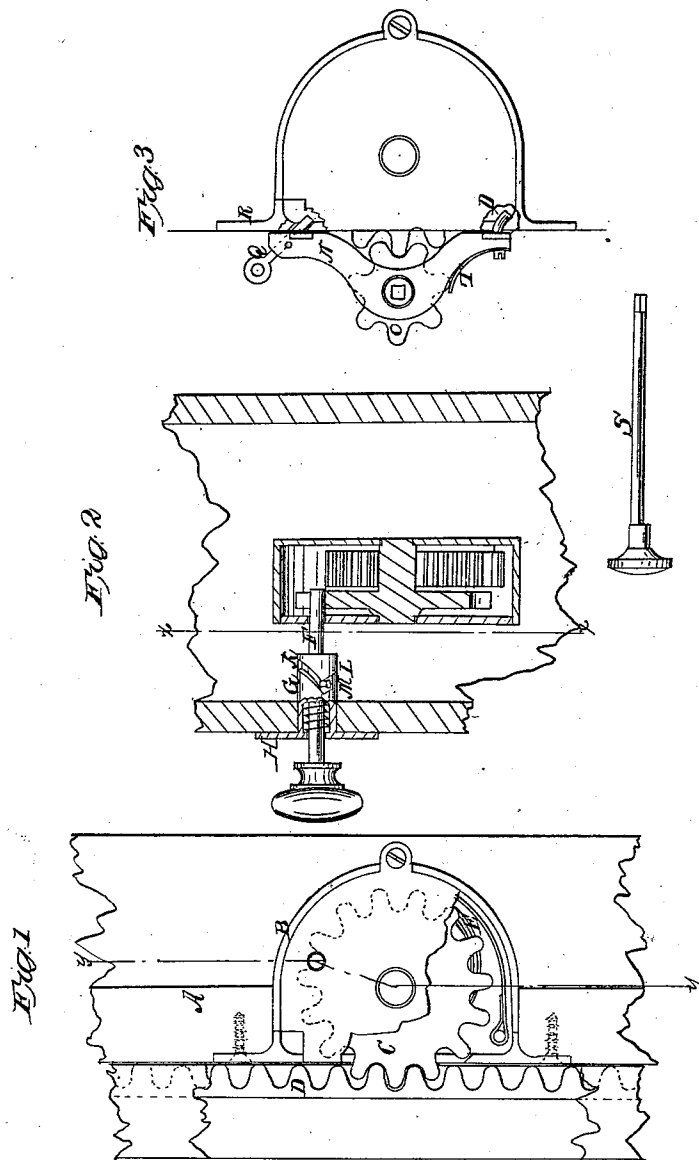


W. M. & C. A. Warren,

Sash Balance.

N<sup>o</sup> 84,596.

Patented Dec. 1, 1868.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN SASH-FASTENERS.

Specification forming part of Letters Patent No. 81,596, dated December 1, 1863.

*To all whom it may concern:*

Be it known that we, WILLIAM M. WARREN and CHARLES A. WARREN, of Watertown, in the county of Litchfield and State of Connecticut, have invented a new and Improved Sash-Fastening Device; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to that class of sash-fastening devices where racks, pinions, and balancing-springs are used, a part of which are applicable whether springs are used or not.

It consists of an improved arrangement of the locking-pin, whereby the same is more readily actuated for unlocking the sash; also, of an improved detachable device for winding up the springs when springs are used for balancing the sash.

Figure 1 represents a side elevation of a rack-pinion and balancing-spring as commonly used to which our improved locking device is applied. Fig. 2 represents a transverse sectional elevation of the same with our improved locking device attached. Fig. 3 represents an elevation of our improved winding device, and Fig. 4 represents a key for operating the winding device.

Similar letters of reference indicate corresponding parts.

A represents a section of the window-frame or jamb, in which is inserted a common case, B, provided with a toothed pinion, C, which meshes into a rack, D, secured to the window-sash.

E represents a spring, secured at one end to the case and at the other to the pinion or its shaft, which is designed to balance the sash in the ordinary way.

F represents a locking-pin, which is arranged to work through a tube, G, entering the casing from the front, and provided with the escutcheon H, and so arranged with reference to the pinion C that the end of the pin F will, after passing through the side of the case, enter the spaces between the teeth, when, by the rotation of the said pinion, they are brought coincident with the pin. A spring, I, is pro-

vided within the tube, and so arranged with reference to the pin as to bear it constantly inward and hold it in the position to lock the pinion.

The tube G is provided with two helical slots, K, opposite each other, which, at the ends nearest the casing, terminate in short slots or recesses L, inclined in the opposite direction, and the pin F is provided with trunnions M, working in the said slots.

When it is desired to unlock the pinion, the same may be accomplished by simply taking hold of the knob of the pin F and turning it in the right direction, the action of the trunnions M in the helical slots withdrawing it as it turns by the action of the hand. When it has been turned far enough for the trunnions to fall into the recesses L, by the action of the spring the pin will be held in that position out of contact with the pinion, admitting the sash to be moved in either direction, as desired.

To lock the pinion, the pin may, in a similar manner, be turned in the other direction until the trunnions have passed out of the recesses L into the slots K, when the spring I will throw the pin back into the spaces between the teeth whenever they are moved to the point of coincidence with the same.

Instead of forming the slots or grooves K in the tube G, they may be made in the pin F, and a pin projecting from the tube, so as to enter the grooves in the pin, will serve the same purpose; and it is not necessary to provide grooves on both sides of the tube or the pin.

Other arrangements of inclined planes may also be provided to effect the same purpose.

We are aware that locking-pins have been used when a spring-actuated pin has been provided with trunnions to work in grooves arranged longitudinally and transversely of the sleeve, in a manner similar to a bayonet-fastening; but this arrangement is objectionable, for the reason that it requires two movements of the hand on the pin to effect a release of the latter from the locking-pinion and to secure the pin in its outward position against the action of the spring.

We are also aware that a spring-actuated

pin has been used in combination with a pinion as a locking device when a series of holes has been made in the pinion for the pin to lock into. By our improved arrangement the expense of boring the said holes is avoided.

In Fig. 3 is represented our improved detachable winding apparatus, to be used when, by the use of the balancing-springs E, it is necessary to wind the pinions up against the springs to set them, so as to balance the sash.

N represents a bearing or support for the pinion O, made in any suitable form, and provided with the hook D and inclined pin Q, whereby it may be readily attached to or detached from the face-plate R of the case B.

When the sash is removed, so as to hold the pinion O in gear with the pinion C, the axle of the pinion O is provided with a square key-hole, and a key, S, is fitted to it, whereby it may, when the pin F is withdrawn, be wound up to set the spring to any degree of tension and locked in that position, when the winding device may be detached and the sash inserted.

The pinion O is provided with a spring-pawl, T, to hold it while being wound.

By the use of a detachable winding device it is only necessary to provide one apparatus for the use of all the windows of a house, whereas, when fixed winding devices are used, one must be provided for each locking device. Another advantage of this arrangement is that when the winding is accomplished by a pinion fixed in the case B and gearing into the pinion C, or by the use of a key working in the axis of the pinion C, for either of these arrangements the key must be passed through

an opening in the face of the window-casing, and, in order to give the proper finish, an escutcheon must be provided for the said opening. The position on the casing of the said escutcheon would be governed by the axis of the pinion, and, in order to present the best appearance, the escutcheon for the locking-pin should be in the same vertical plane with that for the winding-key; but this cannot always be the case, in consequence of the variation in the breadth of the face of the casings, and some of the casings are made so narrow that, in order to fix the escutcheon for the winding-key, it would be necessary to let one side of it into the molding, which would present a very unsightly appearance.

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

1. The combination, with the locking-pinion C, of the locking-pin F, arranged to be withdrawn and held by means of inclined grooves K and L, when a rotary movement is communicated to it, as arranged and shown, and for the purpose described.

2. The combination, with a spring-actuated balancing-pinion for sash-fastening, of a detachable winding apparatus, with its hook D, pin Q, and frame, arranged as and for the purpose described.

The above specification of our invention signed by us.

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