Oct. 23, 1928. 1,688,563

J. K. TOMLINSON

SHADE ROLLER CONSTRUCTION

Filed Feb. 18, 1927

Fig. 1.

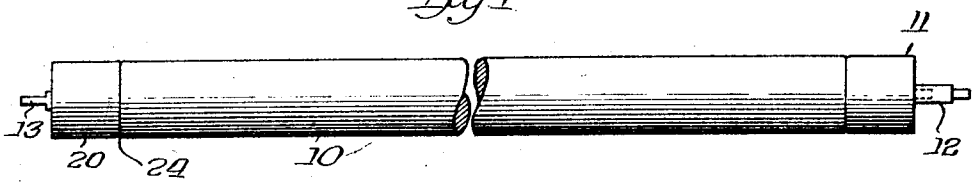


Fig. 2.

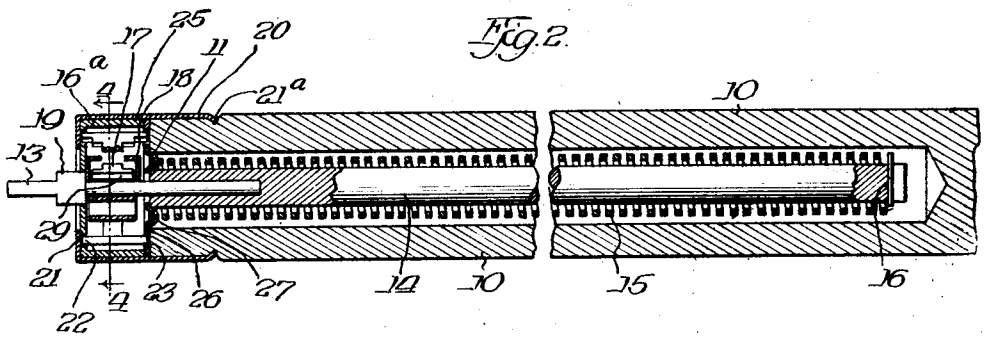


Fig. 3.

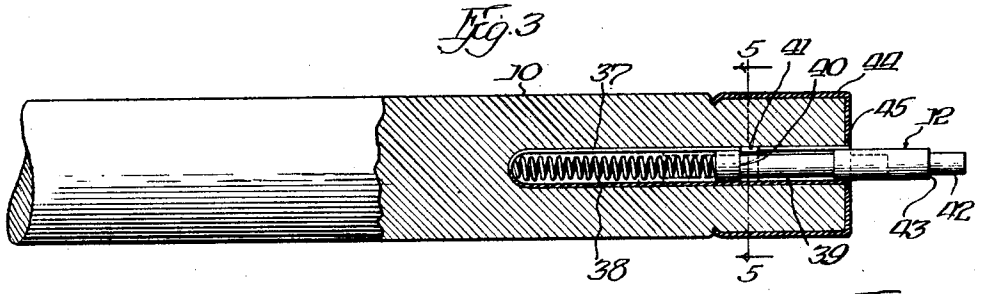


Fig. 6.

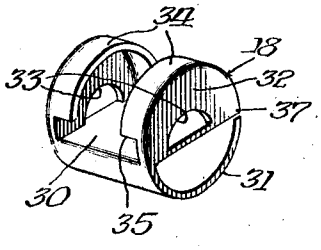


Fig. 4.

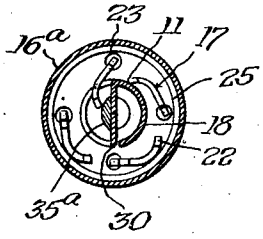


Fig. 5.

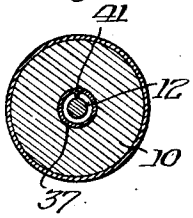
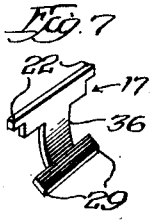


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN K. TOMLINSON, OF CHICAGO, ILLINOIS.

SHADE-ROLLER CONSTRUCTION.

Application filed February 18, 1927. Serial No. 169,196

My invention relates to a shade roller construction.

One of the objects of my invention is to provide an improved shade roller construction which will prevent accidental release of the shade roller.

A further object of my invention is to provide a shade roller construction in which one of the bracket engaging pins is adjustable in and out in order to enable the shade roller to be used without having to cut off the end with any great degree of precision in fitting the roller to the brackets.

Further objects will appear from the description and claims.

In the drawings, in which an embodiment of my invention is shown,

Figure 1 is an elevation of the shade roller;

Fig. 2 is an axial section of that end of shade roller provided with the spring and latch construction;

Fig. 3 is an axial section of the other end of the shade roller;

Fig. 4 is a section on the line 4—4 of Fig. 2;

Fig. 5 is a section on the line 5—5 of Fig. 3;

Fig. 6 is a perspective view of the stationary pawl engaging member; and

Fig. 7 is a perspective view of one of the pawls.

Referring to the drawings in detail, the construction shown therein comprises a wooden roller 10 to which the shade is attached, pawl controlled spring means 11 at one end of the roller for controlling rotation of the roller, and a spring pressed pin 12 at the other end of the roller for engaging the supporting bracket.

The pawl controlled spring means for controlling rotation of the shade roller comprises a non-rotatable pin 13 engageable with the roller supporting bracket, a non-rotatable wooden rod 14, into which the end of the pin 13 is fitted, a coil torsion spring 15 having one end secured at 16 to the wooden rod, a pawl mounting drum or barrel 16ª to which the other end of the coil torsion spring is secured, a plurality of pawls 17 pivotally mounted in this pawl mounting barrel, and a pawl engaging member 18 non-rotatably mounted on the non-rotatable pin. The pawl mounting drum is rotatably mounted on the cylindrical journal portion 19 of the non-rotatable pin and is secured to the end of the wooden shade roller by means of a cap or ferrule 20 having a flange 21 which holds the pawl mounting drum in position and having its end crimped inwardly as shown at 21ª to bite into the wooden roller and hold the cap with the pawl mounting drum securely in position.

Each of the pawls, shown in detail in Fig. 7, has a pair of oppositely extending pintles 22 which fit somewhat loosely in openings 23 at the opposite ends of the mounting drum thus providing a pivotal mounting for the pawl. The pawl mounting drum comprises a cup-shaped member 25 and a cover member 26, the cup member and cover member having interengaging means to position them properly with respect to each other and the cap member having lugs 27 struck up therefrom to provide for the connection of the end of the coil torsion spring 15.

The point of the pawl 17 has two oppositely extending lateral projections 29 the purpose of which, as will be explained more fully hereinafter, is to co-operate with the pawl engaging member 18 to prevent accidental release of the shade roller.

The pawl mounting drum 16ª, the pawl 17, and the pawl engaging member 18 may all be formed of sheet metal, if desired.

The pawl engaging member 18, shown in detail in Fig. 6, comprises a central plate portion 30 which serves as an abutment for the point of the pawl, a semi-cylindrical portion 31 which serves to prevent the point of the pawl from approaching too closely the axis of the shade roller, a pair of oppositely disposed semi-circular plate members 32 having semi-circular apertures 33 to receive the semi-cylindrical portion of the non-rotatable pin 13, and arcuate flange portions 34 extending toward each other from the apertured plate portions, these arcuate flanges overlying and cooperating with the two oppositely extending lateral projections 29 on the pawl to prevent accidental dis-engagement of the pawl from the central abutment member. In order to permit the entry of the point of the pawl into engagement with the abutment member, the two arcuate flanges are cut away as indicated at 35, sufficiently to permit the entry of the wide point of the pawl. The distance between the adjacent edges of the arcuate flanges is greater than the width of the narrow portion 36 of the pawl (but less than the width of the wide point of the pawl, so that the narrow portion of the pawl can travel in the space be-

tween these flanges. The flanges will prevent the wide portion 29 of the pawl from escaping from confinement by the flanges 34 except at the point where the flanges are cut away.

As shown in Fig. 4, the curved substantially semi-cylindrical portion 35ª of the pin, which lies between the two semi-circular plate portions 32, serves to prevent the point of the pawl from approaching too closely the axis of the shade-roller, which might perhaps result in a binding action between the pawl and the abutment which would be detrimental to the action of the pawl and the pawl engaging member.

The operation of the end of the shade roller just described, is as follows:

If the shade is in lowered position and held by the engagement of the point of one of the pawls with the central non-rotatable abutment plate, as shown in Fig. 4, and it is desired to raise the shade, the shade is first pulled down far enough to cause the wide point 29 of the pawl to be withdrawn at the cut away portions 35 of the retaining flanges 34 and the shade is then quickly released, whereupon the coil torsion spring 15 will cause rapid rotation of the shade roller and centrifugal force will cause the pawls 17 to fly outwardly to prevent their engagement with the pawl engaging member 18. To stop the shade in the desired position, the movement of the shade is arrested to prevent centrifugal force from acting on the pawls 17 to throw them outwardly and the shade is allowed to be rolled slowly upward until the wide point 29 of the pawl enters underneath the overlying retaining flanges 34 through the cut away places 35 and comes to a stop against the abutment plate 30. It will be seen that the overlying flanges 34 will effectually prevent accidental dis-engagement of the pawl 17 from the abutment 30, as the shade roller would have to be rotated a substantial distance, far enough to bring the wide point of the pawl opposite the cut away places 35 in the flanges 34 in order for the point of the pawl to be released from its engagement with the pawl engaging member.

Referring now to the other end of the shade roller; the spring pressed pin construction comprises a sheet metal housing or barrel 37 fitted in an axial recess in the end of the shade roller, a coil compression spring 38 seated in this metal housing and the bracket engaging pin 12 telescopically mounted in this housing and pressed outwardly by the spring 38. In order to hold the telescoping pin 12 in the housing 37 against the action of the spring 38 the pin is reduced in diameter as indicated at 39 to provide a shoulder portion 40 which cooperates with a stop member 41 which may be struck inwardly from the sheet metal housing 37. The bracket engaging portion of the pin 12 which enters the round hole in the roller supporting bracket is reduced as indicated at 42 to provide a shoulder portion 43 which engages the side of the bracket to properly position the pin with respect to the bracket. A suitable sheet metal cap member, or ferrule 44, is provided for the end of the shade roller having a central opening to provide clearance for the pin and housing. The use of this spring pressed pin is obvious. It enables the shade roller to be fitted to the brackets without the necessity for extreme accuracy in cutting off the end of the wooden roller to suit the distance between the two supporting brackets.

While I have described but one embodiment of my invention, it is obvious that many modifications therein may occur to those skilled in the art, and I desire, therefore, that my invention be limited only by the scope of the appended claims and by the prior art.

I claim:

1. A shade roller holding construction comprising a pawl rotatable with the shade roller, and moved to non-holding position by centrifugal force when the shade roller is rotated, said pawl having a lateral projection and means cooperating with said pawl for holding the shade roller against rotation, comprising an abutment member for engaging the pawl to stop rotation of the roller and a laterally extending retaining flange which overlies the lateral projection of the pawl when the pawl is in holding position, to prevent accidental release of the shade roller.

2. A shade roller holding construction comprising a pawl rotatable with the shade roller, and moved to non-holding position by centrifugal force when the shade roller is rotated, said pawl having a pair of oppositely extending lateral projections and means cooperating with said pawl for holding the shade roller against rotation, comprising an abutment member for engaging the pawl to stop rotation of the roller, and a pair of laterally extending retaining flanges which overlie said lateral projections, respectively, when the pawl is in holding position, to prevent accidental release of the shade roller.

3. A shade roller holding construction comprising a pawl rotatable with the shade roller, and moved to non-holding position by centrifugal force when the shade roller is rotated, said pawl having a pair of oppositely extending lateral projections and means cooperating with said pawl for holding the shade roller against rotation, comprising an abutment member for engaging the pawl to stop rotation of the roller, a pair of laterally extending retaining flanges which overlie said lateral projections, respectively, when the pawl is in holding position, to prevent accidental release of the shade roller, and a barrel enclosing said abutment and flanges in the end walls of which barrel said pawl is pivotally mounted.

4. A shade roller holding construction comprising a pawl rotatable with the shade roller, and moved to non-holding position by centrifugal force when the shade roller is rotated, said pawl having a pair of oppositely extending lateral projections and means cooperating with said pawl for holding the shade roller against rotation, comprising an abutment member for engaging the pawl to stop rotation of the roller, and a pair of laterally extending retaining flanges which overlie said lateral projections, respectively, when the pawl is in holding position, to prevent accidental release of the shade roller, said flanges and abutment being formed as integral parts of a sheet metal member.

5. A shade roller holding construction comprising a pawl rotatable with the shade roller, and moved to non-holding position by centrifugal force when the shade roller is rotated, said pawl having a pair of oppositely extending lateral projections and means cooperating with said pawl for holding the shade roller against rotation, comprising an abutment member for engaging the pawl to stop rotation of the roller, and a pair of laterally extending retaining flanges which overlie said lateral projections, respectively, when the pawl is in holding position, to prevent accidental release of the shade roller, said flanges and abutment being formed as integral parts of a sheet metal member, said sheet metal member comprising also a pair of apertured plate members extending transversely of the axis of the shade roller from which plate members said flanges extend toward each other, and a bracket engaging pin fitted in said apertures.

6. A shade roller holding construction comprising a pawl rotatable with the shade roller, and moved to non-holding position by centrifugal force when the shade roller is rotated, said pawl having a pair of oppositely extending lateral projections and means cooperating with said pawl for holding the shade roller against rotation, comprising an abutment member for engaging the pawl to stop rotation of the roller, and a pair of laterally extending retaining flanges which overlie said lateral projections, respectively, when the pawl is in holding position, to prevent accidental release of the shade roller, said flanges and abutment being formed as integral parts of a sheet metal member, said sheet metal member comprising also a pair of apertured plate members extending transversely of the axis of the shade roller from which plate members said flanges extend toward each other, and a bracket engaging pin fitted in said apertures, said pin having a semi-cylindrical portion lying between said plates for guiding the point of the pawl into engagement with said abutment.

7. A shade roller holding construction comprising a pawl rotatable with the shade roller, and moved to non-holding position by centrifugal force when the shade roller is rotated, said pawl having a pair of oppositely extending lateral projections and means cooperating with said pawl for holding the shade roller against rotation, comprising an abutment member for engaging the pawl to stop rotation of the roller, and a pair of laterally extending retaining flanges which overlie said lateral projections, respectively, when the pawl is in holding position, to prevent accidental release of the shade roller, said flanges and abutment being formed as integral parts of a sheet metal member, said sheet metal member comprising also a cylindrical shield portion substantially co-axial with the shade roller for preventing the point of the pawl from approaching too closely to the axis of the shade roller.

8. A shade roller holding construction comprising a pawl rotatable with the shade roller and moved to non-holding position by centrifugal force when the shade roller is actuated, and means cooperating with said pawl for holding said shade roller against rotation and preventing accidental release thereof, comprising a member having an opening into which the point of said pawl enters and having means for holding the roller against rotation engaged by said pawl when the roller has rotated a substantial distance past the position where the point of the pawl has entered said opening, whereby the roller has to be rotated a substantial distance in the reverse direction before the point of the pawl is withdrawn from said opening.

In witness whereof, I have hereunto subscribed my name.

JOHN K. TOMLINSON.