United States Patent [19]

Garretson

[11] **3,785,107**

[45] **Jan. 15, 1974**

[54] **POST AND POST BASE ASSEMBLY**

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Related U.S. Application Data

[62] Division of Ser. No. 45,176, June 10, 1970, Pat. No. 3,683,739.

[52] **U.S. Cl.** **52/514,** 52/728, 256/59

[51] **Int. Cl.** **E04c 3/30**

[58] **Field of Search** 256/1, 59, 32, 33; 52/514, 728

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Attorney—Clarence A. O'Brien & Harvey B. Jacobson

[57] **ABSTRACT**

A repair assembly including a first post repair structure and a second repair structure for attaching horizontal fence members to fence posts. The first structure includes an upstanding split clamp sleeve with downwardly divergent bracing legs for clamping about the rotted lower end of a fence post and embedding in ground anchored concrete and the second structure includes an endless, formed and tensioned wire loop arranged to twice horizontally embrace the side of a corresponding fence post remote from the related fence boards and twice vertically embrace the fence board side remote from the corresponding fence post.

5 Claims, 14 Drawing Figures

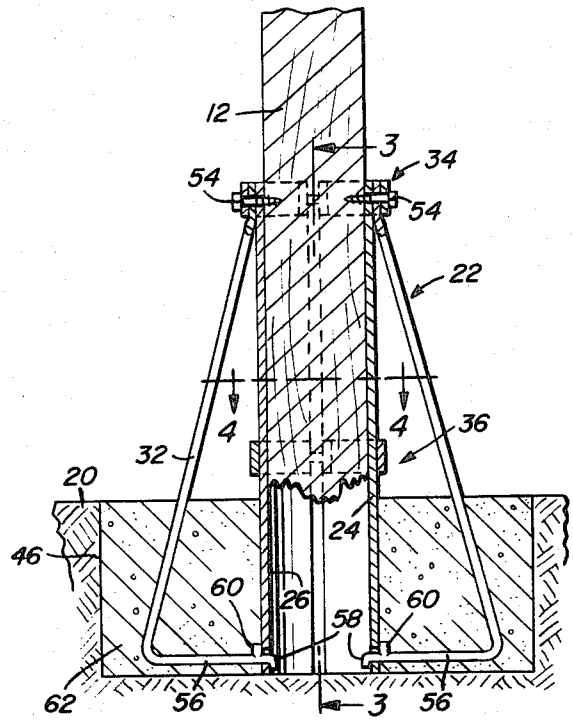


Fig. 1

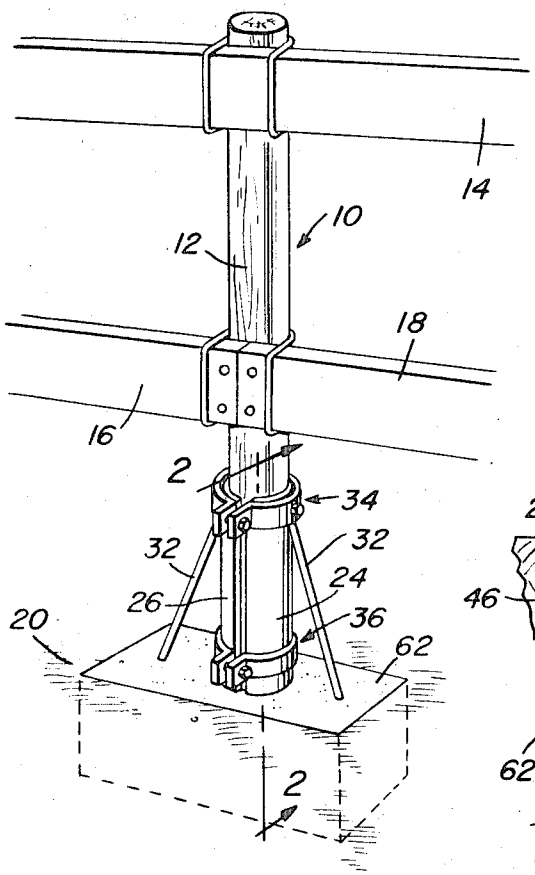


Fig. 2

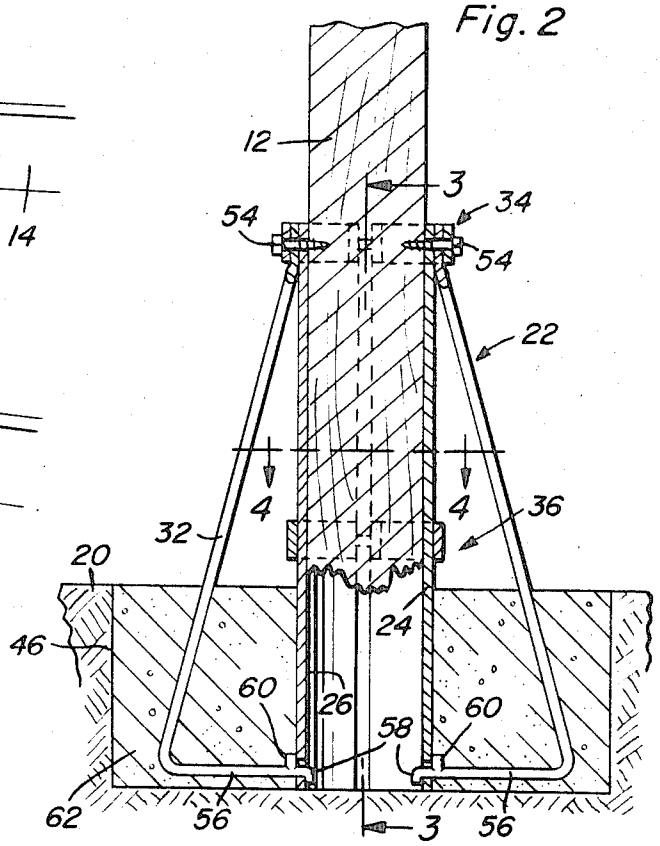


Fig. 3

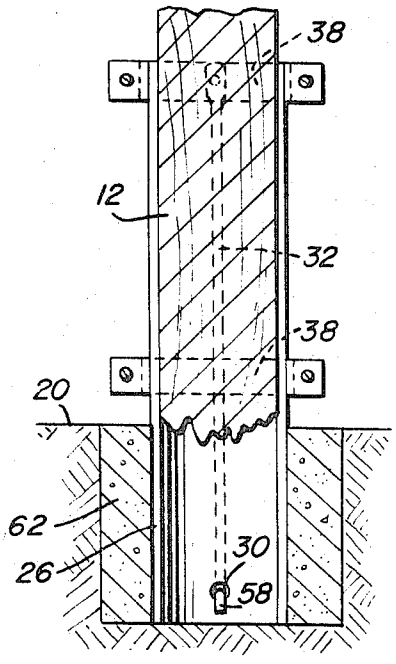


Fig. 4

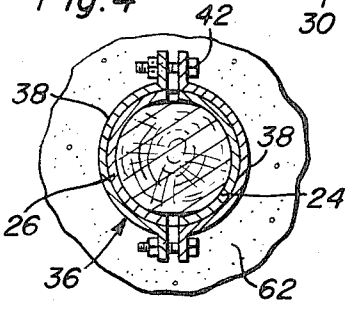


Fig. 5

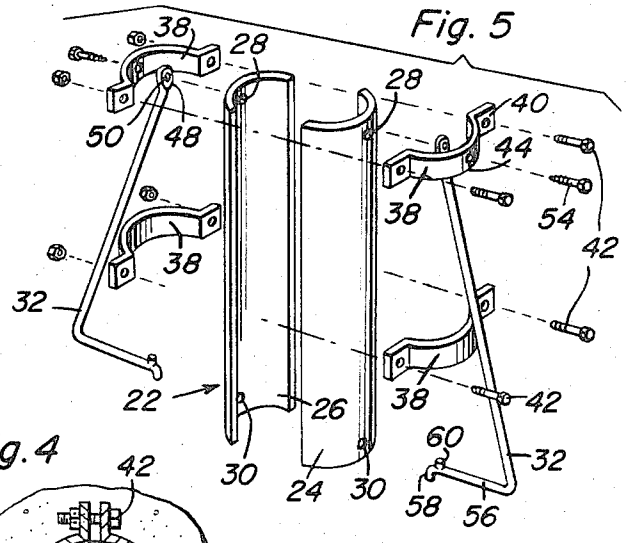


Fig. 6

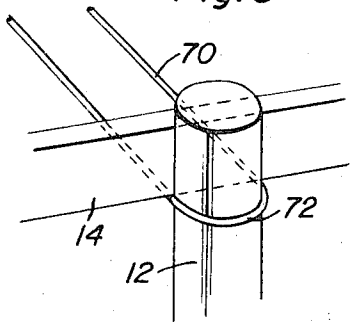


Fig. 7

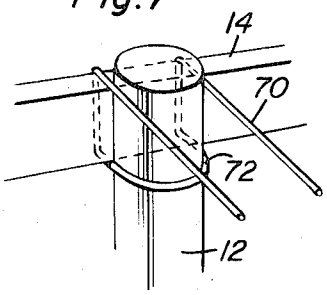


Fig. 8

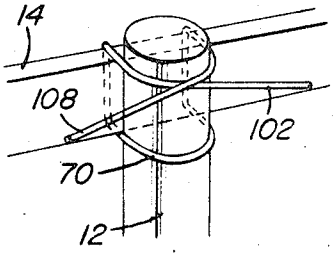


Fig. 9

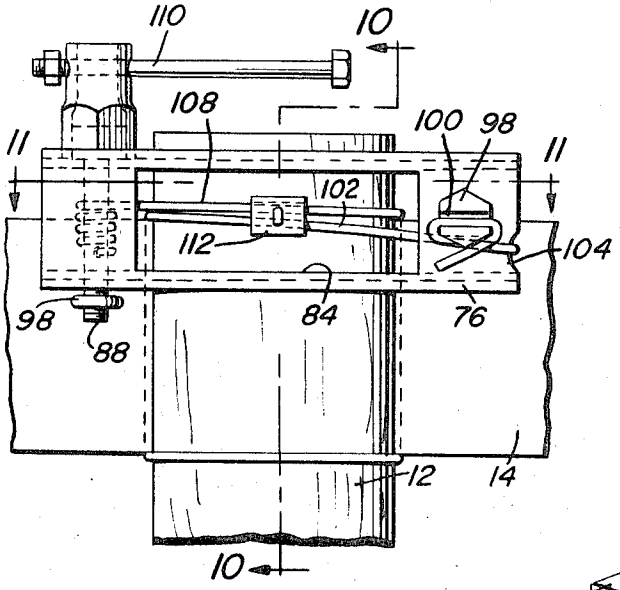


Fig. 10

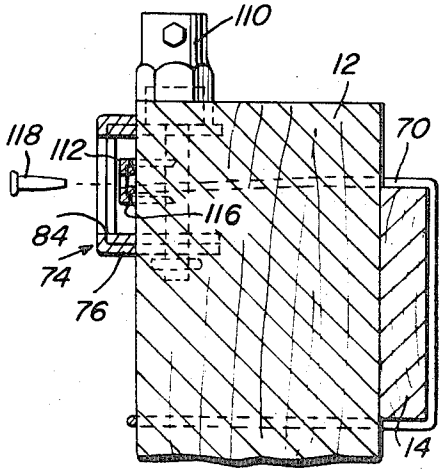


Fig. 11

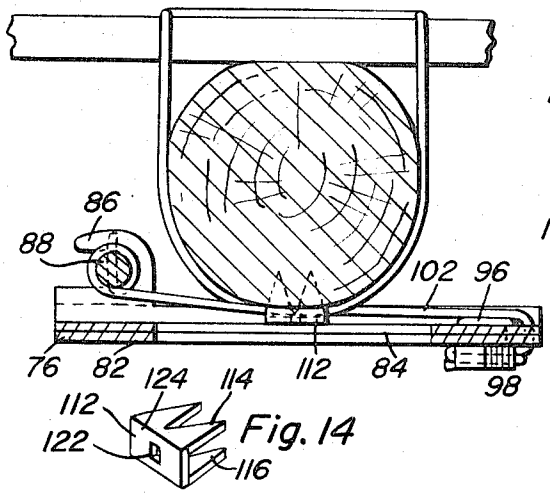


Fig. 12

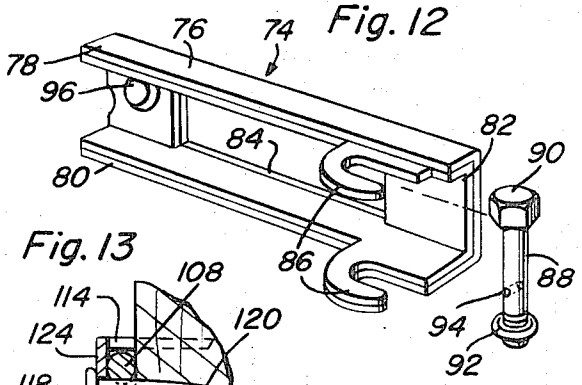


Fig. 13

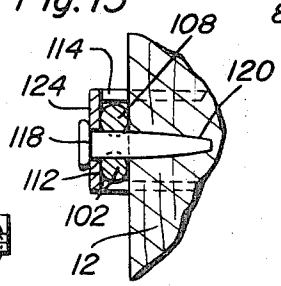


Fig. 14

POST AND POST BASE ASSEMBLY

This is a division, of application Ser. No. 45,176, filed June 10, 1970.

The fence repair structure of the instant invention may be utilized to efficiently repair fence posts and fence rails or boards at their points of attachment to the associated fence posts. The repair structure represents a savings in time of repair as well as money and materials usually associated with fence repair. Further, the repair structure will conserve and extend the serviceable use of the rapid dwindling natural supply of timber.

The repair structure includes first and second repair structures with the first structure comprising a split clamp sleeve for clamping engagement about the lower end of a fence post which is rotted away at ground level. The split clamp is of course disposed upright and the upper portion thereof is clampingly engaged about the lower end of the solid post material remaining while the lower end of the split clamp is embedded in a footing member of large plan area recessed within the ground. The footing member is most desirably a block of poured concrete formed in a recess provided therefor in the ground and in which the lower end of the split clamp is anchored.

The second repair structure includes an elongated bendable wire tension member and also a tool for tensioning the wire after it has been twice encircled about remote sides of a fence post and an associated fence board or rail.

The main object of this invention is to provide a repair assembly for fence structures that may not only be utilized to repair the lower ends of fence posts which have rotted away at ground level but also to repair horizontal fence boards or rails where they have become partially rotted at their points of attachment with associated fence posts.

Another object of this invention, in accordance with the immediately preceding object, is to provide a repair assembly which, after being utilized to repair fence portions, will render the repaired fence portions serviceable for a period of time which in most cases exceeds the original expected period of serviceability of the repaired fence portions.

A final object of this invention to be specifically enumerated herein is to provide a repair assembly in accordance with the preceding objects which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a fragmentary perspective view of a fence with the repair structure of the instant invention operatively associated therewith;

FIG. 2 is an enlarged fragmentary vertical sectional view taken substantially upon the plane indicated by the section line 2—2 of FIG. 1;

FIG. 3 is a vertical sectional view taken substantially upon the plane indicated by section line 3—3 of FIG. 2;

FIG. 4 is a horizontal sectional view taken substantially upon the plane indicated by section line 4—4 of FIG. 2;

FIG. 5 is an exploded perspective view of the first fence post repair structure exclusive of the concrete footing therefor;

FIGS. 6 through 8 are fragmentary perspective views of the upper portion of the fence structure illustrated in FIG. 1 as seen from the reverse side thereof illustrating progressive steps in securing a wire tension member about the upper fence board and the upper end of the fence post;

FIG. 9 is an enlarged fragmentary elevational view illustating the manner in which the tensioning tool portion of the instant invention is utilized in tensioning the wire tension member after it has been applied to the post and the associated fence board or rail;

FIG. 10 is a fragmentary vertical sectional view taken substantially upon the plane indicated by section line 10—10 of FIG. 9;

FIG. 11 is a fragmentary horizontal sectional view taken substantially upon the plane indicated by section line 11—11 of FIG. 9;

FIG. 12 is an exploded perspective view of the wire tensioning tool;

FIG. 13 is a fragmentary vertical sectional view illustrating the manner in which the anchor staple and wedge are operatively associated with the opposite ends of the tension member in order to retain the latter in its tensioned state; and

FIG. 14 is a perspective view of the staple fastener.

Referring now more specifically to the drawings the numeral 10 generally designates a fence structure including a fence post 12, an upper fence rail section 14 and a pair of lower end abutted fence rail sections 16 and 18.

The fence structure is supported from the ground 20 and it may be seen from FIG. 2 of the drawings, that the lower end of the fence post 12 which is normally embedded in the ground 20 has been rotted away.

The first fence post repair structure or assembly of the instant invention is referred to in general by the reference numeral 22 and includes a pair of upstanding half-cylindrical sections 24 and 26 which are identical and include centrally disposed apertures 28 adjacent their upper marginal edge portions and larger diameter central apertures 30 adjacent their lower marginal edge portions.

The fence post repair structure of assembly 22 further includes a pair of bracing rods 32 and a pair of split clamp assemblies 34 and 36 which each include a pair of half-cylindrical strap members 38 provided with angulated apertured end tabs 40 and clamping fasteners 42. The strap members 38 are also centrally apertured as at 44.

When repairing the lower end of the post 12 whose bottom end has rotted away, a recess 46 is formed in the ground 20 in the area in which the lower end of the fence post 12 was embedded in the ground and the half-cylindrical members 24 and 26 are embracingly engaged with opposite sides of the lower end of the fence post 12 in the manner illustrated in FIG. 2 of the drawings with a little less than one-half the length of the members 24 and 26 projecting downwardly below the lower terminus of the rotted fence post 12. The strap members 38 of the split clamp assembly 34 and 36 are thereafter loosely disposed in position and the fasteners

42 are placed in their proper positions but are not tightened. Then, the bracing rods, which include angulated upper end portions 48 apertured as at 50, have the upper end portions 48 thereof placed between the centrally apertured portions of the strap members 38 and the corresponding members 26 and 30 with each set of apertures 28, 44 and 50 registered. Then, a lag screw type of fastener 54 is secured through each set of registered apertures. However, the lower end of each bracing rod 32 includes an inwardly directed horizontal leg portion 56 which terminates inwardly in a downturned tongue 58 and each downturned tongue 58 has been previously engaged with the associated aperture 30 before the upper terminal end portion 48 of the corresponding bracing rod 32 has been positioned as above described. Further, each of the legs 56 includes an upwardly projecting abutment 60 which abuts the outer surface of the corresponding one-half cylindrical member in a manner most clearly illustrated in FIG. 2 of the drawings and after the split clamp assembly 34 and bracing rods 32 have been assembled about the one-half cylindrical members 24 and 26, the split clamp assembly 36 is secured about the mid-portions of the one-half cylindrical members 24 and 26. Then, the various fasteners 42 and 54 are tightened and the fence post repair structure 22 is allowed to rest upon the bottom of the recess 46. Thereafter, with the fence post 12 possibly braced in an upright position as desired, the concrete utilized to form the fitting 62 is poured into the recess 46 about the lower end of the fence post repair structure 22 and allowed to hardened in order to rigidly embed the lower end of the fence post repair structure 22 within the footing 62. In this manner, the lower end portion of the post 12 is fully repaired and is in fact more likely to remain serviceable, in conjunction with the fence post repair structure 22, for a period of time exceeding the original life of the fence post 12 before its repair.

With attention now invited more specifically to FIGS. 6 through 8 of the drawings there will be seen an elongated wire type tension member 70 which has had its mid-portion 72 encircled about the side of the upper end of the post 12 remote from the rail section 14. The free ends of the tension member 70 pass immediately beneath the lower marginal edge portion of the rail section 14 and are then bent upwardly and back over the top or upper marginal edge portion of the rail structure 14 in the manner illustrated in FIG. 7 of the drawings. Then, the free end portions of the tension member 70 are swung toward each other and crossed in the manner illustrated in FIG. 8 of the drawings.

By this sequence of steps of bending the wire tension member 70, vertically spaced horizontal loops are encircled about the side of the fence post 12 remote from the rail section 14 and horizontally spaced vertical loops are encircled about the side of the rail section 14 remote from the fence post 12.

With attention now invited more specifically to FIGS. 9 through 11 of the drawings, there may be seen a tensioning tool referred to in general by the reference numeral 74. The tool 74 includes an elongated channel-shaped body 76 comprising a pair of double-thickness opposite side longitudinal flanges 78 and 80 and a double-thickness web or bight portion 82 extending between corresponding edge portions of the flanges 78 and 80. The bight portion or web 82 includes a central window 84 and one end portion of the body 76 includes notched flange extensions 86 which open endwise outwardly of the corresponding end of the body. A winding member or shaft 88 is provided and includes an enlarged head 90 on one end which may be engaged by a suitable wrench. The winding member 88 includes a radially outwardly projecting and circumferentially extending flange or shoulder 92 on its other end and a diametric bore 94 generally centrally intermediate the flange or shoulder 92 and the head 90.

The winding member 88 is seated in the notched flange extensions 86 for rotation relative to the body 76 and the end of the bight portion or web 82 remote from the flange extensions 86 has a headed shank-type fastener 96 journalled therethrough. The fastener 96 includes an enlarged head 98 on the side of the bight portion or web 82 remote from the flanges 78 and 80 and the head 98 is provided with a diametric slot 100.

In operation, and with attention invited now to FIGS. 8 and 9 of the drawings, the end portion 102 of the tension member 70 is passed beneath the end of the bight portion or web 82 remote from the fastener 96 and bent back over the notched end edge 104 of the bight portion and then about the fastener beneath the head 98 thereof and through the slot 100. In this manner, the end portion 102 is anchored relative to the fastener 96.

The other end portion 108 of the tension member 70 is then inserted through the diametric bore 94 and the winding member 88 is rotated by means of any suitable hand tool such as tool 110 in order to wind the end portion 108 of the tension member 70 about the shank portion of the winding member 88. The winding of the end portion 108 on the winding member 88 will of course cause the tension member 70 to be tensioned and thereafter a double stapel member 112 is placed against the post 12 through the window 84 with the end portions of the tension member 70 received between the legs 114 and 116 of the staple 112. Then, a wedge-type fastener 118 has its minor dimensioned end portion 120 inserted through an opening 122 provided therefor in the web 124 of the staple 112 and the fastener 118 and staple 112 are then driven into the post 12. From FIG. 13 of the drawings it may be seen that the end portions of the tensioned tension member 70 are held captive between the pairs of legs 114 and 116 of the staple 112 and that the wedge-type fastener 118 forces itself between the end portions of the tension member 70. In this manner, not only are the end portions of the tension member 70 clamped between the web portion 124 and the post 12 but also clampled between the inside surfaces of the legs 114 and 116 and the confronting sides of the sedge-type fastener 118. Accordingly, the end portions 102 and 108 of the tension member 70 are tightly retained against relative longitudinal shifting and against any shifting relative to the post 12. Then, the terminal end portions of the tension member 70 may be cut away by any suitable tool adjacent the winding member 88 and the fastener 96 after which the tensioning tool 74 is free to be withdrawn from the post 12 and the cut end portions of the tension members 70 may be removed from the winding member 88 and the fastener 96.

The tension member 70, tensioning tool 74 and staple 112 therefore provide an assembly in conjunction with the wedge-type fastener 118 for not only tensioning the tension member 70 twice about the post 12 and twice about the rail section 14 but also for securing the end portions of the tension member 70 against dis-

placement relative to each other, the post **12** and the rail section **14.**

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling with the scope of the invention as claimed.

What is claimed as new is as follows:

1. In combination, an upstanding fence post and a fence post base assembly, said assembly including an upright sleeve assembly, split longitudinally into opposing sleeve halves, a rigid footing member of a horizontal length greater than its horizontal width, thhe lower end of said sleeve assembly being embedded in said footing member with said sleeve halves spaced along the horizontal length of said footing member and opening toward the remote ends of said footing member, said post having its lower end portion snugly telescoped downwardly into said sleeve assembly to a point at least slightly below the vertical center of said sleeve assembly, a pair of upper and lower clamps extending about and clampingly engaging the upper ends and mid portions of said sleeve halves to said lower end portion of said post, a pair of downwardly divergent bracing legs rigidly attached to their upper ends to opposite sides of said upper clamp and the remote circumferential midportions of said upper ends of said sleeve halves, the lower end portions of said legs being embedded in said footing and terminating downwardly in inwardly directed generally horizontal lower terminal end portions also embedded in said footing member and having their adjacent inner ends anchored to remote circumferential midportions of the lower ends of said sleeve halves.

2. The combination of claim **1** wherein each of said clamps comprises a pair of opposing generally semi-cylindrical strap members with opposite end outwardly directed apertured end tabs and a pair of threaded fasteners secured through corresponding end tabs to clamp the strap members about said sleeve assembly, the upper ends of said bracing legs being disposed beneath the midportions of the corresponding strap members between the latter and said remote circumferential midportions of said upper ends of said sleeve halves, and a fastener secured through each bracing leg upper end and the corresponding strap member and the sleeve half.

3. The combination of claim **2** wherein the last mentioned fasteners are also fastened directly to said post.

4. The combination of claim **1** wherein said sleeve halves are generally semi-cylindrical in configuration.

5. The combination of claim **1** wherein said footing member comprises a body of hardened poured fluent material.

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