

No. 768,417.

PATENTED AUG. 23, 1904.

C. G. WOODS.
WINDOW SCREEN.

APPLICATION FILED APR. 4, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

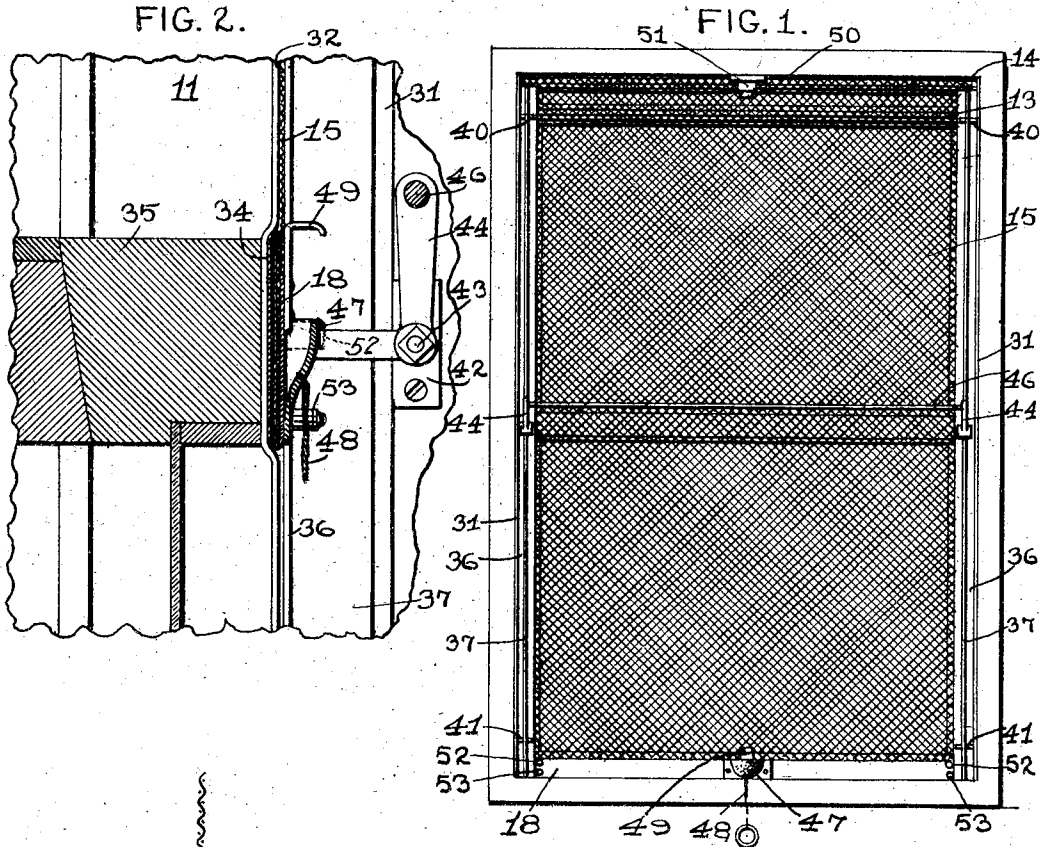
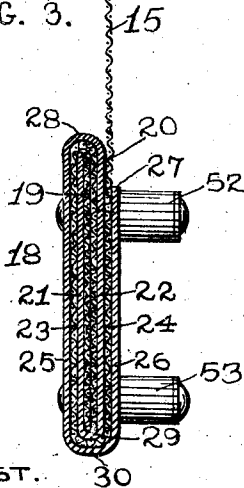


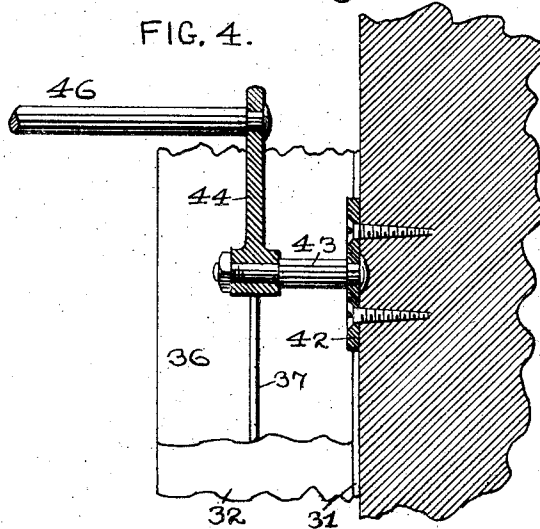
FIG. 3.



ATTEST. 30

H. G. Fletcher.
S. G. Wells.

FIG. 4.



INVENTOR.

Chas. G. Woods

By Higdon, Longant & Hopkins, Attys.

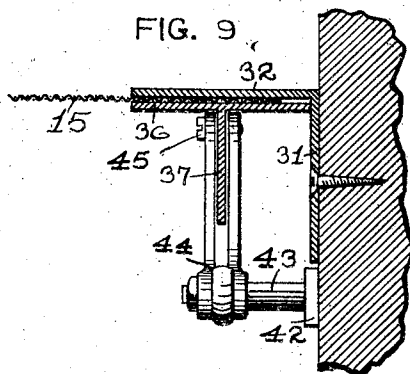
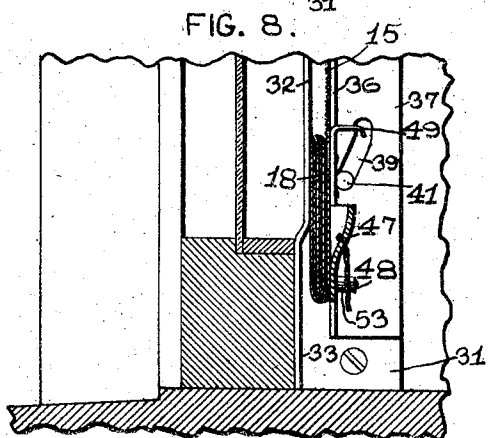
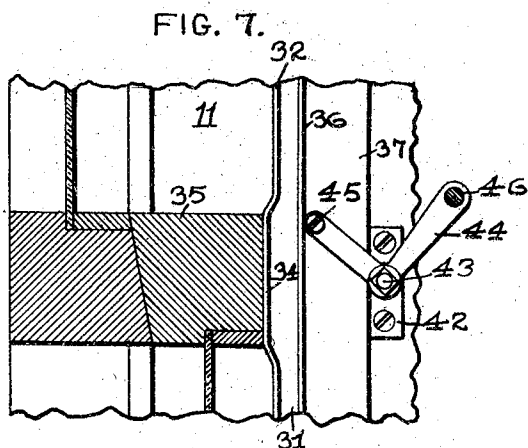
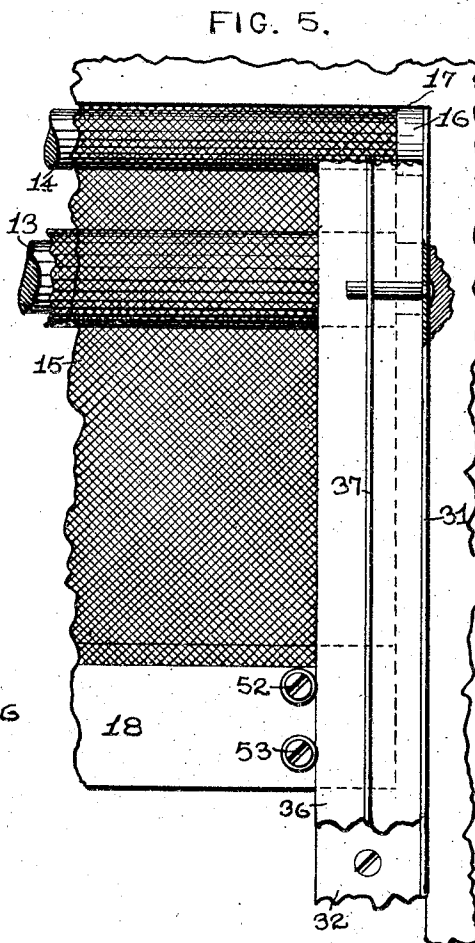
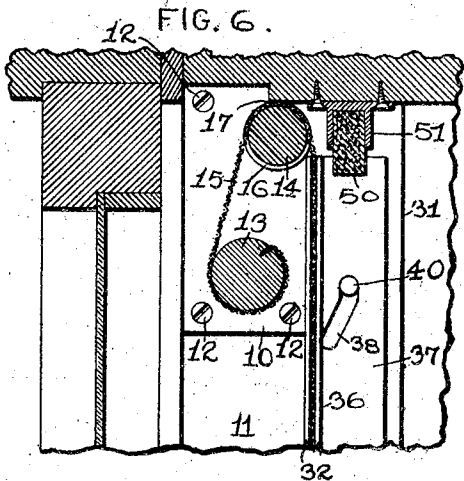
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APPLICATION FILED APR. 4, 1904.

NO MODEL.

2 SHEETS—SHEET 2.



ATTEST.
H. G. O'Leary,
S. G. Wells.

INVENTOR.
Chas. G. Woods.

BY Higdon, Morgan, & Hopkins, Attys.

UNITED STATES PATENT OFFICE.

CHARLES G. WOODS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE EXCELSIOR MANUFACTURING AND SUPPLY CO., OF ST. LOUIS, MISSOURI.

WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 768,417, dated August 23, 1904.

Application filed April 4, 1904. Serial No. 201,539. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. WOODS, a citizen of the United States, and a resident of St. Louis, Missouri, have invented certain new and useful Improvements in Window-Screens, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to window-screens; and it consists of the novel features herein shown, described, and claimed.

In the drawings, Figure 1 is a front elevation of a window and showing my improved screen in use. Fig. 2 is a transverse section through the meeting-rails of the window-sashes and showing the screens clamped at the meeting-rails, so as to screen the upper half of the window and not the lower half, parts being broken away. Fig. 3 is a cross-section, upon an enlarged scale, of the movable binding-strip. Fig. 4 is a sectional detail on a plane parallel with Fig. 1, illustrating the construction and application of one of the clamping-levers. Fig. 5 is an enlarged detail elevation of one of the upper corners of the window. Fig. 6 is a transverse section at the top of the window and through the parts shown in Fig. 5. Fig. 7 is a view analogous to Fig. 2 with the screen omitted and the clamping-plates in their open positions. Fig. 8 is a transverse section at the bottom of the window and showing the clamping-plates in their open positions and showing the movable binding-strip in position to pass between the clamping-plates. Fig. 9 is a horizontal sectional detail showing the connection between one of the clamping-levers and the movable clamping-plate.

Referring to the drawings in detail, the bearing-plates 10 are mounted one in each of the upper corners of the window-casing and secured to the inner faces of the sides 11 of the window-casing by screws 12. The spring winding-roller 13 (like a Hartshorn roller) is mounted in the lower ends of the bearing-plates 10, and a guide-roller 14 is mounted in the upper ends of the bearing-plates. A woven-wire screen 15 is attached to the roller

13, so as to be wound upon the roller by the tension of the spring, and said screen passes upwardly over the guide-roller 14 and then downwardly. The guide-roller 14 is longer than the width of the screen, and enlargements 16 are formed at the ends of the guide-roller, so that the faces of the enlargements 16 are on a level with the outer face of the screen, and the roller 14 is located in position to bring the outer face of the screen and the outer faces of the enlargements 16 against the lower face 17 of the upper section of the window-casing.

The movable binding-strip 18 comprises a strip of sheet metal placed against the lower face of the screen 15 in alinement with its lower edge and folded upwardly over and over, so as to form the two central layers 19 and 20 of screen, the two central layers 21 and 22, of sheet metal, inclosing the layers 19 and 20, the two outer layers 23 and 24 of screen inclosing the layers 21 and 22, and the two outer layers 25 and 26, of sheet metal, inclosing the layers 23 and 24, as shown in Fig. 3. The screen 15 extends upwardly from the upper edge 27 of the outer layer 26, said upper edge 27 being considerably lower than the curve 28, which connects the layers 22 and 25 and forms the upper edge of the binding-strip. The lower edges of the layers 21 and 22 are connected by a curve 29 and the lower edges of the layers 25 and 26 are connected by a curve 30. A supporting-plate 31 is secured to the inner face of each of the sides 11 of the window-casing, said supporting-plate extending from the top to the bottom of the window. A rigid clamping-plate 32 extends inwardly from the rear edge of each of the supporting-plates 31, there being a lower offset portion 33 at the lower end of each of the rigid clamping-plates to receive the movable binding-strip 18 and there being a central offset portion 34 at the center of each of the rigid clamping-plates in position to engage the front face of the upper rail 35 of the lower window-sash to receive the movable binding-strip 18 when it is desired to screen only the upper window-sash, as shown in Fig. 2. The clamping-plates 32 are located in vertical

alinement with the front part of the guide-roller 14, so that the screen 15 passes downwardly in front of the rigid clamping-plates. A movable clamping-plate 36 is mounted in opposition to each of the rigid clamping-plates 32 in front of the screen 15, and a flange 37 extends forwardly from the center of each of the movable clamping-plates 36. Cam-slots 38 and 39 are formed in the upper and lower ends, respectively, of each of the flanges 37, and operating-studs 40 and 41 are fixed one in each of the supporting-plates 31 and extend inwardly through the slots 38 and 39.

Base-plates 42 are secured one to each of the inner faces of the sides 11 of the window-casing. Studs 43 extend inwardly from the base-plates, and bell-crank levers 44 are pivotally mounted upon the studs 43, the inner ends of said bell-crank levers being bifurcated to straddle the flanges 37, and pivot-pins 45 pass through the bell-crank levers and through the flanges 37 and form pivotal connections between the bell-crank levers 44 and the movable clamping-plates 36. A handle 46 rigidly connects the outer ends of the bell-crank levers, so that they may be operated simultaneously.

When the movable clamping-plates 36 are carried upwardly by swinging the handle 46 downwardly, the studs 40 and 41, engaging in the cam-slots 38 and 39, move the ends of the movable clamping-plates 36 away from the screen, as the intermediate portions of said clamping-plates are carried outwardly by the bell-crank levers. When the handle 46 is elevated to depress the inner ends of the bell-crank levers, the movable clamping-plates are moved against the screen 15 and form a binding, which completely closes the spaces between the edges of the screen and the inner faces of the window-casing and holds the screen firmly in position.

A handle 47 is secured to the center of the binding-strip 18, and a cord 48 is secured to this handle, so that when the binding-strip is at the upper part of the window the cord 48 will depend in front of the window to a point within reach and may be used to pull the screen downwardly against the tension of the roller 13 until the handle 47 can be reached, and then the handle 47 may be used to pull the screen downwardly and place the binding-strip 18 against the lower offset 33, and then the handle 46 may be operated to move the movable clamping-plates 36 into position and hold the screen. When the movable binding-strip 18 is in the lower offset 33, the screen covers both sashes of the window, and if it is desired to screen only the upper sash the movable binding-strip is placed in the central offsets 34.

A stop 49 extends upwardly and outwardly from the movable binding-strip 18, and a rubber buffer 50 is located in a socket 51, secured to the lower face 17 of the upper section of

the window in position to be engaged by the stop 49 and limit the upward motion of the binding-strip 18. The principal object of the buffer 50 is to prevent noise should the screen be allowed to go up without restraint under the influence of the spring-roller. It will also prevent the binding-strip from going up against the lower face of the upper section of the window-casing, and thus prevent marring the window-frame.

Guide-rollers 52 and 53 are mounted at the corners of the movable binding-strip 18 in position to engage the inner edges of the movable clamping-plates, so as to keep the movable binding-strip in a horizontal plane as it moves up and down.

I claim—

1. In a window - screen: rigid clamping-plates extending inwardly from the sides of the window-casing; a spring-roller mounted at the upper end of the window; a guide-roller; a screen attached to the spring-roller and extending over the guide-roller and downwardly in front of the rigid clamping-plates; movable clamping-plates in front of the screen and having cam-slots; studs extending from the window-casing through the cam-slots; and bell-crank levers pivotally connected to the window-casing and to the movable clamping-plates to move the movable clamping-plates to and from the screen; substantially as specified.

2. In a window - screen: rigid clamping-plates extending inwardly from the sides of the window-casing and having offset portions at their lower ends, and having offset portions at their centers; a spring-roller; a guide-roller; a screen attached to the spring-roller and extending over the guide-roller and downwardly in front of the rigid clamping-plates; a movable binding-strip attached to the lower end of the screen and adapted to fit in said offsets; movable clamping-plates having cam-slots at each end; studs extending from the window-casing through the cam-slots; and bell-crank levers connecting the movable clamping-plates to the window-casing, so as to move the clamping-plates to and from the screen; substantially as specified.

3. In a window-screen: a spring-roller; a guide-roller; clamping means; a screen attached to the spring-roller and extending over the guide-roller and downwardly; a binding-strip at the lower end of the screen; a buffer extending downwardly from the window-casing; and a stop upon the binding-strip to engage the buffer; substantially as specified.

4. In a window - screen: rigid clamping-plates extending inwardly from the sides of the window-casing and having offset portions at their lower ends, and having offset portions at their centers; a spring-roller; a guide-roller; a screen attached to the spring-roller and extending over the guide-roller and downwardly in front of the rigid clamping-plates; a mov-

able binding-strip attached to the lower end of the screen and adapted to fit in said offsets; said movable binding-strip comprising a strip of sheet metal placed against the lower face of the screen in alinement with its lower edge and folded upwardly over and over; movable clamping-plates having cam-slots at each end; studs extending from the window-casing through the cam-slots; and bell-crank levers connecting the movable clamping-plates to the window-casing, so as to move the clamping-plates to and from the screen; substantially as specified.

5. In a window-screen: rigid clamping-plates extending inwardly from the sides of the window-casing and having offset portions at their lower ends, and having offset portions at their centers; a spring-roller; a guide-roller; a screen attached to the spring-roller and extending over the guide-roller and downwardly

in front of the rigid clamping-plates; a movable binding-strip attached to the lower end of the screen and adapted to fit in said offsets; movable clamping-plates having cam-slots at each end; guide-rollers carried by the movable binding-strip and engaging the inner edges of the movable clamping-plates; studs extending from the window-casing through the cam-slots; and bell-crank levers connecting the movable clamping-plates to the window-casing, so as to move the clamping-plates to and from the screen; substantially as specified.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

CHARLES G. WOODS.

Witnesses:

M. M. BRAZILL,
ALFRED A. EICKS.