July 19, 1932. C. C. CRISPEN 1,868,409

SPRING RETRIEVING REEL

Filed May 26, 1931

Fig. 1.

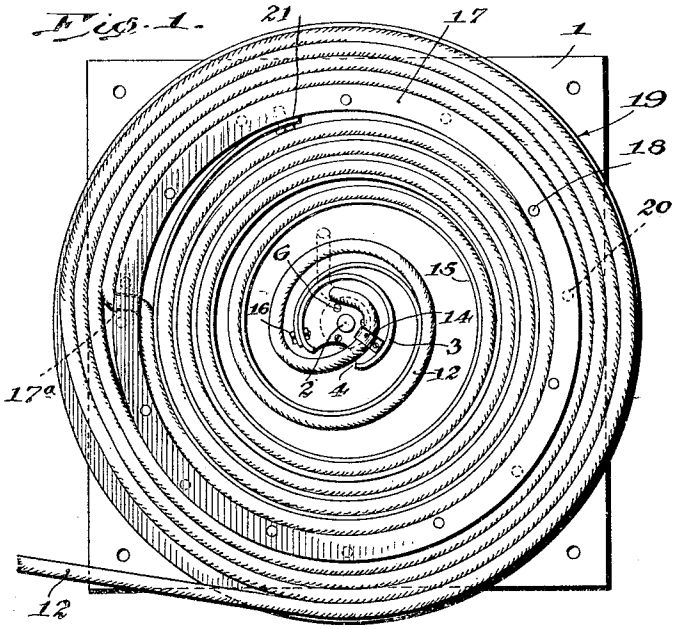


Fig. 2.

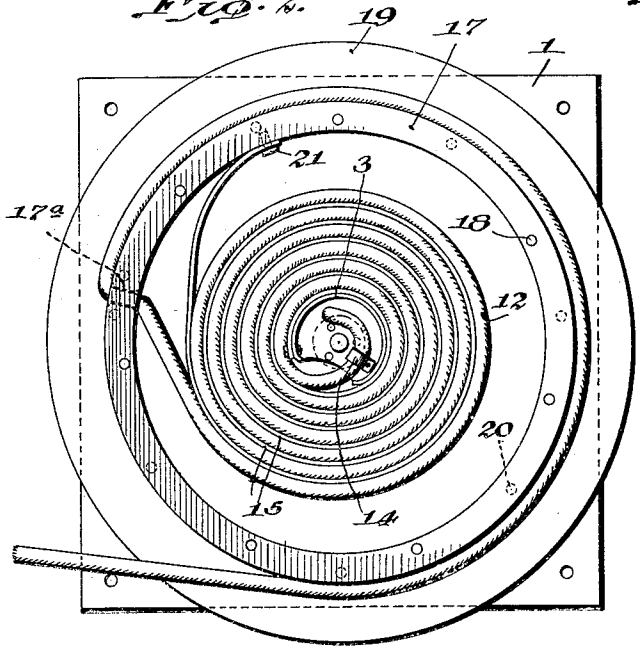
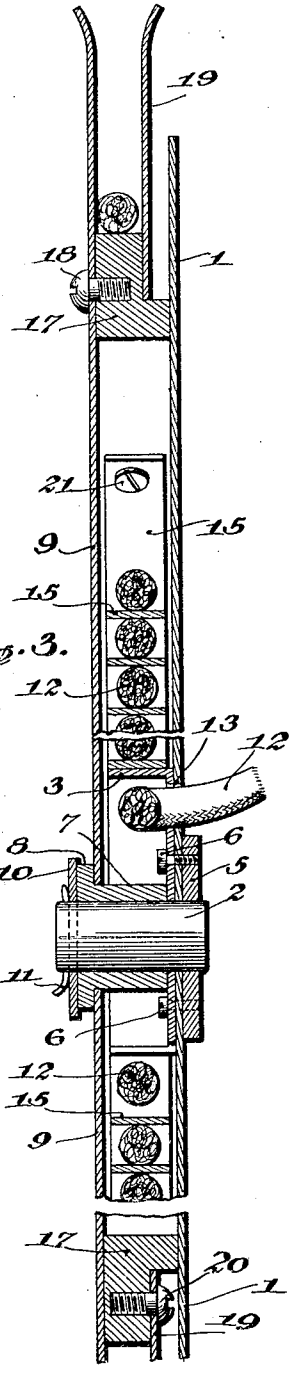


Fig. 3.



WITNESS

INVENTOR

C. C. Crispen,

BY

ATTORNEY

Patented July 19, 1932

1,868,409

UNITED STATES PATENT OFFICE

CLARENCE C. CRISPEN, OF HARRISBURG, PENNSYLVANIA

SPRING RETRIEVING REEL

Application filed May 26, 1931. Serial No. 540,145.

My invention relates to improvements in spring retrieving reels which are used in connection with cables or cords carrying electrical conductors, and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of my invention is to provide a spring retrieving reel which is of comparatively simple construction, but in which movable contacts such as conducting rings, brushes, etc., are eliminated.

A further object of the invention is to provide a device of the type described which is so constructed that the cord or cable does not twist with each revolution, as with some devices, for the same purpose.

A further object is to provide a spring reel in which it is immaterial as far as the operation of the device is concerned, whether there are one, two or multiple conductor cords.

Other objects and advantages will appear in the following specification and the novel features of the invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawing forming part of this application, in which:

Figure 1 is a side view of the device with the cover disk and hub removed, showing the spring and cord in unwound position.

Figure 2 is a similar view showing the cord and spring wound up into compact condition, and,

Figure 3 is an enlarged diametrical sectional view.

In carrying out my invention I provide a supporting back 1, having an opening in which is disposed a central shaft 2. This shaft also passes through a central opening in a cup 3, which, as will be seen from Figs. 1 and 2, is provided with an opening 4 in its side wall. In the rear of the support is a plate 5. Screws 6 pass through the cup, support 1, and the plate 5, thus binding these parts securely together. The shaft is provided with a hub 7 which has a flange 8 arranged to abut a disk 9 through which the hub passes, this hub being secured in position by a washer 10 and a cotter pin 11, as shown in Fig. 3.

A cord or cable 12 passes through the alined openings 13 in the supporting back and the cup 3 is bent around, as shown in Figs. 1 and 2, where it passes underneath a retaining clip 14, and then out from the cup through the opening 4.

A coiled spring 15 is secured at 16 to the outside of the cup 3. The cord or cable 12 is coiled around the spring between adjacent convolutions, and passes through an opening 17*a* in a ring 17. As will be seen from Fig. 3, this ring 17 is secured to the disk 9 by means of screws 18. A portion of this ring is spaced from the supporting back 1, and an annular flange 19 is secured to the ring by screws such as that shown at 20. The outer portions of the disk 9 and the flange 19 are flared outwardly, and the space between, together with the ring 17, constitutes a spool upon which the cord or cable is wound. The outer end of the spring 12 is fastened to the ring 17, as shown at 21. As will be seen from Fig. 3, the space between the supporting back 1 and the disk 9 is sufficient to permit the spring to expand or contract freely while maintaining each convolution of the cord in its proper place between the adjacent convolutions of the spring.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. In Fig. 1 I have shown the spring and the confined cord in expanded position. When now the cord 12 is pulled, as for instance to the left in Figs. 1 and 2, the reel will be rotated around the shaft 2 as a center, and since the reel carries with it the ring 17, which is in fact a part of it, the spring, which is attached to the ring, will be wound up, as shown in Fig. 2. The spring under tension will tend to unwind when force on the cord is relieved. This will rotate the reel in the reverse direction, and will wind up the cord in the outer space between the flange 19 and the edge of the disk 9.

It will thus be seen that the cord can be pulled out and wound up without the necessity of sliding electrical contacts such as that

in conducting rings and brushes. There is, therefore, less liability of failure of the device to work than where such electrical connections are provided. Furthermore, the construction is a simpler one, and as stated, there is no twisting of the cord since a straight pull will bring the portions carried by the real into direct alinement with the pulling force at the point where the cord leaves the reel.

I claim:

1. In a spring retrieving reel comprising a support, a shaft carried by the support, a hub rotatable on said shaft, a cup-shaped receptacle secured to said support, said receptacle and said support having alined openings, and one wall of the receptacle being cut away, a spiral spring having one end secured to the wall of said receptacle on the outside thereof and being coiled around said receptacle, a disk mounted on said hub, and a ring mounted between said disk and said support concentrically of said shaft, and being secured to said disk.

2. In a spring retrieving reel comprising a support, a shaft carried by the support, a hub rotatable on said shaft, a cup-shaped receptacle secured to said support, said receptacle and said support having alined openings, and one wall of the receptacle being cut away, a spiral spring having one end secured to the wall of said receptacle on the outside thereof and being coiled around said receptacle, a disk mounted on said hub, a ring mounted between said disk and said support concentrically of said shaft and being secured to said disk, said disk having a portion projecting beyond said ring, and an annular flange secured to the ring and being spaced from said support, the space between the annular flange, the disk, and the ring constituting a spool.

3. In a spring retrieving reel comprising a support, a shaft carried by the support, a hub rotatable on said shaft, a cup-shaped receptacle secured to said support, said receptacle and said support having alined openings, and one wall of the receptacle being cut away, a spiral spring having one end secured to the wall of said receptacle on the outside thereof and being coiled around said receptacle, a disk mounted on said hub, a ring mounted between said disk and said support concentrically of said shaft and being secured to said disk, said disk having a portion projecting beyond said ring, an annular flange secured to the ring and being spaced from said support, the space between the annular flange, the disk, and the ring constituting a spool, said ring having an opening, and a cord extending through the alined openings in the receptacle and the support, and passing through the opening in the wall of the receptacle, said cord being wound between the convolutions of the spring and having a portion passing through the opening in the ring, and another portion wound around the spool.

4. In a spring retrieving reel comprising a support, a shaft carried by the support, a hub rotatable on said shaft, a cup-shaped receptacle secured to said support, said receptacle and said support having alined openings, and one wall of the receptacle being cut away, a spiral spring having one end secured to the wall of said receptacle on the outside thereof and being coiled around said receptacle, a disk mounted on said hub, a ring mounted between said disk and said support concentrically of said shaft and being secured to said disk, said disk having a portion projecting beyond said ring, an annular flange secured to the ring and being spaced from said support, the space between the annular flange, the disk, and the ring constituting a spool, said ring having an opening, a cord extending through the alined openings in the cylindrical compartment and the support, and passing through the opening in the wall of the cylindrical compartment, said cord being wound between the convolutions of the spring and having a portion passing through the opening in the ring, and another portion wound around the spool, and means for securing one end of the spring to the inner face of the ring.

5. In a spring retrieving reel, a support, a shaft carried by the support, a hub rotatable on said shaft, a cup-shaped receptacle secured to said support, said receptacle and said support having alined openings and one wall of the receptacle being cut away, a spiral spring having one end secured to the wall of said receptacle on the outside thereof and being coiled around the receptacle and a cable passing through said alined openings and through the wall of the receptacle and having a portion extending between the convolutions of the spring.

CLARENCE C. CRISPEN.