(No Model.) 2 Sheets—Sheet 1.

H. O. WHYMAN.

WINDOW SCREEN.

No. 263,371. Patented Aug. 29, 1882.

Fig. 1.

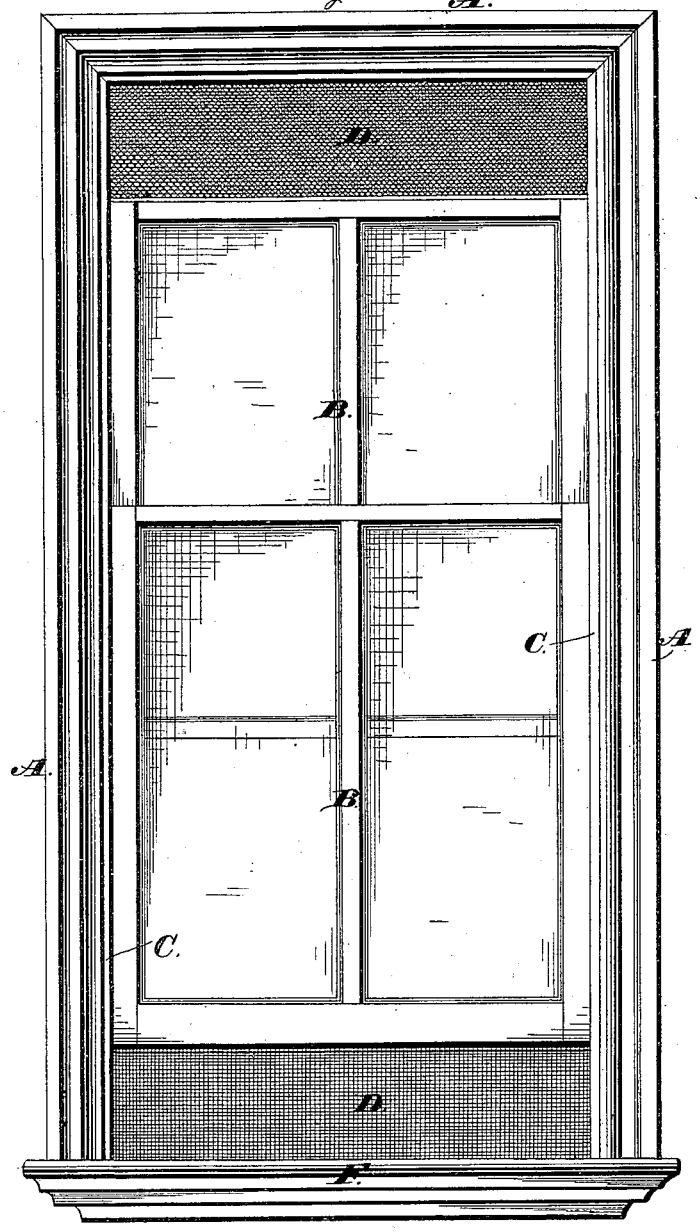
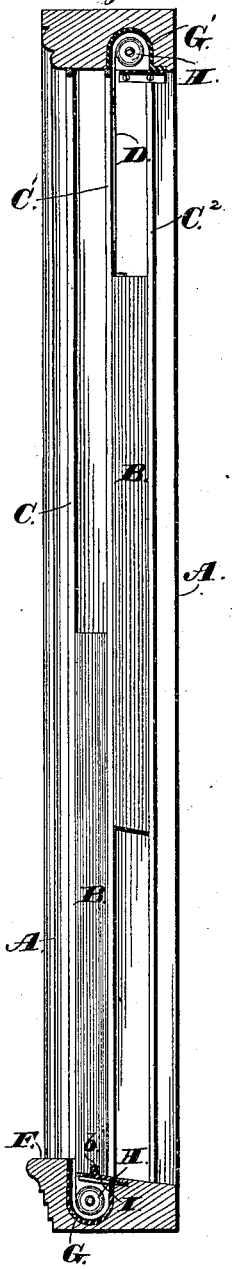


Fig. 2.



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

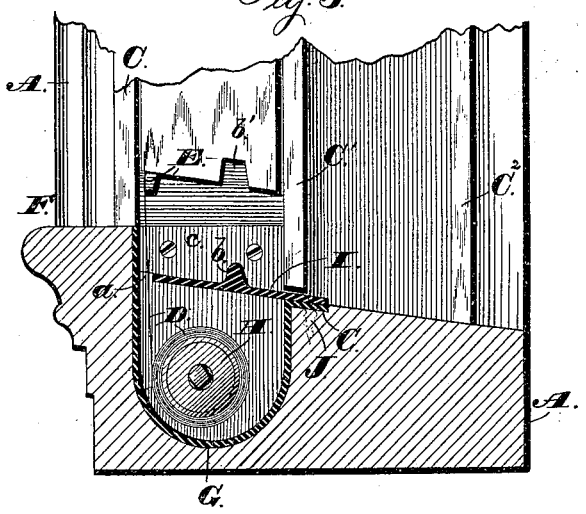
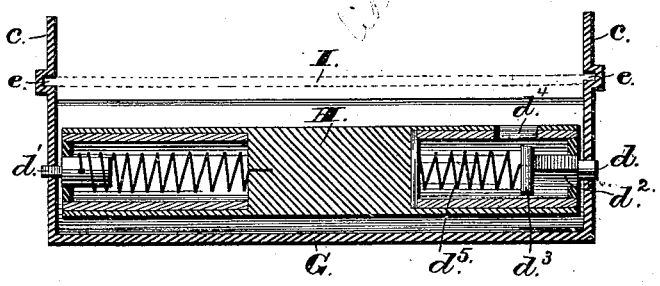


Fig. 4.



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UNITED STATES PATENT OFFICE.

HORATIO O. WHYMAN, OF NORFOLK, NEBRASKA, ASSIGNOR OF ONE-HALF TO AUGUST P. PILGER, OF SAME PLACE.

WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 263,371, dated August 29, 1882.

Application filed March 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, H. O. WHYMAN, of Norfolk, in the county of Madison and State of Nebraska, have invented certain new and useful Improvements in Window-Screens; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in window-screens; and it consists in the parts and combinations of parts, as will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a front view, showing the outer sash slightly lowered and the inner sash slightly elevated. Fig. 2 is a transverse vertical section of the frame with the sashes in their closed position. Fig. 3 is an enlarged transverse sectional view of the lower box and a portion of the frame, and Fig. 4 is a longitudinal sectional view of one of the spring-actuated rollers.

A represents a window-frame, and B the sashes secured therein by the beads C C′ C², and D the screens, made of flexible wire, cotton, or other suitable material, the outer or free ends of which are secured to the strips E. These strips E are respectively adapted to be removably secured to the lower edge of the lower or inner sash and the upper edge of the top or outer sash, and when removed from the said sashes to fill up the spaces *a*, through which the said screens pass from their respective boxes G G′, and thereby enable the window-frame to present a neat and finished appearance when the sashes are raised or lowered so as to expose the sill or cap-piece F. These boxes G G′ are constructed similar in every respect except the lid of the lower box, G, which is provided with a rib, *b*, adapted to prevent rain from beating under the window and passing into the said chamber G. The lower sash is provided with a corresponding groove, *b′*, which fits over the said rib *b* when the sash is lowered onto the sill. These boxes G G′ are of the same length as the window-sashes are wide, and are of size sufficient to comfortably admit of a spring-roller, H, with enough screening wound thereon to answer the necessary purpose. I prefer to make the boxes of cast metal, of the shape shown, and secure them in place by the flanges *c*. These boxes are each provided at one end with a round opening for the round spindle *d* of the spring-actuated roller H, and at the opposite ends with an angular opening for the reception and retention of the angular spindle *d′* of the roller H. This spring-actuated roller H is intended to act similarly to the spring-actuated window-curtain rollers now ordinarily employed, except that there is no mechanism interposed for preventing the spring from constantly performing its function. In this case the constant tendency of the spring is to wind the screen on the roller; but this tendency is overcome by the window-sash to which the screen is secured. As the sash is raised or lowered the screen is also withdrawn from the boxing or wound on the roller, and is constantly in position to act. The boxes are secured in position by simply removing a portion of the sill and cap-piece of the window-frame immediately under and over the sashes, and when secured in position present a neat appearance.

I are the lids, slightly longer than the boxes, and are adapted to slide in the grooves *e* and protect the screen. When these covers are placed in position they are secured by screws J, which hold them firmly in place. A space, *a*, is left from each box for the passage of the screw, which space is filled by the strip E when they are removed from the sashes.

When any of the parts of my improved device become broken or disarranged from continued usage it is only necessary to lift or lower the sash, as the case may be, and remove the lid of the box, which gives free access to the spring-roller and screen.

The screens D are of the same width as the window-sashes, and are respectively secured on the inner side of the lower edge of the lower sash and the inner side of the upper edge of the upper sash, which enables them to bear respectively against the beads C and C′ throughout the entire length of the screens, and thereby prevent the edges thereof from being blown

inward, which would allow an ingress for mosquitoes, flies, &c. As either sash is raised or lowered the screen is reeled off or wound on the roller, as the case may be, and hence there is no slack at any point which would be liable to catch in the frame as the sashes are raised or lowered.

The great difficulty heretofore experienced in the use of this style of screens is that when any portion thereof becomes disarranged from constant use it becomes necessary to tear up the window-sill and cap-piece F to get at the parts, which is a laborious as well as a costly operation, and one of the objects of my present invention is to obviate this defect by securing either wooden or metallic boxes to the window-frame below the lower sash and above the upper sash and provide the same with sliding covers, which are retained in place by screws, and which form respectively parts of the sill and cap-piece. By this means, after the window is once provided with my improved screen and boxing, it is only necessary to remove the lid, which exposes the screen to view.

The spring-actuated rollers H, as before stated, are intended to act similarly to the ordinary spring window-curtain roller, with the exception that they are not provided with any automatic stop mechanism for holding the screens at any desired height. Each roller is provided on one end with the round spindle d and the angular spindle d', by means of which it is held in the box. This round spindle d is provided with a square body or shank, d^2, and with the shoulder d^3, which latter comes immediately under the opening d^4. The inner end of this spindle d affords a bearing for one end of the spring d^5, which latter exerts sufficient pressure on the said spindle to hold the same out in position, while the square body or shank d^2 thereof prevents the same from turning.

When for any reason whatever it becomes necessary to remove the roller from the box it is simply necessary to insert a pointed instrument through the opening d^4 until the same bears against the shoulder d^3, when, by slight pressure inward, the spindle d is drawn in the roller H, which allows the said roller to be taken from the casing without trouble or inconvenience.

If desired, a small lug can be formed on the body of the spindle d and project up through the opening d^4, so as to enable the spindle to be moved inward without the aid of an instrument.

If it should be necessary to take the roller from the box and the tension of the spring be lost thereby, the necessary amount of power can be imparted thereto by fastening a string to the outer end of the screen, and after the same has been wound on the roller, and winding the string a few times around the roller, and then placing the roller with the screen and string wound thereon in the box. By the time the string is unwound and the screen reached the spring will have full power to perform its necessary function.

The boxes G, I prefer to make of cast metal, and provide the same with a metallic top or lid, I, as they can be manufactured at a small initial cost, and will last longer and answer the purpose better than wood.

My improved device is simple in construction, can be secured to any ordinary window-frame, is of few parts, and can be manufactured at a small initial cost.

It is evident that slight changes in the construction of the different parts might be resorted to without departing from the spirit of my invention, and hence I would have it understood that I do not limit myself to the exact construction shown and described, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. In a window-screen, the combination, with the frame having a box secured thereto below the lower sash and a box secured thereto above the upper sash, and removable covers adapted to slide in grooves formed in the ends of the said boxes, of spring-rollers, each having one end of a flexible screen wound thereon, while the opposite ends of the said screens are respectively secured to a strip which is adapted to fill the space between the lid and side of the box for the passage of the screen when the said screens are disconnected from their respective sashes, substantially as and for the purpose set forth.

2. In a window-screen, the combination, with the window-frame having the box secured therein, a spring-roller pivotally secured within the said box, and a flexible screen, one end of which is connected to the spring-actuated roller, while the opposite end thereof is removably secured to the window-sash, of a removable lid or cover to said box, provided with a rib, and the window-sash, the lower edge of which is provided with a groove adapted to fit over the said rib, substantially as and for the purpose herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of March, 1882.

HORATIO O. WHYMAN.

Witnesses:
O. J. EGBERT,
C. B. BURROWS.