(No Model.)

# J. H. ONSTAD.

## WINDOW SCREEN.

No. 601,715. Patented Apr. 5, 1898.

Fig 1.

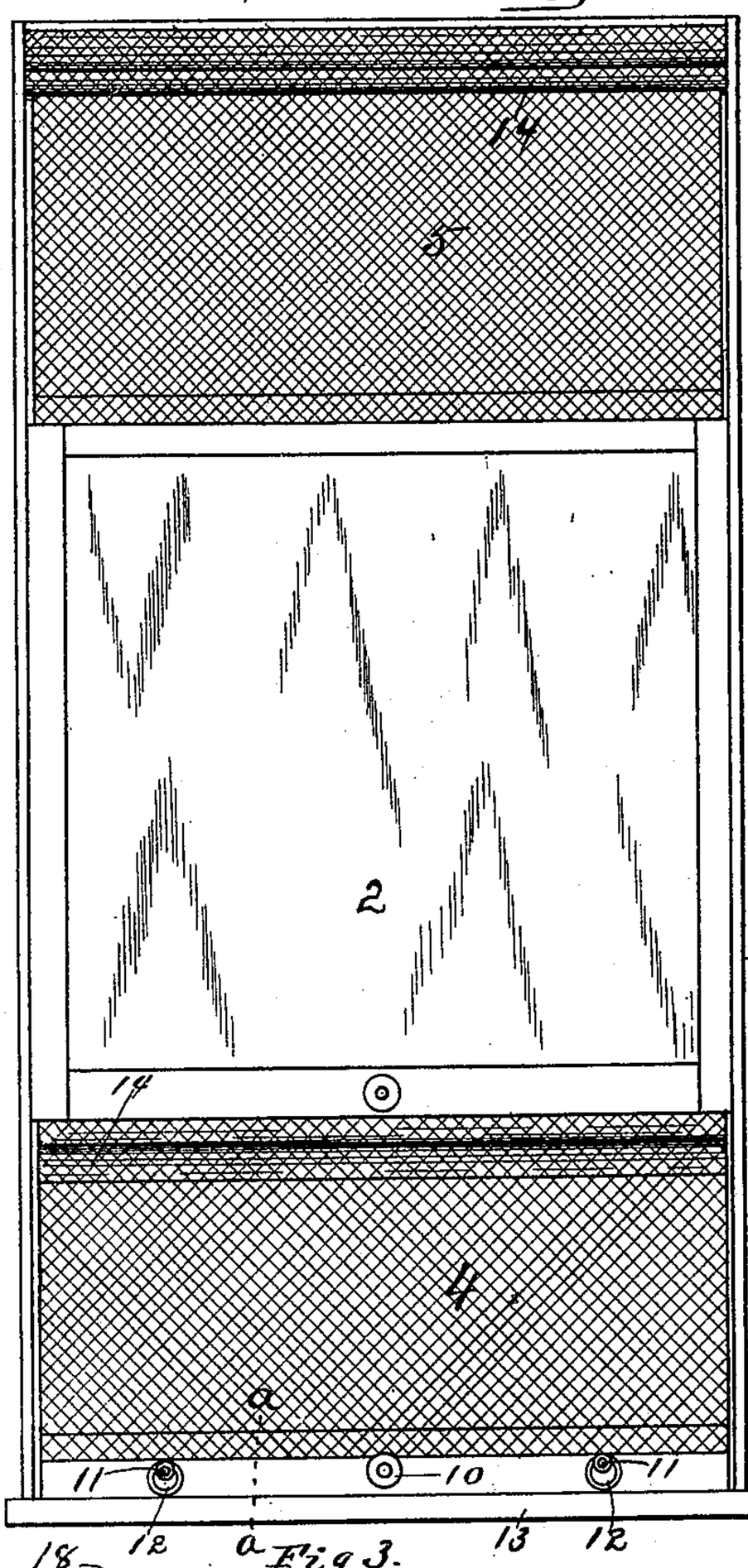



Fig 3.

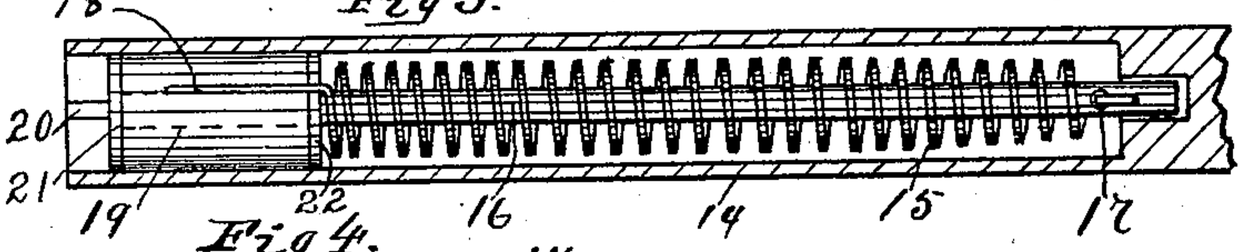



Fig 4.

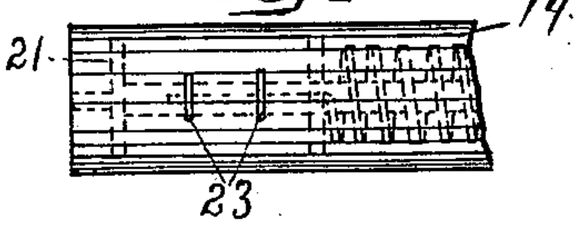
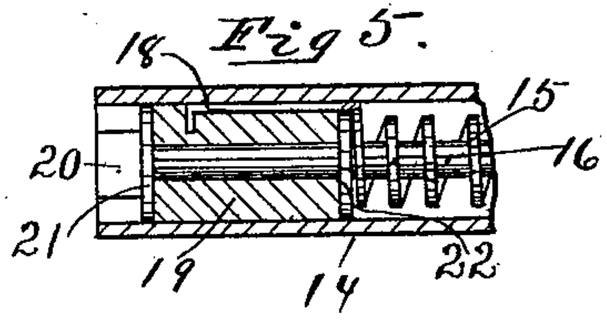



Fig 5.



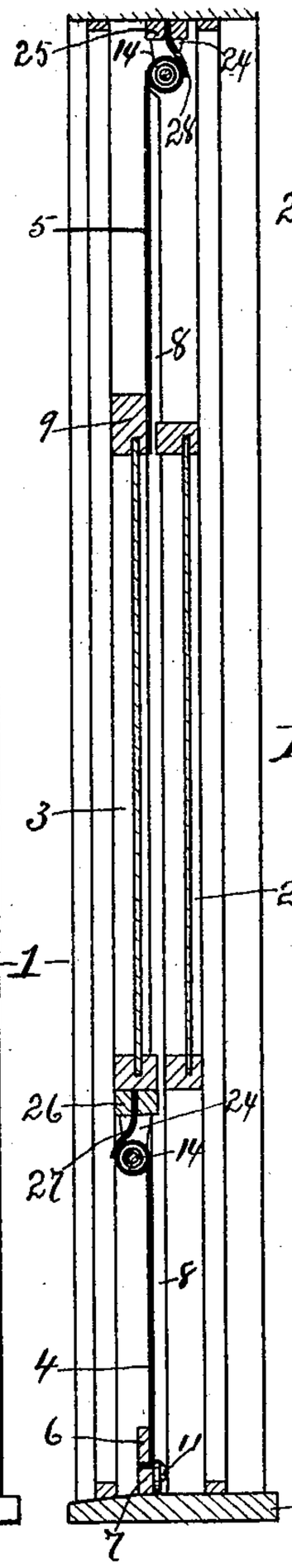




Fig 6.

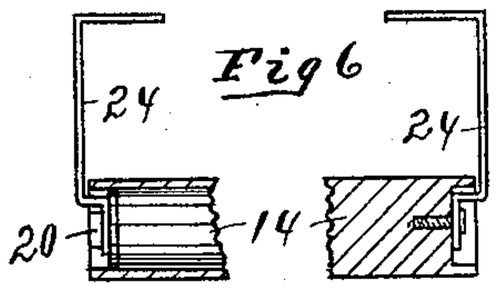



Fig 7.

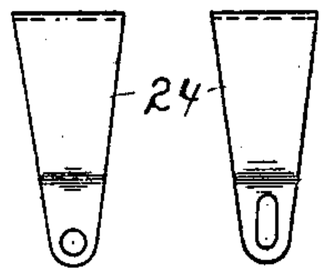



Fig. 2. Fig 8.

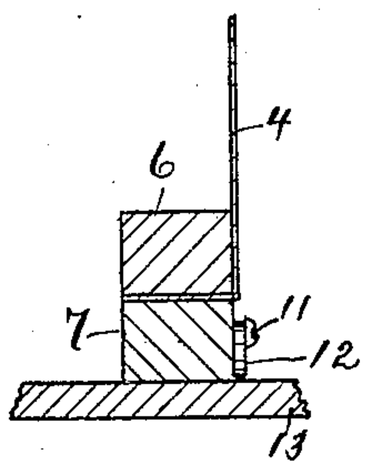
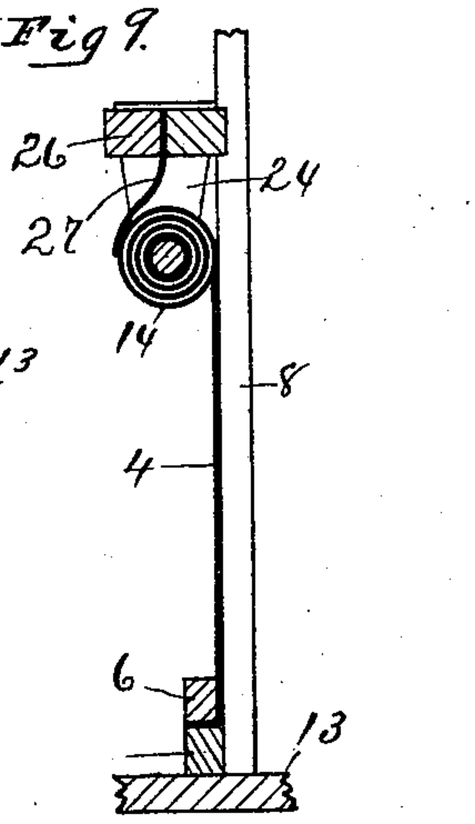



Fig 9.

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# UNITED STATES PATENT OFFICE.

JOHN H. ONSTAD, OF DAYTON, OHIO.

## WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 601,715, dated April 5, 1898.

Application filed August 25, 1897. Serial No. 649,493. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. ONSTAD, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Window-Screens; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in window-screens of the class which have means for automatically winding and unwinding the screens as the sashes are moved up or down.

The main objects of the invention are to dispense with the use of dogs for holding the rollers, to so place the screen material that there will be no openings between it and the side parting-strips of the window-frame, to close the horizontal space above the screen-rollers in a manner to always insure said space being closed, and to simplify the construction of the roller and to reduce the diameter thereof without curtailing the strength of the roller in order that it may not entirely fill the cross-space of the channel between the parting-strips. To obtain a full understanding of the invention, reference is made to the accompanying drawings, of which—

Figure 1 is an elevation of the inner side of a window having my improved screen therein. Both sashes are moved to a central position in the window in this view, in which position the upper and lower screens are partly wound upon their rollers. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is an enlarged longitudinal sectional view of one end of the winding-roller. Fig. 4 is a side elevation of the same end of the roller. Fig. 5 is a sectional view of the same end of the roller. Fig. 6 is a sectional view of each end of the roller attached to the brackets; Fig. 7, side elevations of the brackets; Fig. 8, an enlarged section through the lower horizontal screen-strips on the line *a a* of Fig. 1. Fig. 9 is an enlarged vertical sectional view of the lower screen, showing a portion thereof and one of the parting-strips in elevation.

Similar reference characters indicate corresponding parts in the several views.

1 designates the frame of the window, and 2 the lower and 3 the upper sash, which are all of the usual construction.

4 and 5 designate, respectively, the screens, which consist of fibrous material having a desirable flexibility to permit of its readily winding upon the rollers. The lower edge of the lower screen 4 is secured between two horizontal strips 6 and 7 by entering said strips from the inner side in order that the vertical edges of said screen will lie close to the parting-strips 8. The lower edge of the upper screen 5 is secured to the inner face of the upper horizontal strip 9 of the upper sash in order that the vertical edges of the upper screen will also lie close to said parting-strips, and thereby avoid having openings at the vertical edges of the screens, through which flies might find their way.

10 designates a finger-piece secured to the lower horizontal cross-piece 7, by which the lower screen is manipulated, and 11 11 are pins projecting from said piece 7, which are adapted to enter eyes 12 12, projecting from the window-sill 13.

The lower end of the upper screen 5 is maintained in position by the upper sash, and both screens are wound and unwound by raising or lowering said sash in the usual manner.

14 designates the rollers, usually constructed of wood, one end of which is hollow, as shown in Figs. 3, 4, and 5, to inclose the usual coil-spring 15. In the present instance this spring surrounds a small metallic spindle or rod 16, which has the desired strength and admits of the roller being made substantially smaller than common. Therefore said rollers may be successfully operated in all windows. One end of the spring is projected through an opening 17 in the inner end of the spindle and is bent over to secure it therein. The outer end 18 of said spring is turned and the extreme end enters the side of a wooden plug 19 and is therein made secure. The outer end of the spindle loosely penetrates said plug, so that the latter may turn with the roller, and the extreme outer end 20 of said spindle is flattened, as shown in Fig. 5. The ends of the plug 19 have two metal-

lic washers 21 and 22, which are also loose on the spindle.

In Fig. 4, 23 are one or more brads that are driven into the roller and enter the plug on each side of the secured end 18 of the spring. These washers are shown in Fig. 5 to be about the same diameter as the plug; but this is immaterial. The end of the spring being comparatively thin and flat and the roller and plug being constructed of white pine, the end of said spring is not prevented from lying along the side of the plug, as shown. It will either embed itself in the surface of the plug or in the inner side of the roller. The plug is snugly inclosed in the end of the roller, and as the latter is turned the spring is put under tension.

24 designates two angular brackets with their upper ends projected at right angles and their lower ends provided with round and oblong openings, as shown in Fig. 6, the latter opening fitting over the flat end 20 of the spindle. The lower ends of said brackets are also turned inwardly to enter recesses in the ends of the roller. The roller is thus supported on these brackets, which in turn have their upper horizontal portions or ends secured to the upper sides of the upper horizontal and lower horizontal strips 25 26. The upper strip 25 is secured to the upper horizontal part of the window-frame, while the lower strip 26 is affixed to the lower side of the lower horizontal strip of the upper window-sash 3. Each of these strips 25 26 consists of two pieces secured together longitudinally, and which tightly inclose longitudinally the strips 27 28 of screen material. These strips 27 28 lap over the rollers, as shown, and thereby close all space over the upper sides of said rollers. It will be noted that the position of attachment of these strips is on a line with the longitudinal axes of the rollers. This renders it necessary to bring the lower or free edges of said strips to one side of the roller in order for the said strips to rest on the rollers. This is important, as thereby there is a certain amount of pressure given the lower longitudinal edges of said strips that insures their being in constant contact with the rollers, which is maintained regardless of the amount of usage the said rollers may undergo.

Having described my invention, I claim—

A window-screen comprising fibrous material 4 having its lower horizontal edge secured between strips 6 and 7 so that the vertical edges of said material will lie close to the parting-strips of the window-frame, a roller to which the upper horizontal edge of said material is attached, two horizontal strips 26 attachable to the bottom of a window-sash, brackets 24 secured to the upper side of said strips, and upon which the said roller is mounted, and a strip of fibrous material inclosed longitudinally between said strips 26 in line with the longitudinal center of the roller and adapted to rest on said roller throughout the length thereof, as shown and described.

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

JOHN H. ONSTAD.

Witnesses:
R. J. McCARTY,
C. W. ELLIFF.