

H. H. FORSYTH.
CURTAIN FIXTURE.
APPLICATION FILED JAN. 22, 1904.

998,685.

Patented July 25, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

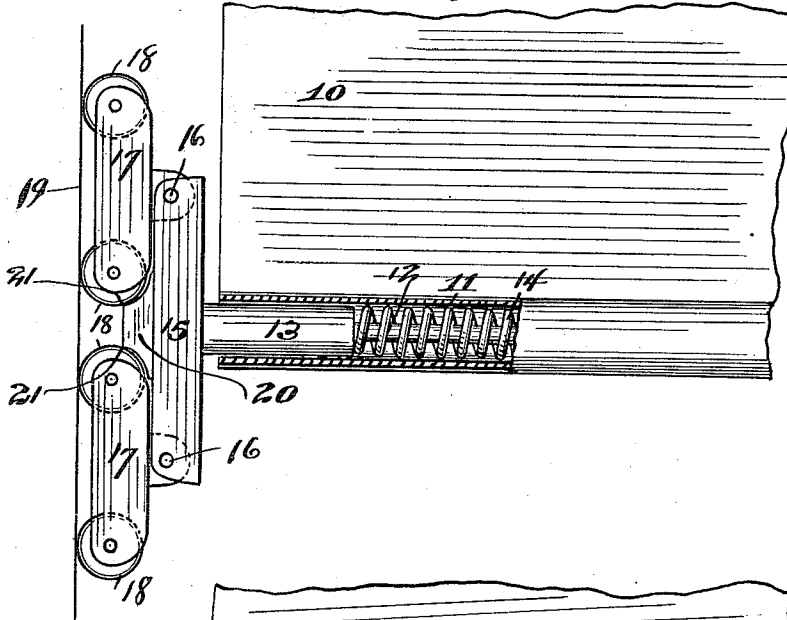


Fig. 2.

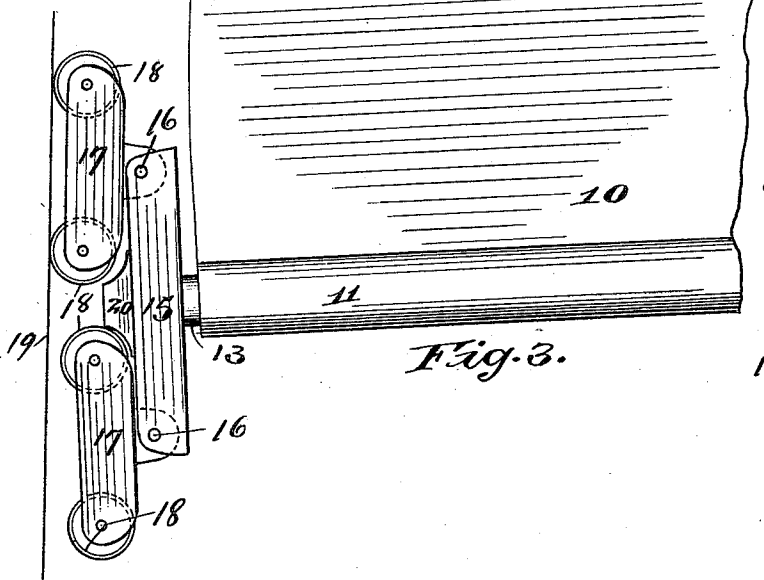
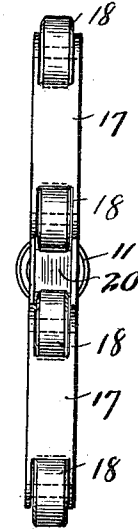
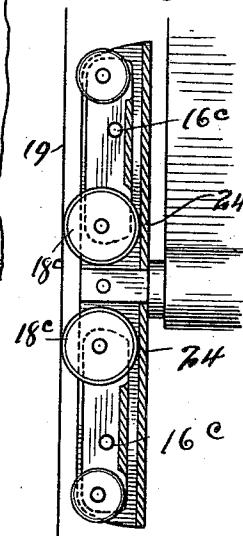


Fig. 3.

Fig. 8.



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2 SHEETS—SHEET 2.

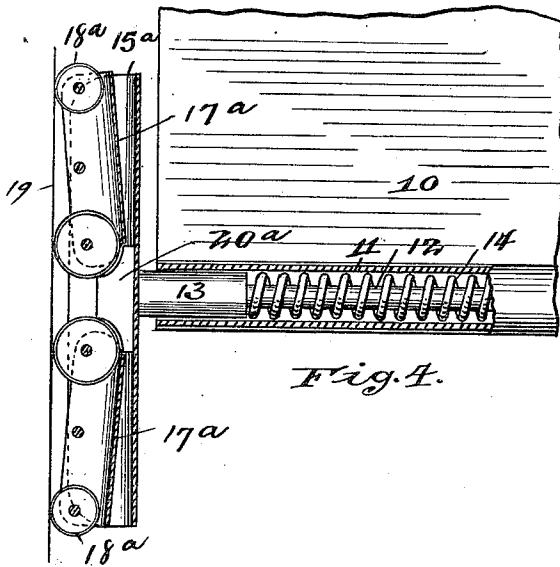


Fig. 4.

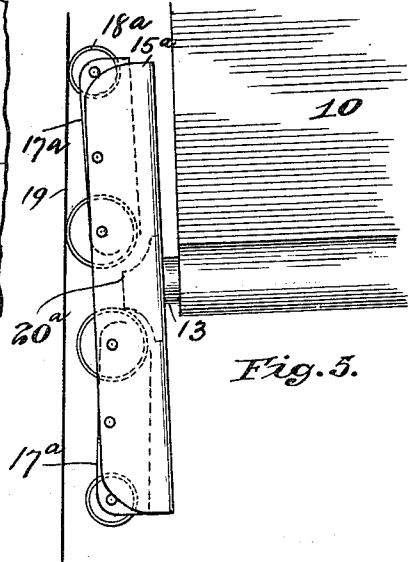


Fig. 5.

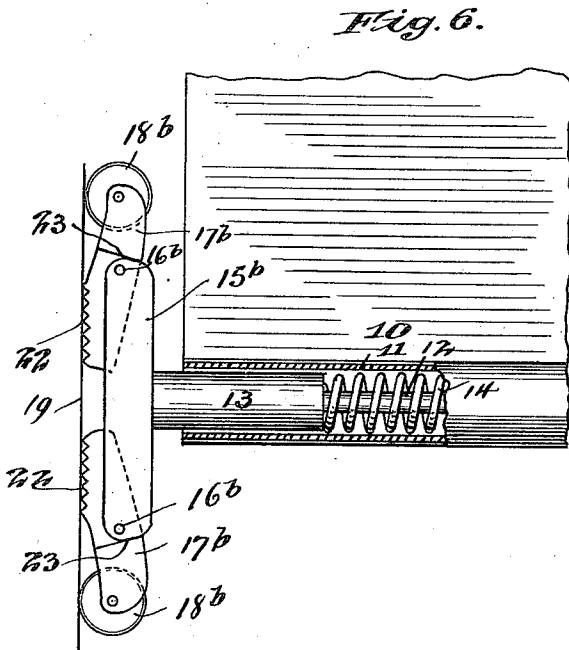


Fig. 6.

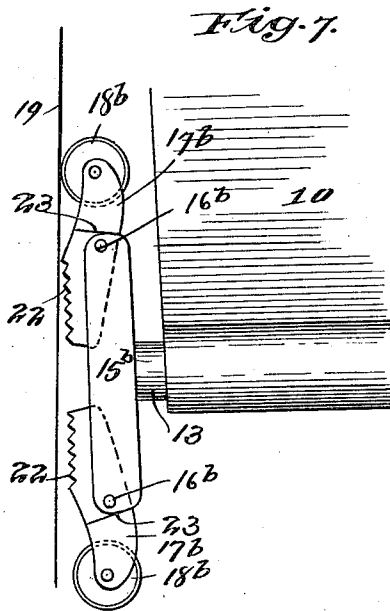


Fig. 7.

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UNITED STATES PATENT OFFICE.

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CURTAIN-FIXTURE.

998,685.

Specification of Letters Patent.

Patented July 25, 1911.

Application filed January 22, 1904. Serial No. 190,222.

To all whom it may concern:

Be it known that I, HENRY 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.

This invention relates to that type of curtain fixtures which are employed in connection with a flexible shade, or curtain, mounted upon a spring-actuated shade-roller, the spring of which exerts a constant tendency to roll the shade up on the roller, the fixture being mounted in the lower edge of the shade or curtain.

A curtain fixture of the general type to which my invention relates is described in the Letters Patent to Forsyth and Forsyth, Jr., No. 559,446 of May 5, 1896.

The object of my invention, generally stated, is to provide an improved curtain or shade fixture wherein the curtain shall be automatically held in any adjusted position so long as the stick is in its horizontal or normal position, but which shall be automatically and sensitively self-righting whenever the shade-stick is canted or inclined; and in carrying out my invention I have provided in addition to the usual head of the shade-stick a supplemental head which is mounted upon the main head and is provided with one or more anti-friction surfaces which are adapted to bear upon the window-frame; and in association therewith a brake which, when the shade-stick is in the normal or horizontal position, is applied or active, but which, when the stick is canted, is wholly or partially released and rendered inactive, so as to allow the supplemental head and its anti-friction surface or surfaces to operate unimpeded in effecting the self-righting of the stick under the pull of the shade-roller spring.

My invention may be embodied in several forms of construction; and in the accompanying drawings I have illustrated some of the permissible variations or forms all embodying the operative principle of the invention and capable of effecting the benefits and advantages thereof, and referring thereto,—

Figures 1 and 2 illustrate one form or embodiment of my invention in side elevation and front views, respectively, of the

head and its associated parts; Fig. 3 is a view similar to Fig. 1, showing the position which the head and its associated parts assume when the shade-stick is canted or inclined; Figs. 4 and 5 illustrate a modified form of construction; Fig. 4 showing the head in longitudinal section with the stick in horizontal position, and Fig. 5 showing the head in side elevation with the stick in a canted or inclined position; Figs. 6 and 7 are views similar to Figs. 4 and 5, respectively, showing a further modification; and Fig. 8 is a view in longitudinal section through the head showing a still further modification closely related to the form of the invention shown in Figs. 4 and 5.

Describing first the construction shown in Figs. 1, 2 and 3, the shade is provided with a hollow shade-stick 11 in which is mounted a sliding rod 12 having an enlarged guiding member 13 affording an abutment for one end of the outwardly forcing spring 14. A head 15 is mounted on the end of the rod, and to the ends of the head 15 are pivotally mounted at 16 upper and lower trucks, respectively, each of these trucks comprising what I term a supplemental head 17, each of which is provided at its ends with anti-friction rollers 18 pivoted thereto, said rollers riding in the usual groove of the frame, the bottom of which is conventionally indicated by the line 19. Secured to the head 15 is a brake-block 20 so disposed as to lie between the lower roller of the upper supplemental head and the upper roller of the lower supplemental head. The upper and lower ends of the brake-block 20 are, as herein shown, concaved; and may be so formed as to engage the peripheries of the rollers lying adjacent thereto at a single point, as indicated at 21. This causes the brake to bite upon the periphery of the roller in a very effective manner when the shade-stick is in its normal position with the rollers of both supplemental heads engaging the walls of the groove.

The operation is readily apparent. With the parts in the positions shown in Fig. 1 the brake is active or applied, preventing the rotation of the inner rollers and causing the latter to drag frictionally upon the wall of the groove, whereby the shade is retained in its adjusted position against the pull of the shade-roller spring until the head and

its connected parts are positively retracted by the usual pinch-handles or sufficient lifting force is applied to the stick to overcome the frictional resistance caused by the locked inner rollers. When, however, the stick is canted toward the position indicated in Fig. 3, the brake is released or its action is minimized to such an extent as to permit the upper truck to move freely along the groove under the action of the shade-roller spring until the stick is righted, whereupon the braking action once more becomes effective. Obviously, at the other end of the stick the reverse takes place; the upper truck and its rollers being retracted, and the brake being released from the inner roller of the lower truck, leaving the lower truck free to move along the groove for self-righting purposes.

Figs. 4 and 5 illustrate a somewhat more compact form of the invention closely similar in other respects to the form above described. In this form the supplemental heads 17^a and the brake-block 21 all set well back within the hollow head 15^a, the latter being made of increased length as compared with the head 15 and practically coextensive with the total outside length of both the supplemental heads 17^a. In this form increased lightness is also secured by making both the main and supplemental heads in hollow form, and by making the outer rollers 18^a of the twin trucks somewhat smaller than the inner brake-engaged rollers. The operation of this form of the device is the same as that already described.

In the modification shown in Figs. 6 and 7 the braking surface is transferred from the main head to the supplemental head, the braking action taking place between the latter and the wall of the groove rather than between contacting surfaces carried by the main and supplemental heads respectively. In this form of the invention the head 15^b has pivoted to the opposite ends thereof supplemental heads 17^b, in the outer ends of which are mounted the anti-friction devices 18^b. The inner ends of the supplemental heads, instead of carrying rollers adapted to be engaged by a brake-block on the main head, as in the constructions hereinabove described, are themselves provided, respectively, with friction or braking surfaces such as the serrations shown at 22 which normally contact the inner wall of the groove, constituting a drag upon the trucks, and preventing the automatic rise of the curtain when the shade-stick is in normal position by their braking effect upon the wall of the groove. In order to insure perfect contact of these braking surfaces at all times and regardless of any slight irregularity in the wall of the groove, the supplemental heads are preferably pivoted as at 16^b to the ends of the head 15^b, and are further provided with shoulders 23 engaging the ends of the

main head inwardly of the pivots, by reason of which construction when the shade-stick is canted one of the brakes is entirely removed from the wall of the groove and the brake of the other truck is wholly or partially released, as shown in Fig. 7; thereby placing the fixture in a position favorable for self-righting.

Fig. 8 illustrates a still further modification quite similar to the form of the invention shown in Figs. 4 and 5; but wherein, instead of employing a brake-block as a distinct and separate element carried by the head, the inner surface of the head itself serves as a brake, as indicated at 24, in connection with the inner rollers 18^c of the trucks which are made large enough relatively to the width of the head to rub against the wall of the latter at the points 24 when the shade-stick is in the normal position, thereby producing the requisite holding effect. When, however, the shade-stick is canted, the braking surface 24 is more or less withdrawn from the periphery of the inner roller which remains in contact with the wall of the groove, thereby leaving the truck to which said roller pertains free to yield to the self-righting tendency of the stick. It will be observed that in this form of the invention the outer rollers lie normally out of contact with the frame, and that the pivots 16^c are located farther from the inner than from the outer rollers. The former gives the head a bearing base of limited extent on the wall of the groove with the braking force applied to all of the normally active groove-engaging members of the head, thereby creating a fixture of great holding power in which wear on the cooperating surfaces forming the brake is automatically taken up; while the latter feature, by reason of the increased radius of the angular movement between the main and supplemental heads renders the brake more sensitive to slight angular deflections of the shade-stick from the horizontal.

My present invention provides a curtain fixture having distinct advantages. It is important, in a device of this kind, to provide an extended guide at the ends of the fixture of such length as to prevent binding of the guide in its travel up and down the window-frame. It is further important to construct the fixture so as to permit angular deflection of the curtain-stick, and hence arises the necessity for making suitable provision for retaining the heads of the fixture in position in the grooves when the stick is canted. My present construction realizes these important considerations in a very simple and effective manner. The long heads afford efficient guides in the movements of the fixture; the pivotal connection of the main and supplemental heads permits the stick to be tilted without kinking

or binding, and the length of the supplemental heads is such that they afford efficient guides, and thus maintain themselves within the grooves when the stick is canted.

5 These supplemental heads being provided with antifriction means which become effective when the brake is removed, make the fixture extremely sensitive, and the self-righting occurs instantly, while the brake
10 action is effective to hold the curtain against the upward pull of the spring-roller, the jar and vibrations of the car, the forces of the wind upon the curtain, and
15 other causes tending to permit the curtain to roll up.

It will be evident that other forms of the invention varied with respect to mechanical details from the forms hereinabove described and shown might readily suggest
20 themselves to the mechanic or artisan skilled in this art, which would still be within the principle of the invention, possessing all the benefits and advantages thereof. I do
25 not, therefore, limit the invention to any or all of the several forms herein set forth, except to the extent indicated in specific claims.

I claim:

1. In a curtain fixture, the combination
30 with a stick, of a head at the end thereof, a supplemental head mounted upon said head and provided with an anti-friction device adapted to bear upon a window frame, and
35 a brake for said supplemental head carried by said first mentioned head and arranged to be active and hold said supplemental head when the stick is in the normal position and to be released by the canting of the stick.

2. In a curtain fixture, the combination
40 with a stick, of a head at the end thereof, a supplemental head pivoted upon said head and provided with an anti-friction device adapted to bear upon the window frame,
45 and holding instrumentalities for the supplemental head including a braking surface carried by said first mentioned head and positioned so that it is active to hold the supplemental head when the stick is in the normal
50 position and is released by the canting of the stick.

3. In a curtain fixture, the combination
55 with a stick, of a head at the end thereof, a supplemental head mounted upon said head and provided with a roller or wheel adapted to bear upon the window frame, and a brake for the supplemental head carried by the first mentioned head and constructed and arranged so that it is active when the stick is
60 in the normal position and is released by the canting of the stick.

4. In a curtain fixture, the combination of
65 a main head, a supplemental head pivoted to swing on a pivot mounted on and extending transversely of the main head, said sup-

plemental head comprising an elongated member with an anti-friction bearing adapted to engage the base of a guide groove, and a brake for holding the fixture in position.

5. In a curtain fixture, the combination
70 of a main head, a supplemental head pivoted to swing on a pivot mounted on and extending transversely of the main head and comprising an elongated member extending
75 from a point substantially midway of the main head to a point therebeyond, an anti-friction bearing carried by the supplemental head, and a brake for retaining the fixture in place.

6. In a curtain fixture, the combination
80 with a stick, of a head at the end thereof, a truck mounted on said head with capacity for angular movement relatively to the latter and adapted to engage the window
85 frame, and a brake carried by said head and engaging a wheel of said truck when the stick is in the normal position and disengaged therefrom when the stick is canted.

7. In a curtain fixture, the combination
90 with a stick, of a head at the end thereof, a truck pivotally mounted on said head and adapted to engage the window frame, and a brake carried by said head and constructed
95 and arranged to engage a wheel of said truck when the stick is in the normal position and disengaged therefrom when the stick is canted.

8. In a curtain fixture, the combination
100 with a stick, of a head at the end thereof, a pair of trucks pivotally mounted on the ends of said head, respectively, and adapted to engage the window-frame, and a brake carried by said head between said trucks,
105 said brake being constructed and arranged to engage the adjacent wheels of the latter when the stick is in the normal position and being disengaged therefrom when the stick is canted.

9. In a curtain fixture, the combination
110 with a stick, of a hollow head at the end thereof, a pair of trucks pivotally mounted in endwise alinement within said hollow head and adapted to engage the window-frame, and a brake carried by said head
115 between said trucks, said brake being adapted to engage the adjacent wheels of the latter when the stick is in the normal position and being retracted therefrom when the stick is canted.

10. In a curtain fixture, the combination
120 with a stick, of a tilting member at the end of the stick, a normally movable part carried by the tilting member adapted to engage the window frame, and a brake arranged for contact with said part when the
125 stick is horizontal and released therefrom upon the canting of the stick.

11. In a curtain fixture, the combination
130 with a stick and an elongated head, of two

tilting supplemental heads carried thereby, each having at opposite ends anti-friction members, and means for mounting the respective tilting heads to permit their tilting movement in a plane parallel with the stick.

12. In a curtain fixture, the combination with a stick, of a tilting member, a normally movable part carried thereby, means for mounting the tilting member at the end of the stick, and a brake arranged for contact with the part carried by the tilting member when the stick is horizontal and released upon the canting of the stick.

13. In a curtain fixture, the combination with a stick, of a head at the end thereof, a supplemental head mounted upon said head and provided with an anti-friction device adapted to bear upon the window frame guide, the said guide, and a brake carried by the head associated with said supplemental head and positioned so that it is active when the stick is in the normal position and is released by the canting of the stick relative to the window frame.

14. In a curtain fixture, the combination of a main head, elongated supplemental heads respectively projecting from opposite ends of the main head and pivoted intermediate their ends to the ends of the main head to swing on pivots arranged transversely of the main head, anti-friction bearings carried by the supplemental heads, and a brake for retaining the fixture in place.

15. In a curtain fixture, the combination of a main head, a truck carried by the main head and comprising an elongated member pivoted intermediate its ends to the main head to swing on a pivot arranged transversely of the main head, and anti-friction bearings carried by the supplemental head.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."