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(54) **FENCE POST**

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(57) **ABSTRACT**

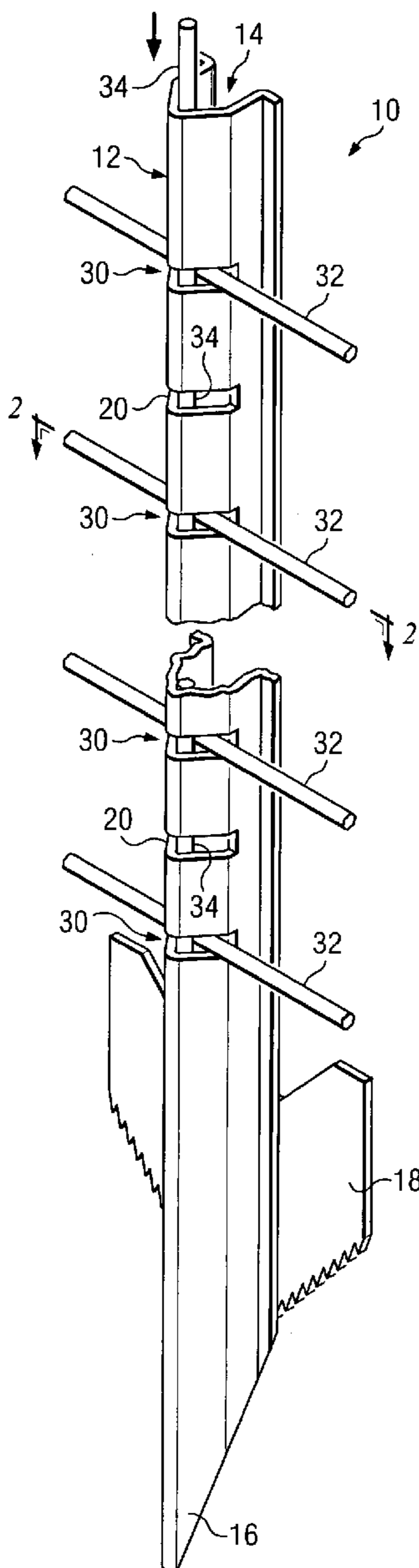
A nominally vertically disposed fence post comprises a wall defining an interior. A plurality of nominally horizontally disposed slots are located at equally spaced intervals along the length of the fence post and extend through the wall into the interior thereof. Selected slots receive fence wires therein. A keeper rod extends through the interior of the fence post between the wall and the fence wires to retain the fence wires in the slots. Electrified fence wires are each received in an insulated insert which is received in one of the slots and are retained therein by an insulated keeper rod.

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**Related U.S. Application Data**

(60) **Provisional application No. 60/541,882, filed on Feb. 4, 2004.**



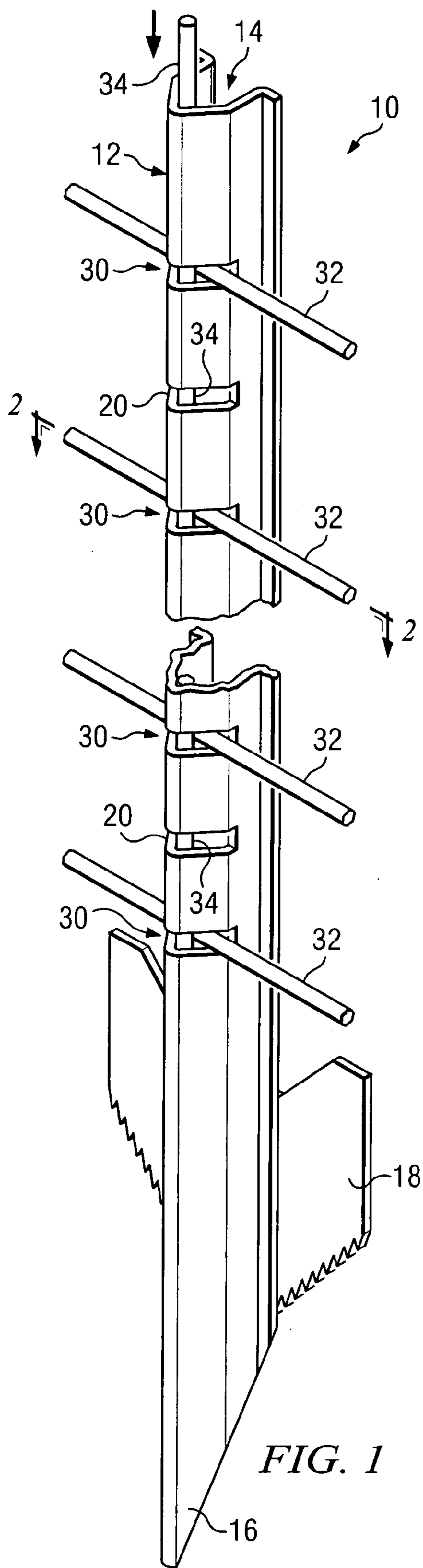


FIG. 1

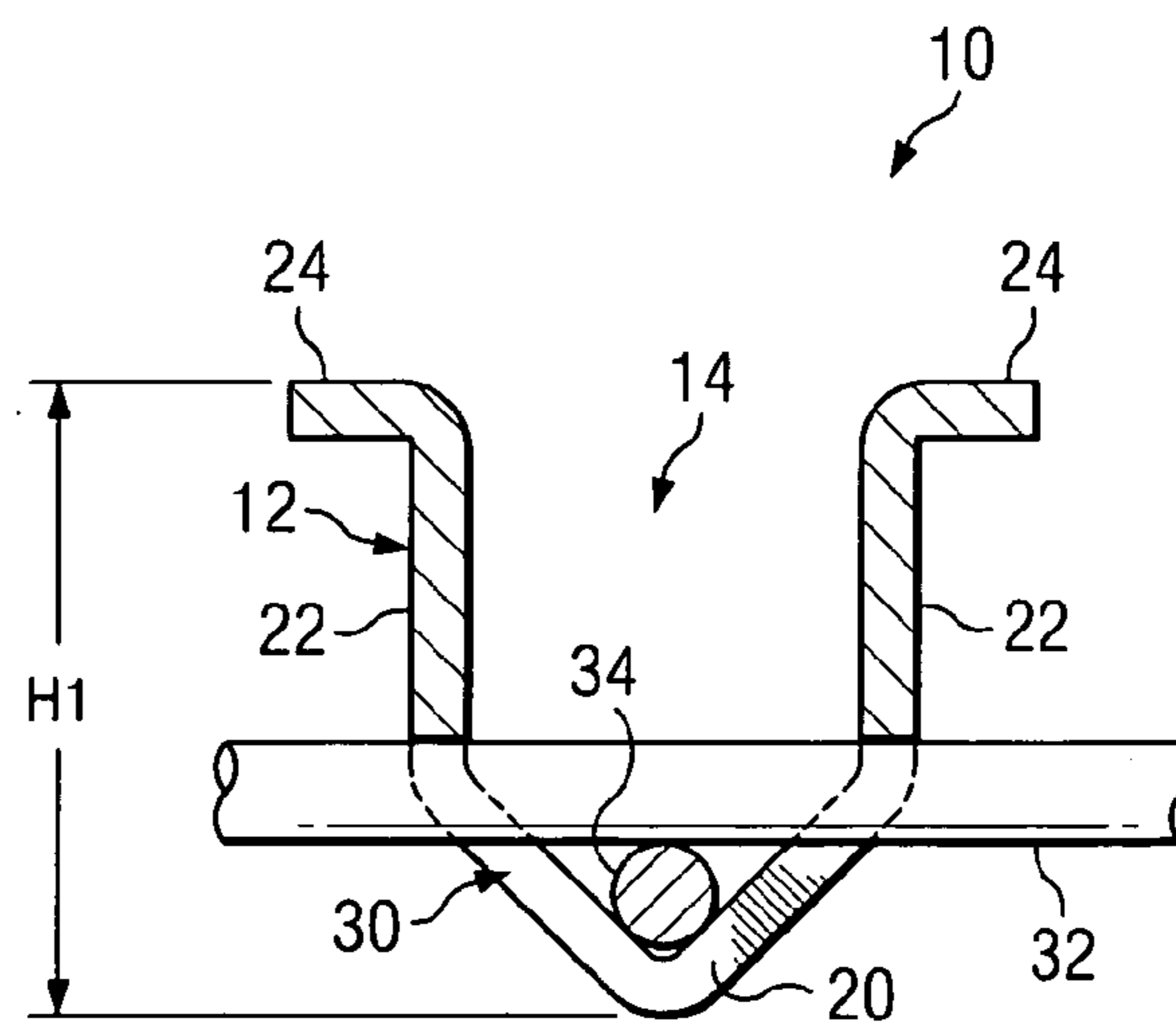


FIG. 2

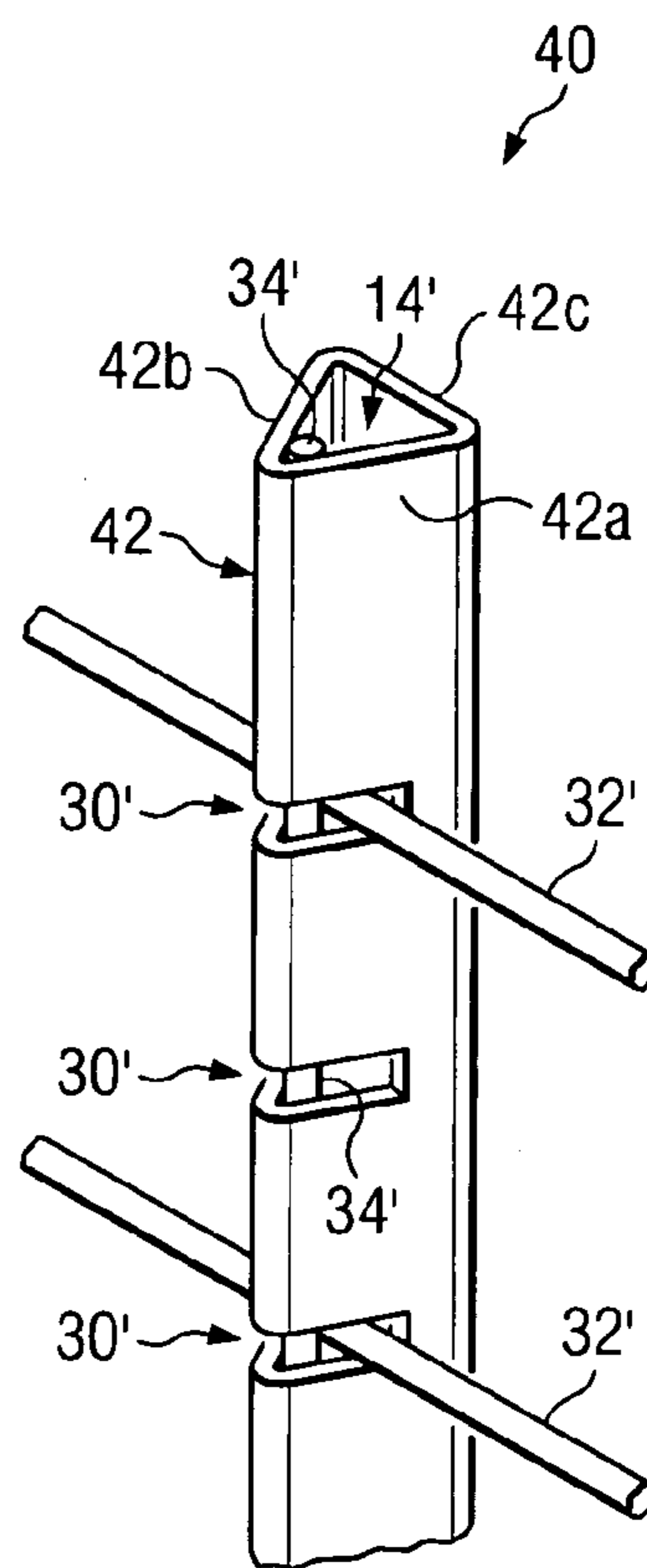


FIG. 3

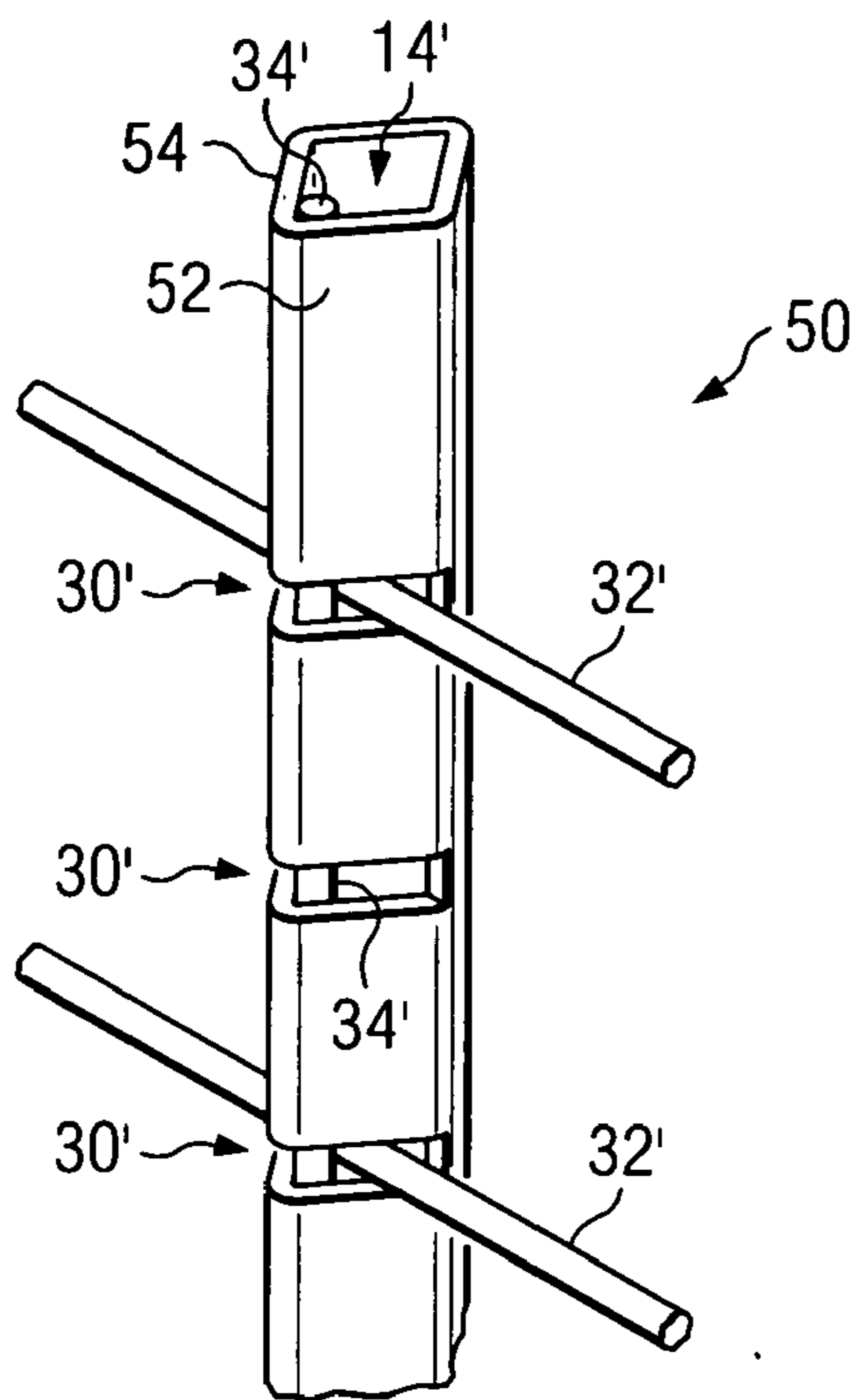


FIG. 4

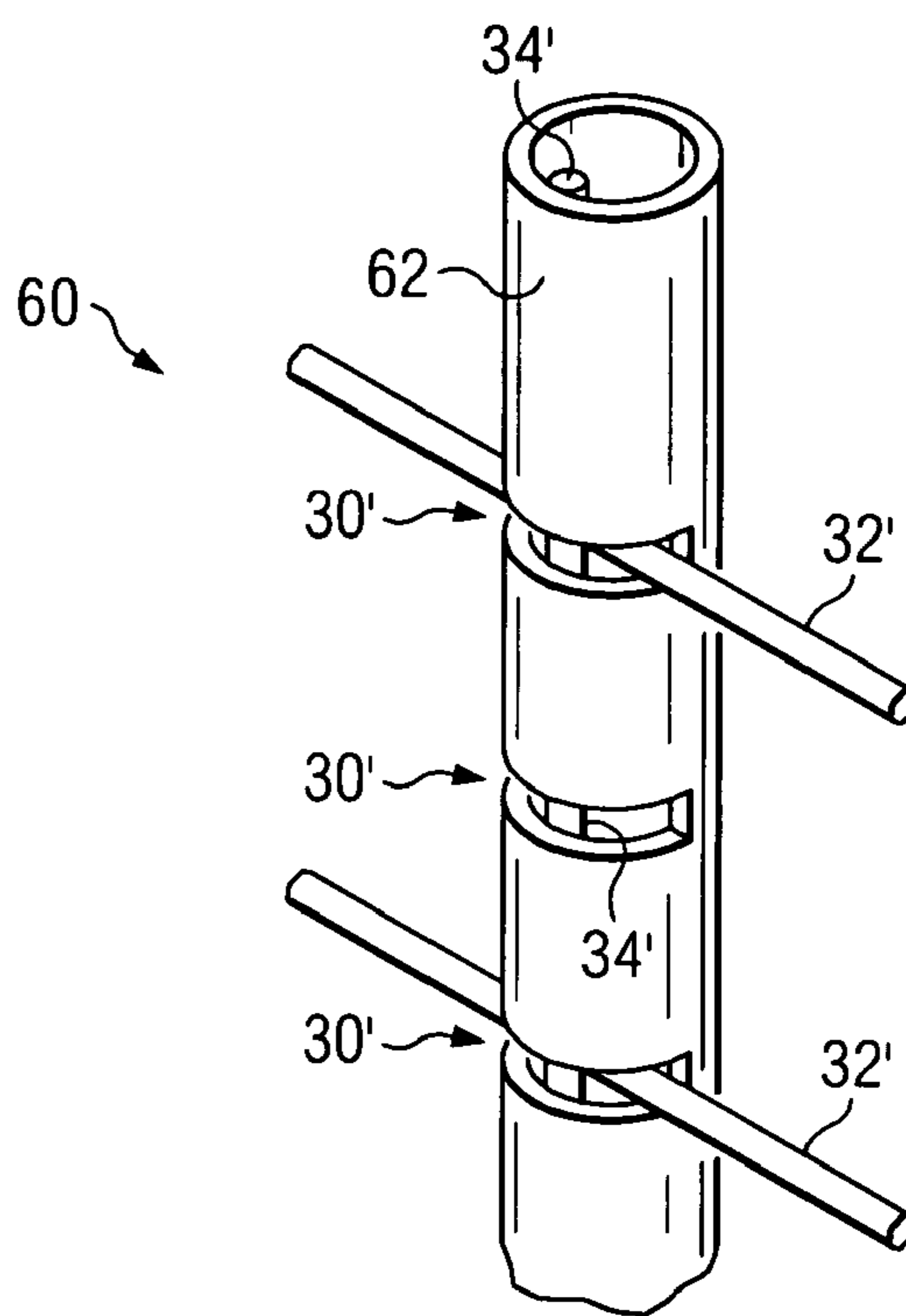


FIG. 5

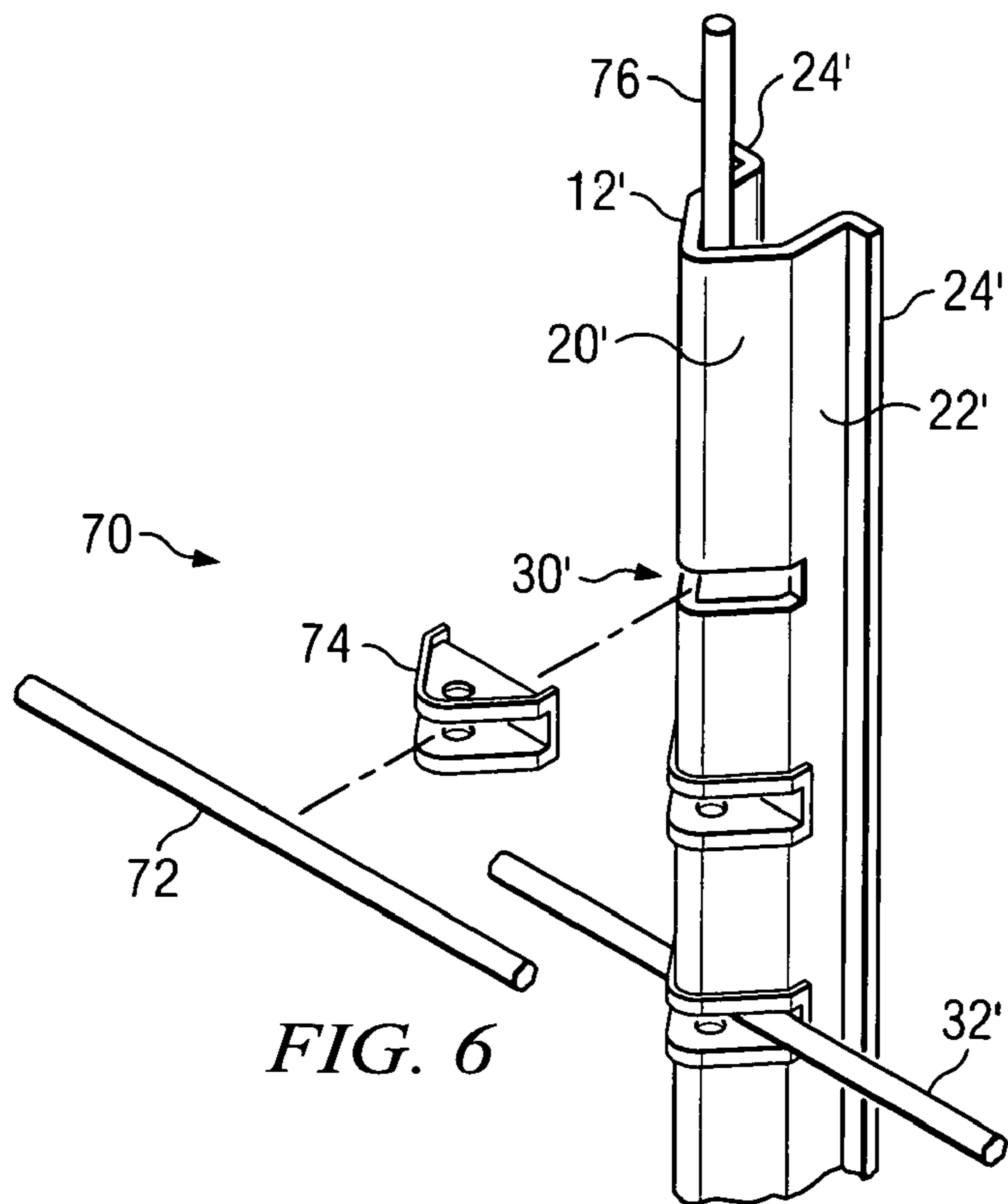


FIG. 6

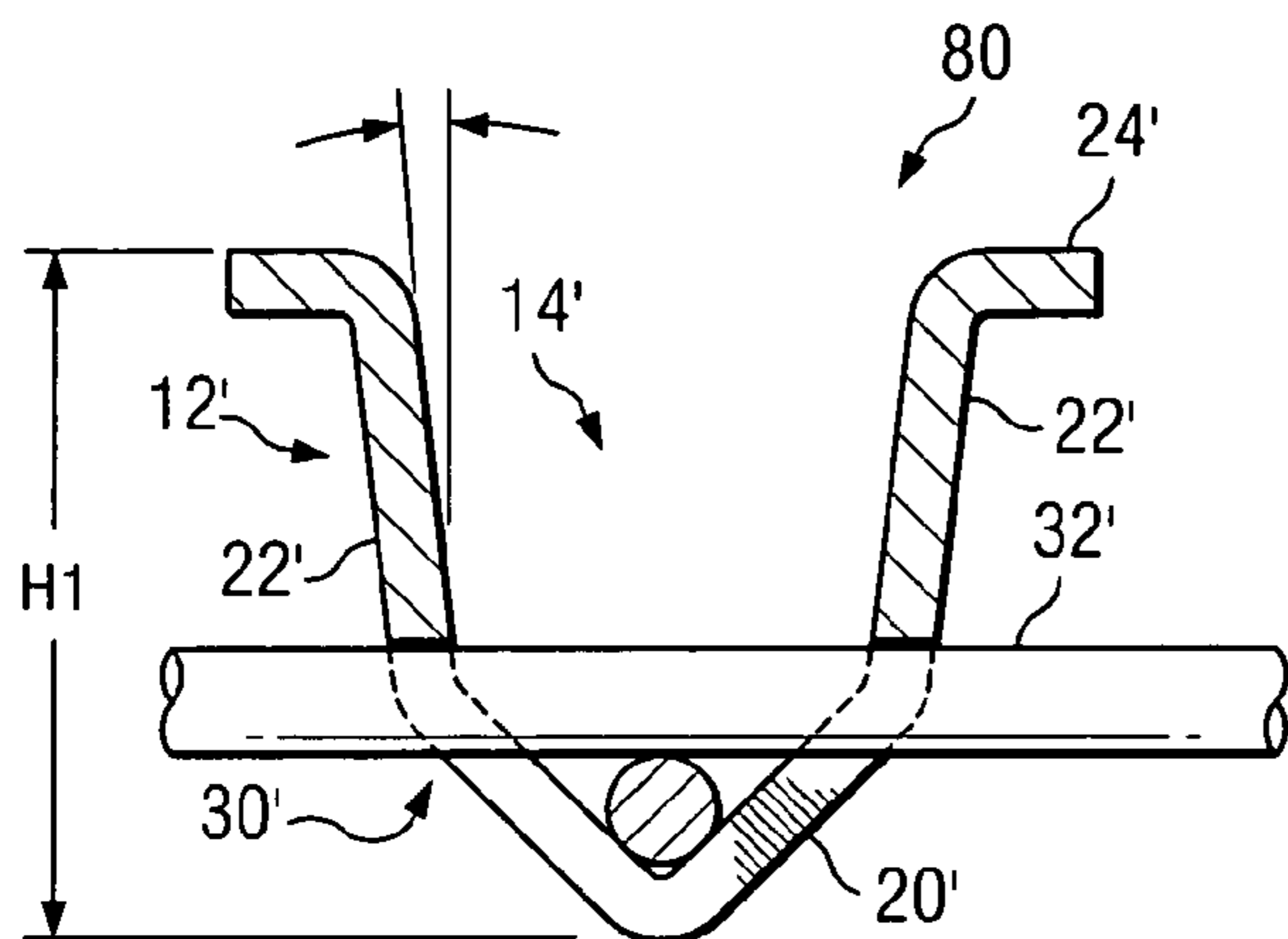


FIG. 7

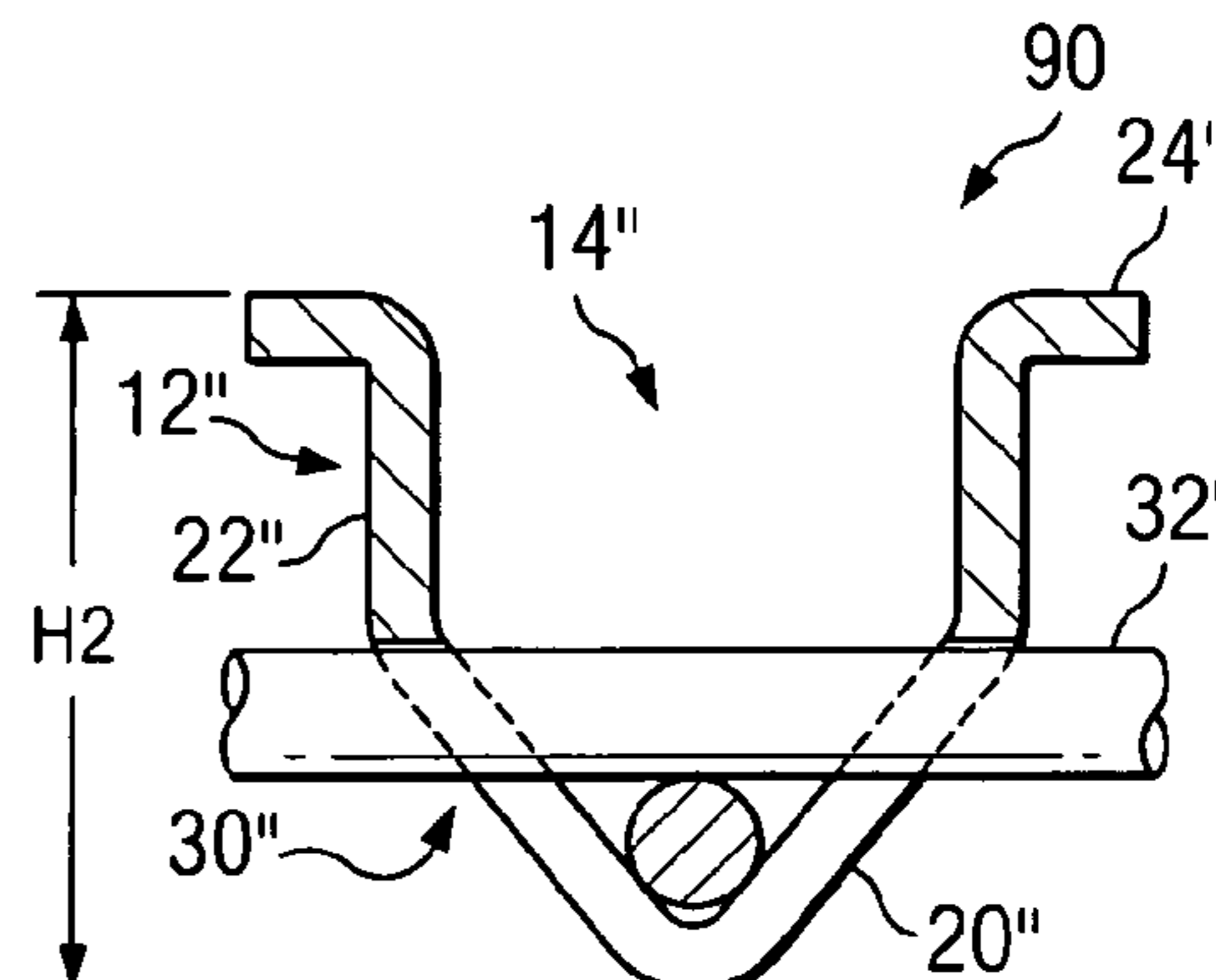


FIG. 8

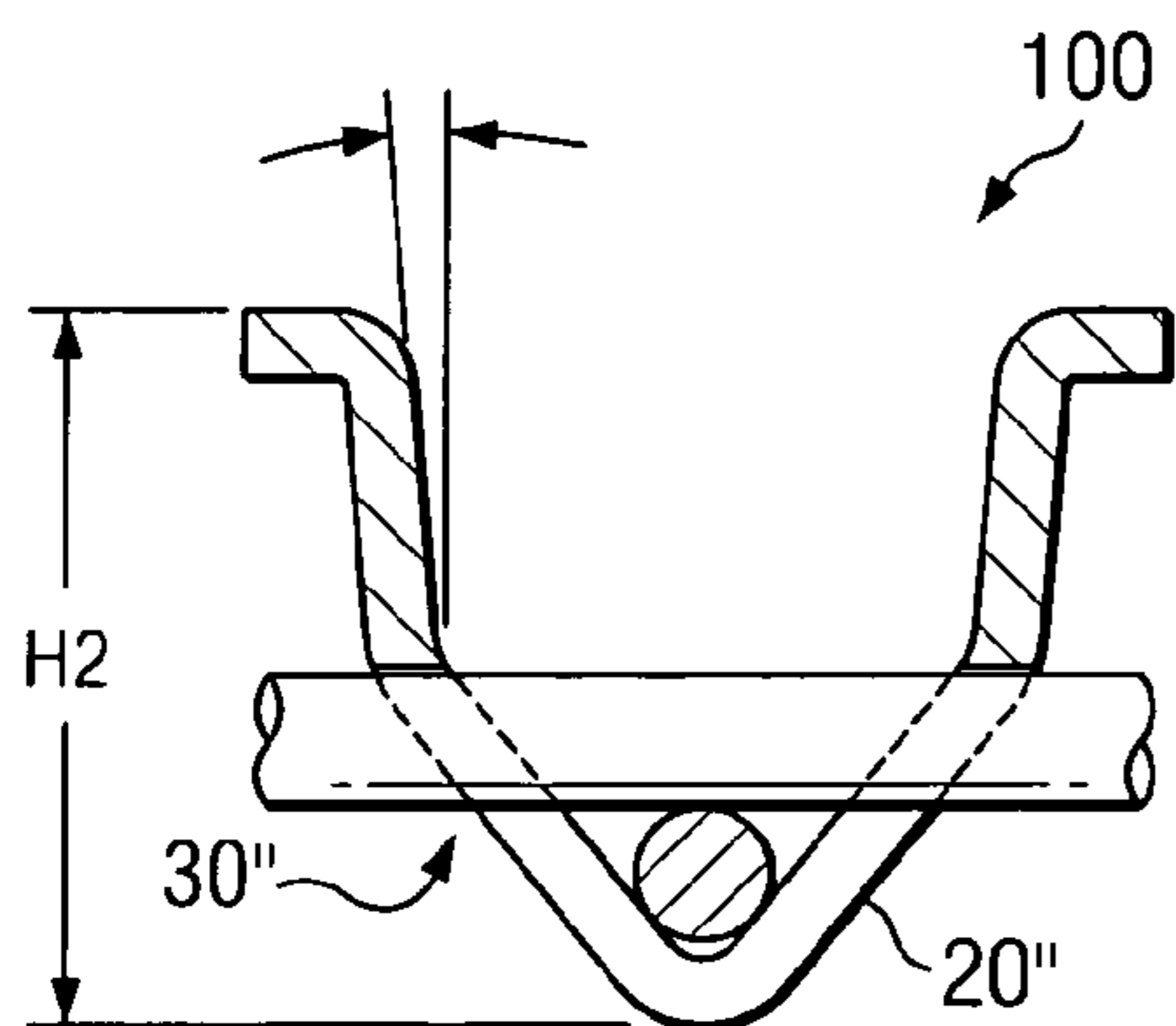


FIG. 9

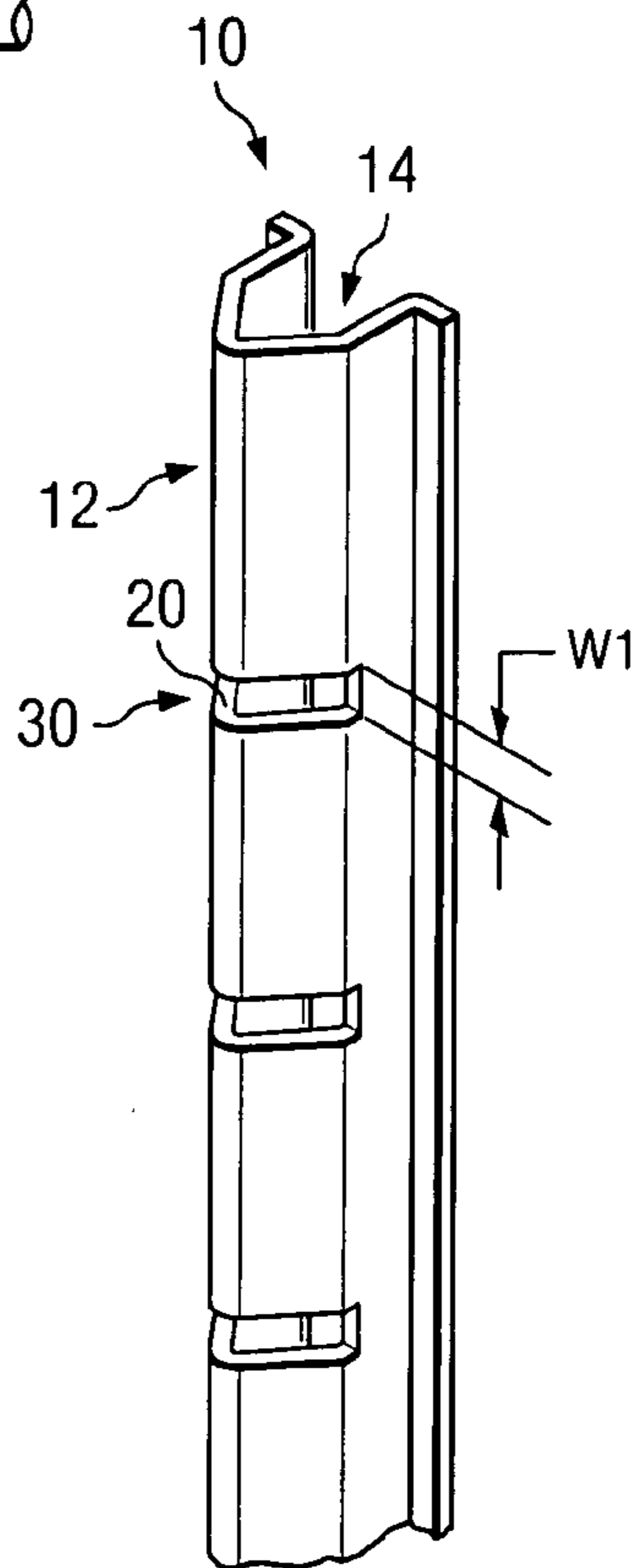


FIG. 10

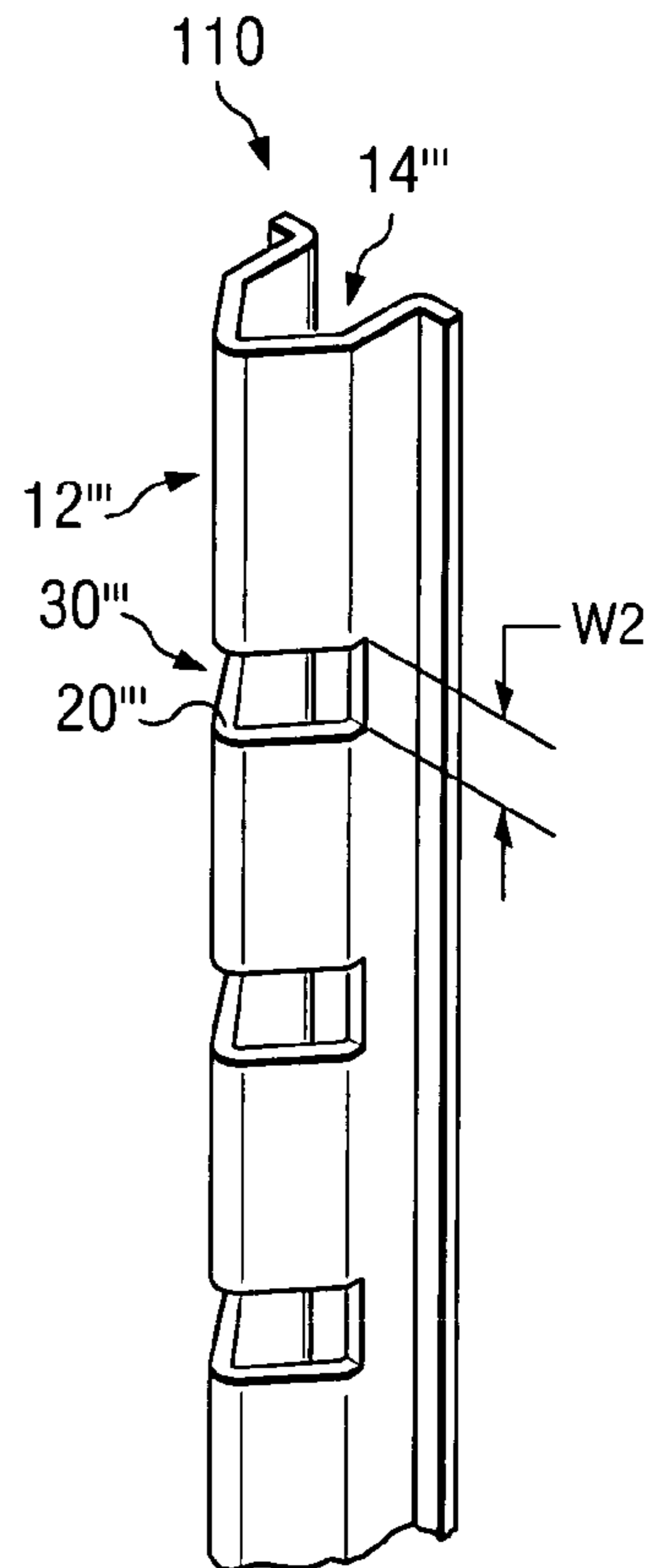


FIG. 11

## FENCE POST

### CLAIM OF PRIORITY

[0001] This application claims priority of prior provisional Application Ser. No. 60/541,882 filed Feb. 4, 2004.

### TECHNICAL FIELD

[0002] This invention relates generally to fence posts, and more particularly to an improved fence post design which is both easier to use and more pleasing in appearance as compared with traditional fence posts.

### BACKGROUND AND SUMMARY OF THE INVENTION

[0003] Over the centuries fence posts have been manufactured from a wide variety of materials including unprocessed sticks and tree limbs, various wooden configurations manufactured by conventional wood processing techniques, metal tubes formed from iron, steel, and other metals, etc. A fence post design that is currently in wide spread use is formed from steel and is T-shaped in horizontal cross section. Protrusions are provided at equally spaced intervals along the length of the fence post to facilitate alignment of fence wires therewith.

[0004] One difficulty that has heretofore been common to all fence post designs comprises the fact that a fastener of some type is necessary in order to secure each fence wire to each fence post. In the case of wooden fence posts, nails or cleats can be used to secure the fence wires to the fence post. In the case of the T-shaped fence post described above, clips are received around the fence wires and the fence post. The opposite ends of the clips are then twisted around one another to secure the fence wires in place.

[0005] As will therefore be understood, the construction of a fence utilizing conventional fence post designs entails considerable expense due to the fact that each fence wire must be manually attached to each fence post. An additional difficulty involves the fact that the necessity of utilizing fasteners to attach fence wires to fence posts often results in a fence construction which is unsightly in appearance.

[0006] The present invention comprises an improved fence post design which overcomes the foregoing and other difficulties which have long sense characterized the prior art. In accordance with the broader aspects of the invention, one or more side walls define an interior which may be open, partially enclosed, or fully enclosed. Nominally horizontally disposed slots are formed through the side wall and into the interior of the fence post. The horizontally disposed slots are located at equally spaced intervals along substantially the entire length of the fence post.

[0007] In use, the fence post is driven into the ground in a nominally vertical orientation. Fence wires are positioned in some or all of the horizontally disposed slots comprising the fence post. The fence wires are fully seated in the slots after which a keeper rod is extended through the interior of the fence post between the wall of the fence post and the fence wires thereby retaining the fence wires within the horizontally disposed slots.

[0008] In the case of an electrified fence, wire receiving inserts formed from an electrically insulating material are

received in the horizontally disposed slots comprising the fence post. The fence wires are received in the inserts and are retained by keeper rod which is either formed from or covered with an insulating material.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0009] A more complete understanding of the present invention may be had by reference to the following Detailed Description when taken in connection with the accompanying Drawings, wherein:

[0010] **FIG. 1** is a perspective view illustrating a fence post comprising a first embodiment of the present invention;

[0011] **FIG. 2** is a sectional view taken along the line 2-2 in **FIG. 1** in the direction of the arrow;

[0012] **FIG. 3** is a perspective view illustrating a second embodiment of the invention;

[0013] **FIG. 4** is a perspective view illustrating a third embodiment of the invention;

[0014] **FIG. 5** is a perspective view illustrating a fourth embodiment of the invention; and

[0015] **FIG. 6** is a perspective view illustrating a fifth embodiment of the invention which is particularly adapted for use in conjunction with electrified fences.

[0016] **FIG. 7** is a perspective view illustrating a sixth embodiment of the invention;

[0017] **FIG. 8** is a perspective view illustrating a seventh embodiment of the invention;

[0018] **FIG. 9** is a perspective view illustrating an eighth embodiment of the invention;

[0019] **FIG. 10** is a perspective view illustrating one embodiment of the horizontal slots which are used in the practice of the invention; and

[0020] **FIG. 11** is a perspective view illustrating a second embodiment of the horizontal slots which are used in the practice of the invention.

### DETAILED DESCRIPTION

[0021] Referring now to the Drawings, and particularly to **FIGS. 1 and 2** thereof, there is shown a fence post **10** comprising a first embodiment of the invention. The fence post **10** comprises a wall **12** defining an interior **14**. The wall **12** of the fence post **10** comprises a unitary construction formed from steel or any other high strength, weather resistance material, however, multiple component walls may also be used in the practice of the invention. The interior **14** defined by the wall **12** may be either open as shown in **FIGS. 1 and 2**, or partially closed, or fully closed depending upon the requirements of particular applications of the invention.

[0022] Referring specifically to **FIG. 1**, the lower end of the fence post **10** comprises a beveled point **16**. The beveled point **16** facilitates insertion of the fence post **10** into the ground. As will be appreciated by those skilled in the art, other types and kinds of lower end configurations for the fence post **10** may be utilized in the practice of the invention dependent upon the requirements of particular applications thereof.

[0023] The lower end of the fence post **10** is also provided with a spade **18**. The function of the spade **18** is to prevent removal of the fence post **10** after it is installed in the ground. The spade **18** also functions to prevent rotational movement of the fence post **10** in the vertical plane following installation thereof.

[0024] Referring specifically to **FIG. 2**, the wall **12** comprises a v-shaped front section **20** which extends to spaced, parallel side sections **22**. The side sections **22** in turn extend to flanges **24** which extend perpendicularly outwardly from the side sections **22**. The wall **12** has a height **H1** which is configured for optimal resistance to bending in the direction extending parallel to the wall **12**. The configuration of the wall **12** as shown in **FIG. 2** provides an interior **14** which is entirely open. As will be appreciated by those skilled in the art, the flanges **24** can also extend inwardly from the wall sections **22** thereby providing an interior **14** which is partially enclosed. The flanges **24** can also extend inwardly from the wall sections **22** a sufficient distance to engage one another in which case the interior **14** is entirely enclosed.

[0025] The fence post **10** differs from prior fence post designs in that the fence post **10** is provided with a plurality of nominally horizontally disposed slots **30**. As is best shown in **FIG. 2**, each of the slots **30** extends through the wall **12** comprising the fence post **10** and into the interior **14** thereof. As is best shown in **FIG. 1** the slots **30** are located at equally spaced intervals along substantially the entire length thereof. Although the slots **30** are illustrated in the drawings as being equally spaced, the fencepost **10** may also be manufactured with the slots **30** unequally spaced. As will be understood by those skilled in the art, it is not necessary to provide slots **30** in the portion of the fence post **10** that will be underground following installation thereof. However, the slots **30** may be provided at equally spaced intervals along the entire length of the fence post **10** depending upon the particular process that is utilized in the manufacture of the fence post **10**.

[0026] Utilization of the fence post **10** begins with installation of the fence post into the ground. The fence post **10** is installed using any of a variety of well know fence post installation techniques. The fence post **10** is typically installed in a nominally vertical or plumb orientation, however, other orientations of the fence post **10** may be utilized depending upon the requirements of particular applications thereof.

[0027] The following installation of the fence post **10** in the ground, fence wires **32** are installed in one or more of the slots **30**. Each fence wires **32** is fully seated in its corresponding slot **30**. Following the positioning of the fence wires **32** in the slots **30**, a keeper rod **34** is extended through the interior **14** of the fence post **10** between the wall **12** and the fence wires **32**. The keeper rod **32** may be formed from the same material that is utilized in the manufacture of the fence post **10** and/or the fence wires **32**. Alternatively, the keeper rod **34** may be formed from steel or other metals, fiberglass, various plastics and other polymerics, and other materials, provided only that the keeper rod **34** is sufficiently strong and tough to resist breakage during utilization of a fence that is constructed from fence post comprising the present invention and sufficiently resistant to deterioration due to weather.

[0028] In actual practice the keeper rod **34** may be installed by first pushing the uppermost fence wire **32** into

its corresponding slot **30** as far as possible, inserting the keeper rod **34** into the upper end of the fence post **10** until it moves past the uppermost fence wire **32** and the uppermost slot **30**, thereafter pushing the next lower fence wire **32** as far as possible into its corresponding slot **30**, moving the keeper rod **34** downwardly until it is past the second fence wire **32** and its corresponding slot **30**, etc. When the keeper rod **34** is fully seated in the fence post **10** thereby retaining all of the fence wires **32** in their respective slots **30**, the upper end of the keeper rod **34** is typically aligned with the upper end of the fence post **10**. However, as will be appreciated by those skilled in the art, it is also possible to move the upper end of the keeper rod **34** further downwardly relative to the fence post **10** provided only that the upper end of the keeper rod **34** has not moved downwardly sufficiently to disengage the keeper rod **34** from the uppermost fence wire **32**.

[0029] Referring to **FIG. 3** there is shown a fence post **40** comprising a second embodiment of the invention. Many of the component parts of the fence post **40** are substantially identical in construction and function to component parts of the fence post **10** illustrated in **FIGS. 1 and 2** and described hereinabove in conjunction therewith. Such identical component parts are designated in **FIG. 3** with the same reference numerals utilized above in the description of the fence post **10**, but are differentiated therefrom by means of a prime (') designation.

[0030] The fence post **40** comprises a triangularly shaped wall **42**. The wall **42** comprises three interconnected panels **42a**, **42b** and **42c**. As will be appreciated by those skilled in the art, when the wall **42c** is utilized the interior **14'** of the fence post **40** is completely enclosed. However, the wall **42c** may be dispensed with entirely in which case the interior **14'** of the fence post **40** is open. The wall **42c** can also comprise inwardly turned flanges in which case the interior **14'** Lastly, the wall **42c** can comprise outwardly turn flanges similar to the flanges **24** of the fence post **10** as shown in **FIG. 2** and described hereinabove in conjunction therewith.

[0031] Referring to **FIG. 4** there is shown a fence post **50** comprising a third embodiment of the invention. The fence post **50** includes numerous component parts which are substantially identical in construction and function to component parts of the fence post **10** illustrated in **FIGS. 1 and 2** and described hereinabove in conjunction therewith. Such identical component parts are designated in **FIG. 4** with the same reference numerals utilized in the description of the fence post **10** but are differentiated therefrom by means of a prime (') designation.

[0032] The fence post **50** differs from the fence post **10** of **FIGS. 1 and 2** in that the fence post **50** comprises a wall **52** which is square or rectangular in configuration. The horizontally disposed slots **30'** extend into the wall **52** through one corner **54** thereof thereby extending into the interior **14'** of the fence post **50**.

[0033] A fence post **60** comprising a fourth embodiment of the invention as illustrated in **FIG. 5**. Many of the component parts of the fence post **60** are substantially identical in construction and function to component parts of the fence post **10** as illustrated in **FIGS. 1 and 2** and described hereinabove in conjunction therewith. Such identical component parts are designated in **FIG. 5** with the same refer-

ence numerals utilized in conjunction with the description of the fence post **10** but are differentiated therefrom by prime (') designation.

[0034] The fence post **60** differs from the fence post **10** in that the wall **62** thereof is round. Thus, the wall **62** may comprise a length of pipe formed from steel or other metals, fiberglass, polyvinylchloride (PVC) and other polymerics, etc. with the only requirements for the selection of the material to be utilized in the construction of the wall **62** being sufficient strength and weather resistance to meet the requirements of particular applications of the invention. As will also be appreciated by those skilled in the art, the cross section of the wall **62** is not necessarily round, but can be oval, etc.

[0035] FIG. 6 illustrates a fence post **70** comprising a fifth embodiment of the invention. Many of the component parts of the fence post **70** are substantially identical in construction and function to component parts of the fence post **10** illustrated in FIGS. 1 and 2 and described hereinabove in conjunction therewith. Such identical component parts are designated in FIG. 6 with the same reference numerals utilized in the description of the fence post **10** but are differentiated therefrom by means of a prime (') designation.

[0036] The fence post **70** is particularly adapted for use with fences in which the fence wires **72** are electrified. Rather than being received directly in the horizontally disposed slots **30'**, the electrified fence wires **72** are received in inserts **74** which are formed from an insulating material. The inserts **74** are in turn received in the slots **30'** formed in the wall **12'** comprising the fence post **70**. The fence post **70** further differs from the fence post **10** in that the keeper rod **76** is either formed from an insulating material or is coated with an insulating material. Thus, by means of the inserts **72** and the construction of the keeper rod **76**, the electrified fence wires **32'** are entirely isolated from the wall **12'** of the fence post **70** thereby preventing grounding of the electrified wires **32'**.

[0037] FIG. 7 illustrates a fence post **80** comprising a sixth embodiment of the invention. Many of the component parts of the fence post **80** are substantially identical in construction and function to component parts of the fence post **10** illustrated in FIGS. 1 and 2 and described hereinabove in conjunction therewith. Such identical component parts are designated in FIG. 7 with the same reference numerals utilized in the description of the fence post **10** but are differentiated therefrom by means of a prime (') designation.

[0038] The fence post **80** differs from the fence post **10** of FIGS. 1 and 2 in that the fence post **80** comprises side sections **22'** which are not perpendicular, but extend from the v-shaped front section **20'** side section **22'** construction enables the fence post **80** to be manufactured more easily as compared with the perpendicular side sections **22**.

[0039] FIG. 8 illustrates a fence post **90** comprising a seventh embodiment of the invention. Many of the component parts of the fence post **90** are substantially identical in construction and function to component parts of the fence post **10** illustrated in FIGS. 1 and 2 and described hereinabove in conjunction therewith. Such identical component parts are designated in FIG. 8 with the same reference numerals utilized in the description of the fence post **10** but are differentiated therefrom by means of a prime (') designation.

[0040] The fence post **90** differs from the fence post **10** of FIGS. 1 and 2 in that the fence post **90** comprises shorter side sections **22"**. As a result of the shorter side sections **22"**, the wall **12"** has a height **H2**. The shorter wall **12"** requires less raw material and is therefore less expensive to manufacture than embodiments having the taller wall **12**, having height **H1**. Although the shorter wall **12"** does not provide the same bending resistance as the taller wall **12**, the strength sacrificed is minimal and does not impact the intended performance or durability of the fence post **90**.

[0041] FIG. 9 illustrates a fence post **100** comprising an eighth embodiment of the invention. Many of the component parts of the fence post **100** are substantially identical in construction and function to component parts of the fence post **10** illustrated in FIGS. 1 and 2 and described hereinabove in conjunction therewith. Such identical component parts are designated in FIG. 9 with the same reference numerals utilized in the description of the fence post **10** but are differentiated therefrom by means of a prime (") designation.

[0042] The fence post **100** differs from the fence post **10** of FIGS. 1 and 2 in that the fence post **100** comprises side sections **22"** which are not perpendicular, but extend from the v-shaped front section **20"** at an angle. Additionally, the side sections **22"** are shorter in height than the side sections **22** of fence post **10**. The wall **12"** has a height **H2**, requiring less raw material for the manufacture thereof. The shorter wall **12"** and the angled side sections **22"** present an embodiment which is more easily manufactured and at lesser cost as compared with other embodiments of the invention described herein.

[0043] FIG. 10 illustrates a portion of the embodiment shown in FIG. 1. The fence post **10** is provided with a plurality of nominally horizontally disposed slots **30** having a width **W1**. Slots **30** having width **W1** are sized appropriately for receiving a varying sizes of fence wire.

[0044] FIG. 11 illustrates a portion of the embodiment shown in FIG. 1. Many of the component parts of the fence post **110** are substantially identical in construction and function to component parts of the fence post **10** illustrated in FIGS. 1, 2, and 10 and described hereinabove in conjunction therewith. Such identical component parts are designated in FIG. 11 with the same reference numerals utilized in the description of the fence post **10** but are differentiated therefrom by means of a prime (") designation.

[0045] The fence post **110** differs from the fence post **10** of FIGS. 1, 2, and 10 in that the fence post **110** comprises nominally horizontally disposed slots **30"** having a width **W2** which is substantially greater than width **W1**. Slots **30"** having width **W2** accommodate more easily accommodate misalignments of fence wires used in the practical of the invention.

[0046] Although preferred embodiments of the invention have been illustrated in the accompanying Drawings and described in the foregoing Detailed Description, it will be understood that the invention is not limited to the embodiments disclosed, but is capable of numerous rearrangements, modifications, and substitutions of parts and elements without departing from the spirit of the invention.

- 1. A fence post comprising:  
a wall defining an interior;  
at least one slot extending through the wall into the interior for receiving a fence wire therein; and  
a keeper rod extending through the interior of the fence post between the wall and the fence wire for retaining the fence wire in the slot.
- 2. The fence post according to claim 1 wherein the interior of the fence post is entirely enclosed except for the slot extending through the wall.
- 3. The fence post according to claim 1 wherein the wall defines an interior which is partially enclosed except for the slot extending through the wall.
- 4. The fence post according to claim 1 wherein the wall defines an interior having one side which is entirely open.
- 5. The fence post according to claim 1 further including an insert formed from an electrically insulating material, the insert being received in the slot formed through the wall and the fence wire being received in the insert, and wherein the keeper rod comprises at least an exterior surface form from an electrically insulating material.
- 6. A fence post comprising:  
a wall defining an interior;  
a plurality of slots each extending through the wall and into the interior;  
the slots being positioned at spaced apart intervals along the length of the wall;

- each of the slots for selectively receiving a fence wire therein; and  
a keeper rod extending substantially the entire length of the wall and positioned within the interior defined by the wall between the wall and the fence wires for retaining the fence wires in the slots.
- 7. The fence post according to claim 6 wherein the interior of the fence post is entirely enclosed except for the slot extending through the wall.
- 8. The fence post according to claim 6 wherein the wall defines an interior which is partially enclosed except for the slot extending through the wall.
- 9. The fence post according to claim 6 wherein the wall defines an interior having one side which is entirely open.
- 10. The fence post according to claim 6 further including inserts formed from an electrically insulating material, the inserts being received in the slots formed through the wall and the fence wires being received in the inserts, and wherein the keeper rod comprises at least an exterior surface form from an electrically insulating material.
- 11. The fence post according to claim 6 wherein the slots are positioned at equally spaced apart intervals along the length of the wall.
- 12. The fence post according to claim 6 wherein the slots are positioned at unequally spaced apart intervals along the length of the wall.

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