Aug. 20, 1929. O. LALONDE 1,725,285

STOPPER FOR SPRING OPERATED ROLLERS

Filed Nov. 8, 1928

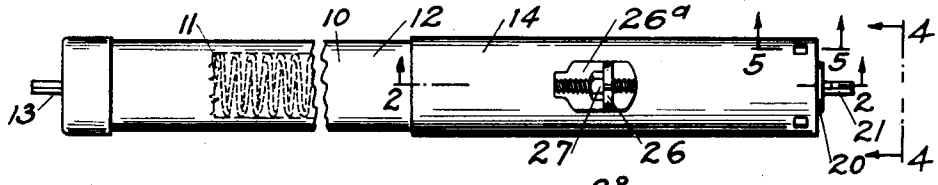


Fig. 1.

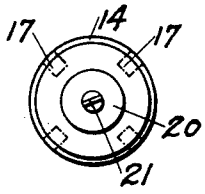


Fig. 4.

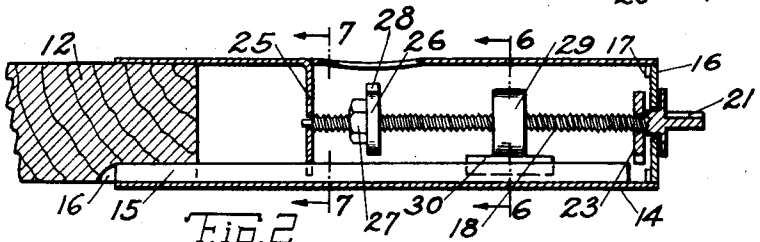


Fig. 2.

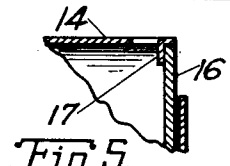


Fig. 5.

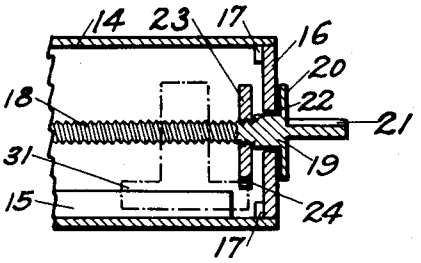


Fig. 3.

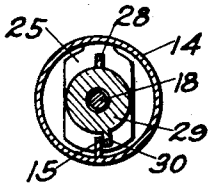


Fig. 6.

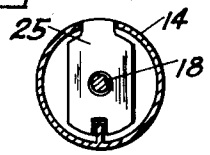


Fig. 7.

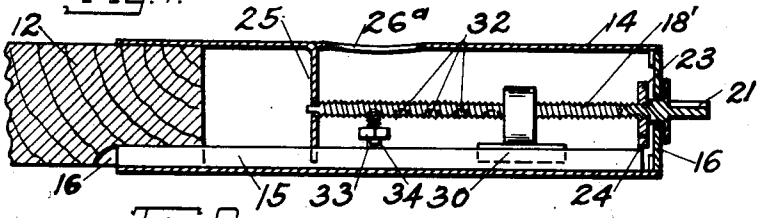


Fig. 8.

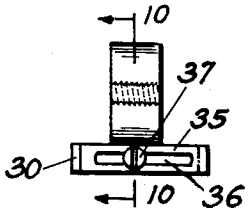


Fig. 9.

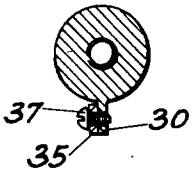


Fig. 10.

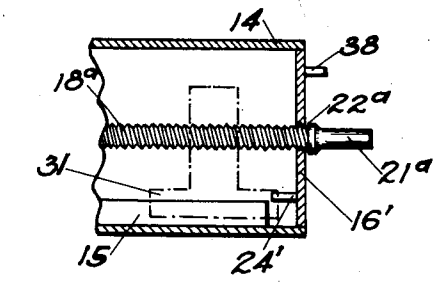


Fig. 11.

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Patented Aug. 20, 1929. 1,725,285

UNITED STATES PATENT OFFICE.

OSCAR LALONDE, OF ASTORIA, NEW YORK, ASSIGNOR OF ONE-THIRD TO SAMUEL HUTTER, OF NEW YORK, N. Y., AND ONE-THIRD TO HARRY ODES, OF BROOKLYN, NEW YORK.

STOPPER FOR SPRING-OPERATED ROLLERS.

Application filed November 8, 1928. Serial No. 317,923.

This invention relates generally to spring operated rollers and has more particular reference to a stop for limiting the rotation thereof.

The invention has for an object the provision of a device of the class mentioned, which is of simple durable construction, desirable in use and efficient in action, and which can be manufactured and sold at a reasonable cost.

The invention is especially applicable to shade rollers for limiting the amount thru which a shade upon the roller may be moved. Quite often one draws the shade down too far tearing it off of the roller or hurting the spring of the roller. With the instant arrangement the distance to which the shade may be moved is predetermined so that it is limited for motion within this distance for eliminating the possibility of hurting the spring of the roller or of tearing the shade off the roller. Furthermore, with this arrangement the shade may be arranged for merely operating thru a half way extended position to a three quarter way extended position or any other limited operation desired.

The device is readily adapted to other spring operated rollers such as those found in toy vehicles. It is generally known that children overwind these rollers breaking the springs and ruining the toy. With the instant arrangement, a roller may be limited for operation so that the spring cannot be overwound and damaged.

The invention proposes the use of an auxiliary tubular member adapted for engagement on the blank end of a roller and having a shuttle guide ridge extended longitudinally on its inner side for engagement by a lock lug integral with a shuttle threadedly engaged on a threaded member rotatively mounted within the tubular member. Stops are arranged on this threaded member for limiting the motion of the said shuttle.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a side elevational view of a shade roller provided with a stopper constructed according to this invention.

Fig. 2 is a longitudinal fragmentary vertical sectional view, taken on the line 2—2 of Fig. 1.

Fig. 3 is a detail view of one end of Fig. 2.

Fig. 4 is an end elevational view seen looking in the direction of the arrows 4—4 of Fig. 1.

Fig. 5 is a fragmentary sectional view, taken on the line 5—5 of Fig. 1.

Fig. 6 is a transverse sectional view taken on the line 6—6 of Fig. 2.

Fig. 7 is a transverse sectional view, taken on the line 7—7 of Fig. 2.

Fig. 8 is a view similar to Fig. 2, but disclosing a modification thereof.

Fig. 9 shows a shuttle for use in the device, constructed according to modified form.

Fig. 10 is a sectional view, taken on the line 10—10 of Fig. 9, and

Fig. 11 is a sectional view similar to Fig. 3, but disclosing another modified form of the device.

The reference numeral 10 indicates generally a shade roller of any design or construction having a spring end 11 and a blank end 12. The spring end of the shade roller is that end thru which the stem, such as stem 13 projects for connection with a stationary part, and connected with the internal spring of the roller. The inner end of the spring is connected onto the roller.

An auxiliary tubular end 14 is forced onto the blank end 12 of the roller and held against rotation by a shuttle guide ridge 15 engaging in a groove 16 formed on the blank end of the roller 12.

A stationary end disc 16 is forced into the free end of the tubular member and rests against end disc stop lugs 17 stamped out of the material of the tubular member. A threaded member 18 has an enlarged portion 19 rotatively mounted within the stationary end disc 16 and a flange 20 is integral with the enlarged portion 19 and is disposed on the outer side of the end disc 16. A rectangular lug 21 is integral with the flange 20 and is intended for engaging in some bracket that will hold it against rotation. The junction between the threaded member 18 and the enlarged portion 20 pro-

duces shoulder 22 and a lock collar 23 threadedly engages on the member 18 and abuts against this shoulder for rotatively supporting one end of the said threaded member. This lock collar is provided with a stop lug 24.

A standard 25 is stamped out of the material of the tubular member for providing a window opening 26ª and the inner end of the threaded member 18 rotatively engages in this standard. The arrangement is such that the threaded member 18 is free to be rotated. A second collar 26 is threadedly mounted on the member 18 and a lock nut 27 abuts against this collar for holding it in various fixed positions along the length of member 18. This second collar is provided with a stop lug 28.

An internally threaded shuttle 29 engages upon the threaded member 18 and is formed with a lock-lug 30 extending passed the sides of the shuttle. This lock lug engages against the shuttle guide ridge 15 so that wher the threaded member 18 is held stationary and the roller rotated, the shuttle moves along the threaded member. Upon continued rotation the shuttle will reach the end of the threaded member so that the lug 30 will engage against one of the stopping lugs of the collars and lock the roller against further rotation. The dot dash lines 31 in Fig. 3 indicate the shuttle on its extreme outer position with the shuttle lock lug 30 engaged against the stop lug 24 of the collar 23. In this condition of the device, the roller may no longer be rotated for advancing the shuttle towards the collar 23. But the roller may be rotated in the opposite direction for advancing the shuttle towards the collar 26 and upon reaching the collar the lock lug of the shuttle will act against the stop lug of the collar and prevent further rotation of the roller in the specific direction.

For changing the limit thru which the roller may be rotated it is only necessary to move the position of the second collar 26 and lock this collar in its new condition with the lock nut 27. Small adjustments may be accomplished thru the window 26. If it is desirable to produce larger adjustments the stationary end disc 16 may be drawn out of the tubular member by drawing upon the lug 21. After the adjustment has been made it may be reengaged within the tubular member.

In the modified form of the device illustrated in Fig. 8 the threaded member 18′ has been shown with a pluralitv of transverse threaded apertures 32 for receiving a stop screw 33 provided with a stop lug 34. This stop screw may be engaged in any one of the threaded apertures 32 according to the limits thru which the roller is desired to operate. In operation of this form of the device, the stop lug 30 of the shuttle acts against the stop lug 34 of the screw or against the stop lug 24 of the collar 23.

In Figs. 9 and 10 a modified form of a shuttle has been illustrated in which a shuttle lug extension plate 35 provided with a slot 36 engaged by a set screw 37, rests upon the stop lug 30 of the shuttle. The set screw 37 engages in the lug 30 for clamping the shuttle lug extension plate in any extended position the limits thru which the roller may act would be less than when the lock extension plate is in a retracted position.

The modified form of the device illustrated in Fig. 11 discloses a stationary end disc 16′ threadedly engaged on a threaded member 18ª formed with a shoulder 22ª against which the end disc clamps. The member 18ª is formed with a round projection 21ª for engaging in a circular aperture formed in a roller shade supporting bracket not shown on the drawing, a stop pin stop projects from the outer side of the disc 16′ for engaging against the latter mentioned roller shade supporting bracket for holding the latter disc stationary. The periphery of the disc 16′ forms a bearing for the tubular member 14 which rotates upon rotation of the roller upon which the device is attached. A stop lug 24′ projects from the inner face of the disc 16′ for engagement by a lock lug of the shuttle of the device as indicated by dot dash lines 31. In operation the disc 16′ and threaded member 18ª remain stationary while the tubular member 14 rotates and causes the shuttle to travel along the threaded member.

While I have illustrated and described my invention with some degree of particularity, I realize that in practice various alterations therein may be made. I therefore reserve the right and privilege of changing the form of the details of construction or otherwise altering the arrangement of the correlated parts without departing from the spirit or the scope of the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:—

1. In combination with a stopper for spring operated rollers having a stationary threaded member supporting rotatively a tubular member with a shuttle guide ridge and fixedly supporting a stop lug, a shuttle internally threaded for engaging on the threaded member and formed with a lock lug for engaging the shuttle guide ridge, and a lock lug extension plate for engaging the stop lug and adjustably mounted on the said lock lug.

2. In combination with a stopper for spring operated rollers having a stationary threaded member supporting rotatively a

tubular member with a shuttle guide ridge and fixedly supporting a stop lug, a shuttle internally threaded for engaging on the threaded member and formed with a lock lug for engaging the shuttle guide ridge, a lock lug extension plate for engaging the stop lug and formed with a slot, and a screw extending thru the slot and threadedly engaged in the lock lug for adjustably holding the extension plate.

Signed at New York in the county of New York and State of New York this 30th day of October, 1928.

OSCAR LALONDE.