REBAR SUPPORT PEG

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ABSTRACT

A support peg for a reinforcing bar is formed from sheet metal bent to define two plates each extending from a bend line outwardly to a side edge of the body. The plates combine to form a peg portion along the bend line which can be hammered into the ground with a bottom point and a coterminous top hammering edge. One or both of the plates has a side portion standing outwardly from a side edge of the plate portion thereof and defining a bottom shoulder of the side portion facing downwardly for engaging the ground and acting as a depth gauge when the peg is driven into the ground. One or both of the side portions has a receptacle at the top or side edge for receiving a reinforcing bar and for supporting the reinforcing bar on the side portion at a position spaced from the ground.
REBAR SUPPORT PEG

[0001] This invention relates to a support peg which can be driven into the ground and includes a support receptacle for a reinforcing bar to be received in a concrete pour.

BACKGROUND OF THE INVENTION

[0002] In pouring of concrete to form base pads or roadway panels, it is typical to lay reinforcing bars in a grid pattern over the hard packed base layer onto which the concrete is poured.

[0003] The bars must be supported from the ground at a height above the ground so as to be buried at the required depth in the poured concrete.

[0004] One style of support comprises a peg or nail which is driven into the hard packed layer to a required depth and which includes a shelf or arm which carries the bar. An array of such pegs is used across the pad to be poured.

[0005] A number of prior art patents show pegs designed to or suitable to support reinforcing bars during the pouring of concrete. These include:

[0006] U.S. Pat. No. 2,031,265 (Keseling) issued Feb. 18, 1936 which discloses a peg formed from sheet metal bent to form a channel in horizontal cross section with a rear wall of the channel shaped with a top recess to receive the bar and one side of the channel projecting upwardly to form a leg which can bend over the bar to hold it in place. A flap in the rear wall is bent outwardly to form a depth gauge to engage the ground at the required depth. It is not clear how a hammering force is applied to the peg to drive it into the ground.

[0007] U.S. Pat. No. 3,572,001 (Munchinsky) issued Mar. 23, 1971 which discloses a peg formed from sheet metal bent to form a right angle in horizontal cross section with two legs projecting upwardly which can bend over the bar to hold it in place. A plurality of holes are provided to receive a pin at a selected depth to form a depth gauge to engage the ground at the required depth. It is not clear how a hammering force is applied to the peg to drive it into the ground.

[0008] U.S. Pat. No. 3,758,062 (Caldwell) issued Sep. 11, 1973 which discloses a peg formed from sheet metal bent to form a channel in horizontal cross section with a series of holes to receive a wire to support the bar. A cap is applied over the upper end to receive a hammering force applied to the peg to drive it into the ground.

[0009] U.S. Pat. No. 6,112,494 (Hardy) issued Sep. 5, 2000 which discloses a molded structure with an upper cradle for the reinforcing bars and a depending leg for standing on the ground.

[0010] US Patent Application 2008/0209843 (Helms) published Sep. 4, 2008 which discloses a sheet metal set holder with a series of upper slots for the bars and a pair of horizontal flaps at the rear which engage over a piece of the rebar driven into the ground as a peg.

SUMMARY OF THE INVENTION

[0011] It is one object of the invention to provide a support peg which can be driven into the ground and includes a support receptacle for a reinforcing bar.

[0012] According to one aspect of the invention there is provided a support peg for a reinforcing bar comprising:

[0013] a peg body formed from sheet metal bent along a bend line to define two plates each extending from the bend line outwardly to a side edge of the body with the plates meeting at the bend line at an angle;

[0014] the plates each having a plate portion at the bend line which extends continuously from an upper edge of the peg body to lower edge of the peg body;

[0015] the plate portions being tapered at the lower edge to define a bottom pointed portion to be driven into the ground;

[0016] the plate portions being coterminal at the top edge so that the top edge lies substantially in a common plane to define a horizontal top surface which can receive hammer blows for the peg to be driven into the ground;

[0017] at least one of the plates having a side portion standing outwardly from a side edge of the plate portion thereof and defining a receptacle for receiving a reinforcing bar and for supporting the reinforcing bar on the side portion at a position spaced from the ground.

[0018] At least one of the plates having a side portion standing outwardly from a side edge of the plate portion thereof and defining a receptacle for receiving a reinforcing bar and for supporting the reinforcing bar on the side portion at a position spaced from the ground.

[0019] In a preferred arrangement, both the plates have a respective side portion standing outwardly from a side edge of the plate portion thereof and defining a bottom shoulder of the side portion facing downwardly for engaging the ground and acting as a depth gauge when the peg is driven into the ground.

[0020] In one preferred arrangement, the receptacle is located in a top edge of the plate portion and preferably there is provided a second peg comprising a peg body formed from sheet metal bent along a bend line to define two plates each extending from the bend line outwardly to a side edge of the body with the plates meeting at the bend line at an angle; the plates each having a plate portion at the bend line which extends continuously from an upper edge of the peg body to lower edge of the peg body; the plate portions being tapered at the lower edge to define a bottom pointed portion to be driven into the ground; the plate portions being coterminal at the top edge so that the top edge lies substantially in a common plane to define a horizontal top surface which can receive hammer blows for the peg to be driven into the ground; one of the plates having a side portion standing outwardly from a side edge of the plate portion thereof and defining a bottom shoulder of the side portion facing downwardly for engaging the reinforcing bar supported on the peg.

[0021] In a second preferred arrangement, the receptacle is located in a side edge of the plate portion so as to form a covering edge which holds the rebar down.

[0022] In a third preferred arrangement, the plate portion is cut to form a strap portion which can wrap over the reinforcing bar with the strap portion being formed by cutting the plate portion along the outer side edge thereof leaving the strap portion attached to the plate portion adjacent the receptacle.

[0023] In a fourth preferred arrangement, both the plates have a respective side portion standing outwardly from a side edge of the plate portion thereof and each defining a receptacle for receiving a reinforcing bar and for supporting the reinforcing bar on the side portion at a position spaced from the ground so that the supported reinforcing bars are at right angles and at different heights.

[0024] According to a second aspect of the invention there is provided an array of reinforcing bars for reinforcing a concrete pad comprising:
[0025] a first set of parallel reinforcing bars extending in a first direction;
[0026] a second set of parallel reinforcing bars extending in a second direction at right angles to the first direction;
[0027] a plurality of support pegs, each driven into the ground and arranged to support one or more of the reinforcing bars;
[0028] each support peg comprising:
[0029] a peg body formed from sheet metal bent along a bend line to define two plates each extending from the bend line outwardly to a side edge of the body with the plates meeting at the bend line at an angle;
[0030] the plates each having a plate portion at the bend line which extends continuously from an upper edge of the peg body to lower edge of the peg body;
[0031] the plate portions being tapered at the lower edge to define a bottom pointed portion to be driven into the ground;
[0032] the plate portions being coterminous at the top edge so that the top edge lies substantially in a common plane to define a horizontal top surface which can receive hammer blows for the peg to be driven into the ground;
[0033] at least one of the plates having a side portion standing outwardly from a side edge of the plate portion thereof and defining a bottom shoulder of the side portion facing downwardly for engaging the ground and acting as a depth gauge when the peg is driven into the ground;
[0034] at least one of the plates having a side portion standing outwardly from a side edge of the plate portion thereof and defining a receptacle for receiving a reinforcing bar and for supporting the reinforcing bar on the side portion at a position spaced from the ground.

BRIEF DESCRIPTION OF THE DRAWINGS

[0035] One embodiment of the invention will now be described in conjunction with the accompanying drawings in which:
[0036] FIG. 1 is a front elevational view of a first peg according to the present invention.
[0037] FIG. 2 is an isometric view of the peg of FIG. 1.
[0038] FIG. 3 is a side elevational view of a hold down peg for use with the peg of FIG. 1.
[0039] FIG. 4 is an isometric view of the hold down peg of FIG. 3.
[0040] FIG. 5 is an isometric view of a second peg according to the present invention.
[0041] FIG. 6 is an isometric view of a third peg according to the present invention.
[0042] FIG. 7 is an isometric view from the opposite side of the peg of FIG. 6.
[0043] In the drawings like characters of reference indicate corresponding parts in the different figures.

DETAILED DESCRIPTION

[0044] A support peg for engaging into the ground to support an array of reinforcing bars is shown in FIGS. 1 and 2 and comprises a support peg body 10 formed from sheet metal which is bent about a vertical bend line 11 to form two plates 12 and 13. Each of the plates includes a first plate portion adjacent the bend line shown as plate portion 12A of the plate 12. These plate portions extend from a coterminous top edge 14 downwardly to a lower edge 15 where each of the plate portions 12A and 13A is tapered as indicated at 12B, 13B to define a pointed section 16 which can be driven into the ground.
[0045] Beyond the side of each of the plate portions 12A and 13A as defined by dash lines 12C and 13C is formed an extended side portion 12D and 13D respectively. It will be appreciated that the dotted lines 12C and 13C are in effect imaginary lines within the plate itself. However it will also be appreciated that these side edges of the plate portion are continuous through the structure from the top edge 14 to the bottom pointed portion 16. Therefore the plate portions 12A and 13A define a structurally sound element which has sufficient material thickness and sufficient plate width to withstand the necessary hammering force applied to the top edge 14 to drive the pointed lower end 16 into the ground. In the casting of concrete, the ground or surface underneath the poured layer of concrete is typically a packed layer of hard core or gravel so that the hammering action necessary to drive the peg into the ground is significant. However it will be appreciated that the gauge or thickness of the material can be selected relative to the size of the peg to allow such hammering action to occur thus driving the peg into the ground.
[0046] The side portions 12D and 13D extend outwardly beyond the main right angle portion defined that part of the peg that is to be driven and thus form flaps or projecting portions not intended to contribute significantly to the strength of the portion of the peg to be driven. However these side or flaps define a common bottom edge 12E, 13E which are arranged at a common height spaced upwardly from the pointed portion 16 by a distance measuring the length of the peg portion to be driven into the ground. The bottom of the flaps or side portions thus define a shoulder which butts the ground when the peg is driven sufficiently into the ground so also to provide stabilizing support for the peg and also to define a depth gauge for the peg.
[0047] In the embodiment of FIG. 1 the side portion 13D is greater in width than the side portion 12D. This portion 13D has a receptacle 13F at its upper edge with the receptacle being recessed from the top edge 14 to be hammered. The receptacle has a width and a height sufficient to receive the diameter of the reinforcing bar to be supported. The receptacle includes a side upstanding portion 13G which is arranged to engage a side of the reinforcing bar to hold it within the receptacle.
[0048] The upper part of the receptacle is open allowing the reinforcing bar simply to be dropped in from the top resting against the upstanding retaining member 13G and also against the side 13H1 of the receptacle which is along the line 13C.
[0049] The peg thus formed can simply replace nails or other longitudinal driven members with the structure of the sheet metal providing the butting shoulder at the bottom defining the depth gauge and also defining the receptacle to carry the reinforcing bar without the necessity for additional elements to be welded in place on the peg itself.
[0050] In FIGS. 3 and 4 is shown a second element 20 which is arranged to act as a hold down to engage the top of a reinforcing bar sitting within the receptacle 13F. Thus the hold down member 20 is similarly formed from sheet metal to define plates 21 and 22 again arranged at a right angle with those plates having portions 21A and 22A at the bend line 23 which act as a structural peg member extending from a pointed portion 24 at the lower to an upper hammering surface 25 at the upper end. The plate 21 carries a projecting side
portion 21B with a receptacle 21C in a bottom edge of the plate portion 21B so that this receptacle can engage over the reinforcing bar within the receptacle 21C and hold it down against the bottom of the receptacle 21C thus trapping the reinforcing bar between the two pegs.

[0051] In FIG. 5 is shown an arrangement similar to that of FIG. 1 so as to define a peg 30 having plates 31 and 32 again extending from a pointed lower end 33 to an upper hammering surface 34. In this embodiment each of plates 31 and 32 includes a plate portion 31A and 32A extending outwardly from a side edge 31B and 32B of the plates respectively. Each of these plate portions includes a receptacle 31C and 31D. The receptacle 31D is of the same construction as the receptacle shown in FIG. 1.

[0052] As an alternative embodiment, the receptacle 31C is formed in the side edge 31D of the plate portion rather than in the top edge. This forms a mouth 31E through which the reinforcing bar can be inserted with that reinforcing bar dropping downwardly into a bottom of the receptacle 31C to rest against a surface 31F. Thus the receptacle 31C acts to confine the reinforcing bar in both side to side and vertical directions.

[0053] The receptacle 31C is arranged below the receptacle 31D so that the reinforcing bar extending through the receptacle 31C is at right angles to the reinforcing bar in receptacle 31D and underneath the reinforcing bar and receptacle 31D. This single peg therefore holds the reinforcing bar of the right angle grid pattern of reinforcing bars commonly used. The number of pegs can therefore be reduced by ensuring that each peg is located at a junction between two reinforcing bars of the grid pattern with the peg supporting both those of those reinforcing bars. A hold down member of the type shown in FIGS. 3 and 4 can be used if necessary to hold the reinforcing bar in the receptacle 31D downwardly into the receptacle.

[0054] In FIGS. 6 and 7 is shown yet another arrangement again of basically the same construction providing a peg 40 with plates 41 and 42 of the construction previously described. The plate 42 includes a plate portion 42A outwardly of a line 42B but again forms a receptacle 42C for the reinforcing bar at right angles to the plate portion 42A. In this embodiment a strip portion 42D is cut from the side edge 42E of the plate portion 42A and is sufficiently narrow so that it can be bent manually from its position along side the edge 42E upwardly and over a top reinforcing bar 44 sitting on a reinforcing bar 45 within the receptacle 42C. Thus the strip portion from the side edge of the plate portions 42A can act as a hold down by bending over the reinforcing bar 44 thus hold both reinforcing bars 44 and 45 downwardly against the bottom surface of the receptacle 42C. The reinforcing bar 44 simply sits on the reinforcing bar 45 and thus is supported at the required spaced position from the ground again using the bottom edges of the plate portion 42A as a depth gage.

[0055] Also in FIGS. 6 and 7 there is shown a slot 46 which is cut in the body so as to lie along the bend line 47 at the lower pointed portion 48. This slot is cut in the metal while it remains at a flat blank form at the same time as the remaining edges and shapes are cut and prior to bending. The slot counteracts the increased difficulty of bending the body to form the plates 41 and 42 at the bend line 47 due to decreasing width of the plates at the lower pointed portion 48. The slot starts at an upper end 46A at or adjacent the upper end of the pointed portion and extends to a lower end 46B close to but spaced from the tip of the pointed portion. In this way the tip remains intact and cannot split onto two parts which may bend and interfere with the engagement into the ground. The slot is of a width which is effectively the minimum which can be cut and the material removed at the bend line, thus weakening the material at the bend line to allow bending without weakening the structure sufficiently in the longitudinal direction to interfere with ground penetration.

[0056] Since various modifications can be made in my invention as herein above described, and many apparently widely different embodiments of same made within the spirit and scope of the claims without department from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

1. A support peg for reinforcing bar comprising:
   a peg body formed from sheet metal bent along a bend line to define two plates each extending from the bend line outwardly to a side edge of the body with the plates meeting at the bend line at an angle;
   the plates each having a plate portion at the bend line which extends continuously from an upper edge of the peg body to lower edge of the peg body;
   the plate portions being tapered at the lower edge to define a bottom pointed portion to be driven into the ground;
   the plate portions being coterminous at the top edge so that the top edge lies substantially in a common plane to define a horizontal top surface which can receive hammer blows for the peg to be driven into the ground;
   at least one of the plates having a side portion standing outwardly from a side edge of the plate portion thereof and defining a bottom shoulder of the side portion facing downwardly for engaging the ground and acting as a depth gauge when the peg is driven into the ground;
   at least one of the plates having a side portion standing outwardly from a side edge of the plate portion thereof and defining a receptacle for receiving a reinforcing bar and for supporting the reinforcing bar on the side portion at a position spaced from the ground.

2. The support peg according to claim 1 wherein both the plates have a respective side portion standing outwardly from a side edge of the plate portion thereof and defining a bottom shoulder of the side portion facing downwardly for engaging the ground and acting as a depth gauge when the peg is driven into the ground.

3. The support peg according to claim 1 wherein the receptacle is located in a top edge of the plate portion.

4. The support peg according to claim 3 wherein there is provided a second peg comprising a peg body formed from sheet metal bent along a bend line to define two plates each extending from the bend line outwardly to a side edge of the body with the plates meeting at the bend line at an angle; the plates each having a plate portion at the bend line which extends continuously from an upper edge of the peg body to lower edge of the peg body; the plate portions being tapered at the lower edge to define a bottom pointed portion to be driven into the ground; the plate portions being coterminous at the top edge so that the top edge lies substantially in a common plane to define a horizontal top surface which can receive hammer blows for thepeg to be driven into the ground; one of the plates having a side portion standing outwardly from a side edge of the plate portion thereof and defining a bottom shoulder of the side portion facing downwardly for engaging the reinforcing bar supported on the peg.

5. The support peg according to claim 1 wherein the receptacle is located in a side edge of the plate portion so as to form a covering edge which holds the rebar down.
6. The support peg according to claim 1 wherein the plate portion is cut to form a strap portion which can wrap over the reinforcing bar.

7. The support peg according to claim 6 wherein the strap portion is formed by cutting the plate portion along the outer side edge thereof leaving the strap portion attached to the plate portion adjacent the receptacle.

8. The support peg according to claim 1 wherein both the plates have a respective side portion standing outwardly from a side edge of the plate portion thereof and each defining a receptacle for receiving a reinforcing bar and for supporting the reinforcing bar on the side portion at a position spaced from the ground.

9. The support peg according to claim 1 wherein there is provided a slot which is cut in the body so as to lie along the bend line at the lower pointed portion with a lower end of the slot spaced from a tip of the pointed portion.

10. An array of reinforcing bars for reinforcing a concrete pad comprising:
    a first set of parallel reinforcing bars extending in a first direction;
    a second set of parallel reinforcing bars extending in a second direction at right angles to the first direction;
    a plurality of support pegs, each driven into the ground and arranged to support one or more of the reinforcing bars;
    each support peg comprising:
        a peg body formed from sheet metal bent along a bend line to define two plates each extending from the bend line outwardly to a side edge of the body with the plates meeting at the bend line at an angle;
        the plates each having a plate portion at the bend line which extends continuously from an upper edge of the peg body to lower edge of the peg body;
        the plate portions being tapered at the lower edge to define a bottom pointed portion to be driven into the ground;
        the plate portions being coterminous at the top edge so that the top edge lies substantially in a common place to define a horizontal top surface which can receive hammer blows for the peg to be driven into the ground;
        at least one of the plates having a side portion standing outwardly from a side edge of the plate portion thereof and defining a bottom shoulder of the side portion facing downwardly for engaging the ground and acting as a depth gauge when the peg is driven into the ground;
        at least one of the plates having a side portion standing outwardly from a side edge of the plate portion thereof and defining a receptacle for receiving a reinforcing bar and for supporting the reinforcing bar on the side portion at a position spaced from the ground.

11. The array according to claim 10 wherein both the plates have a respective side portion standing outwardly from a side edge of the plate portion thereof and defining a bottom shoulder of the side portion facing downwardly for engaging the ground and acting as a depth gauge when the peg is driven into the ground.

12. The array according to claim 10 wherein the receptacle is located in a top edge of the plate portion.

13. The array according to claim 10 wherein there is provided a second peg comprising a peg body formed from sheet metal bent along a bend line to define two plates each extending from the bend line outwardly to a side edge of the body with the plates meeting at the bend line at an angle; the plates each having a plate portion at the bend line which extends continuously from an upper edge of the peg body to lower edge of the peg body; the plate portions being tapered at the lower edge to define a bottom pointed portion to be driven into the ground; one of the plates having a side portion standing outwardly from a side edge of the plate portion thereof and defining a bottom shoulder of the side portion facing downwardly for engaging the reinforcing bar supported on the peg.

14. The array according to claim 10 wherein the receptacle is located in a side edge of the plate portion so as to form a covering edge which holds the rebar down.

15. The array according to claim 10 wherein the plate portion is cut to form a strap portion which can wrap over the reinforcing bar.

16. The array according to claim 15 wherein the strap portion is formed by cutting the plate portion along the outer side edge thereof leaving the strap portion attached to the plate portion adjacent the receptacle.

17. The array according to claim 10 wherein both the plates have a respective side portion standing outwardly from a side edge of the plate portion thereof and each defining a receptacle such that one of the side portions supports a reinforcing bar of the first set and the other of the side portions supports a reinforcing bar of the second set at a position spaced from the ground.

18. The array according to claim 10 wherein each peg includes a slot which is cut in the body so as to lie along the bend line at the lower pointed portion with a lower end of the slot spaced from a tip of the pointed portion.

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