

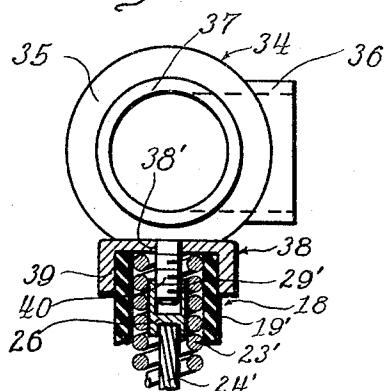
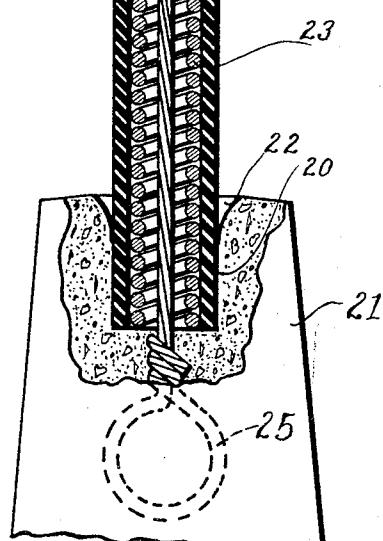
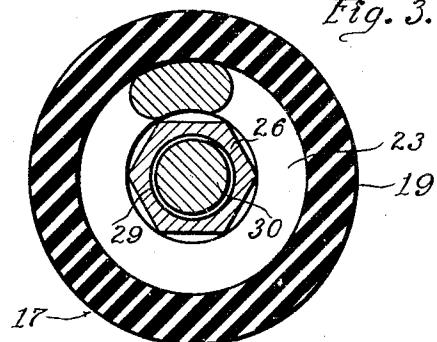
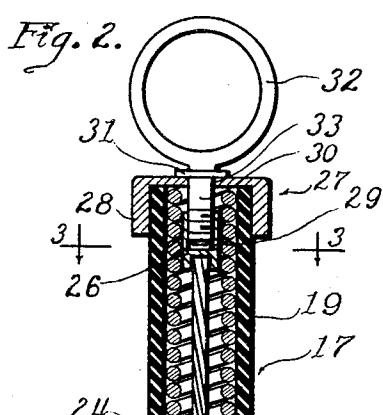
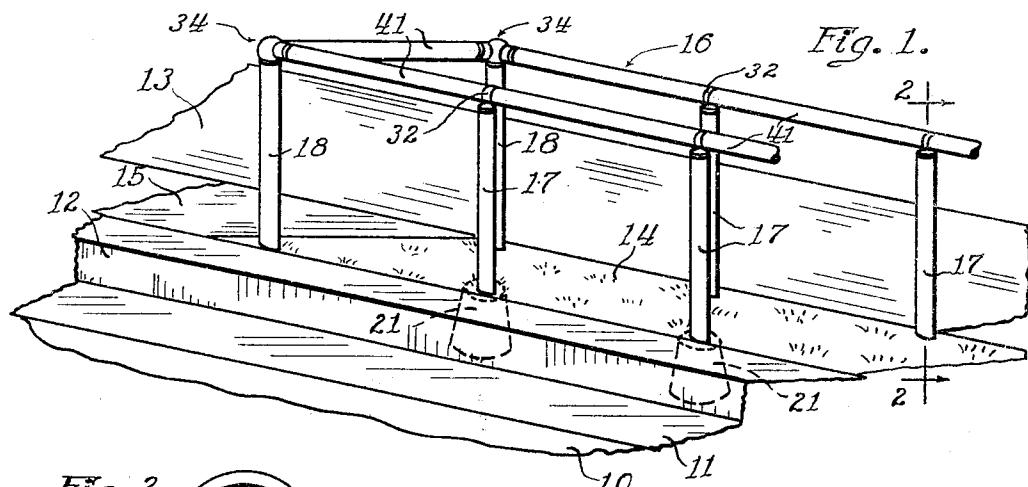
Feb. 14, 1933.

J. FREI, JR

1,897,250

YIELDABLE BARRIER

Filed Aug. 9, 1930



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UNITED STATES PATENT OFFICE

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YIELDABLE BARRIER

Application filed August 9, 1930. Serial No. 474,154.

This invention relates to fence construction and more particularly to such a construction including a normally stiff but yieldable post construction.

5 Heretofore, it has been the practice in providing fences or barriers around grass plots disposed between a curb and sidewalk, to construct such fences or barriers by employing rigid uprights or posts either sunken 10 into the ground or seated in suitable anchoring means in turn sunken into the ground and suitably connecting the upper ends of such posts to form a suitable barrier restraining entry upon the grass plots by careless individuals. Fences including concrete, metal 15 either in tubular or solid form, wood, etc. uprights or posts are commonly employed, the connecting means forming the barrier portions being either in the form of flexible 20 means such as chains or flexible metal cables or rigid tubular members.

In the majority of fences employed to surround plots of grass, shrubs, etc., disposed between the curb and sidewalk of a city 25 street, the outer line of fence posts or uprights are usually disposed adjacent the curb. In many instances, vehicles, including both passenger and commercial vehicles, particularly in being backed up for the purposes of 30 making a turn, are so backed as to have the rear wheels engage the usual curb and owing to the proximity of the fence posts or uprights to the curb, such vehicles are frequently backed into such posts or uprights and 35 often engage the barrier means connecting such uprights or posts. It is evident, that a vehicle of considerable weight in many cases upsets or bends the uprights or posts and in cases where rigid barrier means are em- 40 ployed, such barrier means are bent or distorted. In cases where the uprights or posts refuse to give to any degree, such uprights or posts are readily uprooted. It will be readily 45 apparent that unless immediate repairs are made, such damaged posts or barrier members

present a rather unsightly appearance. And, it follows that if the fence is to be straightened or replaced, repair costs are involved.

With the above in view it is the main object of the present invention to provide a 50 fence construction including normally stiff but yieldable and bendable posts or uprights such as will readily yield to force applied thereto but upon release of such application of force, will readily be restored to original 55 upright condition. To this end, I have provided a fence post, upright, or staff construction which is suitably anchored to the ground and which will readily yield in any direction upon the application of excessive force there- 60 to. More specifically, I prefer to mount a staff or body portion comprising a tubular resilient water-proof member reinforced by a coil spring in an upwardly extending open 65 ended socket provided in a concrete block adapted to be sunk into the ground and below 70 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 75 provided at one end with a closed loop em- bedded in the concrete anchor and having a suitable bushing or plug member secured to the other end thereof and normally disposed adjacent the upper end of the staff or body 80 portion. A suitable cap is provided for the upper end of the staff or body portion and is detachably secured to such upper end by means of a member having adjustable con- 85 nection with the bushing or plug member. By adjusting this securing means, the pres- 90 sure applied by the cap from the coil spring and tubular casing may be varied thereby permitting of adjustability of the tension of the coil spring whereby the desired normal stiffness of the post or upright may be se- cured.

The securing means for the upper end of the staff or body portion may be formed in- 95 tegrally with the cap or may be in the form

of an extension passing through the cap and provided at its upper end with a suitable barrier receiving means such for example as an eye. Where the present construction is employed, the corner posts or uprights may be provided with such an eye member where a flexible barrier means is employed, but where a solid or tubular barrier means is employed, I prefer to provide a cap securing means having integrally formed therewith a suitable receiving means for the solid or tubular barrier member.

By the provision of a fence construction including normally stiff but yieldable or bendable posts or uprights, where flexible barrier means are employed, collision between a vehicle and one of the uprights will only bend such upright without materially affecting any of the other uprights or posts in the fence. Where solid or tubular barrier members rigidly connect the upper ends of the flexible or bendable posts or uprights, collision between a vehicle and one upright or with the barrier means will cause all of the uprights or posts to yield slightly. In either case, it will be readily apparent that due to the restorative effect of the posts or uprights, the fence will be immediately restored to its original condition upon relief of the excessive pressure thereagainst. Thus, the fence including the salient features of the present invention eliminates unsightliness in fence constructions due to collision therewith by vehicles and at the same time entirely eliminates repair costs.

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 a fragmentary perspective of a fence construction embodying the salient features of the present invention;

Figure 2 is an enlarged axial section through a fence post or upright taken substantially along the line 2—2 of Figure 1;

Figure 3 is an enlarged transverse section taken along the line 3—3 of Figure 2; and

Figure 4 is a side elevation of a modified form of barrier receiving means for corner posts or uprights, a part of the post or upright being shown in section.

In Figure 1, I have illustrated a fragmentary perspective of one side of a street, showing the street pavement 10 bordered by a gutter shoulder 11 including a curb 12. The usual sidewalk 13 is spaced from the curb 12, the curb and sidewalk bounding on opposite sides, a grass plot 14. A suitable vehicle discharge connecting walk 15, connects the curb 12 with the sidewalk 13.

A fence generally indicated at 16 comprises a plurality of posts or uprights 17 and 18, the latter forming the corner posts while the

former form the intermediate supporting posts.

Referring now more particularly to Figures 2 and 3, each post 17 comprises a tubular casing 19 formed of resilient water-proof material such, for example, as rubber, the casing 19 being adapted to be seated at its lower end in a suitable socket 20 provided in the upper end of a concrete anchor 21 preferably of frusto-conical formation. The upper end of the socket 20 is formed with a gradually enlarging mouth portion 22, the purpose of which will be hereinafter described.

A suitable coil spring 23 is concentrically disposed within the casing 19 with its outer periphery in engagement with the inner periphery of the casing 19. Preferably, the adjacent coils of the spring 23 are slightly spaced apart.

To suitably anchor the post or upright 17 in the anchor 21, a flexible cable 24 is provided, the lower end of the cable being formed into a closed loop 25 which is embedded in the concrete anchor 21. The body portion of the cable 24 extends axially through the post or upright 17 and has anchored to its upper end as by soldering or welding, a polygonally faced bushing or plug 26. Preferably, the largest diametric dimension of the plug is slightly larger than the internal diameter of the coil spring 23 so that the polygonal plug or bushing is frictionally seated and retained in the upper end of the coil spring 23 to prevent rotation thereof.

The upper end of the staff or post 17 is provided with a cap 27 including a peripheral flange 28 which is adapted to embrace a portion of the end of the casing 19. The bushing or plug 26 is provided with a threaded bore 29 into which a threaded stud or extension 30 is adapted to take. Stud or extension 30 carries thereon and formed integrally therewith a collar 31 and a suitable barrier receiving ring 32. As will be apparent from Figure 2, the stud 30 extends through a suitable perforation 33 in the cap 27, the collar 31 engaging the upper side of said cap.

Inasmuch as the coils of the spring 23 are slightly spaced apart, any tightening action transmitted to the cap 27 by means of drawing up on the bushing or plug 26, will affect the tension of the spring 23, thereby permitting of variation of such tension whereby the relative stiffness of the staff or post 17 may be varied.

By providing the upper open end of the socket 20 with an enlarged mouth 22, the post 17 may be bent in any direction without imposing any cutting action upon the casing 19 at the upper end of the socket 20.

Referring now more particularly to Figure 4, I have illustrated therein a preferred embodiment of a corner post 18 embodying

the salient features of the present invention, the modification in this case residing in the provision of a barrier receiving means at the corner of a fence such as 16. As in the case 5 of the staff or post 17, the staff or post 18 comprises similar parts, the upper end only being illustrated and including the casing 19', the coil reinforcing spring 23', cable 24', and bushing or plug 26'. The barrier receiving means 34 comprises a substantially spherical hollow body 35 provided with right angularly disposed receiving socket portions 36 and 37 disposed in the same plane. At its bottom portion, the barrier receiving means 10 34 is provided with an integral threaded stud 40. This stud passes through perforation 38' in a cap 38 provided with a laterally extending peripheral flange 39 adapted to take over the upper end of the casing 19' in 15 the same manner as the cap 27 of the previously described form provided for the staff or post 17. The threaded stud or extension 40 is adapted to take into the threaded bore 29' of the bushing or plug 26'. Inasmuch as the 20 function and operation of the modified form of barrier supporting means 34 is similar in character to that employed with the staff or post 17, such function and operation will be readily apparent.

30 It will be of course understood that while I have illustrated a fence comprising a plurality of staffs or posts embodying the features of my invention as interconnected by means of relatively rigid barrier means such 35 for example as 41, any other type of barrier means may be employed instead. In the embodiment disclosed, it will be readily apparent that when any one post or when any portion of the barrier member 41 is struck 40 by a vehicle or other moving object with substantial force, all of the post will yield. In the event, however, that a flexible barrier means is employed to connect the posts, when any one post is struck by a moving 45 vehicle or other object, only such post as is struck will yield. In both cases, any post or posts which are bent by impact will be automatically restored to upright position when relieved of any substantial lateral or trans- 50 verse pressure.

Inasmuch as the outer casing of each of the posts or staffs is formed of water-proof material, both the encased coil spring and the 55 cable anchoring means and associated parts will be effectively shielded from the elements.

Thus a fence embodying the salient features of the present invention provides a simple and efficient construction, self restoring after impact by a moving object, of pleasing appearance, and capable of being utilized with either rigid barrier connecting means or flexible barrier means.

While I have disclosed a preferred embodiment of my invention, it will be understood that I do not wish to be limited there-

to since certain changes may be made therein without departing from the essence of the invention or spirit and scope of the appended claims.

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

1. A fence construction comprising a plurality of anchors adapted to be sunk into the ground, a normally stiff but inherently bendable post supported in each of said anchors providing a plurality of uprights, deflectable laterally in all directions at all points throughout the length thereof each of said uprights being partially seated in said anchors, anchoring means embedded in said anchors for restraining withdrawal of said uprights from their respective anchors, and rigid barrier means connected to the upper extremity of said anchoring means for connecting said uprights into a unitary structure to form a fence laterally yieldable as a unit in all directions upon application of a thrusting pressure upon one of said uprights. 75 80 85

2. A fence construction comprising a plurality of anchors adapted to be sunk into the ground, a normally stiff but inherently bendable post associated with each of said anchors providing a plurality of uprights, deflectable laterally in all directions at all points throughout the length thereof each of said uprights being loosely seated in said anchors, flexible anchoring means embedded in said anchors and extending axially within said uprights for restraining withdrawal of said uprights from their respective anchors but permitting flexion thereof, and rigid barrier means connected to the upper extremity of said anchoring means for connecting said uprights together to form a fence laterally yieldable in all directions whereby pressure applied in any direction upon one of said uprights will be transmitted to each of the other of said uprights. 90 95 100 105

3. A fence construction comprising a plurality of anchors adapted to be sunk into the ground, a normally upright but inherently bendable post associated with each of said anchors and providing a plurality of posts deflectable laterally in all directions at all points along their length, each of said posts being loosely seated at one end in said anchors, flexible anchoring means extending axially within said posts for restraining withdrawal of said posts from their respective anchors but permitting flexion of the posts, said anchoring means being embedded in said anchors 110 115 120

and being detachably associated with the upper end of said posts, and barrier means connected to the upper extremity of said anchoring means for connecting said posts into a unitary structure and arranged in such manner that pressure exerted in any direction upon any of said posts will be transmitted to all of the other posts. 125

4. A fence construction comprising a plu-

rality of posts deflectable laterally in all directions at all points along their length, and rigid barrier means connecting said posts together remote from the lower ends thereof.

5 5. A fence construction comprising a plurality of posts deflectable laterally in all directions at all points along their length and anchored at their lower ends, and barrier means connecting said posts together adjacent their upper ends and so arranged that force applied to one of said posts will be transmitted to each of the other of said posts.

10 In witness whereof, I hereunto subscribe my name this 7th day of August, 1930.

15**JOHN FREI, JR.****20****25****30****35****40****45****50****55****60****65**