Feb. 22, 1938. A. C. HANSON 2,109,112

CONTROLLING DEVICE FOR WINDOW SHADE ROLLERS

Filed March 10, 1937

Fig. 1.

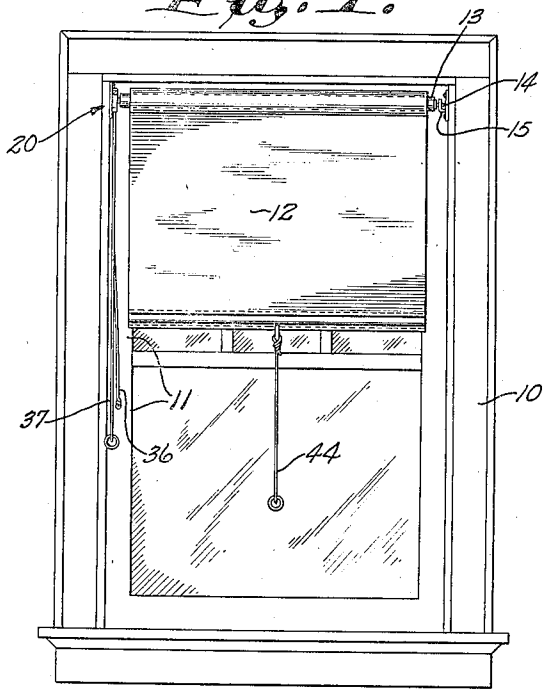


Fig. 3.

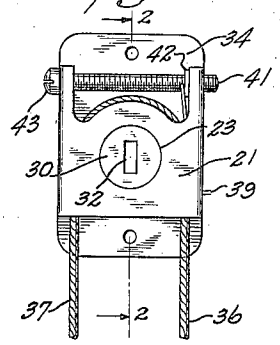
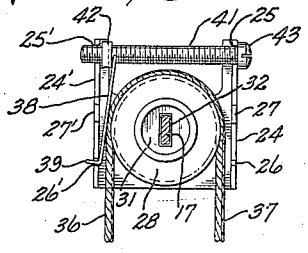


Fig. 4.



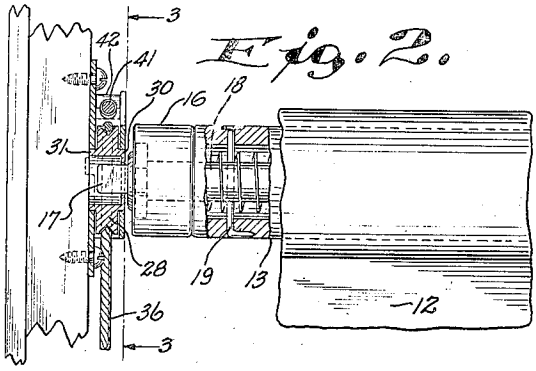


Fig. 2.

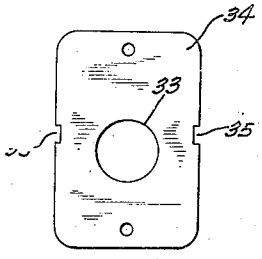


Fig. 5.

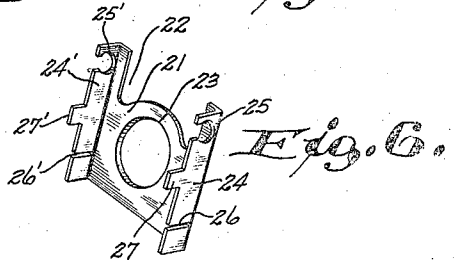


Fig. 6.

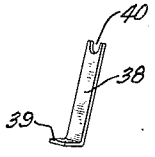


Fig. 8.

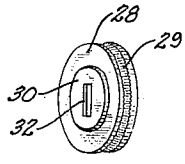


Fig. 7.

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CONTROLLING DEVICE FOR WINDOW SHADE ROLLERS

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9 Claims. (Cl. 156—28)

This invention relates to improvements in controlling devices for window shade rollers.

It is one of the objects of the present invention to provide a simple form of fixture or device for application to the end of a curtain roller to efficiently balance and tension the curtain or shade carried by the roller during its various movements and at any position of adjustment.

A further object of the invention is to provide a curtain roller fixture provided with internal braking means adjustable from exteriorly of the fixture for regulating the friction or tension to hold the roller in any desired position and also for imposing a frictional restraint on the operating cord to prevent improper sliding or shifting of position of the same.

A further object of the invention is to provide a curtain roller fixture having a drum rotatably mounted within a casing and an operating cord extending over the drum and having both ends depending from the casing and revolving the drum and roller engaged thereby, there being within the casing a novel form of adjustable spring brake to yieldably engage a portion of the cord and press the latter against the drum.

A further object of the invention is to provide a curtain roller fixture which can be applied to the standard spring curtain roller without any material modification of the roller.

A further object of the invention is to provide a curtain roller fixture which is extremely flat and compact and embodies a minimum number of easily assembled parts.

A further object of the invention is to provide a controlling device for window shades in which the parts are so constructed that they may be assembled to form either a right or left hand fixture. Thus two sets of manufacturing dies are unnecessary.

A further object of the invention is to provide a device of the class described having an adjustment member, wherein said adjustment member projects from the vertical wall of the fixture which faces the room, thereby rendering said adjustment member readily accessible for manipulation at any time without removing the fixture.

Other objects of the invention are to provide a curtain roller fixture which is simple mechanically, which causes a minimum amount of wear on the cord, which is inexpensive to manufacture and install, which is strong and durable, and which is neat and attractive in appearance when installed.

With the above and other objects in view the invention consists of the improved curtain roller fixture and all its parts and combinations as set forth in the claims and all equivalents thereof.

In the accompanying drawing illustrating one complete embodiment of the preferred form of the invention in which the same reference numerals designate the same parts in all of the views:

Fig. 1 is an elevational view of a window showing a shade mounted thereon with its roller engaged by the improved controlling device or fixture;

Fig. 2 is an enlarged fragmentary view of the curtain roller showing it in engagement with the improved fixture, part of the curtain roller being broken away and shown in section, and the fixture being shown in vertical section;

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is a view showing the interior of the fixture with the back plate removed;

Fig. 5 is a plan view of the back plate alone;

Fig. 6 is a perspective view of the fixture casing with the back plate removed;

Fig. 7 is a perspective view of the sheave alone; and

Fig. 8 is a perspective view of the spring brake alone.

Referring now more particularly to the drawing, it will appear that the numeral 10 designates a window casing having window sashes 11 slidably mounted therein. The window sashes are adapted to be covered or shaded to any desired extent by a shade or curtain 12 which is windable on any desired type of roller 13. The roller illustrated is the standard spring roller now commonly used, and said roller may be readily adapted for use with the present invention in a manner to be hereinafter described.

One end portion of the roller has a stud 14 projecting outwardly therefrom which is engageable with a standard curtain fixture 15 mounted on one side of the upper portion of the window casing. The other end portion of the roller is covered by a ferrule 16, from which a flat stud 17 projects in the usual manner, said stud being secured to a rotatable shaft 18 within the roller. Where a standard spring roller is used, as illustrated, it is merely necessary to modify it to the extent of holding the shaft 18 and stud 17 against rotation relative to the roller, and this is easily accomplished by merely driving a nail 19 through the roller and shaft 18, thereby securing said shaft and stud against rotation independently of the roller 13. The stud 17 is adapted for engagement with the improved curtain roller fix-

ture, which fixture is indicated by the numeral 20 in Fig. 1, and which will now be described in detail.

The curtain roller fixture 20 is mounted on the upper portion of the window casing opposite the fixture or bracket 15. The main body of the improved fixture is a metal stamping as shown in Fig. 6 having an end wall 21 which preferably has its upper portion cut away as at 22, and which is also formed with a circular opening 23 joining the wall 21, and flanged at right angles thereto are vertical walls 24 and 24'. The wall 24 is formed with a circular opening 25 which communicates with the free edge of the wall 24 and is also formed with a slot 26. In addition a lug 27 projects outwardly from the free edge of the wall 24. The wall 24' is formed with a similarly located circular opening 25', slot 26' and lug 27'.

A sheave or pulley 28 is preferably formed with a roughened peripheral groove 29 and with hub portions 30 and 31, there being a slot 32 in the hub 30 shaped to receive the stud 17 of the curtain roller.

The hub portion 30 of the sheave is adapted to rotate in the circular opening 23 of the casing, and the hub portion 31 on the other side of the pulley is adapted to rotate in a circular opening 33 of a back plate 34. The back plate 34 is formed with oppositely disposed notches 35 through which the lugs 27 and 27' are adapted to extend in assembly, and said lugs, in the completed device, are suitably bent over to hold the back plate in position.

A suitable cord is adapted to pass over the sheave in the groove 29 thereof, said cord having an idling end 36 depending below the fixture and an operating end 37 depending below the fixture and assuming a position in front of the depending portion 36.

In order to apply a tension to the cord and sheave so that the curtain will hold itself in any desired position of adjustment, a spring brake 38 is employed (see Fig. 8), which brake has its lower end flanged as at 39 and its upper end straight and recessed as at 40. The flanged end of the end 39 of the brake is insertable in the slot 26' of one of the vertical edge walls of the fixture as shown in Fig. 4, and the recessed upper end 40 of the brake embraces a portion of an adjustment bolt 41, which bolt carries a nut 42 adjacent the brake. In assembly the nut 42 is held against rotation so that when the head 43 of the adjustment bolt is turned, the nut is caused to travel on the bolt to vary the pressure of the brake upon the cord and sheave.

In the drawing a left hand fixture is illustrated, and it is to be noted that when the fixture is installed the head 43 of the adjustment bolt projects from the wall 24 facing the room. Thus the head of the bolt is readily accessible and manipulable at any time to vary the adjustment. It is an important feature of this invention that the same parts may be employed to form either a right or left hand fixture. In order to form a right hand fixture it is merely necessary to insert the flanged end 39 of the brake member 38 in the slot 26 of the wall 24 instead of in the slot 26' of the wall 24', and it is also necessary to reverse the position of the adjustment bolt 41 in the openings 25 and 25' so that the head 43 of the bolt projects from the vertical wall 24' instead of from the vertical wall 24. It is thus apparent that only one set of dies is necessary to manufacture parts for both right and left hand fixtures, and that either style of fixture may be readily made by a slight variance in assembly methods.

In use, with the stud 17 of the curtain in engagement with the slot 32 of the sheave, to raise the shade it is merely necessary to pull downwardly on the cord portion 37. Due to the roughened groove of the sheave 28, this downward pull will cause rotation of the sheave and similar rotation of the curtain roller to wind the curtain thereon. To lower the shade, it is merely necessary to pull downwardly on the shade cord 44 in the usual manner. The brake 38 is adjusted through the adjustment bolt 41 to apply just enough drag on the cord and sheave so that the curtain will maintain itself in a desired position of adjustment. The tension should not be so great as to interfere with the operation of the shade.

While the fixture has been shown and described as being used in connection with the mounting of a standard spring roller for shades wherein the stud has been rendered non-rotative independently of the roller by a securing means such as a nail passed through the roller and internal shaft, it should be understood that any form of roller having a fixed stud at its end portion, may be used in connection with the improved fixture.

Although only one form of the invention has been shown and described, it is obvious that various changes and modifications may be made without departing from the spirit of the invention, and all of such changes are contemplated as may come within the scope of the claims.

What I claim is:

1. A curtain roller fixture comprising a casing attachable to a support, a sheave rotatably mounted within said casing and engageable with the stud of a curtain roller to impart rotation thereto, a flexible member extending over said sheave and depending exteriorly of the casing, a pull on one end of said flexible member serving to rotate the sheave to wind a curtain on its roller, braking means within the casing and engageable with the flexible member for pressing the flexible member against a portion of the sheave to prevent slippage of the flexible member with respect to the sheave and to hold a curtain and its roller in any position of adjustment, and means in connection with said braking means accessible from the edge of the fixture facing the room for adjusting the pressure exerted by the braking means to suit requirements.

2. A curtain roller fixture comprising a casing attachable to a support, a sheave rotatably mounted within said casing and having a slot therein for engaging a curtain roller stud, a flexible member extending over said sheave and having both ends thereof depending exteriorly of the casing, a pull on one end of said flexible member serving to rotate the sheave to wind the curtain on said roller, braking means mounted within the casing and engageable with the flexible member for pressing the latter against the sheave, and pressure regulating means engaging said braking means and accessible from the edge of the fixture facing the room.

3. A curtain roller fixture comprising a casing having a closed side and an open side, a plate closing the open side of the casing, the closed side of said casing and said plate having alined openings therein, a sheave within said casing having its end portions journaled in said openings, said sheave having a slot for engagement with a cur-

tain roller projection, a cord engaging said sheave and extending outwardly of the casing, an external brake engageable with a portion of said cord, and means accessible from the edge of the fixture facing the room for adjusting said brake.

4. A curtain roller fixture comprising a casing, a sheave journaled within the casing having a slot for engagement with a curtain roller projection, a cord extending over a portion of the sheave for frictionally engaging the same and projecting outwardly of the casing, a brake formed of a strip of spring metal having one end fixed to the casing and having a portion engageable with a portion of the cord to press the latter against the sheave, and adjustable means engaging the other end of the brake to vary the tension exerted on the cord.

5. A curtain roller fixture comprising a casing, a sheave journaled in said casing and having a slot for engagement with a curtain roller projection, a cord extending over a portion of the sheave and frictionally engaging the same and depending exteriorly of the casing, a brake member within the casing for exerting a pressure on said cord, an adjustment bolt rotatably mounted in said casing, and a traveling nut on said bolt engageable with a portion of the brake to vary the tension exerted by the latter on the cord.

6. A curtain roller fixture comprising a casing, a sheave journaled in said casing and having a slot for engagement with a curtain roller projection, a cord extending over a portion of the sheave and frictionally engaging the same and depending exteriorly of the casing, a brake member within the casing for exerting a pressure on said cord, an adjustment bolt rotatably mounted in said casing, and a traveling nut on said bolt engageable with a portion of the brake to vary the tension exerted by the latter on the cord, the head of said bolt being accessible from the exterior of the casing.

7. A curtain roller fixture comprising a casing, a sheave journaled in said casing and having a slot for engagement with a curtain roller projection, a cord extending over a portion of the sheave and frictionally engaging the same and depending exteriorly of the casing, a brake member within the casing for exerting a pressure on said cord, an adjustment bolt rotatably mounted in said casing, and a traveling nut on said bolt engageable with a portion of the brake to vary the tension exerted by the latter on the cord, the head of the bolt being accessible from the edge of the casing facing the room.

8. A curtain roller fixture comprising a casing, a sheave journaled within said casing and having means accessible through an end wall of the casing and engageable with the end of a curtain roller, said casing also having a pair of vertical walls extending at right angles to said end wall, an operating cord engageable with the sheave and having an end depending from the casing, a brake member engageable with a portion of said cord to apply tension thereto, each of said vertical walls being formed with similarly positioned means for receiving a portion of said brake, an adjustment member for said brake having a manually operable end, each of said vertical walls having similar means for cooperation with said adjustment member whereby the same casing may be assembled to form either a right or a left hand fixture with the manually operable means accessible from the vertical wall which is to face the room.

9. A curtain roller fixture comprising a casing, a sheave journaled within said casing and having means accessible through an end wall of the casing and engageable with the end of a curtain roller, said casing also having a pair of vertical walls extending at right angles to said end wall, an operating cord engageable with the sheave and having an end depending from the casing, a brake member engageable with a portion of said cord to apply tension thereto, each of said vertical walls being formed with a slot for receiving a portion of said brake, and an adjustment bolt having a traveling nut thereon engageable with said brake to vary the tension exerted thereby, each of said vertical walls having similar openings for cooperation with said adjustment bolt whereby the same casing may be assembled to form either a right or left hand fixture with the head of the bolt accessible from the vertical wall which is to face the room.

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