

No. 762,397.

PATENTED JUNE 14, 1904.

G. H. FORSYTH.
CURTAIN FIXTURE.

APPLICATION FILED JULY 13, 1901.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

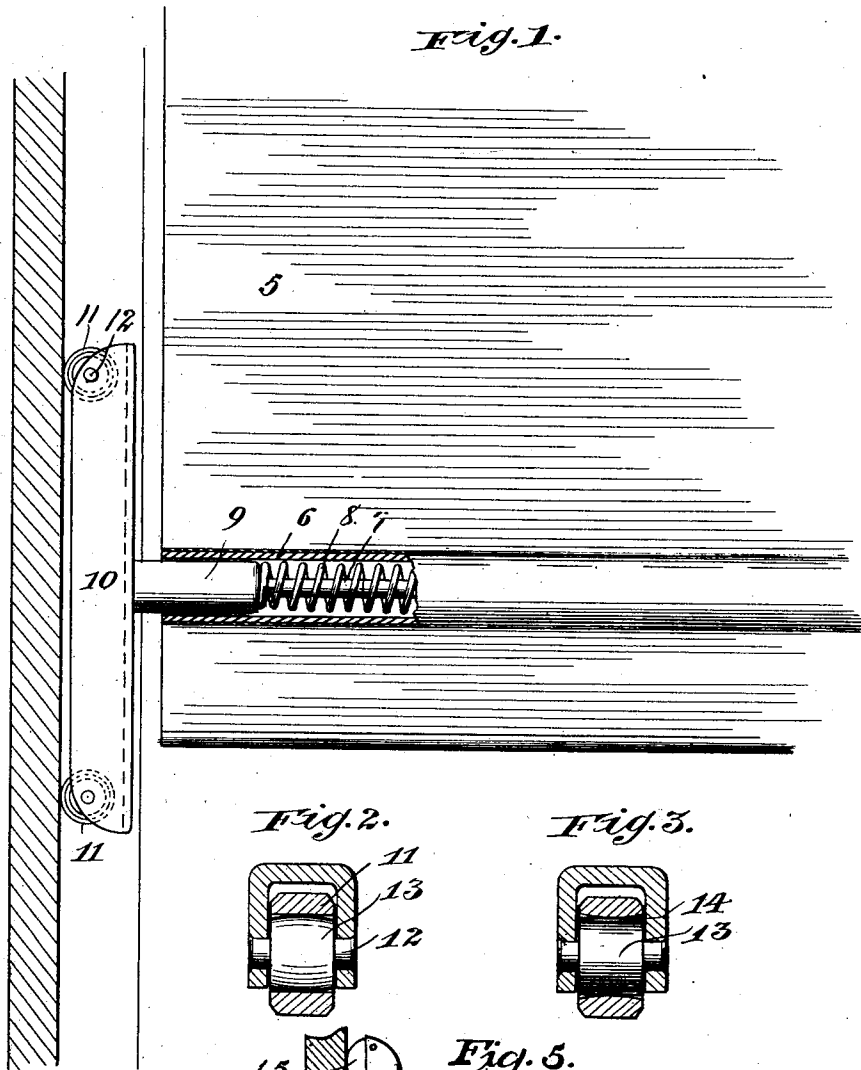


Fig. 2.

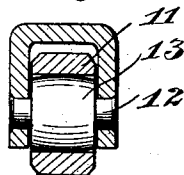


Fig. 3.

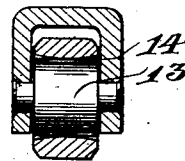
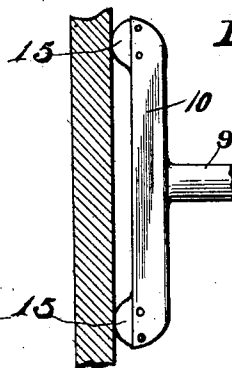


Fig. 5.



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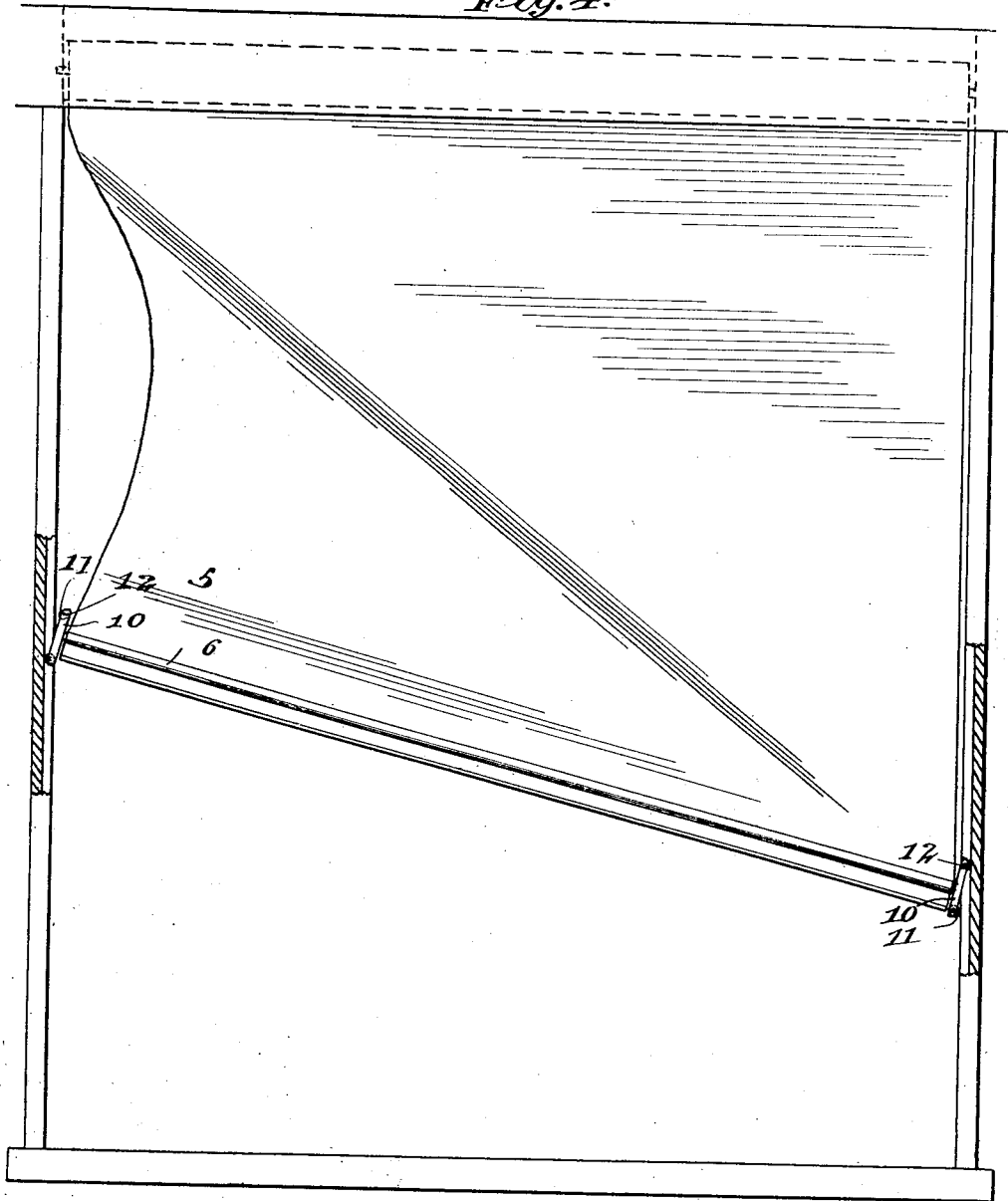
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2 SHEETS—SHEET 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE H. FORSYTH, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CURTAIN SUPPLY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

CURTAIN-FIXTURE.

SPECIFICATION forming part of Letters Patent No. 762,397, dated June 14, 1904.

Application filed July 13, 1901. Serial No. 68,212. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. FORSYTH, of Chicago, Illinois, have invented certain new and useful Improvements in Curtain-Fixtures, of which the following is a specification.

This invention relates to a curtain-fixture of the class designed to hold the lower end of a shade or curtain in an adjusted position against the pull of a self-winding shade-roller. Many curtain-holding devices widely differing in form and operation have been patented and used. The most successful curtain-fixtures of this type are those wherein a spring-actuated shade is provided at the lower end with a hollow curtain stick or tube, within which are mounted sliding rods carrying upon their ends elongated heads, the heads being provided with friction-pads and at their extremities with antifriction-rollers. These fixtures are generally known as "automatic" or "self-righting" fixtures, because when the lower edge of the shade or curtain is moved into an angular position with reference to the shade-roller the friction-tips are less effective for holding purposes and the antifriction-rollers come into play, thus enabling the winding-spring of the shade-roller to exert sufficient force to right the fixture. Various other types of fixtures have been used, and rollers have sometimes been made to serve as the means for affording friction sufficient to hold the curtain against the pull of the shade-roller spring; but in such constructions it has been considered necessary to provide some means whereby the roller itself could be locked by an extraneous device, such as a brake, or by the impingement or interlocking of two rollers due to their method of mounting.

I have discovered that an efficient curtain-holding device may be made by the employment of rollers or wheels mounted upon a head acted upon by a constant pressure, the pressure being such as to overcome the normal tendency of the rollers to permit the curtain to rise, whereby the rollers themselves are made the means of frictionally holding the curtain against the pull of the shade-roller, while serving to make the fixture auto-

matic by enabling the curtain to right itself whenever the shade-stick is placed in an abnormal position.

The theory of the operation of this fixture may be stated as follows: When the rollers—say two on each side and separated from each other—are all in contact with the bottoms of the grooves, the spring-pressure is sufficient to convert said rollers into friction devices whereby the lower edge of the shade or curtain will be held in adjusted position; but when, as frequently happens, the curtain is improperly operated by grasping it near its end, either in pushing it up or pulling it down, the tendency is to throw the lower edge of the shade into an abnormal position that is in angular relation to the shade-roller. In this movement one of the rollers at each end of the stick will be withdrawn from contact with the bottom of the groove, thus reducing the area of the friction-surfaces in contact. Now when this canting begins the tendency of the rollers is to prevent it and to maintain the lower end of the curtain in the proper horizontal position; but if the tendency to self-right be overcome by the force applied to the curtain and the curtain-stick be left in a canted position the fixture at one end furnishes a fulcrum, the pull of the shade-roller spring the power, and the depressed end of the fixture the weight, and the fixture will self-right, and the curtain will return to its horizontal position. A fixture of this kind may therefore be made automatic or self-righting and with a fewer number of parts and of simpler construction than the roller-tip fixture having friction pads or shoes which serve to restrain the pull of the shade-roller.

When the fixture is tilted or canted from its normal horizontal position, the action tends to press the springs of the stick slightly; but owing to the strength of the roller-shade spring being exerted against the lowermost end of the curtain-stick the increased pressure of the stick-springs will be overcome by the shade-roller spring plus the force of gravity acting on the upper end of the canted stick, and the fixture will therefore be quickly

self-righted or set to its horizontal locking position.

The principle of this invention may be embodied in widely-varying structural forms; but I have shown in the accompanying drawings a simple form of construction, in which—

Figure 1 is a side elevation of one end of the fixture, showing one of the heads and antifriction-rollers, a portion of the tubular shade-stick being broken away to show the outwardly-thrusting spring and the shank of the head. The bottom of the groove and the margin of the curtain are also indicated in said figure. Figs. 2 and 3 show sectional details of a construction wherein provision is made for obtaining a full-faced bearing of the roller upon the bottom of the groove; and Fig. 4 is an elevation showing the curtain-stick in a canted position, the walls of the grooves being broken away to show the action of the fixture. Fig. 5 is a detail view of a slightly-modified form.

In the drawings let 5 represent the curtain or shade, and 6 the tubular shade-stick, within which is mounted a rod 7, which may be provided with a pendant (not shown) for retracting the head against the thrust of the spring 8. The spring will have a bearing at its inner end upon a shoulder or other stop in the tubular shade-stick and its outer end against the end of the shank 9 of the shell or head 10. The latter may be of any usual form of construction; but as shown it is of a common type, consisting of a sheet of metal doubled into U form and having its outer corners rounded off. Within the ends of this shell or head are journaled the antifriction wheels or rollers 11. These rollers may be journaled upon the pins 12 and the latter fixed in the head, or they may travel with the roller.

In Figs. 2 and 3 I have shown the rollers provided with pins 12, having enlarged journals 13. In Fig. 2 this journal is slightly curved longitudinally, while the perimeter of the roller 12 is flat or straight. In Fig. 3 the surface of the journal 13 is straight and the opposing surface of the roller is convex, as shown at 14. With the construction shown in either of these figures if there be any irregularity in the bottom of the groove which would tend to cause the roller to have a bearing upon less than its full face the roller will tip or cant until it seats itself squarely upon the bottom of the groove, thereby affording a proper area of friction-surface.

The strength of the spring 8 will be such as to cause the rollers 11 to hold the shade against the pull of the spring of the shade-roller, (not shown,) which, as is usual in such cases, is sufficient to roll up the shade unless restrained. Now assuming that the lower edge of the shade has been moved into an angular position or away from a horizontal, as shown in Fig. 4, it will be seen that the upper roller at the left of the view and the lower roller at the

right of the view are both withdrawn from contact with the bottom of the groove. The tendency of the spring of the shade-roller is to draw the curtain up, and this force is exerted, of course, entirely upon the end of the fixture occupying the lowest position; but the roller still in contact at the elevated end of the shade-stick forms a fulcrum against which the power of the self-winding spring of the shade-roller acts, and the result is that the fixture will be automatically righted or returned to its normal position. It may further be observed that the tendency of these rollers will be to prevent the canting of the shade-stick to an extent which will permit the escape of the heads from the guide-grooves. Assuming now that the curtain-stick has been placed in the position shown in Fig. 4 by an attempt to raise the shade by grasping it near its end at the left-hand side of the view, while in this position the lower roller at one end and the upper roller at the other end of the stick are alone in contact with the bottoms of the guide-grooves and by drawing down on the lower end or forcing upward on the upper end of the stick the slight holding pressure exerted against the heads by the spring within the stick is released, owing to the fact that the said movement of the canted stick increases slightly the cant thereof which carries the rollers out of their position of slight holding impingement against the guides. By this means and while in that position the rollers are rendered wholly antifriction and offer no resistance to the free movement of the heads up and down the grooves while power is being applied for moving the fixture. Therefore the heads having this free movement will not escape from the guide-grooves, but will follow up or down the grooves freely or without sticking.

It will be seen that this fixture may be rendered very sensitive and that it operates in a different way from the fixtures having friction-tips and antifriction-rollers, because when the canting movement begins in a fixture of the description last mentioned the friction-shoe, still partially in contact, acts to prevent the immediate righting of the fixture until it is carried entirely out of contact with the bottom of the groove, while in my fixture as soon as the canting begins the tendency to self-right immediately sets in.

Considered as an operative device it will be observed that the elongated heads contain friction-surfaces above and below the axis of the spring, and these friction-surfaces are shown in the present illustration in the form of rollers; but they need not be rollers, since other forms of contacting-surfaces might be employed, or they might, in fact, be omitted and the heads themselves made to bear against the bottom of the groove at points above and below the axis of the spring. Such a modification is shown in Fig. 5 of the drawings,

wherein the ends of the head are provided with curved friction-surfaces 15, stationarily secured against rotation and held in place in any convenient manner.

5 A further advantage obtained by the construction above described and shown is that when the fixture is used in connection with a shallow irregular groove the elongated head can be passed through the groove around
10 curved portions thereof by the central portion between the rollers extending over the side walls of the grooves at the curved portion. Evidently there may be other advantages in connection with this fixture.

15 I claim as my invention—

1. A holding device for spring-actuated shades comprising in combination a spring-actuated shade-roller and its shade, a stick
20 elongated head movably supported at the end of the stick, said head being provided with curved friction holding-surfaces at opposite ends fixed in position against bodily movement longitudinally of the head and projecting out-
25 ward beyond the outer edge of the head whereby their surfaces will be forced normally into holding contact with the guide by the spring.

2. A holding device for spring-actuated shades comprising in combination a stick to

be carried by the shade, elongated rigid heads 30 movably mounted at the ends of the stick, and springs normally tending to move the heads outwardly, said heads being provided with bearings at their ends only, said bearings being fixed against bodily movement length- 35 wise of the head and curved on their outer edges whereby said bearings serve as friction holding devices when the stick is horizontal and as antifriction devices when the stick is moved toward a canted position, substantially 40 as described.

3. A holding device for spring-actuated shades comprising in combination a stick to be carried by the shade, elongated rigid heads 45 movably mounted at the end of the stick, and springs normally tending to move the heads outwardly, said heads having relieved central portions and bearings at their outer ends only, said bearings being fixed against bodily move- 50 ment lengthwise of the head and curved thereby to serve as friction holding devices when the stick is horizontal and as antifriction guiding devices when the stick is moved toward a canted position, substantially as described.

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