

H. L. CRAIG.
SASH BALANCE.

Patented Feb. 14, 1893.



UNITED STATES PATENT OFFICE.

HIRAM L. CRAIG, OF WAYNE, INDIANA.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 491,639, dated February 14, 1893.

Application filed July 12, 1892. Serial No. 439,747. (No model.)

To all whom it may concern:

Be it known that I, HIRAM L. CRAIG, a citizen of the United States, residing at Wayne township, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Sash-Fasteners, of which the following is a specification.

The object of my said invention is to provide means whereby the upper and lower sashes of a window may be adjustably secured together, so that ventilation may be provided at the top of the window, or at the bottom, or at both places, as may be desired. Said invention will be first fully described and then pointed out in the claims.

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 front elevation of one side of a window provided with attachments embodying my said invention; Fig. 2 a vertical sectional view of the same on the dotted line 2 2 in Fig. 1; Fig. 3 a fragmentary perspective view on an enlarged scale; Fig. 4 a detail sectional view similar to a portion of Fig. 2, but on an enlarged scale, and Fig. 5 a transverse sectional view looking downwardly from the dotted line 5 5 in Figs. 2 and 4.

In said drawings the portions marked A represent the window frame; B the lower sash; C the upper sash; D a rack-bar secured to the upper sash; E a toothed wheel or pinion mounted in bearings on the lower sash; F a detent by which said pinion is governed; G a lock for said detent, and H a belaying pin to which to secure the pull-cord of said lock.

The frame A and sashes B and C are or may be of any ordinary or desired construction.

The rack-bar D is secured to the upper sash C. It may be of an ordinary form, but I prefer to make it by forming a series of rectangular holes in a flat plate, the cross-bars dividing which serve as the cogs, and plowing a groove in the wood of the sash underneath to receive the points of the teeth of the pinion which engages therewith. By this means a much neater appearing structure is produced, as there are no projections from the surface, and as it is equally as effective for the purpose.

The wheel E is an ordinary toothed wheel

or pinion, and is mounted on an axle *e* running in appropriate bearings, preferably in a housing E' which surrounds it, and which housing is secured to the lower sash B. It extends through a mortise in said sash, and engages with the rack-bar D on the upper sash C. As the sashes are moved in relation to each other, this pinion of course turns on its axis, and is in engagement with the rack-bar at varying points.

The detent F is fulcrumed in the housing at *f*, and one end is provided with teeth which engage with the adjacent portion of the pinion E, and is thus adapted to hold said pinion from movement when in engagement therewith. Its other end extends down and serves as a handle by which the detent can be forced out of engagement, thus permitting the sashes to move. Its lower end is formed, as will be presently described, to be securely locked and held by a movable lock in locked position.

The lock G for the detent is mounted also in the housing E', and is adapted to slide therein. It is operated to move into engagement with the detent by a spring G', and may be withdrawn from said engagement by any means, but preferably by a cord or chain *g* connected thereto. Its upper end is preferably wedge-shaped, as shown, so that when in its normal position, underneath the handle end of the detent, it holds said detent tightly against the pinion, and prevents any rattling of the device. It is flattened for a short distance on its outer surface, and the handle end of the detent also extends down vertically for a corresponding distance, so that there shall be a square bearing against said lock, thus insuring that no amount of pressure which can be put upon the parts shall produce any sliding on the inclined surfaces, which might loosen and release the action of the device.

An ordinary belaying pin H is provided at a point on the sash below the lock G, to which the cord attached thereto may be secured when pulled down, thus holding said lock out of contact with the detent, and permitting the same to fall back so that there shall be a free movement between the sashes.

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

1. The combination, with the upper and lower sashes of a window, of a rack-bar secured to one, a pinion secured to the other, and a detent for said pinion by which it may be locked in place.
2. The combination with the upper and lower sashes of a window, of a fastening device, consisting of a rack-bar secured to one sash, a pinion secured to the other, and a pivoted or fulcrumed detent having a sliding lock whereby it is secured in locked position.
3. The combination with a rack and pinion forming part of a sash fastener, of a detent for said pinion having an inclined surface, and a spring-operated sliding lock having a similarly inclined surface, whereby the parts are held together, and rattling prevented, substantially as set forth.
4. The combination with a rack and pinion forming part of a sash fastener, of a detent having an inclined and a straight surface, and a sliding lock for locking the same having corresponding surfaces, whereby the detent

is first forced to position, and then securely held, substantially as shown and described. 25

5. The combination with a rack and pinion forming part of a sash fastener, of a detent, a sliding lock for holding the same, a spring whereby said sliding lock is held into contact with said detent, and a pull by which it is withdrawn from said contact, substantially as set forth. 30

6. The combination, in a sash fastener, of a rack, a pinion, a detent, a sliding lock, a spring for operating the same, a cord whereby said sliding lock may be withdrawn from contact, and a belaying pin or fastener to which said cord may be attached, substantially as shown and described. 35

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 9th day of July, A. D. 1892. 40

HIRAM L. CRAIG. [L. S.]

Witnesses:

CHESTER BRADFORD,
J. A. WALSH.