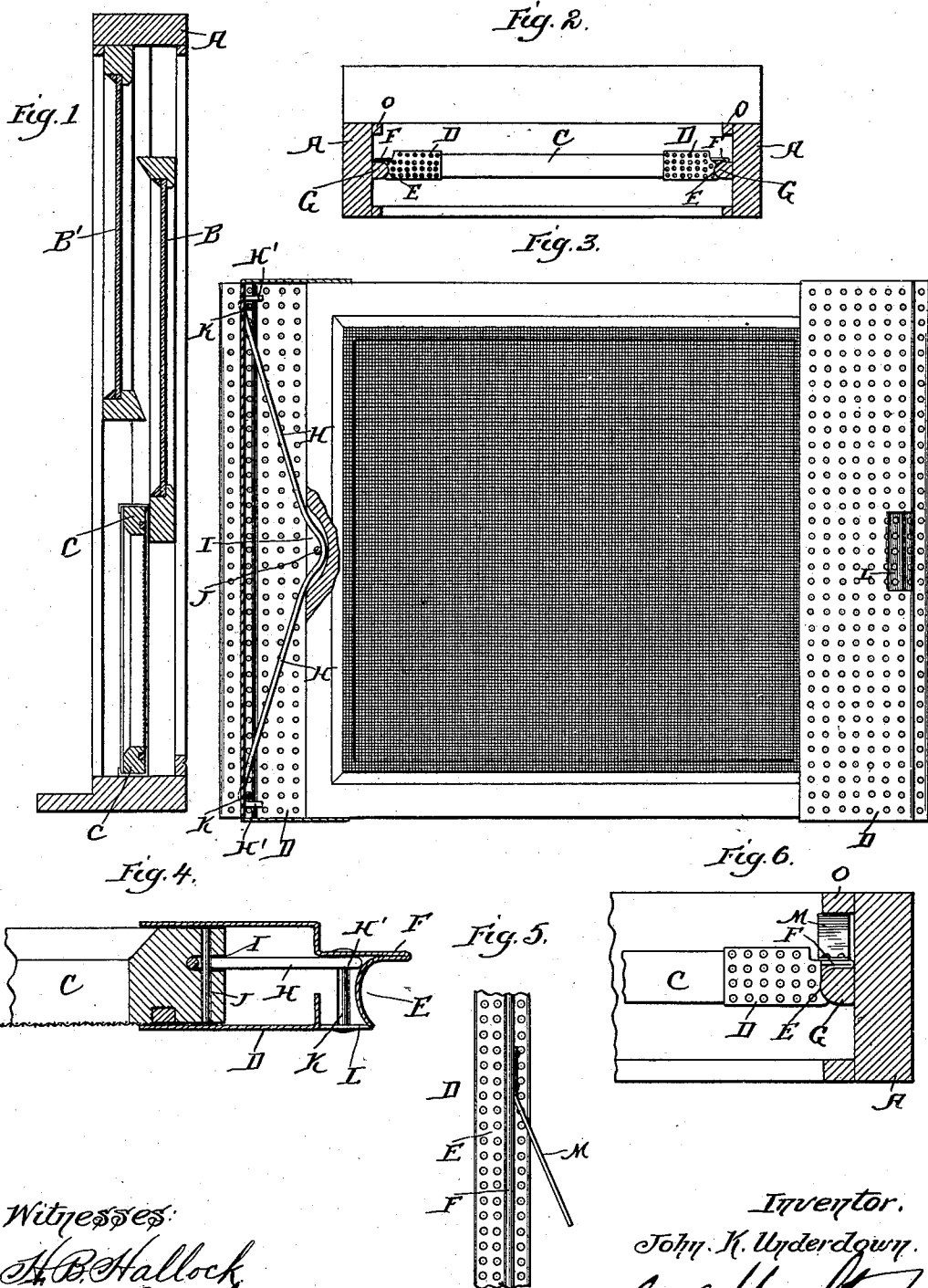


J. K. UNDERDOWN.
ADJUSTABLE WINDOW SCREEN

(Application filed Feb. 16, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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No. 661,567.

Patented Nov. 13, 1900.

J. K. UNDERDOWN.
ADJUSTABLE WINDOW SCREEN.

(Application filed Feb. 16, 1900.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 7.

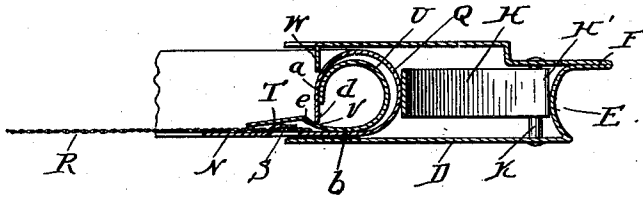


Fig. 8.

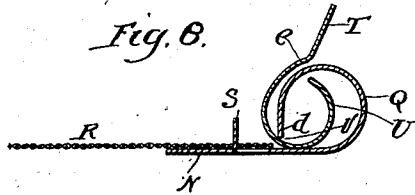


Fig. 9.

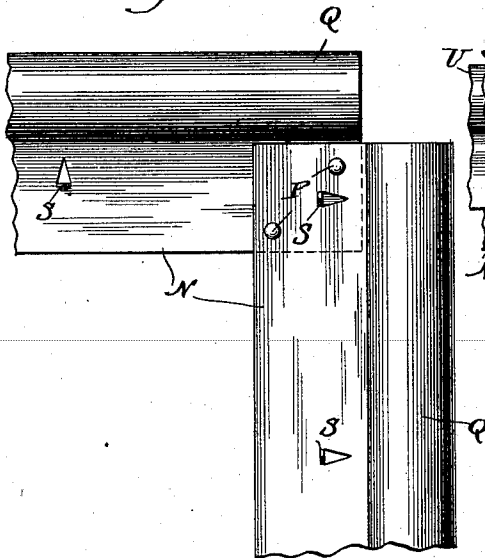
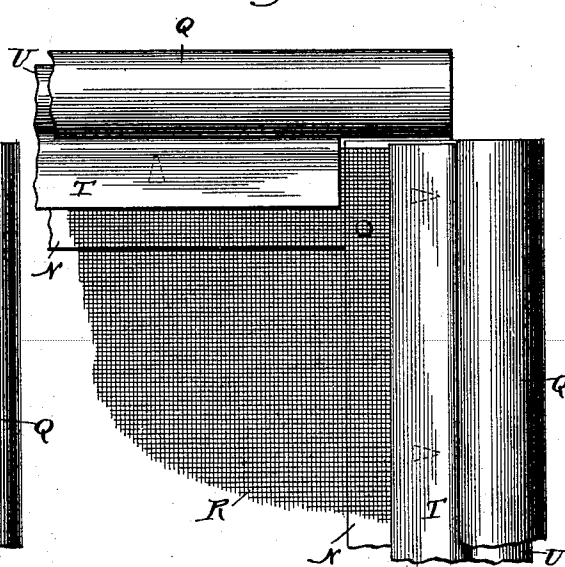


Fig. 10.



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UNITED STATES PATENT OFFICE.

JOHN K. UNDERDOWN, OF PHILADELPHIA, PENNSYLVANIA.

ADJUSTABLE WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 661,567, dated November 13, 1900.

Application filed February 16, 1900. Serial No. 5,476. (No model.)

To all whom it may concern:

Be it known that I, JOHN K. UNDERDOWN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Adjustable Window-Screens, of which the following is a specification.

My invention relates to a new and useful improvement in adjustable window-screens, and has for its object to provide an adjustable screen wherein the adjustable parts will be constructed of perforated material, so as to allow for the free passage of air therethrough, and to construct this screen in such a manner as to allow it to fit upon the parting-strip of the window-casing, so as to permit the raising and lowering of the window without necessitating the removal of the screen.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical section of a window-frame, showing my improvements applied thereto; Fig. 2, a horizontal section of a window-frame, showing my screen in place upon the parting-strip; Fig. 3, a view of one of my adjustable screens, one of the boxes being in elevation and the other in section; Fig. 4, an enlarged cross-section of one of the boxes and a portion of the screen-frame; Fig. 5, an end view of a portion of the boxes, showing a slight modification applied thereto; Fig. 6, a cross-section of a portion of the window frame and screen with the same modification applied thereto. Fig. 7 is a view similar to Fig. 4, showing a modification of the screen-frame. Fig. 8 is a cross-section of one side of the metal screen-frame, showing the position of the parts for the renewal of the wire-cloth. Fig. 9 is a view showing the formation of the corners of the metal screen-frame. Fig. 10 is a view of one corner of the metal screen-

frame, all parts being in their normal position.

In carrying out my invention as here embodied, A represents a window-casing and B B' the sash working therein.

C is a screen-frame.

D D are boxes adapted to slide over the ends of the screen C, and in practice I prefer to make these boxes of some perforated sheet metal for the purpose of allowing the free passage of air therethrough. These boxes can be made of one piece of material bent in the form shown in Fig. 4, the pieces D' D' being bent over the top and bottom, so as to form a box only open at one end, wherein the screen-frame C fits. The outer edges of these boxes are formed, as shown in Fig. 4, with a groove E. At the side of the groove, toward the outside of the window, an extension is made by the bending of the metal, so as to form a flange F, for the purpose hereinafter described.

G G are the parting-strips, formed with the window-casing A, and the groove E is adapted to fit upon these parting-strips, and by reason of the said groove being formed in the manner shown the inner surface of the screen and the parting-strip will be flush with each other, thereby allowing the sash B to be raised and lowered without necessitating the removal of the screen. The flange F will abut against the outer surface of the parting-strip, thereby preventing the screen from being forced inward by wind or other means. A spring H is arranged inside of the box D, being bent in the manner shown and fitting into a slot I, formed in the screen-frame C, and a pin J passed through the screen-frame over the bent portion of the spring H, thereby holding the same securely in place, but allowing for certain rocking of the spring for the purpose of better exertion of equal pressure. The ends H' of the spring bear against the closed end of the boxes and are bent inward, so as to form hooks, and the pins K, passing through the boxes, engage these hooked ends H', thereby preventing any accidental removal of the boxes from the screen-frame, it being understood that the spring H in its normal position ceases to exert any pressure upon the boxes, and thereby holds the same in proper relation to the screen-frame. Handholds L

are provided in the boxes for the proper manipulation of the screen.

In Figs. 5 and 6 I have shown a slight modification wherein I provide a spring M, secured to the flange F on its outside edge, so that when the screen is in place upon the parting-strip the springs M will bear against the bead O, and thereby hold the screen more securely in place.

The advantages of my improvement are very obvious in that constructing the box of perforated metal allows the free passage of air therethrough and also allows the same to be made cheaply and quickly and more durable, and the parts being so few in number the whole screen can be made at a small cost and at the same time exceedingly durable. It is also understood that my screen can be reversed and placed upon the upper half of the parting-strip when it is desired to lower the upper sash.

In Figs. 7, 8, 9, and 10 I have shown a further modification, in which the screen-frame is made of metal and in which N represents sheet-metal strips, forming the ends and sides of the frame and are secured together at the corners by any suitable means. (Illustrated in Fig. 9 by rivets P.) The outer edges of these metal strips N are bent into the form of the roll Q, the edge *d* of the roll coming to within a short distance of the flat portion of the strip N. The wire-cloth R is adapted to be secured upon the outer side of the metal strip N—that is to say, the side on which the roll Q is formed. Means for fastening this wire-cloth are provided by punching out the pointed retaining-pieces S from the metal strip N at suitable intervals. These retaining-pieces S, after being pressed through the wire-cloth, are bent over on the top of the same, thus retaining the cloth in place.

For the purpose of covering these retaining-pieces S and for giving a neat appearance to the frame I provide a covering-strip T. This covering-strip T is also a sheet-metal strip, having a roll U formed on its outer edge. This roll U is adapted to fit within the roll Q of the strip N. The flattened portion of this roll passes through the opening V left between the edge *d* of the roll Q on the flat portion of the strip N. This roll U is formed in such a way that when the covering-strip T is forced downward against the wire-cloth it will bear against the inner surface of the roll Q at the points *a* and *b*, and by reason of the end *d* of the roll Q being forced outward by the action of the inner roll U against the curved portion *e* of the covering-strip T there will be caused sufficient friction and spring action between the two members to retain the covering-strip T in position shown in Fig. 7, which is its normal position, there being no necessity for any other fastening whatsoever.

To remove the wire-cloth R for the purpose of renewing it, it is necessary to simply raise each of the covering-strips T in the position

shown in Fig. 8, and by bending up the retaining-pieces S the old cloth can be easily removed and new cloth substituted, the retaining-pieces being bent back and the covering-strips T being forced downward into their normal position, when the screen is again ready for use. This metal frame will fit within the box D, the same as the wooden screen-frame C; but in this metal frame I would do away with the pin J and slot I in the screen-frame and let the spring H bear directly against the outer surface of the roll Q. To prevent the box D from coming off the screen-frame in this case, I provide the stops W, said stops being bent downward at suitable intervals after the frame is inserted within the box, and these will prevent the box from being accidentally removed from the frame. To remove the frame from the box, it is simply necessary to straighten out the stops W.

The advantages of this construction are that the frames can be made very cheaply and at the same time exceedingly durable and that the wire-cloth can be easily replaced at any time by the owner, it requiring no special skill or tool for the operation.

Of course I do not wish to be confined to the exact construction of these two metal strips, as slight modifications can be made in the same without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In an adjustable screen, the combination of a screen proper with perforated boxes adapted to slide over each end of the screen-frame, springs arranged within said boxes and adapted to exert pressure outwardly upon the same, as specified.

2. In an adjustable screen, the combination of a screen proper with perforated boxes adapted to slide longitudinally over the ends of said screen, the outer ends of said boxes being closed and formed with a groove adapted to fit upon the parting-strip of the window-casing, said groove so formed that the inner face of the screen will be flush with the inner surface of the parting-strip so as to allow for the raising and lowering of the window-sash past the screen, springs arranged within said boxes and adapted to exert an outward pressure on the boxes, and pins arranged so as to engage the ends of the springs for preventing the accidental removal of said boxes from the screen-frame, substantially as shown and for the purpose specified.

3. As a new article of manufacture, a screen-frame having perforated boxes adapted to slide over the ends thereof, a groove E formed in the ends of the outer edge of said boxes and adapted to fit upon the parting-strip of the window-casing in such manner as to allow the free raising and lowering of the window-sash past the screen, a flange F formed with the box to engage the outer surface of the parting-strip, springs H arranged within said boxes and adapted to press said boxes outward,

hooks H' formed on the ends of the springs, pins K passing through the boxes and engaging the hooks H' preventing the removal of the boxes from the screen-frame, and hand-
 5 hold L formed in the boxes, substantially as shown and for the purpose specified.

4. In an adjustable screen, a screen-frame, perforated boxes adapted to slide upon the
 10 ends of said screen-frame, a spring H arranged within said boxes and adapted to press the same outward, pins passing through the boxes and engaging the ends of the springs H, a groove E and a flange F formed in the edge
 15 of said boxes, a spring M secured to the outer surface of the flange F and adapted to exert pressure between an outer bead O and the flange F, for the purpose of binding the screen
 20 securely in place, substantially as shown and specified.

5. In combination with a screen of the character described, a screen-frame, the sides and
 ends of which are made of sheet-metal strips

said strips having flat portions, a roll formed
 on the outer edges of said strips retaining
 devices for retaining the wire-cloth formed in
 25 the flat portions of said strips, covering-strips having flat portions adapted to cover the retaining devices and to pass between the end
 d of the roll and flat portion of the first-
 named strip into the roll thereof, a roll formed
 30 upon the outer edge of said covering-strip and adapted to fit inside of the roll of the first-named strip and to bear against the inner surface of the outer roll in such a manner as to cause sufficient friction and spring
 35 action therebetween to hold the covering-strip in its normal position, as specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

JOHN K. UNDERDOWN.

Witnesses:

N. SCHOFIELD,
 E. H. FORSYTH.