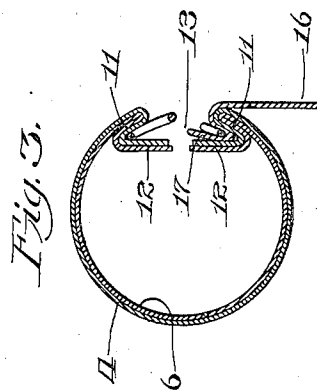
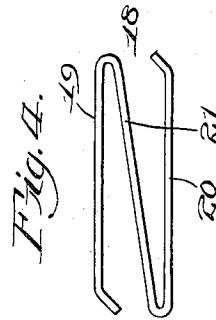
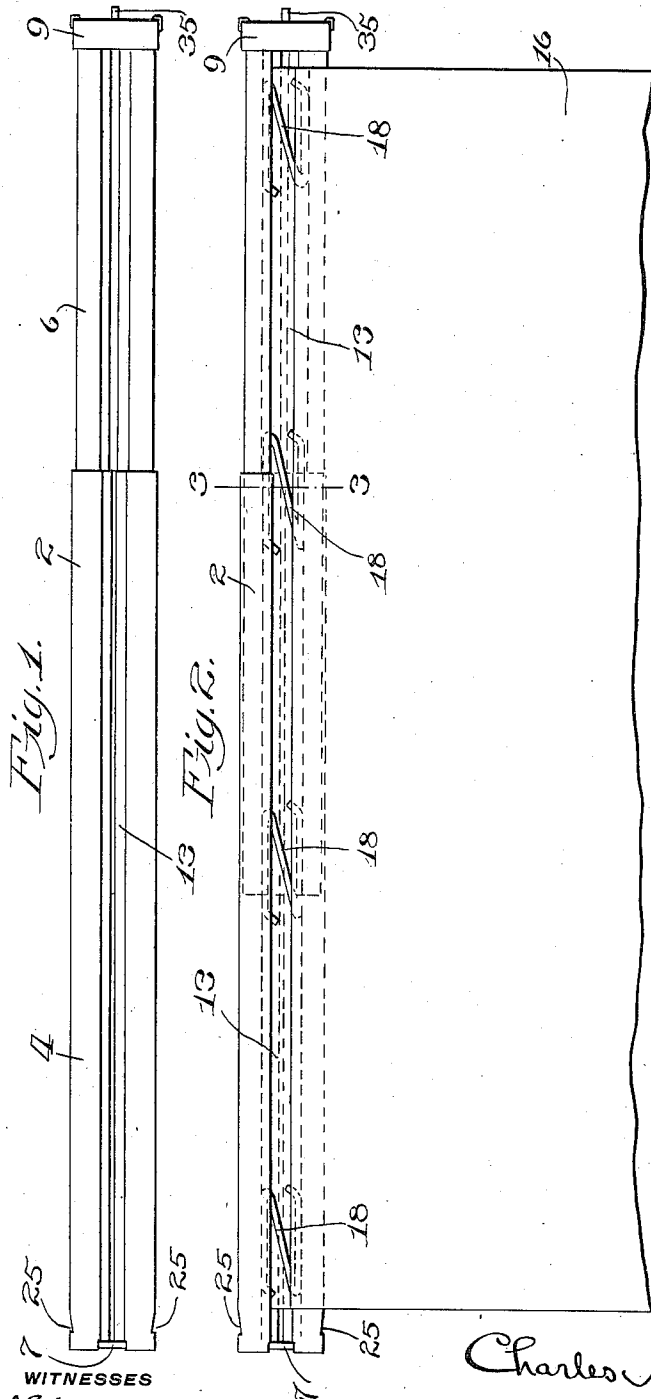


1,013,531.

Patented Jan. 2, 1912.
2 SHEETS—SHEET 1.



WITNESSES
E. M. Ware
R. H. Gamble

INVENTOR:
Charles Augustus Carmany
BY A. V. Jones
ATTORNEY

C. A. CARMANY.
CURTAIN ROLLER.
APPLICATION FILED APR. 7, 1909.

1,013,531.

Patented Jan. 2, 1912.

2 SHEETS-SHEET 2.

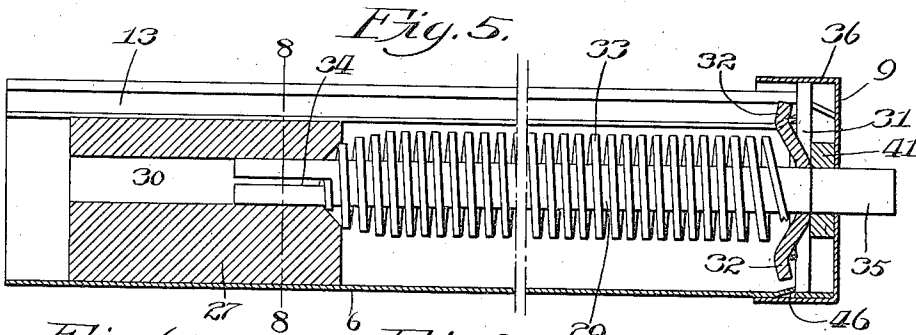


Fig. 6.

Fig. 7.

Fig. 8.

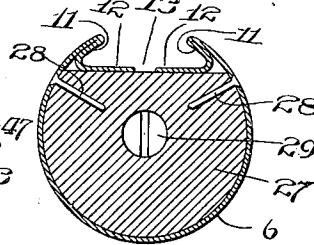
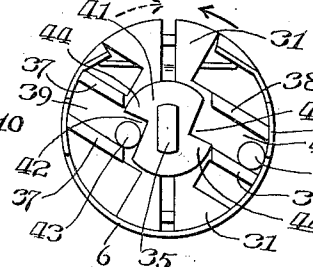
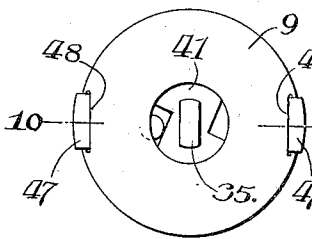


Fig. 9.

Fig. 11.

Fig. 10.

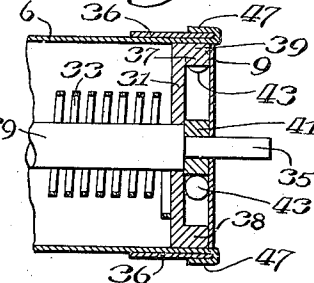
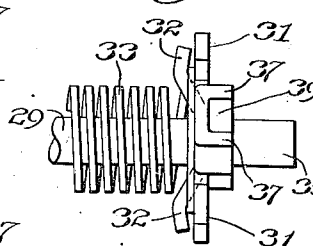
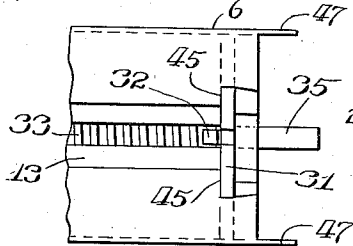
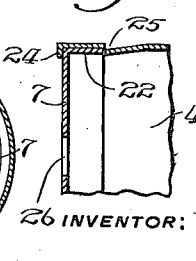
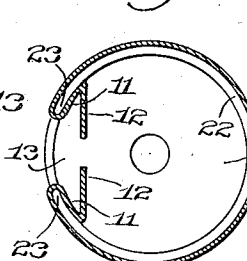
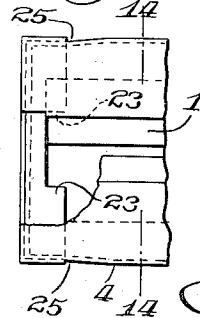
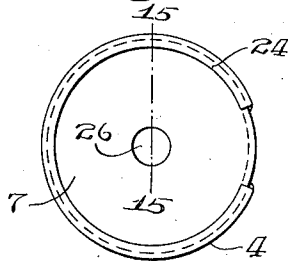


Fig. 12.

Fig. 13.

Fig. 14.

Fig. 15.



WITNESSES

E. M. Ware
J. H. Sample

Charles Augustus Carmany

BY

A. I. Jones
ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES AUGUSTUS CARMANY, OF COATESVILLE, PENNSYLVANIA.

CURTAIN-ROLLER.

1,013,531.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed April 7, 1909. Serial No. 488,504.

To all whom it may concern:

Be it known that I, CHARLES AUGUSTUS CARMANY, citizen of the United States, residing at Coatesville, in the county of Chester and State of Pennsylvania, have invented certain new and useful Improvements in Curtain-Rollers, of which the following is a specification.

The object of my invention is to provide a novel, inexpensive and durable curtain roller for window shades and the like; and a further object of the invention is to provide, in combination with a curtain or shade a simple and efficient means whereby a curtain or shade may be attached to the roller.

The invention consists in the novel construction and combinations of parts which will be hereinafter fully described and claimed.

In the drawings:—Figure 1 is a front view of my improved roller. Fig. 2 is a similar view including a window shade or curtain, and the means for securing the curtain or shade to the roller. Fig. 3 is a section, enlarged, on line 3—3 of Fig. 2. Fig. 4 is a view of one of the springs for holding the curtain in place upon the roller. Fig. 5 is a longitudinal section, partly broken away, of the inner section of the telescopic body portion of the roller and the parts carried thereby. Fig. 6 is a view of the right hand end of the section of the roller shown in Fig. 5. Fig. 7 is a view similar to Fig. 6, with the end head of the roller removed therefrom. Fig. 8 is a section on line 8—8 of Fig. 5. Fig. 9 is a plan view of the right hand end of the section of the roller shown in Fig. 5, with the end head of the roller removed therefrom. Fig. 10 is a horizontal section on line 10—10 of Fig. 6. Fig. 11 is a view of parts of the spring-controlled mechanism for rotating the roller. Fig. 12 is a view of the left hand end of the roller shown in Fig. 1. Fig. 13 is a view of the left hand end of the roller shown in Fig. 1, partly broken away. Fig. 14 is a section on line 14—14 of Fig. 13. Fig. 15 is a section on line 15—15 of Fig. 12.

2 designates the main body of the curtain roller, the body being formed in two sections 4 and 6, which are arranged to telescope with each other as I shall presently describe. The outer ends of the sections 4 and 6 have secured thereto suitable heads, 7 and 9 respectively.

Each of the sections 4 and 6 of the body 2

of the roller is formed of sheet metal. The metal sheet forming each section is first bent into substantially tubular form, bringing its longitudinal edge portions adjacent each other. The edge portions of each section are then bent and extended inwardly and in directions away from each other, as at 11, 11, and the edge portions are then bent and extended toward each other, as at 12, 12, in a manner to form a slot between the adjacent edge portions and an undercut groove 13 in the roller, as shown in the drawings.

The section 6 is fitted within the section 4, the fit between the two sections 4 and 6 being such as to permit a telescopic adjustment of the two sections for the purpose of shortening or lengthening the roller as desired, and the frictional engagement of the two sections 4 and 6 with each other holding them in their positions of adjustment. The groove 13 formed in the roller not only serves as an opening into which a curtain or shade may be inserted and then secured to the roller, but the groove 13 formed by bending the metal also serves as a strengthening or stiffening rib for the entire roll.

Referring to Figs. 2 and 3, 16 designates a part of a curtain, the upper edge portion 17 of which is inserted into the undercut groove 13 in the body 2 of the roller; and also inserted into the groove 13 are substantially Z-shaped springs 18, each of which comprises two arms 19 and 20, connected by a diagonal part 21, which, when the springs are inserted into the undercut groove 13, tends to force the arms 19 and 20 apart and into the undercut portions of the grooves.

It will thus be seen that by inserting the upper edge portion 17 of the curtain 16 into the groove 13, and then inserting the springs 18 into the groove, the arms 19 and 20 of each spring will be forced into the undercut portions of the groove and will bind and hold the curtain between the springs 18 and the inner wall of the groove.

Any desirable number of the springs 18 may be employed in securing the curtain 16 to the roller.

The end head 7 is disk-like in form, as shown, and it is arranged within the end of the section 4 and is provided with an inwardly-extending flange 22 which extends part way around the edge of the end head and terminates in end portions 23 having a space therebetween. The outer ends of the longitudinal edge portions of the section 4

are bent inwardly between and into engagement with the end portions 23 of the flange 22, in forming the undercut groove 13, as shown in Fig. 14, thus holding the end head 7 in place within the section 4. The end head 7 serves as a means to support the outer end of the section 4 against being collapsed.

In order to prevent displacement of the end head 7 longitudinally of the section 4, the outer end of the edge portion of the metal forming the section 4 is bent inwardly as at 24 (Figs. 12 and 15) into engagement with the outer face of the end head 7, and opposite sides of the section 4 are provided with indentations 25 adjacent the inner face of the flange 22 of the head 7. It will thus be seen that the metal displaced by the indentations 25 engages the flange 22 in opposition to the inturned portion 24 of the section 4, to hold the head 7 against displacement longitudinally of the roller. The end head 7 is provided with a central opening 26 therein for the reception of a pivot pin of a suitable bracket upon which the end head 7 of the roller is adapted to be mounted.

In order to support the inner or free overlapping ends of the sections 4 and 6 against being collapsed, I provide within the inner section 6, adjacent the inner end thereof, a suitable block 27 which is held in place by small nails or brads 28 driven through the metal forming the section 6 and into the block 27.

The roller is provided with a suitable spring actuated rotating means which I shall now proceed to describe. Extending centrally through the section 6 of the roller is a shaft 29, the inner end of which extends into an opening 30 in the block 27 in a manner to permit the block 27 to rotate with the section 6 about the shaft 29. The outer end of the shaft 29 extends through a central opening in a head 31 which is adapted to rotate about the shaft 29 and which forms an element of the spring-actuated rotating means for the roller, as will presently appear. The head 31 is formed of sheet metal which is cut and bent to form inwardly extending arms 32, which are engaged by one end of a torsion spring 33 the other end of which is engaged with the shaft 29 by being extended through a slot 34 in the inner end of the shaft. The head 31 is arranged within the outer end of the section 6 of the roller, and it is engaged with the inner wall of said section in a manner to prevent the collapse thereof; and the head 31 also extends into the slot formed between the longitudinal edges of the metal forming the section 6 in a manner to cause said section and the other parts of the roller, independently of the shaft 29 and the parts carried thereby, to rotate with the head 31 upon the shaft 29. The outer end of the

shaft 29 is flattened, as at 35, and it extends beyond the end head 9 as shown. This flattened end 35 of the shaft 29 is adapted to be inserted into the slot of a bracket of well known construction in the curtain fixture art, which bracket is adapted, as is well known, not only to support the outer end of the shaft 29 but also to prevent the rotation thereof by the engagement of the flattened end of the shaft with the walls of the slot in the bracket.

The end head 9 is provided with an inwardly extending flange 36, which surrounds the outer end of the section 6 of the roller and which also surrounds the head 31, retaining the outer end of the section 6 of the roller in shape between the head 31 and flange 36. The head 9 is arranged in spaced relation to the head 31, and extending from the head 31 and into the space formed between the heads 9 and 31 are two pairs of flanges 37, 37 and 38, 38, which extend tangentially with respect to the shaft 29 and which form pockets 39 and 40. Within each pocket 39 and 40 is arranged a ball 43, each ball 43 being adapted to roll within its pocket toward and from the shaft 29. Arranged between the pockets 39 and 40 and within the spaces between the heads 9 and 31, is a collar 41 which is mounted upon the flattened end 35 of the shaft 29 in a manner to prevent the rotation of the collar 41 about the shaft. The collar 41 has notches 42 cut therein, forming teeth 44 upon the collar. The balls 43 are adapted to engage the teeth 44 of the collar 41 and the flanges 37 and 38 of the head 31, in a manner to prevent the rotation of the head under certain conditions, as will be hereinafter explained.

The outer ends of the longitudinal edge portions of the section 6 of the roller are cut away, forming shoulders 45 (see Fig. 9), against which the inner face of the head 31 rests on one side of the roller, while the inner face of the head 31 on the other side of the roller rests against the metal displaced by an indentation 46 in the metal forming the section 6 of the roller (see Fig. 5); and the head 31 is held in place against the shoulders 45 and indentation 46 by the flanges 37 and 38 cut from the metal forming the body of the head 31 and bent and extended into engagement with the head 9. The head 9 is held in place with its inner face in engagement with the outer end of the metal forming the section 6 of the roller, by projections 47 formed on the outer end of the section 6 of the roller, which projections first extend through slots 48 in the head 9 and are then bent outwardly and then inwardly against the outer face of the flange 36 of the head 9, thus securely holding the head 9 in place. The ends of the spring 33 are so engaged with the head 31

and the shaft 29 that when the roller, supported by the brackets as hereinbefore described, is turned in the direction of the full line arrow in Fig. 7, the spring 33 will be wound upon the shaft 29; after which, when permitted so to do, the spring will, by its own action, rotate the roller in the direction of the dotted line arrow in Fig. 7.

The operation is as follows:—Assuming that the head 7 has been mounted upon the pivot stud of a suitable bracket, and that the flattened outer end of the shaft 29 is mounted within the slot of the well known curtain fixture as hereinbefore described, it will be seen that the roller may be rotated and that the shaft 29 will remain stationary. The curtain 16 is so wound upon the roller that in lowering or unwinding the curtain from the roller, the roller will be turned in the direction of the full line arrow in Fig. 7, and the spring 33 will be wound upon the shaft 29. After the curtain has been unwound or lowered to the desired extent and is released, one of the balls 43 will roll into one of the notches 42 in the collar 41, and will be engaged by one of the teeth 44 of the collar and one of the flanges 37 or 38, in a manner to lock the roller in position upon the shaft 29 and prevent the action of the spring 33 from rotating the roller to rewind the curtain thereupon.

When it is desired to permit the spring 33 to rotate the roller and rewind the curtain thereupon, the curtain is first drawn downwardly against the action of the spring 33 and is then permitted to move upwardly with such speed that it will permit the spring 33 to rotate the roller with sufficient speed to maintain the balls 43 in the outer portions of the pockets 39, and prevent the engagement of the balls 43 with the teeth 44 of the collar 41 until the curtain has reached the desired position, whereupon, by retarding the movement of the curtain, the speed of the roller being turned by the spring 33 will be decreased sufficiently to permit one of the balls 43 to reengage one of the teeth 44 and prevent the further rotation of the roller by the action of the spring 33, as previously explained.

I claim:—

1. The combination with a roller comprising a body portion formed of sheet metal bent into substantially tubular form having a bent portion forming a longitudinal slot therein, said bent portion terminating inwardly of one end of said body portion and an end head having an inner face engaged with said bent portion, said body portion having a bent part holding said end head in place, of a curtain having a portion extending into said slot, and means for holding said curtain in engagement with said roller.

2. The combination with a roller comprising a body portion having end heads

secured thereto, said body portion being formed of sheet metal bent into substantially tubular form bringing its longitudinal edge portions adjacent each other, said edge portions being first bent and extended inwardly and in directions away from each other and then bent and extended toward each other forming an undercut groove in the roller, of a curtain having a portion extending into said groove, and a Z-shaped spring extending into the undercut portions of the groove and holding the curtain in engagement with the roller.

3. In a curtain roller, a body portion, and an end head having an inwardly extending flange which also extends part way around the edge of the end head and terminates in end portions having a space therebetween, said body portion being formed of sheet metal bent into substantially tubular form around said end head and then bent inwardly, between and into engagement with the end portions of the flange.

4. In a curtain roller, a body portion formed of sheet metal bent into substantially tubular form, a spring for rotating the body portion, and means to prevent the actuation of the body portion by said spring, said means including an element within and fixed to one end of the body portion, said body portion having parts bent into engagement with said element, and an end head surrounding said element, said body portion having parts bent into engagement with the end head.

5. In a curtain roller, a body portion formed of sheet metal bent into substantially tubular form, a spring for rotating the body portion, and means to prevent the actuation of the body portion by said spring, said means including an element within and fixed to one end of the body portion, said body portion having parts bent into engagement with said element, and an end head surrounding said element, said end head having a slot formed therein and said body portion being provided with a projection extending through said slot and bent into engagement with the end head.

6. In a curtain roller, a body portion formed of sheet metal bent into substantially tubular form, bringing its longitudinal edge portions adjacent each other and forming a slot therebetween, a spring for rotating the body portion, and means to prevent the actuation of the body portion by said spring, said means including an element within and fixed to one end of the body portion, said element having a part extending into said slot, and said body portion having parts bent into engagement with said element.

7. In a curtain roller, a body portion formed of sheet metal bent into substantially tubular form, bringing its longitudinal edge portions adjacent each other and forming

a slot therebetween, a spring for rotating the body portion, and means to prevent the actuation of the body portion by said spring, said means including an element within and
5 fixed to one end of the body portion, said element having a part extending into said slot, said element being engaged with the inner wall of the body portion and having a part extending into said slot, and said
10 body portion having parts bent into engagement with said element.

8. In a curtain roller, the combination of a body portion having an opening therein, a shaft within the body portion and extending beyond one end thereof, a toothed collar fixed to said shaft, a head surrounding

said shaft and having a part engaging a wall of said opening and preventing the body portion from turning relatively to the head, said head having a pocket formed
20 therein adjacent said collar, a ball within said pocket and movable into and out of engagement with said collar, and a spring exerting pressure in one direction against said shaft and in a reverse direction against
25 said head.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES AUGUSTUS CARMANY.

Witnesses:

HARRY S. WOODWARD,
F. P. ZOOK.