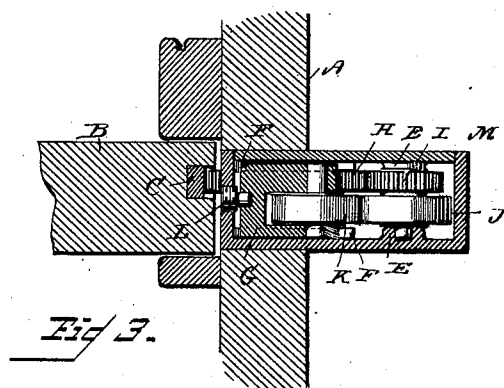
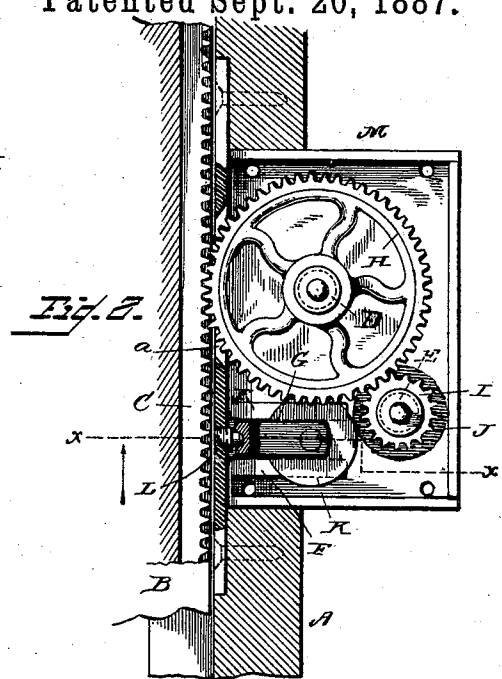
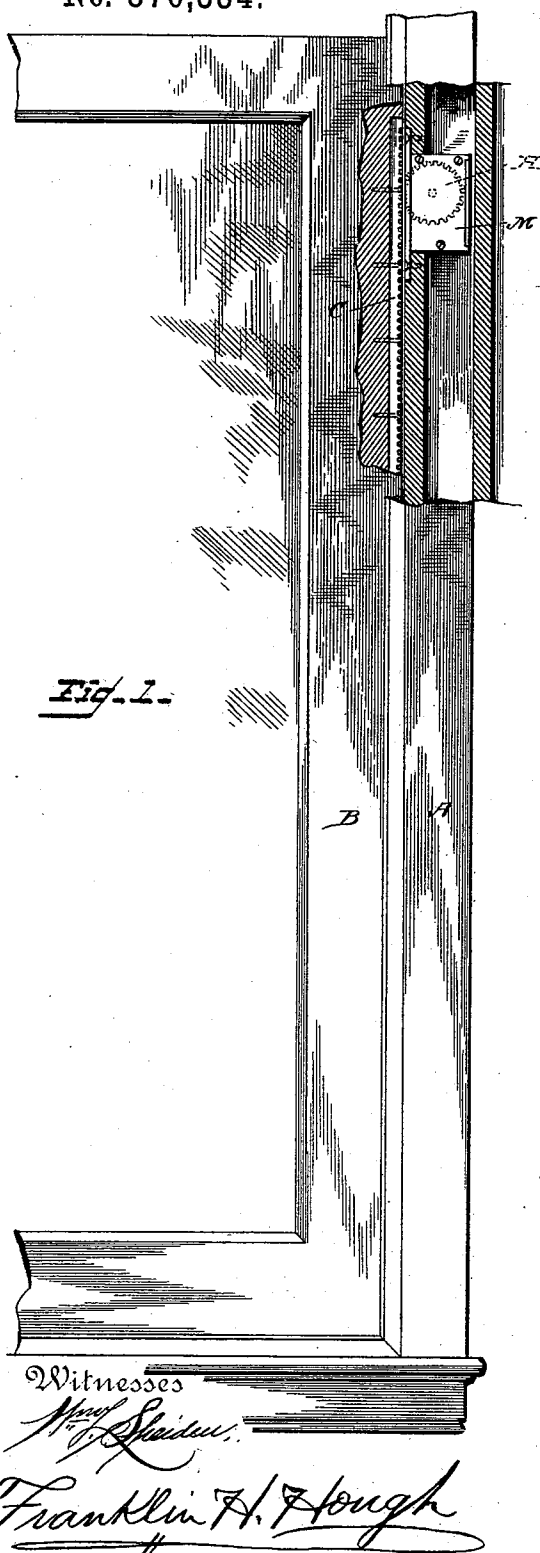


(No Model.)

F. R. HUNT.
SASH BALANCE.

No. 370,334.

Patented Sept. 20, 1887.



Witnesses
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Franklin H. F. Hough

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UNITED STATES PATENT OFFICE.

FREDERIC R. HUNT, OF LEAVENWORTH, KANSAS.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 370,334, dated September 20, 1887.

Application filed June 29, 1887. Serial No. 242,833. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC R. HUNT, a citizen of the United States, residing at Leavenworth, in the county of Leavenworth and State of Kansas, have invented certain new and useful Improvements in Sash-Holders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in sash-holders, and has for its object to construct a holder in which no springs or weights are necessary, and in which the parts will operate by friction without the aid of any projecting part to work by hand to hold the window-sash at any desired height.

The invention will be hereinafter particularly described, and then specifically defined by the claims, reference being had to the drawings forming a part hereof, and in which—

Figure 1 is a front elevation of a portion of the lower sash and its frame, with a part of each broken away to show the application of the holder. Fig. 2 is a view of the holder as applied in Fig. 1, but on an enlarged scale and having one side of the holder-casing removed. Fig. 3 is a cross-section on the line *x x* of Fig. 2, looking from the bottom, as indicated by arrow in Fig. 2.

In the drawings, the letter A designates a portion of the window-frame, and B the window-sash. In the edge of the window-sash is set a rack, C, which preferably extends from the top or near the top to the bottom of the sash.

The window-frame is recessed, and in the recess is set the casing M, which contains the moving parts of the holder. The casing may be of any suitable form and construction to hold the operating parts. The preferable construction, however, is to cast the sides with the sockets D and E to receive the shaft of the main cog-wheel and one of the friction rollers or wheels, and with the ribs F, which, together with the space between them, form a way in which the frame G of one of the friction roll-

ers or wheels may be moved back and forth. These sockets and ribs will of course be duplicated, so that the opposite sides of the casing will be provided with them and the bearings of the several parts be formed thereby.

The main cog-wheel H is journaled so that a portion of its periphery projects through an opening, *a*, in the casing, in order that it may engage with the teeth of the rack C. Within the casing the teeth of the cog-wheel mesh with the teeth of a pinion, I, on the shaft of the friction roller or wheel J. This pinion and the friction roller or wheel may be formed in any suitable manner, so that one will turn with the other—that is, the pinion may be cast or otherwise secured to the side of the roller or wheel, or the two may be keyed or otherwise secured to the shaft, or otherwise formed, as may occur to the mechanic, so that they will turn together.

The friction roller or wheel J bears against a second friction roller or wheel, K, and the friction between the two rollers or wheels is such as to hold the sash at any desired adjustment, and yet when additional weight or power is applied to the sash to overcome the friction the sash will be raised or lowered, as it may be moved up or down. In order that the friction may be proportioned to the weight of the sash, or that the latter may require more or less power to move it, one of the rollers or wheels—say the wheel K—is journaled in a movable bearing, which may consist of a frame, G, which, as previously stated, is guided and moves in ways formed by the ribs F. This roller or wheel K is moved to or from the roller or wheel J by an adjusting or set screw, L, which passes through the front face of the casing and bears against or enters the frame, so that when screwed up it moves the roller or wheel toward the other friction roller or wheel to increase the friction, and when unscrewed permits the one roller or wheel to be moved from the other, so that the friction is lessened.

The friction rollers or wheels are preferably made of brass, but may be made of other metal or suitable material, and so may any of the parts be made of any suitable material.

The parts may be separately cast or formed, and the rollers and wheels can be readily and easily adjusted to their positions in the cas-

ing, and when the removable side of the casing is put in place and fastened by any desired number of screws the parts are held securely in place in operative positions. It will be observed that no springs are necessary, nor any projecting finger-piece, to render any of the parts operative, and that the sash is held to its adjustment by the friction between the two friction rollers or wheels, which can be readily regulated to meet the circumstances or emergency of any conditions. The casing is readily applied and concealed within the window-frame, and can be applied to windows already in place, as well as those that have not yet been set in place. The parts also are few, and, besides being inexpensive, are not at all liable to get out of repair, and can be applied or placed in position by comparatively unskilled persons, and any wear on the friction rollers or wheels can of course be taken up by the adjusting-screw. The construction also permits the sash to be held from a fraction to any number of inches from the window-sill.

Only one holder is illustrated as applied to the window; but one on the other side will be applied in the same way. While I do not limit myself to any point of application of the holder, still it is deemed best to apply it to the frame toward the upper end of the sash at such point that the sash can be applied and lifted above the point of application of the wheel-casing before the casing is put in place, as shown in the drawings.

What is regarded as the best and simplest form of the invention has been illustrated and described; but it is not intended that the invention should be limited to all the details of

construction, nor to the arrangement of the parts shown, as it is obvious that changes might be made therein and the substance of the invention be employed.

Having described my invention and set forth its merits, what I claim is—

1. A sash-holder composed of a cog-wheel to engage with a rack, a frictional roller or wheel in contact with a frictional bearing-surface, and a pinion intermediate of said frictional roller and gearing with said cog-wheel, said frictional roller holding said cog-wheel stationary until the friction is overcome by power applied to the cog-wheel, substantially as described.

2. A sash-holder composed of a cog-wheel to engage with a rack, a frictional roller or wheel in contact with a frictional bearing-surface, a pinion intermediate of said frictional roller and gearing with the cog-wheel, and means for regulating the frictional contact of said roller with the bearing-surface, substantially as described.

3. A sash-holder composed of the cog-wheel, frictional rollers or wheels in contact with each other, a pinion intermediate of said rollers and gearing with the cog-wheel, and adjusting means for moving one roller to or from the other to regulate the friction between the rollers, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERIC R. HUNT.

Witnesses:

WM. G. HENDERSON.

W. C. DUVALL.