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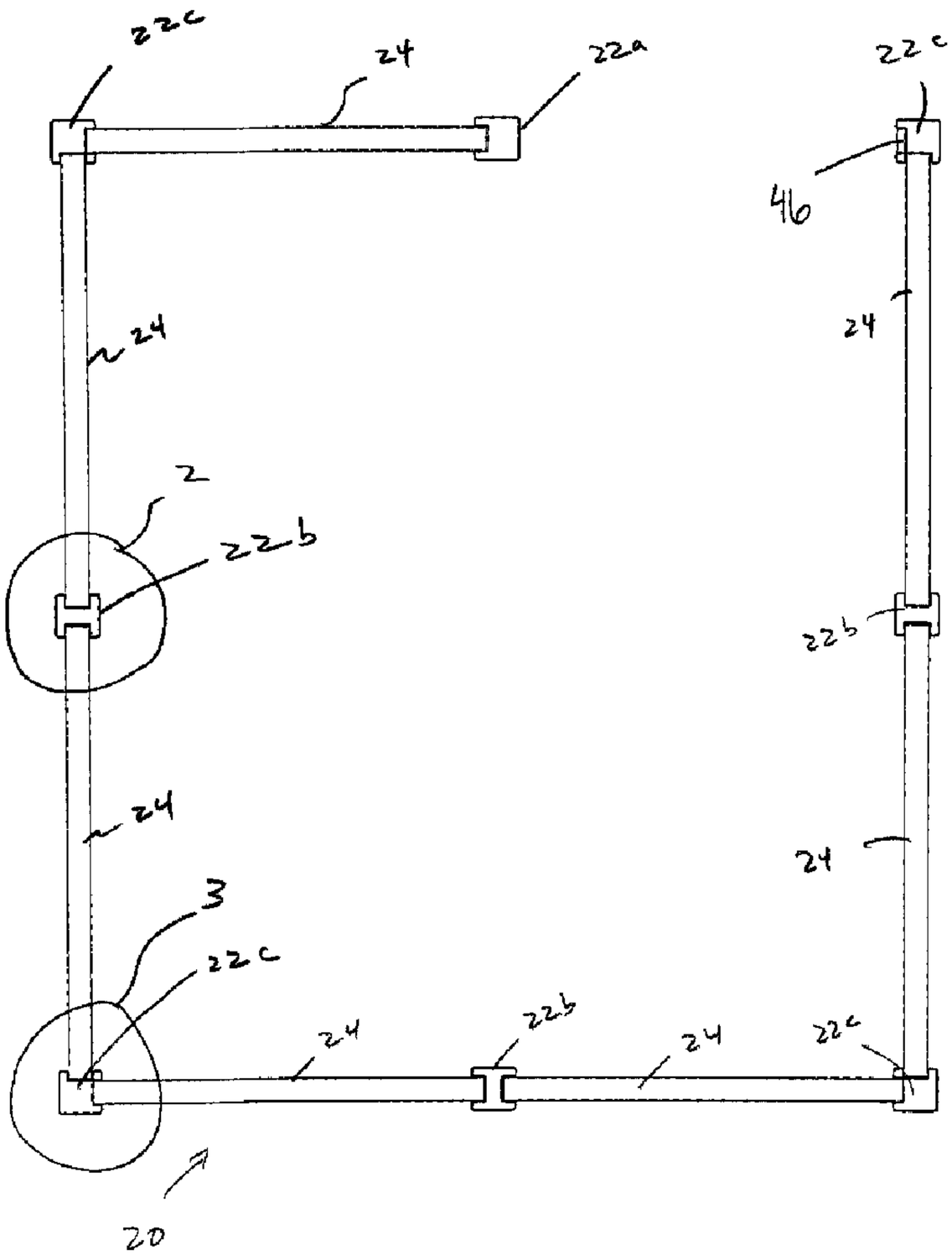
(54) Titre : CLOTURE MODULAIRE ET METHODE DE CONSTRUCTION
(54) Title: MODULAR FENCING SYSTEM AND METHOD FOR CONSTRUCTING SAME



(57) Abrégé/Abstract:
The invention is directed to a fence post and a modular fencing system and method that utilizes same. The fence post has an elongated body having an outer wall and at least one elongated channel defined by said outer wall. The elongated channel has

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(57) Abrégé(suite)/Abstract(continued):
opposing sides and an open front. A fastener guide is defined in the outer wall along a plane that is generally orthogonal to the opposing sides of the component channel. In a further embodiment the component channel includes a lip protruding inwardly from the opposing sides adjacent to the front portion. In a further embodiment the fencing system includes post reinforcement members and rail reinforcement members. In other embodiments a fencing system is provided which includes posts, rails, pickets, screens and spacers that interconnect with the aid of fasteners to define a fence structure.

File No. 31168-2042

ABSTRACT OF THE DISCLOSURE

The invention is directed to a fence post and a modular fencing system and method that utilizes same. The fence post has an elongated body having an outer wall and at least one elongated channel defined by said outer wall. The elongated channel has opposing sides and an open front. A fastener guide is defined in the outer wall along a plane that is generally orthogonal to the opposing sides of the component channel. In a further embodiment the component channel includes a lip protruding inwardly from the opposing sides adjacent to the front portion. In a further embodiment the fencing system includes post reinforcement members and rail reinforcement members. In other embodiments a fencing system is provided which includes posts, rails, pickets, screens and spacers that interconnect with the aid of fasteners to define a fence structure.

Title: MODULAR FENCING SYSTEM AND METHOD FOR CONSTRUCTING SAME

FIELD OF THE INVENTION

[0001] The present invention is directed to fencing systems and in particular to modular fencing systems.

BACKGROUND OF THE INVENTION

[0002] Modular fencing systems are becoming increasingly popular particularly those having components formed of extruded or molded materials such as polyvinylchloride (PVC) or other plastics or composites. Such materials are durable and resistant to rotting or insects. One problem with current modular fencing systems is the manner in which the fencing components are interconnected. Current systems are not adapted for securely fastening the components together in a simple, accurate and aesthetically pleasing way.

[0003] There is a need to improve upon existing fencing system designs in order to simplify their assembly, to allow a variety of design variations from the same set of components, and improve their overall strength. Furthermore, there is a need to improve the manner of securing components together while maintaining a pleasing aesthetic appearance to the finished product.

SUMMARY OF THE INVENTION

[0004] In one aspect the invention provides a fence post comprising (a) an elongated body having an outer wall; (b) .at least one elongated component channel defined in said body by said outer wall, said component channel having a pair of opposing sides, a back extending between said opposing sides and an open front defined between said opposing sides; and (c) at least one fastener guide defined in said outer wall along a plane that intersects said opposing sides of said component channel.

[0005] In another aspect the invention provides a modular fencing system comprising (a) a plurality of fence posts, each said fence post comprising (i)

an elongated body having an outer wall, (ii) at least one elongated component channel defined in said body by said outer wall, said component channel having a pair of opposing sides, a back extending between said opposing sides and an open front defined between said opposing sides, (iii) at least one fastener guide defined along a plane that is orthogonal to said opposing sides of said component channel; and (b) a plurality of rails for extending between adjacent pairs of said fence posts, said rails having a cross-sectional profile that is sized to fit within said component channels.

[0006] In another aspect the invention provides a modular fencing system comprising (a) a plurality of fence posts, each said fence post comprising (i) an elongated body having an outer wall, (ii) at least one elongated component channel defined in said body by said outer wall, said component channel having a pair of opposing sides, a back extending between said opposing sides and an open front defined between said opposing sides, (iii) a lip protruding inwardly from each of said opposing sides of said component channel adjacent to said front; and (b) a plurality of rails for extending between adjacent pairs of said fence posts, said rails having a cross-sectional profile that is sized to fit within said component channels.

[0007] In another aspect the invention provides a fence post comprising (a) an outer wall defining an elongated body having a hollow interior; (b) at least one elongated component channel defined in said body by said outer wall; and (c) an elongated post reinforcement member disposed within said hollow interior, said post reinforcement member defining an elongated channel for nesting with said component channel of said body.

[0008] In another aspect the invention provides a method for constructing a modular fence system composing the following steps: (a) securing elongate fence posts into a ground surface each of said fence posts have elongate component channels with opposing sides and an open front and at least one fastening guide defined along a plane that is orthogonal to said opposing sides of said component channel; (b) positioning rails laterally between pairs of fence posts with the ends of said rails being disposed in said component channels; (c) drilling access holes through said fence posts and said rails; (d)

drilling pilot holes through at least one side of said component channel and at least one wall of said rails disposed in said component channel; and (e) securing said rails to said posts using fasteners extending through said pilot holes in said component channels and said rails.

[0009] The terms "fence" and "fencing system" as used herein are intended to include all forms of barrier systems having a support member and a spacing member including, without limitation, fence systems, railing systems, noise barrier systems, partition wall systems and the like.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Figure 1 is a plan view of a modular fencing system (with caps removed) in accordance with the present invention;

[0011] Figure 2 is an exploded perspective view of a portion of the modular fencing system identified at 2 in Figure 1;

[0012] Figure 3 is a perspective view of a portion of the modular fencing system identified at 3 in Figure 1;

[0013] Figure 4 is a sectional view of the assembled components for the modular fencing system as shown along lines 4-4 of Figure 2;

[0014] Figure 5 is a sectional view of the assembled components for the modular fencing system as shown along lines 5-5 of Figure 2;

[0015] Figure 6 is a sectional view of the assembled components for the modular fencing system as shown along lines 6-6 of Figure 2;

[0016] Figure 7 is a sectional view of an intermediate post for the modular fencing system of Figure 1;

[0017] Figure 8 is a sectional view of a corner post for the modular fencing system of Figure 1.;

[0018] Figure 9 is a sectional view of an end post for the modular fencing system of Figure 1.

[0019] Figure 10 is a sectional view of a blank spacer for the modular fencing system of Figure 1;

[0020] Figure 11 is a sectional view of a post element for a modular fencing system in accordance with another embodiment of the present invention;

[0021] Figure 12 is a sectional view of a post comprising two inter-fitted post elements as shown in Figure 11.

[0022] Figure 13 is an exploded perspective view of a portion of a modular fencing system in accordance with another embodiment of the present invention;

[0023] Figure 14 is a sectional view of an intermediate post with reinforcement member for the modular fencing system of Figure 13;

[0024] Figure 15 is a sectional view of a corner post with reinforcement member for the fencing system of Figure 13;

[0025] Figure 16 is a sectional view of an end post with reinforcement member for the fencing system of Figure 13; and

[0026] Figure 17 is a front view of a fence section for the modular fencing system of Figure 13 with reinforcement members being shown in phantom outline.

DETAILED DESCRIPTION OF THE INVENTION

[0027] A modular fencing system in accordance with the present invention is shown generally at 20 in the Figures. The system includes a plurality of elongate posts 22 adapted for laterally supporting a plurality of elongate rails 24. Additional modular fencing components such as screens 26 and pickets 28 are similarly supported between rails 24 and posts 22.

[0028] Posts 22, as depicted in the figures, are generally square in cross section however, posts 22 may instead be round, polygonal, or any other suitable cross-sectional shape. The outer surface of posts 22 may be smooth as shown in the figures, or may be textured such as with a wood grain texture or any other desirable texture that can be formed thereon. As shown, the posts 22 are adapted to be secured in the ground within holes (not shown) that are filled with dirt or cement. Alternatively, the posts 22 may include a base (not shown) that may form a free-standing support or that may be secured with fasteners to a floor, a walkway, a deck or a similar surface.

[0029] Referring to Figures 1 to 3, posts include end posts 22a, intermediate posts 22b, and corner posts 22c. Posts 22 have an outer wall 30 that defines a hollow interior 32 and at least one component channel 34 for receiving rails 24 and component spacers 36. The hollow interior 32 is adapted to optionally receive a reinforcement member 110 to reinforce the post 22. More details concerning a fencing system utilizing one or more reinforcement members is described below and shown in Figures 13-17.

[0030] Component channel 34 has a generally rectilinear profile and is preferably rectangular with opposing sides 38 and a back 40. Channel 34 has an open front 42 in order to receive rails 24 and spacers 36. A lip 44 protrudes inwardly from sides 38 adjacent to front 42 for frictionally engaging rails 24 and for slidably supporting spacers 36 within channel 34.

[0031] As shown in Figures 4 to 9, intermediate posts 22b have opposing channels 34 defined along a common central axis C to facilitate construction of a straight section of fencing, corner posts 22c have channels 34 defined along orthogonal central axes C to facilitate construction of a right-angled corner section of fencing and end posts 22a have a single channel 24 to facilitate construction of an end section of fencing. Alternatively, intermediate posts 22b or corner posts 22c may be adapted to function as end posts 22a and, if desired, a blank spacer 46 may be disposed into channel 24 to provide a more pleasing aesthetic appearance (as shown in Figure 1 and 10).

[0032] Referring to Figures 2 and 3, rails 24 include a screen rail 24a, an intermediate rail 24b, and a picket rail 24c. Intermediate rail 24b is only required for dual component configurations such as shown in the figures with one set of fencing components disposed at an upper portion of the fence and another set of fencing components disposed at a lower portion of the fence. It will be understood that various configurations are possible utilizing all or some of rails 24, pickets 28, and screens 26.

[0033] Rails 24 preferably have a hollow interior 48 with an outer wall 50 that defines at least one rail channel 52 for slidably receiving fencing components such as pickets 28 or screens 26. Rails also may be straight, curved or any other desired shape according to the desired aesthetic design. The hollow

interior 48 is adapted to receive a reinforcement member 112 to reinforce the rail 24. More details concerning the reinforcement member for the rail are described below and shown in Figures 13-17. Screen rail 24a includes a screen channel 52a for receiving screen 26 and picket rail 24c includes a picket channel 52b for receiving pickets 28. Intermediate rail 24b includes rail channels 52 defined on opposing surfaces in order to receive screens 26 and/or pickets 28. In the configuration shown in the figures, intermediate rail 24b includes both screen channel 52a and picket channel 52b. It could instead include two screen channels 52a or two picket channels 52b if such configurations are desired.

[0034] Screen rail 24a, intermediate rail 24b and picket rail 24c may be interchanged to support alternate configurations of fencing components. For instance, if only a picket fence configuration is desired then two picket rails 24c are utilized with picket channel 52b of the upper picket rail 24c extending downwardly and picket channel 52b of the lower picket rail 24c extending upwardly. It is intended that a consumer would purchase only those posts 22 and rails 24 required to produce the configuration of fencing product desired.

[0035] Referring to Figures 5 and 6, spacers 36 are preferably substantially hollow with an outer wall 54 that defines a spacer channel 56 for receiving pickets 28 or screens 26. Thus, a screen spacer 36a may include a screen channel 56a for receiving screens 26 and a picket spacer 36b may include a picket channel 56b for receiving pickets 28. Spacer channels 56 have a width W that is slightly narrower than the width w of the corresponding screens 26 and pickets 28. Spacer channels 56 have sides 58 that are sufficiently resilient that the sides 58 will deform to receive and support the corresponding screen 26 or picket 28 under compression.

[0036] Referring to Figures 2 and 3, caps 60 are provided to fit snugly over the top of posts 22 to cover the hollow opening and provide a pleasing aesthetic appearance to the fence. Caps 60 include an outer wall 62 that is adapted to snugly fit over outer wall 30 at the top of posts 22 without the need for fasteners to secure the cap in place.

[0037] Referring to Figures 7-9, fastener guides 70 are defined in outer wall 30 of posts along a plane F that is generally orthogonal to sides 38 of channels 34. Fastener guides 70 are preferably defined as an elongate groove extending along the length of the posts. The guides 70 may have a v-shaped or a u-shaped profile as shown in the figures or it may have a different rounded or rectilinear profile if desired.

[0038] Fastener guides 70 are provided to facilitate alignment of a drill bit (not shown) to drill an access hole 72 in outer wall 30 of posts 22 and a pilot hole 74 in sides 38 of channels 34 and rails 24 for receiving fasteners 76. Fasteners 76 may be self tapping screw fasteners as shown or may be any other form of suitable fastener such as bolts, nails or the like. Access hole 72 is preferably formed with a diameter D that is slightly larger than the widest diameter of fastener 76. Pilot hole 74 is preferably formed with a diameter d that is slightly smaller than the narrowest diameter of fastener 76. Thus, during installation, access holes 72 would first be drilled at desired locations through outer surface 30 of posts 22 and then pilot holes 74 would subsequently be drilled in alignment with access holes 72 through sides of channels 34 and rails 24. While it is preferable that fasteners 76 are countersunk within posts 22, it is contemplated that fasteners 76 may instead be secured to posts 22 such that the head of the fastener is engaged against the outer surface of post 22 (thus avoiding the need of forming an access hole 72 for counter-sinking the fasteners 76).

[0039] It is contemplated that a single fastener 76 would be extended through both sides 38 of channels 34 and rails 24 (or other fencing components disposed therein). Alternatively, a first fastener 76 may be secured through a single side 38 of channel 34 and rail 24 with a second fastener 76 being secured through the opposing side 38 and rail 24 if desired (this configuration is not shown).

[0040] As shown in Figure 4 it is preferable that fasteners are secured at least through rails 24 in order to securely fasten rails 24 and posts 22 together. It is further preferred that a pair of fasteners 76 are used to secure each rail 24. Provided that rails 24 are firmly secured to posts 22, it is not necessary,

although possible if desired, to secure fasteners 76 through spacers 36, pickets 28 or screens 26.

[0041] Once fasteners are secured, plugs 78 may then be inserted into access holes 72 to snugly cover the opening to deter water or other materials from entering the post and to provide a pleasing finished appearance to posts. Should it be necessary to dismantle the fencing components, such as for instance, to replace a broken rail 24 or picket 28, plugs 78 may be removed and fasteners 76 may be accessed.

[0042] Referring to Figures 11 and 12, an alternative embodiment of post 22 is depicted with like reference numerals referring to like elements described above. In this embodiment, post 22 comprises a pair of post elements 100 that are identical in profile and that include nesting elements 102 that allow post elements 100 to be secured together either by way of slidable insertion, or by way of snap-fit insertion. Nesting elements 102 include first shoulders 104 that engage second shoulders 106 to facilitate post elements being secured together. First shoulders 104 further include a tapered wall 108 that facilitates a snap fit engagement between corresponding post elements 100.

[0043] Referring to Figures 13-17, an alternative embodiment of a fencing system 20 is depicted with like reference numerals referring to like elements as described above. In this embodiment, one or more of the posts 22 are reinforced with post reinforcement members 110 and one or more of the rails 24 are reinforced with rail reinforcement members 112. For instance, for the section of fencing depicted in Figure 13, screen rail 24a and picket rail 24c are each reinforced with corresponding rail reinforcement members 112. A rail reinforcement member 112 may also be disposed within intermediate rail 24b if additional reinforcement is desired.

[0044] Referring to Figures 14-16, post reinforcement member 110 is configured to fit closely with component channels 34. Accordingly, for an intermediate post 22b configuration, post reinforcement member 110 includes opposing side walls 114 spanned by opposing back walls 116. Side walls 114 and back walls 116 are sized to fit closely with sides 38 and back 40 of component channel 34. A channel 118 is defined between side walls 114 and

back walls 116 to accommodate an additional reinforcing bar (not shown) if desired. Since post reinforcement members 110 are adapted to be embedded in the ground (or secured to a base member) an additional reinforcing bar is not believed to be necessary.

[0045] A similar configuration of post reinforcing member 110 may be used for an end post 22a as shown in Figure 16.

[0046] For a corner post 22a, as shown in Figure 15, the post reinforcing member 110 comprises back walls 120 that are adapted to be arranged generally parallel to the opposing back walls 40 of the component channels 34. Post reinforcing member 110 further includes side walls 122 that are disposed at the ends of back walls 120 and that extend perpendicular to the sides 28 of the component channels 34.

[0047] Similarly, rail reinforcement members 112 are configured to fit closely with the interior surface of rail walls 50. Preferably, the rail reinforcement members 112 are generally hollow and, in the case where rails 24 are generally rectangular in cross section, will have a corresponding rectangular cross section. The rail reinforcement member 112 used for screen rail 24a will have a slightly different configuration then rail reinforcement member 112 used for picket rail 24c or intermediate rail 24b in view of the size and configuration of rail channels 52.

[0048] Post reinforcement member 110 and rail reinforcement member 112 are preferably formed from metal (preferably galvanized or coated) where such metal is sufficiently rigid to provide the desired reinforcement along the length of the post or rail. It has been found that a galvanized G90 metal having a thickness of 14 gauge is suitable for most fencing applications. While metal is the preferred material for reinforcement it will be understood that other materials may be utilized including extruded or molded PVC or other plastics or composites having sufficient rigidity.

[0049] Referring to Figures 13-14, it can be seen how fasteners 76 extend through the walls of reinforcement members 110 and 112 as well as the walls of posts 22 and rails 24. As described above, access holes 72 and pilot holes 74 are drilled with the aid of fastener guides 70 to facilitate accurate location

of fastener 76. Fasteners are then secured in place and plugs 78 are provided to cover the access holes.

[0050] In use, a fencing system 20 is constructed by first identifying the desired fencing configuration and then selecting the fencing components required to construct the desired configuration. Posts 22, with post reinforcement members 110 if desired, would be secured into the ground in known manner with end posts 22a, intermediate posts 22b, and corner posts 22c disposed in the appropriate locations with channels 34 located squarely across from channels 34 disposed in adjacent posts 22. Rails 24, with rail reinforcement members 112 if desired, would be arranged for placement between posts 22. Lower rails 24 would be cut if necessary to their desired lengths and disposed between posts 22 in their desired positions. Spacers 36 would be cut if necessary to desired length and disposed in component channels 34. Intermediate rails 24b or upper rails 24 (if no intermediate rails are required) would also be placed into position. Pickets 28 and/or screens 26 are also slidably positioned between rails 24. Once all of the elements are suitably positioned, access holes 72 are drilled into posts 22 using fastening guides 70 for alignment and pilot holes 74 are drilled into sides 38 of component channels 34, sides of rails 24 and through the respective reinforcement members 110 and 112 if applicable. Fasteners 76 are then inserted through access holes 72 and through pilot holes 74 to fasten rails 24 and posts 22 together. Plugs 78 are then inserted into access holes 72 to cover openings. Caps 60 are then fitted over posts 22 to complete the construction.

[0051] Although the disclosure describes and illustrates preferred embodiments of the invention, it is to be understood that the invention is not limited to these particular embodiments. Many variations and modifications will now occur to those skilled in the art. For definition of the invention, reference is to be made to the appended claims.

Claims:

1. A fence post comprising:

(a) an elongated body having an outer wall;

(b) at least one elongated component channel defined in said body by said outer wall, said component channel having a pair of opposing sides, a back extending between said opposing sides and an open front defined between said opposing sides; and

(c) at least one fastener guide defined in said outer wall along a plane that intersects said opposing sides of said component channel.

2. A fence post as claimed in claim 1 wherein said fastener guide has a v-shaped cross-section.

3. A fence post as claimed in claim 1 wherein said fastener guide extends along the length of said post.

4. A fence post as claimed in claim 1 wherein said at least one fastener guide is defined on each of said opposing sides of said post.

5. A fence post as claimed in claim 1 wherein a first of said fasteners guides is defined on an outer portion of said outer wall and a second of said fastener guides is defined in an adjacent side defined in said component channel, said first fastener guide and said second fastener guide being aligned along a common plane that intersects and is generally orthogonal to said opposing sides of said component channel.

6. A fence post as claimed in claim 5 wherein a second set of said first and second fastener guides are defined on opposing sides of said post.

7. A fence post as claimed in claim 1 wherein said post has a pair of said component channels.

8. A fence post as claimed in claim 1 wherein said post has a plurality of said component channels that are disposed along a common central axes.

9. A fence post as claimed in claim 1 wherein said post has an plurality of said component channels that are disposed along orthogonal central axes.

10. A fence post as claimed in claim 1 wherein said post has a generally rectilinear cross-sectional profile.

11. A fence post as claimed in claim 1 wherein said post has a generally rounded cross-sectional profile.

12. A fence post as claimed in claim 1 further comprising a lip protruding inwardly from each of said opposing sides of said component channel adjacent to said open front.

13. A fence post as claimed in claim 1 that is integrally formed through an extrusion process.

14. A fence post as claimed in claim 1 that is integrally formed through a molding process.

15. A fence post as claimed in claim 1 that is formed of any extrudable or moldable material.

16. A fence post as claimed in claim 1 that is formed of PVC.

17. A fence post as claimed in claim 1 further comprising a plurality of plugs for covering access holes formed in said fastener guide.

18. A fence post as claimed in claim 1 wherein said outer wall defines a hollow interior.

19. A fence post as claimed in claim 18 further comprising a post reinforcing member that is disposable within said hollow interior.

20. A modular fencing system comprising:

(a) a plurality of fence posts, each said fence post comprising:

(i) an elongated body having an outer wall ;

(ii) at least one elongated component channel defined in said body by said outer wall, said component channel having a pair of opposing sides, a back extending between said opposing sides and an open front defined between said opposing sides; and

(iii) at least one fastener guide defined along a plane that is orthogonal to said opposing sides of said component channel; and

(b) a plurality of rails for extending between adjacent pairs of said fence posts, said rails having a cross-sectional profile that is sized to fit within said component channels.

21. A modular fencing system as claimed in claim 20 wherein rail component channels are defined in said rails for receiving one or more desired fence components.

22. A modular fencing system as claimed in claim 20 wherein said fence components comprise one or more pickets.

23. A modular fencing system as claimed in claim 21 wherein said fence components comprise one or more screens.

24. A modular fencing system as claimed in claim 20 further comprising component spacers sized for fitting within said post component channel.

25. A modular fencing system as claimed in claim 24 wherein at least one of said component spacers defines a fence component channel for snugly receiving at least one of said fence components.

26. A modular fencing system as claimed in claim 25 wherein said component spacer defines a blank face for covering said front portion of said channel.

27. A modular fencing system as claimed in claim 20 further comprising a plurality of plugs for covering access holes formed in said fastener guides during assembly of said fencing system.

28. A modular fencing system comprising:

(a) a plurality of fence posts, each said fence post comprising:

(i) an elongated body having an outer wall ;

(ii) at least one elongated component channel defined in said body by said outer wall, said component channel having a pair of opposing sides, a back extending between said opposing sides and an open front defined between said opposing sides; and

(iii) a lip protruding inwardly from each of said opposing sides of said component channel adjacent to said front;

(b) a plurality of rails for extending between adjacent pairs of said fence posts, said rails having a cross-sectional profile that is sized to fit within said component channels.

29. A modular fencing system as claimed in claim 28 wherein rail component channels are defined in said rails for receiving one or more desired fence components.

30. A modular fencing system as claimed in claim 28 wherein said fence components comprise one or more pickets.

31. A modular fencing system as claimed in claim 29 wherein said fence components comprise one or more screens.

32. A modular fencing system as claimed in claim 28 further comprising component spacers sized for fitting within said post component channel.

33. A modular fencing system as claimed in claim 32 wherein at least one of said component spacers defines a fence component channel for snugly receiving at least one of said fence components.

34. A modular fencing system as claimed in claim 33 wherein said component spacer defines a blank face for covering said front portion of said channel.

35. A fence post comprising:

(a) an outer wall defining an elongated body having a hollow interior;

(b) at least one elongated component channel defined in said body by said outer wall;

(c) an elongate post reinforcement member disposed within said hollow interior, said post reinforcement member defining an elongated channel for nesting with said component channel of said body.

36. A fence post as claimed in claim 35 wherein said post reinforcement member is removably disposed within said hollow interior.

37. A fence post as claimed in claim 35 wherein said outer wall defines a completely hollow interior.

38. A fence post as claimed in claim 35 wherein said outer wall defines an opposing pair of said component channels.

39. A fence post as claimed in claim 35 wherein said outer wall defines a pair of said component channels orthogonally to one another.

40. A fence post as claimed in claim 35 wherein said post reinforcement member is formed of metal.

41. A method for constructing a modular fence system comprising the following steps:

(a) securing elongate fence posts to a ground surface each of said fence posts have elongate component channels with opposing sides and an open front and at least one fastening guide defined along a plane that is orthogonal to said opposing sides of said component channel;

(b) positioning rails laterally between pairs of fence posts with the ends of said rails being disposed in said component channels;

(c) securing said rails to said posts using fasteners and said fastening guides; and

(d) drilling pilot holes through at least one side of said component channel and at least one wall of said rails disposed in said component channel.

42. A method as claimed in claim 41 further comprising the step of drilling holes through said fastening guides for receiving said fasteners.

43. A method as claimed in claim 42 wherein said holes include access holes for fully receiving said fasteners.

44. A method as claimed in claim 42 wherein said holes include pilot holes for receiving said fasteners.

45. A method as claimed in claim 41 further comprising the step of inserting plugs into said holes after securing said fasteners.

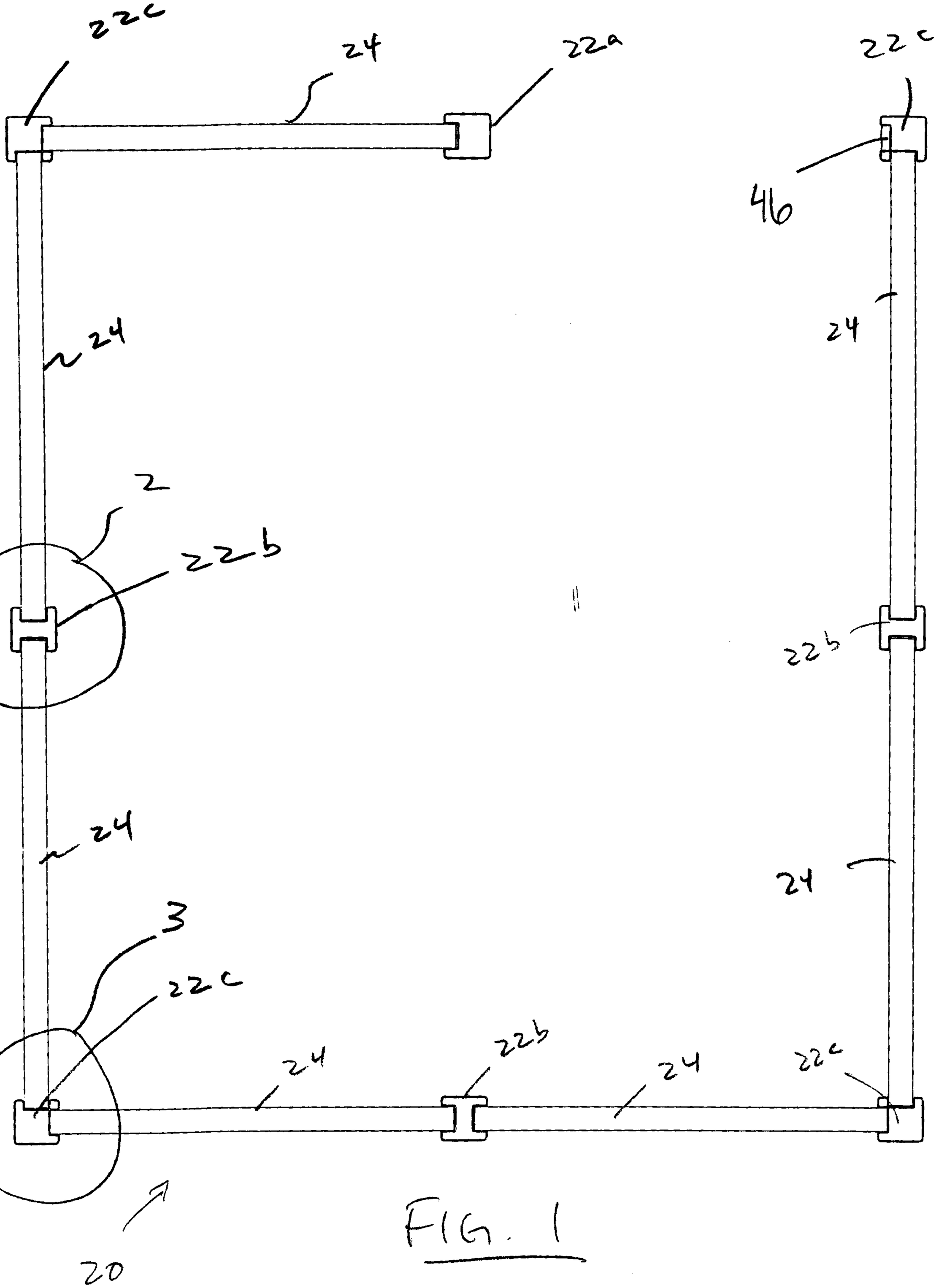

FIG. 1

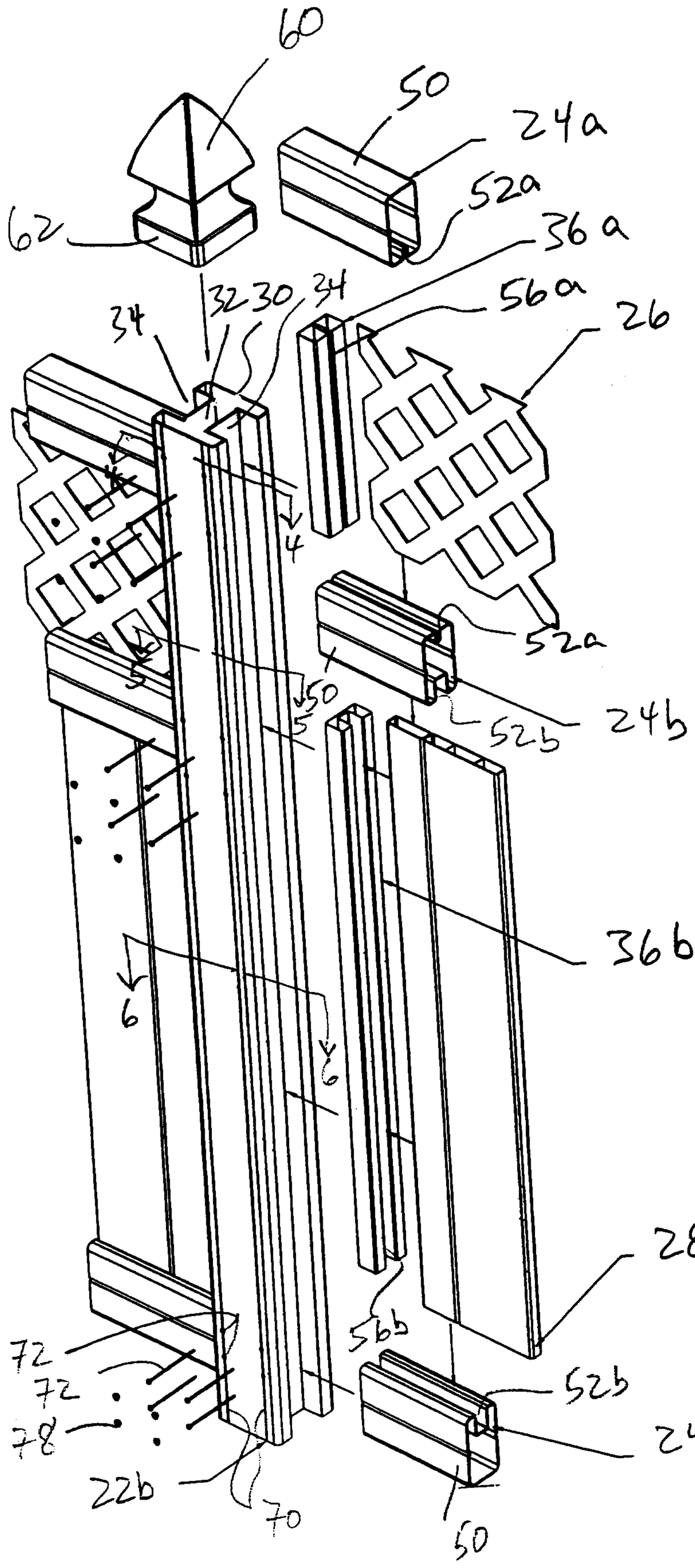
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FIG 2

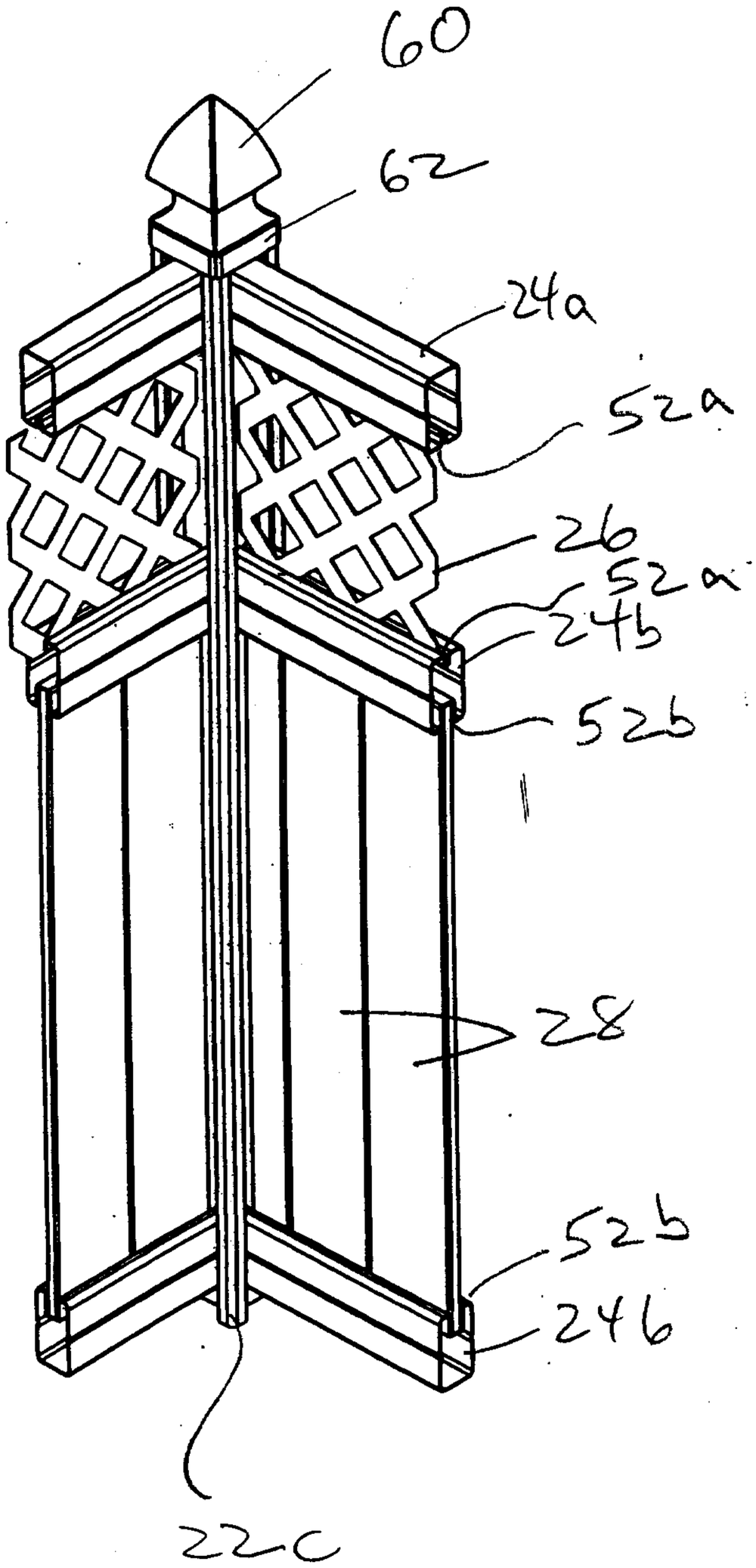

fig 3

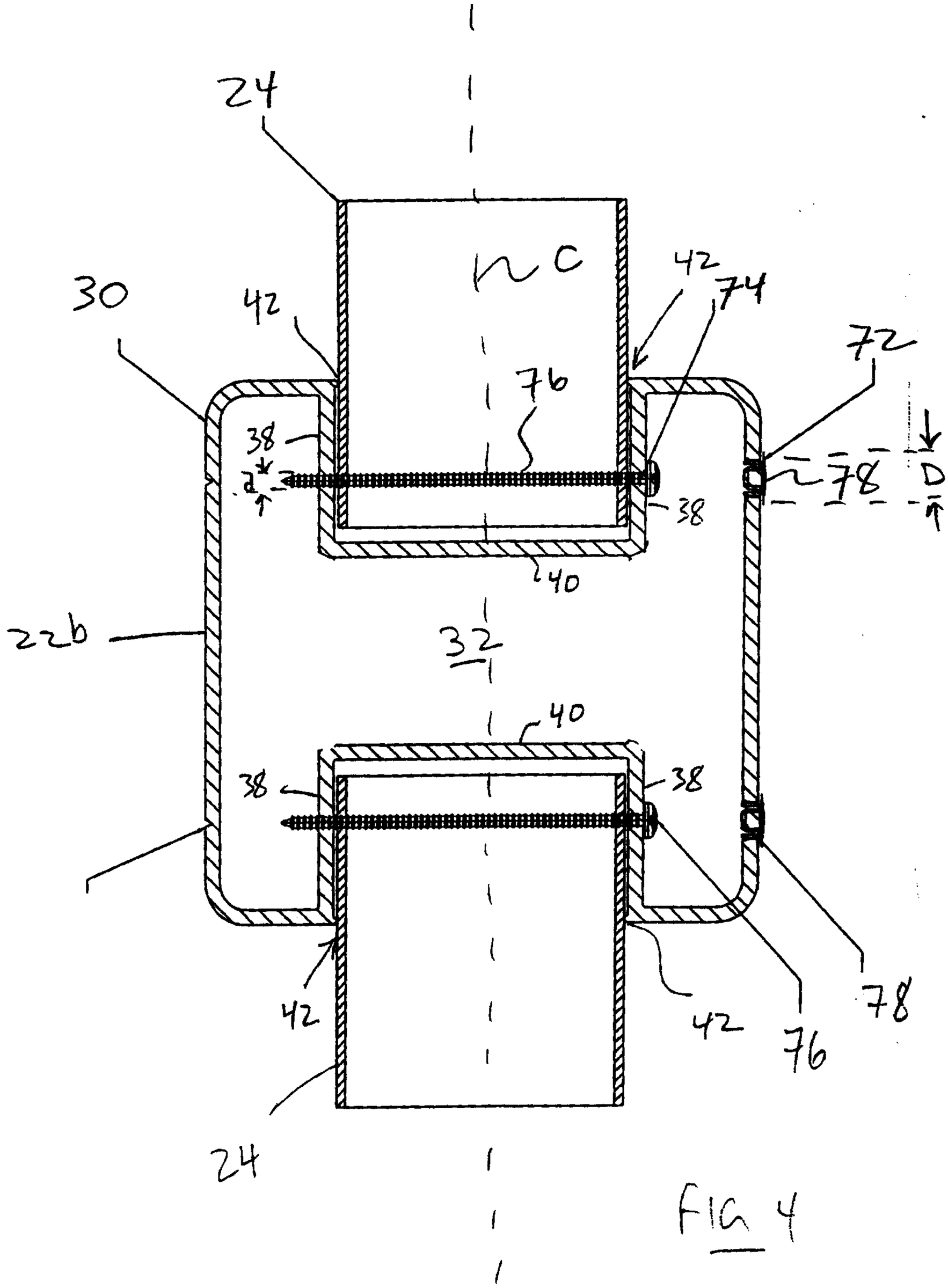
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FIG 4

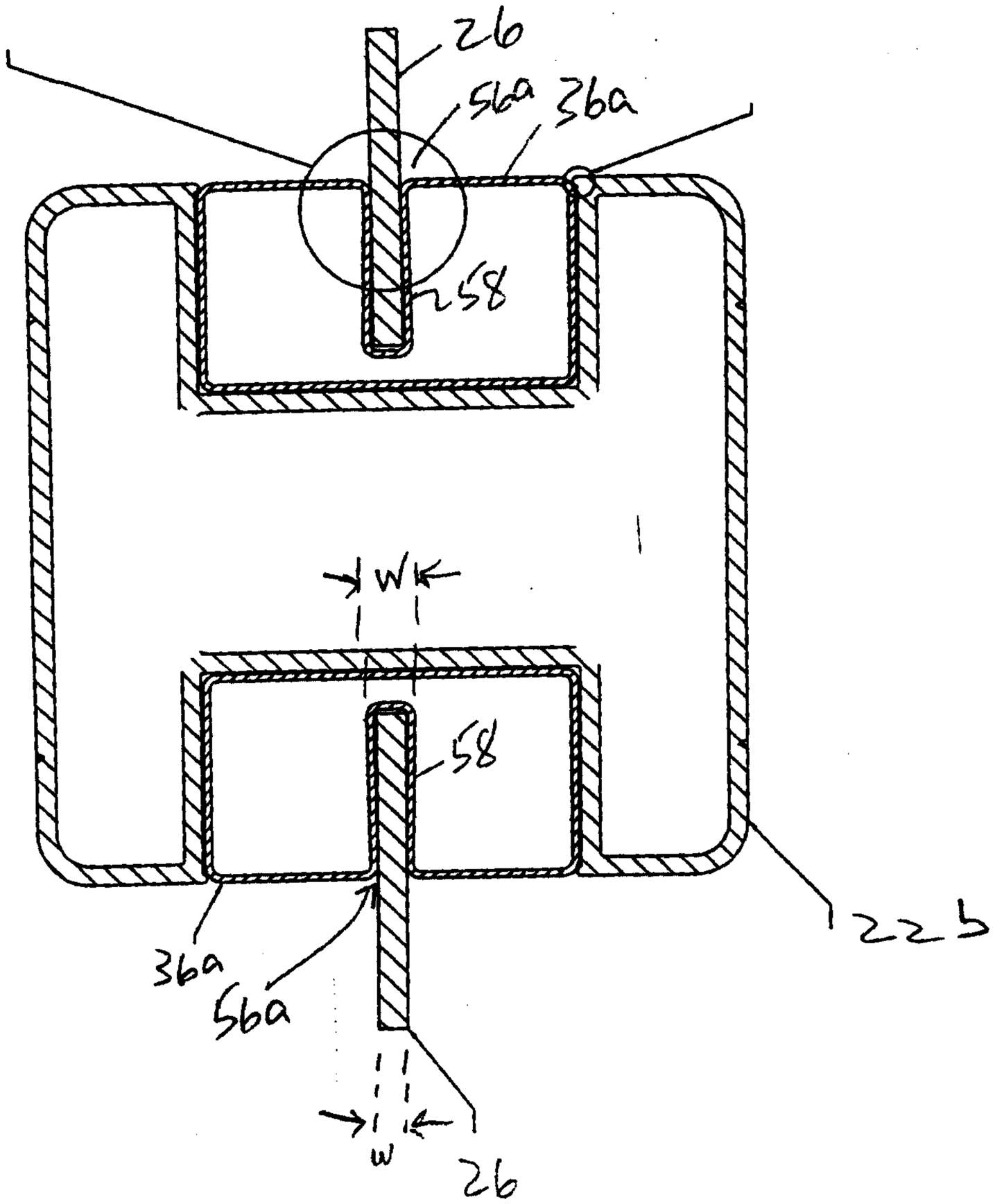

fig 5

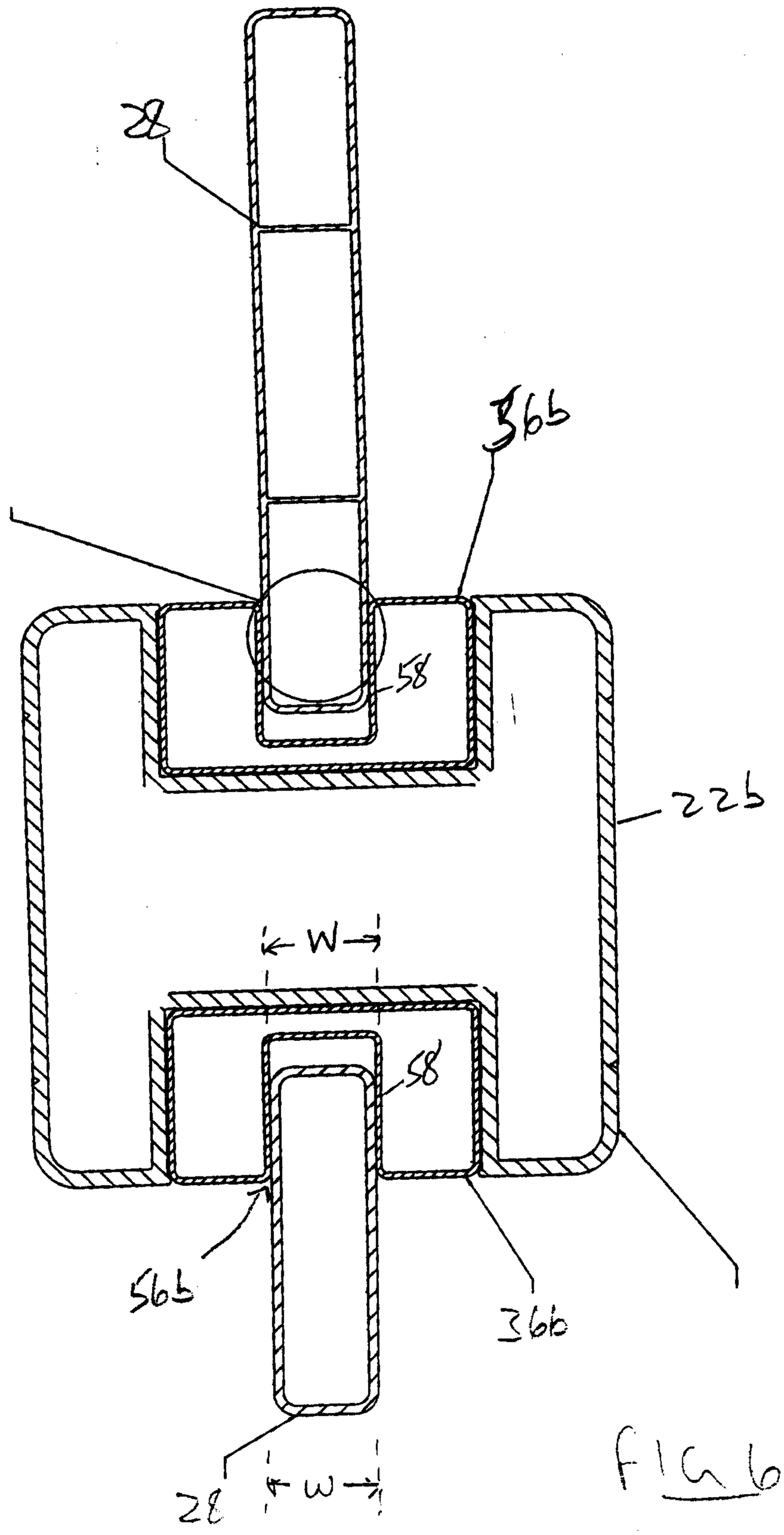

Fig 6

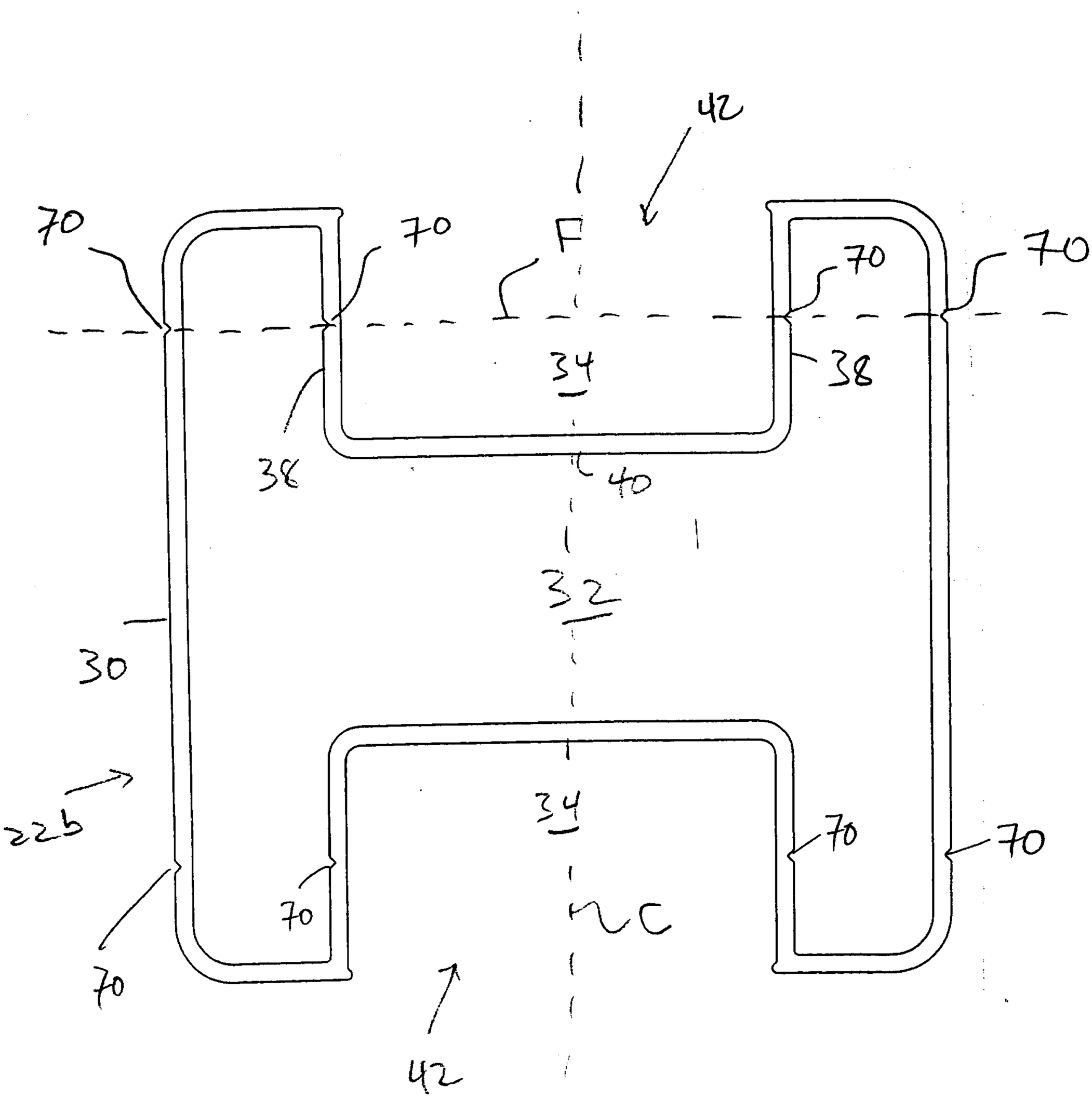

FIG 7

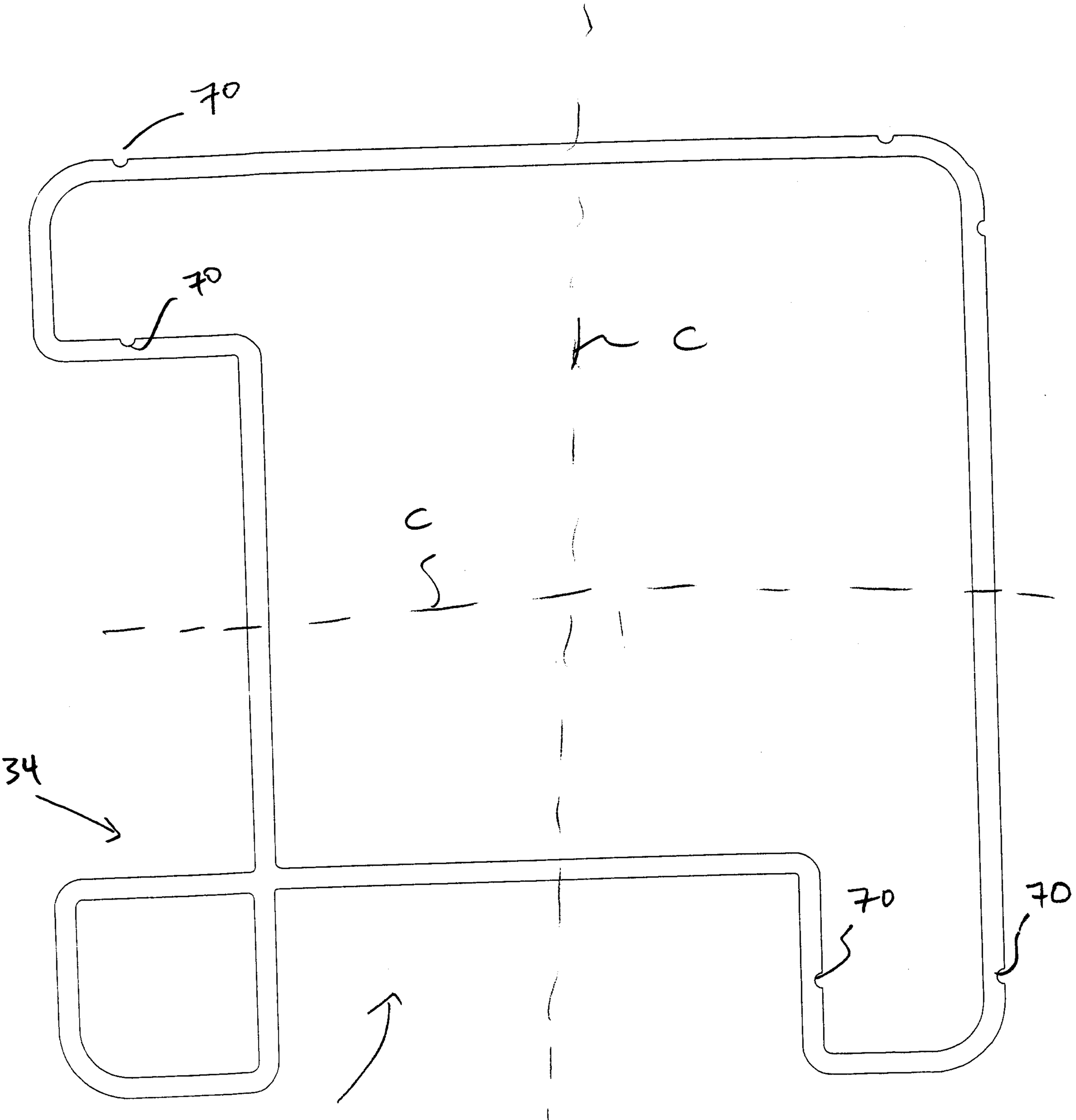

FIG. 8

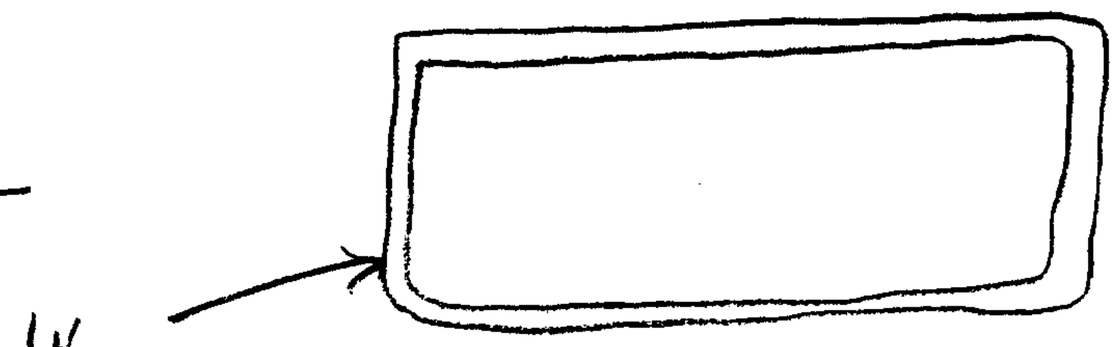

FIG. 10

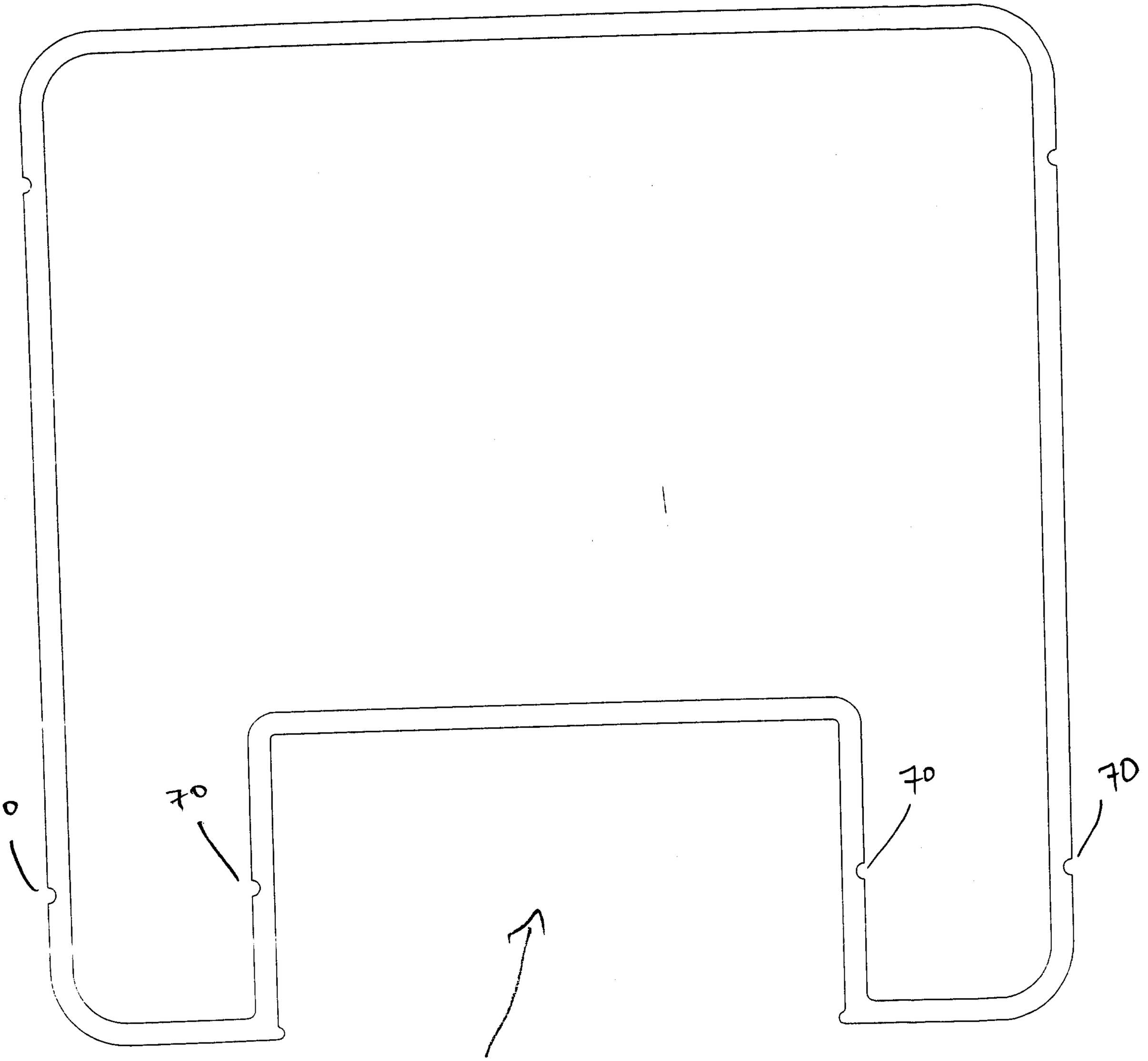

Fig. 9

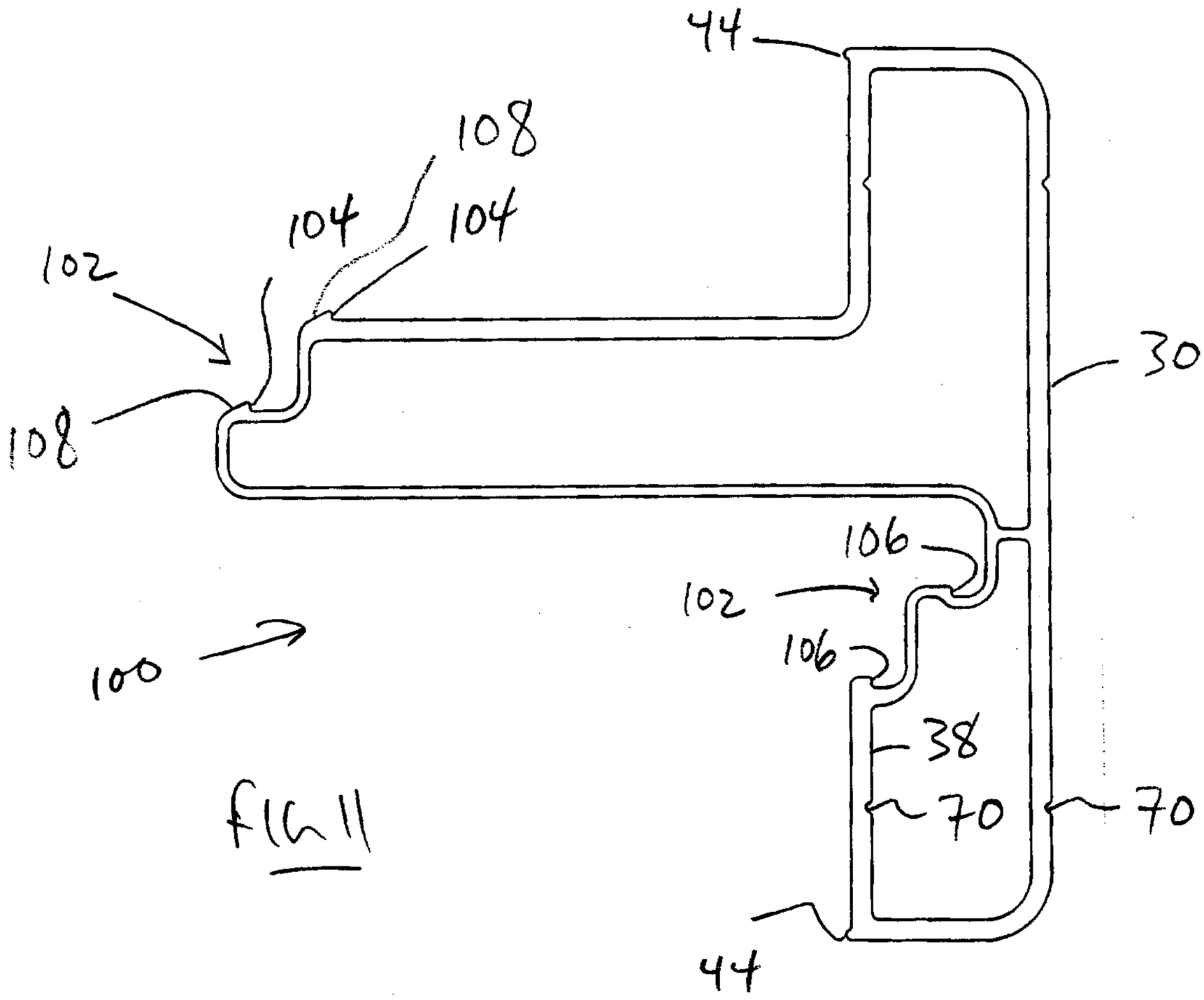
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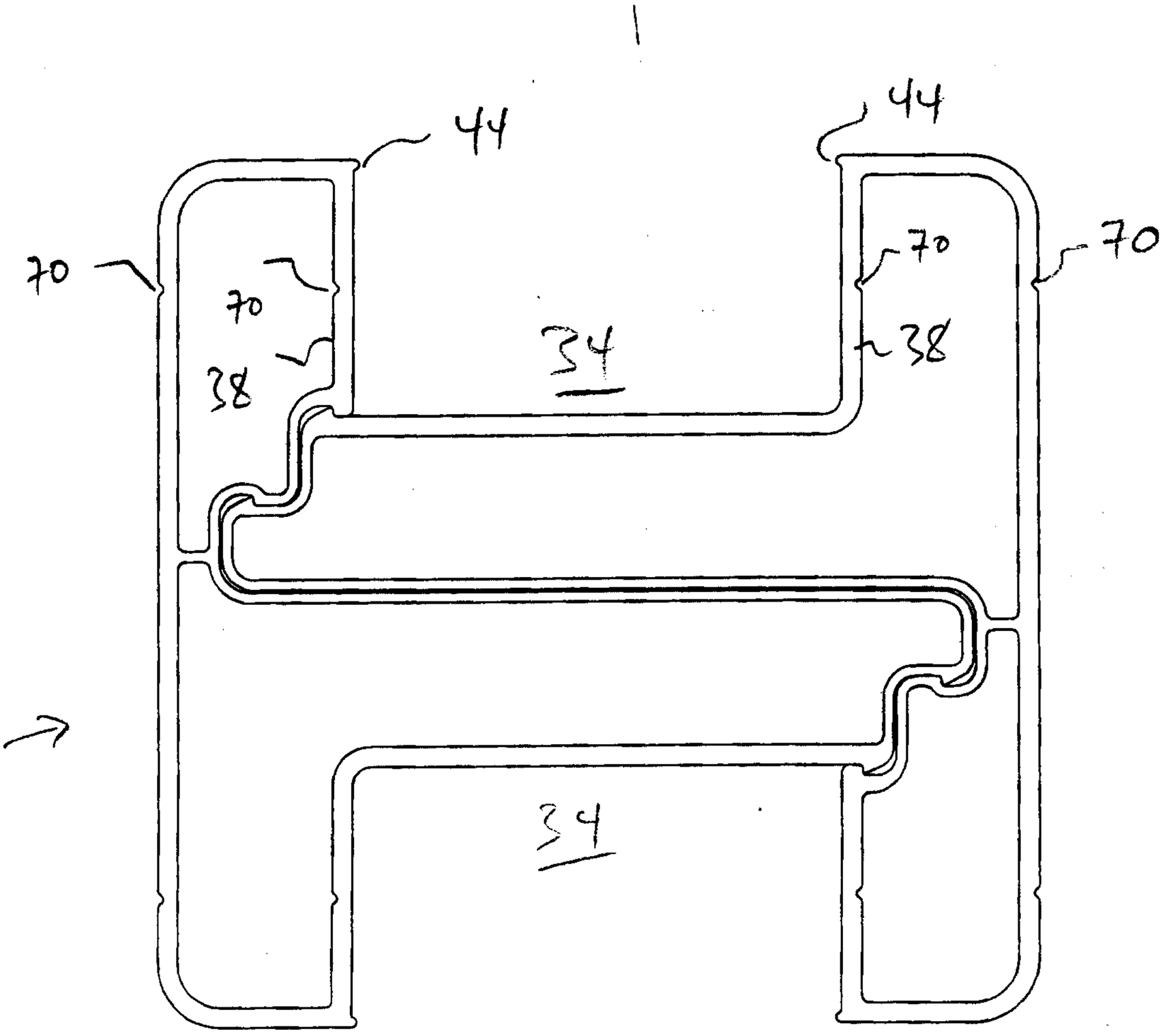
fig 11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226
34

fig 12

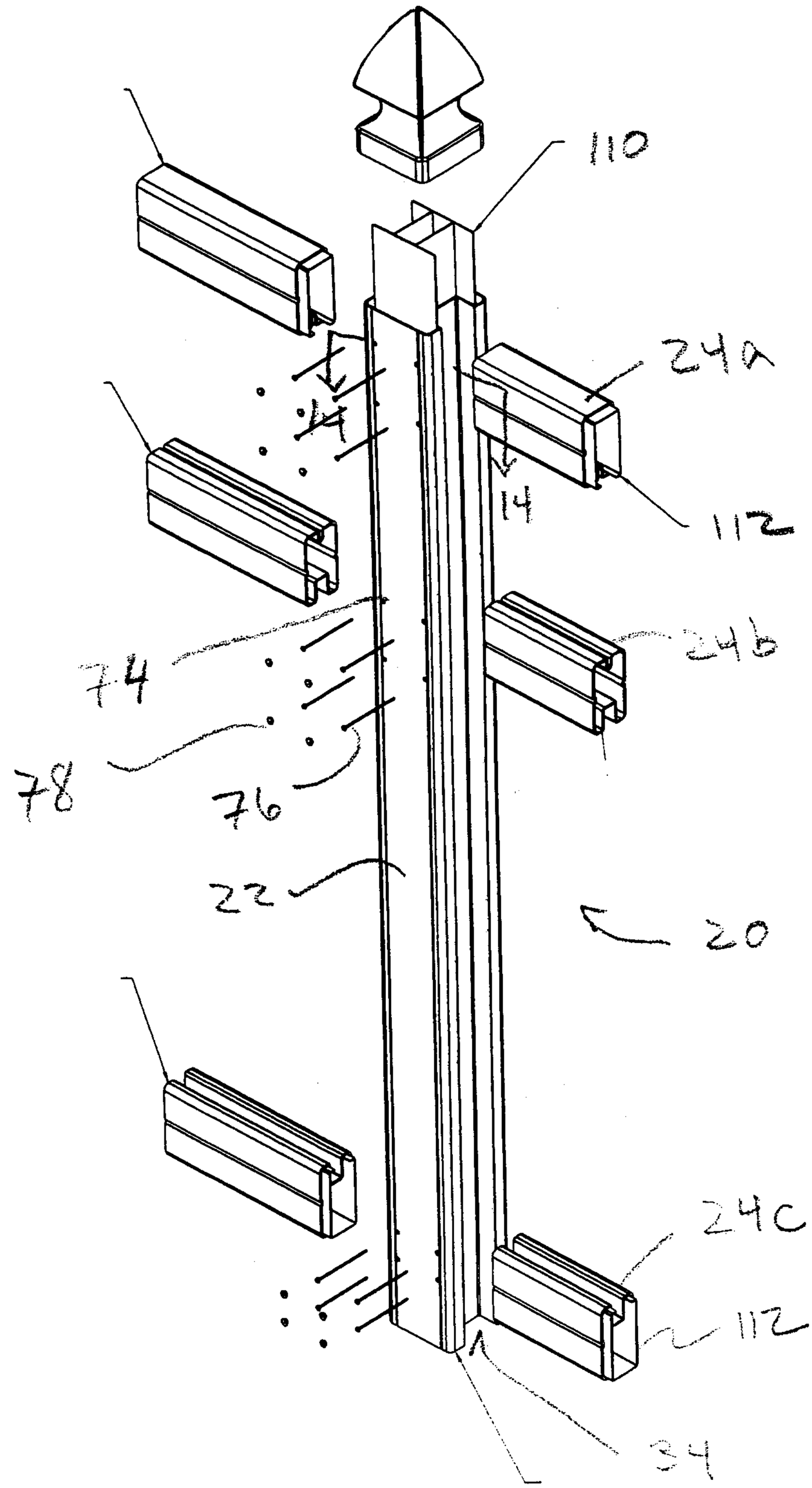


FIG. 3

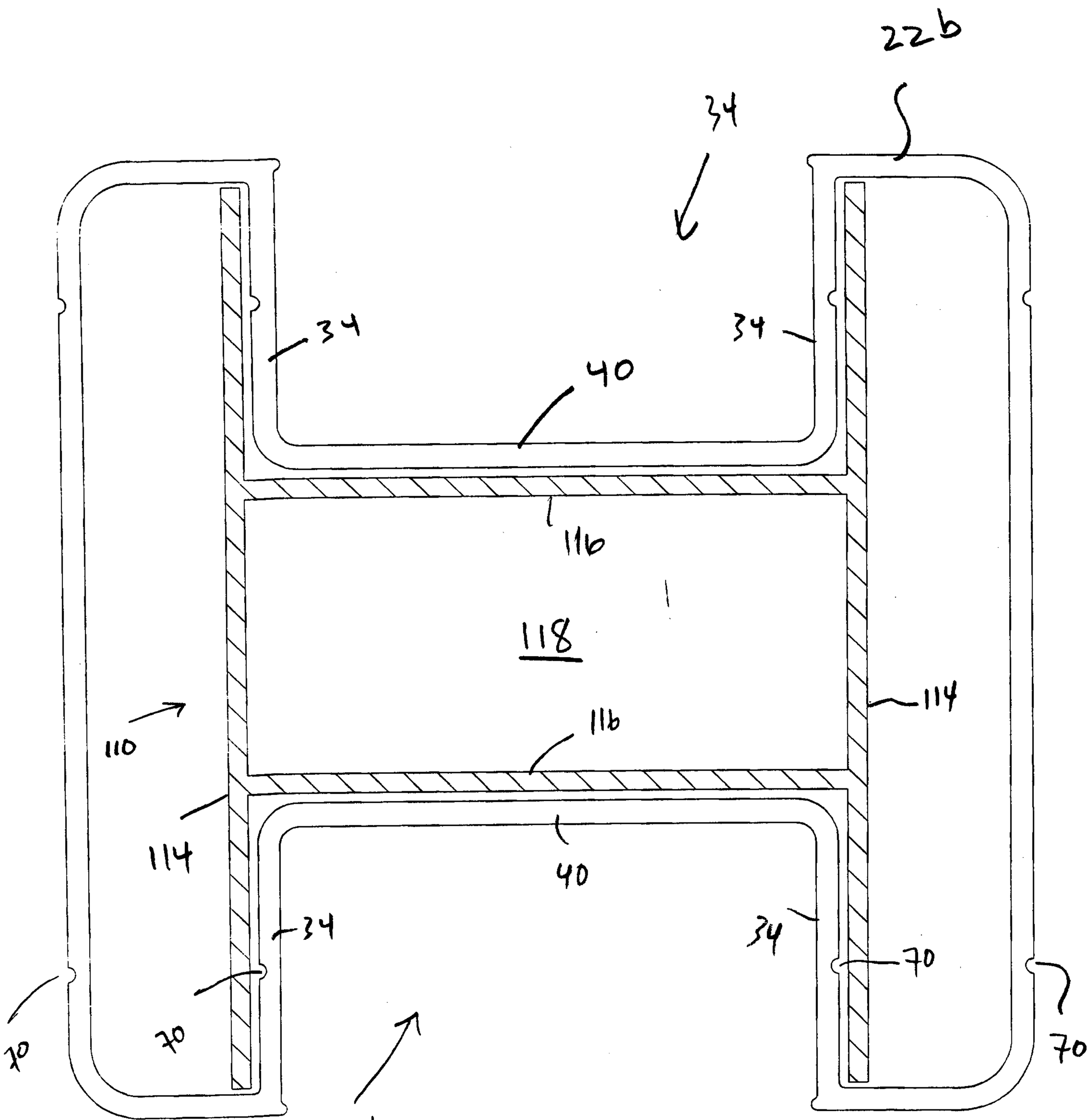


FIG. 14

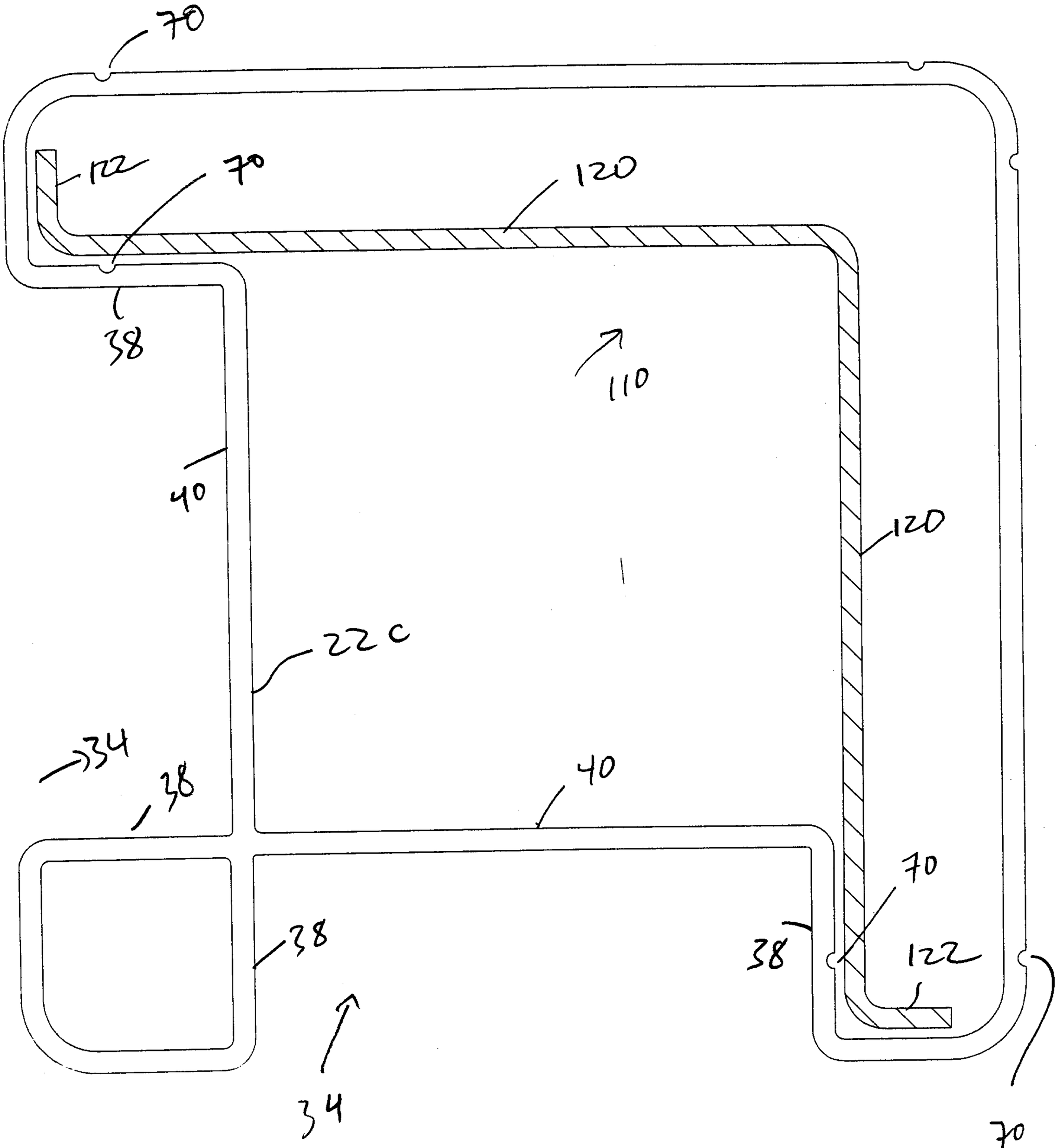


fig. 15

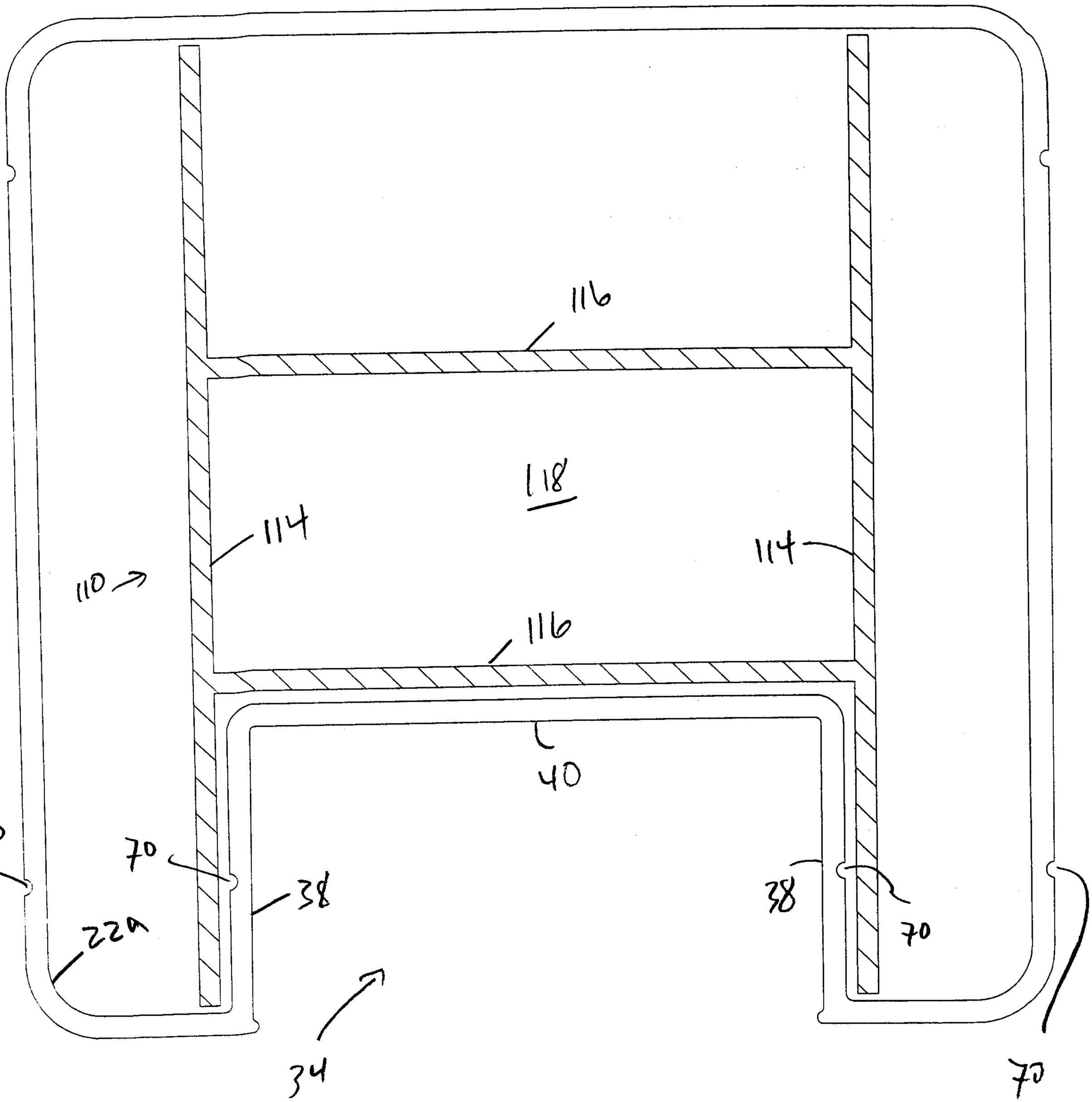
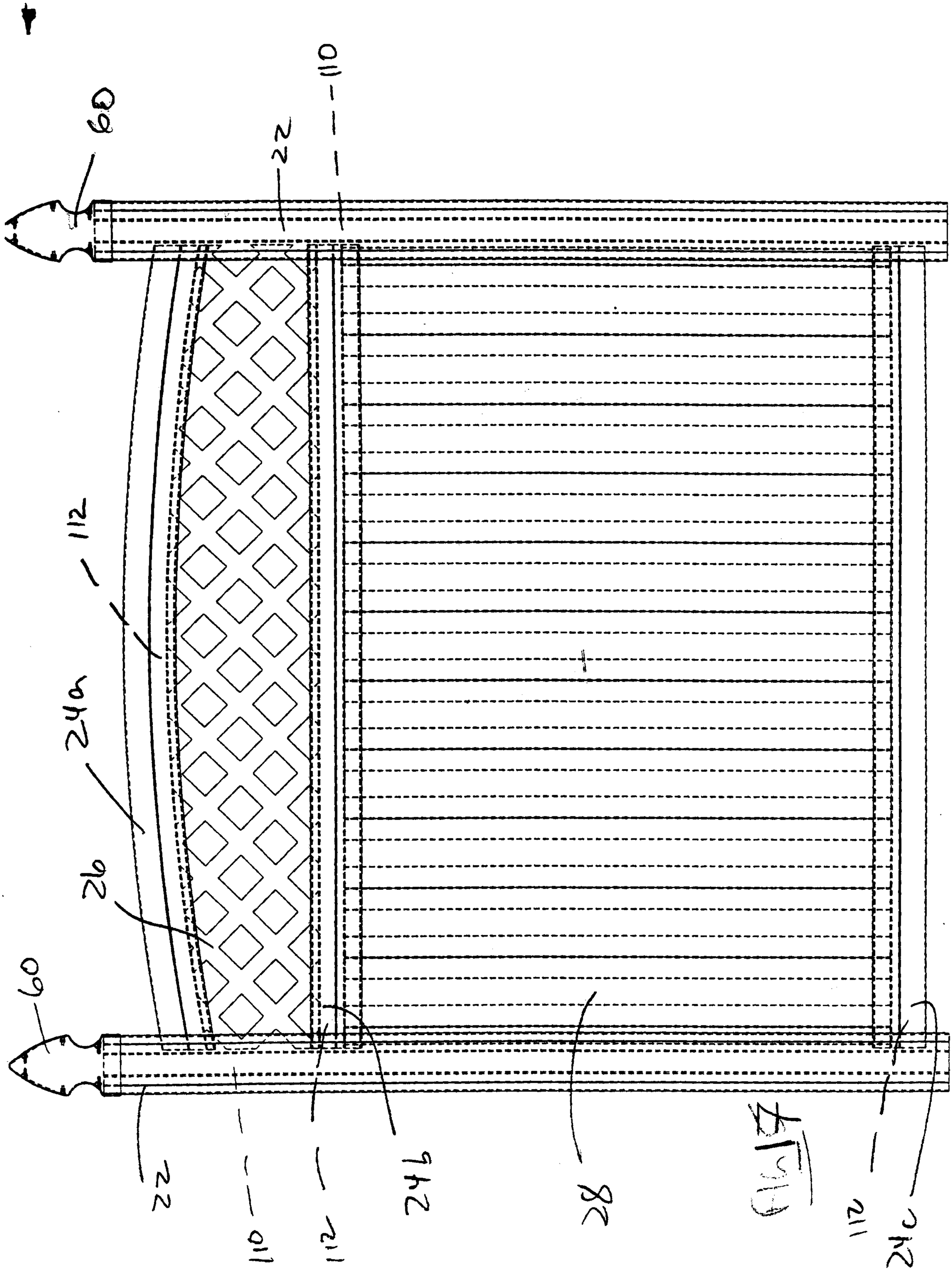


Fig 16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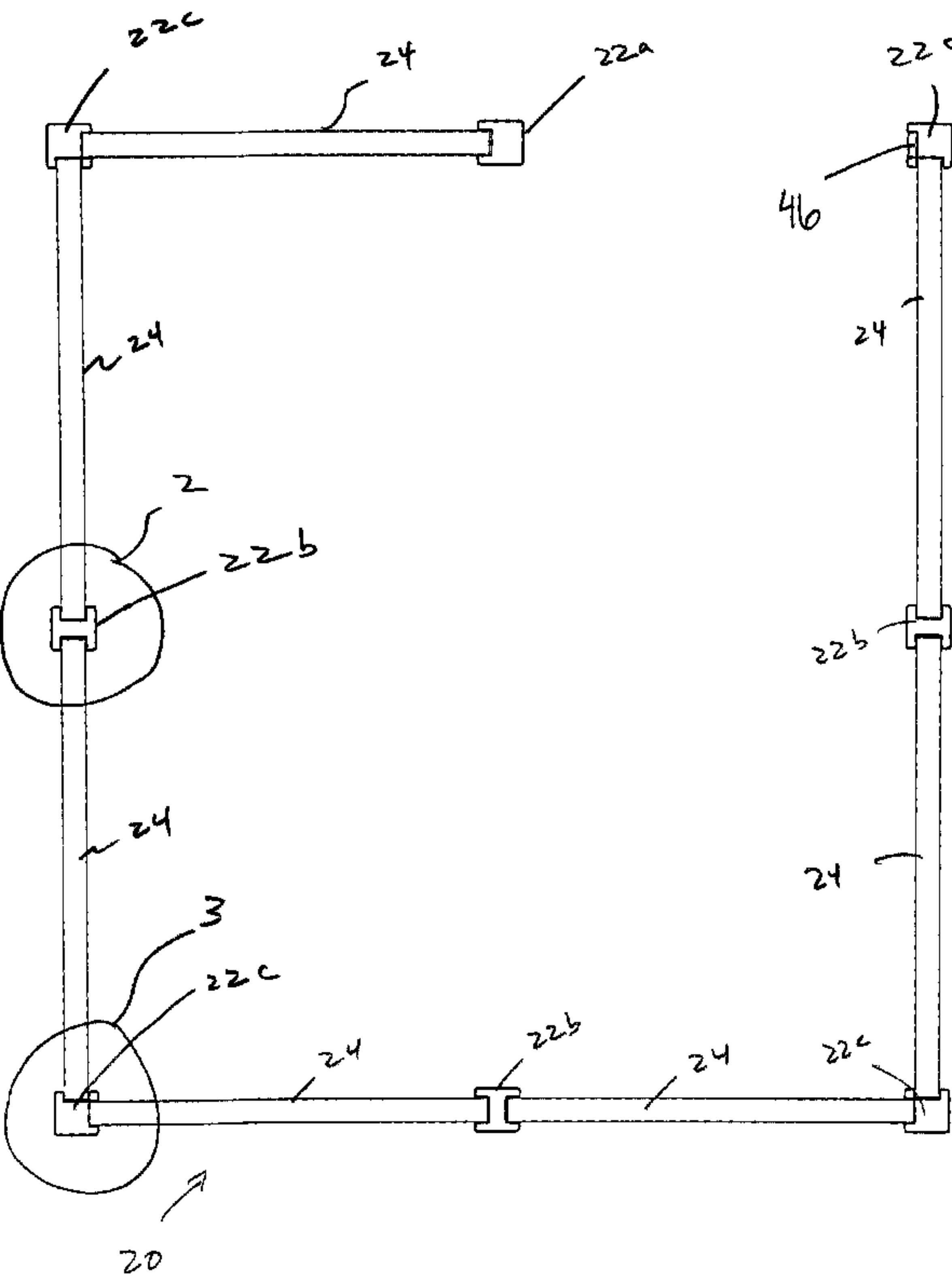
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