G. H. FORSYTH.

CURTAIN FIXTURE.

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928,910. Patented July 20, 1909.

Fig. 1.

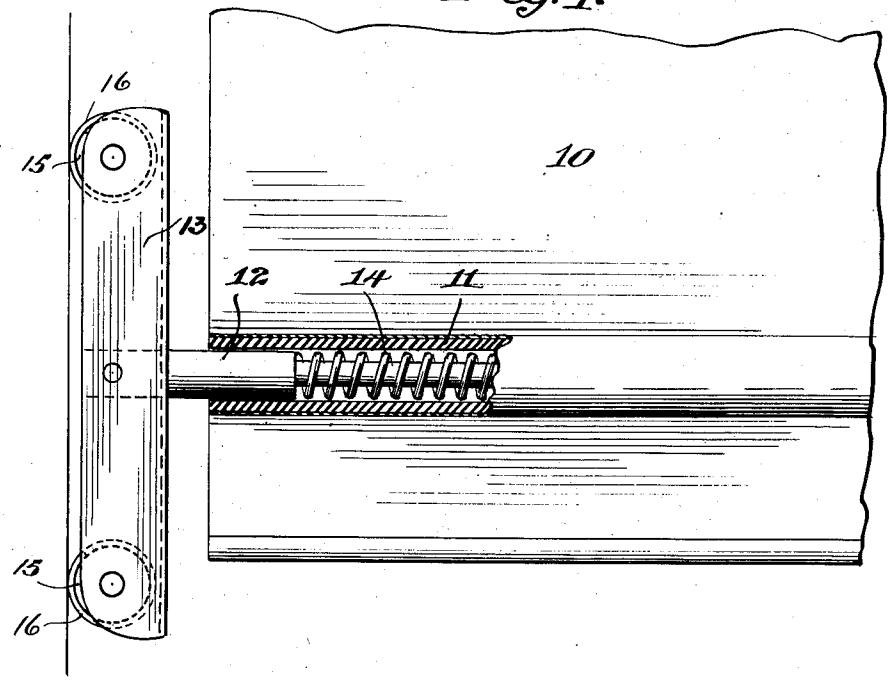


Fig. 8.

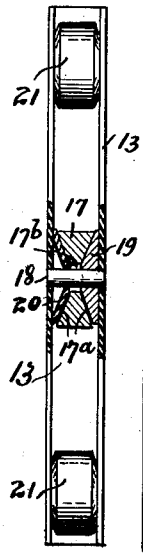
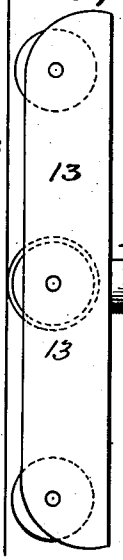


Fig. 7.



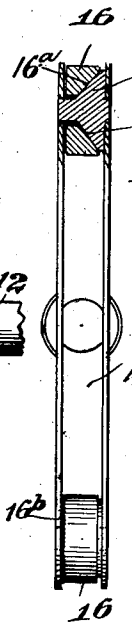
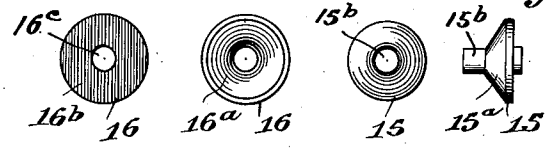


Fig. 2.

Fig. 3 Fig. 4. Fig. 5 Fig. 6.



Witnesses,

F. D. Mann

S. N. Pond

Inventor,

George H. Forsyth,

By Offield, Towle & Linthicum

Attys

UNITED STATES PATENT OFFICE.

GEORGE H. FORSYTH, OF CHICAGO, ILLINOIS.

CURTAIN-FIXTURE.

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Application filed March 6, 1905. Serial No. 248,633.

To all whom it may concern:

Be it known that I, GEORGE H. FORSYTH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Curtain-Fixtures, of which the following is a specification.

My invention relates to improvements in curtain fixtures of that general type wherein a spring-actuated curtain or shade is provided at its lower end with a curtain-stick carrying spring-pressed heads or shoes adapted to frictionally engage the sides of the casing or grooves therein to hold the curtain at any adjusted position against the pull of the curtain-roller.

My invention has for its principal object the production of an improved and simplified fixture of that class wherein spring-pressed elongated heads on the ends of the curtain-stick carry rollers adapted to engage the vertical side members of the window or other casing. Heretofore in such devices the heads have usually been provided with frictional holding devices which are pressed into peripheral holding engagement with the bottom or side walls of grooves in the casing in order to hold the shade in adjusted position against the upward pull of the curtain-roller spring. In some cases braking devices carried by the head and applied to the rollers under the outward thrust of the curtain-stick springs have been proposed to convert the rollers from anti-friction devices into frictional holding devices.

My present invention is an improvement upon this latter type, being chiefly distinguished by the omission of such separate braking devices and employing in place thereof a novel manner and means of mounting the rollers whereby the latter, under the thrust of the curtain-stick spring, are caused to frictionally engage laterally with a side wall or other stationary member of the head and, under the braking effect thus produced, frictionally engage the casing peripherally to retain the curtain and fixture in adjusted position.

My invention, in its preferred form, is illustrated in the accompanying drawing, wherein,—

Figure 1 is an elevational view, partly in vertical section, of a portion of a curtain carrying one end of the fixture; Fig. 2 is a face view of the head or shoe of the fixture with one of the rollers and its mounting in central vertical section; Figs. 3 and 4 are opposite face views of the roller, detached; Figs. 5 and 6 are respectively end and side views of the conical journal of the roller, detached; and Figs. 7 and 8 are, respectively, face and side elevational views of a modification, wherein a single frictionizing device is employed in association with anti-friction rollers in the ends of the head.

Referring to the drawing, 10 indicates a fragment of the lower portion of a window or other curtain in and transversely of which is mounted the usual hollow curtain-stick 11, the latter carrying in each end a shank 12 of a hollow head 13, normally pressed outwardly by the curtain-stick spring 14. Fixed in the opposite ends of the head and between the side walls thereof are journal bearings 15 for a pair of rollers 16. The journals 15 are distinguished by having their roller-engaging surface made conical, as shown at 15^a; while the rollers are similarly distinguished by having one face thereof conically recessed or concaved, as shown at 16^a, to engage the conical convex surface of the journal, as clearly shown in Fig. 2, while the opposite plane face of the roller is preferably roughened, as indicated at 16^b (Fig. 3) or otherwise treated to produce a friction surface for coöperation with the adjacent side wall of the head. The hole 16^c of the roller is of somewhat larger diameter than the diameter of the cylindrical portion 15^b of the journal engaged thereby, so that said roller can have a limited movement in a direction transverse to its journal, to permit the wedging action between the conical surfaces of said parts, as hereinafter described.

From the foregoing construction it will be seen that when the fixture is in place in the casing the outward thrust of the spring 14 acting through the head and through the engaging inclined or conical surfaces on the journals and rollers will tend to crowd the latter laterally against that side wall of the head which is adjacent to the smaller end of the cone, thus producing a frictional braking effect upon the roller to retard or prevent its rotation, and thereby creating a peripheral frictional holding effect of the roller upon the casing which serves to offset the upward pull of the curtain-roller spring, and thus holds the curtain in any adjusted position. The curtain may, however, be manually adjusted either up or down, and

this matter may be accomplished without wear on either the frictionally engaged parts of the roller, head or casing by providing the curtain-stick with the usual head-retracting pinch-handles, if desired. However, by a proper adjustment of the relative strengths of the curtain-roller spring and the curtain-stick spring the device may be adapted to easy manual manipulation consistently with a perfect holding effect when released and without the necessity of head-retracting devices.

In Figs. 7 and 8 I have shown a modified form of the invention, wherein the head 13 is provided centrally of its longitudinal dimension and opposite the curtain stick with a frictionizing roller 17 provided with concave conical surfaces 17^a on either side thereof, and an axial hole 17^b. This roller is mounted on a fixed spindle 18 secured in and between the side walls of the head, and of less diameter than the diameter of the hole 17^b; and flanking the roller on either side are a pair of convex cone-faced bearing members 19 and 20 lying against the side walls of the head and surrounding the spindle 18. These bearing members 19 and 20 may either be secured to the side walls of the head as fixed parts carried thereby, or they may be rotatably mounted on the spindle 18 and adapted to frictionize laterally with the side walls of the head.

21 designates each of a pair of anti-friction rollers mounted in the ends of the head, and serving to facilitate the self-righting of the curtain stick when canted or tilted from its normal horizontal position, in the manner well understood in the art. In this form of the invention, as in that already described, the outward thrust of the curtain stick spring creates a wedging action between the roller 17 and the bearing members 19 and 20 which flank the same on either side. Where said members are fixed with the side walls of the head, the braking effect is produced by the friction generated between the engaging conical surfaces of the roller and bearing members. Where said bearing parts are rotatably mounted on the spindle 18, the retarding or braking effect is distributed between the engaging conical surfaces and the engaging surfaces of the bearing members and side walls, the principal friction occurring between said last-named surfaces. In both cases the principle is the same, the braking effect resulting from friction produced between one or both sides of the roller and the side wall of the head or a fixed part carried thereby.

This invention is believed to embody a broadly new principle of operation in a curtain fixture of this general type to the extent that the roller braking effect is produced laterally between the roller and the head or some fixed part carried thereby simply under the thrust of the curtain-stick spring and without requiring any adjunctive roller braking devices. By the terms "lateral" and "laterally" used in this specification and the claims appended thereto, as referring to the character of the contact or engagement between the roller and the braking device and the frictional retarding effect created thereby, I refer to the side or sides of the roller as distinguished from its periphery; and it should be understood that said terms do not include, and are not intended to include, peripheral contact or engagement or peripheral frictional retarding effect. Hence I do not limit the invention to the particular means herein shown and described for securing the lateral braking effect, except to the extent indicated in specific claims.

I claim:

1. In a curtain fixture, the combination with a curtain-stick and a head mounted on the end thereof, of a movable frame-engaging member mounted on said head, and means whereby under the thrust of the curtain-stick spring, said member is made to have lateral frictional engagement with an element of the head, substantially as described.

2. In a curtain fixture, the combination with a curtain-stick and a spring-pressed head mounted on the end thereof, of a roller carried by said head, and means whereby under the outward thrust of the curtain-stick spring said roller is caused to frictionally engage laterally a fixed member of the head.

3. In a curtain fixture, the combination with a curtain-stick and a head mounted on the end thereof, of a roller mounted on said head, and means whereby, under the outward thrust of the curtain stick spring, said roller is forced laterally into frictional engagement with the side wall of the head.

4. In a curtain fixture, the combination with a curtain-stick and a hollow head mounted on the end thereof, of a cone journal mounted between the side walls of the head, and a roller loosely mounted on said cone journal, substantially as and for the purpose described.

5. In a curtain fixture, the combination with a curtain-stick and a hollow head mounted on the end thereof, of a cone journal mounted between the side walls of the head, and a roller loosely mounted on said cone journal, said roller having a frictional surface on that side toward which the roller is forced by the action of the cone journal, substantially as described.

6. In a curtain fixture, the combination with a curtain-stick and a hollow head mounted on the end thereof, of a journal bearing mounted in said head and having a cylindrical portion and a conical portion, and a roller having an axial opening engag-

ing the cylindrical portion of the journal and of greater diameter than the latter, and also having a concave side coöperating with the cone portion of the bearing, substantially as and for the purpose described.

7. In a curtain fixture, the combination with a curtain-stick and a hollow head mounted on the end thereof, of a journal bearing mounted in said head and having a cylindrical portion and a conical portion, and a roller having an axial opening engaging the cylindrical portion of the journal and of greater diameter than the latter, and also having a concave side coöperating with the cone portion of the bearing, the other side of said roller having a friction surface for engagement with the side wall of the head, substantially as and for the purpose described.

8. In a curtain fixture, the combination of a head, of a journal bearing mounted on said head having a conical portion and extending at right angles to the side of the head, and a roller sleeved upon the journal and of greater diameter than the latter and adapted to engage the base of a window frame guideway and also having a concaved side adapted to engage over the cone portion of the bearing for the purpose described.

GEORGE H. FORSYTH.

Witnesses:
JEROME W. MILLINGTON,
FREDERICK C. GOODWIN.