(No Model.) 2 Sheets—Sheet 1.

# M. F. MAHONEY.

## SWINGING WINDOW.

No. 521,472. Patented June 19, 1894.

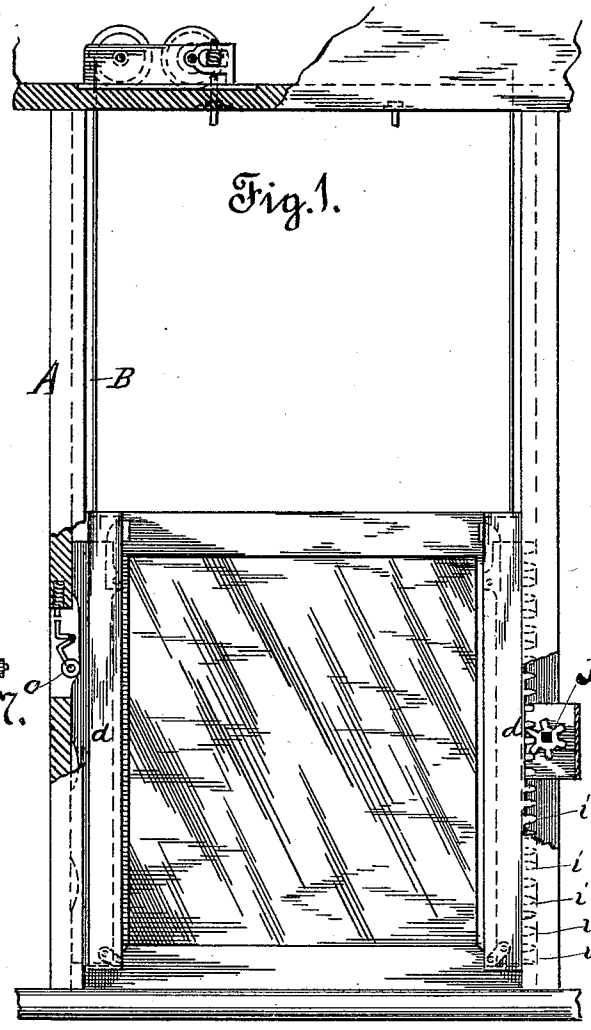

Fig. 1.

Fig. 7.

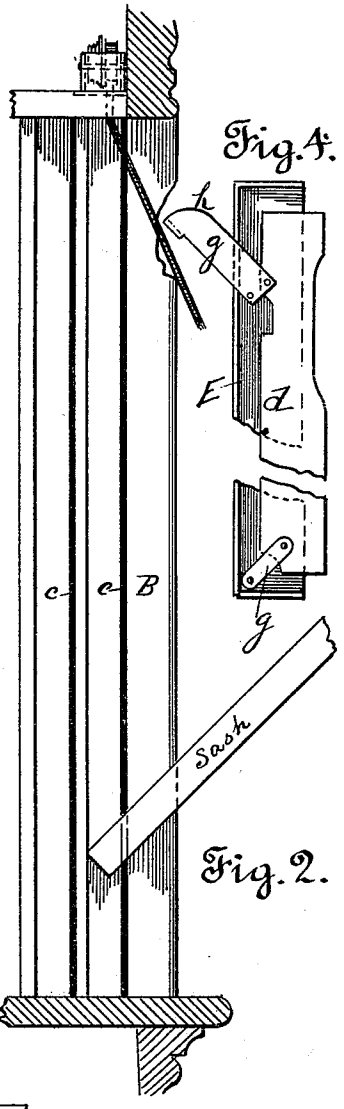

Fig. 4.



Fig. 2.

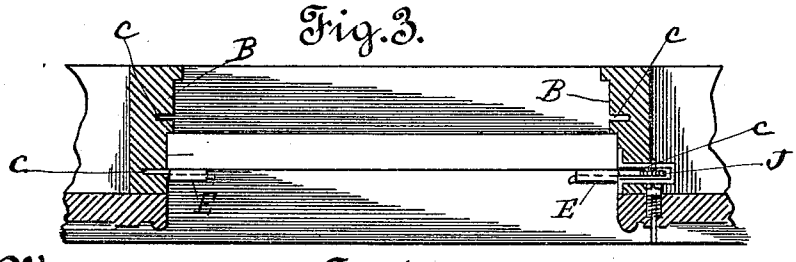

Fig. 3.

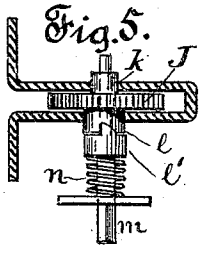

Fig. 5.

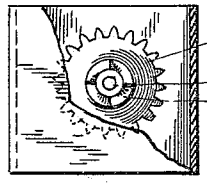

Fig. 6.

Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

# M. F. MAHONEY.

## SWINGING WINDOW.

No. 521,472. Patented June 19, 1894.

Fig. 8.

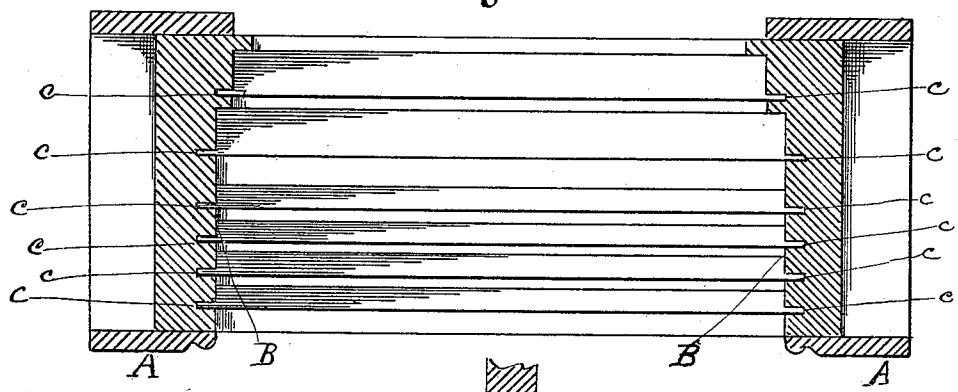
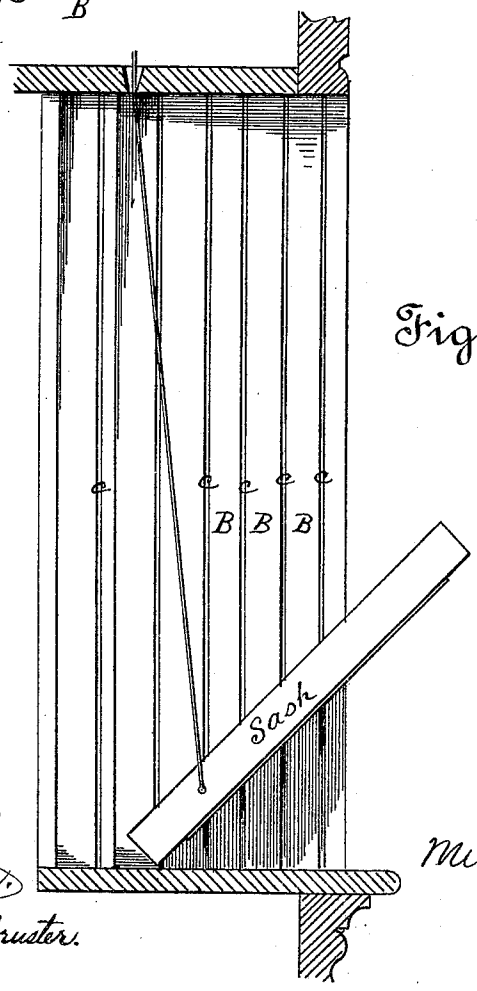



Fig. 9.




Witnesses.

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# UNITED STATES PATENT OFFICE.

MICHAEL F. MAHONEY, OF SAN FRANCISCO, CALIFORNIA.

## SWINGING WINDOW.

SPECIFICATION forming part of Letters Patent No. 521,472, dated June 19, 1894.

Application filed May 17, 1893. Serial No. 474,544. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL F. MAHONEY, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Swinging Windows; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

The object of my invention is to provide an improved construction of window-frames and sashes, in which the usual stops and parting strips which guide the sashes are dispensed with, and to provide means in connection therewith for guiding the sashes and securing them in place that can be readily withdrawn or disconnected so that the sashes can be entirely removed or turned to the inside of the room or house for cleaning or repairs, and as easily returned and secured in place without detaching or removing any part of the frame.

My invention also applies to window screens and blinds, and provides an improved window in which the pulley stile has a perfectly flat or plane face without projections or strips, and in which the blinds, window and screens are each and all readily removable, yet perform their functions of raising and lowering, while they are as securely held in place as if separated or held by stops and parting strips.

In connection with my improved window construction I also provide a convenient locking mechanism and a burglar alarm action that render the construction complete and perfectly adapted for security and comfort, all as hereinafter more fully described.

Referring to the accompanying drawings, Figure 1 is a front elevation of a window showing the frame partly broken away. Fig. 2 is a side elevation of one of the pulley stiles showing the window sash partly turned into the room. Fig. 3 is a transverse section of the window-frame. Fig. 4 shows the parallel mechanism for operating the slide plates. Fig. 5 is a detail top plan of the locking mechanism for the window; and Fig. 6 is a front elevation of Fig. 5, with the operating key or pin removed; Fig. 7, a separate view of lever of burglar alarm. Fig. 8 is a cross section of a window frame showing the grooves in the stile; and Fig. 9 is a vertical section of the window-frame, showing the grooves in the pulley-stiles.

Let A represent the casing of a window-frame, and B the pulley stile. This pulley stile I make perfectly plain or flat, without any stops or parting strips whatever. It can be made of wood or metal.

Instead of using stops and parting strips for holding the window sashes in place, and to guide them while being raised and lowered, I provide narrow slots or grooves *c. c.*, which extend from the top to the bottom of the pulley stile on each side of the window, and I then provide the sashes with plates or strips *d. d.* of wood or metal, which project from each of the side rails of the sash, so as to enter and move in the grooves *c. c.* when the sash is in place. The plates or strips *d. d.* extend the full length of the sash, and are wide enough to enter the slots or grooves in the pulley stile and form a strong support for the sash. The window can then be raised and lowered in the ordinary way, the plates moving in the slots or grooves, and serving as supports and guides. In cold countries where it is desirable to make a very close joint to shut out wind and cold, two plates and two grooves can be used on each rail of the sash instead of using two sashes as is now done. It is also apparent that blinds, shades and screens can be applied to the window in the same way, the only requisite being that the pulley stiles be furnished with a sufficient number of parallel slots or grooves to accommodate such screens and blinds.

In order to allow the sashes, blinds or screens to be removed from the window opening, or to allow the sash to be tipped into the room for cleaning the glass, or for repairs, I provide a movable plate *d*, which can be thrown outward from the sash rail into the slots or grooves *c* in the pulley stile, or withdrawn into the sash rails as occasion requires. The most convenient way to do this is to mount the plate *d* in a metal casing E, as shown at Fig. 4, and connect the plate *d* at top and bottom with the casing by means of links *g. g.* and a lever *h*, and then secure the casing to the sash rail. The lever *h* serves both as lever and link, so that by throwing

the lever inward, up or down, according to its attachment, so as to lie close against the casing, the plate *d* is thrown outward by a parallel movement into engagement with the slot or groove in the pulley stile, and by throwing it outward the plate *d* is withdrawn by a parallel movement into the casing, and thus withdrawn from the slot or groove, leaving the sash free to be removed from the window, opening or turned inward, as represented at Fig. 2. This arrangement will be readily understood by an examination of Fig. 4.

The plate *d* on one side of the window sash I provide with teeth *i* on its edge so as to convert it into a rack, and this rack will engage with a toothed or spur wheel J, which is mounted inside the casing opposite the slot *c*, about midway of the sash, where the plate is thrown out into the slot. The wheel J is mounted upon a hollow shaft or spindle *k*, the outer end of which is formed into one portion of a clutch *l*. A shaft *m* passes from the interior of the casing through a hole and into the hollow shaft or spindle *k*, and it carries the other part *l'* of the clutch. A spiral spring *n* surrounds the shaft *m* and serves to hold the two parts of the clutch together when they are in the locking position. The shaft or spindle *k* extends into the room through the window casing, and has a button or knob on its end (not shown). It is therefore evident that when the clutches are engaged the rotation of the spur wheel J is prevented, and the window sash is locked in position so that it cannot be raised or lowered, but when the spindle is drawn outward and turned so as to disconnect the parts of the clutch the sash is free to raise and lower.

To furnish a burglar alarm I mount a spring controlled contact roller *o* on the end of a pivoted lever in the opposite casing, and opposite the edge of the plates, as shown on the left side of Fig. 1. I then cut out portions of the edge of the plate, so that the roller will be thrown outward by the projecting portion of the edge of the plate when it strikes it in raising or lowering the window. This outward motion of the lever throws the opposite end of the lever in contact with the wire that leads to the alarm, and completes the circuit, so that the alarm is given. When the window is in its open or closed position the roller rests in one of the recesses out of contact with the plate and the circuit is broken. By the above arrangement, I provide a window that has many advantages over the present construction. It does away with the projecting stops and parting strips; the sashes will move easily while being raised and lowered; the joint between the sash and pulley stile is perfectly protected from the entrance of wind and dust; the sashes will be prevented from rattling by the wind, and they can be turned into the room or house to be cleaned or repaired without detaching any of the parts of the frame. It also provides a perfect lock, thereby avoiding the necessity of sash fasteners, and when used in connection with my improved sash balance placed in the head of the window-frame, as described in an application for a patent, Serial No. 441,330, which I have made, and which is now pending, the whole will form a complete and perfect window system that is adapted for all classes of buildings.

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

1. In a window, the combination with the pulley stiles having slots or grooves, extending their full length, of sashes having plates engaging said slots and hung or supported in said sashes by links, one link having the function of a lever, being pivoted or fulcrumed at one end at opposite points, to both the sash and the plate, and the other end adapted for manipulation by the hand, substantially as and for the purpose set forth.

2. In a window, the combination, with the pulley-stiles having slots or grooves extending their full length, of the sashes having plates hung or pivoted therein, and engaging said slots or grooves, and one of said plates geared to raising and lowering mechanism, substantially as and for the purpose set forth.

3. The combination of a window-sash, provided with a movable rack or plate adapted to be moved inward and outward, a gear or cog wheel and a hollow shaft carrying said wheel and provided with a clutch-head, and a shaft adapted to be manipulated by hand, and passing through said hollow shaft and having a clutch-head held in engagement with the aforesaid clutch-head by a spring, substantially as set forth.

4. The combination with the window sash, of the movable plate secured thereto, said plate having its outer face indented or cut away, of the vertical grooves or channel within which same work when thrown outward, of the contact switch operated by the movable plate contacting therewith as the window is raised.

5. The combination with the window sash, of the vertical clamp or holding plate secured thereto, of the movable plate located between the vertical plate and sash and held in place by the former, said movable plate having its outer face indented or cut away, of a device for throwing the movable plate in or out parallel with the vertical plate, of the groove or channel within which said plate fits when thrown outward, and of the contact switch operated by the movable plate connecting therewith as the window is raised.

In testimony whereof I affix my signature in presence of two witnesses.

MICHAEL F. MAHONEY.

Witnesses:
N. A. ACKER,
LEE D. CRAIG.