

(No Model.)

W. THOMPSON.  
SELF REGULATING WINDOW SCREEN.

No. 535,930.

Patented Mar. 19, 1895.

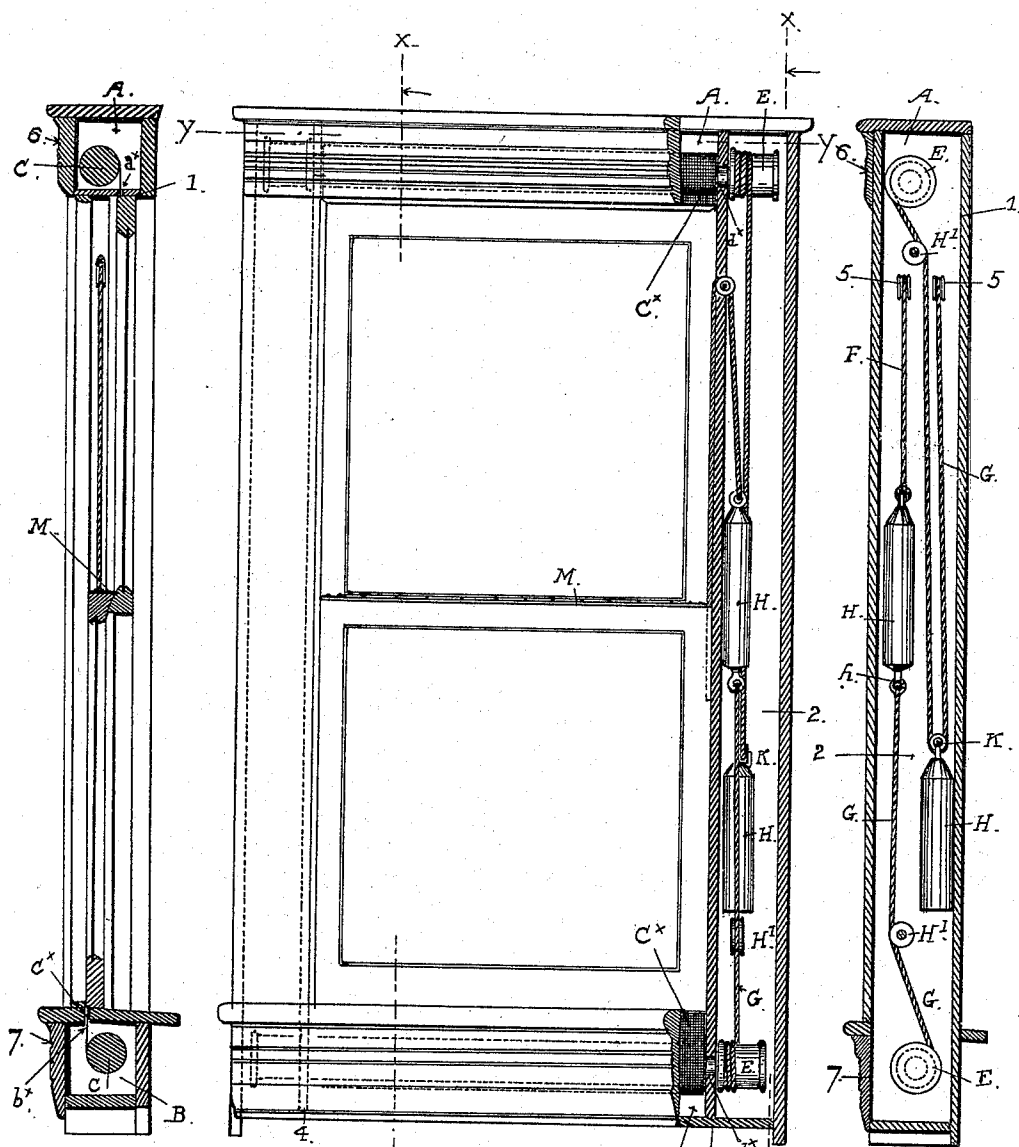


Fig. 2.  
Section through x.x. fig. 1.

Fig. 3.  
Section through y.y. fig. 1.

Fig. 4.  
Section through y.y. fig. 1.

Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM THOMPSON, OF SANTA CRUZ, CALIFORNIA.

## SELF-REGULATING WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 535,930, dated March 19, 1895.

Application filed July 18, 1894. Serial No. 517,931. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM THOMPSON, a citizen of the United States, residing at Santa Cruz, in the county of Santa Cruz and State of California, have invented certain new and useful Improvements in Self-Regulating Window-Screens, of which the following is a specification.

My invention relates to improvements made in self-acting window-screens of that class or description in which the screen is wound on a roller concealed from view and also protected from the weather within a pocket in the window-frame; and the end of the screen being attached to the sash it is drawn off the roller and caused to protect the opening between the sash and the window-frame by the movement of the sash.

The object of the present improvement is to provide simple and efficient means of operating a screen directly from the cords and weights of a window-sash and by the movements of the sash in the window-frame, whereby I am enabled to dispense with spring-rollers, holding-catches and other operating means in the frame in addition to the counter-weights of the window, and make the sash-weights do the work of winding up the screens and keeping them at proper tension to secure smoothness and a close fit over the opening between the sash and the window-frame when the sash is opened.

In the said drawings, Figure 1 represents in front-view looking from the inside of the room a window-casing with two sashes hung in the usual manner by cords and weights and having the said improvements applied thereto for operation. Fig. 2 is a cross-section taken on the vertical line  $x-x$ — Fig. 3, on the right-hand side of that line. Fig. 4 is a cross-section on the line  $x-y$ — and on the left-hand side of that line. Fig. 4 is a cross-section taken on the horizontal line  $y-y$ .

The main feature of this invention consists in so connecting the screen and its roller with the window-sash and with the counter-balance, or cords and weights, of the sash that the movements of the sash operate the screen and cause it to roll up and to unroll at all times under a state or condition of tension sufficient to keep the screen smooth and in

position to cover the opening between the sash and the window-frame when the window stands open.

In carrying out and applying my invention, to a window with an upper and a lower sash hung with cords and weights in the ordinary manner, I form a pocket  $A$ — in the window-frame above the head-stile  $1$ — the full width of the space between the vertical pockets  $2-2$ — provided for the weights at the sides of the frame; and at the bottom of the frame under the sill  $3$ — I form a pocket  $B$ — of the same length.

Across the head-stile  $1$ , on the underside, and from end to end of the pocket  $A$ , I cut a slot  $a^x$ — of suitable width to let the material of which the screen is made, such as wire-cloth, readily pass through without binding, and in like manner I cut a slit  $b^x$ — in the sill  $3$ . These slits are in line, or lie in the same plane with, the inner face of their respective sashes. In these pockets  $A-A$   $B$ — are set rollers  $C$ — having screens of wire-cloth or any suitable fabric  $C^x$ — wound or laid smoothly on them, the heads of the rollers being set against the side-boards  $4$ — of the pockets  $2$ ; and the axles  $d$ — of the rollers being set in bearings  $d^x$ — formed in the sides by cutting slots through them into the weight-pockets. On the ends of the axles  $d$ — extending into the pockets  $2$ , I fix flanged spools  $E$ , one on each end of the roller, of about the same diameter as the roller and in width about equal to the depth of the pocket, but with suitable clearance to avoid binding or rubbing.

The edge of the cloth along one end is fastened to the roller and being laid smoothly around it a sufficient number of times according to the length of the window-sash, the opposite end of the cloth is fastened to the edge of the sash; so that in raising the lower sash, or in drawing down the upper sash, the screen is drawn off its roller in the pocket out through the slit in the stile or sill. It should be mentioned that the slit and the roller are so located and placed that the screen as it is drawn off the roller will hug closely the window-stops at the sides of the sash.

The reverse motion to wind the screen on the roller is produced from the opposite movement of the sash in closing the window by

connecting the spools on the roller with the cords and weights of the sash in the following manner:—A cord —G— fastened at one end to the spool —E— and laid in several turns upon the spool is attached by the other end to the sash-weight —H— in the pocket —2— and a grooved-pulley —H'— is set in the pocket —2— to guide the cord —G— in line with the weight.

10 In the case of the top roller —A— the same cord —G— is made to serve for the screen-roller and for the window-sash by placing a pulley —K— on the sash-weight, and then carrying the sash-cord from the main pulley 15 —5— in the frame through the pulley —K— and up to the spool —E— on the roller-axle, to which that end of the cord is made fast. By this means, the weight of the upper sash is made to wind up the roller —A— and keep 20 its screen in proper tension.

The roller of the lower screen —B— is operated in a corresponding manner by the weights that counterbalances the lower sash; but instead of employing the sash-cord —F— 25 to connect the roller with the weight I attach a separate cord —G— to the spool and after laying it the required number of turns on the spool I fasten its end to the bottom of the sash-weight, making an eye —h— on that 30 end for that purpose. This connection of the roller-spools with the sash-weights is the same on both sides of the window-frame, so that the tension is applied to both ends of each roller. This construction allows the ordi- 35 nary weights and cords to be used without change, excepting that the upper sash requires a longer cord to extend from the sash-pulley in the frame to the weight and up to the spool of the screen-roller above.

40 To close the opening that is left between the upper and lower sashes of a window, and that otherwise would be unprotected, I attach a flat strip of sheet-rubber —M— to the bottom of the upper sash letting it extend inward toward the lower sash, so that its edge 45 touches that sash and covers the open space left when the lower sash is raised, or the upper sash is lowered. This strip —M— does

not interfere with the free movements of the sashes but to protect the opening between 50 the sashes that would not be covered by the screens.

Access is afforded to the roller-pockets by making the finish or front of the casing removable; both at the head-casing —6— at 55 the top and at the apron —7— at the bottom of the frame.

Having thus fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is— 60

1. In a self-acting window-screen, the combination, with a window-frame having horizontal screen-pockets in the ends provided with slits or openings for the passage of the screens, and vertical weight-pockets in the 65 sides; of the screen-rollers C, screens C<sup>x</sup> mounted in the screen-pockets, spools E on the ends of the said rollers and located within the vertical pockets and the sash-weight H and cords F G connecting the said weights to 70 the window-sashes and to the spools of the rollers, the ends of the said roller-screens being attached to the top and bottom sashes as described; whereby the sash-weights operate to wind up and keep in tension the said screens 75 in all movements of the sashes.

2. In a self-acting window-screen mechanism, the combination, with the screen-roller located in a pocket in the end of the window-frame and having spools on the ends which 80 extend into the sash-weight pockets in the sides of the frame and a flexible screen attached to the roller and to that end of the window-sash which is nearest to the roller-pocket, of the sash-weights and the cords connecting the weights to the sash, and a cord 85 in each side-pocket connecting the sash-weight in that pocket to the spool on the end of the screen-roller located therein, substantially as hereinbefore described. 90

In testimony that I claim the foregoing I have hereunto set my hand and seal.

WILLIAM THOMPSON. [L. S.]

Witnesses:

E. L. WILLIAMS,  
J. W. HUBBARD.