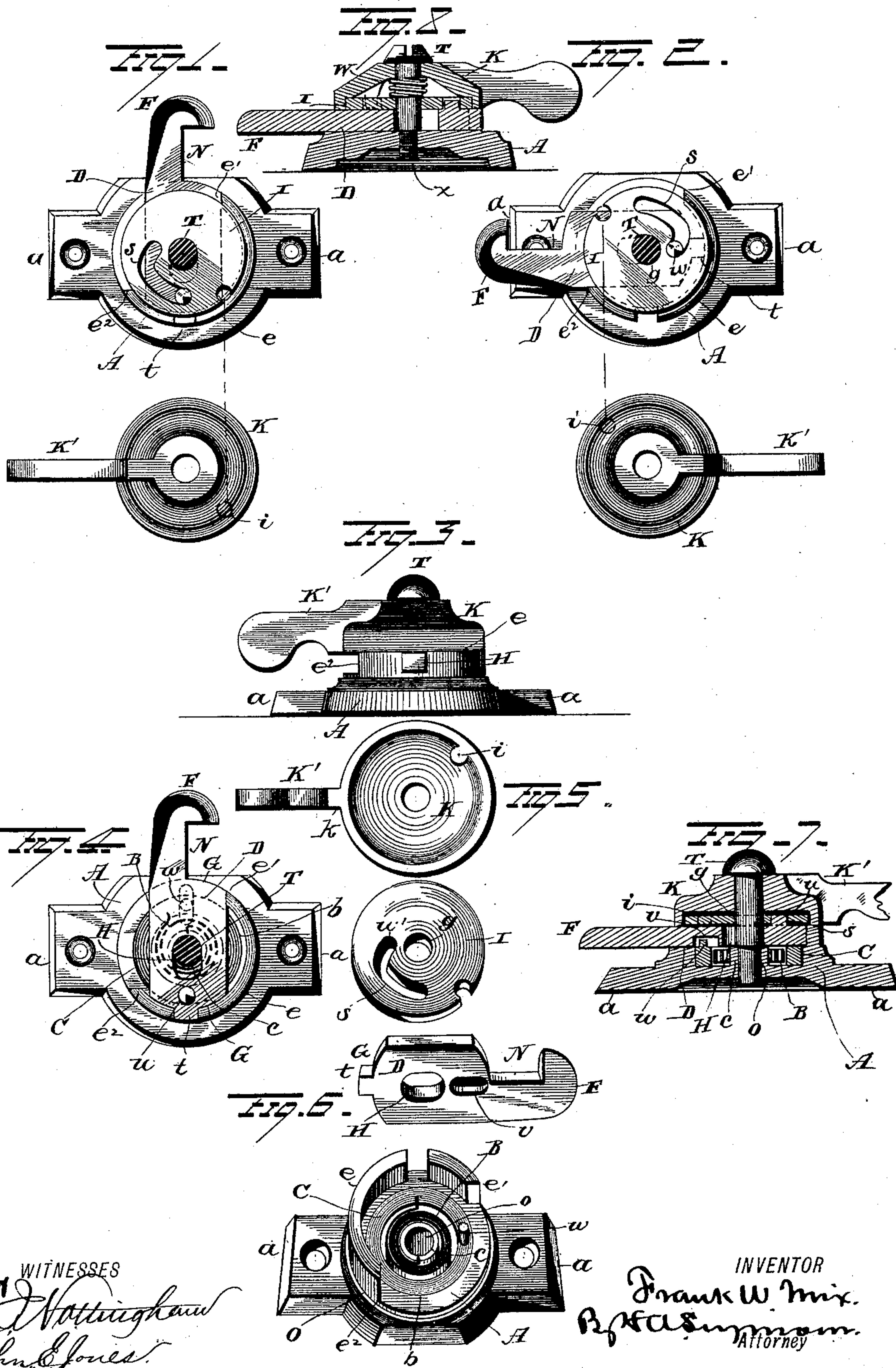


(Model.)

F. W. MIX.  
SASH FASTENER.

No. 359,274.

Patented Mar. 15, 1887.



WITNESSES

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# UNITED STATES PATENT OFFICE.

FRANK W. MIX, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO P. & F. CORBIN, OF SAME PLACE.

## SASH-FASTENER.

SPECIFICATION forming part of Letters Patent No. 359,274, dated March 15, 1887.

Application filed November 8, 1886. Serial No. 218,298. (Model.)

*To all whom it may concern:*

Be it known that I, FRANK W. MIX, of New Britain, in the county of Hartford and State of Connecticut, 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.

My invention relates to window-sash locks; and its object is to provide a lock or fastener that will secure the meeting-rails of the sash of a window in such connection that the adjacent or meeting faces of these rails will be securely drawn and held together to prevent lateral motion or rattle at this point, and, further, to prevent improper elevation of the lower or depression of the upper sash.

A further object is to construct a sash-lock in which a swinging locking-bolt is provided with a projecting toe on its rear surface, this toe being made to securely engage a notch in the rim of a base-plate upon which it has a support, the notch and toe being in closed adjustment when the locking-bolt is in locking contact with a suitable catch placed upon the surface of the meeting-rail of the upper sash, and thus prevent improper disengagement of these parts.

A further object is to provide a sash-lock that will automatically disengage its locking-bolt and cause this bolt to lie in a line parallel to the edge of the meeting-rail upon which it is located when an actuating-lever is caused to describe an arc of ninety degrees, this swing movement of the lever disengaging a locking-toe of the locking-bolt to permit this action.

A further object is to construct a sash-lock that cannot become accidentally unlocked when once secured, and, further, that from its style of construction can be produced at a low initial cost.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the drawings making a part of this specification, Figure 1 is a plan view of the sash-lock in a locked position. Fig. 2 is a plan

view of the lock in an unlocked position. Fig. 3 is an outside edge view of the lock, showing the locking-toe in its notch in the base-plate-rim. Fig. 4 is a plan view of the sash-lock with the cap-plate and its lever removed. Fig. 5 is a view of the inside of the cap-plate and its attached lever. Fig. 6 is a view of the parts of the sash-lock detached. Fig. 7 is a cross-section of the lock. Fig. 8 is a cross-section of a modified form of the sash-lock.

A represents the base-plate of the sash-lock. It is made with a circular body, O, that is recessed in its lower surface to lighten it. Two extensions, *a*, are made at opposite points on the sides of this circular portion to form ears for screw-holes, whereby attachment is made of the base A upon the meeting-rail of a lower sash of a window. The base-plate A has an annular groove, *b*, cut in its top surface for the reception of a coiled spring, B, that has its inner end connected to the central collar, *c*, formed on the plate A. The spring B is of such a relative size in the diameter of its coils as to permit an annular piece, C, to be placed in the groove *b* and neatly fit with its peripheral edge the edge-surface of this circular cavity *b*. The coiled spring B has its outer end secured to the inner edge of the annulus C.

An upwardly-projecting flange or rim, *e*, is made upon the top surface of the circular body of the base-plate A, and this flange *e* is notched or cut away from *e'* to *e''*, so that a flat surface of the top of plate A is produced between the shoulders of the ring that terminates at these points *e'* *e''*, the ring C and coiled spring B being level on their top face with this flat part of the top face of the base-plate A.

Upon the plate A the latch-bar D is mounted. It is shown in Figs. 4 and 6. This bar D has its top and bottom sides, as well as its edges, parallel. The outer or free end, F, is rounded, and a notch, N, is made on one edge, to hook upon a proper catch that is mounted upon the meeting-rail of the upper sash opposite the inner edge of the base-plate A.

The inner end, G, of the bar D is rounded to conform to the circular inner edge of the flange *e*, and at a central point in the width of the bar a toe, *t*, is made to project rearward. The toe *t* is made of a length equal to the thickness



of the flange *e* on the base-plate A. In a line with the center of the width of the bar D an elongated hole or pivot-orifice, H, is made in this bar. The position of this slot is such that when the bar is in place on the base-plate, with the toe *t* in its complementary notch in the rim of this plate A, the forward termination of the oblong hole H will correspond with the central tapped hole, *o*, made in the base-plate for a connecting-bolt, T. When the bar D is moved forward to permit the toe *t* to be withdrawn from the notch in the flange *e*, the rear curved edge of the oblong hole H in the bar D will be in line with the rear edge of the threaded central perforation, *o*, in the base-plate A. The width of the bar D and the position of the shoulders *e'* *e''* on the flange *e* are such, relatively, as to cause the bar D, when its contiguous edge bears upon the shoulder *e'*, to lie in line with the longitudinal center of the plate A, and this position will be assumed when the bar is in an unlocked adjustment with regard to the catch on the upper-sash rail. A projecting pivot, *u*, is formed on the top surface of the bar D, between its curved rear edge and the rear edge of the elongated hole H.

A short longitudinal slot, *v*, is made on the lower surface of the bar D, just in advance of the oblong perforation H. This slot or oblong recess *v* engages with the pintle *w*, that is made to project from top surface of the ring C. The spring B is coiled, so that its tension will force the bar D to abut with its edge *e'* against the shoulder *e'* of the flange *e* on plate A, when free to do so.

Upon the bar D, in engagement with the pivot *u*, the cam-disk I is placed. This disk I is made circular and of suitable thickness. It has a center perforation, *g*, and a cam-slot, *s*, made through it. The slot *s* is made to engage the pivot *u*, as before mentioned, and extends from a perforation, *u'*, made the size of the pivot *u*. This end of the slot is nearly in line with the axial center of the center hole, *g*, in the disk I, and is continued diagonally therefrom a distance about equal to the diameter of the pivot *u*. From this point the slot is extended upwardly to approach the edge of the disk I, and terminates at a point opposite the axial center of the bolt-hole *g* in this disk, about ninety degrees distant from the starting-point, so that this cam groove or slot *s* will permit a quarter-revolution of the disk I when it is turned upon the bolt T, that is inserted through the center perforation, *g*. The disk I is also perforated near its edge for the reception of a pivot or stud, *i*, that projects from the inner face of the cap-plate K. This cap-plate K is made to fit upon the cam-disk I, and in this style of the sash-lock is preferably made with a depending edge or short flange, *f*, which encircles the edge of the disk I, as shown in Fig. 7.

The cap-plate K is preferably cupped to give it a concave or dished shape, and has a projecting limb, K', on its edge at a point, *k*, opposite the stud *i*, made on its inner surface.

The handle K' is designed to afford finger-hold to operate the lock.

In operation, the base-plate A and locking-catch E are mounted opposite each other at the center of the meeting-rails of a window-sash, and it is essential that both the lock and its catch be connected when it is being secured to the sash. The sashes are then held together and the parts secured in place. The lever *k'* will now lie in line with the rail of the window upon the right side, as shown in Fig. 1, in which a locked position of the device is shown. When the bar D is in locked adjustment with its catch, as displayed in Fig. 1, the slot *s* of the cam-disk I will have been brought into the position shown in Fig. 1, with the pivot *u* in engagement with the outer termination of the slot *s* that is nearest the edge of the disk I. This location of parts permits the toe *t* to engage the notch in the rim or flange *e*, so as to cause the curved edge of the rear end of the bar D to abut against the inner surface of the flange.

It is obvious that the toe *t* forms a perfect locking-detent to hold the bar D in a transverse position with relation to the base-plate A. To unlock the fastener, move the lever *k'* toward the rear to revolve the cap on which it is rigidly secured. After it has passed the notch in which the toe *t* is located, the cam-disk I will have made a fourth-revolution on its center bolt, and by the action of the cam-groove *s* upon the pivot *u* the bar D will be projected sufficiently to disengage the toe *t* from the notch in which it is located. The action of the coiled spring B will now throw the handle K' around to line with the sash-rail, and the bar D will lie in the same longitudinal position with regard to the body or base-plate A of the lock.

In Fig. 8 is shown a modification of this sash-fastener. The same general features are embodied, with the exception that the ring in the base-plate and the coiled spring to which it is attached are not used. As this modification is intended for a cheaper form of sash-lock, the automatic action effected by these parts is dispensed with, and a spiral spring, W, is placed under the cap-plate K upon the bolt T. This spring W is mainly intended to hold the locking-bar D and its cam-disk in working condition. The bolt T is threaded to a shoulder, *x*, the plain portion of the same—that is, above this shoulder—being made of such a relative length as will permit an easy movement of the locking-bar D and the cam-disk above it when the center bolt, T, is tightly adjusted in the threaded hole made for it in the base-plate A.

The operation of this form of sash-lock is identical with that shown in the other style, with exception that the lever *k'* must be moved to cause a half-revolution of the cap-plate, of which it is an integral part, in order to fully withdraw the toe on the locking-bar D from its notch, and thus permit this bar to be partially rotated, tending to locate both the lever



*k* and the bar D in a line with the meeting-rails of the sash on which the sash-lock is placed.

Slight changes might be made in the exact forms and arrangement of parts of this invention without exceeding its scope. I therefore do not restrict myself to the exact forms shown.

I am aware that it is not new to provide the base-plate of a sash-fastener with a recess adapted to receive a projection on the locking-bar, the latter being operated by a movable cam, and also that it is old to provide the base-plate with a raised rim adapted to form a seat for the movable cam which operates the locking-bar, and hence I make no claim, broadly, to such construction.

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

1. In a window-sash lock, the combination, with a base-plate, of a locking-bar having a hook adapted to engage a catch on the upper-sash rail and a toe to engage the notch in the flange on the base-plate on its inner end, a cam-slotted disk, a pivot or lug on the locking-bar to engage this cam-slot, a center bolt, and a means of revolving this cam-disk to cause the engagement and disengagement of the toe on the locking-bar with and from the notch made for it in the raised flange on the base-plate, substantially as set forth.

2. In a window-sash lock, the combination, with a base-plate, of a locking-bar having a hook adapted to engage a catch, a toe to engage the notch made for it in the circular raised flange on the base-plate, a circular cam-disk slotted to move the locking-bar with which it is connected by a pivot on the bar entering the cam-slot, a cap-plate removably connected with the cam-disk, a lever on the cap-plate, and a center bolt to connect the parts, substantially as set forth.

3. The combination, with a base-plate having an upwardly-projecting arc-shaped rim, the latter having a locking-notch formed therein, of a locking-bar having a catch and a projection to engage the locking-notch in the rim, and an operating device resting on the rim

above the locking-bar and in engagement with the same.

4. The combination, with a base-plate having an upwardly-projecting arc-shaped rim, the latter having a locking-notch formed therein, of a locking-bar having a hook adapted to engage a catch and a projection to engage the locking-notch in the rim, a movable cam located above the locking-bar, and a spring for moving the locking-bar in one direction, substantially as set forth.

5. In a window-sash lock, the combination, with a base-plate, of a locking-bar having a hook adapted to engage a locking-catch, a toe on its rear curved end to engage a notch in a flange on the base-plate, a ring placed in a circular groove in the base-plate under the locking-bar, a coiled spring in the same groove and connecting the ring and the base-plate by its attached ends, a pivoted connection between the locking-bar and the ring-face, a cam-disk that engages the locking-bar by a pivot-connection in its slot, a cap-plate having a handle-extension, a stud on the cap-plate to engage a hole in the cam-disk, and a center bolt to hold the parts together, substantially as set forth.

6. In a sash-lock, the combination, with a base-plate and a locking-bar, of a cam-disk resting above and in engagement with the locking-bar, and a cap removably secured to the cam-disk and provided with a lever or projection for turning same, substantially as set forth.

7. The combination, with a chambered base-plate, a ring resting in the chamber in said base-plate, and a spring secured to the ring and plate and adapted to move the former in one direction, of a movable cam and a locking-bar located between the cam and ring and in engagement with both, substantially as set forth.

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

FRANK W. MIX.

Witnesses:

S. N. CHAFFER,  
E. L. PRIOR.