No. 767,644. PATENTED AUG. 16, 1904.

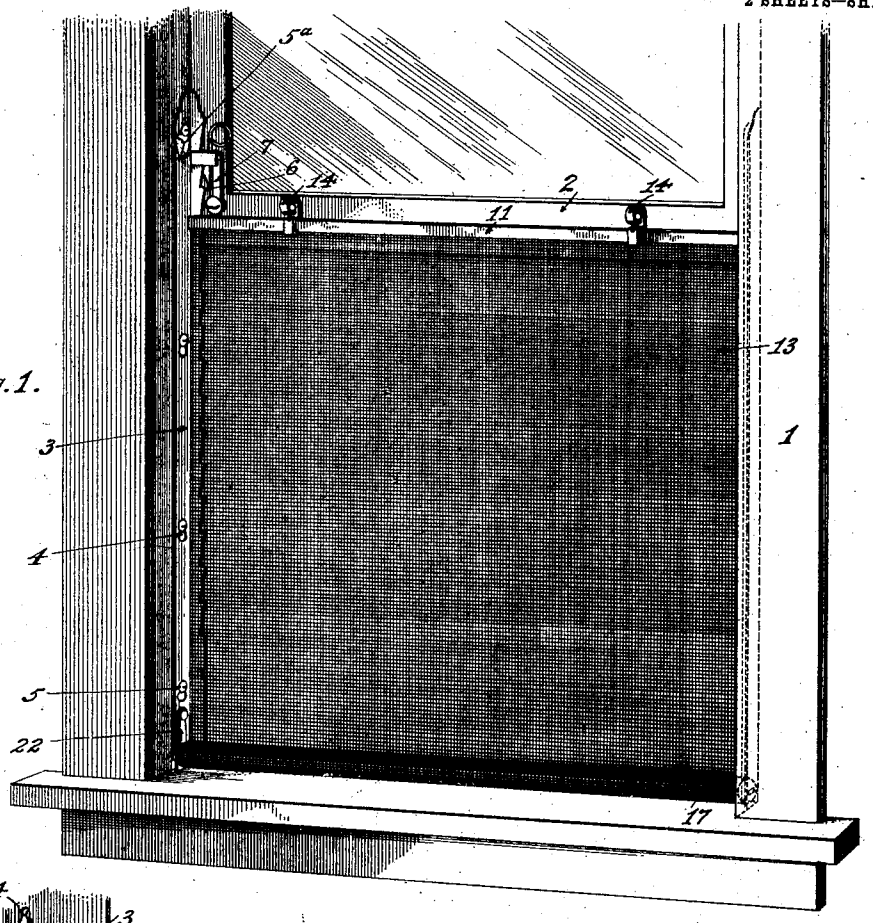
M. F. HUTCHISON.

ROLLER SCREEN.

APPLICATION FILED SEPT. 25, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.



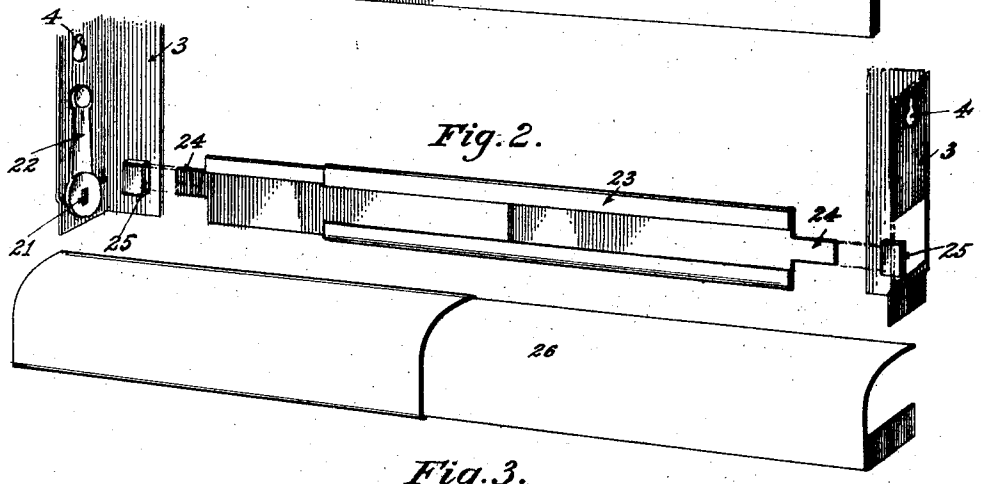


Fig. 2.

Fig. 3.

Witnesses

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No. 767,644. PATENTED AUG. 16, 1904.

M. F. HUTCHISON.

ROLLER SCREEN.

APPLICATION FILED SEPT. 25, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4.

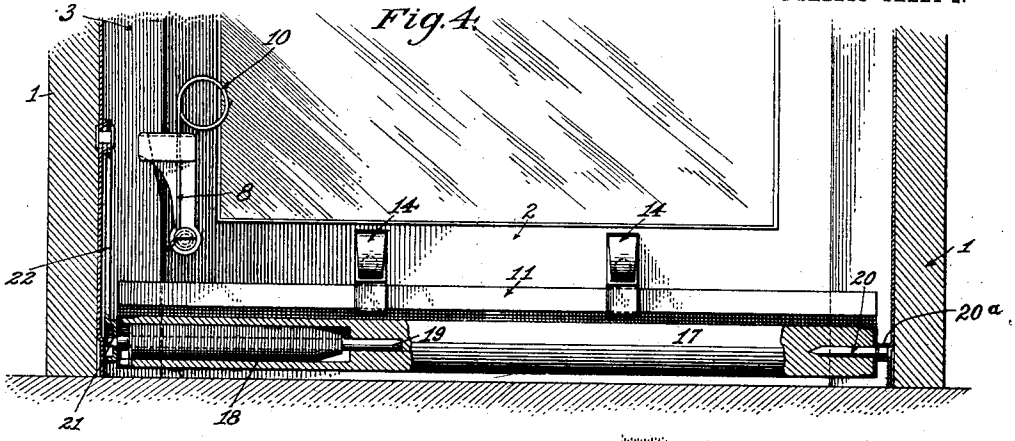


Fig. 5.

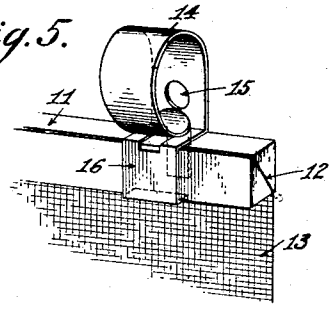


Fig. 6.

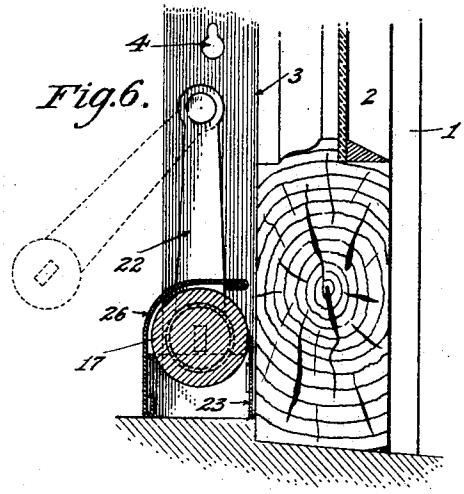


Fig. 7.

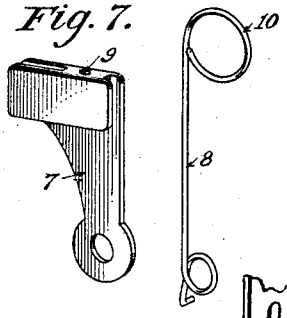


Fig. 8.

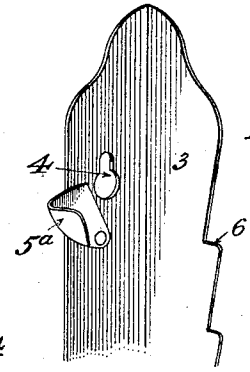
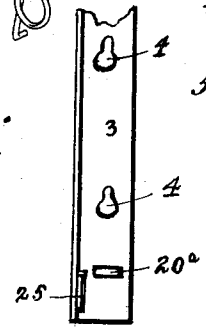


Fig. 9.



Witnesses

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No. 767,644. Patented August 16, 1904.

UNITED STATES PATENT OFFICE.

MAURICE FRANK HUTCHISON, OF FLORIS, VIRGINIA.

ROLLER-SCREEN.

SPECIFICATION forming part of Letters Patent No. 767,644, dated August 16, 1904.

Application filed September 25, 1903. Serial No. 174,540. (No model.)

To all whom it may concern:

Be it known that I, MAURICE FRANK HUTCHISON, a citizen of the United States, residing at Floris, in the county of Fairfax and State of Virginia, have invented new and useful Improvements in Roller-Screens, of which the following is a specification.

My invention relates to screens for windows, and more particularly to rolling screens adapted to be attached to window-sashes and rolled and unrolled as the sash is lowered or raised.

The primary object of the present invention is to provide a rolling screen operating with and controlled by the raising and lowering of the window-sash that will insure the exclusion of flies and other insects by maintaining the screen in close contact with the window-frame.

A further object of the invention is to provide a rolling screen that may be readily applied to an ordinary window-frame without altering the construction of the latter and removed without defacing the window frame or sash.

A further object of the invention is to provide improved means for attaching the screen to the sash and generally to improve the details of screens of the type referred to.

With these ends in view the invention consists of the features of construction hereinafter fully described, and illustrated in the accompanying drawings, which form part of this specification.

In the drawings, Figure 1 is a view in perspective of a portion of a window frame and sash with my improved screen applied thereto, the cover for the screen being removed. Fig. 2 is a perspective view showing the adjustable guard employed in connection with the screen-roller and the lower ends of the strips which support the guard and roller. Fig. 3 is a view in perspective of the telescopic cover for the screen-roller. Fig. 4 is an elevation, partly in section, showing the screen rolled and the sash in lowered or closed position. Fig. 5 is a detail perspective view of one end of the screen-supporting strip, showing the manner of securing the screen material thereto and also illustrating one of the finger-pieces for raising and lowering the sash and for detachably securing the screen-strip to the sash. Fig. 6 is a vertical section of the lower rail of the window-sash and screen-roller, showing the manner of suspending the latter. Fig. 7 is a perspective view of one of the spring-catches employed for securing the sash at different adjustments. Fig. 8 is a detail perspective view of the upper end of one of the guide-strips with its catch-button for securing the strip to the window-frame, and Fig. 9 is a detail view of the lower portion of one of the guide-strips.

The reference-numeral 1 designates a window-frame, and 2 the sash, both of which are of the well-known construction in common use. To each side of the frame 1 is detachably secured an angle-strip 3, said strips being formed with keyhole-slots 4, as best shown in Fig. 8, to receive headed pins 5, projecting from the inner surfaces of the frame. Adjacent to one or more of the slots 4 is a pivoted catch-button 5^a, which serves to retain the headed pins in the narrow portions of the slots, thus firmly securing the strips in place, but permitting them to be readily removed when the catch-button is turned away from the pin.

One of the angle-strips 3 is formed along its inner edge with a series of notches 6, adapted to be engaged by a spring-catch of the form shown in Fig. 7, comprising a dog 7, pivotally secured to the lower rail of the sash, as shown in Fig. 1, and a spring 8, bent around the pivot of the dog at one end, then extending upward through an opening 9, and terminating in a loop 10, by means of which the dog is pulled out of engagement with the notched strip. The upper portion of the dog is preferably bifurcated to adapt it to straddle the edge of the strip.

It will be apparent that the sash may be secured at any desired adjustment by the means thus described and readily released and lowered.

The numeral 11 designates a strip, preferably of wood, divided diagonally its entire length, as indicated at 12, between the two sections of which is secured the upper edge of the screen 13, the two sections of the strip

then being securely fastened together, as by gluing, tacks, or otherwise. As clearly shown in Fig. 5, this manner of securing the screen to the strip brings the screen flush with the inner side of the strip and in close contact with the window-frame when the sash is raised.

Upon the strip 11 are adjustably secured two finger-pieces, which serve the double purpose of means for raising and lowering the sash and means for detachably securing the strip 11 to the window-sash. Each of these finger-pieces comprises a curved arm 14, having a perforation 15 and a slide 16 conforming to the cross-sectional shape of the strip. The perforations 15 receive pins projecting from the sash-rail, and the manner of securing the finger-pieces upon the slide permits them to be adjusted thereon without removal therefrom, if desired.

The lower edge of the screen 13 is secured to a roller 17, one end of which is bored out to form a seat for a spring 18 and pintle 19, while the opposite end of the roller is provided with a pintle 20, supported in a bearing 20^a, formed in the adjacent strip 3. The spring 18 when in a relaxed condition is somewhat larger in diameter than the hollow portion of the roller 17 and before being placed in position therein is wound very tightly, so as to be under a high tension, thereby bearing against the inner walls of the roller, and the roller being suspended in the bearing 21 of the swinging arm 22 and the elongated bearing 20^a will thus by the action of the spring as the screen is unwound be gradually forced back and always in contact with the guard 23. The projecting end of the pintle 19 is squared to fit a slot 21, formed in the end of an arm 22, the upper end of which is pivotally attached to the adjacent strip 3.

In rear of the roller 17 is located a guard 23, preferably composed of telescopic sections to adapt it to be adjusted to fit windows of different widths and having end lugs 24 fitting within keepers 25 on the guide-strips 3. The function of this guard is to close the space below the roller, as illustrated in Fig. 6.

The screen-roller is concealed by a cover 26, comprising telescopic sections curved to conform to the position of the roller and adapted to be suitably supported between the guide-strips.

The operation of the mechanism as above described will be readily understood, the spring 18 being so adjusted that when the sash is closed and the screen rolled up there will be little or no tension on the spring; but as the sash is raised the tension on the spring will increase, so that any movement of the sash in a downward direction will cause the screen to wind automatically.

A distinguishing feature of my construction of roller and spring is that the spring is so wound as to entirely fill the bore of the roller, and I have found that by this arrangement and adjustment of the spring the latter not only winds the screen, but imparts a slight rearward bodily movement to the roller when the screen is unwinding, throwing the roller toward the guard 23 and effectually preventing the ingress of insects below the roller.

It is obvious that my improvements may be applied to any ordinary window and may be quickly removed when desired.

When the sash to which the screen is attached is weighted by the ordinary counterbalancing cord and weight, the notches 6 and spring-catch for sustaining the sash may be omitted.

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

1. The combination with a window-frame, of a roller, an elongated bearing for one end thereof and a pivoted arm provided with a bearing for the opposite end, a screen attached to the roller, a guard in rear of the roller and a coil-spring adjusted under tension within one end of the roller, substantially as described.

2. A rolling window-screen, comprising a supporting-strip having an inclined kerf or slot, a netting secured at its upper edge within said kerf or slot, a spring-roller to which the roller edge of the netting is attached and means for securing said strip to a window-sash.

3. A rolling window-screen comprising a supporting-strip divided diagonally of its length, a netting having its upper edge secured between the two portions of said strip, a spring-roller to which the roller edge of the netting is attached and finger-pieces laterally adjustable on without removal from said strip for securing the same to a window-sash.

4. The combination with a window-sash and a screen-roller, of an adjustable guard arranged in the rear of and adjacent to but not connected with said roller.

5. The combination with a window-frame, of angle-strips formed with keyhole-slots, means for detachably securing said strips to the frame and a catch-button on said strip adjacent one of said slots for locking the strips in position.

6. The combination with a window-sash of a rolling screen having a suspending-strip at its upper edge and finger-pieces adjustable laterally on without removal from said strip for raising and lowering the sash.

7. The combination with a window-frame, of angle-strips formed with keyhole-slots, means for detachably securing said strips to the frame, a catch-button for locking said strips in place, a screen-roller and a guard mounted in bearings in the lower ends of said strips in rear of and adjacent to said roller.

8. The combination with a window-frame, of angle-strips formed with keyhole-slots, a catch-button on said strips adjacent one of said

slots for locking the strips in position, one of said strips being notched, means for detachably securing said strips to the frame, a spring-catch for engaging the notched strip, a screen-roller, a guard arranged in rear of and adjacent to said roller and a cover for the roller.

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

MAURICE FRANK HUTCHISON.

Witnesses:
W. GALLIE,
E. L. ROBEY.