

1,284,978.

R. T. AXE.
 SPRING ROLLER.
 APPLICATION FILED FEB. 27, 1917.

Patented Nov. 19, 1918.

Fig. 2.

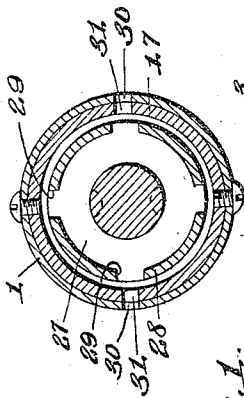


Fig. 1.

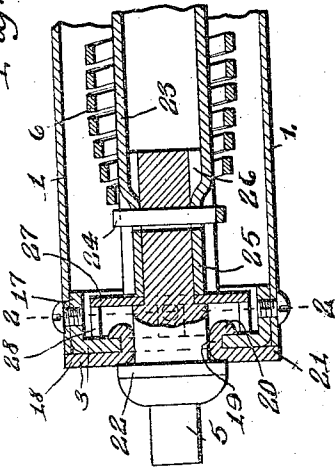
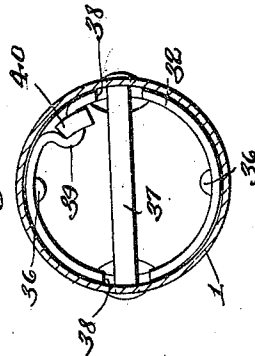


Fig. 3.



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ROY T. AXE, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE O. M. EDWARDS COMPANY, INC., OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

SPRING-ROLLER.

1,284,978.

Specification of Letters Patent.

Patented Nov. 19, 1918.

Application filed February 27, 1917. Serial No. 151,234.

To all whom it may concern:

Be it known that I, ROY T. AXE, a citizen of the United States, and a resident 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 relates to spring rollers for raising or counterbalancing curtains, windows, etc., which is particularly simple and economical in construction and highly efficient and durable in use and it consists in the combinations and constructions hereinafter set forth and claimed.

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

Figure 1 is a longitudinal sectional view, partly broken away, of a roller embodying my invention.

Figs. 2 and 3 are sectional views taken respectively on lines 2—2, and 3—3, Fig. 1.

1 designates the body of the roller, which is here shown as tubular throughout.

2 and 3 are, respectively, the heads at opposite ends of the body, in which are supported the axles 4, 5, one of which as the axle 4 rotates with the roller and the other of which as 5 is held from rotation, so that the body of the roller revolves around said axle.

6 is the spring connected at one end to the body of the roller as hereinafter described, and at its other end to a portion of the axle 5, the spring tending to rotate the body of the roller around the axle 5.

Each head 2, 3 consists of two discoidal members, one of which is formed with a cylindrical flange which fits into one end of the tubular body 1, and the other of which lies contiguous to the former member with its outer margin lapping the end edge of the tubular body 1. Each head is also formed with an opening for the axle 4 or 5 of the roller.

7 and 8 designate the members of the head 2, the member 7 having a cylindrical flange 9 which fits into the end of the tubular body 1, and the member 8 being a flat disk, the

outer margin of which laps at 10 the end of the tubular body 1. The member 7 is held in position by suitable fastening members as screws 11 extending through the wall of the body 1 and into the cylindrical flange 9. Both members 7, 8 are formed with suitable central openings for the axle 4. Said axle 4 consists of a rod extending through the central openings of the members 7, 8 of the head 2 and supported at its inner end by a member 12 fitting the tubular body 1 opposed to and spaced apart from the head 2. A sleeve 13 is inserted between the disk 12 and the discoidal member 7, said sleeve abutting at its ends against the said parts 7 and 12 and being located in alinement with the central openings thereof. The axle 4 is provided with a flange or shoulder 14 abutting against the outer ends of the member 8 of the head 2 and with a shoulder 15 at its inner end abutting against the inner face of the disk 12.

Preferably, the central portion of the disk 12 is projected to form a spherical boss as shown at 16.

17 and 18 designate the parts of the head in which the axle 5 is located, the member 17 being similar in construction to the member 7 of the head 2 but having its central opening of larger diameter than the part of the axle 5 therein. The member 18 is similar to the member 8 of the head 2 but is provided with a hub 19 which extends into the central opening of the member 17 and which has its inner end spread in the form of a flange at 20 in order to form a peripheral circumferential groove in which the margin of the member 17 around its central opening is held.

The outer margin of the member 18 laps the end edge of the tubular body at 21.

The peripheries of both members 8 and 18 are substantially flush with the periphery of the body 1 of the roller.

The axle 5 is provided with an annular shoulder 22 which abuts the outer face of the member 18, and said axle includes a stub portion located within the tubular body 1 and a tubular portion 23 mounted on the stub portion and secured thereto by a key 24

and also by lengthwise corrugations 25 fitting in lengthwise grooves 26 in the stub. A disk 27 is mounted on the stub and has lugs which enter the groove 26. This disk 27 has a cylindrical flange 28 formed with perforations 29 at intervals which are designed to register with aligned perforations 30, 31, in the body 1 and flange of the member 17. The purpose of the disk 27 is to receive in one of the holes 29, a locking pin inserted through the holes 30, 31 for the purpose of holding the spring 6 under tension when the roller is dismantled.

The tubular portion 23 of the axle 5 is supported at its inner end by a bearing or plug member 32 which includes a cup-shaped body having a tubular hub 33 projecting from its bottom 34 and in which the part 23 of the axle 5 is journaled. Said plug member also includes a plate or disk 35 inserted in the cup-shaped member against the bottom 34, the disk being held in position by shoulders 36 on the cylindrical wall of the cup-shaped part. Said shoulders are formed by indenting the cylindrical wall at intervals so that the indented portions overlie the margin of the disk 35. The member 32 is held in position by a key 37 extending transversely through the body 1 of the roller and through lengthwise slots 38 formed in the member 32 and opening through the edge of the cup-shaped part so that said member 32 can be removed and replaced upon axial-movement thereof.

The spring 6 is connected at one end to the axle 5 or the tubular portion 23 thereof and at its other end to the member 32, it being here shown as having its extreme end portion 39 passed through a loop 40 provided on the member 32.

What I claim is:

1. A spring roller comprising a tubular body, and a head at one end of the body having an axial opening for one of the axles of the roller, the head including a member having a cylindrical flange fitting into the tubular body and spaced apart from the axle and a disk arranged contiguous to said member and having its margin lapping the edge of the tubular body, substantially as and for the purpose described.

2. A spring roller comprising a tubular body, and a head at one end of the body including a discoidal member provided with a cylindrical flange fitting into the body and with a central opening, the flange being spaced apart from the axle, a second discoidal member mounted on the outer side of the former member and formed with a hub extending into the central opening of the former member, forming a bearing for one of the axles of the roller, substantially as and for the purpose specified.

3. A spring roller comprising a tubular body, and a head at one end of the body in-

cluding a discoidal member provided with a cylindrical flange fitting the body and with a central opening, a second discoidal member mounted on the outer side of the former member and formed with a hub extending into the central opening of the former member, forming a bearing for one of the axles of the roller, the hub being formed with a circumferential groove for receiving the margin of the former member around the central opening thereof, substantially as and for the purpose set forth.

4. A spring roller comprising a tubular body, and a head at one end of the body including a discoidal member provided with a cylindrical flange fitting into the body and with a central opening, the flange being spaced apart from the axle, a second discoidal member mounted on the outer side of the former member and formed with a hub extending into the central opening of the former member, forming a bearing for one of the axles of the roller, the second member having its outer margin lapping the end edge of the tubular body, substantially as and for the purpose described.

5. A spring roller comprising a tubular body, and a head at one end of the body including a discoidal member provided with a cylindrical flange fitting into the body and with a central opening, the flange being spaced apart from the axle, a second discoidal member mounted on the outer side of the former member and formed with a hub extending into the central opening of the former member forming a bearing for one of the axles of the roller, the hub being formed with a circumferential groove for receiving the margin of the former member around the central opening thereof, the second member having its outer margin lapping the end edge of the tubular body, substantially as and for the purpose specified.

6. A spring roller comprising a tubular body, a head in one end of the tubular body, a member fitting within the end portion of the tubular body and spaced apart from said head, said member and the head being formed with axial openings, a sleeve interposed between said disk and the head and abutting at its ends against the same, and having its bore aligned with its axial openings thereof, and an axle extending through said openings and the sleeve and having shoulders abutting against the outer face of the head of the roller and against the inner face of said member, substantially as and for the purpose set forth.

7. A spring roller comprising a body having a tubular portion, a plug located in the body, and including a cup-shaped part slidably fitting the body, an axial hub projecting from the bottom of said cup-shaped part, and a disk inserted in the cup-shaped part against the bottom thereof, the cup-

shaped part being provided with a shoulder
located in position to engage and hold the
disk against the bottom of said cup-shaped
part, an axle about which the body of the
5 roller rotates, said axle including a portion
supported at its inner end by said hub, and
a spring encircling the axle and connected
at one end to the plug and at its other end

to the axle, substantially as and for the purpose described.

In testimony whereof, I have hereunto
signed my name at Syracuse, in the county
of Onondaga, and State of New York, this
10th day of Nov., 1916. 10

ROY T. AXE.

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