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C. L. HOPKINS.

CURTAIN FIXTURE.

APPLICATION FILED AUG. 19, 1904.

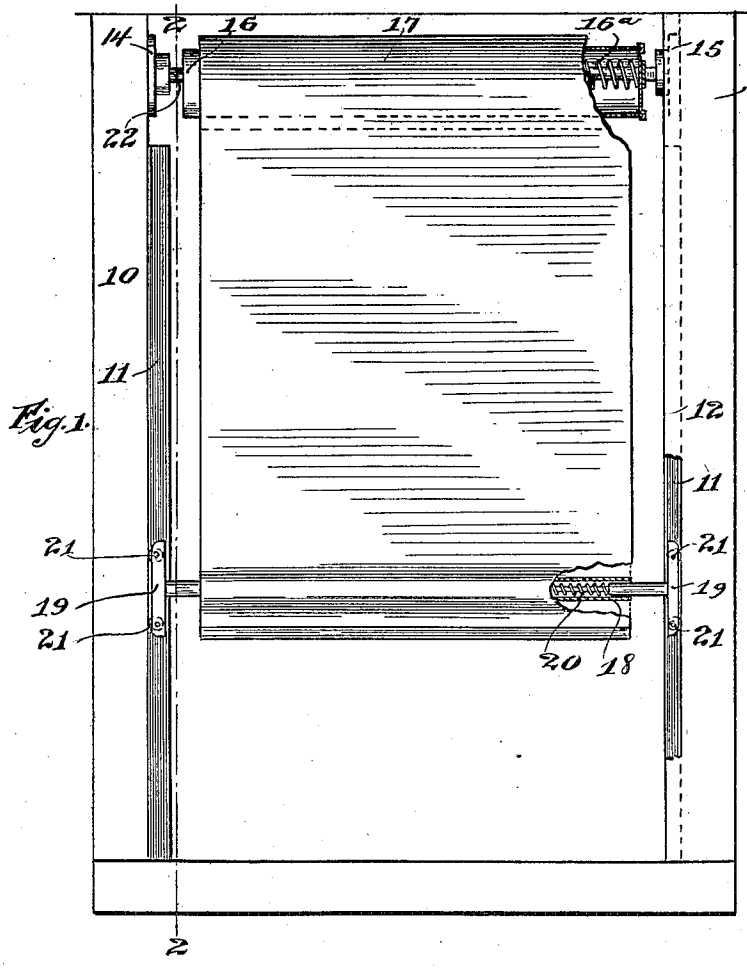


Fig. 1.

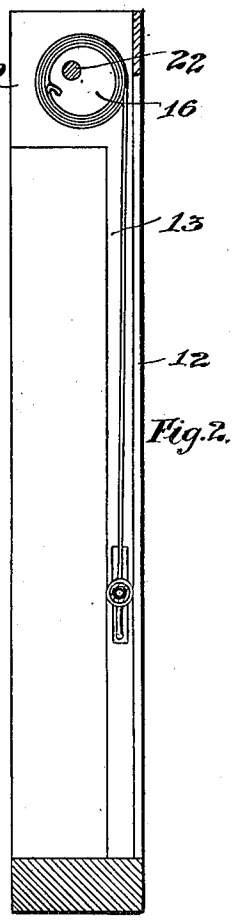


Fig. 2.

Fig. 3.

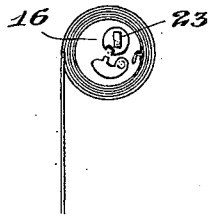


Fig. 4.

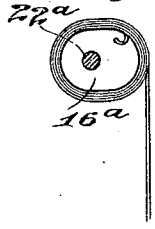


Fig. 5.

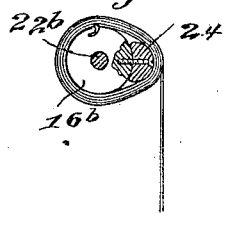
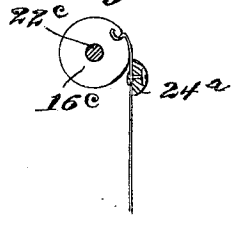


Fig. 6.



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UNITED STATES PATENT OFFICE

CHARLES L. HOPKINS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CURTAIN SUPPLY COMPANY, OF NEWARK, NEW JERSEY, AND CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

CURTAIN-FIXTURE.

No. 824,930. Specification of Letters Patent. Patented July 3, 1906.

Application filed August 19, 1904. Serial No. 221,415.

To all whom it may concern:

Be it known that I, CHARLES L. HOPKINS, 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.

This invention while applicable to various kinds of curtains is particularly intended for use with that class of curtains wherein a curtain-stick carried by the curtain is provided at its ends with tips or heads adapted to move in grooves or guideways at the sides of the window as the curtain is raised or lowered. Curtains of this kind are principally employed upon street and railway cars.

The object of the present invention is the provision of simple, economical, and efficient means whereby the curtain may remain at desired positions of vertical adjustment and whereby it may be adjusted to positions of various heights without the use of pinch-handles or like devices.

Curtain-fixtures intended to restrain a curtain against the tendency of the shade-roller spring to draw it upwardly and wind the curtain about a roller are usually constructed and operated by reason of friction means applied between the ends of the curtain-stick in the lower end of the curtain and the casing, and a great variety of devices of this sort have been made and used.

The principle of my invention consists in applying to a curtain-roller itself means whereby the tension of the curtain-roller spring is overcome at determinate points along the travel of the lower edge of the curtain and the curtain-stick and the heads carried thereby serve mainly the purpose of guiding the lower edge of the curtain up and down vertically and preventing it from flapping.

In carrying out my invention I so modify the usual construction of a curtain-roller on which the curtain is wound that at each revolution thereof the leverage of the spring is decreased to such an extent that it will no longer be sufficient to wind up the curtain, and this I accomplish by placing the spindles or journals of a shade-roller eccentric to the axis thereof and by forming the body of a roller itself elliptical or eccentric or by providing the curtain itself with a strip which in the winding thereof about a roller will cause the roller to become eccentric.

Referring to the drawings, Figure 1 is a face view, partly in section, of a window-frame having fitted therein a curtain provided with my invention in its preferred form. Fig. 2 is a vertical cross-sectional view of the same, taken on line 2 2, Fig. 1. Fig. 3 is a detail showing the end of a roller opposite to that shown in Fig. 2. Figs. 4, 5, and 6 are details showing modifications whereby the peculiar action of a roller on the curtain is secured.

In the drawings, 10 is the window-frame, having the strips or stops 11 and 12 to form the groove or guideway 13. At the upper part of the window-frame are secured the usual brackets 14 and 15, in which is mounted a spring-actuated roller 16, upon which winds the curtain 17. The curtain carries near its lower edge the tubular curtain-stick 18, inclosed in a pocket formed in the material of the curtain. This tubular curtain-stick has at each end a tip or head 19, adapted to be constantly thrust outwardly or toward the bottom of the groove 13 in the window-frame by the spring 20, arranged within the stick 18. The heads 19 are preferably provided with the antifriction-rollers 21, which roll along the bottoms of the grooves 13 as the curtain is moved up or down.

By reference to Figs. 1, 2, and 3 it will be seen that a roller 16 is arranged to rotate eccentrically as the curtain is wound on or off the roller. In Fig. 2 the end of a roller having the round pintle 22 is seen, while Fig. 3 shows the opposite end of a roller with the square pintle 23 and notch and pawl. It will be observed that there is but one notch and one pawl, as is customary with rollers for car-curtains or other curtains which require a constantly-acting roller. The roller is always placed in the bracket with the notch down, so that the pawl will fall away from the notch instead of into it and the roller will be permitted to exert at all times an upward pull upon the curtain. Now it is evident that if a roller be adapted to rotate eccentrically, as herein shown, the pull of the roller upon the curtain tending to wind up the same will vary. If the curtain be grasped

at the bottom and drawn down, the upward pull of the roller in opposition to the downward pull of the hand of the operator will be least when the roller is at that point in its rotation at which the curtain will draw from the side of the roller having the greatest radius. This upward pull of the curtain will be greatest when the curtain is drawing from the side of the roller having the least radius. The guiding device described above exerts a certain degree of restraint upon the curtain against upward movement by reason of its weight and the friction of its parts. Now if this resistance be properly proportioned to the tension of this spring in the roller it is possible to secure such an adjustment that the curtain will remain stationary at certain points if drawn down and then released from the hand of the operator. This is due to the fact that the roller does not exert the same pull at all points in its rotation and that the device at the bottom of the curtain exerts a sufficient restraint to prevent the roller passing the point in its rotation at which it has the least pull.

It is evident that the principle involved in this device may be used in forms and arrangements of parts somewhat different from that described above and shown in Figs. 1, 2, and 3. A modification is shown in Fig. 4, in which a roller 16^a, instead of being circular in cross-section and arranged to rotate eccentrically, is substantially oval in cross-section, the pintle 22^a being so placed as to cause the roller to rotate irregularly. In Fig. 5 is shown an ordinary round roller 16^b, concentrically mounted on pintles 22^b, having secured to one side thereof a strip of metal, wood, or other suitable material 24 to give the roller an irregular form. In Fig. 6 is shown another method of using a round roller 16^c, concentrically mounted on pintles 22^c. The strip 24^a is riveted or otherwise conveniently secured to the curtain near its upper edge, this strip lying against the roller when the curtain is wound thereon and causing the material to wind upon the roller and strip in an irregular-shaped roll.

Other forms and combinations of parts may be made by those skilled in the art embodying this invention, and I do not limit my invention to the disclosure herein shown; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a curtain, of a spring-actuated roller whereon said curtain is mounted, means for varying the effective pull of the spring-roller during the rotation thereof, and restraining means to hold the curtain against the pull of the shade-roller spring.

2. The combination of a curtain, of a spring-actuated roller therefor adapted to impart thereto an upward tendency, means for varying the pull of the shade-roller at different points in the rotation thereof, and means at the lower portion of the curtain for restraining said curtain against upward movement.

3. The combination of a curtain, a spring-actuated roller therefor, means for exerting an upward pull upon the curtain at all times but exerting less pull at one portion of its rotation than at other portions of its rotation, and restraining means carried by the curtain adapted to prevent the roller passing the point in its rotation at which it exerts the least pull.

4. The combination with a curtain, of a spring-actuated roller upon which the curtain winds and means for exerting a greater pull upon the curtain at one point in its rotation than at other points in its rotation, and means at the lower portion of the curtain for restraining the curtain against the pull of the roller, for the purpose set forth.

5. The combination of a spring-actuated curtain-roller, a curtain winding thereupon in an irregular-shaped roll and having an upward tendency of varying intensity, and means carried by the lower portion of the curtain for restraining the curtain against its upward tendency, for the purpose set forth.

6. The combination with a curtain, of a spring-actuated roller upon which the curtain winds, said roller having applied to it means for causing different pulls at different points of its rotation, for the purpose set forth.

7. The combination of a curtain, a spring-actuated roller upon which the curtain winds, said roller having applied to it means for causing different pulls at different points of its rotation, and a guiding device for guiding the bottom of the curtain.

8. The combination of a curtain, a spring-actuated roller therefor having applied thereto means for causing it to exert a greater pull upon the curtain at one point in its rotation than at another point in its rotation, and a weight at the lower edge of the curtain.

9. The combination of a curtain, a spring-actuated roller therefor having applied thereto means whereby it exerts a greater pull upon the curtain at one point in its rotation than at another point in its rotation, a curtain-stick carried by the curtain, guideways adjacent the ends of the stick, and guiding means at the ends of the stick adapted to move in said guideways.

10. The combination with a curtain, of a spring-actuated roller therefor having applied thereto means for causing it to exert a greater pull upon the curtain at one point in its rotation than at another point in its rotation, means at the lower portion of the curtain for restraining the curtain against the pull of the roller, and means for guiding the bottom of the curtain.

11. A spring-actuated roller for guiding

curtains having applied thereto means adapted to cause the same to rotate irregularly and to exert a greater pull upon the curtain at one part of its rotation than at another part of its rotation, for the purpose set forth.

12. A spring-actuated curtain-roller mounted to rotate eccentrically and to exert a varying pull upon its curtain, for the purpose set forth.

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