

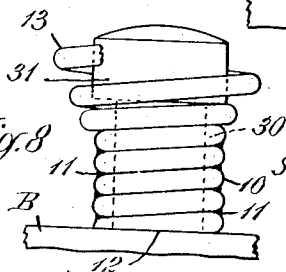
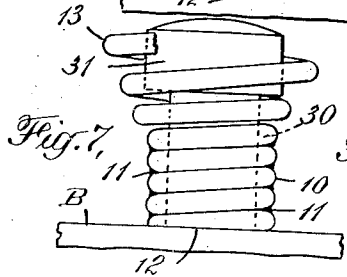
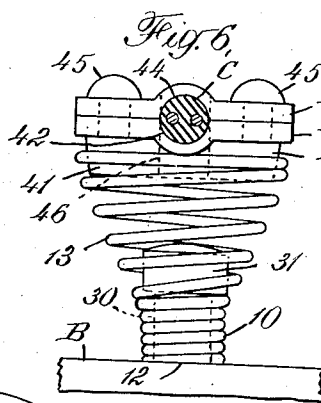
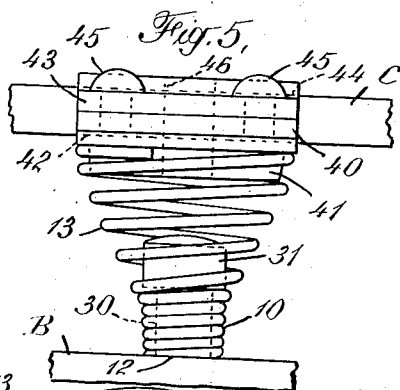
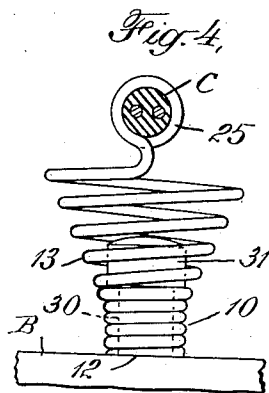
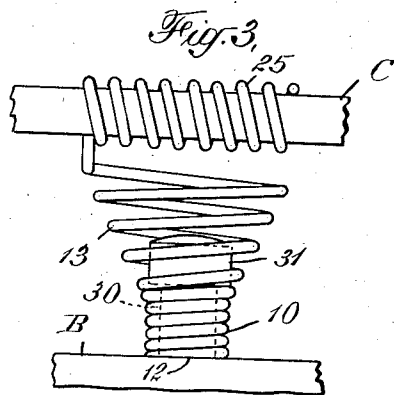
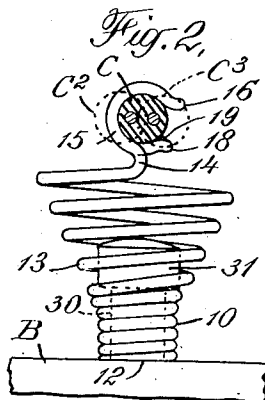
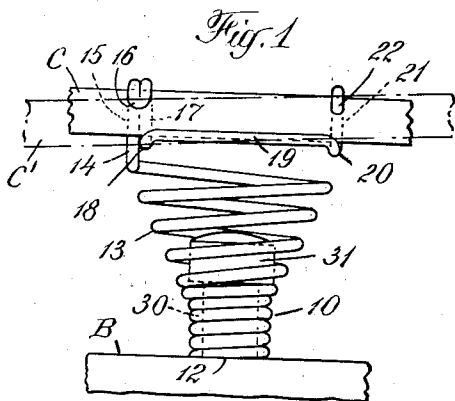
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FLEXIBLE CABLE SUPPORT

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FLEXIBLE CABLE SUPPORT

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5 Claims. (Cl. 248—54)

This invention relates to flexible cable supporters and its object is to provide a simple inexpensive device for yieldingly holding a cable, wire or tube. More specifically its object is to provide such a supporter which is capable of cushioning the vibrations of a body to which the cable or the like is attached.

These and other objects of my invention will appear in the following specification in which I will describe several devices which embody the invention, the novel features of which will be set forth in the appended claims.

Referring to the drawing:

Figure 1 is a side elevation of a device which is made according to and embodies this invention together with a portion of a cable;

Fig. 2 is a similar view of the parts shown in Fig. 1, the view being taken at right angles to that shown in the latter figure;

Fig. 3 is a side elevation of a modified form of a supporter which also embodies the invention together with a portion of a cable;

Fig. 4 is a similar view of the parts shown in Fig. 3, the view being taken at right angles to that shown in the latter figure;

Fig. 5 is a side elevation of a further modified construction, together with a portion of a cable;

Fig. 6 is a similar view of the parts shown in Fig. 5, the view being taken at right angles to that shown in the latter figure;

Figs. 7 and 8 are side elevations on a larger scale of a part of the devices shown in the preceding figures, illustrating the way a locking effect is obtained. In Fig. 7 the parts are shown in an initial uncompressed condition and in Fig. 8 the same parts are shown compressed.

10 designates a hollow cylinder constructed of a number of coils of wire helically wound and in abutting relation. This is a rigid structure and if desired its rigidity may be increased by applying a coat 11 of metal as by brazing, soldering or electro-plating. This is shown in Figs. 7 and 8. The lower end 12 of this cylinder is normal to the axis of the cylinder.

From the top of the cylinder the wire is wound spirally to form an open coiled outwardly flaring spring 13 coaxial with the cylinder 10.

In the construction shown in Figs. 1 and 2 the wire is extended upwardly as at 14, thence in a circular form, as at 15 to the point 16 where it is bent outwardly and back on itself to form a lip. 17 is a portion of the wire parallel to the portion 15 which extends to the point 18 when it is bent outwardly to form another lip. 19 is a straight portion of the wire normal to the axis of

the spring 13 and slightly offset from the lip 18. At a point spaced from the portion 17 the wire is bent slightly to form a lip 20 in alignment, in the view shown in Fig. 2, with the lip 18. Then the wire is bent in a circular form, as at 21, parallel with the portions 15, 17 and to form a lip 22 parallel to the lip 16. When the device is used to support a cable with a spirally wound sheathing lip 22 is disposed to the left of the lip 20 instead of directly above it.

The cable C is shown as circular in cross section having the diameter of that of the inside diameter of the portions 15, 17 and 21. The distance between the lips 16, 18 and between the lips 18 and 22 is less than this diameter but these lips may be sprung apart to admit the cable.

The inside of the cylinder 10 forms a clearance opening for a screw 30 which passes through it into a tapped hole in a body B to which the support is affixed. The screw therefore holds the device in an upright position.

By reference to Fig. 7 it may be seen that the head of the screw, which is designated by the reference numeral 31 will clear one or more convolutions of the cone shaped spring 13 but will engage a part of the spring near the cylinder 10. Then when the screw is tightened, as shown in Fig. 8, the lower part of the spring 13 will be flattened and will act like a spring washer as a lock for the screw.

From the foregoing description it is apparent that the cable C is resiliently supported on the body B. Furthermore this resiliency is universal in direction. Obviously the spring 13 may become elongated or shortened by relative movements between the cable C and the body B. In Fig. 1 the cable is shown at C' in dot and dash lines as tilted in one direction. In Fig. 2 the cable is shown at C² and C³ as deflected into two possible positions.

The lower part of the modifications shown in Figs. 3, 4, 5 and 6 is the same as that shown in the preceding figures. In Figs. 3 and 4 the part of the wire above the cone shaped spring 13 is wound into a helix 25 at right angles to the axis of the spring 13 through which the cable C may be passed.

In Figs. 5 and 6 a clamp is affixed to the upper end of the conical spring 13. The lower member of this clamp, designated by 40, has a frusto-conical boss 41 projecting from its lower surface which fits into the spring 13. This lower member 40 is brazed to the spring or affixed thereto in any other suitable manner. The upper surface of this lower member is flat with a semi-

circular groove 42 running across it. 43 is an upper member the lower surface of which is flat and has a semi-circular groove 44 running across it. The cable C lies in the groove 42, 44 and the members 40, 43 are held together by screws 45. 46 designates a central hole through the members 40 and 43 to give access to the screw 39.

Several modifications have been illustrated and described to show that the invention is not limited to any specific form or construction and I intend no limitations other than those imposed by the following claims.

What I claim is:

1. A flexible supporter comprising a cylinder of comparatively small diameter formed of a plurality of convolutions of wire, and a cone shaped spiral spring formed of the same wire, the axes of the cylinder and of the spring being in the same line, said wire extending from the larger end of the spring and bent into a form adapted to receive and support an elongated member.

2. A flexible supporter comprising a cylinder of comparatively small diameter formed of a plurality of convolutions of wire, and a cone shaped spiral spring formed of the same wire, the axes of the cylinder and of the spring being in the same line, said wire extending from the larger end of the spring and bent to form parallel spaced arcuate portions of a diameter corresponding to the transverse dimension of an elongated member to be supported, the ends of said arcuate portions being spaced apart a distance less than said transverse dimension of the supported member.

3. A flexible supporter comprising a cylinder of comparatively small diameter formed of a plurality of convolutions of wire, and a cone shaped spiral spring formed of the same wire, the axes of the cylinder and of the spring being in the same line, said wire extending from the larger end of the spring and bent into a helix with its axis normal to the axis of the cylinder and spring.

4. A flexible supporter comprising a cylinder of comparatively small diameter formed of a plurality of convolutions of wire, a cone shaped spiral spring formed of the same wire, the axes of the cylinder and the spring being in the same line, combined with a headed screw for affixing said supporter to a body, said screw fitting the inside of the cylinder with its head engaging the smaller convolutions of the cone shaped spring, and member attaching means on the larger end of the spring.

5. A flexible supporter comprising a cylinder of comparatively small diameter formed of a plurality of convolutions of wire, a cone shaped spiral spring formed of the same wire, the axes of the cylinder and the spring being in the same line, combined with a headed screw for affixing said supporter to a body, said screw fitting the inside of the cylinder with its head engaging the smaller convolutions of the cone shaped spring, and a clamp permanently affixed to the larger end of the spring.

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