

PAPER A: PREPARATION OF A PATENT SPECIFICATION
7 October 2014, Tuesday
1330 – 1730 hrs

Maximum Time: 4 Hours (includes reading time)

Maximum Marks: 100



INSTRUCTIONS TO CANDIDATES

1. This Paper consists of 18 pages, including this cover page.
2. Type/Write your answers in English. Answers in any other language will not be marked.
For candidates who opted out from laptop examination: Answers in illegible handwriting will not be taken into consideration.
3. One hardcopy of the question paper is provided, for your reading and for your use (optional) when answering the question(s) in the Answer Script/Answer Booklet(s). For candidates who opted out from laptop examination: You are given two hardcopies of the question paper.
4. Only your answers and/or drawings to the question(s) typed/written or indicated/glued in the Answer Script/Answer Booklet(s) provided by the Examination Secretariat will be considered. Candidates should not change the format of the Answer Script or type in the margin. For candidates who opted out from laptop examination: You are to write on one side of each sheet in the Answer Booklet(s).
5. Information provided in the question(s) may be obtained from actual situations or modified therefrom for the purpose of this examination. You should accept the facts given in the paper. Assume also that the prior art given is exhaustive.
6. The documents provided in this question are:
 - a. Client's Write-up of His Invention (2 pages);
 - b. Annexure A (2 pages of drawings);
 - c. Annexure B (3 pages of description and 3 pages of drawings); and
 - d. Annexure C – Prior Art (7 pages).

End

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Client's Write-up of His Invention (1/2)

An existing client has contacted you regarding a new matter. They have been producing border elements for garden beds for years. The current product is a very simple design, and they have provided you with some drawings in Annexure A. As shown in Figure 1, the border element 1 has a wooden or plastic board 2 with stakes 3 that are fixed to the bottom surface of the board 2. The stakes 3 are simply nailed into the board 2 and have pointed ends 4 to be driven into the ground. Typically, two stakes 3 are provided along the bottom of the board 2, near the respective ends thereof, but the number can vary depending on the length of the board 2. The board element s1 come in different lengths and heights. They are used to define garden beds or boundaries in private or public gardens. The board 2 may have a flat or ornamental surface finish.

For installation of the border element 1, the board 2 is positioned with the stakes 3 above the ground 30, and applying a force to drive the stakes 3 into the ground 30 until the board 2 is level with or just above the ground 30, as illustrated in Figures 3 a) and b) of Annexure A.

Another type of border element 10 which they are selling is of a small picket fence type design with a beam structure comprising vertical beams 11 interconnected by one or more horizontal beams 12, as shown in Figure 2 of Annexure A. In those border elements 10, the stakes 13 are fixed to the bottom surfaces of one or more of the vertical beams 11. Again, the board elements 10 come in different lengths and heights.

The product has been very successful, but increasingly they have received feedback that there are shortcomings with the general design. Customers find it difficult to push the board or the beam structure with the fixed stakes into the ground using only their hands, in particular when the ground contains stones. Often, a hammer must then be used to force the board or the beams with the fixed stakes into the ground. However, the use of a hammer often results in blemishes to the top of the board of the beams, even if a cloth or the like is used to protect the surfaces. Also, because the board or the beam structure needs to be balanced on the stakes, as the hammer impacts on the board or the beam structure to drive the stakes into the ground, it can happen that the board or the beam structure pivots on the stakes out of the vertical

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Client's Write-up of His Invention (2/2)

orientation and towards the ground. This even poses an injury risk for the user, so that your client would like to eventually take the old product from the market.

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They have come up with a new design, and have provided you with a description and some schematic drawings in Annexure B. They told you that the inventor came up with the new design after watching a home and garden show on TV last month. In that show, there was a segment on recycling old floorboards by turning them into border elements for garden beds. This involved simply drilling long holes across the boards from one small side to the other, and using long nails inserted through the holes and driven into the ground to secure the boards as border elements for garden beds.

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In the client's opinion, their new design and installation technique addresses the shortcomings of their current products and they expect it to be very successful. They are mainly interested in protection for the product, but because the product can also be used in publicly accessible gardens and parks, including commercial botanic gardens or amusement parks, they would also like to stop installation of garden beds using their new design for broader protection, if possible.

15

You have conducted a preliminary search, and have identified one prior art patent document, attached as Annexure C, which appears to describe a retainer into which one end of a stake is received for securing a border element on the ground.

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The client wants you to prepare and file a Singapore patent application for the invention, and would prefer to not have more than 10 claims.

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Annexure A (1/2)

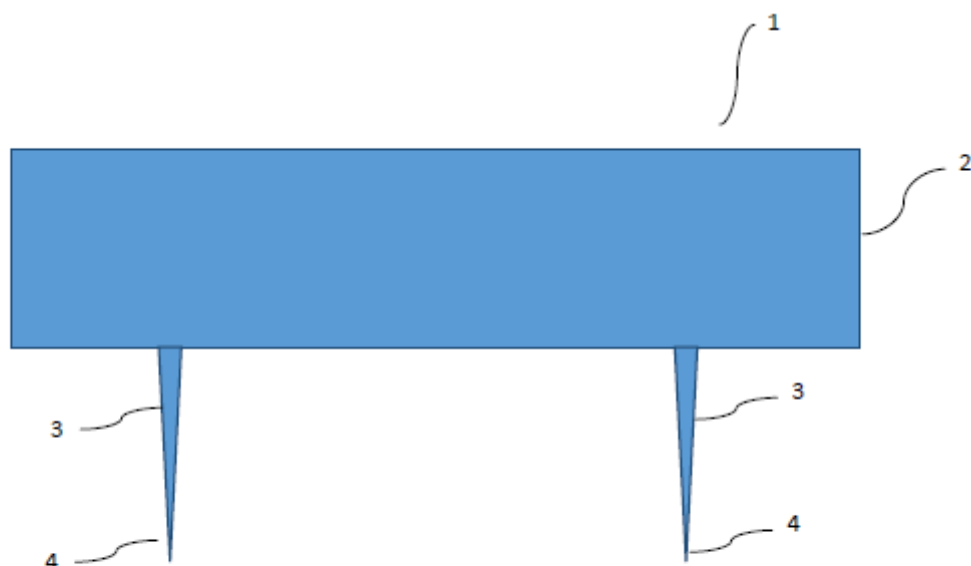


Figure 1

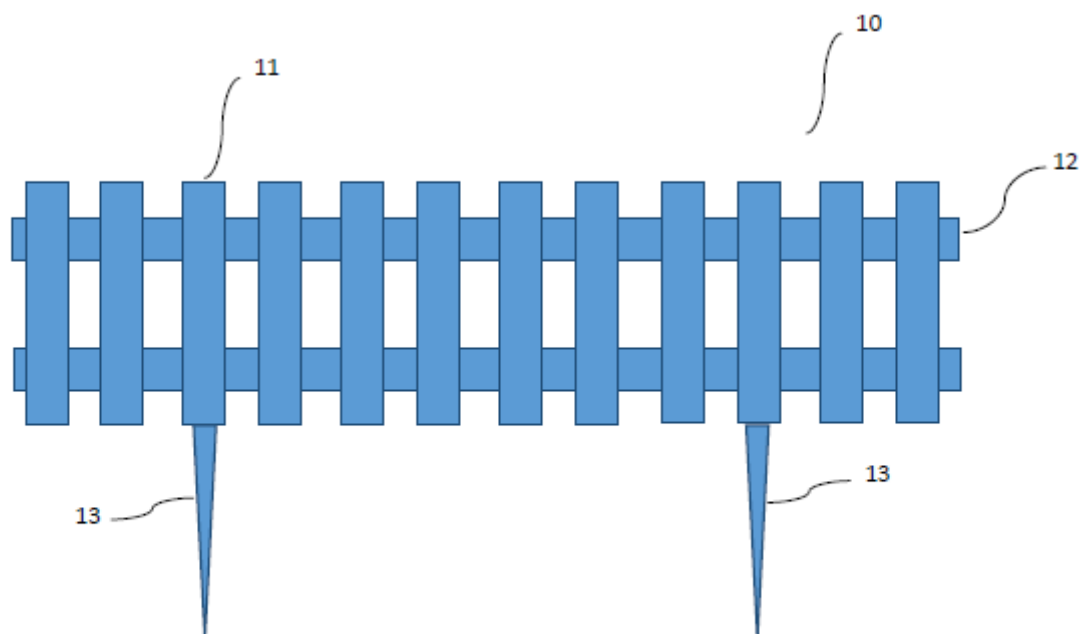


Figure 2

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Annexure A (2/2)

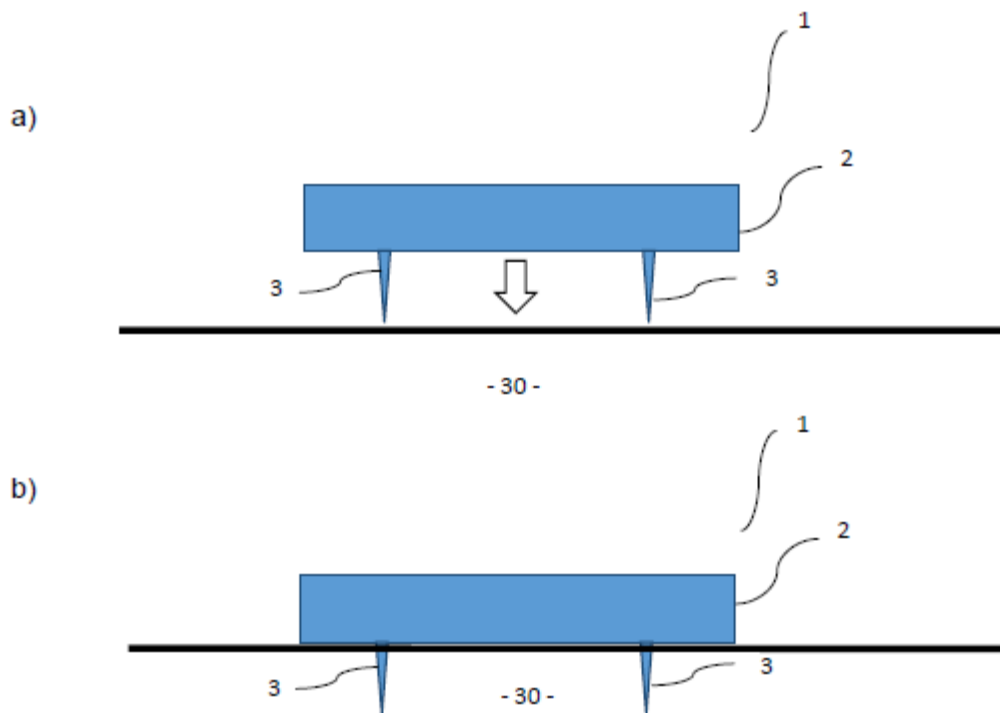


Figure 3

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Annexure B (1/6)

Description

Figure 1 shows a schematic drawing of a new border element 100. Instead of fixing the stakes
5 to the bottom of the board 102, brackets 104 are provided on a vertical surface 106 of the board
102. The brackets 104 are sized to receive stakes 108 in a sliding fashion. In that way, the
board 102 can be placed directly on the ground and the stakes 108 can be driven into the
ground using the brackets 104 as a secure guide.

10 More specifically, and as shown in Figures 6 a) and b), for installation of the border element 100,
the board 102 is positioned on the ground 600, with the stakes 108 projecting above the board
102, such that their tips (hidden in Figure 6) rest on the ground 600. The stakes 108 are then
driven into the ground 600, for example using a hammer, for securing the board 102 and using
the brackets 104 as a secure guide. The border element 100 is thus easily secured to the
15 ground 600 in the desired position. Having the bracket 104 guiding the stake also means that,
compared to the system shown on the home and garden show, the tops of the stakes 108 are
laterally displaced from the top of the board 102, and thus damage to the board is less likely.
Also, since the stakes 108 move within channels which are not within the board 102, stakes 108
with larger diameters and head sizes can be used.

20 Returning to Figure 1, for stable guiding of the stakes 108, the brackets 104 should be of the
same height as the height of the board 102. The stakes 108 move directly along the surface of
the board 102 and within a U-shaped channel provided by each bracket 104. Because the
stakes 108 will be located directly against the board 102 when the border element 100 is
25 installed on the ground, this provides improved support for the board 102 in its desired vertical
disposition.

It is best to have the stakes 108 and brackets 104 interlocked with each other such that the
stakes 108 are moveable within the respective brackets 104 but cannot be removed from the
30 brackets 104 inadvertently. In that way, the board 102 with the brackets 104 and the stakes 108
forms one unit of connected parts, making it easy to use and handle during installation of a
garden bed border with reduced risk of dropping or even losing stakes.

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Annexure B (2/6)

Figure 2 shows a more detailed view of part of the board 102 with one bracket 104 and interlocked stake 108. The bracket 104 has a vertical slot 200 formed therein. The stake 108 has a pin 202 fixed to it, the pin 202 being received in the slot 200. During fabrication of the border element 100, the stake 108 is placed on the vertical surface 106 of the board 102 with the pin 202 facing away from the board 102, and the bracket 104 is placed over the stake 108 with the pin 202 received in the slot 200. The bracket 104 is fixed to the board 100 using for example screws 204.

The pin 202 is positioned just above halfway along the length of the stake 108, with the length of the stake 108 being twice the height of the board 102. The length of the slot 200 determines the maximum displacement of the stake 108. The position of the pin 202 is chosen such that the top 208 of the stake 108 is just above the top of the board 102 when the pin 202 is in its lowest position, i.e. when the stake 108 has been maximally driven into the ground using for example a hammer. The invention thus always avoids blemishes to the board 102 even when a hammer is used during installation.

The pin 202 may be fixedly attached to the stake 108 such as by welding to the stake 108. In another design, the pin 202 is moveable against a biasing spring such that the pin 202 can be pushed inwardly to be flush with the circumference of the stake 108. In such designs, the stake 108 can be removed from the bracket 104 if desired. For example, the border element 100 may be sold with the stakes 108 removed from the brackets 104 and placed alongside the board 102 for packaging, as shown in Figure 3. This can reduce the package size and associated costs significantly.

The number and location of the brackets 104 and stakes 108 can vary between different designs, including along the length of board 102 and/or attached at one or both ends of the board 102. Figure 4 shows a side view of the bracket 104, illustrating the inverted U-shaped channel 400 provided for guiding the stakes along the board when the border element is installed on the ground. In a modification of the bracket 104, an additional flat plate portion (not shown) extends across the base of the inverted U-shaped channel 400, so that the additional plate, when the modified bracket is fixed to the surface of the border element, prevents the tip of

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Annexure B (3/6)

the stake from getting stuck in the surface of the border element during installation. This facilitates smooth insertion of the stake and may avoid potential damage to the border element.

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Figure 5 shows a schematic drawing of another new border element 500, in a small picket fence type design with a beam structure comprising vertical beams 502 interconnected by two horizontal beams 504. Brackets 506 are provided on two of the vertical beams 502. The brackets 506 are sized to receive stakes 508 in a sliding fashion. In that way, the beam structure formed by the beams 502, 504 can be placed directly on the ground and the stakes 508 can be driven into the ground using the brackets 506 as a secure guide, similar to what has been described above with reference to Figures 6 a) and b) for the border element 100.

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In this alternative design 500, the brackets 506 and stakes 508 can be the same as described for the first design 100.

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Annexure B (4/6)

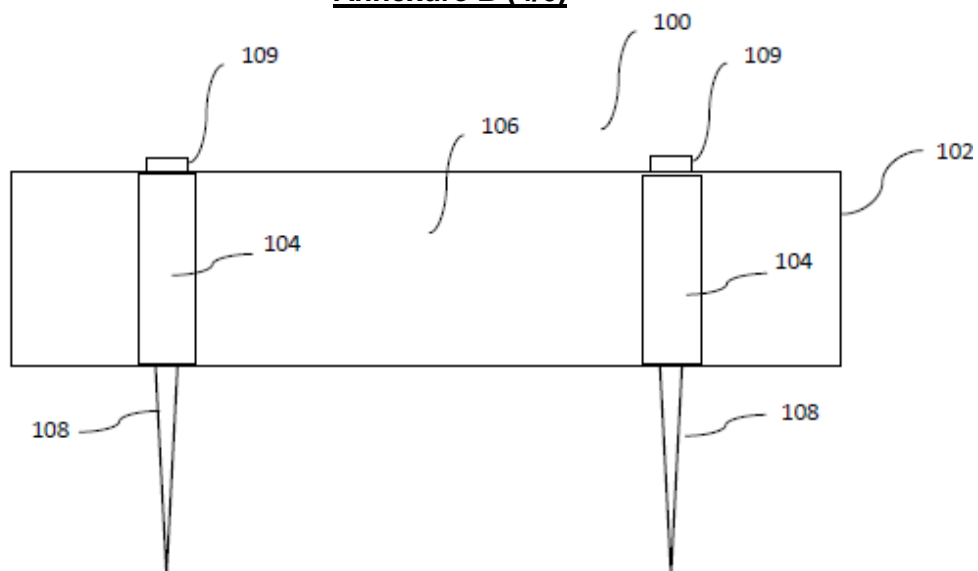


Figure 1

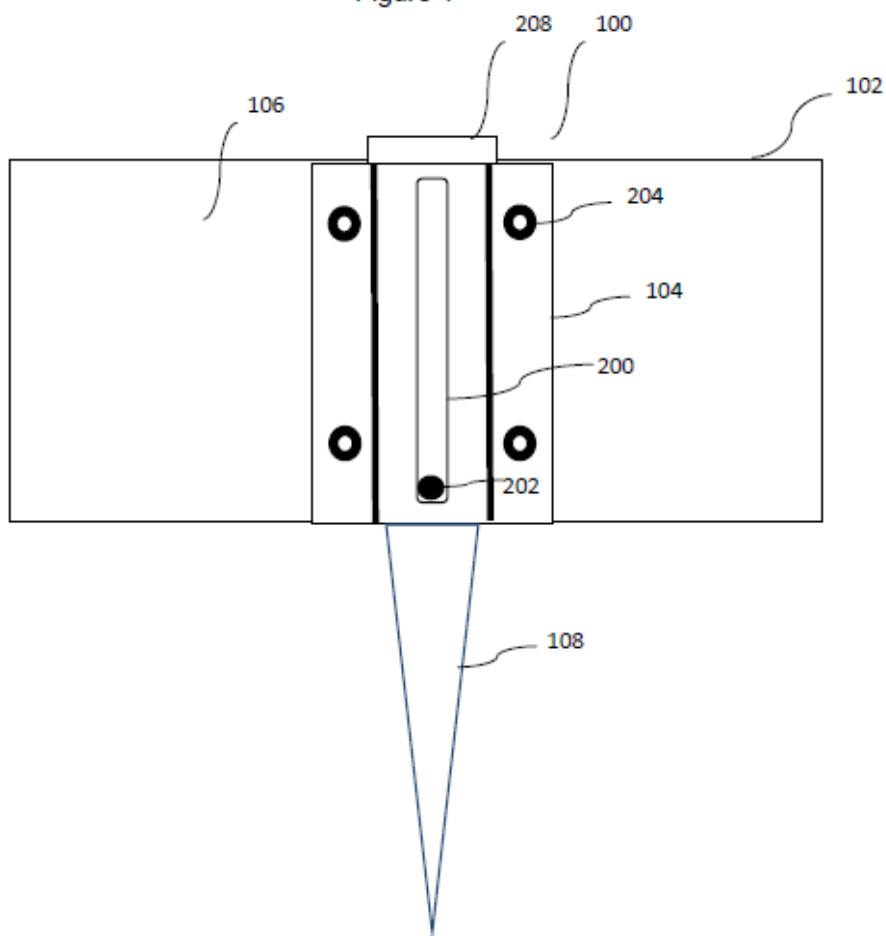


Figure 2

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Annexure B (5/6)

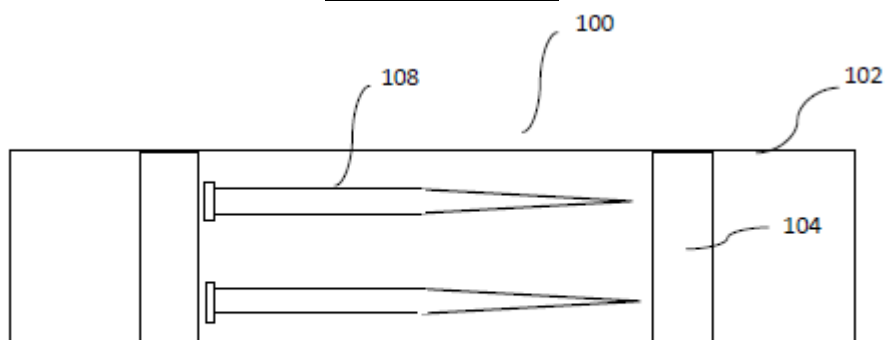


Figure 3



Figure 4

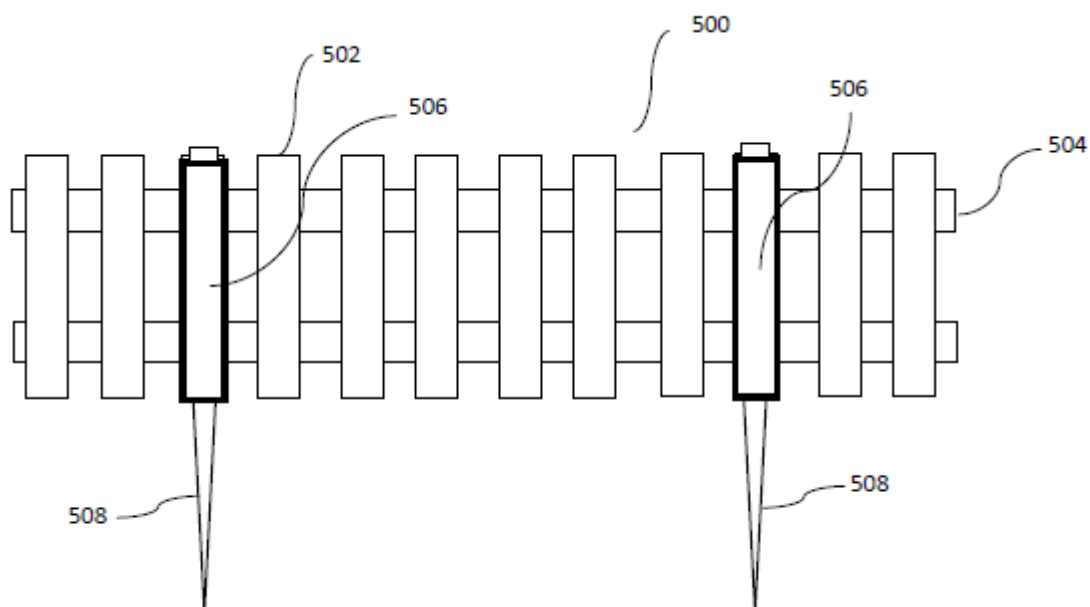


Figure 5

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Annexure B (6/6)

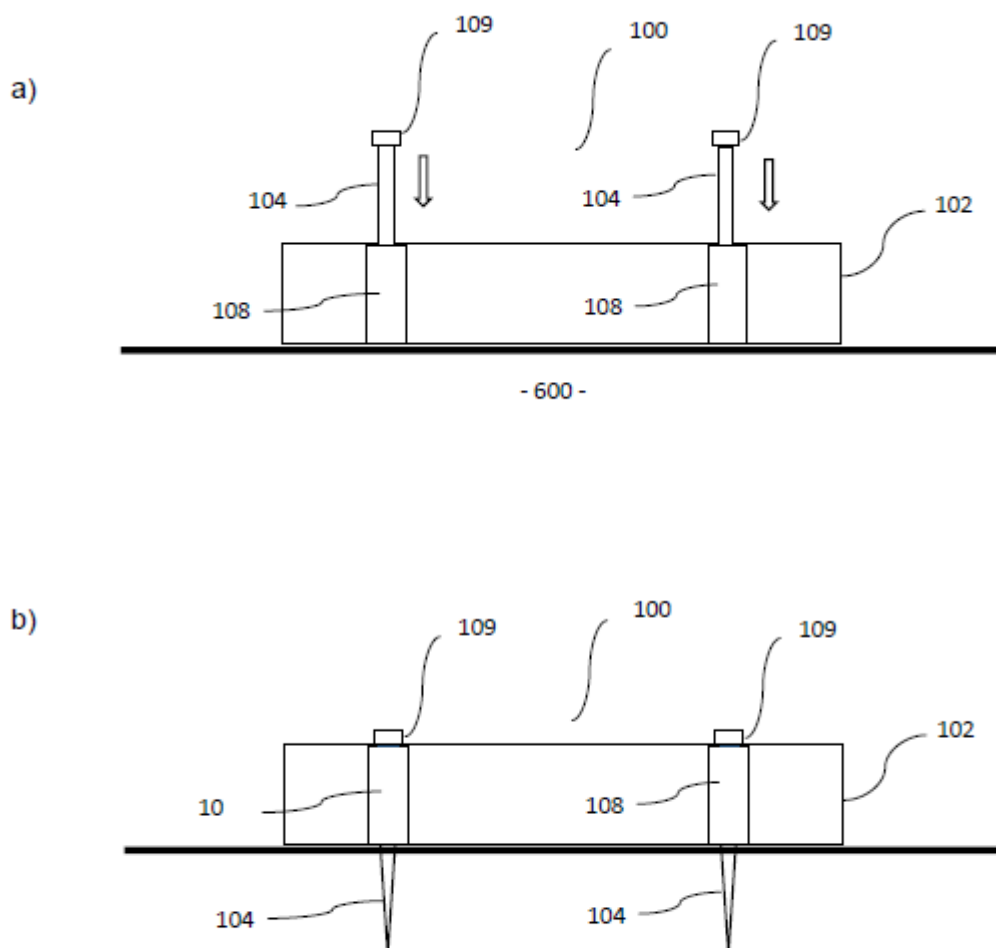


Figure 6

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Annexure C (1/7)



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(54) **EDGING GUIDE**

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(72) Inventor: **Lars Rosaen**, Plymouth, MI (US)

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(22) Filed: **Jun. 14, 2013**

Related U.S. Application Data

(63) Continuation of application No. 12/027,749, filed on Feb. 7, 2008, now Pat. No. 8,464,464.

(57) **ABSTRACT**

An edging guide may include an anchor and a retainer that may be rotatably mounted to the anchor. The anchor may be buried in the ground during use and may include a post portion and a support portion. The retainer may be rotatably mounted to the support of the anchor and may function to secure hold one or more lengths of edging material.

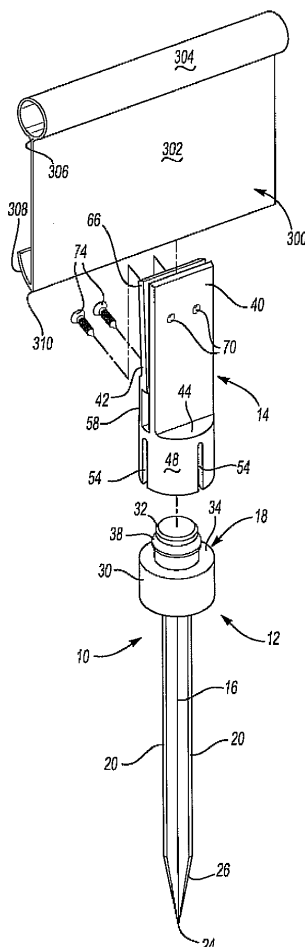


FIG. 1

Note: This document has been modified for the purpose of the examination.

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Annexure C (2/7)

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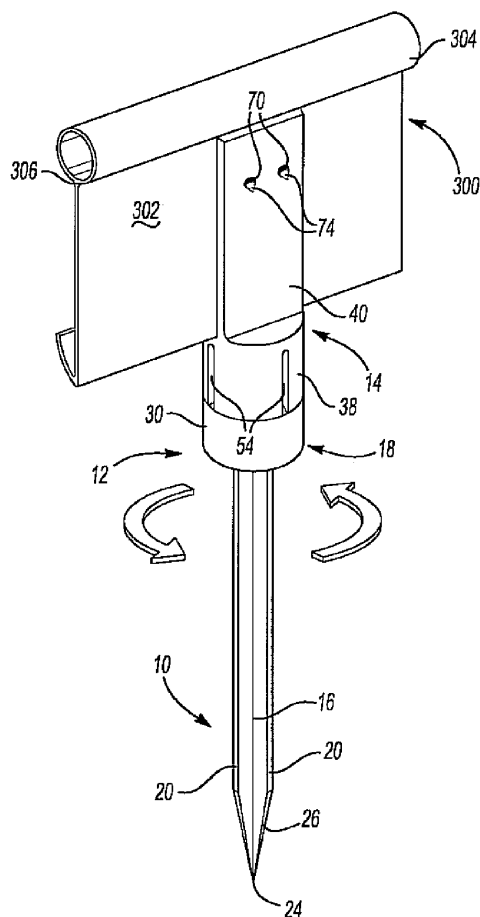


Fig-2

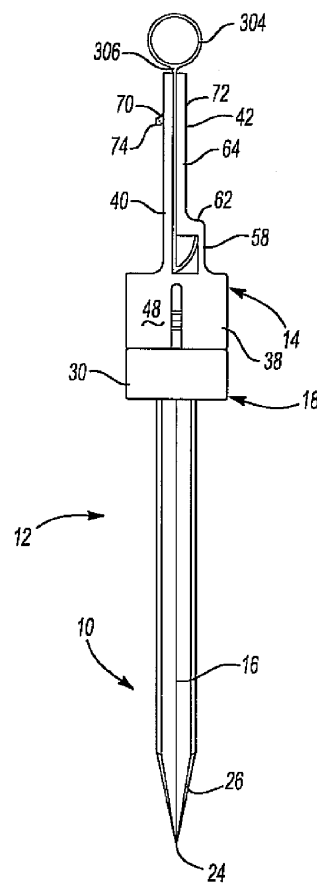


Fig-3

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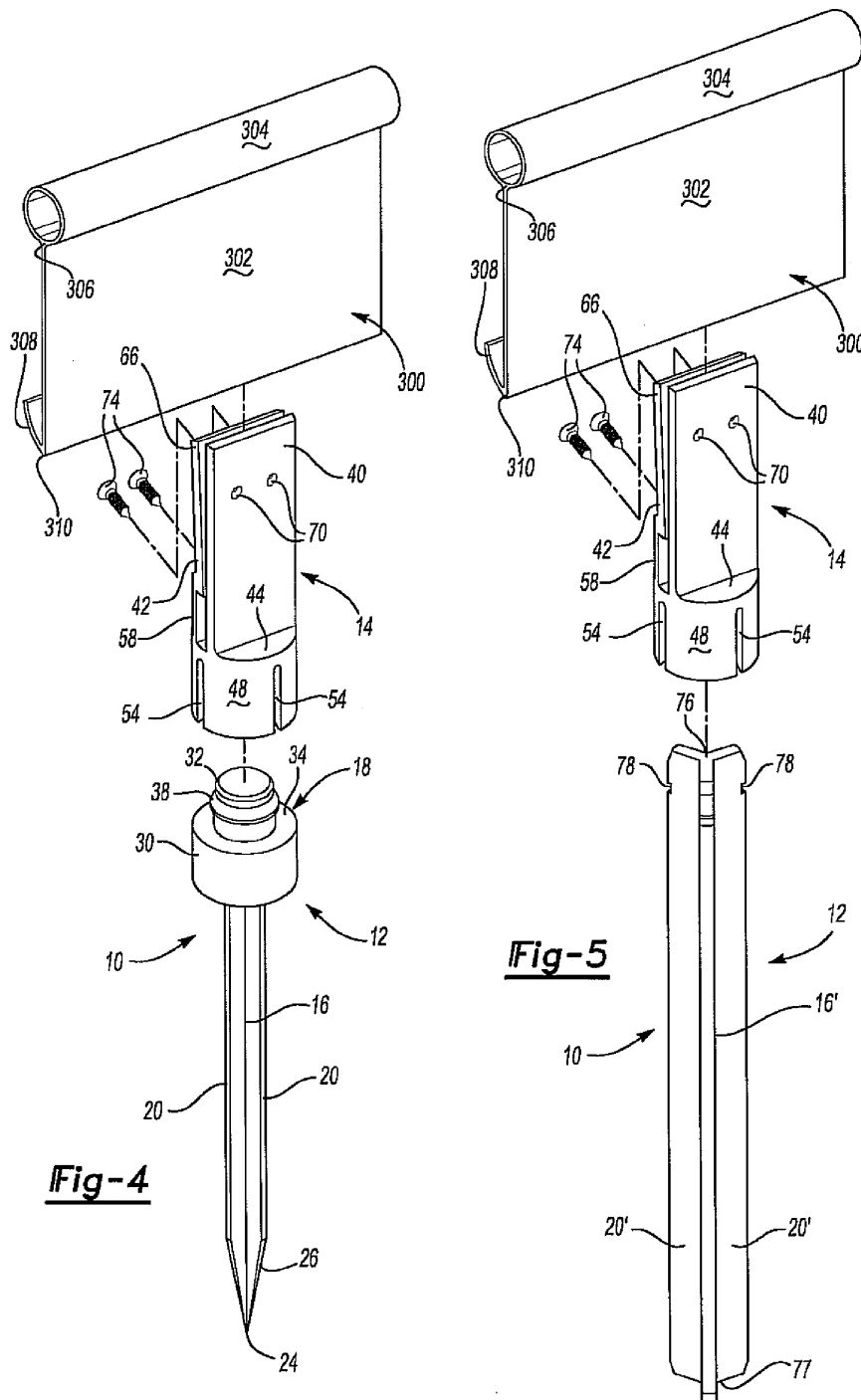
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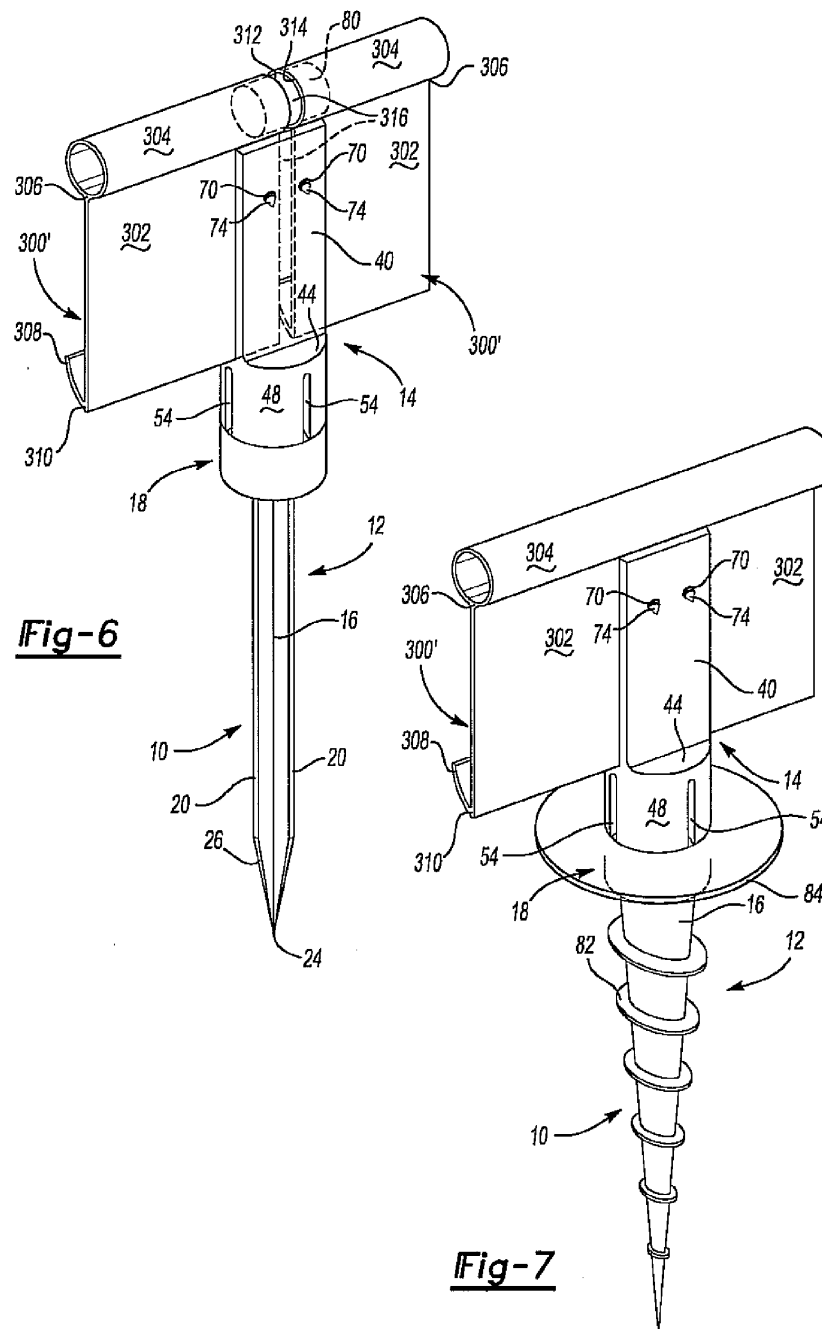
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Annexure C (4/7)

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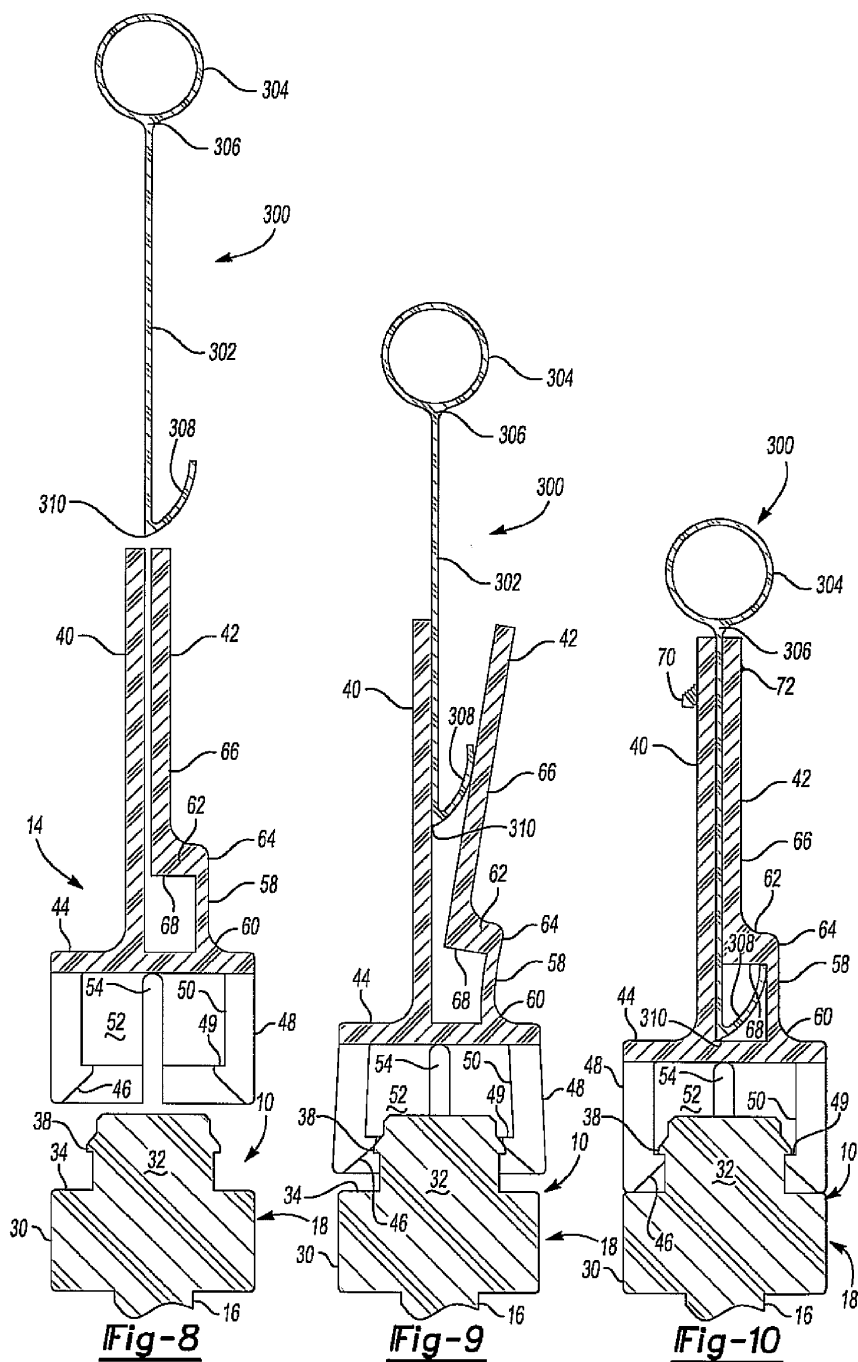
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Annexure C (5/7)

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Annexure C (6/7)

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EDGING GUIDE

FIELD OF THE INVENTION

[0002] Disclosed herein is an embodiment for an edging guide. More specifically, disclosed herein is a guide for use with garden edging or the like. The guide may include an anchor and a retainer. The anchor may be positioned in the ground. The retainer may be rotatably positioned on the anchor and may function to retain one or more lengths of edging material.

REFERENCE TO RELATED ART

[0003] Garden edging is typically used in residential and commercial applications as a barrier between a garden bed and an adjacent bed or a lawn. Such edging may be constructed as an elongated plastic panel having a tube positioned along one edge of the panel and a hook positioned along an opposite edge. The tube may be used as a handhold during the installation process, and it is often the only part of the edging that is visible after the edging has been installed. The hook may open upwardly toward the tube of edge.

[0004] A common problem with available edging material is that, over time, pressure resulting from the heating and freezing of the ground, plus moisture from rain, will combine to slowly work the edging material out of the ground. This, of course, is a particularly undesired result given the amount of time and effort required to properly install the edging in the first place. To that end, the upwardly open hook of the edging material may be successful in delaying the dislodging of the material, but it does not prevent it.

[0005] Accordingly, there is a need for a supplemental anchoring system for an edging panel that can counter the environmental factors at work and retain the edging in position. It would also be advantageous to have an edging retainer or guide apparatus that provides the user with the ability to easily adjust the position of the edging, especially during setup.

SUMMARY OF THE INVENTION

[0006] An edging guide that may include an anchor and a retainer that may be rotatably mounted to the anchor. The anchor may be buried in the ground during use and may include a post portion and a support portion. The retainer may be rotatably mounted to the support of the anchor and function to hold one or more portions of edging material. The edging material and the edging guide may be constructed from molded plastic using known methods. However, the edging guide, or the individual components of the edging guide, and the edging itself may be constructed from various other polymers, metals (e.g., stainless steel, aluminum, or like metal) or coated metal surfaces that are resistant to rust or corrosion.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Reference will now be had to the attached drawings, wherein like referenced numerals refer to like parts throughout, and wherein:

[0008] FIG. 1 is an environmental perspective view showing a plurality of edging guides retaining multiple lengths of edging material;

[0009] FIG. 2 is a rear perspective view of the edging guide shown in use in FIG. 1;

[0010] FIG. 3 is a planar side view of the edging guide shown in FIG. 1;

[0011] FIG. 4 is an exploded rear perspective view of the edging guide of FIG. 1;

[0012] FIG. 5 is an exploded rear perspective view of an edging guide having an alternative embodiment of an anchor;

[0013] FIG. 6 is a rear perspective view of the edging guide shown in FIG. 1 being used to secure two separate sections of edging material to a single retainer;

[0014] FIG. 7 is a rear perspective view of an edging guide having another alternative embodiment of an anchor;

[0015] FIG. 8 is a side cutaway view of the edging retainer and a portion of the anchor wherein the edging material is arranged for insertion into the retainer;

[0016] FIG. 9 is a cutaway view of the edging retainer wherein the edging material is being inserted into the retainer; and

[0017] FIG. 10 is a side cutaway view showing the edging material inserted in and secured to the retainer.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0018] Referring now to FIGS. 1 through 4, an edging guide 10 may include an anchor 12 and a retainer 14. The anchor 12 may be buried in the ground 200 during use and may include a post 16 portion and a support portion 18. The retainer 14 may be rotatably mounted to the support 18 of the anchor 12 and function to hold one or more portions of edging material 300. The edging material 300 may include an elongated plastic panel 302 having a tube positioned 304 along one edge 306 of the panel 302 and a hook 308 positioned along an opposite edge 310.

[0019] The edging material 300 and the edging guide 10 may be constructed from molded plastic using known methods. However, the edging guide 10, or the individual components of the edging guide 10, and the edging material 300 may be constructed from various other polymers, metals (e.g., stainless steel, aluminum, or like metal) or coated metal surfaces that are resistant to rust or corrosion.

[0020] Still referring to FIGS. 1 through 4, the post 16 of the anchor 12 may have an X-shaped cross-section formed from four elongated flanges 20 that may extend radially from a center axis of the post 16. The flanges 20 may be tapered together to form a point 24 at one end 26 of the post 16. The support 18 may be positioned on an end of the post 16 opposite the point 24.

[0021] Still referring to FIGS. 1 through 4, the support 18 may include a base 30 with a cylindrical pin 32 that extends upwardly from the center of a top surface 34 of the support 18. A flange or lip 38 may extend concentrically around the pin 32 and, as will be described below, may be used to rotatably secure the retainer 14 to the support 18.

[0022] Still referring to FIGS. 1 through 4 and 8 through 10, the retainer 14 may include a base 48 and a pair of retainer

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plates 40, 42. The base 48 of the retainer 14 may include an upper surface 44, a bottom surface 46, and a sidewall having an exterior 48 and interior 50 surfaces. The interior surface 50 of the base 48 (or alternatively the bottom surface 46) may define a recess 52 that, as will be described below, may be fitted to the pin 32 of the support 18. To that end, the bottom surface 46 of the base 48 may be tapered upward toward the recess 52 to form a catch 49 or flange that may operate to engage the lip 38 of the pin 32. One or more grooves 54 may also extend through the sidewall to the recess 52 such that the sidewall may flex to fit over the pin 32 of the support 18.

[0023] Referring now to FIGS. 1 through 4 and 8 through 10, the plates 40, 42 of the retainer 14 may include a first 40 and a second 42 plate. Each plate 40, 42 may be spaced a predetermined distance from the other to form a channel 66 therebetween, and may also extend substantially vertically from an upper surface 44 of the base 48 of the retainer 14. More specifically, the first plate 40 may be substantially rectangular in form and extend lengthwise from the upper surface 44 of the base 48. Further, as shown in FIG. 4, the second plate 42 may include a first portion 58 that is flexibly mounted at one end 60 to the upper surface 44 of the base 48, a generally horizontal cross-piece 62 that extends horizontally from an opposite end 64 of the first portion 58 toward the first plate 40, and a second portion that may extend substantially vertically from the other end 68 of the cross-piece 62. Accordingly, the first portion 58 and cross-piece 62 of the second plate 42 may function to enlarge the channel 66 into an opening (as will be described below) large enough to accommodate the hook 300 of the edging material 308. As shown in FIGS. 2-3, each plate 40, 42 may also include a pair of aperture 70, 72 for use in fastening one or more lengths of edging material 300 to a retainer 14. The apertures 70 of one plate 40 may be vertically offset from those 72 of the other plate 42 such that any fasteners 74 used may be placed in a downwardly or diagonally directed orientation. It may also be appreciated that the downward orientation the fasteners 74 aids in preventing unwanted dislodging of the edging material 300 and aids installation in narrow or confined spaces.

[0024] Referring now to FIGS. 1 through 4 and to FIGS. 8 through 10, FIGS. 8-10, the retainer 14 may be press-fitting onto the support 18 of the anchor 12. Specifically, in operation, the anchor 12 may be driven or otherwise buried into the ground 200 at a desired location (e.g., a trench dug between a garden bed and a lawn). The recess 52 of the retainer 14 may then be press-fit onto the pin 32 of the support 18 such that the catch 49 of the retainer 14 may engage the lip 38 of the pin 32 and the bottom surface 46 of the retainer base 48 may rest on the top surface 34 of the support 18. Thereafter, edging material 300 may be passed through the channel 56 between the plates 40, 42 of the retainer 14 so that the hook 308 of the edging material 300 may be retained between the plates 40, 42 of the retainer.

[0025] Referring now to FIG. 5, it will be appreciated that the anchor 12 of the guide 10 may be constructed entirely as an elongated post 16'. The post 16' may have a Y-shaped or similar cross-section formed from three elongated flanges 20' that may extend radially from a center axis 22' of the post 16'. Each end 76, 77 of each flange 20' of the post 16' may be tapered to aid the user in driving the post in the ground 200. Further, each flange 20' may have a notch 78 defined in the flange 20' proximate one end 76. In operation, the notch 76 may be engaged by the catch 49 of the retainer 14 so that the retainer 14 may be rotatably mounted to the post 16'.

[0026] Referring now to FIG. 6, as described above the retainer 14 may be used to secure one or more lengths of edging material 300, 300'. Specifically, the ends 312, 314 of two lengths of edging material 300, 300' may be inserted into the retainer 14 and then secured by one or more fasteners 74.

[0027] Referring now to Figure. 7, the post 16 of the anchor 12 may also included a plurality of threads 82. Further, a flange or plate 84 may extend concentrically (or radially) from the base 30 of the support 18. The plate 84 may be constructed as a separate part from the base 30, or it may be molded integral with the base 30. In operation, the threads 82 may assist a user to "screw" or "unscrew" the anchor 12 from the ground 200. The plate 84 may function to increase the amount of soil that may be place over the guide 10 when in use. It being appreciated that more soil may contribute to a greater weight/force being exerted on the guide 10 to further aid the retention of the guide 10 in the ground 200.

[0028] Having thus described various embodiments for the edging guide, it will be understood that certain additional embodiments will become apparent to those of skill in the art that do not depart from the skill of the appended claims.

End