No. 608,461. Patented Aug. 2, 1898.

H. E. LEACH.

SASH FASTENER.

(Application filed Aug. 14, 1897.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

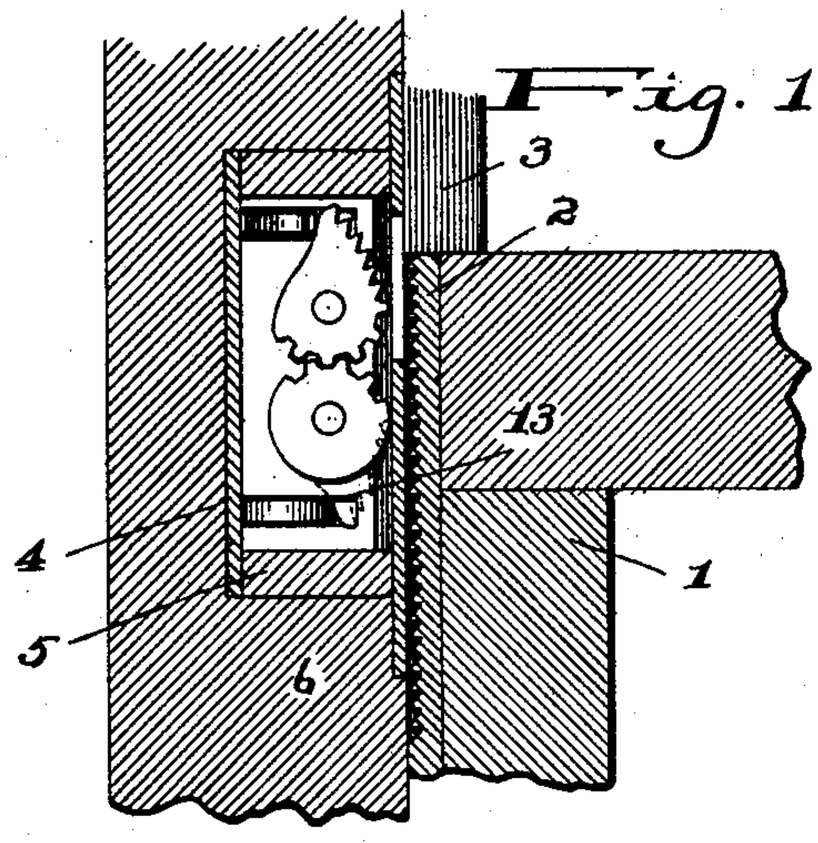


Fig. 2.

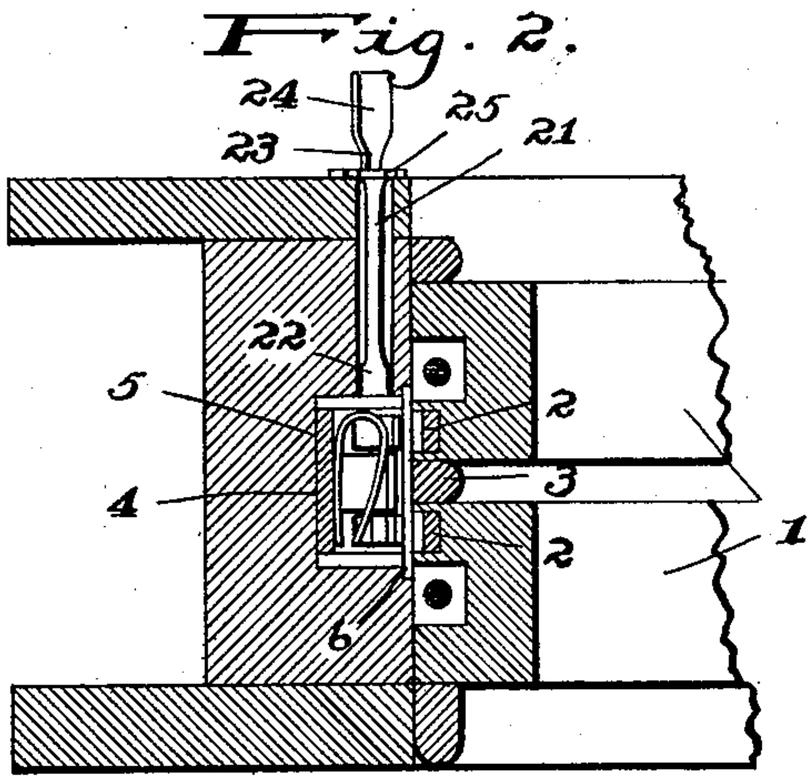


Fig. 3.

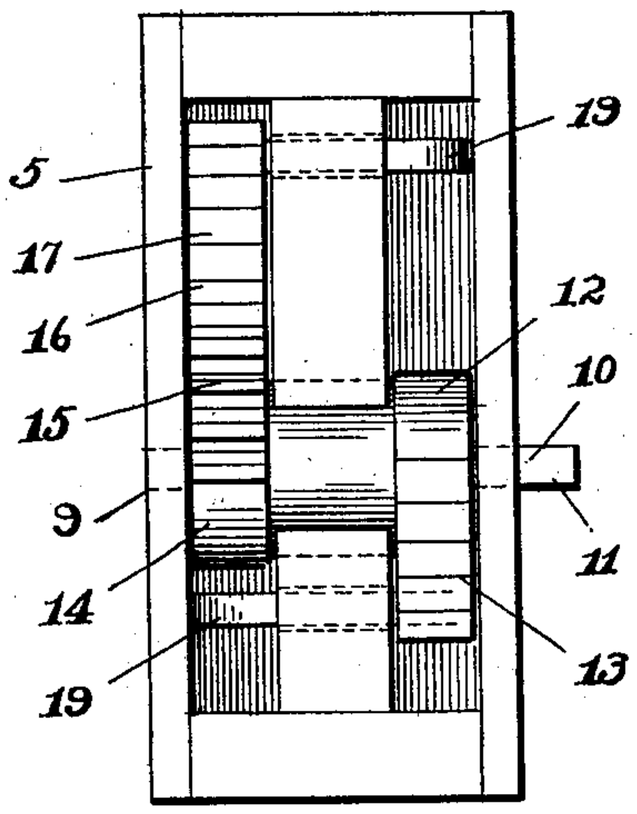


Fig. 4.

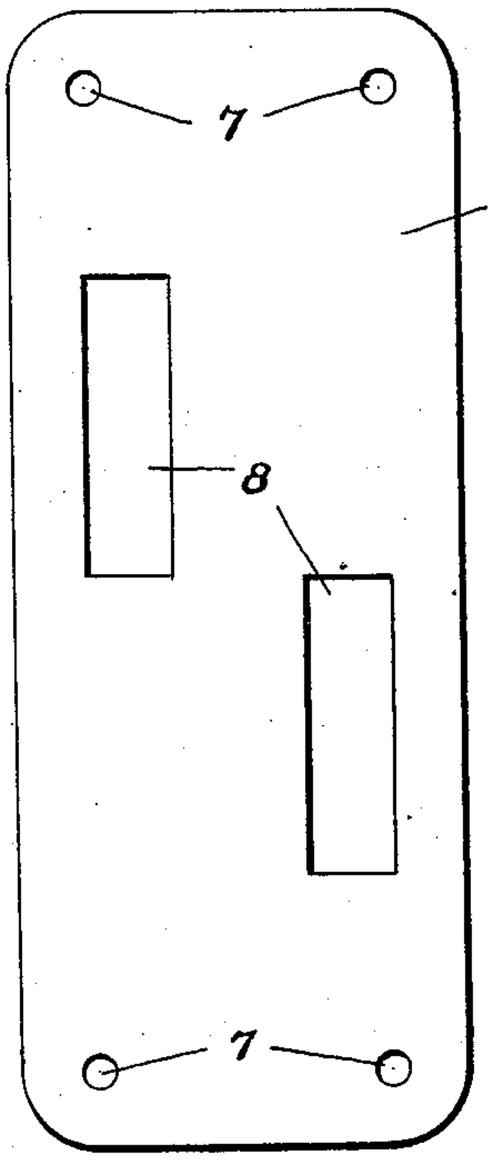


Fig. 5.

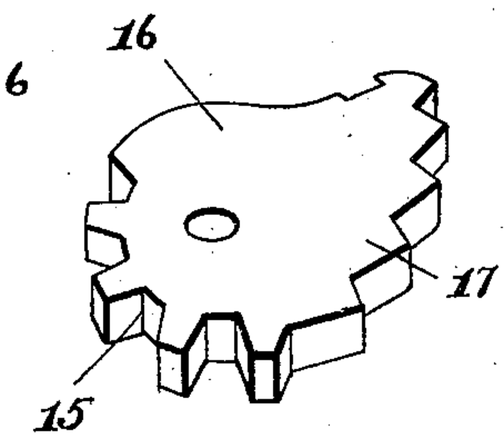


Fig. 6.

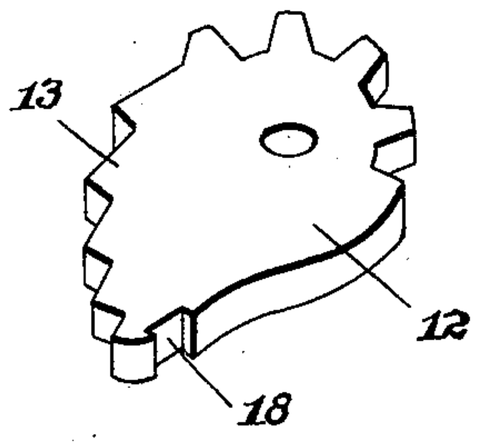


Fig. 8.

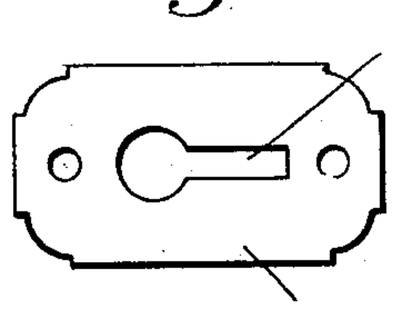
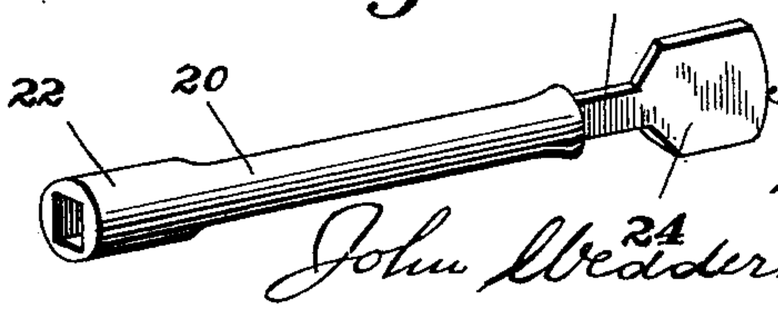


Fig. 7.



Witnesses

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No. 608,461. Patented Aug. 2, 1898.

H. E. LEACH.

SASH FASTENER.

(Application filed Aug. 14, 1897.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 9.

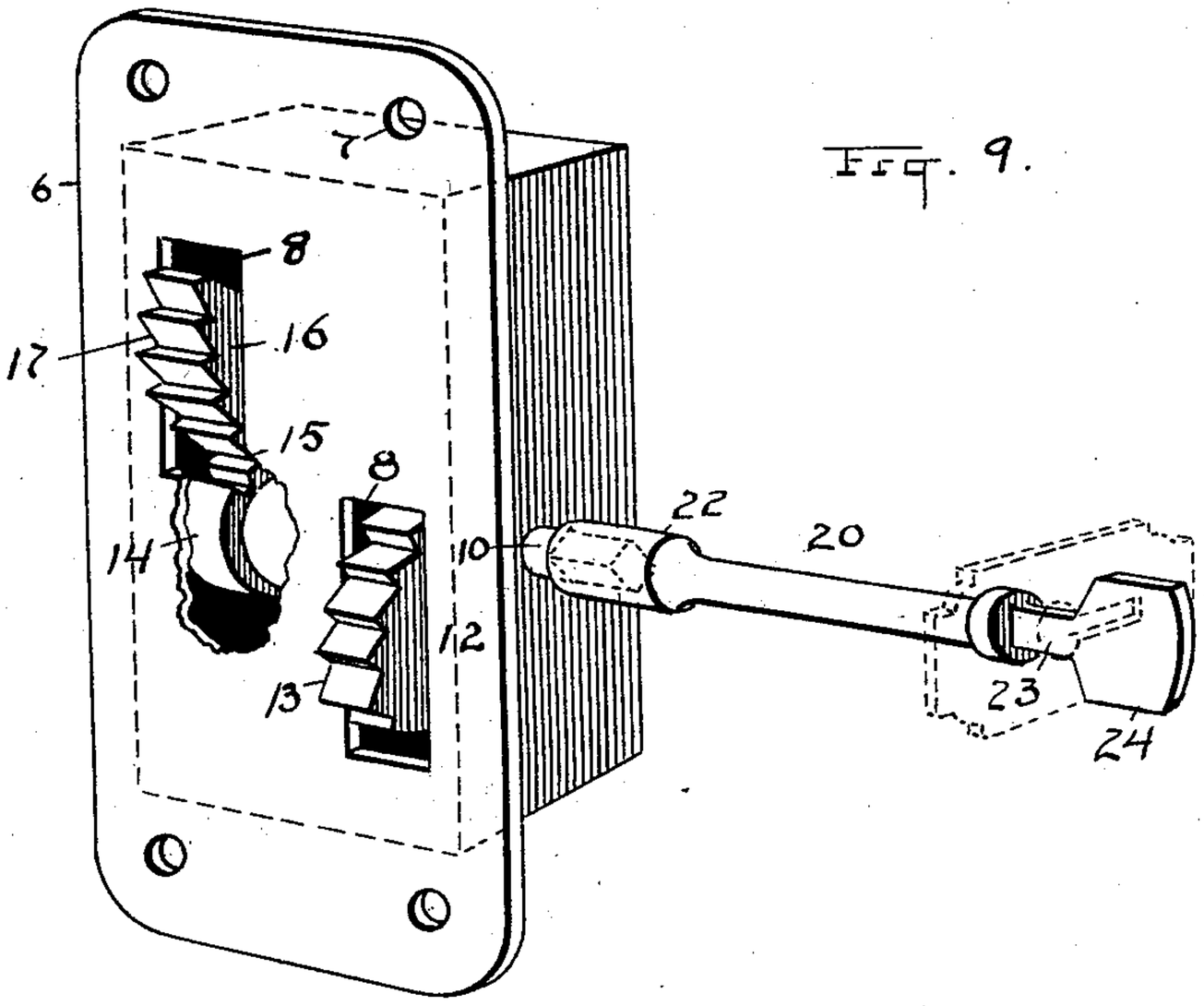
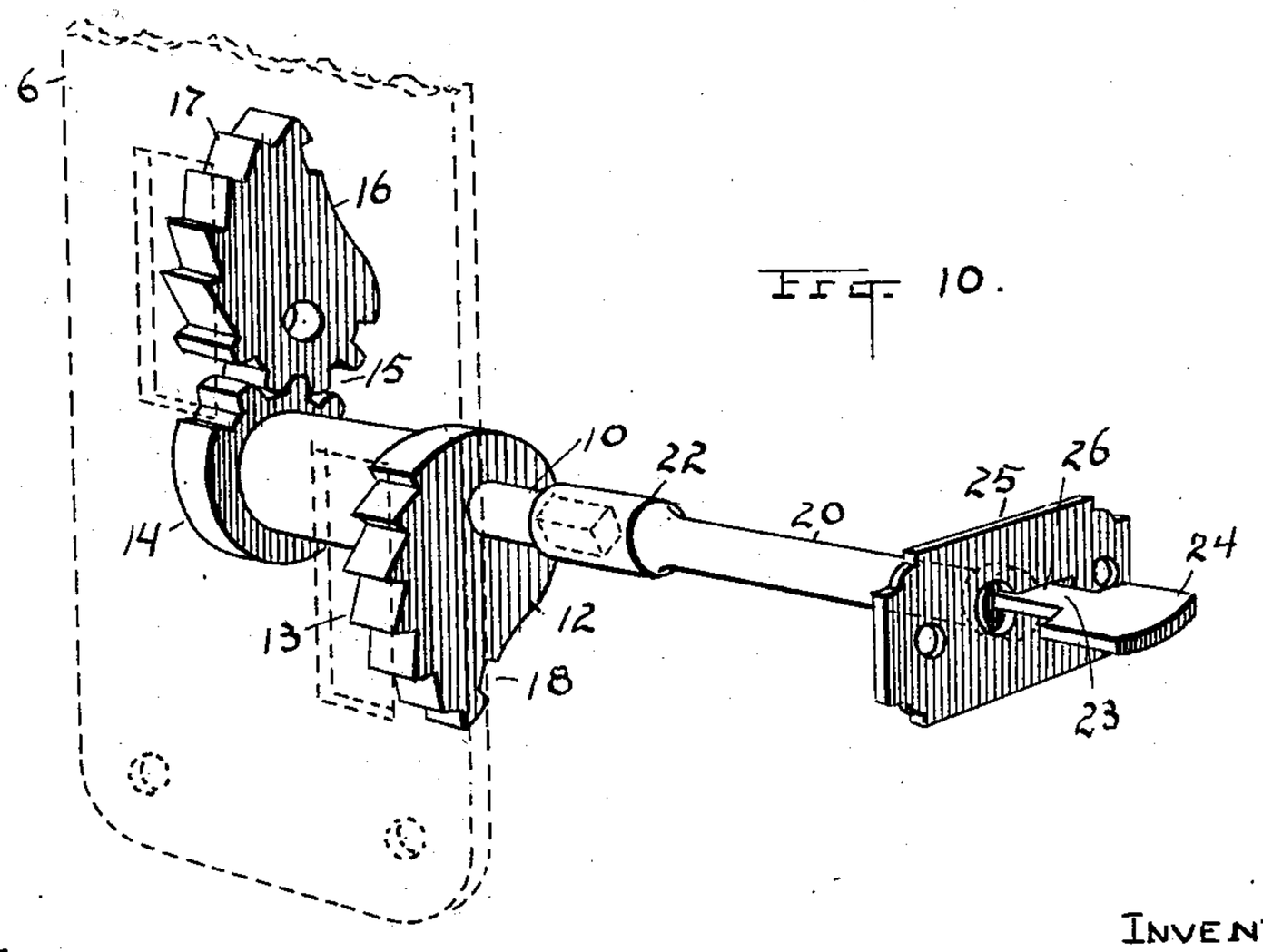


Fig. 10.



Attest

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UNITED STATES PATENT OFFICE.

HENRY EUGENE LEACH, OF BEDFORD, OHIO.

SASH-FASTENER.

SPECIFICATION forming part of Letters Patent No. 608,461, dated August 2, 1898.

Application filed August 14, 1897. Serial No. 648,282. (No model.)

To all whom it may concern:

Be it known that I, HENRY EUGENE LEACH, a citizen of the United States of America, residing at Bedford, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Sash-Locks; and I do hereby 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.

This invention relates to sash-locks, and has for its object to provide a simple and effective lock adapted to operate automatically for engaging and locking the sashes in their closed positions.

The improved sash-lock is designed to be operated from the inside of the room or building and is wholly inaccessible from the exterior thereof.

The detailed objects and advantages of the invention will appear in the course of the subjoined description.

The invention consists in certain novel features and details of construction, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims hereto appended.

In the accompanying drawings, Figure 1 is a vertical sectional view of the window-casing, showing one of the sliding sashes and the improved lock. Fig. 2 is a transverse horizontal section of the sash through the window-frame. Fig. 3 is a view in elevation of the lock-casing with the inner or front plate thereof removed. Fig. 4 is a plan view of the face-plate of the lock-casing. Fig. 5 is a detail perspective view of one of the locking dogs or clutches. Fig. 6 is a similar view of the other dog or clutch. Fig. 7 is a detail view of the key. Fig. 8 is a similar view of the escutcheon-plate. Fig. 9 is a perspective front elevation of the casing complete and the dogs in operative position and showing the key engaged with the shaft of the lower dog in relation to turn the same. Fig. 10 is a perspective elevation of the dog and other mechanism, as in Fig. 1, but showing the casing in dotted lines and the dogs retracted or retired, so as to leave the sashes free to be moved up and down, the key being locked in its securing-plate, as hereinafter described.

Similar numerals of reference indicate corresponding parts in all the views.

In carrying out the present invention each of the sliding sashes (indicated at 1) is provided on one of its longitudinal or vertical edges with a metal rack 2, preferably narrower than the sash and set into a groove, recess, or rabbet in the inner edge of the sash or that edge which lies adjacent to the parting-bead 3. The pulley-stile is cut away or recessed, as indicated at 4, in line with the groove which receives the parting-bead to provide for the insertion of the lock-case of this invention. The lock-case 5 is substantially rectangular in form and is provided with a face-plate 6, which extends at its upper and lower ends beyond the corresponding ends of the lock-case proper, the ends of said plate being provided with openings 7 to receive screws or other fasteners. The face-plate 6 is also provided with longitudinal slots or openings 8 to permit of the working of the dogs or clutches therethrough.

Extending through the openings 9 in the walls of the lock-case is a rotatable shaft 10, having one end projecting outside of the case and squared and tapered, as shown at 11. Mounted fast upon this shaft is a cam-shaped dog or clutch 12, having teeth or notches on its active edge, as at 13, to engage with the teeth of the racks of the sliding sashes. Mounted upon the same shaft 11 is a spur-gear 14, and meshing with said spur-gear is a hub portion 15 of the second reversely disposed or inclined dog or clutch 16, having a working or active piece which corresponds with the clutch 12, the difference residing only in the fact that the teeth 17 thereof face in the opposite direction from the teeth 13 of the other clutch. The clutch 12 is provided with the notch 18 on its inner side, in which is received the free end of a leaf-spring 19, the tension of said spring being exerted to normally press the dogs downward, so as to cause them to engage with the racks or sashes.

20 designates the operating-key, which passes through a transverse horizontal opening 21 in the window-frame and pulley-stile. The key is provided at its inner end with a square or tapered socket 22 to fit over the end of the shaft 10, while the outer end of

said key is reduced and forms a thin narrow shank or neck 23, the key being provided beyond the shank 23 with a head or thumb-piece 24, whereby it may be turned. Secured to the window-frame upon the interior of the building is an escutcheon-plate 25, having a keyhole-slot 26. The opening 21 in the window-frame is slightly larger at its outer end than at its inner end, so as to permit the lateral or rocking movement of the key for the purpose that will appear.

The operation of the lock is as follows: Supposing the lower sash to be partially lifted and the upper sash to be partially lowered, it is possible to push the upper sash up to its full extent and the lower sash down to its full extent without touching the lock, in view of the fact that the spring 19 will allow the dogs to yield inwardly, so that the teeth in the racks will pass by the teeth of the dogs or clutches. However, when the sashes have reached the limit of their movement, they cannot be raised or lowered without breaking or crushing the sashes. When it is desired to raise or lower the sashes, the head of the key is moved downward, so as to disengage the shaft 23 from the narrow portion of the keyhole-slot in the escutcheon-plate. The key may now be turned, and will correspondingly turn the shaft 10, and when thrown in the proper direction the dogs or clutches, by reason of their being geared together, will both be retracted out of engagement with the sashes. After the sashes have been adjusted to the proper positions the shaft 23 is moved into engagement with the narrow portion of the slot in the keyhole-plate, and thus the key and also the shaft 10 are prevented from rotation, thus positively locking the sashes where they are left. The parting-bead is cut away at its inner edge, so as to enable it to straddle the face-plate 6 of the lock.

It will be seen that I have provided a simple and effective lock for holding the sashes of the window closed, and that this lock is practically concealed from view when in proper position, also that the lock may be easily manipulated by any one upon the inside of the building and is inaccessible from without. The key may be entirely removed from the window-frame, so as to prevent persons upon the inside of the building from operating the sashes, if so desired.

One of the chief advantages of the invention resides in the fact that the lock will hold the sash when closed; but the sash may be left partially open for ventilation and can be locked so that it cannot be opened farther, but may be closed, and when closed it will automatically lock itself. It will be apparent that, if found desirable, a leaf-spring may be used upon each of the dogs or clutches, and also that the clutches or dogs may be of rubber instead of metal, thus rendering it possible to do away with teeth on the dogs and the rack-bars.

It will be understood, of course, that many changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

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

1. In sash-locks, a pair of toothed dogs having teeth faced in opposite directions and set in different vertical planes, a shaft supporting one of said dogs and a pinion on said shaft meshing with the other dog, whereby said dogs are geared together and the movement of one dog causes a corresponding movement in the other, a single casing inclosing said dogs, and a spring engaging one of the dogs to force it forward, in combination with the sashes of a window having oppositely-arranged teeth engaged by said dogs, substantially as described.

2. The lock substantially as described, consisting of two oppositely-faced toothed dogs in different vertical planes, an operating-shaft carrying one of said dogs and a pinion on said shaft meshing with the other dog, in combination with a casing supporting said shaft and a bearing for one of said dogs in said casing separate for said shaft and the upper and lower sashes of a window engaged each by one of said dogs, substantially as described.

3. In sash-locks, a pair of dogs set in different vertical planes and having teeth faced in opposite directions, in combination with a single case, a shaft supported in said case carrying one of said dogs and a separate bearing for the other dog and a pinion on said shaft meshing with the said dog having a separate bearing, a key to engage said shaft and turn the dogs back out of locking position, and means to hold said key from turning, whereby the dogs may be held back out of engagement and the sashes left free to be raised and lowered at will, substantially as described.

4. The combination with a pair of sliding sashes, having oppositely-faced teeth at their edges, of a pair of oppositely-facing dogs geared together, and each engaging one of said sashes, a spring for normally pressing one of said dogs outward, a key removably applied to the shaft of one dog and having its shank reduced at one point and a plate provided with an opening through which the key passes, the said plate and key being constructed to lock the key against turning when desired, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HENRY EUGENE LEACH.

Witnesses:
IRA FREEMAN,
WM. PALMER.