

C. A. CARMANY.
CURTAIN ROLLER.
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Patented Jan. 2, 1912.

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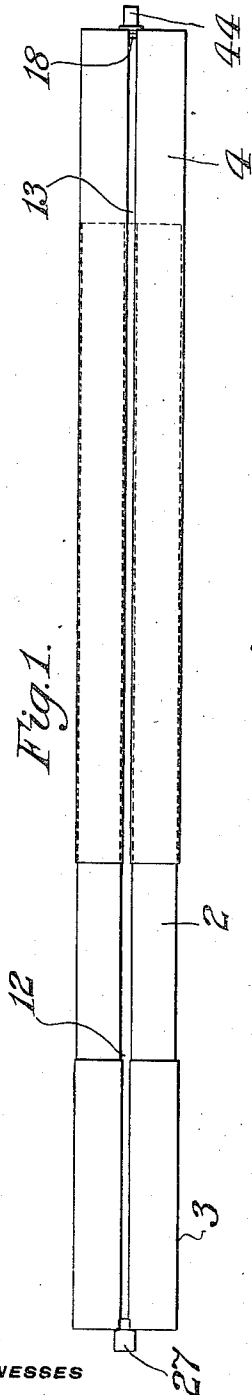
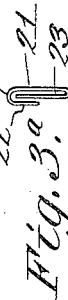
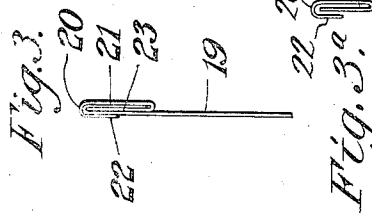
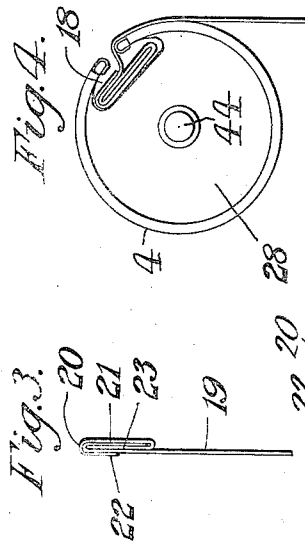
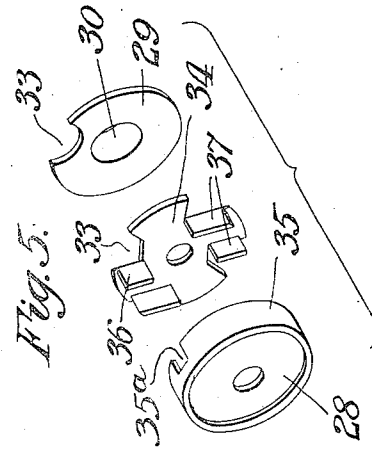
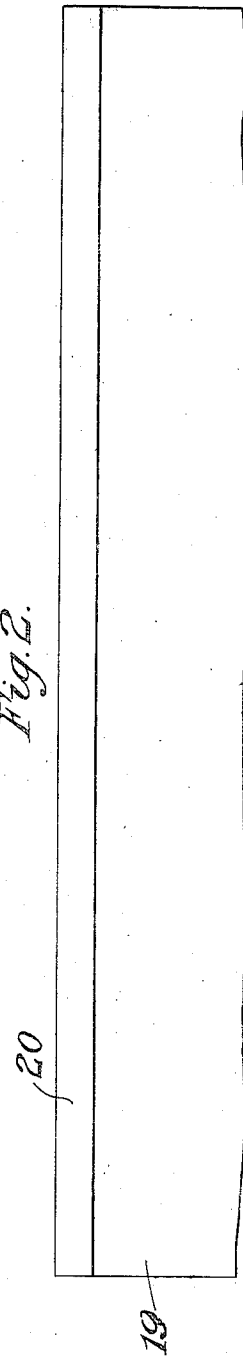


Fig. 2.



WITNESSES

Lawrence E. Tunny,
P. Schleicher

INVENTOR

Charles A. Carmany

BY

A. V. Gouge

ATTORNEY

1,013,532.

2 SHEETS—SHEET 2.



Florence E Tunney
P. Schleicher

INVENTOR

Charles A. Carmany

BY

BY *A. V. Trout*
ATTORNEY

ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES A. CARMANY, OF COATESVILLE, PENNSYLVANIA.

CURTAIN-ROLLER.

1,013,532.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES A. CARMANY, a citizen of the United States, residing at Coatesville, Chester county, 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, simple and efficient curtain roller formed principally of sheet metal and having provision: first whereby the roller may be shortened or lengthened as desired; secondly, whereby the roller may be supported to rotate in suitable brackets; thirdly, whereby one end of a shade or curtain may be readily attached to or removed from the roller; fourthly, whereby the various parts of the roller may be held in proper relation to each other; and fifthly, whereby the roller may be actuated by a spring controlled means.

With the object thus generally stated the invention will be hereinafter fully described and particularly pointed out in the claims.

In the drawings:—Figure 1 is a front view of my improved roller. Fig. 2 is a front view of the upper end of a shade or curtain adapted to be attached to the roller. Fig. 3 is an edge view enlarged of the shade shown in Fig. 2. Fig. 3^a is an end view of the strip of metal detached from the edge of the curtain. Fig. 4 is a view of the right hand end of the roller shown in Fig. 1, having the shade shown in Fig. 2 applied to the roller. Fig. 5 is a perspective view of one of the end heads of the roller and the adjacent parts of the spring actuated means for rotating. Fig. 6 is a longitudinal section through the roller. Figs. 7, 8, 9, 10 and 11 are transverse sections of the roller on lines 7—7, 8—8, 9—9, 10—10 and 11—11, respectively, of Fig. 6. Fig. 12 is a view of parts of the spring actuated mechanism for the roller removed from the body of the roller. Fig. 13 is a view of the end of the body of the roller which receives the part shown in Fig. 12 before the end of the sheet metal forming the body of the roller is bent to hold said parts in place.

2 designates the body section of the curtain roller, 3 an end section surrounding one end of the body section 4 and an end section surrounding the other end of the body section. The end section 3 is secured to the body section 2 by soldering or other means and the end section 4 is adapted to slide

upon the body section 2 in a manner to increase or decrease the length of the roller as desired.

The body section 2 is formed of sheet metal bent into substantially tubular form bringing its longitudinal edges adjacent each other and forming a slot 5 therebetween. The longitudinal edges of the body section 2 are bent inwardly and clenched upon the longitudinal edges of a separate sheet metal strip 6 which is bent to form an undercut groove 12 in the body section 2, as shown. The end section 4 is formed of sheet metal bent into substantially tubular form around the body section 2 and having formed therein an undercut groove 13, the metal forming the same being fitted to and adapted to slide within the undercut groove 12 of the body section 2. The longitudinal edges of the end section 4 are bent to overlap and embrace each other and are clenched together as at 14 forming a seam. The body section 2 has bent or formed therein a longitudinal groove 15 to accommodate the seam 14 so that the outer face of the end section 4 may be made smooth. The end section 3 is formed of sheet metal bent into substantially tubular form around the body section 2, the longitudinal edges being bent inwardly around the edges of the body section 2 as shown in Fig. 7. The outer end of the end section 4 is provided with an end head 16 having an inwardly extending peripheral flange 17 which is inclosed by the end section 4. The inner end of the flange 17 abuts against the part of the section 4 forming the undercut groove 13 and parts of the end section 4 forming the seam 14 which parts terminate inwardly of the end of the section 4 as shown in Fig. 6. The outer end of the end section 4 is bent inwardly over the outer end of the end head 16 thereby firmly holding the end head in place as clearly shown in Fig. 6. The end head 16 is provided with an undercut opening 18 therein which is in registry with the undercut groove 13 and which forms in effect a continuation thereof.

From the foregoing description it will be seen that the undercut opening 18 and the undercut grooves 12 and 13 form in effect a continuous undercut groove extending longitudinally of the roller and open at one end. This continuous groove is adapted to receive one end of a curtain provided with a metal strip which I shall now describe,

referring to Figs. 2, 3 and 4. 19 designates the upper portion of a curtain and 20 a metal strip secured thereto. The longitudinal edge portions 22 and 23 of this strip of metal are bent toward each other, one edge portion 23 being inclosed between the other edge portion 22 and the body of the strip 21. This bent strip of metal is engaged with one end of the curtain 19 by having one end of the curtain 19 folded and inserted between the body 21 of the strip and the outer edge portion 22 thereof in a manner to have the folded end of the curtain embrace the inner edge portion 23 of the strip of metal, as clearly shown in Fig. 3, thereby holding the end of the curtain and metal strip 20 in positive engagement with each other. The outer edge portion 22 of the strip of metal 20 is made narrower than the inner edge portion 23 thereof so that the curtain 19 may extend substantially at right angles from the central portion of the entire strip of metal 20 when the same is inserted in the groove in the roller shown in Fig. 4. This metal strip with the end of the curtain engaged therewith is adapted to be inserted longitudinally of the roller into the opening 18 in the end head 16 and into the undercut grooves 12 and 13 of the sections 2 and 4 respectively. The dimensions of the bent metal strip 20 and the dimensions of the undercut groove in the roller is such that when the end of the curtain carrying the strip of metal has been inserted therein it cannot be removed therefrom laterally of the roller through the undercut groove, but can only be removed longitudinally of the roller and through the opening in the end head 16 thus preventing any liability of accidental disengagement of the curtain from the roller when in operation.

The end sections 3 and 4 of the roller are of substantially equal diameter to engage the outer edges of the curtain and insure its uniform winding upon the roller as will be readily understood. The roller is provided with a suitable spring actuated rotating means which I shall now proceed to describe.

Extending centrally through the outer end of the body section 2 of the roller is a shaft 24 the inner end of which extends into an opening in a block 25 located within and secured to the body section 2. Located within the outer end of the shaft 24 and secured thereto is the inner portion of a pin 27 the outer portion of which extends centrally through and beyond an end head 28 for the end section 3. This end head 28 is secured to the end section 3 and body section 2 as will be hereinafter described, and the pin 27 and shaft 24 are fitted to the end head 28 and block 25 in a manner to permit the entire roller to be rotated independently of the shaft 24 and its pin 27.

Arranged within the outer projecting end

of the end section 3 and against the outer end of the body section 2 is a disk 29 which is provided with an inwardly projecting collar 30 surrounding the shaft 24. The inner face of this disk 29 is provided with projecting arms 31 which are engaged by one end of a torsion spring 32 surrounding the collar 30 and shaft 24 and having its other end engaged with the shaft 24 by being extended into a transverse slot 32 therein. The disk 29 is provided with an opening 33 into which the bent edges of the end section 3 extend in a manner to engage the wall of the opening 33 and cause the disk 29 to rotate with the roller. Arranged against the outer face of the disk 29 is a disk or member 34, the outer face of which is engaged by the inner edge of a flange 35 projecting from the end head 28 in a manner to hold the end head in spaced relation to the member 34. The flange 35 is provided with an opening or notch 35^a to receive the inturned edges of the end section 3, as shown. The outer end of the end section 3 is bent inwardly against the outer face of the end head 28 to firmly hold or clamp the end head 28 and disks 29 and 34 between the outer end of the body section 2 and the inturned edge of the end section 3. Extending from the member or disk 34 into the space within the flange 35 are two pairs of flanges 36 and 37, which extend tangentially with respect to the shaft 24 and which form pockets 38 and 39. Within each pocket 38 and 39 is arranged a ball 40, each ball 40 being adapted to roll within its pocket toward and from the pin 27 of the shaft 24. The pin 27 is provided with a collar 41 arranged between the pockets 38 and 39 and the collar 41 has notches cut therein, forming teeth 42 upon the collar. The balls 40 are adapted to engage the teeth 42 of the collar 40 and the flanges 36 and 37 of the member 29 in a manner to prevent the rotation of the member under certain conditions as will be hereinafter explained. The disk or member 34 is provided with an opening 43 therein, the walls of which are engaged by the inturned longitudinal edges of the end section 3 to cause the rotation of the member 34 with the roller.

The outer end of the pin 27 of the shaft 24 is flattened and 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 24 but also to prevent the rotation thereof by the engagement of the flattened end of the pin 27 with the walls of the slot in the bracket. The end head 16 is provided with a projecting pin 44 which is adapted to be inserted into an opening in a bracket which is also of well known construction in the curtain fixture art. Thus the two ends of

the curtain roller may be supported by the pins 27 and 44 when the roller is in operation.

The operation is as follows:—Assuming that the pins 27 and 44 are supported by suitable fixtures as previously described, it will be seen that the roller may be rotated and that the shaft 24 will remain stationary. The curtain 19 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. 11, and the spring 32 will be wound upon the shaft 24. After the curtain has been unwound or lowered to the desired extent and is released, one of the balls 40 will roll into one of the notches in the collar 41, and will be engaged by one of the teeth 42 of the collar and one of the flanges 36 or 37, in a manner to lock the roller in position upon the shaft 24 and prevent the action of the spring 32 from rotating the roller to rewind the curtain thereupon. When it is desired to permit the spring 32 to rotate the roller and rewind the curtain, the curtain is first drawn downwardly against the action of the spring and is then permitted to move upwardly with such speed that it will permit the spring 32 to rotate the roller with sufficient speed and maintain the balls 40 in the outer portions of the pockets 38 and 39 and prevent the engagement of the balls 40 with the teeth 42 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 32 will be decreased sufficiently to permit one of the balls 40 to reengage one of the teeth 42 and prevent the further rotation of the roller by the action of the spring as previously explained.

I claim:—

1. In a curtain roller and in combination, a body section, an end section formed of sheet metal and surrounding one end of the body section, an end section formed of sheet metal and surrounding the other end of the body section, and end heads for the outer ends of said end sections, said end sections being of substantially equal diameter and having parts engaging the inner faces of said end heads, and parts bent into engagement with the outer faces of said end heads and retaining them in place.

2. In a curtain roller and in combination, a body including a section formed of sheet metal and having a longitudinal groove therein; and an end head for said section having an opening therein extending to the outer wall of the end head and in registry with said groove and permitting one end of a curtain to be passed longitudinally of the roller through said groove and said opening; said section having a part preventing inward movement of said end head, and a

part bent into engagement with said end head and preventing outward movement thereof.

3. The combination of a curtain roller provided with a longitudinal groove having two parallel undercut sides open at one end of the roller, and a curtain having a strip of metal folded upon one end thereof and arranged within said groove and having its sides extending into the undercut sides of the groove, said strip being movable into and from said groove through the end thereof and being prevented from being removed from the roller laterally thereof by the two undercut sides of the groove.

4. The combination of a curtain roller provided with a longitudinal groove having two parallel undercut sides open at one end of the roller, and a curtain having a strip of metal folded upon one end thereof and arranged within said groove and having its sides extending into the undercut sides of the groove, said strip having its longitudinal edge portions bent toward each other, one edge portion being inclosed between the other edge portion and the body of the strip and the outer edge portion being narrower than the body of the strip, said curtain having a folded end embracing the inner edge portion of the strip, said strip being movable into and from said groove through the end thereof and being prevented from being removed from the roller laterally thereof by the two undercut sides of the groove.

5. In a curtain roller and in combination two telescopic sections formed of sheet metal one section extending into the other, said sections having grooved portions fitted to each other, the outer section being formed of single piece of metal having its longitudinal edges bent into engagement with each other forming a seam, and the inner section having a second groove formed therein into which said seam extends.

6. In a curtain roller and in combination two telescopic sections formed of sheet metal one section extending into the other, said sections having grooved portions fitted to each other, the grooved portion of the inner section being formed of a strip of metal separate from the main body of the inner section and having its longitudinal edges clenched between the main body of the inner section and the inturned edges thereof.

7. In a curtain roller and in combination two telescopic sections formed of sheet metal one section extending into the other, said sections having grooved portions fitted to each other, the grooved portion of the inner section being formed of a strip of metal separate from the main body of the inner section and having its longitudinal edges clenched between the main body of the inner section and the inturned edges thereof, the outer section being formed of single piece

of metal having its longitudinal edges bent into engagement with each other forming a seam, and the inner section having a groove formed therein into which said seam extends.

8. The combination of a curtain roller including a body section formed of sheet metal and an end section formed of sheet metal surrounding the body portion and extending beyond one end thereof, said end section being secured to the body section; an end head for the end section; means for holding

the end head in place; and spring actuated rotating means for the body portion, said means including a part prevented from moving outwardly by said end head and prevented from moving inwardly by said body section.

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

CHARLES A. CARMANY.

Witnesses:

F. P. ZOOK,

HARRY S. WOODWARD.