F. A. SWANSON.

WINDOW SCREEN.

APPLICATION FILED FEB. 26, 1912.

1,067,075.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

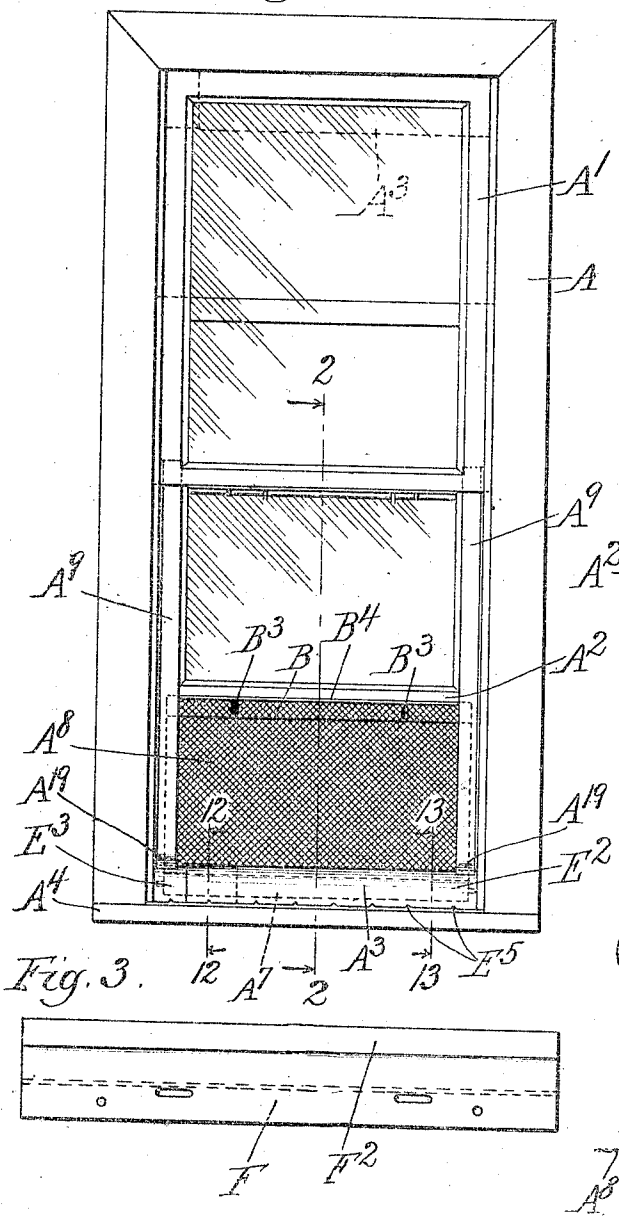

A3
A1
A
2
A9
A9
B3
B4
B
B3
A2
A8
A19
E3
A4
12
13
A19
E2
12
A7
2
A3
13
F5

Fig. 2.

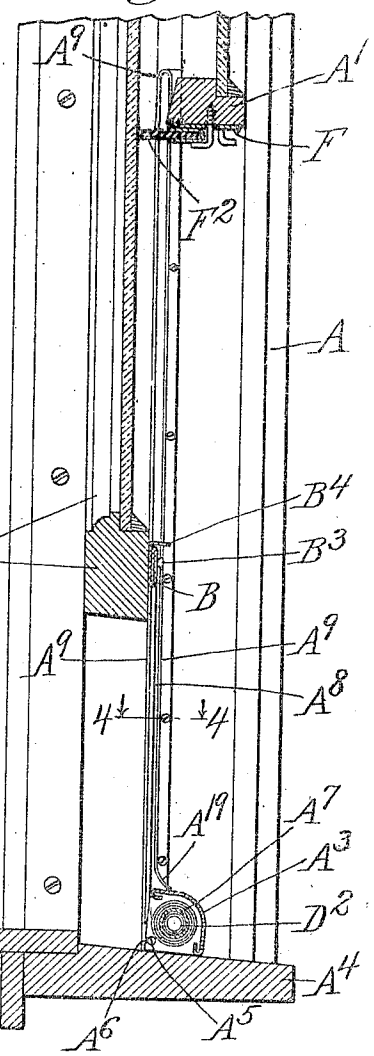
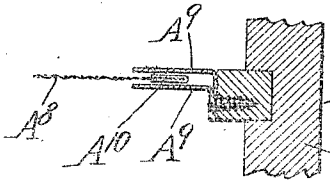


Fig. 3.

Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 11.

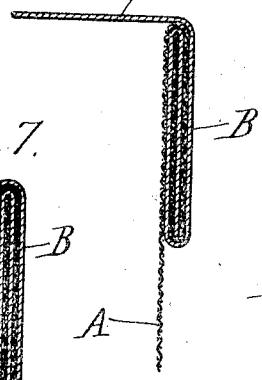


Fig. 7.



Fig. 14.

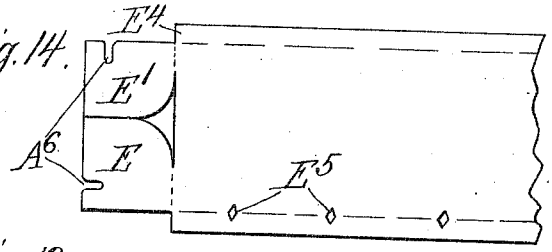


Fig. 12.

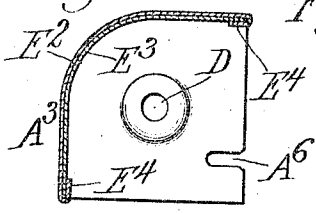


Fig. 13.

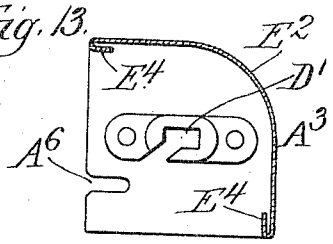


Fig. 8.

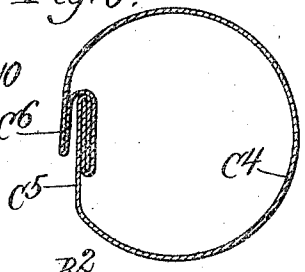


Fig. 9.

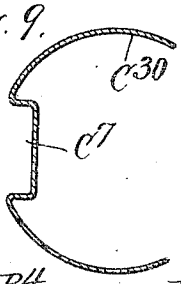


Fig. 10.

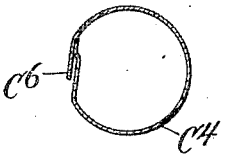


Fig. 6.

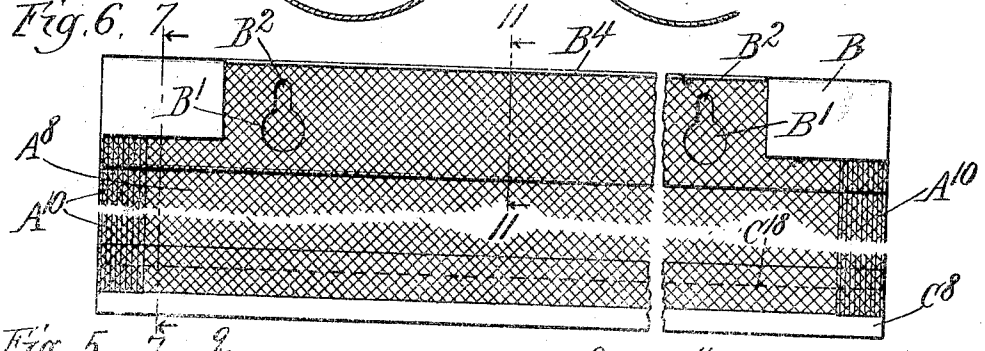
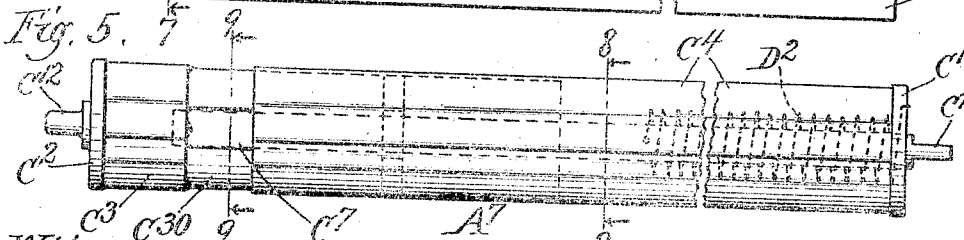


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK A. SWANSON, OF CHICAGO, ILLINOIS.

WINDOW-SCREEN.

1,067,075. Specification of Letters Patent. Patented July 8, 1913.

Application filed February 26, 1912. Serial No. 679,968.

To all whom it may concern:

Be it known that I, FRANK A. SWANSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Window-Screens, of which the following is a specification.

My invention relates to improvements in window screens and is illustrated diagrammatically in one form in the accompanying drawing, wherein—

Figure 1 shows an elevation; Fig. 2 a section along the line 2—2 of Fig. 1; Fig. 3 a detail; Fig. 4 a section along the line 4—4; Fig. 5 a detail of the roller; Fig. 6 a detail of the end of the screen and fastening mechanism; Fig. 7 a section through the screen; Fig. 8 a section along the line 8—8 of Fig. 5; Fig. 9 a section along the line 9—9 of Fig. 5; Fig. 10 a section showing a modified form of Fig. 8; Fig. 11 a section along the line 11—11 of Fig. 6; Fig. 12 a section along the line 12—12 of Fig. 1; Fig. 13 a section along the line 13—13 of Fig. 1; Fig. 14 a development of the containing box.

Like parts are indicated by the same letter in all the figures.

The window casement A contains the upper sash A^1 and lower sash A^2 slidable therein in the usual manner. The box A^3 is removably held in the casement in opposition to the sill A^4 by the screws A^5 engaging the slot A^6. The spring roller A^7 is rotatably mounted in the box A^3 and carries the screen fabric A^8, which is attached to the outside of the window sash A^2 adjacent its bottom. The slotted guides A^9 which are spread at the bottom as indicated at A^{10} to form a guide for the end of the screen as it leaves the roller and box, are attached to either end of the casement outside of the window sash in such manner that the selvage or edge A^{10} of the screen fabric, which is made of heavier or more closely woven material, is held within the slot and slides within the guide. The screen fabric is engaged along its upper edge by the metallic reinforcing member B, which is bent upon itself, and about the fabric to hold them in fixed relation one to the other as indicated. This portion B is provided with eyelets B^1, having the upwardly extending slots B^2 to engage the pins B^3 on the bottom of the window sash, and carries the outwardly projecting strip B^4 which overlies the edge of the box A^3 and prevents the entrance of water and dust when the window is in a closed position and the screen is contained within its holding box. The part B is partially cut away as indicated in Fig. 6, so that the strip B^4 may slide in the space between the guides A^{10} but not interfere with them.

The roller A^7 is adjustable in length and has at either end the plugs C^1 C^2 provided with pins C^{11} C^{12} to engage the holding box, one of them round and rotating within the box, the other rectangular and held against rotation therein. The roller itself is made up of two cylindrical portions C^3 C^4 of the same cross sectional area and shape indicated in Fig. 8. They are made up of sheet metal bent to a substantially circular form, the opposed edges being bent together as indicated in Fig. 8 to leave a flat portion C^5 overhung by a tongue C^6 which is substantially parallel with it, the whole within the peripheral line of the roller.

The roller section C^3 carries an extension C^{30} rigidly attached thereto in slidable connection with the roller section C^4. This extension is provided with the channel C^7 in which slides the junction portion of the roller section C^4. The screen A^8 is provided at its lower end with the catch or clasp C^8 formed of thin sheet metal bent upon itself as indicated to grip the free edge of the fabric. This clasp is provided with the tongue C^{10} which engages the tongue C^6 to hold it upon the roller. The clasp is bent as indicated to conform substantially to the circular shape of the roller, so that when in position it forms with the roller a substantially cylindrical member about which the screen fabric may be wound.

The box A^3 is provided at one end with the circular bearing D to engage one of the pins C^{12} and at the other end with the rectangular bearing D^1 to engage the other pin and hold it against rotation, thus permitting the spring D^2 to retract the screen fabric as the tension upon it is released by the descent of the window sash.

The box A^3 is made, as indicated, in Fig.

14, of sheet metal stamped in such manner that at either end are the two lugs E E¹. These lugs are separate one from the other, and when the roller is bent into the form shown in Figs. 12 and 13, these lugs overlap one another and may be fastened together. The box A³ is made of two separate sections, one E² having the inwardly turned edges, the other E³ having straight edges adapted to slide within the box and be engaged by the inwardly turned edges E⁴. The perforations in the box blank permit when the blank is bent into position the discharge of water which may by chance enter the box from beneath its edge out onto the window sill.

The plate F, which is rigidly attached to the bottom of the upper sash A¹ carries the rubber squeegee F² which engages the glass in the sash A² and thus closes the opening which normally exists between the sash and the glass when the window is in the open position.

In the modified form shown in Fig. 10, the metallic roller is not bent and interlocked into shape and position, but is soldered. The result, however, is substantially the same in that there is a flat or depressed portion for the engagement of the screen carrying clasp, this portion being overlaid by a flange which engages and holds the clasp to the roller.

It will be evident that while I have shown in my drawings an operative device, still many changes might be made in size, shape and arrangement of parts without departing materially from the spirit of my invention and I wish, therefore, that my drawings be regarded as in a sense diagrammatic.

The use and operation of my invention are as follows: The protecting box is bent into position, the two sections, being slidably mounted one upon the other, are drawn out until the box is of the same length as the width of the window. The roller sections are also adjusted to correspond in length with the box and are placed therein. The screen is then placed upon the roller, being held there by means of the removable clasp and wound about it. The roller is twisted until a slight amount of tension will be exerted by the spring when the screen is in the rolled-up position and the overhanging guard on the upper end of the screen overlaps the edge of the box. The box is then attached to the window casement in such manner that it just clears the lower sash. The guides are then placed in position adjacent the casement in such manner that they overhang the edge of the box. The screen is then drawn up into position, engaging the guides in such manner that the selvage edge is located between the parallel members of the guide. The upper holding strip on the screen is then attached to the outside of the sash by means of pins, screws or other mechanism. The window is then ready for operation and may be opened or closed, and when it is opened, the screen will be drawn up, traveling between the guides and held in position. When the window is closed, the screen will be drawn down into the box where it will be protected from the weather.

It will be observed that the selvage on the screen is of considerable width and that the guides project a considerable width inwardly from the casement, thus giving a very considerable margin of adjustability. Since for a comparatively narrow window the screen would fit deep within the guides, and for a comparatively wide window the screen would not fit so far in, thus one width of screen may be used for windows of considerable range of width. The same is true to an even larger extent with the housing box and the spring roller, since these are very readily adjustable in width to suit different widths of windows. The roller is made up of two similar roller sections of the same shape and cross-sectional area joined by a smaller section which is rigidly attached to one of the outer sections and slidable on the other. The two outer sections are grooved as indicated whereby a tongued clasp such as that indicated to carry the screen may be held by insertion in the groove and may be easily withdrawn. It will be noted that the clasp may be inserted or withdrawn in a tangential direction and need not be drawn off of the roller by a longitudinal movement.

I have discussed my device as if it were always to be applied to the lower sash of a window, but it will, of course, be evident that it is equally applicable to the upper sash, and to use it in connection with an upper sash it would be necessary only to attach the holding box to the upper portion of the casement and attach the outer edge of the screen to the top of the upper instead of to the bottom of the lower sash.

I claim:

A removable and adjustable screen for windows comprising a housing made up of two curved members slidable one on the other and interlocking roll supports on either end of said members, a two-part roll carried by said roll supports, the two parts of said roll being parallel one upon the other, a screen removably mounted on said roll, guides projecting outwardly above said housing made up of two parallel strips one of which rests against the window sash and the other slightly removed from it and having a lower outwardly curved member overlying the upper edge of the housing said strip being perforate to attach it to the sash and having a reinforcing strip projecting

outwardly away from the sash adapted to travel between the two inner edges of the guides and to overlie the upper surface of the housing and close the opening between the housing and sash when the sash is in the closed position, said housing being open on its inner and bottom sides toward the sash and the window sill and apertured along its lower edge where it comes in contact with the window sill.

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