W. B. KNAPP.

WINDOW CURTAIN, SCREEN, AND THE LIKE.

APPLICATION FILED SEPT. 30, 1909.

963,900.

Patented July 12, 1910.

2 SHEETS—SHEET 1.

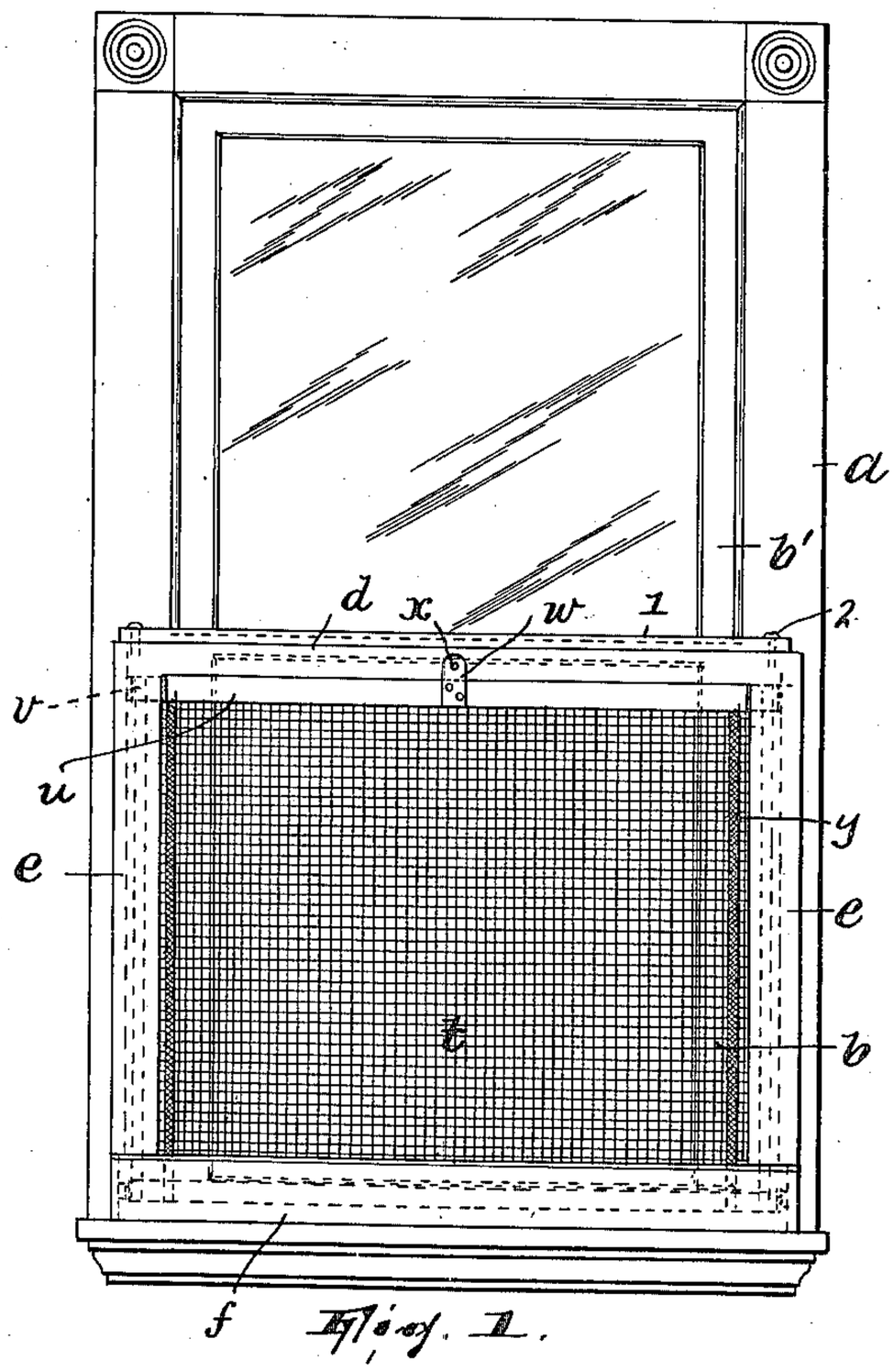

Fig. 1.

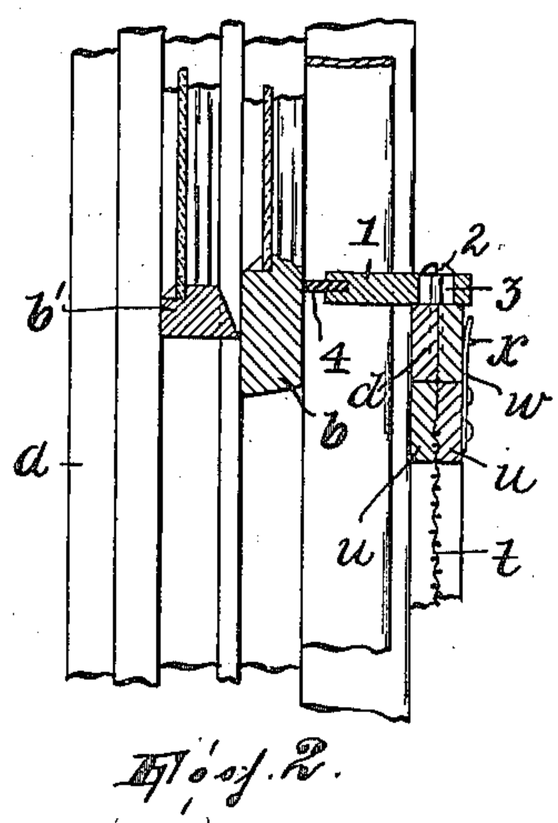

Fig. 2.

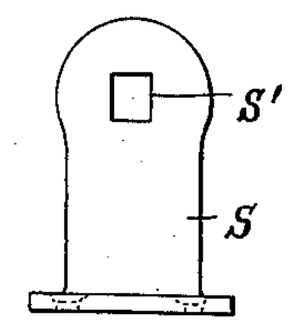

Fig. 10.

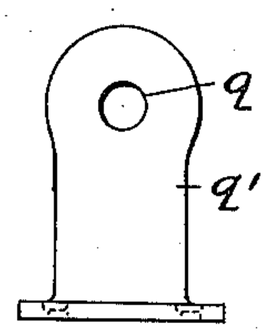

Fig. 11.

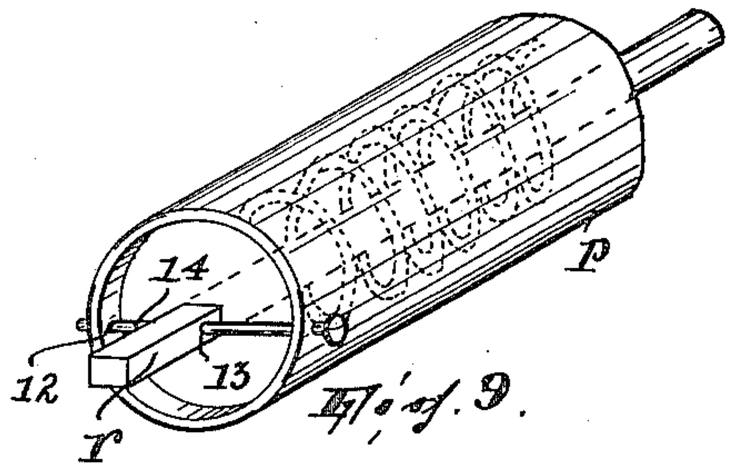

Fig. 9.

WITNESSES

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2 SHEETS—SHEET 2.

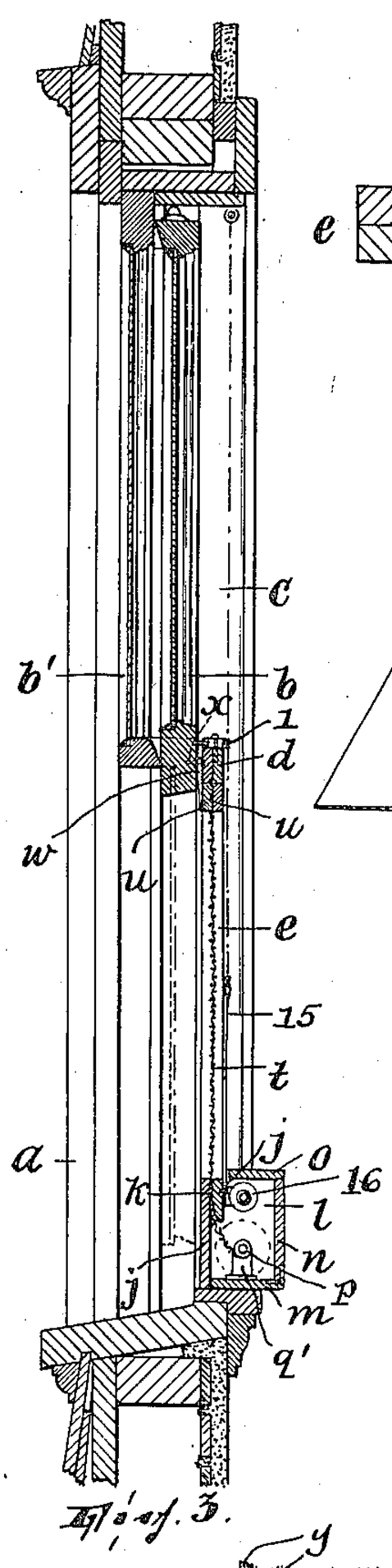

Fig. 3.

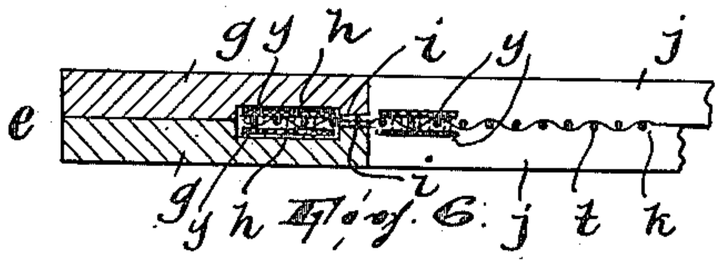

Fig. 6.

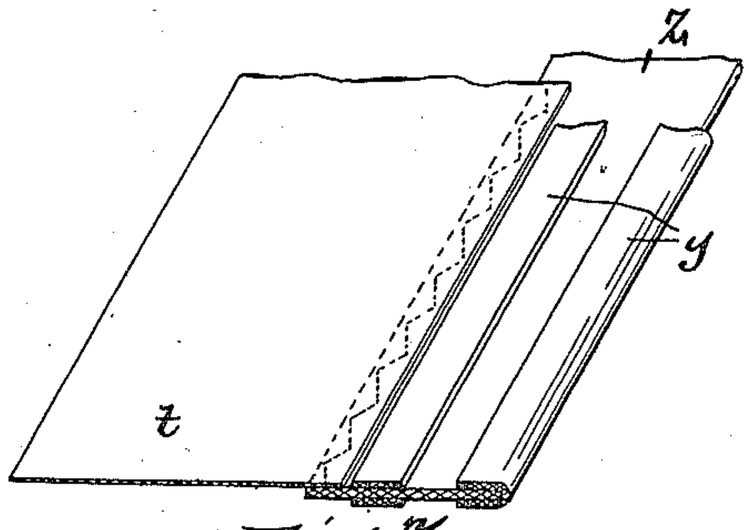

Fig. 7.

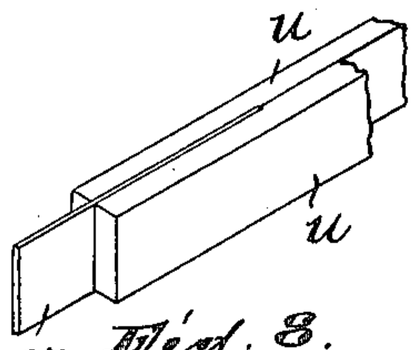

Fig. 8.

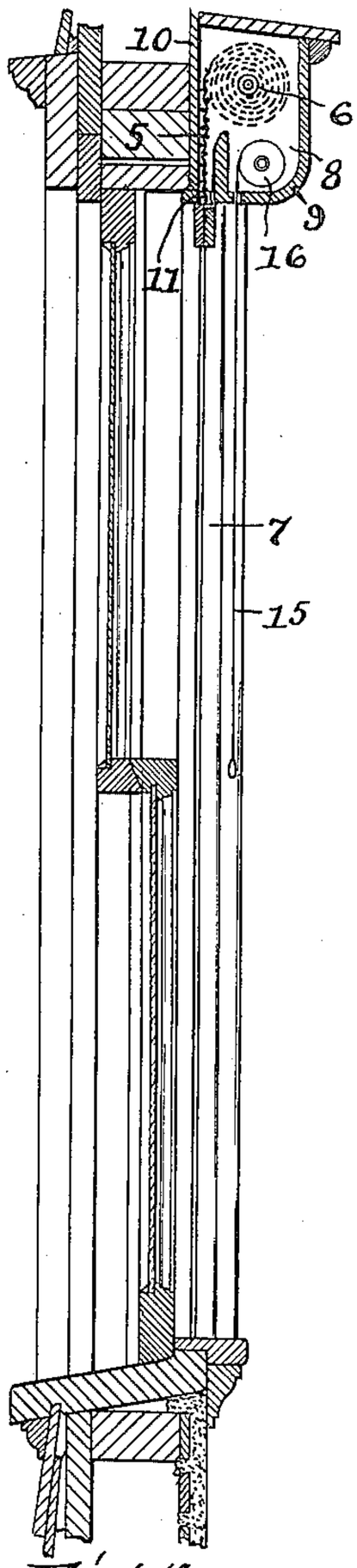

Fig. 4.

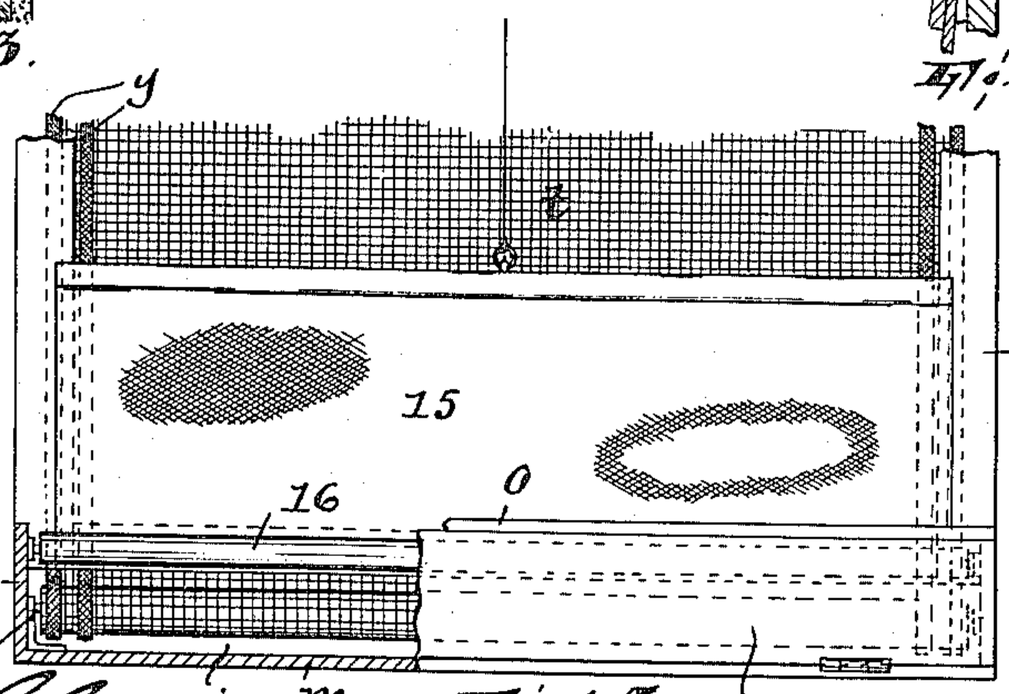

Fig. 5.

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UNITED STATES PATENT OFFICE.

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WINDOW-CURTAIN, SCREEN, AND THE LIKE.

963,900. Specification of Letters Patent. Patented July 12, 1910.

Application filed September 30, 1909. Serial No. 520,324.

To all whom it may concern:

Be it known that I, WILLIAM B. KNAPP, a citizen of the United States, residing in Paterson, Passaic county, New Jersey, have invented a certain new and useful Improvement in Window-Curtains, Screens, and the Like; 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 and numerals of reference marked thereon, which form a part of this specification.

This invention relates to screens, curtains and the like which are wound on rollers so that when a clear space through the window or the like is desired the screen or curtain may be withdrawn.

The invention consists in certain improvements in devices of this character having for their principal objects to facilitate the movements of the screen or curtain and keep it true during such movements, secure a close fit as between the same and the window or other opening to be protected thereby, to insure the curtain or screen winding neatly and compactly on its roller, and to reinforce it and maintain it against being drawn out of the guides in which its edges move.

Referring to the accompanying drawings, Figure 1 is an inside view of a window, showing the improved device arranged against the inside face of the frame thereof; Fig. 2 is a vertical sectional view of a detail of what is seen in Fig. 1; Fig. 3 is a vertical sectional view of a window frame with the improved device, also appearing in vertical section, set in between the stop-beads of the window frame instead of against the inner face of said frame; Fig. 4 illustrates a modification, the window-frame and the improved device appearing in vertical section; Fig. 5 is an inside view, partly broken away, of the lower part of the device as shown in Figs. 1 and 3; and, Figs. 6 to 11 illustrate details.

In the drawings, *a* designates a window-frame, *b*, *b'*, the lower and upper sashes, and *c* the stop-beads.

Referring, first, to Figs. 1, 2, 3 and 5 and the detail views 6 to 11: I provide a suitable rectangular frame the sides of which form guides for the screen or curtain and the bottom of which has a slit through which the curtain slides as it is unwound from or wound on a roller contained in a case disposed at the bottom of the frame. The top of this frame is designated *d*, its sides *e*, and its bottom *f*. Each of said sides comprises two elongated strips *g* having their adjacent faces, near their inner edges, grooved, as at *h*, and each having the material thereof between its groove and its said inner edge planed away slightly, as at *i*, so that in the assembled relation of the strips (which are suitably secured together) each of said sides may be said to have a longitudinal interior guide-way or channel which communicates with the exterior, throughout the length of the inside face of said side, through the slot (of less width than the guideway) formed by the mating planed-away portions *i*. The bottom *f* comprises also two elongated strips, *j*, suitably spaced from each other to form the slit *k*, the rear strip being of greater depth than the front one (Fig. 3); said bottom *f* may from the back of a box, whose side or end walls, bottom, front and top walls are indicated by the reference characters *l*, *m*, *n* and *o*, respectively, the front wall being preferably hinged to the bottom wall so as to permit ready and convenient access to the interior of the box. The frame thus formed may be secured either against the inner face of the window-frame *a* (Fig. 1), or within the same, against the stop-beads *c* (Fig. 3), being supported by the sill.

p designates a roller of the well-known spring type but with the usual pawl and ratchet mechanism omitted; its round trunnion is adapted to be received by the round hole *q* in the bracket *q'* (Fig. 11) and its square trunnion *r* by the square hole *s'* in the bracket *s* (Fig. 10), the brackets, carrying the roller, being then introduced into and secured in the box above referred to in the position indicated in Fig. 3.

On the roller and secured thereto is wound the fabric forming the screen or curtain, the same being marked *t*. Its free end is suitably held between strips *u* which together form a cross-piece whose ends may bear squarely against the inner faces of the sides of the frame of the device (Fig. 1) and have the fins *v* projecting therefrom into the longitudinal channels of said sides. When the curtain or screen is raised against the tension of the spring roller and in such manner as to cover the opening in the frame, it may be held in that position by a flat spring clip

w carried by the cross-piece and having a hole to receive a pin *x* on the top *d* of said frame or on the lower rail of sash *b* (Fig. 3).

The curtain, screen or the like is constructed with a view not only to insure against its being drawn out of the channels in the sides *e* of the frame (into which the edges thereof project, as seen in Fig. 6) but to reinforce it and insure its running true in the guides formed by said sides and winding on and unwinding from the roller uniformly. To this end, a pair of parallel spaced strips *y*, say of braid, tape or the like, is secured along each edge of the screen or curtain longitudinally, both on the inside and outside by preference; a grooved reinforce is thus in effect formed at each edge of the fabric, the spaced thick portions formed by the strips *y* running one in each channel in the sides *e* of the frame and the other in close disposition to the inner faces of said sides (Fig. 6). The curtain or screen must thus run true as it is raised or lowered, it cannot be drawn out of its guides in the sides of the frame and it must wind or unwind uniformly with respect to the roller. So far as I know, this construction of a fabric for a purpose of this kind is new, and as it forms one of the essential features of my invention, I claim it broadly in any adaptation in which it may be useful. If the fabric be of a delicate nature, such as cotton screening, the strips may be secured to a strip of material *z* of a more substantial nature than that of the fabric itself, as shown in Fig. 7, the strip *z* being stitched to said fabric.

In Figs. 1, 2 and 3 I show a plate 1 which may be secured horizontally on the top *d* of the frame by the screws 2, said plate having slots 3 penetrated by the screws and allowing the plate to be adjusted into contact with the lower rail of the inner or lower sash, so as to close any opening at that point; it has an elastic strip 4 which directly bears against the sash.

In Fig. 4, the curtain, screen or the like 5, the roller 6 and its brackets (not shown) are identical to that already described. In this instance, the frame of the device is built into the window-frame. The stop-beads 7 are formed channeled the same as in Fig. 6 and the reinforced edges of the screen, curtain or the like run in the channels thereof and are held in said channels in the same manner as already described. Instead of the box being in this instance arranged at the bottom of the window-frame, it is disposed at the top, 8 being the side or end walls of said box, 9 a strip of molding forming its front and bottom walls and 10 its rear wall; in its wall 9 is a slit 11 to admit the curtain or screen.

In Fig. 9, the spring-roller *p* has holes 12 in the end thereof through which, and a hole 13 in the spring-rotated trunnion *r*, may be passed a nail 14 or the like whereby to hold the trunnion temporarily under tension until the roller, fitted with its brackets, may be set in position in its box. Where the fabric heretofore referred to is a screen, a curtain 15 may also be provided, the same being adapted to wind on and unwind from a spring roller 16.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent is:

1. The combination of a suitable frame having parallel sides and a longitudinal interior channel in each side and a slot of less width than the channel entering to the latter from the inner face of said side, a roller journaled with its axis at right angles to said sides, and a fabric wound on said roller and having its longitudinal edges projecting into said channels, said edges being, within the channels and exteriorly of and close to said sides, thickened uniformly in the transverse direction and continuously in the longitudinal direction and being of greater width transversely than they are thick, substantially as described.

2. The combination of a suitable frame having parallel sides and a longitudinal interior channel in each side and a slot of less width than the channel entering to the latter from the inner face of said side, a roller journaled with its axis at right angles to said sides, and a fabric wound on said roller and having its longitudinal edges projecting into said channels, said edges being, within the channels, thickened uniformly in the transverse direction and continuously in the longitudinal direction and being of greater width transversely than they are thick, substantially as described.

3. The combination of a suitable frame having parallel sides and a longitudinal interior channel in each side and a slot of less width than the channel entering to the latter from the inner face of said side, a roller journaled with its axis at right angles to said sides, and a fabric wound on said roller and having its longitudinal edges projecting into said channels, said edges having, within the channels and immediately adjoining the inner faces of said sides, longitudinal portions thickened uniformly in the transverse direction and continuously in the longitudinal direction and being of greater width transversely than they are thick, substantially as described.

In testimony, that I claim the foregoing, I have hereunto set my hand this 27th day of September, 1909.

WILLIAM B. KNAPP.

Witnesses:
JOHN W. STEWARD,
WM. D. BELL.