

Dec. 19, 1933.

J. FREI, JR

1,939,968

FLEXIBLE POST

Original Filed Aug. 9, 1930

Fig. 1.

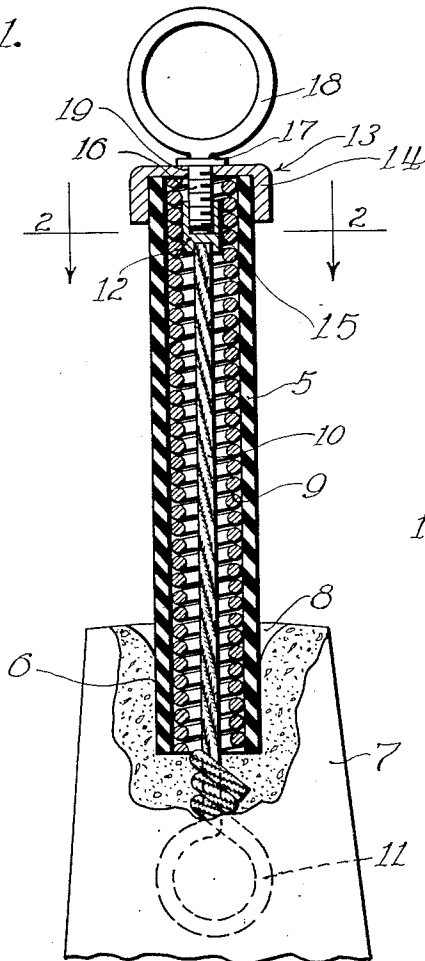


Fig. 2.

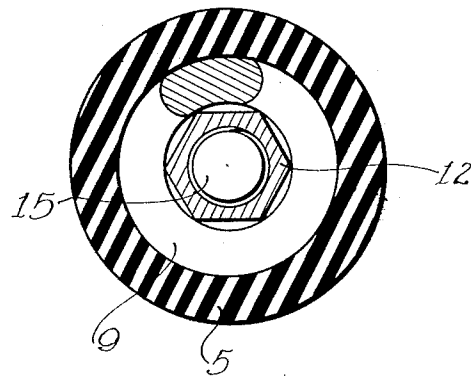
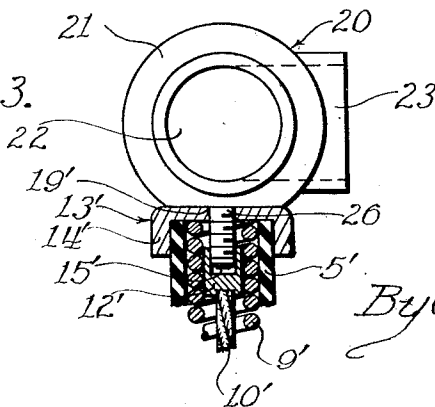


Fig. 3.



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## UNITED STATES PATENT OFFICE

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## FLEXIBLE POST

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Original application August 9, 1930, Serial No. 474,154. Divided and this application January 26, 1931. Serial No. 511,146

5 Claims. (Cl. 189—23)

This invention relates to post construction and more particularly to a novel structure providing a normally stiff but yieldable post adaptable for supporting barriers and other kindred uses such for example as supporting corner sign posts or traffic signals which are apt to be collided with by vehicular traffic and which will be self-restoring to vertical disposition, durable and of pleasing appearance.

The present application is a division of my co-pending application, Serial No. 474,154, filed August 9, 1930, for Flexible post.

With the above in view, it is the main object of the present invention to provide a post construction comprising a body, upright, or staff which is suitably anchored to the ground and which will normally tend to retain its stiffness but which will readily yield in any direction upon the application of excessive transverse force applied thereto.

More specifically, I prefer to provide a post comprising a staff or body portion including a tubular resilient waterproof member or casing reinforced by a coil spring mounted in an upwardly extending open ended socket provided in a concrete anchor adapted to be sunk into the ground and below the surface thereof. To restrain withdrawal of the staff or body portion from such socket, I provide an axially extending anchoring means comprising a flexible metallic cable provided at one end with a closed loop embedded in the concrete anchor and having a suitable retaining or plug member secured to the other end thereof and normally disposed adjacent the upper end of the staff or body portion. A suitable cap is provided for the upper end of the staff or body portion and is detachably secured to the bushing or plug member. By adjusting the securing means, the pressure applied by the cap upon the coil spring and tubular casing may be varied, thereby permitting of adjustability of the tension of the coil spring whereby any desired normal stiffness of the post or upright may be secured. The securing means may be of any type preferably providing a supporting portion for a barrier means for example, or for any other device adapted to be associated with the post.

By the provision of such a post construction, wherein the body or staff is normally stiff but yieldable or bendable, collision therewith or the application of excessive transverse force thereto by a moving body will only bend the post. Since the casing thereof is resilient, and therefore yieldable, it provides a shock absorbing medium

not readily marred or nicked so that upon the release of the excessive pressure thereagainst, the post will be restored to upright position to original condition without having its appearance affected. Thus a post embodying the salient features of the present invention eliminates unsightliness wherever employed due to collision therewith by moving bodies and at the same time eliminates frequent repair costs such as are required with posts which are bent, dented, or broken by such collisions.

Other features and advantages of the present invention will appear from the following detailed description of a preferred embodiment of the invention illustrated in the accompanying drawing, in which:

Figure 1 is an axial section through a post or upright embodying the salient features of the present invention;

Figure 2 is an enlarged transverse section taken substantially along the line 2—2 of Figure 1; and

Figure 3 is a side elevation of a modified form of barrier receiving means where the post is employed in fence constructions particularly adapted for corner posts or uprights, a part of the post or upright being shown in section.

Referring more particularly to Figures 1 and 2, the post comprises a tubular casing 5 formed of resilient water-proof material such, for example, as rubber, the lower end of the casing being adapted to be seated in a suitable outwardly directed open ended socket 6 provided in the upper end of a concrete anchor 7 preferably of frusto-conical formation. The upper end of socket 6 is formed with a gradually outwardly flaring mouth portion 8, the purpose of which will hereinafter appear.

A suitable coil spring 9 is concentrically disposed within the casing 5 with its outer periphery in engagement with the inner wall of the casing 5. Preferably, the adjacent coils of the spring 9 are slightly spaced apart.

To suitably anchor the post or upright in the anchor 7, a flexible metal cable 10 is provided, the lower end of the cable being formed into a closed loop 11 which is embedded in the concrete anchor 7. The body portion of the cable 10 extends axially through the post or upright and has anchored to its upper end as by soldering or welding, a polygonally faced bushing or plug 12. Preferably, the largest diametric dimension of the plug 12 is slightly larger than the internal diameter of the coil spring 9 so that the polygonal plug or bushing is frictionally seated and re-

tained in the upper end of the coil spring 9 to prevent relative rotation thereof.

The upper end of the staff or post is provided with a cap 13 including a peripheral flange 14 which is adapted to embrace a portion of the end of the casing 5. The bushing or plug 12 is provided with an axial threaded bore 15 into which a threaded stud or extension 16 is adapted to take. Stud or extension 16 carries thereon and formed integrally therewith a collar 17 and a suitable ring 18. If desired, ring 18 may be replaced by a plate or other upwardly extending projection for securement thereto of any desirable device depending upon what is desired to be associated or supported upon the post or upright. As will be apparent from Figure 1, the stud 16 extends through a suitable perforation 19 in the cap 13, the collar 17 engaging the upper side of the cap.

Inasmuch as the coils of the spring 9 are slightly spaced apart, any tightening action transmitted to the cap 13 by means of drawing up on the bushing or plug 12, will affect the tension of the spring 9 thereby permitting of variation of such tension whereby the relative stiffness of the staff or post may be varied.

By providing the upper open end of the socket 6 with an enlarged mouth 8, the post may be bent in any direction without imposing any cutting action upon the casing 5 at the upper end of the socket 6.

Referring now more particularly to Figure 3, I have illustrated therein a preferred embodiment of a barrier receiving means for corner posts where it is desired to employ the novel post in a fence or barrier construction. In this embodiment, the post construction itself is similar to that disclosed in Figures 1 and 2 and the parts thereof have been indicated by primed corresponding reference numerals for ready identification of the similar parts. The barrier receiving means 20 comprises a substantially spherical hollow body 21 provided with right-angularly disposed receiving socket portions 22 and 23 disposed in the same plane. At its base, the barrier receiving means 20 is provided with an integral downwardly extending threaded stud 26. This stud passes through the perforation 19' in the cap 13' in the same manner as is disclosed in Figures 1 and 2. The threaded stud or extension 26 is adapted to take into the threaded bore 15' of the bushing or plug 12'.

It will be readily apparent that when a post or staff embodying the features of the present invention is struck by a vehicle or other moving object or body with substantial force, the post or staff body portion will readily yield. The post or staff will be automatically restored to upright position when relieved of the imposed lateral or transverse pressure.

Inasmuch as the outer casing is formed of water-proof material, both the encased coil spring and the cable anchoring means and associated parts will be effectively shielded from the elements. It will be further apparent, that since the outer casing is made of resilient material, the casing will readily absorb shock incident to collision by a moving object or body and will not be scarred, dented, or permanently bent so that upon restoration to upright position, the post will present a pleasing appearance.

While I have disclosed a preferred embodiment of my invention, it will be understood that I do not wish to be limited thereto since certain changes may be made therein without departing from the essence of the invention or the spirit and scope of the appended claims.

What I claim and desire to secure by Letters Patent is:

1. In a post construction, a concrete anchor, a socket open at its upper end in said anchor, a staff having one end thereof seated in said socket and extending upwardly therefrom, said staff comprising a tubular casing of flexible water-proof material, a coil spring concentrically disposed within and reinforcing said casing, a cap removably associated with the other end of said staff, an anchoring means comprising a flexible metal cable extending axially within said staff and having one end thereof formed into a closed loop, said loop being embedded in said anchor, an internally threaded member secured to the other end of said cable, and securing means extending through said cap and having internally threaded engagement with said threaded member whereby said staff is adjustably restrained from withdrawal from said anchor.

2. In a post construction, an anchor, a cap, an elastic flexible member confined between said anchor and said cap and constituting the body of the post, said member being free for flexure at all points throughout its length and being compressible axially, and means connecting said cap with said anchor and adjustable for varying the axial compression imposed upon said member while permitting flexion thereof at all points throughout its length.

3. In a post construction, an anchor, a tubular member seated in said anchor, said member being bendable at all points throughout its length and compressible axially, yieldable means confined within said member and compressible axially and expansible radially, a cap seated upon said member, and means connecting the anchor and the cap and adjustable to vary the axial compression imposed upon said member and said yieldable means.

4. In a post construction, an anchor, a tubular member seated in said anchor, said member being bendable at all points throughout its length and compressible axially, yieldable means confined within said member and compressible axially and expansible radially, said yieldable means contacting the inner side walls of said tubular member and being otherwise free therefrom, a cap seated upon said member, and flexible anchoring means embedded in said anchor and connected with said cap for restraining withdrawal of said member from said anchor, and for varying the axial compression imposed upon said member and said yieldable means.

5. In a post construction, an anchor, an elastic flexible member seated in said anchor and constituting the body of the post, said member being free for flexure at all points throughout its length and being compressible axially, and means securing said member to said anchor and adjustable for varying the axial compression imposed upon said member while permitting flexion thereof at all points throughout its length.

JOHN FREI, JR.

**CERTIFICATE OF CORRECTION.**

**Patent No. 1,939,968.**

**December 19, 1933.**

**JOHN FREI, JR.**

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, line 98, claim 1, strike out the word "internally" and insert the same after "said" in line 99, of said claim; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 30th day of January, A. D. 1934.

**F. M. Hopkins**

**Acting Commissioner of Patents.**

**(Seal)**