

(No Model.)

W. A. ZIETZKE.
SASH FASTENER.

No. 514,532.

Patented Feb. 13, 1894.



Fig. 1.

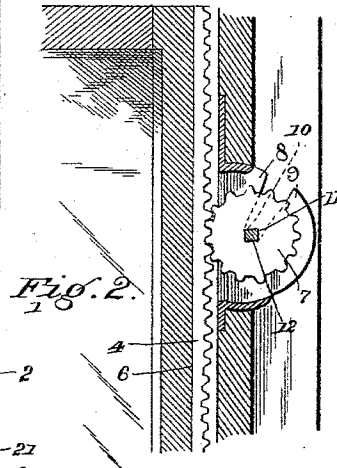


Fig. 2.

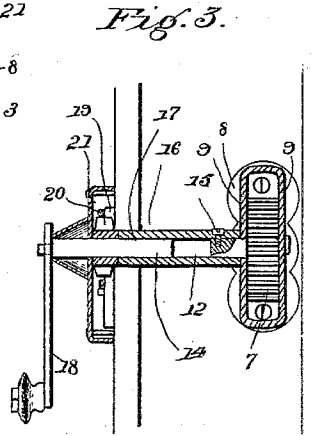


Fig. 3.

Fig. 4.

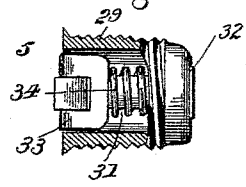
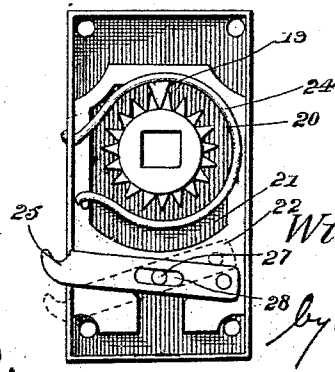


Fig. 6.

Witnesses
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UNITED STATES PATENT OFFICE.

WILHELM A. ZIETZKE, OF BOZEMAN, MONTANA, ASSIGNOR OF ONE-THIRD
TO W. F. DAVIS, OF SAME PLACE.

SASH-FASTENER.

SPECIFICATION forming part of Letters Patent No. 514,532, dated February 13, 1894.

Application filed May 12, 1893. Serial No. 473,986. (No model.)

To all whom it may concern:

Be it known that I, WILHELM A. ZIETZKE, a citizen of the United States, residing at Bozeman, in the county of Gallatin and State of Montana, have invented a new and useful Combined Sash Lift, Stop, and Lock, of which the following is a specification.

My invention relates to improvements in sash operating and locking devices, the objects in view being to provide a combined lift, stop and lock, whereby counterbalancing weights and independent locking devices may be dispensed with, and the functions performed by such devices accomplished by a single mechanism of simple construction which can be applied to any ordinary sash without altering the construction of the latter.

Further objects and advantages of my invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings—Figure 1 is a perspective view, partly broken away, of a window frame with my improved sash-operating and locking devices applied thereto in the operative position. Fig. 2 is a vertical sectional view through the rack-bar and pinion. Fig. 3 is a vertical sectional view at a right angle to the plane of Fig. 2. Fig. 4 is a detail view partly in section of one of the spring pressure devices by which the sash is held in operative relation to the pinion. Fig. 5 is a front view with the face plate removed of the clutch mechanism.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 represents a sash casing which may be of any approved construction and 2 and 3 the upper and lower sashes, respectively.

My improved sash-operating and locking devices are connected to each sash independently and are arranged adjacent to the meeting rails of the sashes, and as the construction of the device used for both sashes is the same it will be necessary herein to describe a single mechanism.

Referring to the lower sash, its side-rails are provided, respectively, with a rack-bar 4 and pressure devices 5. The rack-bar 4 is let into a groove 6 in the side rail and mesh-

ing therewith is a rotatable pinion 7 which is mounted in a metallic bracket 8 which is let into the side of the casement. This bracket comprises the parallel side plates 9 provided with registering bearings 10 in which are rotatably mounted the trunnions 11 of the pinion. One of the trunnions 11 is extended to form a squared post 12, and an operating spindle, which is rotatably mounted in suitable bearings in the casement perpendicular to the plane of the sash, carries a socket piece 14 which receives said squared post and is secured thereto by means of a set screw 15. The socket piece is secured to the outer end of the spindle by means of a set screw 16 which engages one of a series of perforations 17 in the spindle. By means of these perforations the spindle is lengthened to suit the depth of the casement. The spindle 13 is angular in section and extends inwardly beyond the face of the casement and is fitted with a removable key 18 by which the pinion may be rotated to raise or lower the sash.

Secured to the face of the casement, or arranged in any other suitable position, is a clutch mechanism 19 having a ratchet 20 which is rotatably mounted in a shell 21 and is provided with an angular bore which receives and fits the spindle, whereby, as the latter is turned to elevate or lower the sash, said ratchet is correspondingly rotated. Slidably mounted in the shell 21 is a pawl 22 provided with a spur 23 to engage the teeth of the ratchet. This pawl is normally held with its spur in engagement with the ratchet by means of a bowed-spring 24, one end of which is fixed to one side of the shell. Pivotally connected at one end to the sliding pawl is an operating lever 25, whose free end projects through a slot 26 in the side of the shell and which is fulcrumed at an intermediate point upon a stud or pivot pin 27, the lever being provided with an elongated opening 28 to receive such stud. By means of this lever the pawl may be disengaged from the ratchet to allow of the adjustment of the sash by means of the key, spindle, pinion, and rack-bar, as above described.

In order to hold the rack-bar in operative relation to the pinion and preserve such relation irrespective of contractions of the wood-

work due to changes of temperature, moisture, &c., I have provided what I term pressure devices, which are shown in the drawings at 4. These pressure devices (two of which
5 are usually employed in connection with each sash and are arranged upon the opposite side rail from the rack-bar) consist of a barrel 29 which is exteriorly threaded to screw into a
10 socket 30 in the side rail of the sash, a slidable stem 31 which projects through a guide perforation 32 in the rear end of the barrel and is headed, an anti-friction roll which is mounted in a yoke 33 formed on the outer
15 end of said stem, and a spring 34 which embraces the stem and bears at its opposite ends, respectively, against said yoke and the inner end of the barrel. The anti-friction rolls are held permanently in contact with the inner
20 surfaces of the sides of the casement and thereby press the sash in an opposite direction or toward the lifting devices whereby the rack-bar is permanently held in operative relation to the pinion. The actuating springs
25 with which these pressure devices are provided enable the sash to yield laterally to prevent cramping and jamming when the parts become swelled by dampness or otherwise.

The above being the construction of my improved sash-operating and locking devices,
30 the operation thereof will be readily understood. Briefly stated, the sash may be raised or lowered by means of the key which is fitted on the extremity of the spindle, the pawl of the clutch mechanism being held out of en-
35 gagement with the ratchet by means of the operating lever 25 during the rotation of the spindle. When the desired vertical adjustment of the sash is attained the release of the operating lever causes the pawl to engage the

ratchet and lock the spindle against rotation, 40 and thereby secures the sash in the said position.

When the sashes are in their closed positions and the keys have been removed from the spindles, the sashes cannot be moved 45 either from the inside or outside without the use of an implement similar to a key, whereby the spindle may be rotated.

Various changes in the form, proportion, and minor details of construction may be re- 50 sorted to without departing from the spirit or sacrificing any of the advantages of my invention.

Having described my invention, what I claim is— 55

The combination of a rack-bar secured to the side-rail of a sash, a pinion meshing with said rack-bar, a longitudinally extensible spindle carrying said pinion and provided with a suitable handle or key, a ratchet fixed 60 to the spindle and arranged in a suitable shell or casing, a spring-pressed pawl slidably fitted in said shell or casing and provided with a spur to engage the teeth of the ratchet, and an operating lever pivoted to the shell or casing 65 and provided with a slot engaging a stud upon the sliding pawl, whereby the pinion and hence the sash are locked against movement except when the ratchet is released by the elevation of the free exposed end of the 70 operating lever, substantially as specified.

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

WILHELM A. ZIETZKE.

Witnesses:

S. W. COOK,
C. M. THORPE.