

E. F. CHAFFEE.
 SPRING ROLLER.
 APPLICATION FILED JUNE 12, 1912.

1,046,439.

Patented Dec. 10, 1912.

Fig-1-

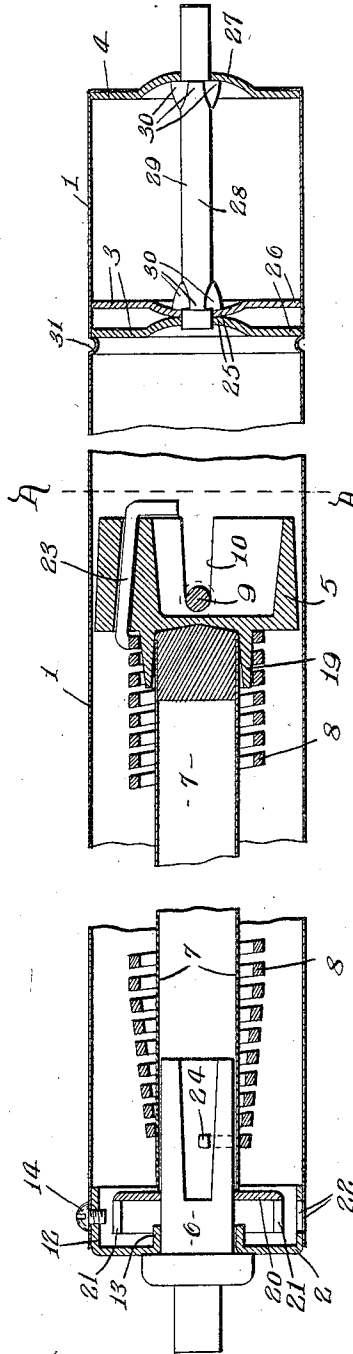


Fig-4-

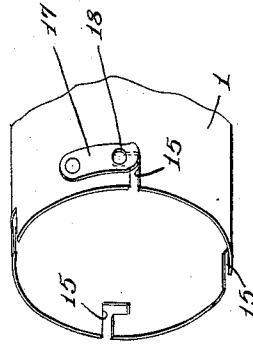
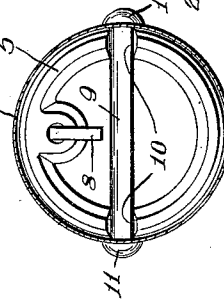


Fig-3-



Fig-2-



WITNESSES:

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SPRING-ROLLER.

1,046,439.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD F. CHAFFEE, of Syracuse, in the county of Onondaga and State of New York, have invented a certain new and useful Spring-Roller, of which the following is a specification.

This invention has for its object the production of a spring roller wherein the parts are easily assembled, and the internal parts are readily removable for the purpose of replacing one or more of the same; and the invention consists in the combinations and constructions hereinafter set forth and claimed.

In describing this invention reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1 is a longitudinal sectional view, partly broken away, of a spring roller embodying my invention. Fig. 2 is a cross sectional view, partly in elevation, on line "A—A," Fig. 1. Figs. 3 and 4 are modified forms illustrating means for securing the detachable head of the roller to the shell.

This spring roller comprises, generally, a hollow cylindrical shell or barrel, an anchor for one end of the spring of the roller, the anchor being located within the barrel, and the anchor and the barrel having detachably engaged interlocking means whereby the anchor and the barrel rotate as a unit, the anchor being movable axially in the barrel for disengaging or engaging the interlocking means to permit the removal and replacing of the internal parts of the roller.

1 is the barrel which is usually formed of sheet metal.

2 is a removable head at one end of the barrel 1, and 3 and 4 are heads at the other end of the barrel.

5 is the anchor.

6 and 7 are, respectively, sections of an axle journaled at one end in the anchor and at its other end in the head 2; and 8 is a torsion spring for actuating the barrel 1, the spring being fixed at one end to the anchor 5, and at its other end to the axle sections 6, 7.

The barrel 1 and anchor 5 are provided with means which interlock by an axial sliding movement of the anchor, and in the illustrated embodiment of my invention, the barrel 1 is formed with a transversely extending key 9, and the anchor 5 is in the

form of a plug having a lengthwise slot or slots 10 opening through its advance end, with respect to the movement of the anchor into the barrel 1, the slots receiving the key 9. Usually the key 9 extends diametrically of the barrel, the key being fixed in position and having rivet heads 11 at its opposite ends located on the exterior of the barrel 1. The anchor 5 is slidable into and out of the barrel 1 through the end normally closed by the removable head 2, and is formed with its periphery tapering toward its advance end for facilitating the movement thereof into the barrel 1. The slots 10 are widened toward their open ends for facilitating the engagement thereof with the key 9. The key 9 and the slots 10 constitute the detachably engaged interlocking means with which the barrel 1 and the anchor 5 are provided.

The head 2 is here shown as formed of sheet metal and is provided with an annular flange 12 which telescopes into the corresponding end of the barrel 1, and with a central hub 13 for receiving the axle section 6. The head 2 is detachably secured in position in any suitable manner, and as shown in Fig. 1, may be held in position by screws 14 extending transversely or radially through the wall of the barrel 1 and into the flange 12, or as seen in Figs. 3 and 4, the barrel may be formed with angular slots 15 which receive peripheral projections 16 on the annular flange 12, the projections 16 being movable into the angular slots 15, and the slots 15 and projections 16 forming a bayonet joint. The head 2 may be held from turning by a spring pressed detent 17 having an opening or depression 18 for engaging the head of one of the projections 16.

The axle section 6 telescopes within the section 7 which is tubular, and said section 7 is journaled at its inner end in a bearing 19 provided on the anchor 5. A head 20 is mounted on the axle section 6 and secured thereto to turn therewith in any suitable manner. Said head 20 is located within the annular flange 12 of the head 2 and has a plurality of notches as 21, any one of which is accessible through aligned holes 22 in the barrel 1 and flange 12 of the head. The holes 22 permit a tool to enter the notches 21 for the purpose of holding the spring 8 under tension while the roller is being mounted in position, as will be understood

by those skilled in the art. The spring 8 is fixed at 23 to the anchor at one end and at its other end at 24 to the axle sections 6, 7.

The heads 3, 4 are located within one end portion of the barrel and are formed of sheet metal, the inner head 3 being spaced apart from the head 4 which is located at the extreme end of the barrel 1. The head 3 is composed of two discoidal sheet metal members fitting the barrel and having central portions projected toward each other forming the hubs 25 which abut against each other, the flange portions 26 of said members being spaced apart. The head 4 is also formed with a similar hub 27 which extends outwardly.

28 is an axle rigidly supported by the heads 3, 4 and having its inner end fitting axial openings in the hubs 25, and the portion 29 of the axle 28 interposed between the heads 3, 4 being provided with integral shoulders 30 which abut against opposing faces of the heads and hold the same spaced apart. The head 3 is held from movement inwardly in the barrel 1 by an internal shoulder or corrugation 31 formed in the barrel 1.

In operation when it is necessary to detach the internal parts of the roller to remove and replace a broken spring or other part, the head 2 is released of its fastening means and the axle section 6 pulled outwardly bringing therewith the section 7, spring 8 and anchor 5. To replace the parts, the reverse of this operation takes place, it being only necessary in addition, to turn the parts until the slots 10 of the anchor 5 find the key 9.

My spring roller is particularly advantageous in that the anchor 5 is not fixed in position by means requiring manipulation to release or retain the same in position.

What I claim is:

1. A spring roller comprising a barrel, and an anchor for one end of the spring of the roller, the anchor being located within the barrel, the anchor and the barrel being provided with detachably interlocked means for locking the anchor and barrel together whereby they rotate as a unit, the anchor being movable axially of the barrel to engage and disengage said means, substantially as and for the purpose described.

2. A spring roller, comprising a barrel having a key extending into the interior thereof, and an anchor for one end of the spring of the roller, the anchor being located within the barrel and being removable by an axial movement therefrom, and having a lengthwise slot at one end for receiving the key and detachably locking the barrel and anchor together whereby they rotate as a unit, substantially as and for the purpose specified.

3. A spring roller comprising a barrel having a key extending transversely there-

through, and an anchor for one end of the spring of the roller, the anchor being located within the barrel and having a slot opening through one end face thereof for receiving the key and locking the anchor and barrel so that they rotate as a unit, the anchor being movable into and out of engagement with the key by an axial sliding movement, substantially as and for the purpose set forth.

4. A spring roller comprising a barrel having a key extending diametrically there-through, and an anchor for one end of the spring of the roller, the anchor being in the form of a plug slidable in the barrel and having a slot opening through one end thereof for receiving the key, the anchor being movable into and out of engagement with the key by an axial sliding movement, substantially as and for the purpose described.

5. A spring roller comprising a barrel, an anchor within the barrel, the anchor and the barrel being provided with detachably engaged interlocking means for locking the anchor and barrel together whereby the anchor and barrel rotate as a unit, the anchor being movable axially of the barrel to engage and disengage said means, and a spring having one end connected to the anchor and acting to hold the said means in interlocking engagement, substantially as and for the purpose specified.

6. A spring roller comprising a barrel having a key extending into the interior thereof, an anchor located within the barrel and removable by an axial movement therefrom, and having a lengthwise slot opening through one end thereof, for receiving the key and detachably locking the barrel and anchor together whereby they rotate as a unit, the anchor being movable axially into and out of engagement with the key, and a spring having one end connected to the anchor, the spring serving to rotate the barrel in one direction and also hold the anchor in interlocking engagement with the key, substantially as and for the purpose set forth.

7. A spring roller comprising a barrel, and an anchor for one end of the spring of the roller, the anchor being in the form of a plug having its periphery tapered, and the anchor and the barrel being provided with detachably engaged interlocking means whereby the anchor rotates with the barrel, the anchor being movable axially of the barrel to engage and disengage said interlocking means, substantially as and for the purpose described.

8. A spring roller comprising a barrel having a key extending transversely there-into, an anchor in the form of a plug slidable in the barrel and having a slot opening through its advance end for receiving the key, and thereby detachably locking the anchor and the barrel together, the anchor

having its periphery tapered and being movable into and out of engagement with the key by an axial sliding movement, and a spring having one end connected to the anchor, said spring serving to rotate the barrel and hold the anchor in interlocking engagement with the key, substantially as and for the purpose specified.

9. A spring roller comprising a barrel, an anchor located within the barrel, the anchor and the barrel being provided with detachably engaged interlocking means whereby the anchor and barrel rotate as a unit, and the anchor being movable axially of the barrel for engaging and disengaging the interlocking means, a head at one end of the

barrel, the head being removable for permitting the removal of the anchor, an axle journaled in the head and in the anchor, and a torsion spring encircling the axle and being fixed at one end to the anchor and at its other end to the axle, substantially as and for the purpose set forth.

In testimony whereof, I have hereunto signed my name in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 20th day of May, 1912.

EDWARD F. CHAFFEE.

Witnesses:

S. DAVIS,

L. M. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."