

June 20, 1933.

A. R. LOPEZ

1,914,748

APPARATUS FOR WINDING SPRING MOTORS

Filed Dec. 3, 1928

Fig. 1.

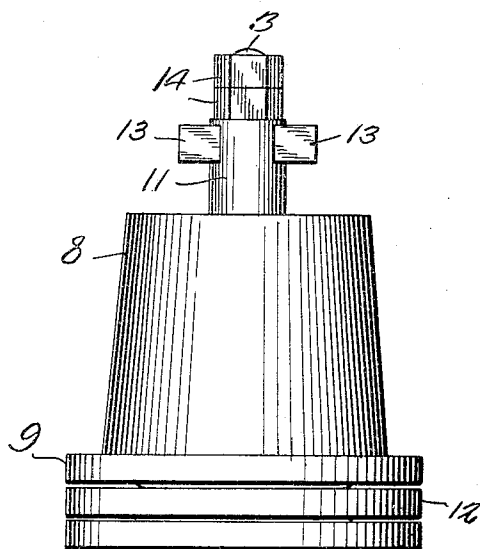


Fig. 2.

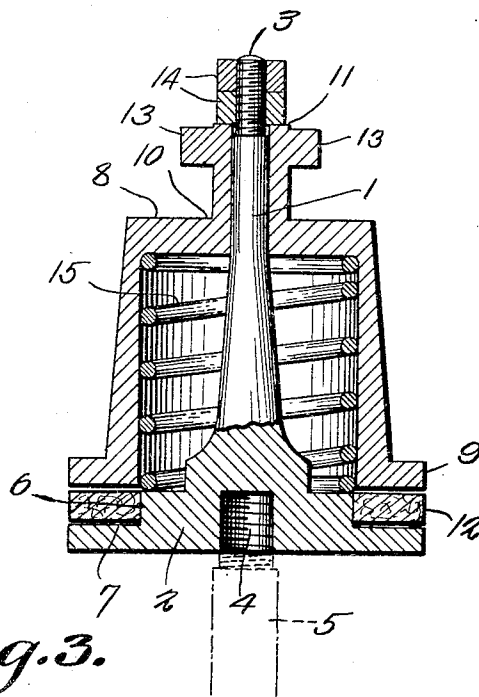
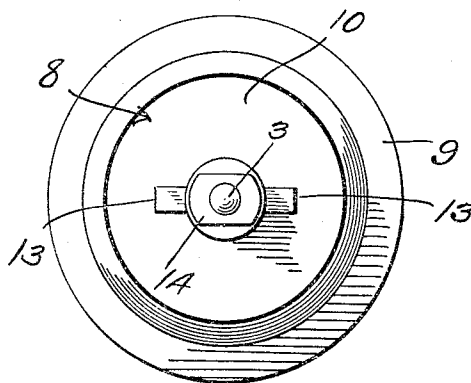


Fig. 3.



Inventor

Andrés Rodríguez López

By

B. Singer

Attorney

UNITED STATES PATENT OFFICE

ANDRÉS RODRÍGUEZ LÓPEZ, OF SAN SALVADOR, EL SALVADOR

APPARATUS FOR WINDING SPRING MOTORS

Application filed December 3, 1928, Serial No. 323,488, and in El Salvador July 24, 1928.

This invention, which I propose to term a Salvatensa, is an improved apparatus for use in winding the spring of a spring motor of any usual form, such as a clockwork, a talking machine spring motor and the like, the object of the invention being to provide an improved apparatus of this kind by means of which over winding of the spring of a motor may be effectually prevented, another object being to provide an improved apparatus of this kind which is automatic in operation and which is simple in construction, strong and durable, and is not likely to get out of order.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawing
Figure 1 is a side elevation of an apparatus constructed and arranged in accordance with this invention.

Figure 2 is a vertical, central, sectional view of the same.

Figure 3 is a plan of the same.

In accordance with my invention, I provide a winding arbor 1 which may be of the form here shown or of any other suitable form and is provided at its inner end with diametrically enlarged base 2 and at its outer end with a threaded extension 3. In the center of the base is a threaded opening 4 of a size and the pitch of which is such as to receive and threadedly engage a correspondingly threaded projection on the outer end of a motor shaft of any form of spring motor, and which motor shaft is here indicated in Figure 2 in dotted lines as at 5. The base 2 has an annular shoulder 6 and an annular recess 7.

I also provide a cap 8 which is here shown as of frusto conical form provided at its inner or lower open end with an outwardly extending annular flange 9 and at its outer or upper end with a closure 10 from which extends a centrally arranged tubular portion 11 through the bore of which and also through a central opening in the closure the outer portion of the arbor 1 extends. Hence the cap is fitted on the arbor for rotation

thereon and also for movement longitudinally toward and from the extended flange of the base. In the space between the flanged lower ends of the base and the cap is a washer 12 which is preferably made of fiber. The tubular portion 10 of the cap is provided with a suitable head 13 for the application thereto of a winding crank or winding key such as is employed for winding the spring of the motor. A pair of adjusting and locking nuts 14 are threaded on the extended portion 3 of the arbor.

Within the cap and arranged around and in concentric relation to the arbor is a coiled spring 15 which is of suitable strength and is of greater strength than the spring of the motor in connection with which the improved apparatus is employed. This spring 15 bears between the base of the arbor and the closure of the cap and is under such compression as normally to create such friction between the arbor and the cap as to cause the arbor to turn with the cap when the latter is rotated by the winding spring or crank. The compression of the spring 15 may be varied as may be required by turning the nuts 14 and hence moving the base flange of the cap toward or from the base flange of the arbor and also toward or from the washer 12 therebetween.

In the operation of my improved winding apparatus, the arbor 1 is secured to the outer end of the shaft of the spring motor as hereinbefore stated and the winding crank or key is applied to the head 13 and turned in the required direction to wind the motor spring and pressure is exerted to cause the washer 6 to act as a friction plate to produce the drive between the arbor and the cap. Hence the arbor 1 and also the shaft of the spring motor, turns with the cap 8 and continues so to do until the motor spring has been wound to the required extent. Further rotation of the cap with the winding key or crank will be independent of the arbor and hence the motor spring will not be over wound. As soon as the operator notices that the cap is turning while the arbor remains at rest, he will then discontinue turning of the key or crank. The spring 15 will then act to move

the cap upwardly and relieve the washer of pressure.

While I have herein described a preferred form of my invention, I would have it understood that changes may be made in the form, proportion and construction of the apparatus without departing from the spirit of my invention within the scope of the appended claims. I would also have it understood that the apparatus may be made of any desired or suitable size, according to the size of the spring motor in connection with which the apparatus is to be used.

Having thus described my invention, I claim:

1. Spring motor winding apparatus comprising an arbor arranged for application to the shaft of a spring motor and provided with a base, a cap closed at its outer end and mounted for rotation on the arbor and having at its outer end a head arranged for the application thereto of an actuating element such as a key, said cap also having a base opposite that of the arbor to frictionally engage the same, and said arbor having an extension at the outer end extending through the outer end of the cap and also through said head, and adjusting nuts on said extension bearing on said head, and a spring in the cap compressed between the cap and the arbor and active when relieved of compression to urge the cap outwardly, to prevent friction between the base thereof and the base of the arbor.

2. Apparatus as claimed in claim 1, including a washer arranged between the bases of the arbor and the cap.

In witness whereof I affix my signature.

ANDRÉS RODRÍGUEZ LÓPEZ.

40

45

50

55

60

65