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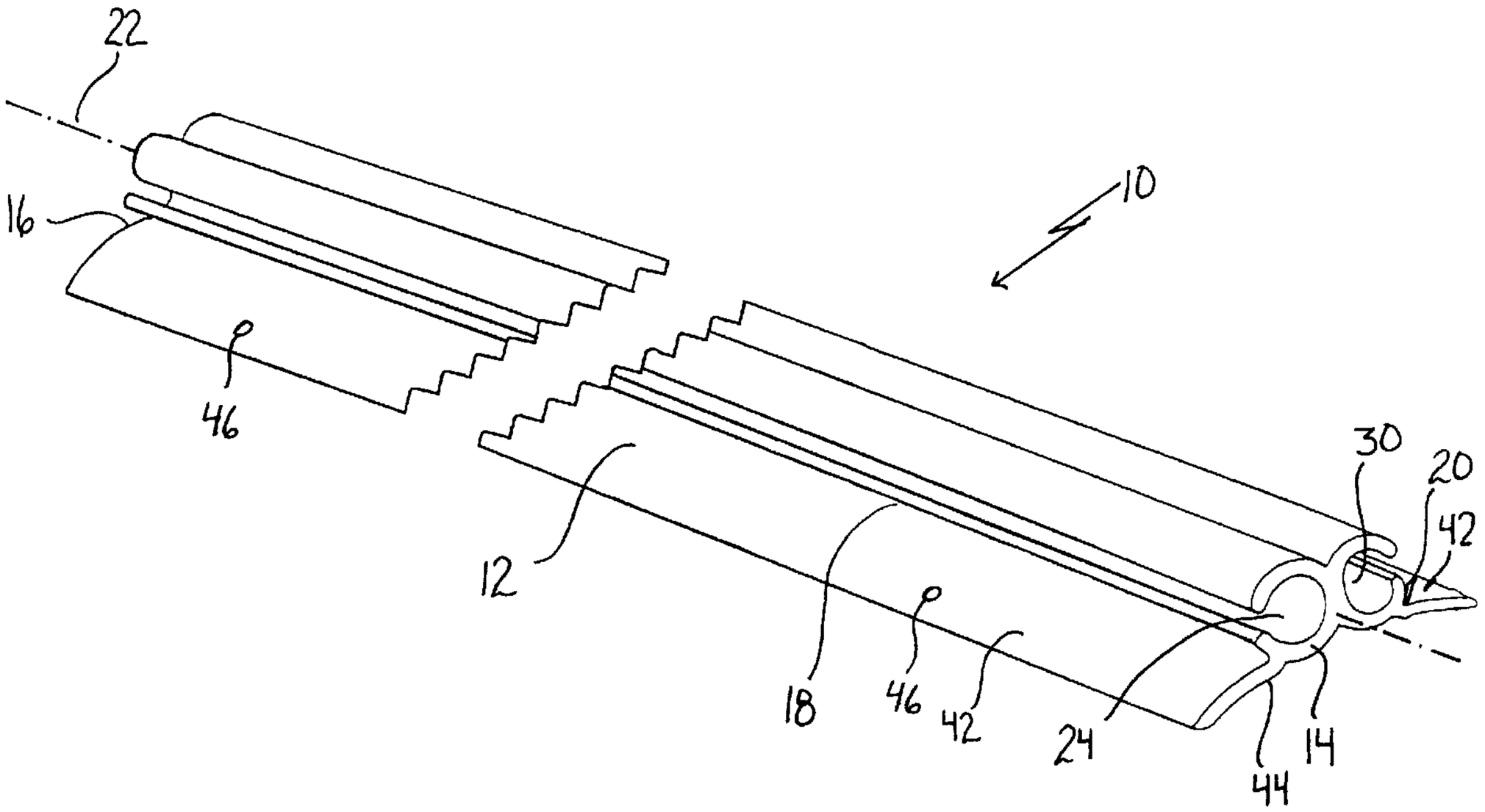
(54) Title: APPARATUS FOR CONNECTING AND ANCHORING TARPAULINS



(57) Abrégé/Abstract:
An apparatus for connecting and anchoring tarpaulins which includes an elongate body having a first end, a second end, a first side, a second side, and a longitudinal axis. A first connector extends parallel to the longitudinal axis. The first connector is adapted to receive and retain a first bulbous edge of a first tarpaulin. A second connector extends parallel to the longitudinal axis. The second connector is adapted to receive and retain a second bulbous edge of a second tarpaulin. Anchoring wings protrude past both the first side and the second side of the elongate body. The anchoring wings have openings adapted to receive fasteners.

ABSTRACT OF THE DISCLOSURE

An apparatus for connecting and anchoring tarpaulins which includes an elongate body having a first end, a second end, a first side, a second side, and a longitudinal axis. A first connector extends parallel to the longitudinal axis. The first connector is adapted to receive and retain a first bulbous edge of a first tarpaulin. A second connector extends parallel to the longitudinal axis. The second connector is adapted to receive and retain a second bulbous edge of a second tarpaulin. Anchoring wings protrude past both the first side and the second side of the elongate body. The anchoring wings have openings adapted to receive fasteners.

TITLE OF THE INVENTION:

Apparatus For Connecting And Anchoring Tarpaulins

FIELD OF THE INVENTION

The present invention relates to an apparatus for connecting and anchoring tarpaulins and, in particular, connecting adjoining bulbous edges of tarpaulins and anchoring the tarpaulins to scaffolding or other structures.

BACKGROUND OF THE INVENTION

The term "tarpaulin" originally was used to indicate a canvas covering coated with a waterproofing compound. It has come, through usage, to indicate waterproof coverings generally, most of which are no longer made of canvas.

Tarpaulins are commonly manufactured with a rope sewn into the edge seam, to form a bulbous edge. Adjoining edges of these tarpaulins are held together with connectors. These connectors commonly have bodies "C" shaped channels, which are adapted to receive the bulbous edges of the tarpaulins.

When enclosing scaffolding, it is not sufficient to merely connect adjoining tarpaulins; there must also be means for anchoring the tarpaulins to the scaffolding and achieving the maximum air/moisture seal in the connection. Most systems rely upon grommets or other fasteners spaced at varying intervals. There is one apparatus that has been developed and is sold under the Trade Mark "SAIL SYSTEMS", which is capable of both connecting tarpaulins and anchoring them to scaffolding. This product requires its own supporting structure and some cumbersome hardware to mechanically anchor to a scaffold.

SUMMARY OF THE INVENTION

The present invention is an apparatus for connecting and anchoring tarpaulins which is readily adapted to suit a wide variety of scaffolding applications and tarpaulin materials.

According to the present invention there is provided an apparatus for connecting and anchoring tarpaulins which includes an elongate body having a first end, a second end, a first side, a second side, and a longitudinal axis. A first connector extends parallel to the longitudinal axis. The first connector is adapted to receive and retain a first bulbous edge of a first tarpaulin. A second connector extends parallel to the longitudinal axis. The second connector is adapted to receive and retain a second bulbous edge of a second tarpaulin. Anchoring wings protrude past both the first side and the second side of the elongate body. The anchoring wings have openings adapted to receive fasteners.

The anchoring wings of the apparatus, as described above, are capable of anchoring the elongate body to a wide variety of different scaffolding configurations. It is preferred that the anchoring wings are angled outwardly and downwardly relative to the elongate body. This enables the anchoring wings to adapt to different sizes from rosette style to tubular style. It is also preferred that the anchoring wings define a substantially concave engagement surface. This enables the anchoring wings to readily engage both tubular members and rosettes. It is further preferred that the anchoring wings extend for substantially the entire length of the elongate body from the first end to the second end. This enables attachment to be effected by using selective openings. It also allows the wings to be used as sliding surfaces for horizontal fasteners that join top and bottom edges of adjacent tarpaulins.

Although the style of connector can vary, it is preferred that the first connector and the second connector are "C" channels that extend for substantially the entire length of the elongate body from the first end to the second end. These "C" channel connectors are the most common form of connector for engaging the bulbous edges of tarpaulins. It is preferred that the first connector extend from the first side and the second connector extends from the second side of the elongate body.

It is also preferred that connectors be symmetrically positioned with the first connector and the second connector being in opposed relation on a common plane.

Although beneficial results may be obtained through the use of the apparatus, as described above, forming an enclosure above the scaffolding is often a problem. Even more beneficial results may, therefore, be obtained when the elongate body is resiliently deformable longitudinally to assume an arcuate shape. This enables the elongate body to be formed into an arch to enclose the space above the scaffolding. The material found to be most suitable for making an elongate body that is resiliently deformable is polymer plastic.

Scaffolding and enclosures differ in height. In order to fit scaffolding of differing height, an alignment guide is provided to join adjacent elongate bodies in end to end relation with the first "C" channel connector and the second "C" channel connector of the adjacent elongate bodies aligned, whereby an edge of a tarpaulin freely passes between the adjacent elongate bodies. It is preferred that the alignment guide engage and secures in end to end relation the anchoring wings of adjacent elongate bodies.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other features of the invention will become more apparent from the following description in which reference is made to the appended drawings, the drawings are for the purpose of illustration only and are not intended to in any way limit the scope of the invention to the particular embodiment or embodiments shown, wherein:

FIGURE 1 is perspective view of an apparatus for connecting and anchoring tarpaulins fabricated in accordance with the teachings of the present invention.

FIGURE 2 is a front elevation view of two adjacent tarpaulins connected with the apparatus illustrated in **FIGURE**

1.

FIGURE 3 is an end elevation view, in section, of the apparatus illustrated in **FIGURE 1**, anchored to a tubular-style scaffolding.

FIGURE 4 is an end elevation view, in section, of the apparatus illustrated in **FIGURE 1**, anchored to a rosette-style scaffolding.

FIGURE 5 is a perspective view, in section, of the apparatus illustrated in **FIGURE 1**, used to connect tarpaulins both vertically and horizontally.

FIGURE 6 is a top plan view of the apparatus illustrated in **FIGURE 1**, connected to another of the apparatus by a connector.

FIGURE 7 is a side elevation view of the apparatus deformed into an arch.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The preferred embodiment, an apparatus for connecting and anchoring tarpaulins generally identified by reference numeral 10, will now be described with reference to **FIGURES 1** through **7**.

Structure and Relationship of Parts:

Referring to **FIGURE 1**, apparatus 10 includes a polymer plastic elongate body 12 that has a first end 14, a second end 16, a first side 18, a second side 20, and a longitudinal axis 22. A first "C" channel connector 24 extends from first side 18 parallel to longitudinal axis 22 for substantially the entire length of elongate body 12 from first end 14 to second end 16. Referring to **FIGURE 3**, first "C" channel connector 24 is adapted to receive and retain a first bulbous edge 26 of a first tarpaulin 28. Referring to **FIGURE 1**, a second "C" channel connector 30 also extends from second side 20 parallel to longitudinal axis 22 for substantially the entire length of elongate body 12 from first end 14 to second end 16. Referring to **FIGURE 3**, second "C" channel connector 30 is adapted to receive and retain a second bulbous edge 32 of a second

tarpaulin 34. In the illustrated embodiment, first bulbous edge 26 and second bulbous edge 32 are created when a cord 36 is fitted within a hem 38 of first tarpaulin 28 and second tarpaulin 34. First connector 24 and second connector 30 are symmetrically positioned and are in opposed relation on a common plane 40.

Referring to **FIGURE 1**, anchoring wings 42 extend for substantially the entire length of elongate body 12 from first end 14 to second end 16. Anchoring wings 42 protrude past both first side 18 and second side 20 and angle outwardly and downwardly away from elongate body 12 to define a substantially concave engagement surface 44. Referring to **FIGURE 3**, anchoring wings 42 have openings 46 that are adapted to receive fasteners 48 which enable apparatus 10 to be secured to a variety of different scaffolding configurations, such as a tubular style scaffold member 50. Referring to **FIGURE 4**, fasteners 48 can also be used to secure apparatus 10 to different scaffolding configurations, including a rosette style scaffold member 52.

Referring to **FIGURE 6**, an alignment guide 54 is provided that engages and secures in end to end relation anchoring wings 42 of adjacent elongate bodies 12. First "C" channel connector 24 and second "C" channel connector 30 of each of adjacent elongate bodies 12 are aligned, whereby bulbous edge 26 of first tarpaulin 28 and bulbous edge 32 of second tarpaulin 34 freely pass between adjacent elongate bodies 12.

Operation:

The use and operation of apparatus for connecting and anchoring tarpaulins 10 will now be described with reference to **FIGURES 1** through **7**. Referring to **FIGURE 2**, there is provided a scaffolding, generally referenced by numeral 56 that has a plurality of vertical support members 58 with a network of horizontal support members 60. First tarpaulin 28 is provided that has bulbous edges 26 and second tarpaulin 34 is provided that also has bulbous edges 32. Apparatus 10 as described above, is provided for connecting and anchoring first tarpaulin 28 and second tarpaulin 34 adjacent to each other.

Referring to **FIGURES 3** and **4**, fasteners 48 are extended through openings 46 on anchoring wings 42 to secure elongate body 12 in a substantially vertical orientation to one of vertical members 58 of scaffolding 56. Referring to **FIGURE 3**, in the illustrated embodiment, fasteners 48 are plastic ties, however other fasteners such as cables or wires could also be used.

Referring to **FIGURES 2** and **6**, as scaffolding 56 differs in heights, elongate bodies 12 also differ in lengths. As such, adjacent elongate bodies 12 can be secured in end to end relation with alignment guide 54 to enable elongate bodies 12 of varying lengths to be combined to suit the dimensions of particular configurations of scaffolding 56.

Referring to **FIGURES 2** and **5**, where a pair of elongate bodies 12 are secured in a substantially vertical orientation to parallel spaced apart vertical members 58 of scaffolding 56 and a third elongate body 62 is positioned in a substantially horizontal orientation spanning between pair of elongate bodies 12, third elongate body 62 is able to slide vertically along wings 42 of pair of elongate bodies 12 in response to movement of first tarpaulin 28.

Referring to **FIGURE 7**, as elongate body 12 is made of resilient material such as polymer plastic, elongate body 12 is resiliently deformable longitudinally to assume an arcuate shape. To form an enclosure 64 above scaffolding 56, elongate body 12 can be deformed longitudinally to form an arch generally referenced by numeral 66, to enclose space 68 above scaffolding 56, where scaffolding is adjacent to a structure such as a building wall 68.

The above described apparatus provides a number of advantages:

- it is modular and light weight
- it is flexible and relatively easy to install
- fire retardant can be added to the polymer plastic
- non-conductive
- rust resistant

- easily attachable to scaffolding using cable ties
- connects to tarpaulins both vertically and horizontally
- will cold bend around a radiused profile
- will connect to all common scaffold enclosures
- superior ability to retain edge of tarpaulin as compared to grommets and other fasteners
- profile can be supplied in any desired length
- profiles can be joined end to end
- material can be easily drilled or cut
- provides a substantially better seal to the elements compared to grommets or other fasteners

In this patent document, the word "comprising" is used in its non-limiting sense to mean that items following the word are included, but items not specifically mentioned are not excluded. A reference to an element by the indefinite article "a" does not exclude the possibility that more than one of the element is present, unless the context clearly requires that there be one and only one of the elements.

It will be apparent to one skilled in the art that modifications may be made to the illustrated embodiment without departing from the spirit and scope of the invention as hereinafter defined in the Claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1) An apparatus for connecting and anchoring tarpaulins, comprising:

a elongate body having a first end, a second end, a first side, a second side, and a longitudinal axis;

an integrally formed first "C" channel connector extending from the first side parallel to the longitudinal axis for substantially the entire length of the elongate body from the first end to the second end, the first "C" channel connector being adapted to receive and retain a first bulbous edge of a first tarpaulin;

an integrally formed second "C" channel connector extending from the second side parallel to the longitudinal axis for substantially the entire length of the elongate body from the first end to the second end, the second "C" channel connector being in opposed relation to the first "C" channel connector on a common plane and being adapted to receive and retain a second bulbous edge of a second tarpaulin;

integrally formed anchoring wings extending for substantially the entire length of the elongate body from the first end to the second end, the anchoring wings protruding past both the first side and the second side and angled outwardly and downwardly away from the elongate body to define a substantially concave engagement surface, the anchoring wings having openings adapted to receive fasteners.

2) The apparatus as defined in Claim 1, wherein the elongate body is polymer plastic.

3) The apparatus as defined in Claim 2, wherein the elongate body is resiliently deformable longitudinally to assume an arcuate shape.

4) The apparatus as defined in Claim 1, wherein an alignment guide is provided that engages and secures in end to end relation the anchoring wings of adjacent elongate bodies, with the first "C" channel connector and the second "C" channel connector of the adjacent elongate bodies aligned, whereby an edge of a tarpaulin freely passes between the adjacent elongate bodies.

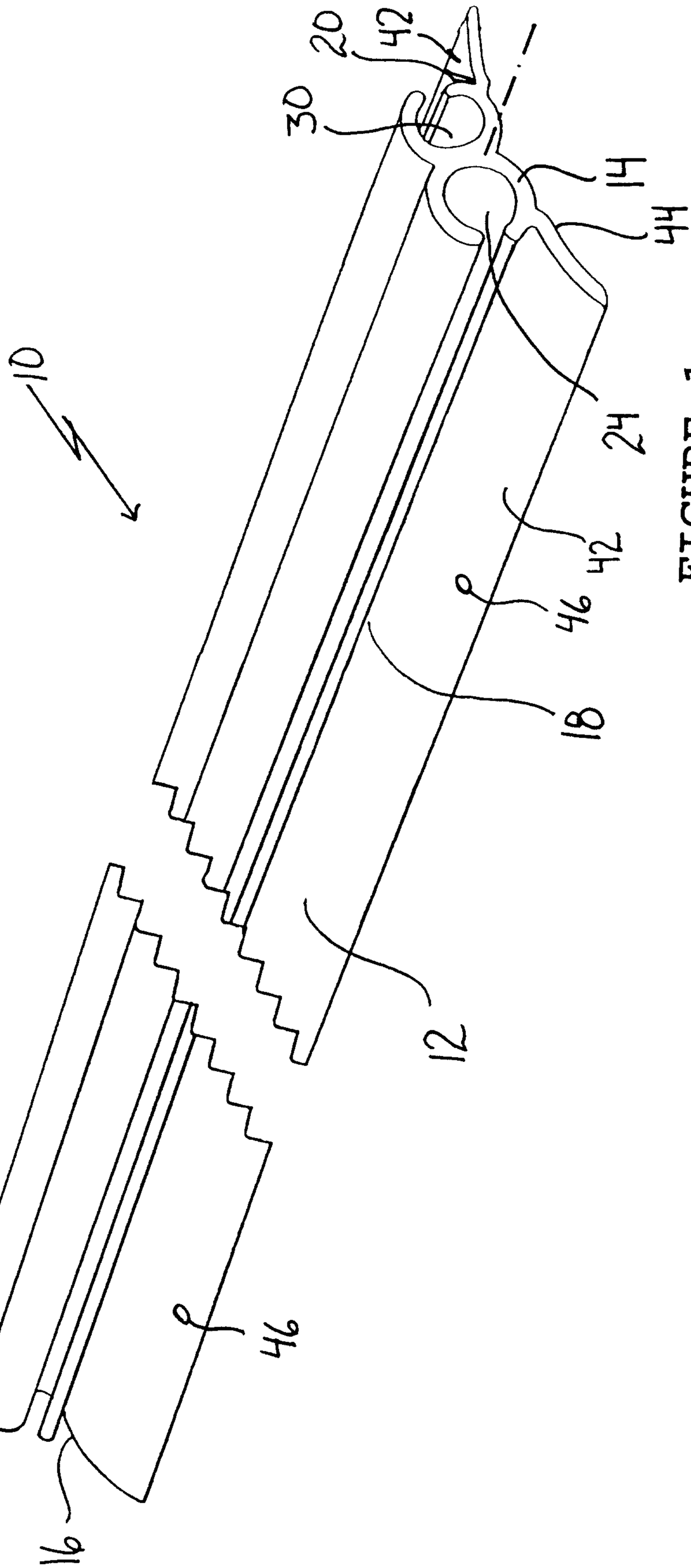


FIGURE 1

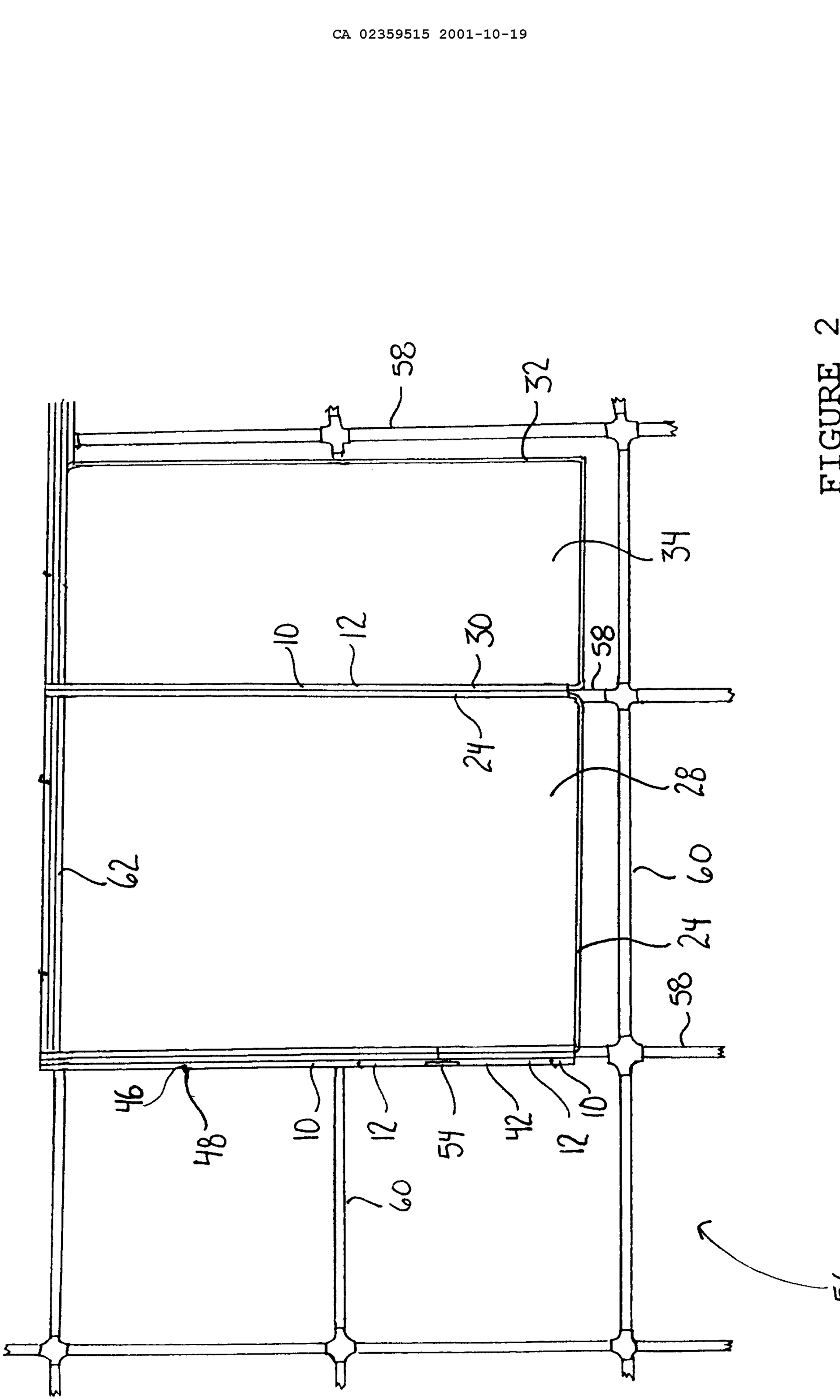


FIGURE 2

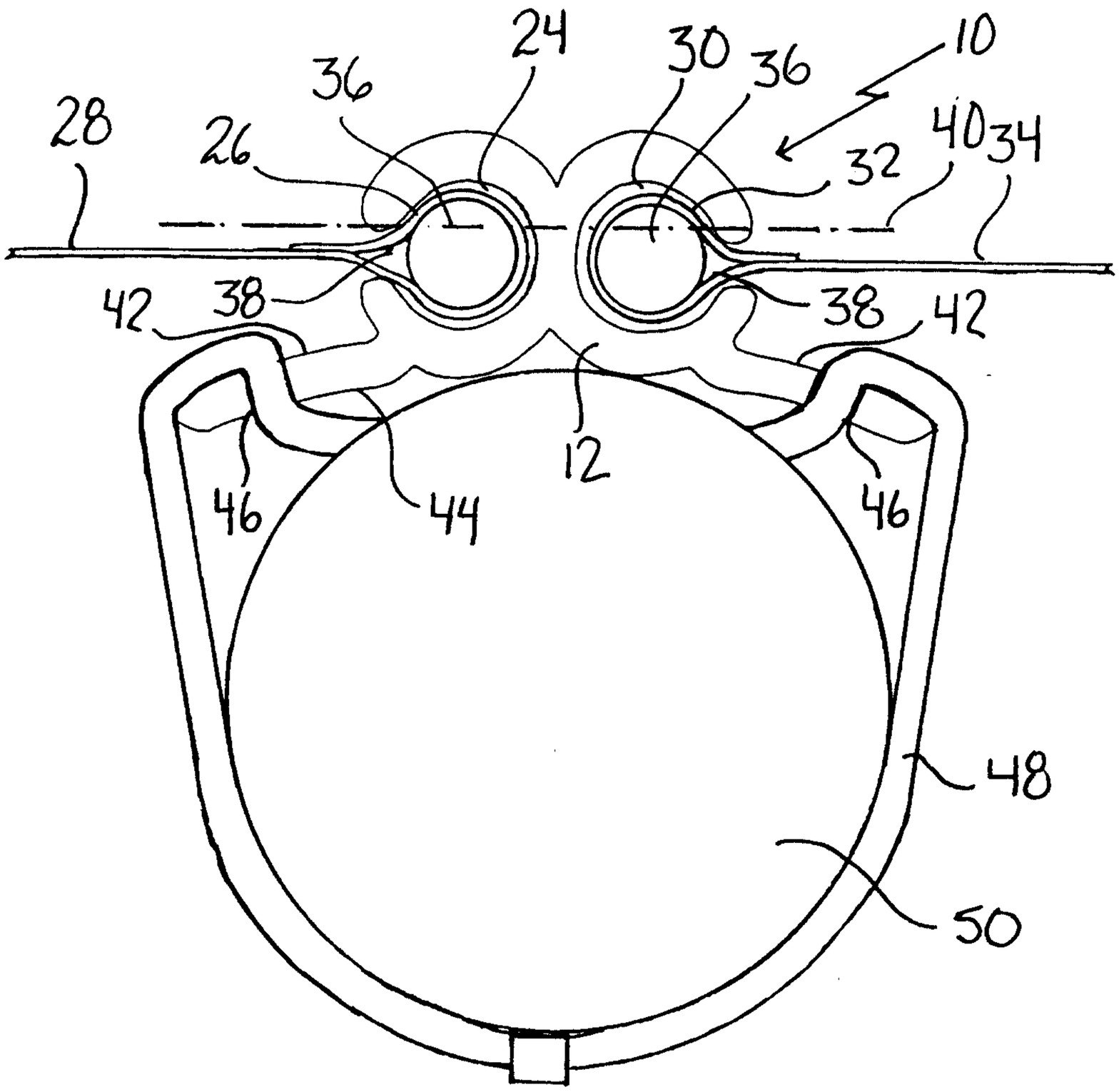


FIGURE 3

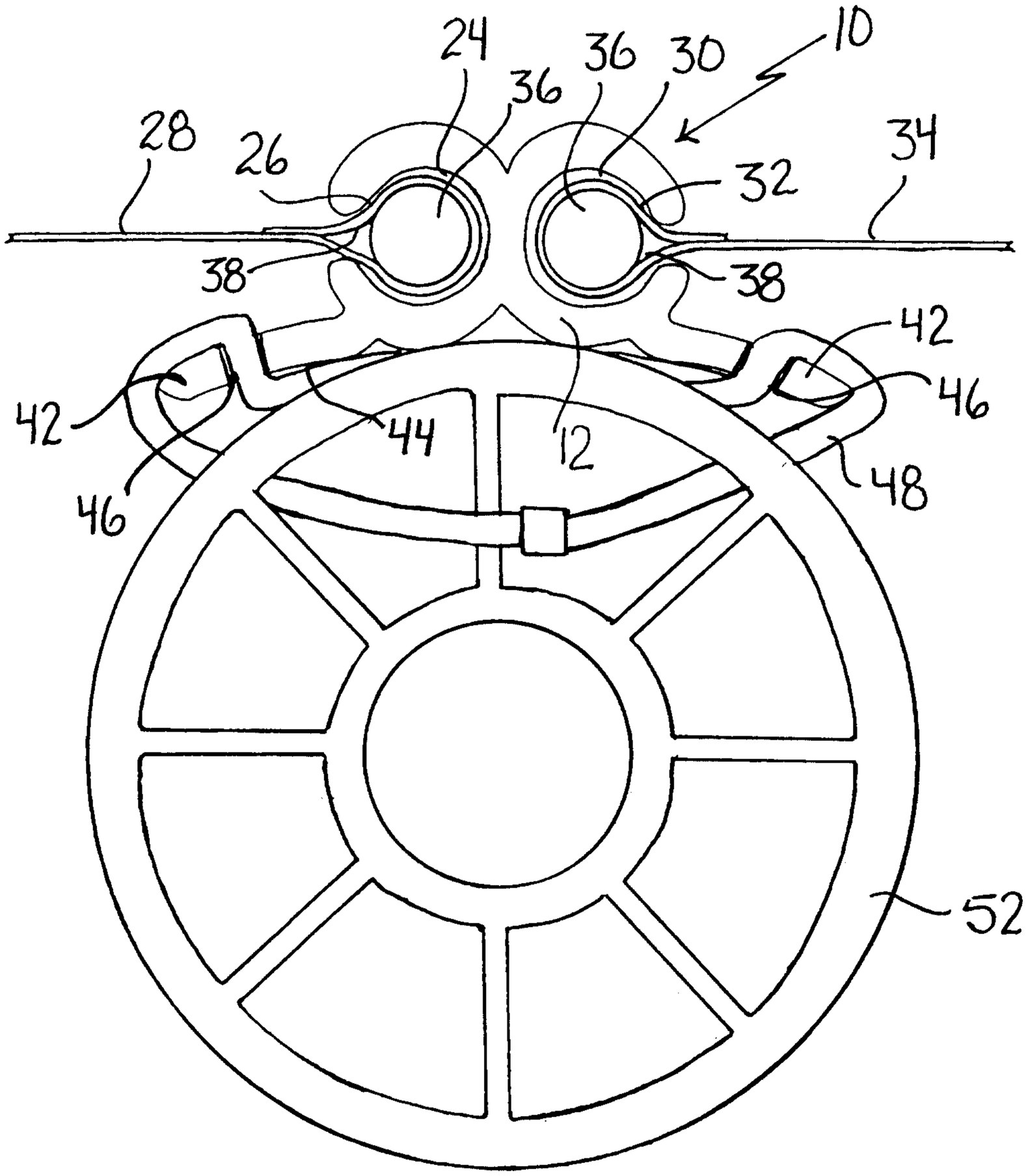


FIGURE 4

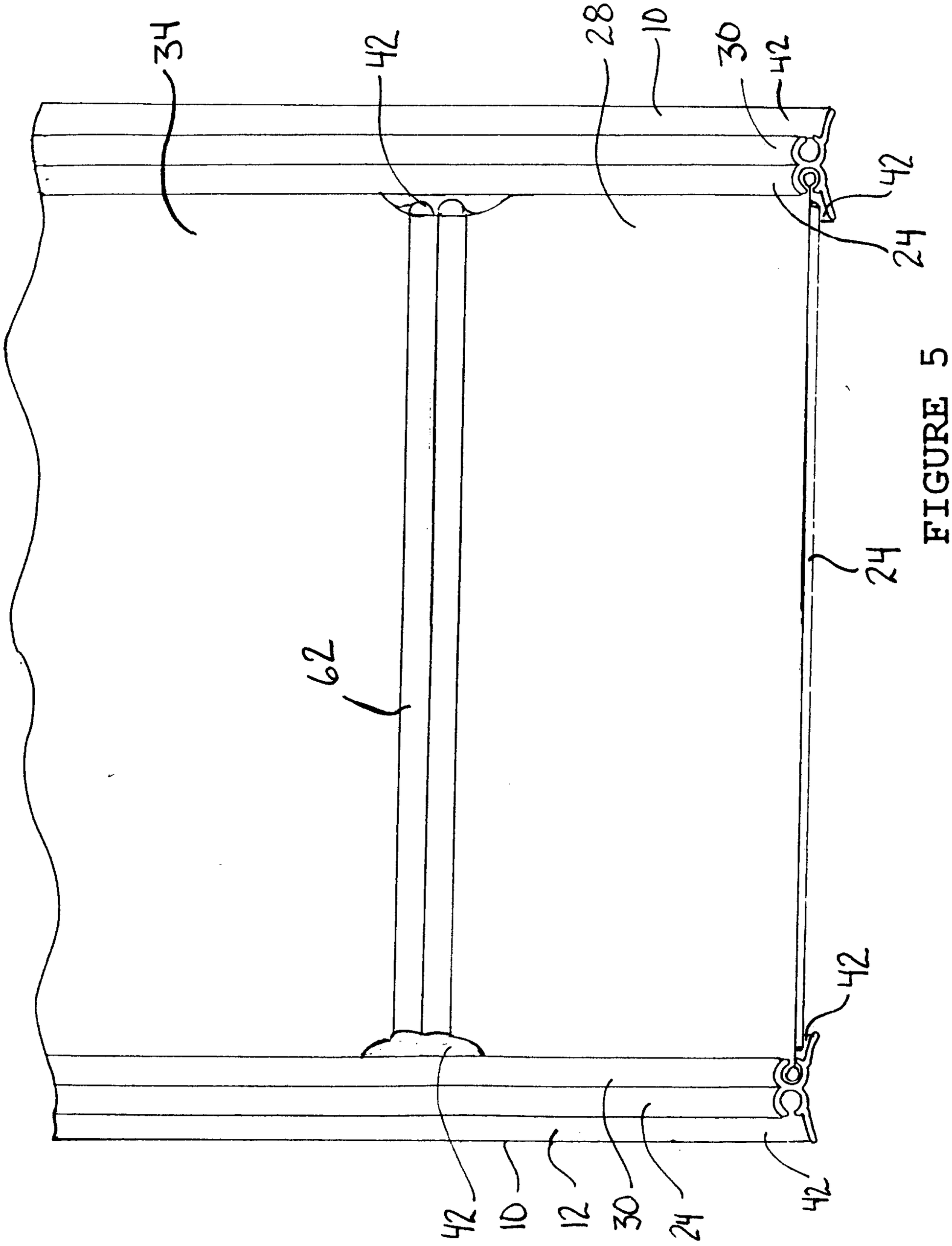


FIGURE 5

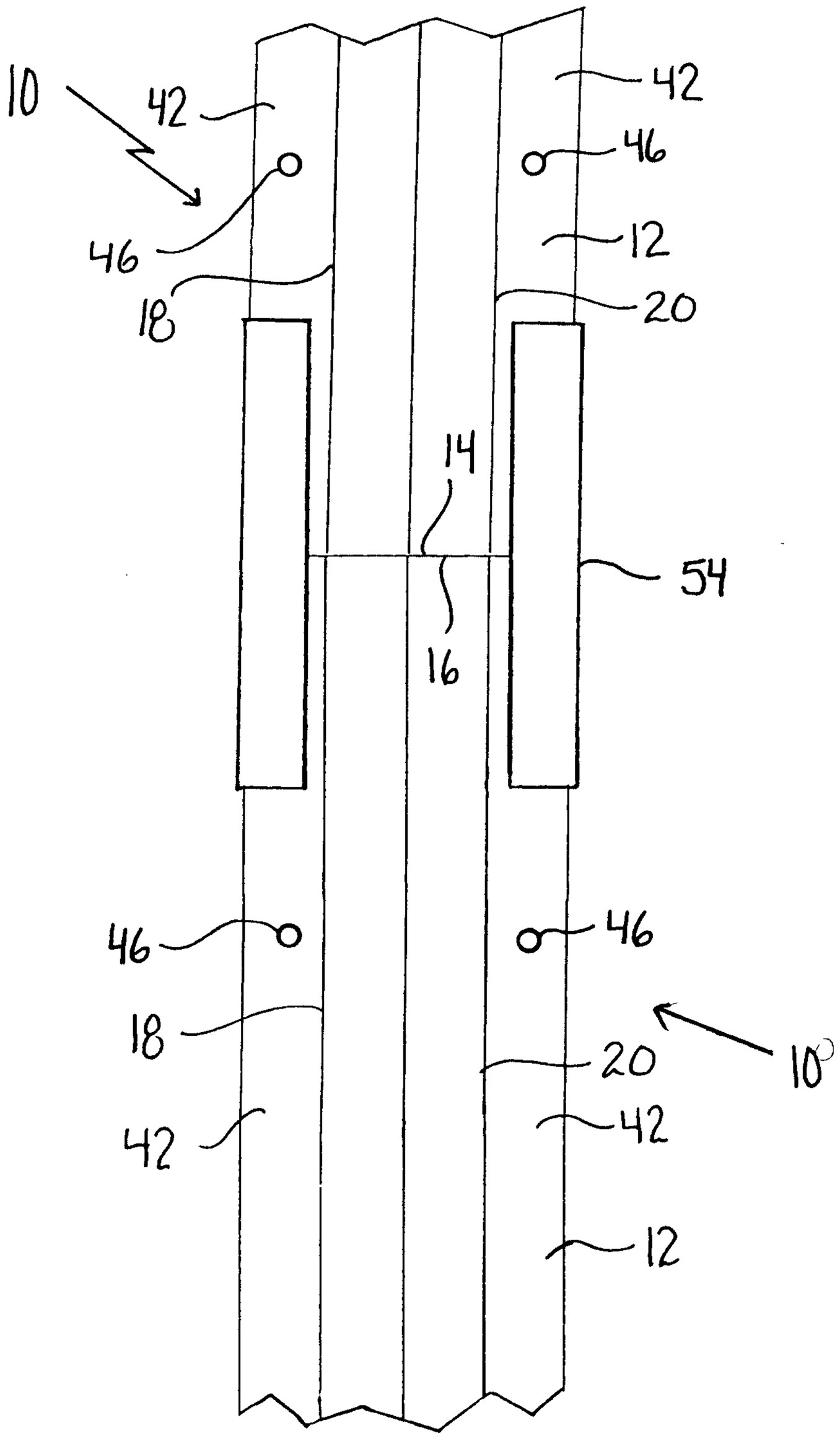


FIGURE 6

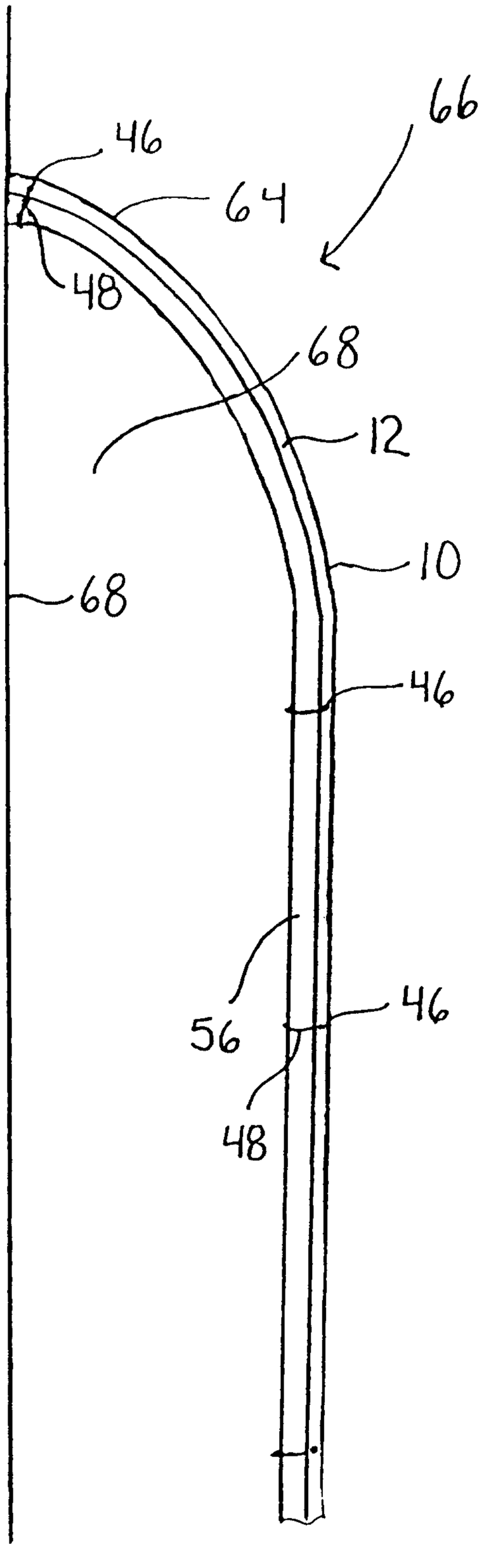
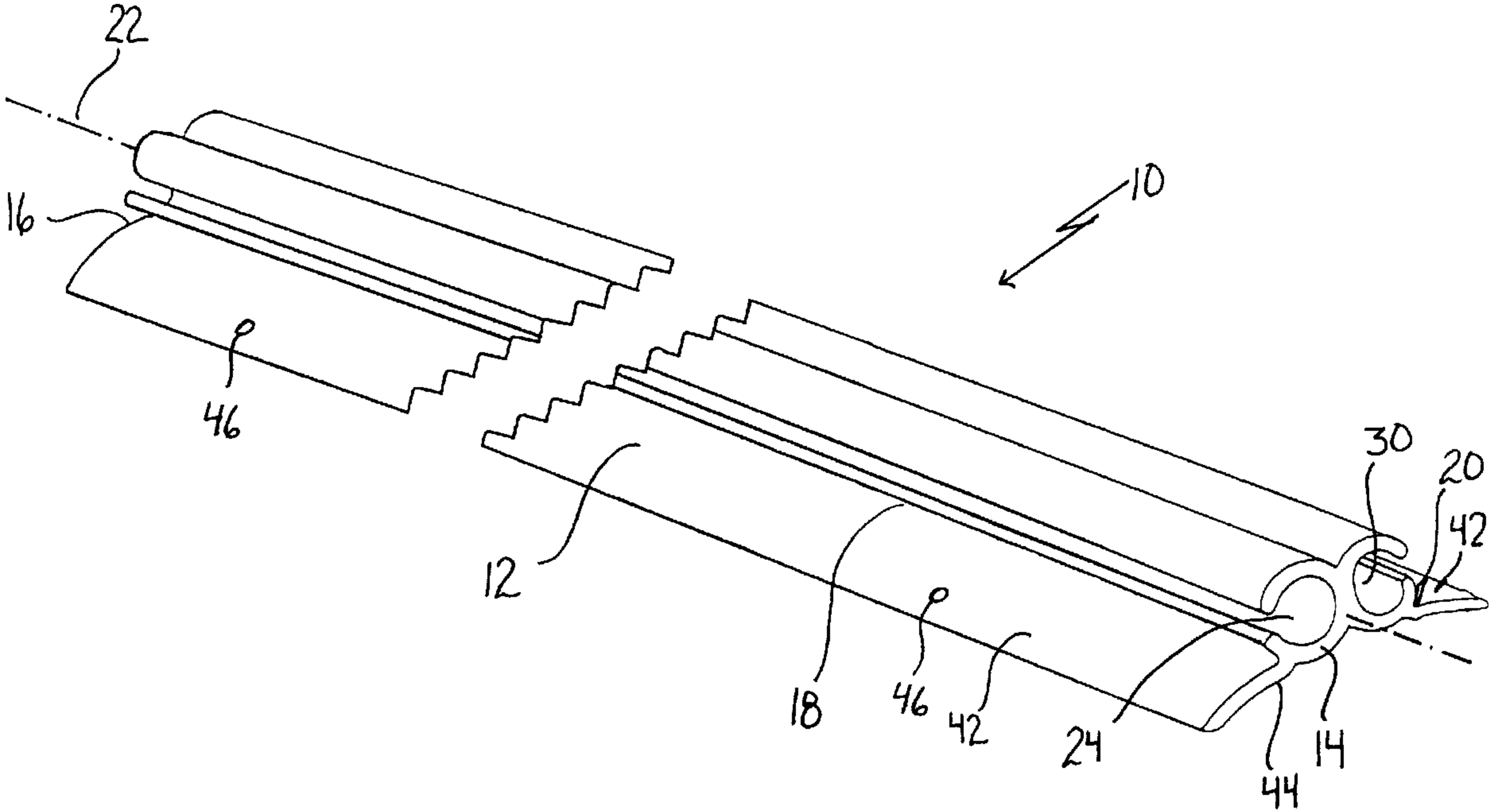


FIGURE 7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