawings is a perspective view of my pulley-bearer. Fig. 2 is a perspective view of the case, in which a cord-directing pulley, a sash-locking bolt, and a cord-holding eccentric are combined. (Parts are broken away in Figs. 1 and 2 to show interior parts of the devices.) Fig. 3 is a longitudinal section of a window, showing my devices applied and combined with a cord and two movable sashes. Jointly considered, these figures clearly illustrate the construction and operation of my complete invention.

A represents the body of my pulley-bearer, preferably made complete in one piece by casting in a mold. It has an inclined position relative to flanges or perforated ears B, formed integral with its lower end, and a slot, C, extending upward from its bottom, that is open on its short and rear side for the admission of pulleys and the passage of a sash-cord.

D is a cord-pulley, of common form and size, mounted in the top portion of the slot C, and *f* is a small pulley mounted in the lower portion of the same slot in such a manner that it can readily be adjusted relative to the upper pulley, D, and the thickness of the window-sashes by simply moving the pin *g* from one of the series of perforations and bearings 1 2 3 to another.

H is a case, of semicircular shape, that has perforated ears extending at right angles from its opposite ends, to adapt it to be fastened upon the top of a sash by means of screws, and is open at its bottom for the admission of a cord-directing pulley and an eccentric cord-holder. It is preferably cast complete in one piece in a mold, but may be formed in sections. *i i* are openings at its ends for the passage of a cord.

k is a cord-directing pulley placed within the case and secured by means of a bolt, *m*, that extends through perforations in the sides of the case, and also through the pulley *k*. A coiled spring, (not shown,) placed upon the bolt *m* and within the pulley, in its normal condition presses against a shoulder formed on the bolt and forces the bolt through the case to enter a perforation formed in the vertical center rail of the sash, as clearly shown in Fig. 3.

n is a stop or pin fixed to the head of the bolt to engage the outside face of the case, and thereby retain the bolt away from the sash-rail, as required in raising and lowering the sashes.

r is a perforation in the side of the case. By simply turning the bolt in its bearings to allow the pin *n* to enter the perforation *r*, the force of the spring upon the bolt will project the bolt through the case as required to engage the rail of the upper sash and lock the window.

s is an eccentric pivoted in the opposite end of the case from the cord-directing pulley and locking-bolt by means of a screw or rivet, *t*.

w is a curved slot in the side of the case, and in concentric position with the pivotal point *t* of the eccentric *s*.

x is a handle that projects through the slot *w*, and is fixed to the top end of the eccentric *s* in such a manner that a downward pressure upon the free end of the handle will lift the eccentric and disengage it from the sash-cord that extends through the case and under the eccentric.

y is a sash-cord fixed to the top and center of the upper sash in a window, and from thence passed upward over the pulleys *f* and D in my pulley-bearer, fixed in the top and center of the window-frame, and from thence down and through the case H, fixed on top of the lower sash and under the pulley *k* and eccentric *s* in that case, as required to connect and balance the two sashes in the window-frame.

To raise the lower sash without lowering the upper one I simply pull on the free end of the cord and shorten it by pulling it through the case H. As I relax my hold the eccentric will engage the cord and prevent it from going back. To lower the upper sash without raising the lower sash I simply lift the eccentric from the cord by means of the projecting handle, and allow the cord to slip and lengthen between the two sashes. To simultaneously raise the lower sash and let down the upper I simply disturb the balance of the two suspended sashes by applying a slight lifting force to the lower sash.

I am aware that pulleys have been fixed in the top and center of a window-frame to balance two sashes, and that pulley-bearers have been placed in an inclined position at the sides of a window-frame to balance a sash by means of weights; but forming a pulley-bearer adapted to be inserted in an inclined bore in the top of a window-frame in the manner specified is novel and greatly advantageous in a sash-balance.

I claim as my invention—

1. The inclined pulley-bearer A, having a flange or flanges to engage the surface of a window-frame, a slot, C, and pulleys *f* and D, substantially as shown and described, for the purposes specified.

2. The sash-cord holder and window-lock, composed of a semicircular case having perforated ears or flanges adapting it to be fixed on a flat surface, and openings in its ends for the passage of a cord, the pulley *k*, a spring-bolt, *m*, and an eccentric, *s*, substantially as shown and described, for the purposes specified.

3. In a window-sash balance, the combination of the pulley-bearer A B C, having pulleys D and *f*, the case H, having openings at its ends for the passage of a cord, a pulley, *r*, bolt *m*, and eccentric *s*, a sash-cord, and two movable sashes, substantially as shown and described, to operate in the manner set forth, for the purposes specified.

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