No. 630,960. Patented Aug. 15, 1899.

J. W. WILSON.

SASH FASTENER.

(Application filed Apr. 5, 1899.)

(No Model.)

Fig. 1.

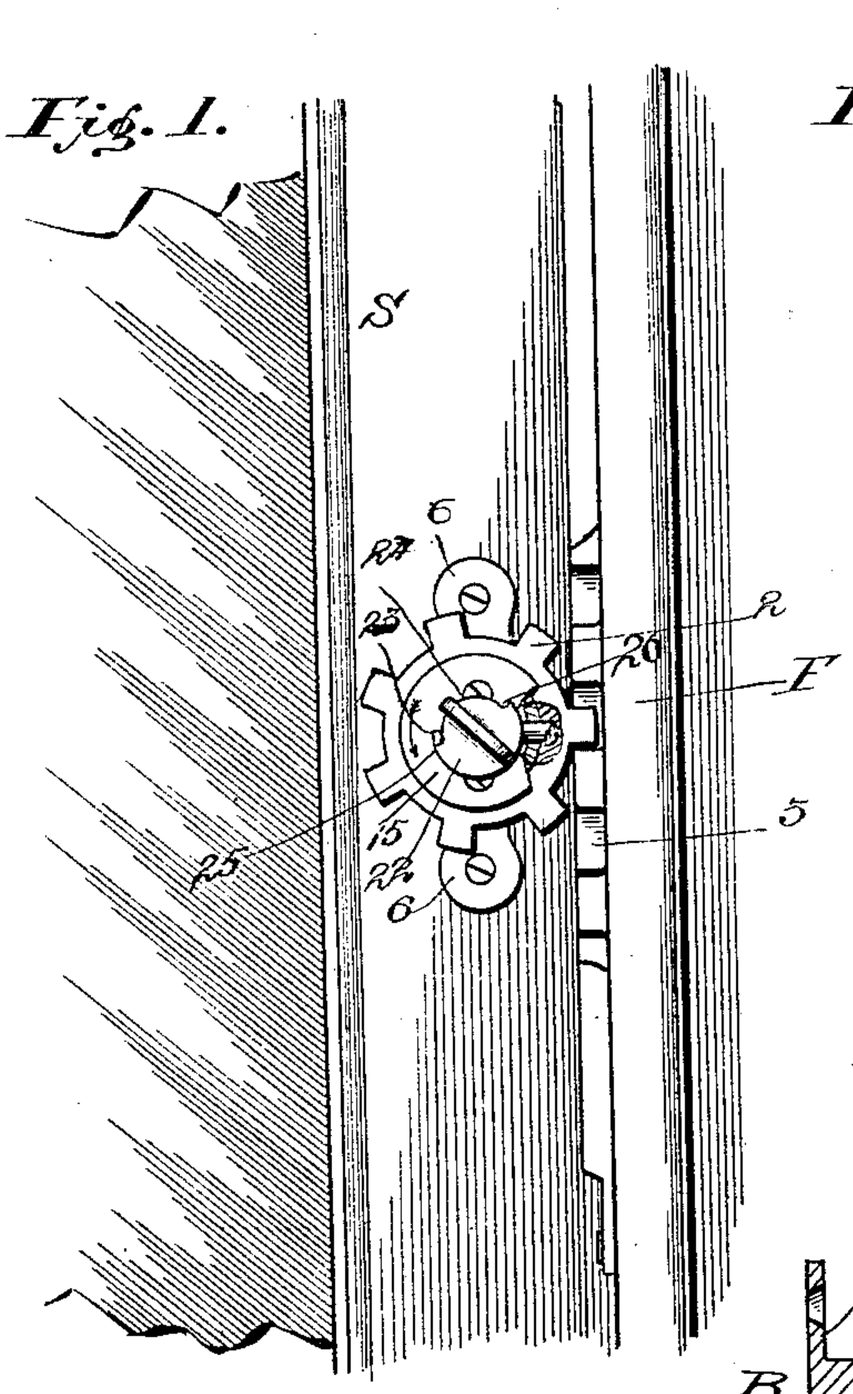


Fig. 2.

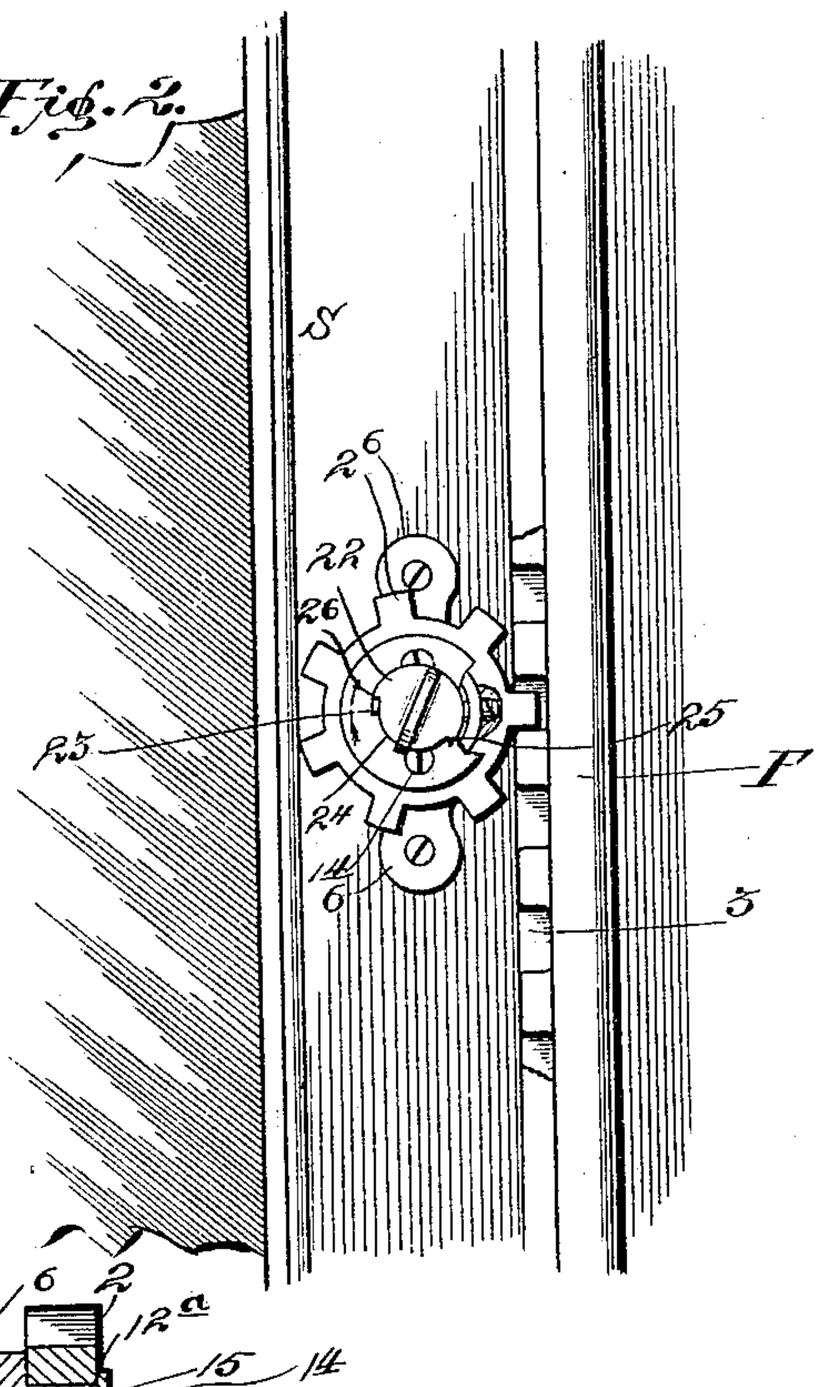


Fig. 7.

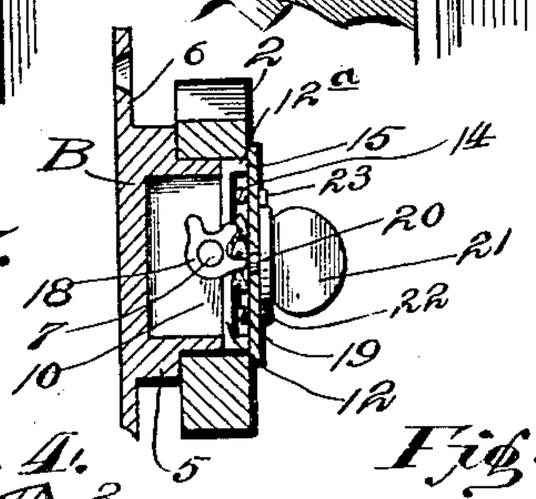


Fig. 5.

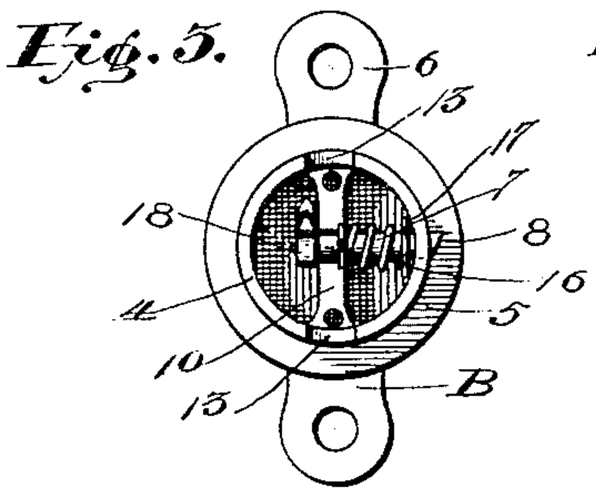


Fig. 4.

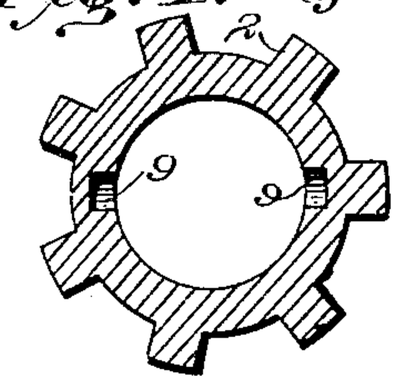


Fig. 5.

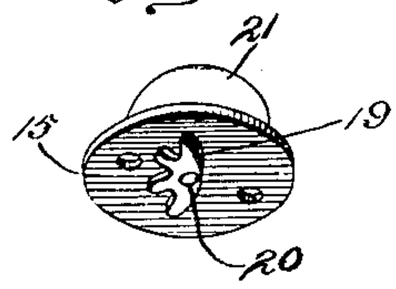
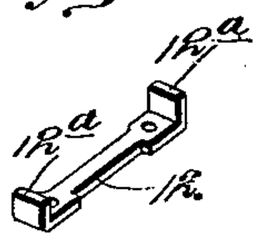


Fig. 6.



Witnesses
Clarence H. Walker.
Keith Luthenans

J. W. Wilson. Inventor
By his Attorneys.
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN WILLIAM WILSON, OF POCAHONTAS, VIRGINIA.

SASH-FASTENER.

SPECIFICATION forming part of Letters Patent No. 630,960, dated August 15, 1899.

Application filed April 5, 1899. Serial No. 711,813. (No model.)

To all whom it may concern:

Be it known that I, JOHN WILLIAM WILSON, a citizen of the United States, residing at Pocahontas, in the county of Tazewell and State of Virginia, have invented a new and useful Sash-Fastener, of which the following is a specification.

This invention relates to sash-fasteners; and the object is to provide an efficient and easily-operable device of this character involving an automatically-operative bolt which is adapted to lock the sash in its lowermost or in its uppermost positions or to maintain the same at a desired place between these two extremes.

The device involves in its construction a rack and pinion connected with the window and its casing, a hollow stud for rotatively supporting the pinion, a bolt supported by the stud for reciprocation and adapted to project into seats in the pinion and having a beveled end, and means for turning the bolt to permit the release of the window-sash, so that the latter can be raised or lowered, and the locking-bolt is preferably spring-actuated and is operated by intermeshing gears connected, respectively, to the bolt and to a thumb-piece rotatively supported by a cap or cover for the hollow stud that supports the pinion, and means is provided for limiting the movement of the thumb-piece, thereby to indicate positively the release of the sash when the same is up or down.

With these ends in view the invention consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is an elevation of a portion of a window sash and frame having the invention applied thereto, parts being broken away to illustrate the operation of the fastener and the latter adjusted to prevent an upward movement of the window-sash. Fig. 2 is a similar view illustrating the fastener adjusted to permit of an upward movement of the window-sash. Fig. 3 is a face view of the housing or casing having its cover removed. Fig. 4 is a detail sectional view of the pinion. Fig. 5 is a detail perspective view of the means for adjusting the locking-bolt. Fig. 6 is a detail perspective view of the plate or bar for holding the locking-bolt in position. Fig. 7 is a vertical longitudinal sectional view of the device.

The same letters and numerals of reference are used to designate like and corresponding parts in each of the several figures of the drawings.

Referring to the accompanying drawings, B designates an attaching-plate having oppositely-disposed lugs or ears 6, adapted to receive suitable fastenings whereby the device may be mounted upon one of the side rails of a window-sash. Intermediate of its ends this attaching-plate is provided with a hollow outwardly-extending casing or housing 5, having its outer end reduced in thickness, as at 4, to provide a hollow stud upon which the pinion 2 is adapted to be rotatively mounted. Upon the face of the adjacent stile F of the window-frame there is provided a suitable rack 3, with which the teeth of the pinion 2 are adapted to register during the vertical movement of the sash, and the pinion is adapted to be locked against rotation, whereby the sash may be held in a predetermined position.

Housed within the casing and the hollow stud is a transversely-disposed locking-bolt 7, having its outer end beveled, as at 8, and adapted to be moved longitudinally through a suitable opening provided in the hollow stud 4, whereby the beveled end 8 of the locking-bolt may be engaged with suitable seats or pockets 9, provided in the inner face of the hub of the pinion 2, whereby the latter may be locked. Located within the casing 5 and projecting outward from the back thereof is an integral web 10, which is adapted to form a bearing for the inner end of the locking-bolt 7, and provided upon the inner extremity of the latter is a sector 18, arranged upon one side of the web 10, opposite the beveled end of the bolt. A suitable transverse stop-shoulder 17 is provided upon the locking-bolt within the hollow stud 4, and encircling the bolt between said stop-shoulder and the web 10 is a coiled spring 16, adapted to

normally hold the locking-bolt in its extended position, with the beveled end 8 projecting exteriorly of the stud 4. It will be noted that this stop 17 engages the inner wall of the hollow stud 4 and prevents the locking-bolt from being projected too far beyond the exterior of the hollow stud, and the coiled spring permits of a slight inward longitudinal movement of the bolt when the window-sash is being moved. In order that the inner or sector end of the locking-bolt may be held in position against the outer edge of the web 10, a transverse strap 12 is provided, having its opposite ends bent up to provide shoulders 12^a, and these shouldered ends of the strap are adapted to be seated in notches 13, provided in the outer edge of the hollow stud at the opposite ends of the web 10, whereby the strap is seated transversely across the locking-bolt and the latter is effectively held in place. Fitted flush against the outer end of the hollow stud 4 is a circular plate 15, held in place by a suitable screw fastening 14, extending through the plate, the strap 12, and into the outer edge of the web 10, whereby the strap 12 and the plate or cover are removably fastened to the hollow stud, and the locking-bolt is effectively protected against the ingress of dirt, &c.

By reference to Fig. 7 particularly it will be noted that the peripheral edge of the cover-plate 15 projects beyond the sides of the hollow stud 4, overlapping the hub of the pinion 2 and conveniently holding the same in place upon the stud.

In the operation of the device it will be understood by reference to Fig. 1 that when the locking-bolt is projected into one of the seats 9 in the hub of the pinion 2 the latter is locked against turning in a direction to the right, as the side of the bolt engages the upper wall of the seat 9, and in this position of the bolt the window-sash cannot be moved upwardly. In order that the pinion may be released and permitted to revolve, it is necessary to turn the locking-bolt axially, so as to dispose the beveled end of the bolt in the position shown in Fig. 2, when by reason of the beveled end 8 being disposed upwardly it is possible to raise the window-sash, as the pinion may then be turned to the right, which movement will force the bolt longitudinally within the hollow stud and out of engagement with the rack 3.

To provide for axially turning the locking-bolt, as hereinbefore described, an actuating mechanism is provided and consists of a stud 20, having at its inner end a sector 19, in mesh with the sector 18, carried by the locking-bolt, and provided with an operating thumb-piece 21 at the outer end of the stud. The latter is mounted centrally through the plate or cover 15, and the sector 19 is located between the strap 12 and the inner side of the cover 15, whereby said stud is mounted in position and prevented from becoming disengaged from the sector 18. A circular disk 24 is provided upon the stud between the thumb-piece 21 and the cover 15, against the outer side of which the disk is adapted to fit. At suitable points in the peripheral edge of the disk there are provided two opposite shoulders 25 and 26, respectively, which are adapted to engage a suitable stop 23, provided upon the outer face of the cover 15 in the path of said shoulders. It will be apparent that by turning the stud 20 by means of the thumb-piece 21 the sector 19, meshing with the sector 18, carried by the locking-bolt, will turn the latter axially, so as to dispose its beveled end 8 in the desired relative position.

By reference to Fig. 1 it will be understood that the stud 20 has been turned until the shoulder 25 has been engaged with the stop 23, whereby the locking-bolt has been turned to dispose its beveled end downwardly, whereby the window-sash is locked against being raised. In Fig. 2 the stud 20 has been turned until the opposite shoulder 26 is in engagement with the stop 23, whereby the beveled end of the locking-bolt is disposed in a direction opposite to that shown in Fig. 1, whereby on raising the window-sash the hub of the pinion will force the locking-bolt longitudinally within the casing 5, out of engagement with the seats 9, and thus the window-sash is free to be raised. In this latter position of the locking-bolt it will be understood that the pinion 2 is prevented from being turned in a direction to the left, whereby the window-sash will be held at any predetermined position.

The present invention provides an exceedingly practical and effective sash-fastener, as the operative parts thereof are conveniently housed against the ingress of dirt, &c., and being located wholly upon the inner side of the sash it is impossible for the fastener to be either removed entirely from the sash or unlocked from the exterior of the window.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what I claim is—

1. The combination with a window-casing and a sash, of a rack and pinion operative therewith, a stud for supporting the pinion, a spring-actuated bolt carried by the stud and adapted to engage the pinion and having a beveled end, and means for turning said bolt, substantially as described.

2. The combination with a window and its casing, of a rack and pinion, a hollow stud for supporting the pinion, a bolt housed within said stud arranged to project into seats in the pinion and having a beveled end, an actuating-stud having a finger-piece, and means located between the actuating-stud and the bolt for turning the latter, substantially as described.

3. The combination with a window and its

casing, of a rack and pinion operative therewith, a hollow stud for supporting the pinion and having a bearing, a bolt supported by said bearing and arranged to project through an opening in the wall of the stud and into one or more seats in the pinion, a stop on the bolt, a spring surrounding the latter and bearing respectively against the bearing and the stop, and means for turning said bolt, substantially as described.

4. The combination with a window and its casing, of a rack and pinion operative therewith, a hollow stud for supporting the pinion and having a bearing, a bolt supported by said bearing and arranged to project through an opening in the wall of the stud and into one or more seats in the pinion, a stop on the bolt, a spring surrounding the latter and bearing respectively against the bearing and the stop, a finger-piece, a cap for the hollow stud, a stud supported by said cap and connected to the finger-piece, and intermeshing gears secured respectively to the bolt and to said stud, substantially as described.

5. The combination with a window and its casing, of a rack and pinion operative therewith, a hollow stud for rotatably supporting the pinion and having a bearing, a bolt supported by said bearing and arranged to project through an opening in the wall of the stud and into one or more seats in the pinion, a stop on the bolt, a spring surrounding the latter and bearing respectively against the bearing and the stop, a finger-piece, a cap for the hollow stud, a stud supported by said cap and connected to the finger-piece, intermeshing gears secured respectively to the bolt and to said stud, shoulders secured to the thumb-piece, and a single stop on the cap adapted to be engaged by said shoulders substantially as described.

6. The combination with a window-casing and a sash, of a rack and pinion, a stud for supporting the pinion, a spring-actuated bolt carried by the stud and adapted to engage the pinion and having a beveled end, and means including two meshing gears for turning said bolt, substantially as described.

7. The combination with a window-casing and a sash, of a rack and pinion, a hollow casing having a reduced portion forming a stud adapted to rotatively mount the pinion, a locking-bolt housed transversely within the hollow stud and arranged to project longitudinally through an opening provided in the stud and adapted to engage seats or sockets provided in the hub of the pinion, a plate covering the outer open end of the hollow stud and projecting transversely at opposite sides thereof, whereby the pinion is retained upon the hollow stud, and a thumb-piece carried by the cover and having operative connection with the locking-bolt, whereby the latter may be actuated, substantially as shown and described.

8. The combination with a window-casing and a sash, of a rack and pinion, a hollow casing having a reduced portion forming a hollow stud adapted to rotatively mount the pinion, a transverse integral web located within the hollow stud, a locking-bolt housed within the hollow stud projecting at one end through an opening formed through the stud and having a bearing at its opposite end upon the web, a strap having its opposite ends fitted in suitable notches provided in the outer edge of the hollow stud and at opposite ends of the web and adapted to confine the locking-bolt against the web, a cover-plate fitted to the open end of the hollow stud, screw fastenings passing through the cover-plate, the strap, and into the web, whereby the cover and the strap are held in place, and means carried by the cover for operating the bolt, substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN WILLIAM WILSON.

Witnesses:

JOHN C. FREEMAN,

C. S. BALL.