

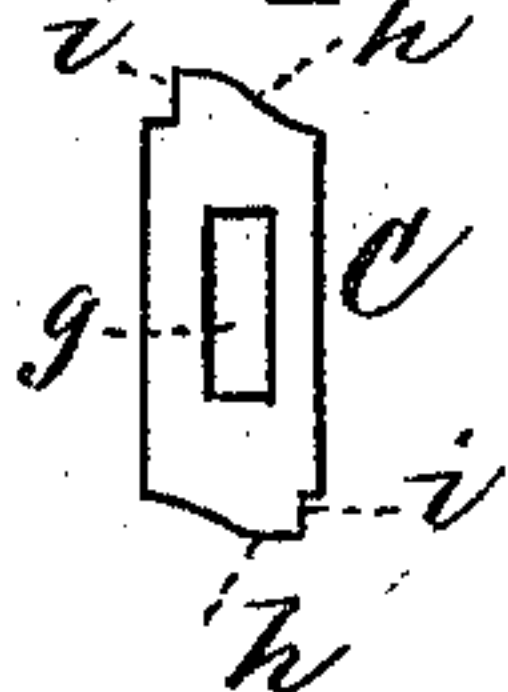
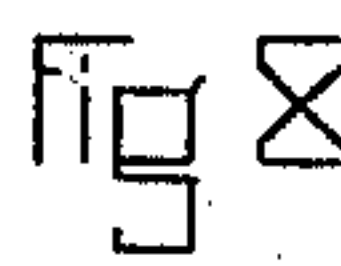
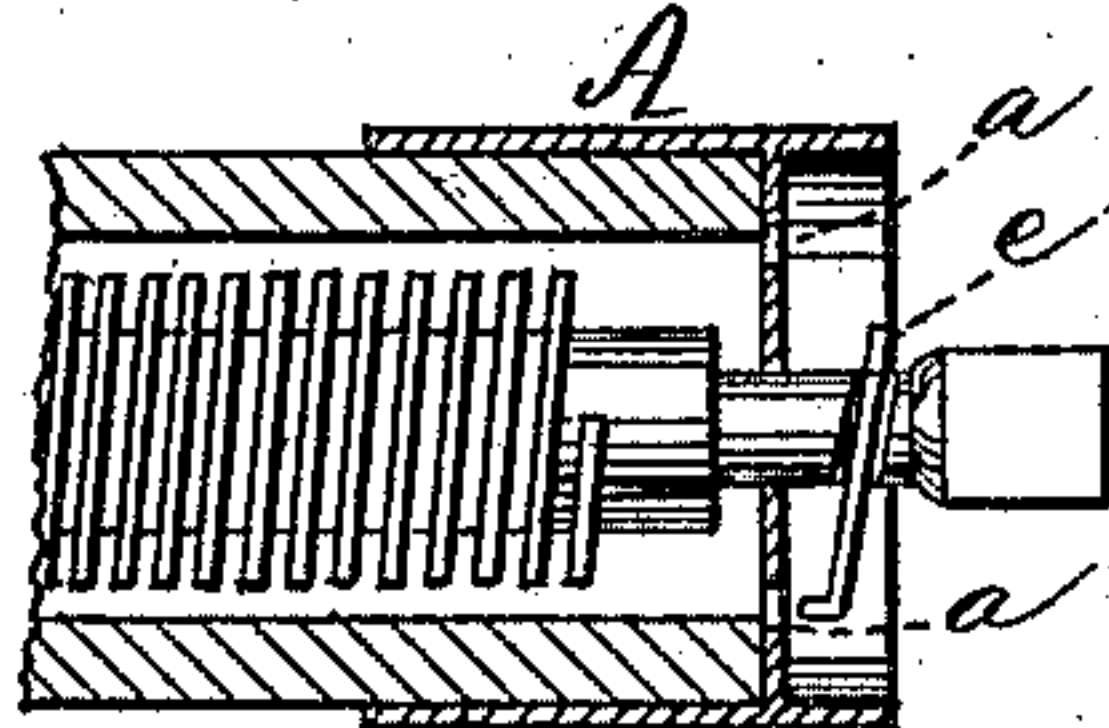
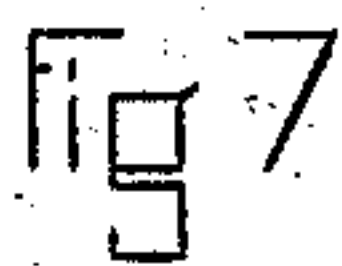
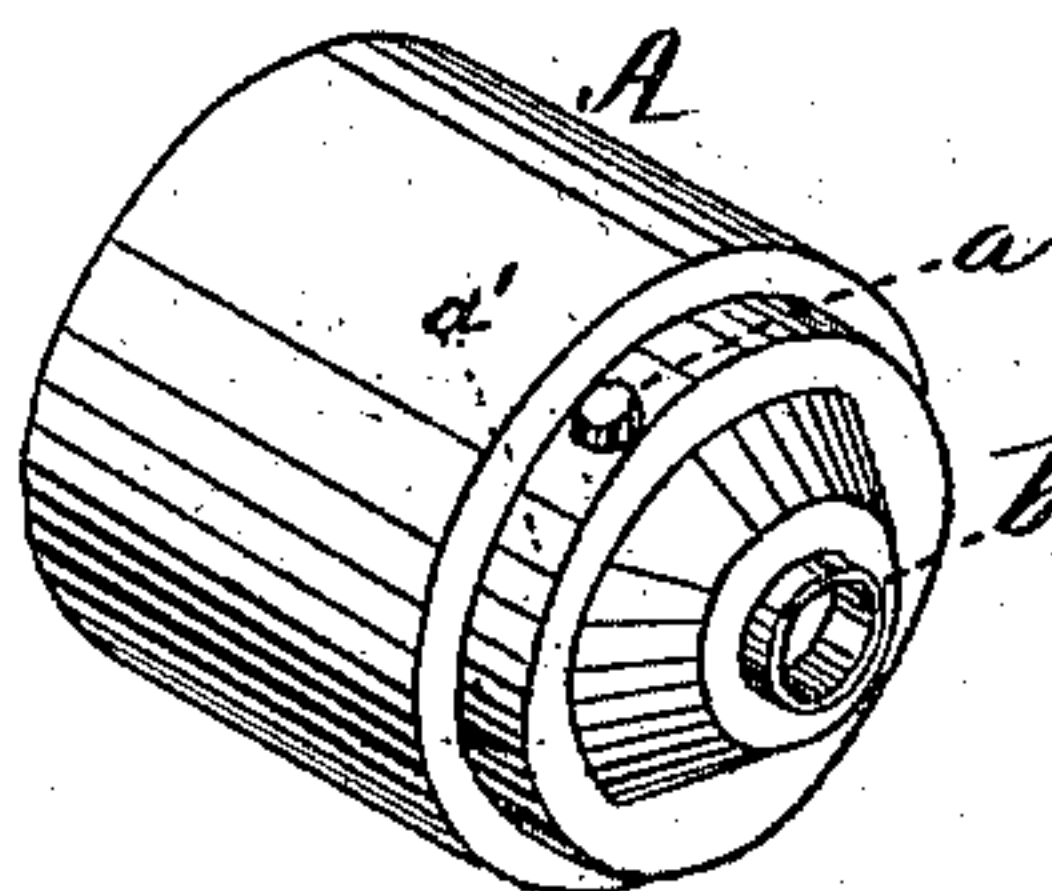
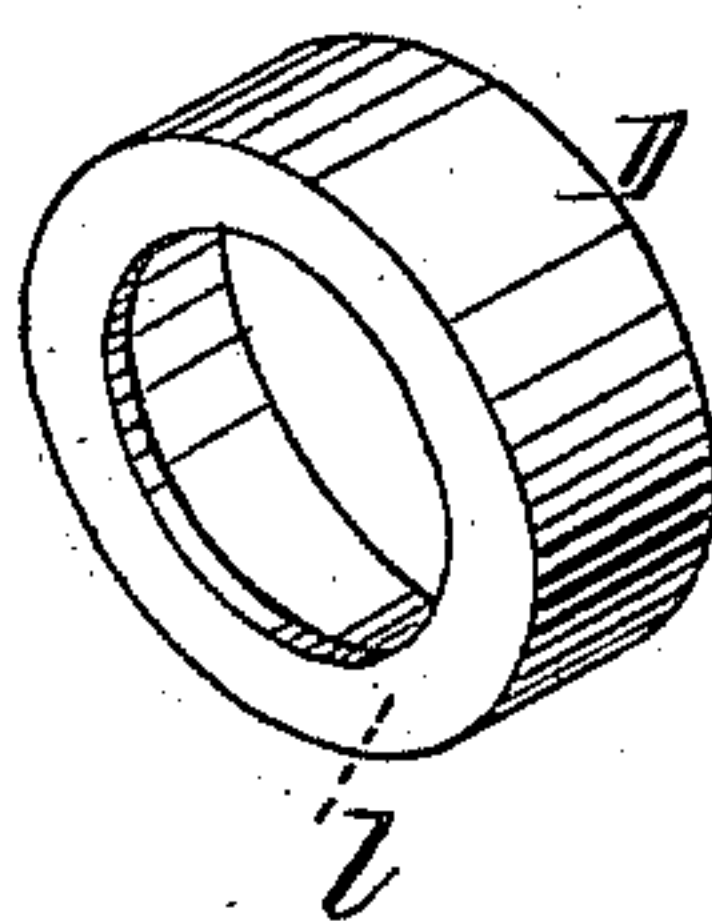
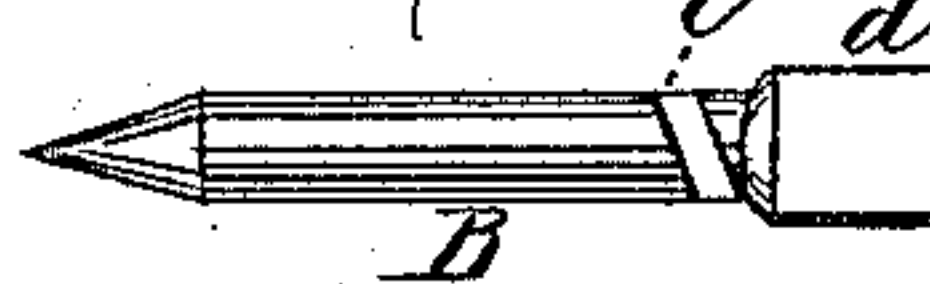
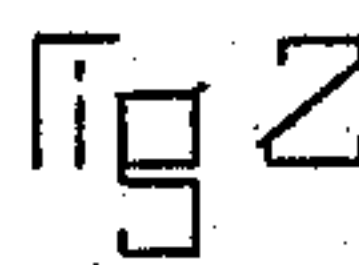
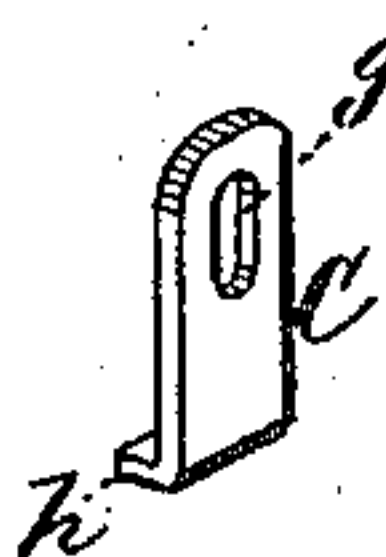
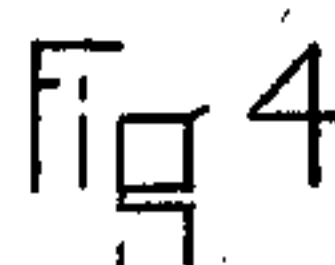
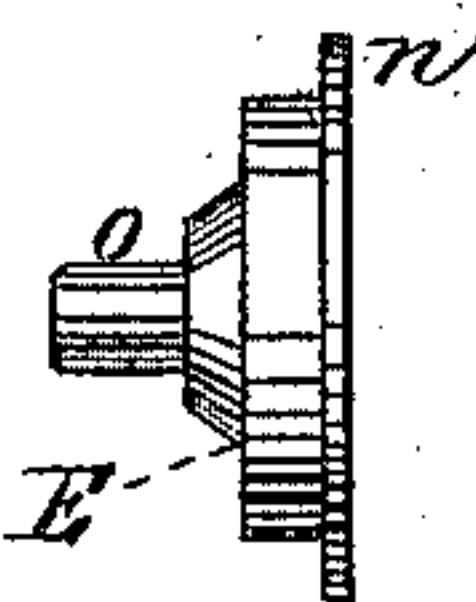
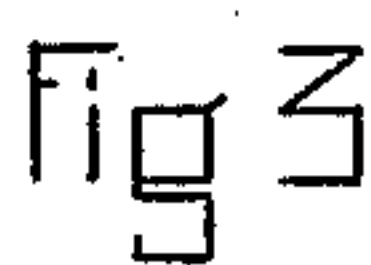
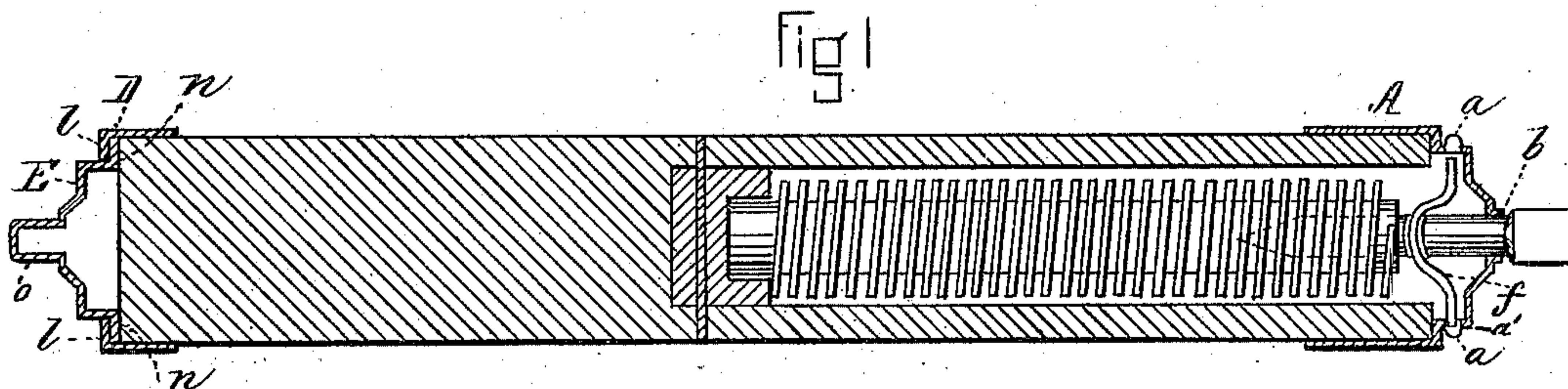
(No Model.)

H. H. BRYANT.

CURTAIN ROLLER.

No. 298,824.

Patented May 20, 1884.



WITNESSES

Alfred Higgins  
John Brown

INVENTOR

Hezekiah A. Bryan



# UNITED STATES PATENT OFFICE.

HEZEKIAH H. BRYANT, OF BOSTON, MASSACHUSETTS.

## CURTAIN-ROLLER.

SPECIFICATION forming part of Letters Patent No. 298,824, dated May 20, 1884.

Application filed November 26, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, HEZEKIAH H. BRYANT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Curtain-Rollers; and I do hereby declare that the following is a full, clear, and exact description of my invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying plate of drawings and the letters and figures of reference marked thereon, making a part of this specification.

My invention relates to curtain-rollers of the class that are operated by springs; and it consists in certain improvements in the "caps" or end pieces which are applied to the rollers, whereby an ornamental and artistic appearance is imparted to the latter, while at the same time the construction is simplified.

My invention also consists in certain improvements in the locking devices used in this class of rollers, whereby the number of parts is considerably reduced, and the construction and adjustment of the same greatly simplified.

Referring to the drawings, Figure 1 is a central longitudinal section of an ordinary spring-roller with my invention attached. Fig. 2 is a detail view of the spindle which supports one end of the roller, and to which the actuating-spring is connected. Fig. 3 is a detail view in side elevation of a part of the cap which is applied to the end of the roller opposite the spindle. Fig. 4 is a detail perspective of the pawl or catch by which the curtain is held at any point against the action of the spring. Fig. 5 is a perspective view of the cap applied to the spring end of the roller. Fig. 6 is a detail perspective of part of the cap illustrated in Fig. 3, showing the manner of constructing the cap in two parts. Fig. 7 is a central section of the spring end of a curtain-roller, showing the manner of adjusting and the operation of the pawl or catch. Fig. 8 is a detail view of a spindle, showing a modification of the construction shown in Fig. 2. Fig. 9 is a modification of the pawl shown in Fig. 4. Fig. 10 illustrates a further modification of the same device.

In said drawings, A represents the cap, which

is applied to the spring end of the curtain-roller A', the latter being of the usual construction, and requiring no special description. This cap I prefer to make of wrought metal, and it may be cheaply made by stamping or drawing a piece of brass into the required form and dimensions. At the outer end the cap may have a peripheral depression, *a'*, which forms an inner shoulder adapted to sit upon the end of the roll; and in this part may be formed two or more pockets or recesses, *a a*, for the purpose of receiving the pawl, as described hereinafter. The form of these recesses may be greatly varied, and they may consist of openings merely; but I prefer the recesses, as I am able to form them at the same time that the cap is being drawn or stamped out, and I thus avoid one handling, and thereby diminish the cost of manufacture. The end of the cap is drawn out, as seen in Figs. 1 and 5, and a central perforation formed therein for the spindle, which may also be provided with a flange, *b*, to give a better bearing, although this is not a necessary feature of my invention.

The spindle B, I form of wrought metal, as I can thereby produce it in a press.

A single piece of wire of suitable length is placed beneath a die in a suitable press, and a groove, *c*, is formed upon both sides of the spindle, substantially as shown in Fig. 2 or in Fig. 8. This groove is for the purpose of receiving a pawl, which is suspended from the spindle in the manner following: The pawl, one form of which is shown in Fig. 4, may be applied to the spindle in the manner shown in Fig. 7, whereby it becomes a "gravity" or tilting pawl. Upon its end is formed a projection, *h*, having a width a little less than the diameter of the pockets *a* in the cap, so that they may be received into the same. A slot, *g*, is formed in its body of sufficient width to receive the diameter of the spindle B, which is inserted until the edges of the slot *g* enter the grooves *c* in the spindle. It is then placed in a press edgewise and subjected to pressure until the slot *g* has been so far narrowed as to confine the pawl within the grooves, but still allowing it to move longitudinally therein and to tilt. The pawl will then occupy the position shown in Fig. 7.

I have shown several other forms of pawl



adapted for use with the spindle I have described, and all clearly within the limits of my present invention. For example, in Fig. 9 the pawl is shown as double—that is, having  
 5 either of its ends adapted to engage with the cap. This pawl is a tilting-pawl, like the ones shown in Figs. 4 and 7; but I may use the sliding double pawl seen in Fig. 10, having a slot, *g*, long enough to permit it to slide end-  
 10 wise upon its bearings on the spindle to engage with the cap.

In both forms last described it will be seen that the ends are provided with lips *h*, adapted to engage with the recesses of the cap, and  
 15 having notches *i*, which limit their entrance within said recesses.

In Fig. 9 I have shown the slot *g* formed in a novel manner. The opening is first cut of a width but a fraction wider than the thickness  
 20 of the spindle measured through its grooved portions *c*. Upon one or both sides of the slot thus formed the metal is cut above and below, and a lip or lips, *k*, are turned out, widening the slot sufficiently to receive the spindle B.  
 25 Being placed thereon, with the pawl lying in the plane of the flattened or grooved portion of the spindle, the lip or lips *k* are turned back to their original position, thereby bringing their inner edges to engage with the grooves  
 30 *c*, and effecting the same result that is accomplished by compressing the pawl in a press, as already described. In this manner the pawl is so combined with the spindle that it is substantially pivoted or hinged and can tilt by  
 35 gravity, if made in the form illustrated in Figs. 4 and 9, sufficiently to bring it into engagement with the cap recesses or orifices. If formed as shown in Fig. 10, however, the pawl must slide within the grooves *c* in the direc-  
 40 tion of its length.

The spindle and pawl having been formed and combined in the manner described, the cap A may be passed over one end of the spindle into proper position with relation to  
 45 the pawl C, as shown in Figs. 1 and 7. The end of the spindle should then be brought under a press for the purpose of flattening it or giving such rectangular form that it cannot turn in its supporting-bracket. This completes the  
 50 locking device, which may be adjusted to any spring-stop curtain-roller in the usual manner.

It should be noted that if this locking device is used upon a spring-balance roller, the pawl C should be so constructed that it can  
 55 engage with the cap A by one of its ends only, and not then if the spindle is held in a certain fixed position, while it would engage if the spindle were allowed to rotate. For the form of pawl shown in Fig. 4, its proper adjustment  
 60 to the spindle when in position in the bracket to operate properly a spring-balance roller is shown in Fig. 7. The forms of pawl shown in Figs. 9 and 10 may be used on such roller provided that the pawl has but one engaging  
 65 end, similar to that shown in Figs. 4 and 7, and provided also that they are adjusted to

the spindle, so as to rest upon its upper side instead of the lower side, as shown for the other form of pawl in Fig. 7. This change of adjustment is required because these pawls  
 70 are arranged to tilt or slide into pockets provided upon the sides of the cap A, whereas in Fig. 7 the pawl is shown as engaging with the end of said cap. For such rollers the pockets  
 75 *a*, or the orifices where such are used, should be about twice the width of the projection *h* upon the pawl C, so that no matter how rapidly the spindle may be made to rotate by the tension of the spring, the pawl will still have  
 80 time to drop into one of the pockets before it entirely passes the mouth of such opening, whereby the rotation of the spindle B, when lifted from the bracket, will be arrested, as any change from its fixed position brings the  
 85 pawls into position, where they are operated by gravity and caused to drop into one of the cap pockets or recesses. With these slight changes my locking device for stop-rollers, as first described above, is adapted for use on  
 90 balance-rollers.

Heretofore the finish applied to the ends of curtain-rollers has been so inartistic as to cause complaint by the consumers; and to overcome these objections I have devised a peculiar construction that is ornamental and artistic.

While the caps shown in the drawings may be produced by casting, I prefer to use wrought sheet metal, and to give it the desired form by spinning it in a lathe or by striking it up in a die. When the caps are spun up, a  
 100 chuck should be provided with such moldings as it is desired to impart to said caps, and, being placed in a lathe with a suitable piece of metal, the spinner proceeds to spin the metal to the proper form. In this manner any variety of moldings possible to the art of spinning metals may be imparted to the caps. On  
 105 the other hand, if the caps or ends are struck up, then the moldings are cut in the die.

In Fig. 1 I have shown one of the many  
 110 forms of molding which may be imparted to the cap. In case the moldings are of such conformation or number that they cannot be struck or spun from one and the same piece of metal, or where it would be cheaper or more  
 115 practicable to use two pieces, then such may be done; and in the drawings I have shown, in Figs. 3 and 6, one practical method of constructing the caps and ends of two pieces of metal. The part D, Fig. 6, is provided with  
 120 a narrow flange, *l*, at any desired point in its circumference. In the drawings I show this flange located at the periphery of the cap; but it may be otherwise placed. The part E is also provided with a similar flange, *n*, Fig. 3.  
 125 The diameter of the flange *n* on the part E should be such as to adapt it to be forced within the diameter of the part D until it is brought firmly and evenly against the flange *l*. When the parts are relatively of the proper size, this  
 130 will provide all the fastening necessary to secure them together, and the joint between the



parts is perfectly concealed. When formed in these two parts, they may be made of thicker metal than would otherwise be practicable. The end cap may be provided with a journal, 5 0, as in Figs. 1 and 3, struck or spun from the metal.

I am aware that in spring-actuated rollers it is common to suspend the action of the pawls by so holding the roller in its brackets 10 that the action of the pawls is suspended until such time as the roller is taken from the bracket; but I am not aware that any one has contemplated a pawl of that character in combination with a pocket or orifice of so much 15 greater width or extent than the width of the ends of the pawl that the latter could not be shot across them, no matter how rapidly the roller was rotated, but would be drawn into them by gravity, and so preserve the tension 20 of the spring.

It will be seen that by molding the ends of the cap which project beyond the extremities of the roll, as shown, I give it a highly ornamental appearance, as those parts are al- 25 ways exposed to view. This ornamentation may consist of concentric moldings or bosses, which are easily formed in a die or by spinning.

By forming the inner molding, as shown 30 in Fig. 1, the caps are limited as to the distance they slip upon the roller, so that the same extent of projection is preserved in all cases. This also diminishes the size and gives a graceful taper to the end pieces.

35 Having thus described my invention, what I claim is—

1. A cap or end piece for curtain-rollers, having ornamental bosses or moldings struck up or otherwise formed upon its ends, which 40 project beyond the ends of the rollers, and having a suitable orifice or opening, through which a spindle or the journal of a bracket may be passed, substantially as described.

2. A cap or end piece for curtain-rollers, 45 having ornamental moldings or bosses struck up or otherwise formed upon its ends, which project beyond the ends of the roller, and of less diameter than the latter, and provided with a suitable orifice or opening through 50 which a spindle or the journal of a bracket may be passed, substantially as described.

3. As a new article of manufacture, a cap

or end piece for curtain-rollers, struck up or spun from wrought metal, having a ferrule portion which fits upon the end of the roller, 55 and provided upon its projecting portion with ornamental bosses or moldings of less diameter than the ferrule, and forming a shoulder which sets against the end of the roller, substantially as described. 60

4. The combination, with a curtain-roller, of a cap or end piece having a bearing-flange, 65 *b*, surrounding the spindle-opening, substantially as described.

5. A cap or end piece for a curtain-roller, 65 composed of two parts, one of which fits upon the roller, and has an inwardly-turned flange, and the other provided with a projecting portion of a less diameter than the roller, and having a peripheral flange which lies with the 70 ferrule portion and against its flange, substantially as described.

6. In a curtain-roller, the combination, with a cap having suitable pockets or recesses, of a spindle having a grooved or flattened por- 75 tion, *C*, and a pawl straddling such portion, and provided with the lip *k*, by bending which the pawl may be fastened in or disengaged from the spindle, substantially as described. 80

7. A cap or end piece for a curtain-roller, composed of two parts, *D* and *E*, having re- 85 spectively inward and outward flanges, and one part being adapted to fit within and project from the other, substantially as described.

8. The combination, with a curtain-roller, of the end cap, *A*, having the pockets *a* and flanged bearing *b*, the spindle *B*, having 90 grooved portion *c*, and pawl *C*, with notched ends *h*, substantially as described.

9. A cap or end piece for curtain-rollers, having a ferrule portion which fits upon the roller, and provided with a peripheral de- 95 pression, *a'*, of less diameter than the roller, and ornamental bosses or moldings concentric therewith, substantially as described.

In testimony that I claim the foregoing I have hereunto subscribed my name in the presence of two witnesses.

HEZEKIAH H. BRYANT.

Witnesses:

ALFRED HIGGINS,  
JOHN BROWN.