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2,035,146

ROLLING SCREEN

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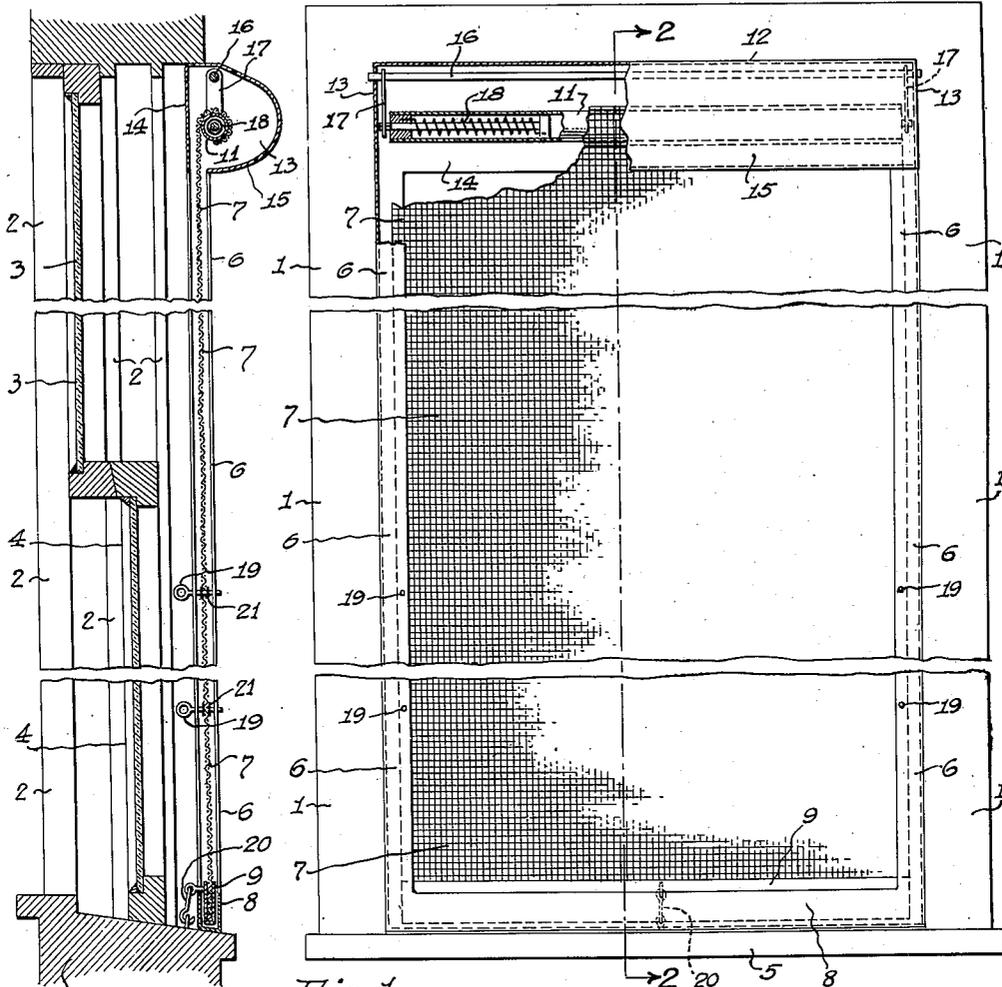


Fig. 2.

Fig. 1.

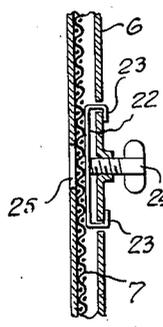


Fig. 5.

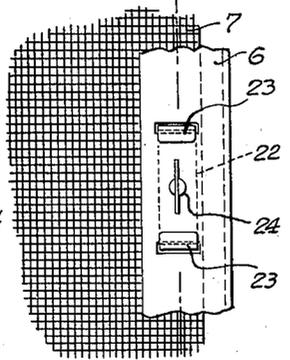


Fig. 4.

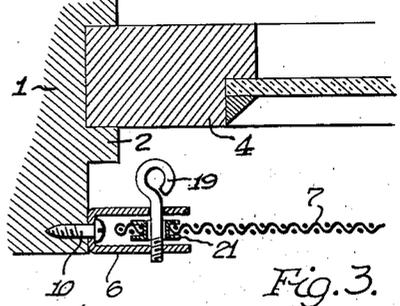


Fig. 3.

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UNITED STATES PATENT OFFICE

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ROLLING SCREEN

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3 Claims. (Cl. 156—39)

This invention relates to window screens and more particularly to such a screen arranged to be rolled up upon a spring roller in a manner similar to that of a window curtain, and an object of the invention is to provide a simple construction which is cheap to manufacture and simple to install. A further object is to provide simple guide and holding means for the edges of the screen fabric to prevent kinking and buckling and to facilitate manipulation. It is also an object to so mount the winding roll as to guide the screen fabric into and out of its guideways and prevent kinking or sharp bending of the fabric where it leaves the guides and at the same time provides for the enlargement of the roll of screen fabric as the screen is wound upon the winding roll.

The invention further consists in certain other new and useful features in the construction, arrangement and combination of elements, all as hereinafter more fully set forth, reference being had to the accompanying drawing, wherein:—

Fig. 1 is a front side elevation of a screen as applied in use and embodying the present invention and showing parts of the structure broken away and in section to more fully disclose the construction;

Fig. 2 is a vertical section substantially upon the line 2—2 of Fig. 1;

Fig. 3 is an enlarged sectional detail;

Fig. 4 is a detail showing a modified construction of screen-edge clamping means showing the same in elevation; and

Fig. 5 is a vertical section substantially upon the line 5—5 of Fig. 4.

As shown in the drawing 1 indicates the usual window frame having the usual vertical side guides 2 for an upper sash 3 and a lower sash 4, the frame having the usual sill 5. Secured to the side members of the frame 1 outside the guides 2 for the lower sash, are channel members 6, each formed of sheet metal and of U-shape in cross-section to receive the side edges of a screen fabric 7 of a length to extend from the upper end of the window frame to the sill 5 to which sill is secured a U-shaped member 8 similar to the side channel member 6 and secured with its ends in alignment with said channels to form a continuation thereof across the sill with the channel of this member 8 open upwardly to receive a binding strip 9 of sheet metal secured in any suitable manner to the lower end edge of the fabric screen 7, the guide channel members 6 and bottom channel 8 being secured in place by screws 10 (see Fig. 3) passing through openings in the bottom wall of each channel and into the wood frame

and sill with the heads of these screws within the channels. By this means the channel members may be quickly, easily and accurately secured in place with the heads of the securing screws concealed from view within the channels.

The upper end of this screen fabric is secured in any suitable manner to a transverse roller 11 mounted within a suitable casing 12 secured to the upper end of the window frame 1 and extending completely across the opening of said frame at its upper end, this casing comprising end walls 13, an inner side wall 14, and a semi-circular outer side wall 15 with the lower side edge of this outer wall, extending across adjacent the outer side of said screen and abutting the outer sides of the guide channels 6 at its ends, thus providing an opening or slot along its lower side for the passage of the screen into said casing as it is wound upon said roll, the casing being otherwise closed to protect the screen and roll from the weather.

To mount the roller 11 within this casing 12, a bar 16 is pivotally mounted at its ends in openings in the end walls 13 of said casing and extends therein adjacent the upper side thereof, and rigidly secured to said bar adjacent each end wall of the casing, is a hanger or lateral arm 17, in the free ends of which arms, the ends of the roll shaft are mounted in the usual manner of mounting such roll having a spring or springs 18 for rotating the roll to wind the screen thereon. The roll is thus mounted to swing away from the back wall 14 of the casing as the screen is wound upon the roll and the roll of screen increases in diameter, and to swing toward said wall as the screen is unwound therefrom, thus maintaining a straight run for the screen into and from the open upper ends of the guide channels 6 to prevent the screen from being sharply bent and from rubbing against the upper ends of the side walls of these channels or the lower edge of the front wall of the casing. The necessity for a guide roll or roll for guiding the screen to the spring roller is thus eliminated.

To hold the vertical side edges of the screen 7 within said channels 6 when the screen is pulled down and held in that position against the action of the spring 18, screw eyes 19 are screwed into openings in the side walls of the channels 6, at intervals, being projected across each channel and through the side edges of the screen, thus fixing the edges of the screen in said channels against being pulled therefrom, as by pressure against the inner or outer sides of the screen in-

intermediate its ends; and to hold the lower end of the screen or binding 9 thereon, within the lower channel member 8 secured to the window sill and thus hold the screen extended or pulled
 5 down, a hook 20 is secured to said binding to engage with a suitable eye or other means on the sill or on said channel member.

As shown in Fig. 3, the edge portion of the screen may be provided with an eye 21 for each
 10 screw 19 to pass therethrough and thus strengthen the screen against tearing under pressure; and as shown in Figs. 4 and 5 means may be provided for clamping the screen edges within
 15 the channels 6, such clamping means being substituted for the screws 19 if found desirable, such clamping means each comprising a single plate or strip 22 within the channel having laterally
 20 bent ends 23 to project through holes in one wall of the channel, and a screw 24 is mounted in a screw-threaded opening in said wall to engage at its inner end, said plate intermediate the
 25 ends thereof and force the same laterally into contact with the edge portion of the screen in said channel to clamp the same between said plate and the opposite side wall of the channels, said opposite wall being preferably formed with a comparatively large opening 25 opposite that
 30 portion of the plate engaged by the screw so that the wire screen will be forced slightly into this opening to give a better hold on the screen.

What I claim is:—

1. In a window screen comprising a screen strip, channel guide members of open channel form and of U-shape in cross section to receive and guide the side edge portions of said screen strip; fastening means secured within said channels of said guide members against movement with said screen and spaced at intervals along said channels to engage the edge portions of said screen and secure the same therein against longitudinal movement and against being pulled from said guide channels by lateral pressure upon said screen.

2. A window screen as characterized in claim 1 and wherein each fastening means for holding the edge portions of said screen within said channels of said guide members, includes a member engaging an opening in a side wall of said channel and extends into said channel.

3. A window screen as characterized in claim 1 and wherein each fastening means for holding the edge portions of said screen within said channels of said guide members comprises a clamping member mounted upon one side wall of each channel and held against movement with said screen, and a screw member passing through said wall to force said clamping member laterally of said channel to clamp the edge portion of the screen between said member and the opposite wall of the channel.

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