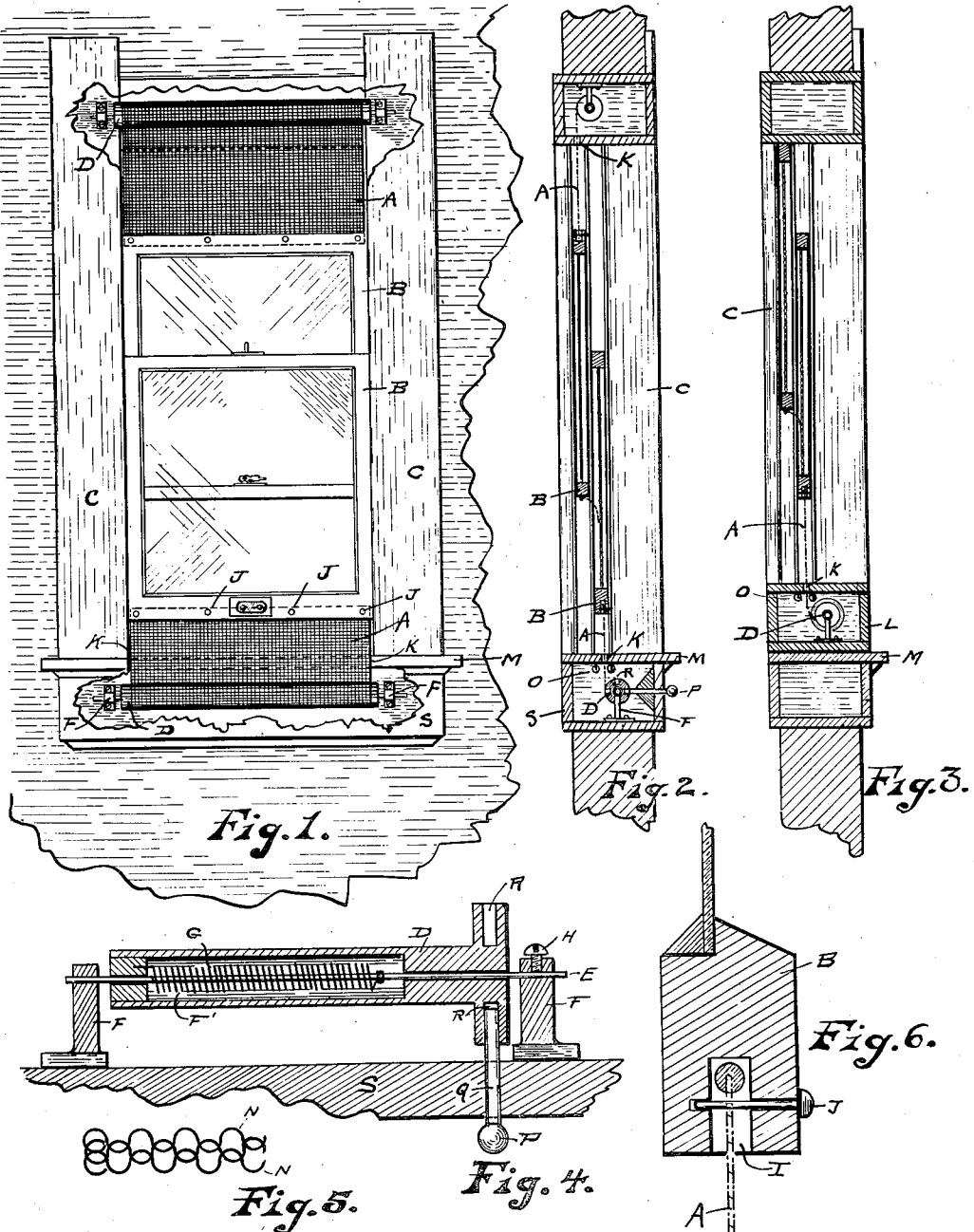


No. 819,396.

PATENTED MAY 1, 1906.

J. ANGELETTI.
FLEXIBLE WINDOW SCREEN.
APPLICATION FILED APR. 24, 1905.



WITNESSES:

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JOSEPH ANGELETTI, OF KENOSHA, WISCONSIN.

FLEXIBLE WINDOW-SCREEN.

No. 819,396.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed April 24, 1905. Serial No. 257,118.

To all whom it may concern:

Be it known that I, JOSEPH ANGELETTI, a citizen of the United States, residing at Kenosha, county of Kenosha, and State of Wisconsin, have invented new and useful Improvements in Flexible Window-Screens, of which the following is a specification.

My invention relates to improvements in flexible window-screens; and it pertains more especially, first, to the peculiar construction of the fabric comprising the screen, the strands of which are so formed and interwoven that the screen may be wound upon and unwound from a supporting-roller without bending the wires of which the fabric is constructed; second, to the peculiar construction and arrangement of the screens with a window-sash and sash-inclosing frame, whereby the screen is brought into the window-frame as the window-sash is opened and withdrawn therefrom as the window is closed.

My invention is further explained by reference to the accompanying drawings, in which—

Figure 1 represents a front view with parts broken away to disclose the interior. Fig. 2 represents a vertical section of a preferred form of my device in which the window-screens are located, one above and the other below the window-frame. Fig. 3 represents a modified form of construction in which the screen-supporting rollers are located in a separate inclosure within the window-frame instead of above or below it, this modified form being more especially adapted to be applied to the windows of old houses or houses previously constructed, where it would be impracticable to place the screen-supporting rollers outside the window-frame. Fig. 4 represents a longitudinal section of one of the screen-supporting rollers. Fig. 5 represents an enlarged view of a portion of the screen, showing the manner of interwinding or securing the wires of which the screen is composed together; and Fig. 6 represents a device for attaching the ends of the screen to the window-sash.

Like parts are identified by the same reference-letters throughout the several views.

A A represent the window-screens, one of which is preferably used above and the other below the window.

B B represent the window-sash.

C is the window-frame.

D is a screen-supporting roller.

E is the roller-supporting rod.

F is a rod-supporting bracket. The roller is made substantially like the ordinary curtain window-roller and is provided with a central aperture F' for the reception of a spiral spring G. The spiral spring G is rigidly affixed at one end of the roller-supporting rod E and at its opposite end to the roller D, as indicated in Fig. 4. The rod E is prevented from turning in the bracket F by the set-screw H. One end of the screen is attached to the roller D by nails or in any other equivalent manner, and the opposite end is attached to the window-sash, as indicated in Figs. 1 and 6.

The upper and lower window-sash are preferably provided with a recess I for the reception of the end of the screen, which is inserted therein and retained in place by a plurality of transversely-arranged pins J, as indicated in said Fig. 6.

In the preferred form (shown in Fig. 1) the screen-supporting rollers are located one below the window-sash and the other above the top of the window, and the free ends of the screen are drawn through the respective slots K K of the frame and connected with the respective upper and lower sash-rails of the respective upper and lower windows.

It will be understood that preparatory to connecting the screens with the respective window-sash they are first wound upon their respective rollers. Their free ends are then connected with the ends of the opposing window-sash in any convenient manner. This being done, it will be understood that when the windows are opened or moved away from the respective rollers the screens will be unwound therefrom, when the spiral springs G will be wound up by the unwinding movement of the screen. When, however, the windows are closed or moved in the opposite direction, the rollers will be caused to revolve in the opposite direction by the recoil of the actuating-springs G, whereby the screens will be again wound upon said supporting-rollers.

For convenience in attaching my screens to windows already in use I have provided a separate screen-inclosing box or receptacle L, which is placed upon the window-sill M, when the screen-supporting roller is affixed to the lower side of the receptacle L by the bracket F, when the sash is closed against said screen-retaining receptacle. A similar receptacle L may, if desired, be used at the upper end of the window-frame and connected with the upper sash, said screen-supporting roller and

bracket being connected with the receptacle L instead of being connected with the window-frame, as shown in Figs. 1 and 2. Thus it is obvious that the modified form of construction shown in Fig. 3 may be readily and quickly attached to the windows already in use simply by placing the receptacle L beneath or above the sash and connecting the free ends of the screens with the opposing window-sash.

It will also be understood that by my form of construction when the screens are not in use they can be readily detached from the sash and permitted to wind upon the rollers in their respective receptacles, and said receptacles will serve as a place of storage for the screen when not in use.

Another advantage gained by my construction consists in the fact that when the windows are closed the screens are removed therefrom, and the light and view are not obstructed thereby.

The screens are only used and exposed to the weather when the windows are opened, and when the windows are closed, as is usual in inclement weather, the screens are removed and protected therefrom. While ordinary wire or other screen cloth may be used, I preferably form a screen of special construction in which the fabric comprising the screen is free to be wound upon a cylindrical roller or unwound therefrom without bending the wires. To accomplish this object, the screen is preferably made of a plurality of horizontally-arranged spiral wires N, which are looped or interwound together, substantially as are the wires comprising the ordinary woven-wire mattress, while the free ends of the respective wires are turned inwardly and looped together in pairs or sets of two each, as shown in Fig. 5, whereby each wire comprising the fabric is free to turn independently of the next adjacent wire with which it is connected without bending the wire, owing to which fact the fabric comprising the screen can be readily and freely wound upon a cylinder without bending the wires of which it is composed, and the liability of the wires becoming crystallized and broken, as would otherwise be the case, is avoided, while owing to the peculiar manner of interlocking the ends of the respective wires together in sets of two each, as indicated, a smooth marginal edge of the screen is formed and the necessity of employing a separate binding for such marginal edge for holding the ends of the wires of which it is composed is avoided.

To prevent the respective screens from con-

tacting with and chafing with the sides of the slots K of the window-sash or inclosure through which they are being drawn as they are wound upon and unwound from their supporting-rollers, I preferably provide the inclosure with one or more longitudinal guide-rollers O O, which serve to guide the screen through the center of the slot as the window-sash are being raised and lowered.

To prevent burglars or others from entering a window, as they might otherwise do when the window-sash is raised, I have provided means for locking the screen-supporting rollers D at several different points of adjustment, whereby the screen will remain taut, and it will be impossible for a person to enter the window without cutting the screen, while owing to the fact that the screen is composed of comparatively large wires it furnishes a substantial barrier to the admission of persons from the exterior.

As a means of locking the screen-supporting roller I have provided one end of the roller D with a plurality of sockets R for the reception of the fastening-pin P, which pin P has slidable bearings in the roller-inclosing case or wall S. Thus it is obvious that after the window is raised it is necessary simply to push the pin forward into one of the several sockets of the roller, whereby the roller will be prevented from turning and the screen from being unwound therefrom. When, however, it is desired to close the window, it is necessary simply to draw the pin B from the socket, when the roller will be free to wind as the screen is released.

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

The combination of a window-sash; a window-screen; a screen-supporting roller; a radial flange provided with a plurality of recesses connected with one end of said roller; one end of said screen being attached to said window-sash and the opposite end being attached to said roller; means for automatically winding said screen upon said roller as the same is released by the movement of the sash and a horizontally-moving locking-pin having slidable bearings in the window-frame adapted to engage the recesses of said radial flange and lock the screen-supporting roller at any desired point of adjustment.

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

JOSEPH ANGELETTI.

Witnesses:

JAS. B. ERWIN,
NELLIE TAUGHER.