March 4, 1930. J. WEICHSEL 1,749,117

SPRING DEVICE

Filed March 10, 1926

Fig. 1.

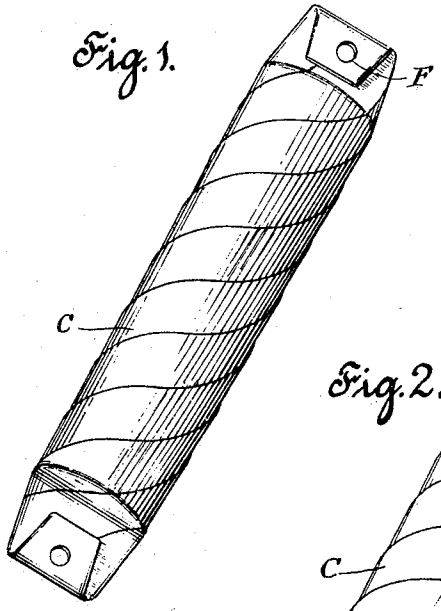


Fig. 2.

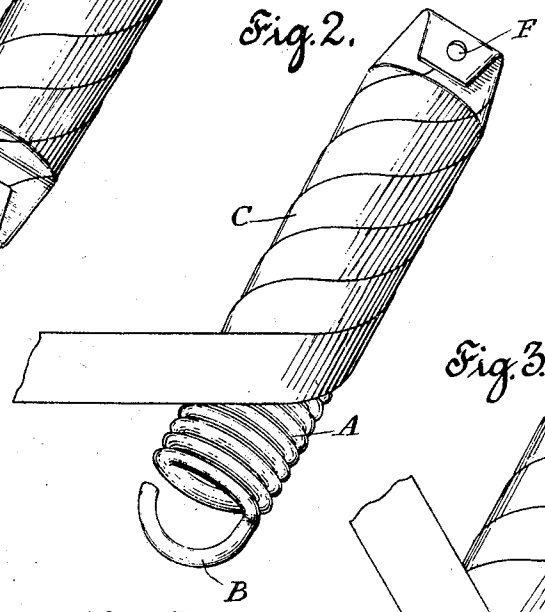


Fig. 3.

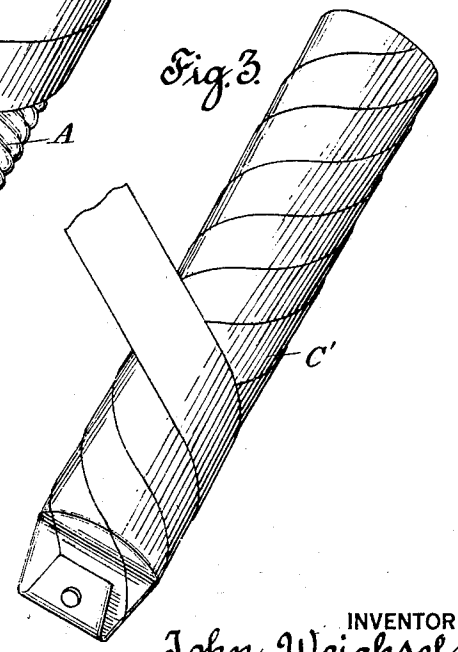


Fig. 4.

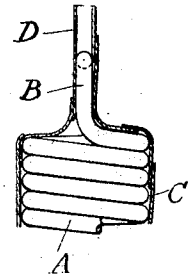
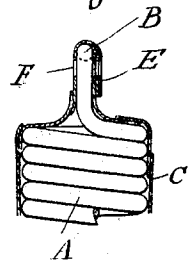


Fig. 5.



INVENTOR

John Weichsel

BY

Abraham Engel.

ATTORNEY

Patented Mar. 4, 1930 1,749,117

UNITED STATES PATENT OFFICE

JOHN WEICHSEL, OF NEW YORK, N. Y.

SPRING DEVICE

Application filed March 10, 1926. Serial No. 93,743.

The present invention relates to spring devices and especially to those employing coil springs and aims to provide certain improvements therein.

The primary object of the present invention is to provide means for protecting coil or helical springs against the entrance into or between the convolutions thereof of dust, dirt, vermin or the like, without in any way impairing the action of the springs. A further object is to provide a spring device of the type described in a simple, efficient and practical manner. Still another object is to provide an improved method of enclosing a coil or helical spring within a protective element.

The foregoing and additional objects I accomplish by making the protective element as a somewhat flexible extensible casing, which I preferably form by spirally winding a ribbon with its edges in overlapping relation, thereby adapting it for relative movement. The ends of the protective element are preferably formed to cooperate with the ends of the spring to provide suitable anchoring means for the spring. The invention also contemplates other features of novelty, which will be hereinafter more fully described.

In the accompanying drawing, I have shown two preferred embodiments of my invention wherein:

Figure 1 is a perspective view of the spring device.

Fig. 2 is a similar view with part of the protective element broken away.

Fig. 3 is a perspective view of a modification showing the protective element in partially completed form.

Figs. 4 and 5 are details of the manner in which the anchoring means of the spring device are formed.

Referring first to Figures 1, 2, 4 and 5 of the drawings, let A indicate a coil or helical spring of any desired or conventional form having its end formed as a hook B which is disposed in a plane substantially at a right angle to the planes of the convolutions of the spring. Surrounding the spring A is the protective element C which as herein shown is in the form of a spirally wound ribbon, the edges of which are in overlapping relation and adapted for relative movement, which it will be appreciated is essential to accommodate the extension and contraction of the spring in use when subjected to strains. The degree of overlapping of the ribbon edges is preferably such as will permit maximum normal distension of the spring without uncovering the same. Preferably this ribbon is of metal, but it will be understood that other material such as fabric, fibre or the like if properly treated may be used with equally good results.

The end portions of the protective element C are preferably flattened after being positioned over the spring as shown at D in Fig. 4, after which the flattened portion extending beyond the hook of the spring is turned down as shown at E in Fig. 5. The turned down flattened ends are thereafter pierced to provide openings F which are just below the bight of the hook B with which it cooperates to provide a reinforced anchoring means for the spring device.

In Fig. 3 I have shown an alternative form of protective element C′ which consists of a pair of ribbons spirally wound in opposite directions with their edges overlapping as hereinbefore described or a single ribbon rewound on itself. A protective element of this type doubly insures against the entrance of deleterious matter into or between the convolutions of the spring.

The end portions of the element C′ may be formed in a like manner as that described in connection with the embodiment of the invention shown in Figs. 1, 2, 4 and 5.

The protective elements C and C′ may be formed either independently of the spring element A or wound directly thereover. I prefer to make them separately from the springs and have found that they may be efficiently made by spirally winding the ribbon over a mandrel to form long tubes which are subsequently cut up into the proper lengths to fit over the springs A, after which the end portions are finished off as hereinbefore described and illustrated in Figs. 4 and 5.

The spring devices of my invention it will be understood may have varied and almost

universal application and I therefore do not wish to limit my invention to any specific application therefor.

It will also be understood that while I have shown and described two preferred embodiments of my invention, I do not wish to be limited to the specific structures disclosed since modifications thereof may be resorted to without departing from the spirit of the invention.

What I claim is:

1. A spring device comprising a coil spring and a one piece extensible metallic housing entirely enclosing said spring having a normal length approximately equal to the normal length of the spring and being adapted to accommodate itself to variations in the effective length of the spring when it is stressed and relaxed.

2. A spring device comprising a coil spring and a protective element therefor, said protective element comprising a ribbon spirally wound around said spring and entirely enclosing the same, the edges of said ribbon being in overlapping relation and adapted for relative telescopic movement to accommodate the protective element to variations in the effective length of the spring when it is stressed and relaxed.

3. A spring device comprising a coil or helical spring having hook-like anchoring means thereon and a one piece protective element entirely enclosing said spring, said protective element comprising an extensible body portion and inextensible flattened end portions formed with anchoring means substantially coinciding with and embracing the anchoring means on the spring.

4. A spring device comprising a coil spring having its end portions disposed in planes substantially at right angles to the planes of the convolutions of the springs and a protective element entirely enclosing said spring, said protective element comprising a ribbon spirally wound around the spring and entirely enclosing the same, the edges of said ribbon being in overlapping relation and adapted for relative telescoping movement to accommodate the protective element to variations in the effective length of the spring when it is stressed and relaxed, said protective element having its end portions flattened to embrace the end portions of the spring.

JOHN WEICHSEL.