



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
16.07.2008 Bulletin 2008/29

(51) Int Cl.:
E04H 12/22 (2006.01)

(21) Application number: **07254681.5**

(22) Date of filing: **03.12.2007**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK RS

(30) Priority: **01.12.2006 GB 0624125**

(71) Applicant: **Simpson Strong Tie International, Inc.**
Tamworth, Staffordshire, B78 3HG (GB)

(72) Inventors:
• **Morize, Rodolphe**
85400 Sainte Gemme La Plaine (FR)
• **Guerin, Xavier**
85400 Sainte Gemme La Plaine (FR)

(74) Representative: **Pluckrose, Anthony William et al**
BOULT WADE TENNANT
Verulam Gardens
70 Gray's Inn Road
London WC1X 8BT (GB)

(54) **A support base for a structural member**

(57) The present invention provides a support base for a structural member such as a post, beam or joist, the support base comprising:
at least one support element (10), each support element comprising:
a ground engaging portion (20) for anchoring the support element to the ground, support surface or other support structure;
an upper portion (30) which, in use, engages with the structural member; and
a seat portion (40) extending between the ground engaging portion and the upper portion which, in use, receives, supports and spaces the base of the structural member above the ground or support surface or other support structure.

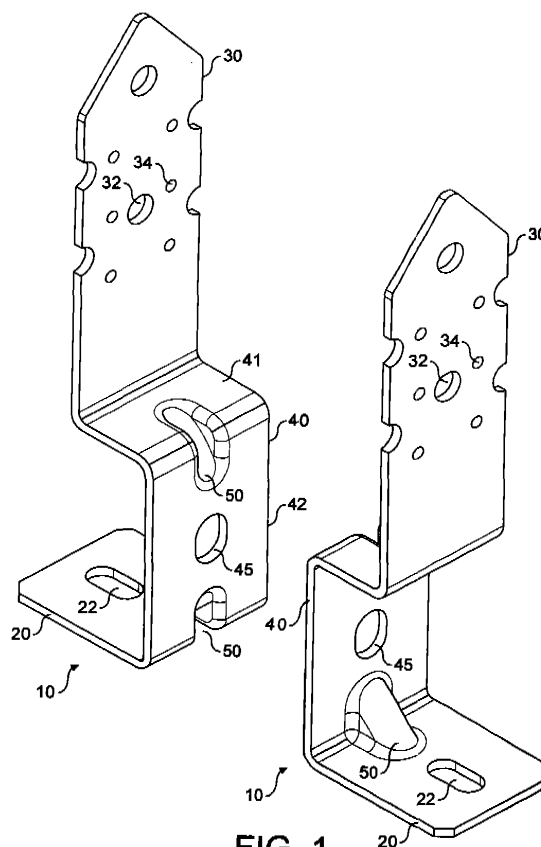


FIG. 1

Description

[0001] The present invention relates to a support base for a structural member such as a post, joist or beam, and in particular to a support base which maintains the supported structural member in an elevated position relative to the ground or other supporting surface or support structure to prevent moisture ingress into the structural member.

[0002] It is well known for posts to be set in and supported by the ground or a concrete foundation. However, moisture is readily absorbed by the post from the ground or surface of the concrete and, over time, the structural integrity of the post is compromised as the post rots or corrodes. Alternatively, it is known to use a metal post spike to support a post. The spike is sunk into the ground or set in a concrete foundation and has an integrated close fitting support "cup" which receives and envelops the entire base of the post. Whilst this extends the life of the post to a certain degree by providing a level of additional shielding, moisture is nevertheless entrained from the surrounding ground levels and the post rots or corrodes.

[0003] To address this moisture ingress problem, a number of post bases have been proposed which elevate the close fitting support cup above ground level to prevent moisture ingress. These have proved more successful, but are complicated by the need to have an over engineered close fitting cup which fully envelops and grips the base of the post to provide sufficient support to the post at the elevated position. This complicates the resulting post base which must cope with greater loads, requiring higher tolerance fits and additional gripping elements or fasteners to provide the necessary level of support. A further problem is that each such post base is sized to closely fit the dimensions of the post to be supported, requiring many different sizes of post base to be manufactured.

[0004] The present invention addresses the above problems and does so with a greatly simplified design which is cheap and easy to manufacture, easy to install and caters for all sizes of posts. Furthermore, the present invention goes further in providing a support base which is not limited to supporting posts, but additionally caters for joists, beams and other structural members.

[0005] The present invention provides, in a first aspect, a support base for a structural member such as a post, beam or joist, the support base comprising:

at least two spaced apart support elements, each support element comprising:

a ground engaging portion for anchoring the support element to the ground, support surface or other support structure;
an upper portion which, in use, engages with the structural member; and
a seat portion extending between the ground en-

gaging portion and the upper portion which, in use, receives, supports and spaces the base of the structural member above the ground or support surface or other support structure.

[0006] Preferred embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a schematic perspective view from above of a pair of support elements which together form a support base according to a first preferred embodiment of the present invention;

Figure 2 is a schematic perspective view from below of a post supported by the pair of support elements of Figure 1;

Figure 3 is a schematic perspective view from above of a pair of support elements bolted together to form a support base according to a second preferred embodiment of the present invention;

Figure 4 is a schematic perspective view from below of a post supported by the pair of support elements of Figure 3;

Figure 5 is a schematic perspective view from below of a post supported by an arrangement of four support elements which together form a support base according to a third preferred embodiment of the present invention;

Figure 6 is a schematic perspective view from below of a post comprising two like timbers supported by an arrangement of four support elements which together form a support base according to a fourth preferred embodiment of the present invention;

Figure 7 is a schematic perspective view from below of one end of a beam supported by just one support element according to a fifth preferred embodiment of the present invention;

Figure 8 is a schematic perspective view from above of a pair of support elements similar to those shown in Figure 1, but without strengthening embossments, according to a further preferred embodiment of the present invention; and

Figure 9 is a schematic perspective view from below of a post supported by the pair of support elements of Figure 8.

[0007] Referring first to Figure 1, there is shown a pair of support elements 10 which together form a support base according to a first preferred embodiment of the present invention. Each support element 10 is formed from a single strip of sheet metal, preferably steel, and preferably galvanised. A first end of each support element 10 comprises a ground engaging portion 20 for anchoring the support element to the ground, a support surface or other support structure. An aperture 22 is provided in the ground engaging portion 20 for receiving a bolt or other fastener to engage and anchor the ground engaging portion 20 to the ground, support surface or support

structure. A second end of each support element 10 comprises an upper portion 30 which, in use, engages with the structural member (not shown) to be supported. The upper portion 30 is arranged substantially perpendicular to the ground engaging portion 20. A number of apertures 32, 34 are provided in the upper portion 30 for receiving a bolt, nail or other fastener to engage and anchor the structural member to the upper portion 30. Extending between the ground engaging portion 20 and the upper portion 30 of each support element 10 is a seat portion 40. A first part 41 of the seat portion 40 extends substantially perpendicularly from the upper portion 30 and, in use, receives and supports the base of the structural member to be supported. A second part 42 of the seat portion 40 extends between the first part 41 and the ground engaging portion 20, spacing the base of the structural member above the ground, support surface or support structure. Preferably, the first part 41 and second part 42 extend in directions substantially perpendicular to the other, although this is by no means essential. Optionally, apertures 50 may be provided for a bolt, tie rod, or other element 60 (as shown in Figures 3 and 4) to bolt, tie or lock the two spaced apart support elements 10 together. This can provide extra structural integrity to the support base. Optional reinforcing or strengthening ribs/embossments 50 may be provided on each support element 10 to give further structural integrity to the support base.

[0008] Referring next to Figure 2, there is illustrated a post 80 supported by the pair of support elements 10 described above.

[0009] Figures 3 and 4 illustrate the use a bolt 60 to tie the two spaced apart support elements 10 together.

[0010] Referring now to Figure 5, there is illustrated a post 80 supported by an arrangement of four support elements 10, which together form a support base according to a third preferred embodiment of the present invention. Again, a bolt, tie rod, or other element 60 (as shown in Figures 3 and 4) can be used to bolt, tie or lock the four (or two pairs of) spaced apart support elements 10 together.

[0011] Figure 6 illustrates a post comprising two like timbers 82 supported by an arrangement of four support elements 10 which together form a support base according to a fourth preferred embodiment of the present invention. Again, a bolt, tie rod, or other element 60 (as shown in Figures 3 and 4) can be used to bolt, tie or lock the four (or two pairs of) spaced apart support elements 10 together.

[0012] Figure 7 illustrates schematically one end of a beam supported by just one support element according to a fifth preferred embodiment of the present invention. This arrangement may be appropriate where the beam is lightweight, not subject to significant loading, or where part of the beam is otherwise supported or built into a structure at the other end.

[0013] Finally, Figures 8 and 9 illustrate a pair of support elements similar to those shown in Figures 1 and 2, but without strengthening embossments, according to a

further preferred embodiment of the present invention.

[0014] It will be appreciated that the present invention is not limited to supporting posts. The present invention may be used to support beams, joists or any other structural members of any material. The present invention may be used above ground only (i.e. not extending into or beneath the ground). Furthermore, the present invention is not limited to supporting structural members in a vertical orientation. The present invention can be used to support structural members in a horizontal or inclined orientation.

[0015] Whilst preferred embodiments of the present invention have been described above and illustrated in the drawings, these are by way of example only and non-limiting. It will be appreciated by those skilled in the art that many alternatives are possible within the ambit of the invention. For example, the support members may be formed in different shape configurations. The support members could be formed from separate parts or made from alternative materials. The number of apertures provided in each support member for fastening and anchoring may be increased, and their relative positions, varied. Indeed, each seat portion of a support member may comprise a single part simply angled between the upper portion and the ground engaging portion (but not normal to either). As such, the true scope of the invention is that as set out in the appended claims.

Claims

1. A support base for a structural member such as a post, beam or joist, the support base comprising:

at least two spaced apart support elements, each support element comprising:

a ground engaging portion for anchoring the support element to the ground, support surface or other support structure;
an upper portion which, in use, engages with the structural member; and
a seat portion extending between the ground engaging portion and the upper portion which, in use, receives, supports and spaces the base of the structural member above the ground or support surface or other support structure.

2. A support base as claimed in claim 1 wherein at least one support element is formed from a single strip of material.

3. A support base as claimed in claim 1 or claim 2 wherein at least one support element is formed from sheet metal.

4. A support base as claimed in any one of the preced-

ing claims wherein at least one support element is formed from steel or aluminium.

5. A support base as claimed in claim 4 wherein the at least one support element is galvanised. 5
6. A support base as claimed in any one of the preceding claims wherein the upper portion of at least one support element is arranged substantially perpendicular to at least part of the seat portion. 10
7. A support base as claimed in any one of the preceding claims wherein the upper portion of at least one support element is arranged substantially perpendicular to the ground engaging portion. 15
8. A support base as claimed in any one of the preceding claims wherein the upper portion of at least one support element is arranged substantially parallel to at least part of the seat portion. 20
9. A support base as claimed in any one of the preceding claims wherein at least one support element is formed from a single strip of material with only three bend lines in its plane. 25
10. A support base as claimed in any one of the preceding claims wherein at least one support element is provided with reinforcing/strengthening ribs or embossments. 30
11. A support base as claimed in any one of the preceding claims further comprising a bolt, tie or other member to bolt, tie or lock the at least two spaced apart support elements together. 35
12. A support base as claimed in any one of the preceding claims for use with a timber structural member.
13. Use of the support base as claimed in any one of the preceding claims to support a post. 40
14. Use of the support base as claimed in any one of claims 1 to 12 to support a beam. 45
15. Use of the support base as claimed in any one of claims 1 to 12 to support a joist.
16. Use of the support base as claimed in any one of the preceding claims to support a structural member in a substantially vertical orientation. 50
17. Use of the support base as claimed in any one of claims 1 to 15 to support a structural member in a substantially horizontal orientation. 55
18. Use of the support base as claimed in any one of claims 1 to 15 to support a structural member in an

orientation not normal to the vertical or the horizontal.

19. Use of the support base of any one of the preceding claims to support a timber structural member.

20. A support base for a structural member such as a post, beam or joist, the support base comprising:

at least one support element, each support element comprising:

a ground engaging portion for anchoring the support element to the ground, support surface or other support structure;
an upper portion which, in use, engages with the structural member; and

a seat portion extending between the ground engaging portion and the upper portion which, in use, receives, supports and spaces the base of the structural member above the ground or support surface or other support structure.

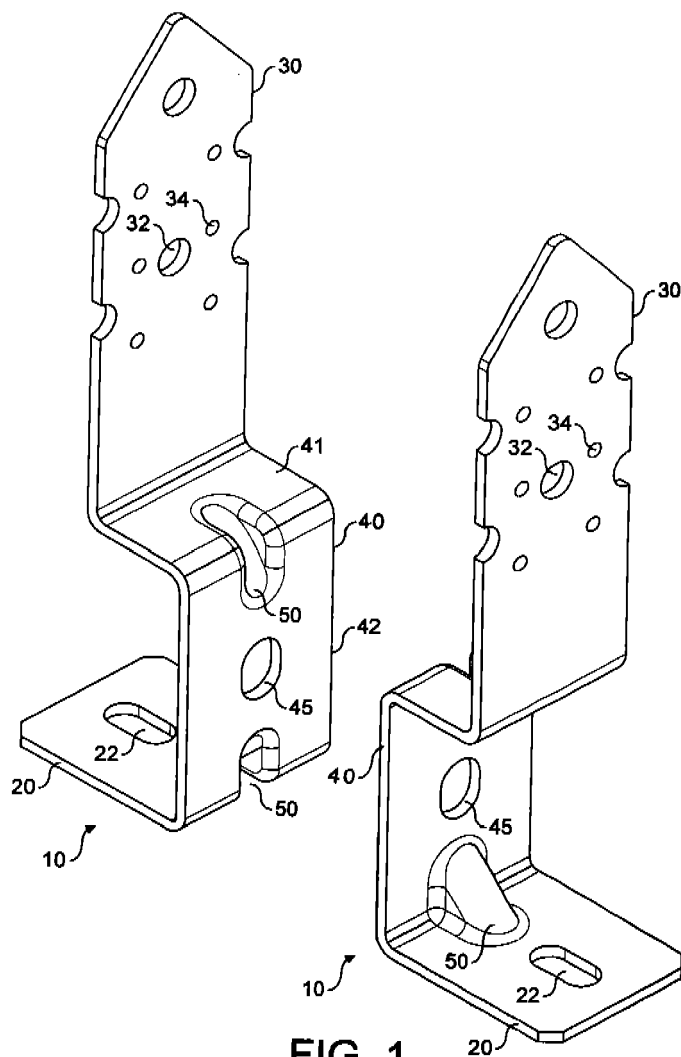


FIG. 1

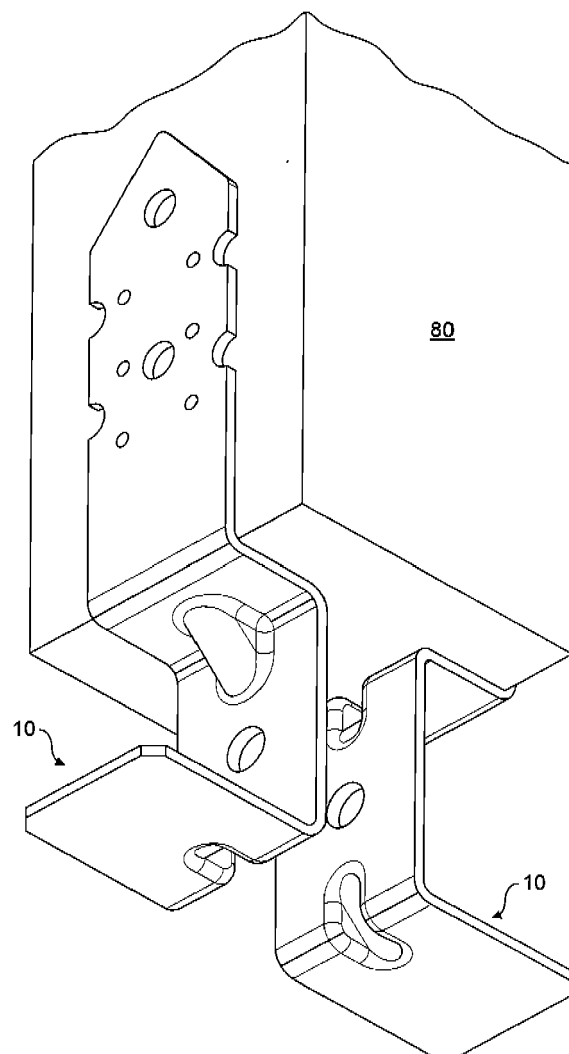


FIG. 2

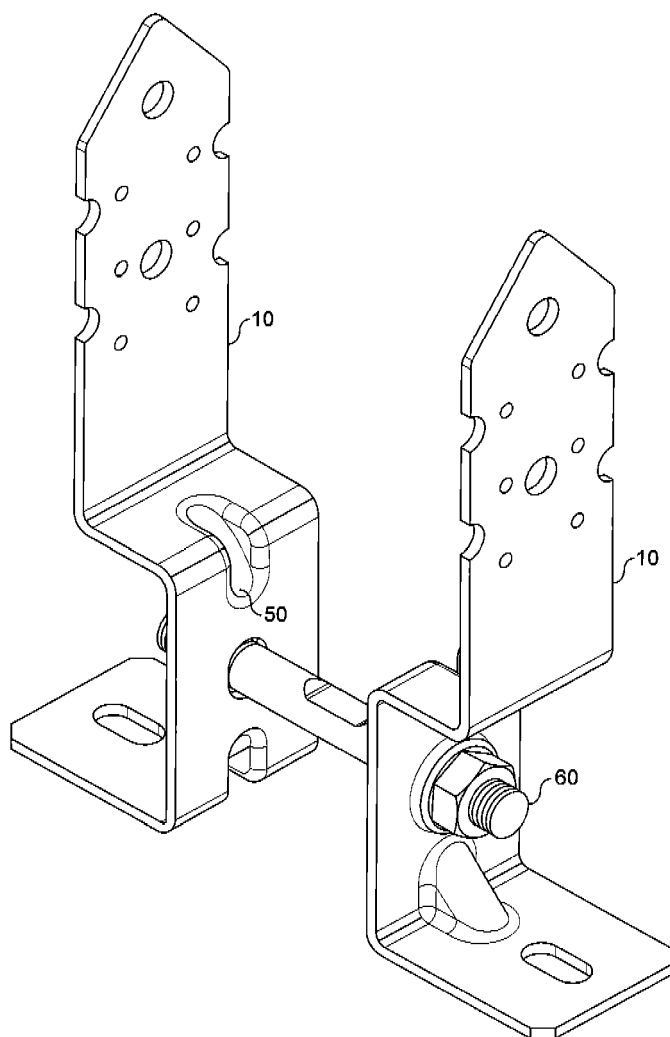


FIG. 3

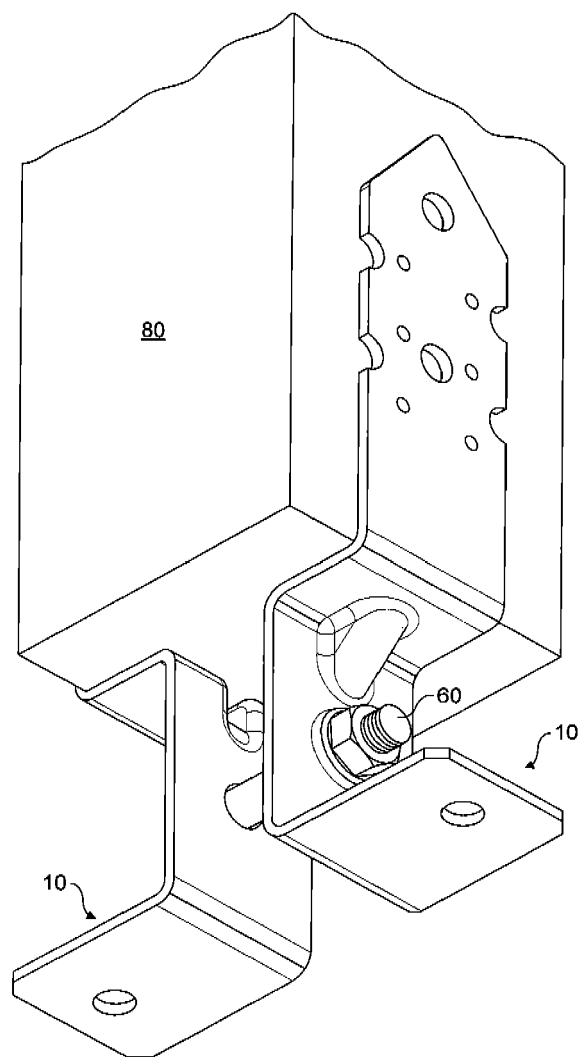


FIG. 4

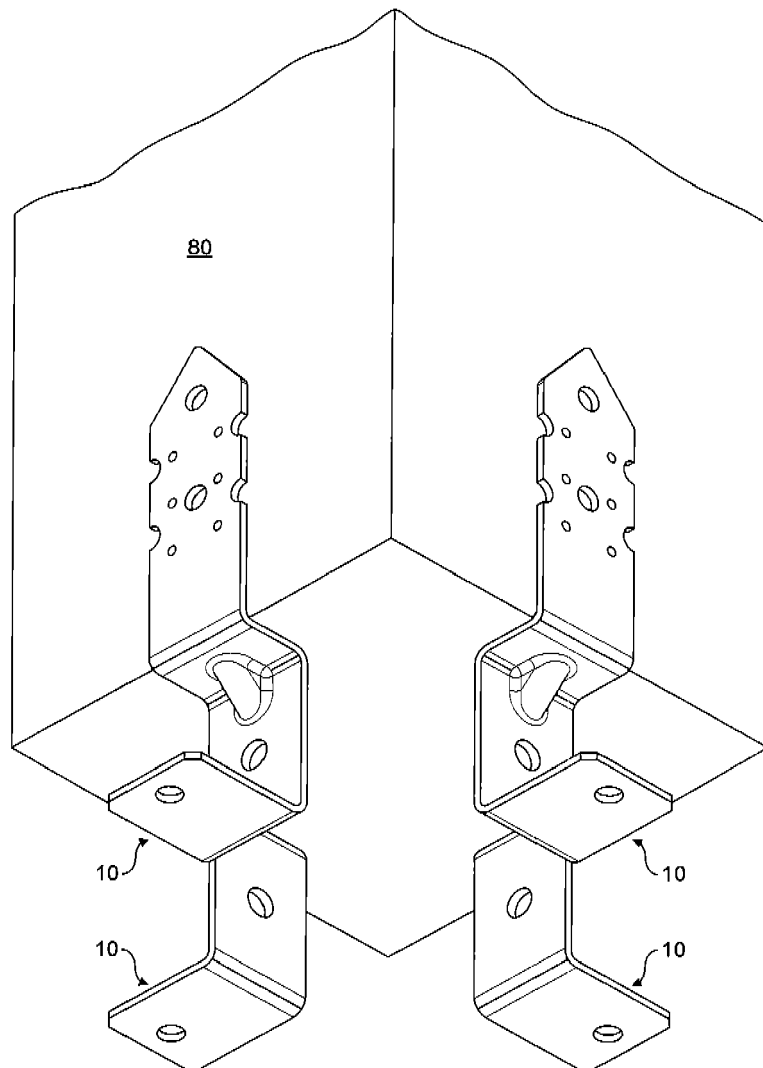


FIG. 5

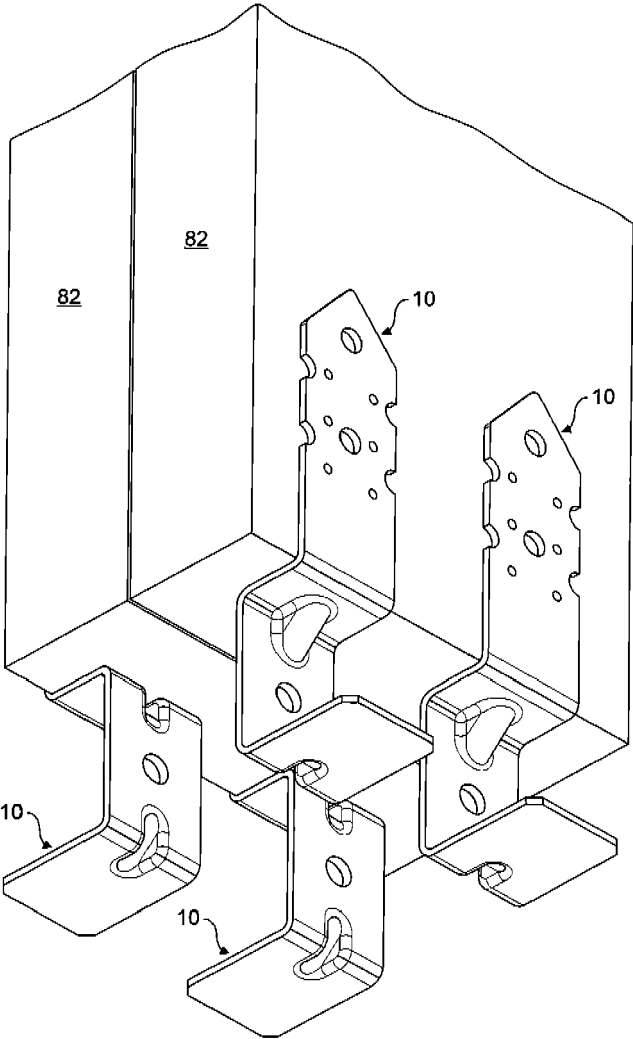


FIG. 6

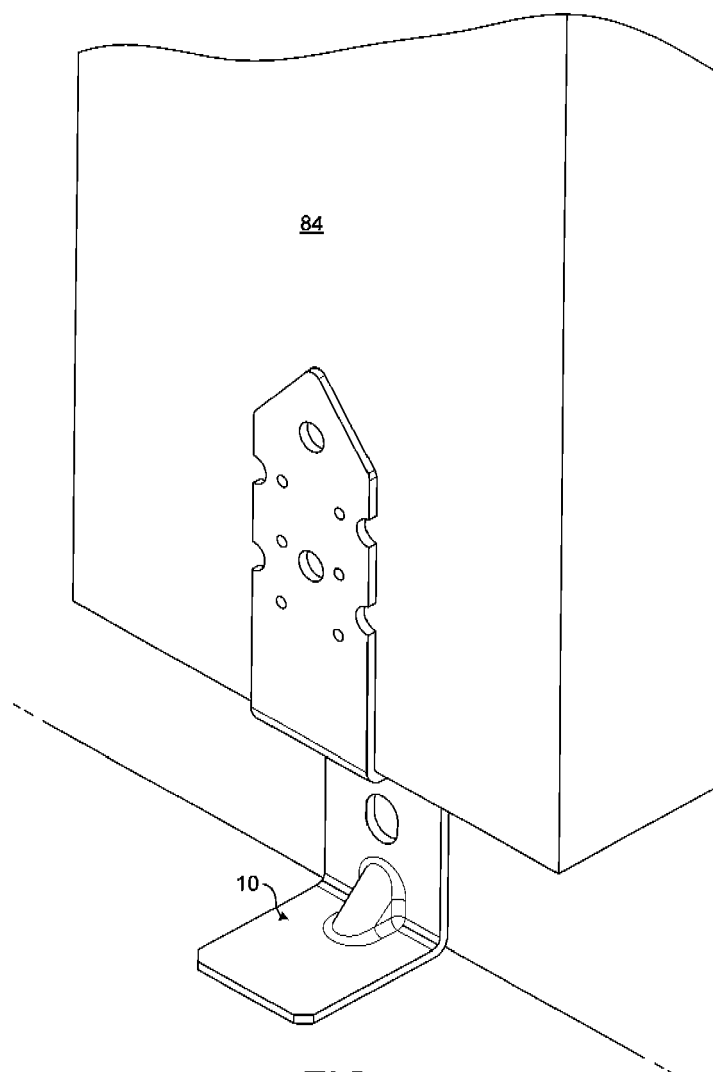


FIG. 7

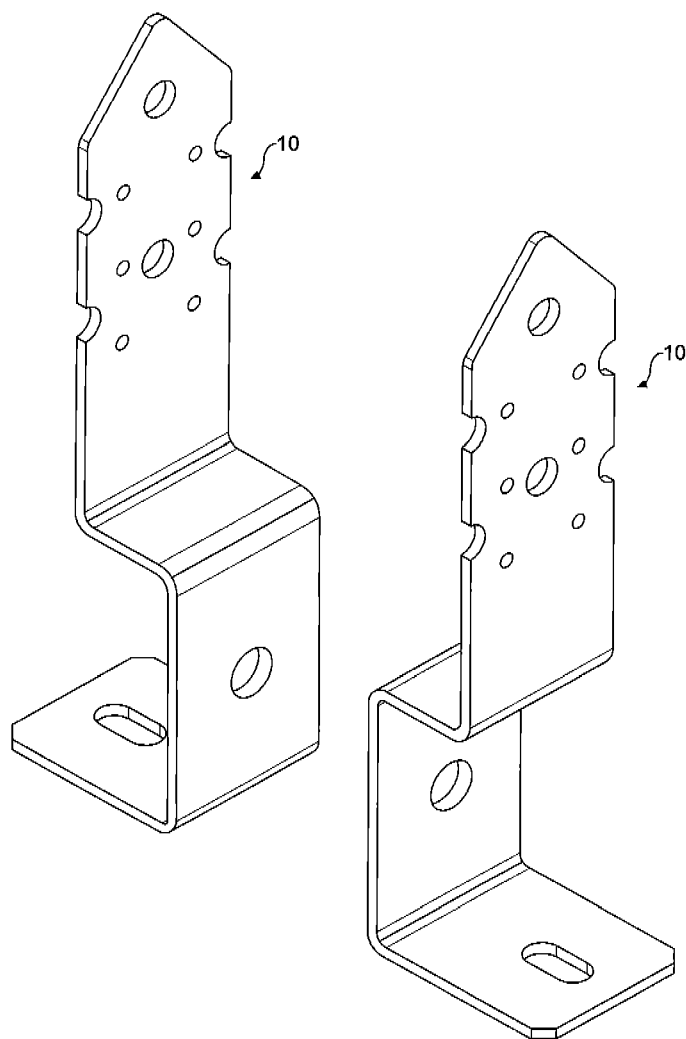


FIG. 8

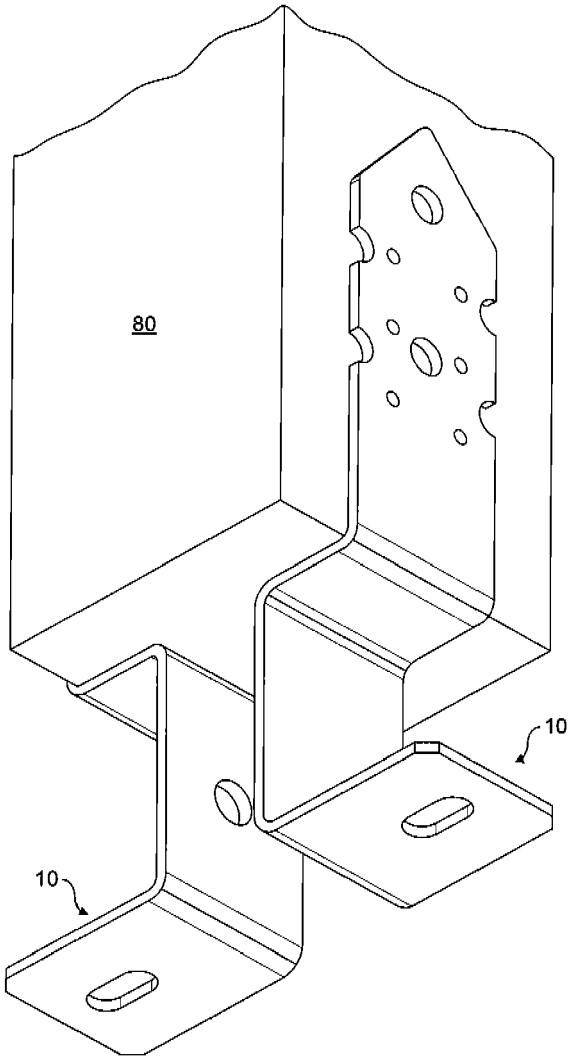


FIG. 9