OPIC
Office de la propriété intellectuelle du Canada

CIPO
Canadian Intellectual Property Office

(12) (19) (CA) **Brevet-Patent**

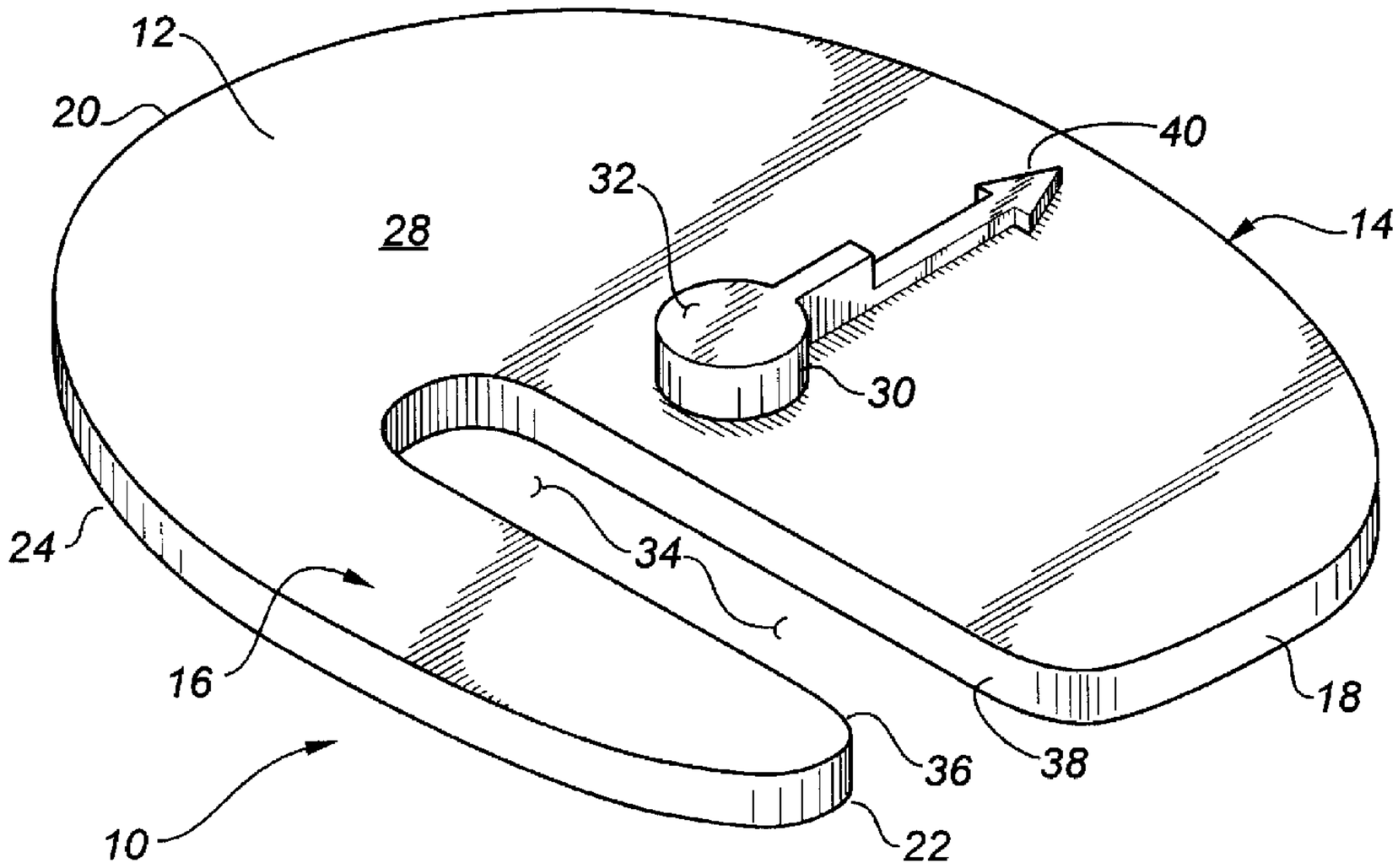
(11) (21) (C) **2,139,244**
(22) 1994/12/28
(43) 1996/06/29
(45) 2000/04/18

(72) Lam, Anthony Hk, CA
(73) ANLAM CORPORATION, CA

(51) Int.Cl.[5] A61B 17/12

(54) **COUSSIN D'APPUI HEMOSTATIQUE**

(54) **HAEMOSTATIC PRESSURE PAD**



(57) A haemostatic pressure pad is described which includes a flat, generally U-shaped body having a first finger portion and a second finger portion. The first finger portion has a first end and a second end. The second finger portion has a first end and a second end. The first finger portion and the second finger portion are conjoined at the respective second ends. The first finger portion is substantially broader than the second finger portion. The body has a lower contact face and an upper attachment face. A boss is positioned on the attachment face of the first finger portion for attaching the body to an haemostatic compression device. A channel is formed between the first finger and the second finger. The channel extends inwardly from the respective first ends of the first finger and the second finger, terminating at the conjoined respective second ends. The channel passes through the body from the contact face to the attachment face.

CANADA

ABSTRACT OF THE DISCLOSURE

A haemostatic pressure pad is described which includes a flat, generally U-shaped body having a first finger portion and a second finger portion. The first finger portion has a first end and a second end. The second finger portion has a first end and a second end. The first finger portion and the second finger portion are conjoined at the respective second ends. The first finger portion is substantially broader than the second finger portion. The body has a lower contact face and an upper attachment face. A boss is positioned on the attachment face of the first finger portion for attaching the body to an haemostatic compression device. A channel is formed between the first finger and the second finger. The channel extends inwardly from the respective first ends of the first finger and the second finger, terminating at the conjoined respective second ends. The channel passes through the body from the contact face to the attachment face.

B

TITLE OF THE INVENTION:

Haemostatic Pressure Pad

NAME(S) OF INVENTOR(S):

Anthony Hk Lam

FIELD OF THE INVENTION

The present invention relates to a haemostatic pressure pad intended to be used with a haemostatic compression device.

BACKGROUND OF THE INVENTION

Haemostatic pressure pads intended for use in a haemostatic compression device come in a variety of shapes and configurations. An example of a haemostatic pressure pad that is in common use is United States Patent 4,572,182 which issued to Royse in 1986. The Royse patent discloses a haemostatic pressure pad which is a circular disk. The circular disk has a symmetrically positioned mounting boss and a "V" shaped notch. The mounting boss is used to mount the haemostatic pressure pad on an arterial clamp. The "V" shaped notch facilitates the placement of the haemostatic pressure pad over a catheter prior to removal of the catheter from a patient's artery.

None of the haemostatic pressure pads commercially available at the present time are capable of applying simultaneous pressure to both the femoral artery and the femoral vein.

SUMMARY OF THE INVENTION

What is required is haemostatic pad that is capable of applying simultaneous pressure to both the femoral artery and the femoral vein.

According to one aspect of the present invention there is provided a haemostatic pressure pad comprising a generally U-shaped body having a first finger portion and a second finger portion. The first finger portion has a first end and a second end. The second finger portion has a first end and a second end. The first finger portion and the second finger portion are conjoined at the respective second ends. The first finger portion is substantially broader or wider than the second finger portion. The body has a lower contact face and an upper attachment face. Means are positioned on the attachment face of the first finger portion for attaching the body to a haemostatic compression device. A channel is formed between the first finger and the second finger. The channel extends inwardly from the respective first ends of the first finger and the second finger, terminating at the conjoined respective second ends. The channel extends through the body from the contact face to the attachment face. The pad is comparable in configuration to a hand having the fingers together and the thumb spaced therefrom - there is a broad portion (the fingers) and a narrow portion (the thumb). The channel preferably extends inwardly to at least about the middle of the body.

The haemostatic pressure pad, as described above, is capable of staunching blood flow from both a femoral artery and a femoral vein when used in accordance with the method that will hereinafter be further described. It is preferred that the channel have substantially parallel sidewalls. It is also preferred that an arrow be positioned on the attachment face of the first finger. The arrow extends away from the second finger substantially perpendicularly to the channel. This assists health care professionals in positioning the body in accordance with the teachings of the method.

According to another aspect of the present invention there is provided a method of positioning a haemostatic pressure pad.

Firstly, provide a haemostatic compression device. Secondly, provide a haemostatic pressure pad as described above. Thirdly, attach the haemostatic pressure pad to the haemostatic compression device. Fourthly, position the contact face of the haemostatic pressure pad on a leg of a patient with the wound positioned between the sidewalls of the channel. The haemostatic compression device is used to apply sufficient force to staunch blood flow. The channel extends substantially perpendicularly to both a femoral artery and a femoral vein in the leg of the patient with the first finger staunching blood flow from the femoral artery and the second finger staunching blood flow from the femoral vein.

In order to ensure the intended positioning it is preferred that the haemostatic pad have directional indicator, such as an arrow, on the attachment face perpendicular to the channel. The health care professional is then able to ensure correct positioning merely by pointing the arrow toward the patient's umbilicus.

According to another aspect of the present invention there is provided an haemostatic compression device/haemostatic pad combination. The haemostatic compression device has a piston with a key shaped terminus. The haemostatic pressure pad, as described above, has an added feature of a boss having a key hole shaped aperture positioned on the attachment face of the first finger portion. The key shaped terminus of the piston from the haemostatic compression device is insertable into the key hole shaped aperture to attach the body to an haemostatic compression device.

Other types of haemostatic pads are attached to a piston of an haemostatic compression device in such a manner that they are free to rotate. However, in accordance with the teachings of the method of a particular positioning of the haemostatic pad is preferred. It is, therefore, preferable that the haemostatic pad be non-rotatably mounted. The combination, as described above, achieves that objective through the use of the

key to key hole engagement.

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, wherein:

FIGURE 1 is a perspective view of a haemostatic pad constructed in accordance with the teachings of the present invention.

FIGURE 2 is top plan view of the haemostatic pad illustrated in **FIGURE 1.**

FIGURE 3 is side elevation view of the haemostatic pad illustrated in **FIGURE 1.**

FIGURE 4 is top plan view of the haemostatic pad illustrated in **FIGURE 1**, positioned in accordance with the teachings of the preferred method.

FIGURE 5 is a side elevation view of the haemostatic pad illustrated in **FIGURE 1** in combination with an haemostatic compression device.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The preferred embodiment, a haemostatic pressure pad generally identified by reference numeral 10, will now be described with reference to **FIGURES 1** through **5.**

The primary procedure for which a haemostatic compression device is used is catheterization via a femoral artery or vein. One example of an instance in which catheterization would be used in when a patient is experiencing cardiogenic shock. A catheter is introduced through puncture wounds in the leg into a femoral artery, a femoral vein, or both. Often a hollow sheath, termed an "introducer" is placed into the puncture wound in the leg as a preliminary step. The catheter is

extended through the introducer, along the artery (or vein) and into the patient's heart. Haemostatic pressure pad 10 is intended for use in such procedures.

Referring to **FIGURES 1** and **2**, haemostatic pressure pad 10 includes a generally U-shaped body 12 having a first finger portion 14 and a second finger portion 16. First finger portion 14 has a first end 18 and a second end 20. Second finger portion 16 has a first end 22 and a second end 24. First finger portion 14 and second finger portion 16 are conjoined at respective second ends 20 and 24.

First finger portion 14 is broader than second finger portion 16. The reason for this difference in size will become apparent from the description of use and operation. The blood flow through a femoral artery is from the heart to the leg. The blood flow through a femoral vein is form the leg to the heart. The pressure in the femoral artery is much greater than the pressure in the femoral vein, and, therefore, a larger first finger portion is required.

Referring to **FIGURES 3** and **5**, the body 12 has a lower contact face 26 and an upper attachment face 28. Referring to **FIGURES 1** and **2**, a boss 30 having a key hole shaped aperture 32 is positioned on the attachment face 28 of the first finger portion 14.

A channel 34 having substantially parallel sidewalls 36 and 38 is formed between first finger portion 14 and second finger 16, terminating at conjoined respective second ends 20 and 24. Channel 34 extends through the body 12 from contact face 26 to attachment face 28.

An arrow 40 is positioned on the attachment face 28 of the first finger portion 14 of the body 12. Arrow 40 extends away from second finger portion 16 substantially perpendicularly to channel 34. This assists health care professionals in positioning body 12 as will hereinafter be described in relation to the preferred method.

Referring to **FIGURE 5**, it is preferred that haemostatic pressure pad 10 be used in combination with an haemostatic compression device having a piston 42 with a key shaped terminus 44. Key shaped terminus 44 of piston 42 from the haemostatic compression device is insertable into key hole shaped aperture 32 of boss 30 to attach the body 12 to the haemostatic compression device.

Referring to **FIGURE 4**, the preferred method of positioning the haemostatic pressure pad 10 will now be described. It will be understood that preparatory steps would include: providing an haemostatic compression device; providing a form of haemostatic pressure pad 10; and attaching haemostatic pressure pad 10 to the haemostatic compression device.

Referring to **FIGURE 3**, contact face 26 of haemostatic pressure pad 10 is placed in contact with a leg 46 of a patient 48. Referring to **FIGURE 4**, the puncture wounds are positioned between sidewalls 36 and 38 of channel 34. Arrow 40 is positioned so that it points toward an umbilicus 52 of patient 48. Referring to **FIGURE 3**, piston 42of the haemostatic compression device is used to apply sufficient force to haemostatic pressure pad 10 to staunch blood flow. Referring to **FIGURES 2** and **4**, channel 34 extends substantially perpendicularly to both a femoral artery 54 and a femoral vein 56 in leg 46 of patient 48. When positioned as described first finger portion 14 staunches blood flow from femoral artery 54 and second finger portion 16 staunches blood flow from femoral vein 56. Referring to **FIGURE 3**, in order to staunch the blood flow from femoral artery 54 and femoral vein 56, haemostatic pressure pad 10 must exert a force upon skin 58, and a subcutaneous layer of fat 60. Femoral artery 54 and femoral vein 56 are positioned between subcutaneous layer of fat 60 and muscle 62.

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 use of arrow 40 is preferred, but is not absolutely essential. Similarly, the use of boss 30 with key hole shaped aperture 32 is preferred, but is not absolutely essential.

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

1. A haemostatic pressure pad comprising:

a generally U-shaped, substantially flat body having first and second finger portions, each finger portion having first and second ends, the finger portions being conjoined at their second ends, the first finger portion being substantially broader than the second finger portion, said finger portions having an upper attachment face and a lower contact face;

said finger portions forming a channel between them extending inwardly from their first ends and extending through the body;

said first finger portion attachment face having a boss protruding upwardly therefrom, said boss forming an upwardly opening aperture for attaching the body with a haemostatic compression device.

2. The haemostatic pressure pad as defined in claim 1, wherein a lineal directional indicator is positioned on the attachment face of the first finger portion, said indicator extending away from the second finger portion substantially perpendicularly to the channel, thereby assisting health care professionals in positioning the body; and

the channel extends inwardly to at least about the middle of the body.

3. A method of positioning a haemostatic pressure pad, comprising the following steps:

providing an haemostatic compression device;

providing a haemostatic pressure pad having

a generally U-shaped body including a first finger portion having a first end and a second end, a second finger portion having a first end and a second end, the first finger portion and the second finger portion being conjoined at the respective second ends, the first finger portion being broader than the second finger portion, the body having a lower contact face and an upper attachment face,

means positioned on the attachment face of the first finger portion for attaching the body to an haemostatic compression device, and

a channel having substantially parallel sidewalls, formed between the first finger portion and the second finger portion, the channel extending inwardly from the respective first ends of the first finger portion and the second finger portion and terminating at the conjoined respective second ends, the channel extending through the body from the contact face to the attachment face;

attaching the haemostatic pressure pad to the haemostatic compression device;

positioning the contact face of the haemostatic pressure pad on a leg of a patient with the wound positioned between the sidewalls of the channel and using the haemostatic compression device to apply sufficient force to staunch blood flow, the channel extending substantially perpendicularly to both a femoral artery and a femoral vein in the leg of the patient with the first finger portion staunching blood flow from the heart through the femoral artery and the second finger portion staunching blood flow along the femoral vein back to the heart.

FIG. 1.

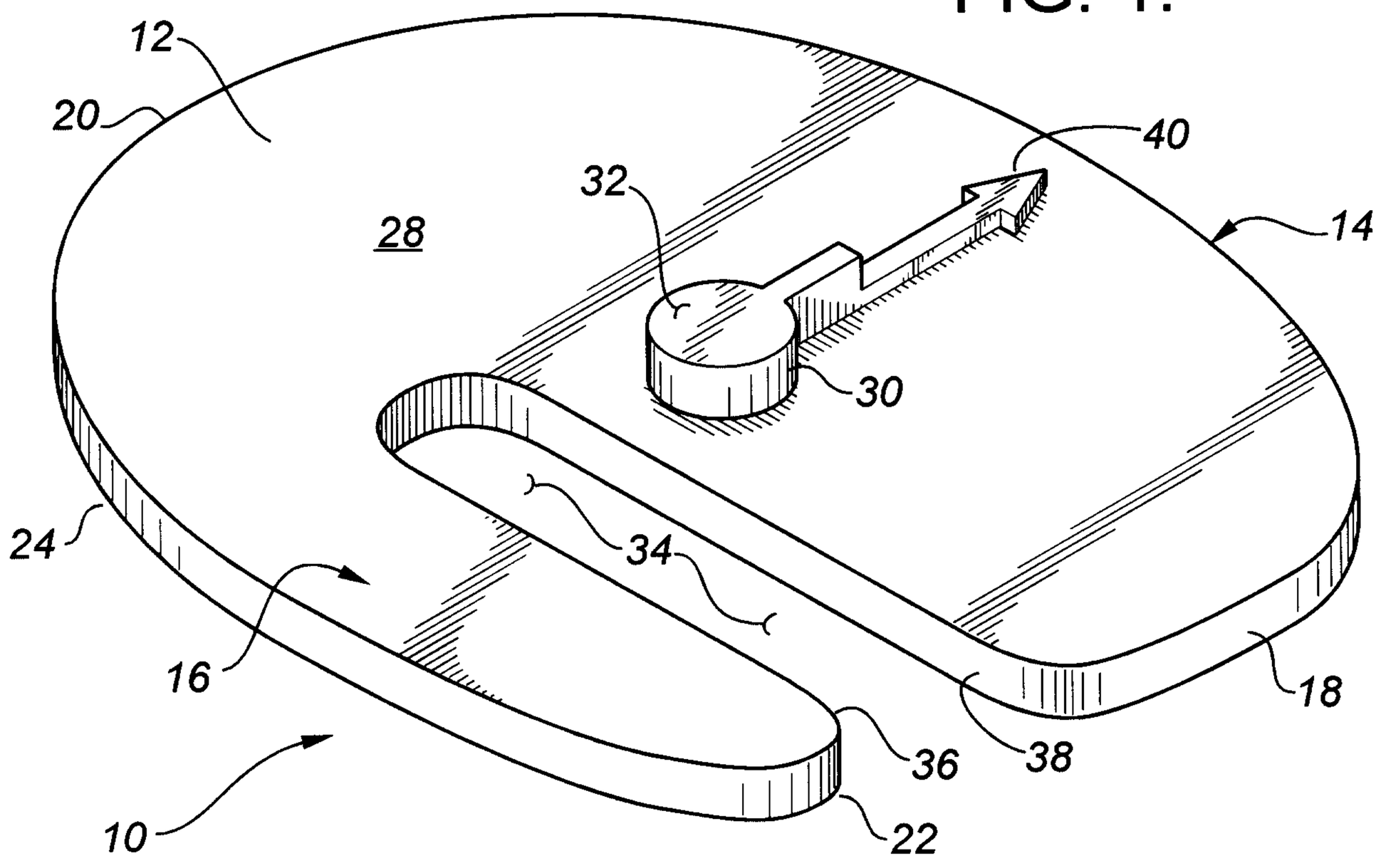
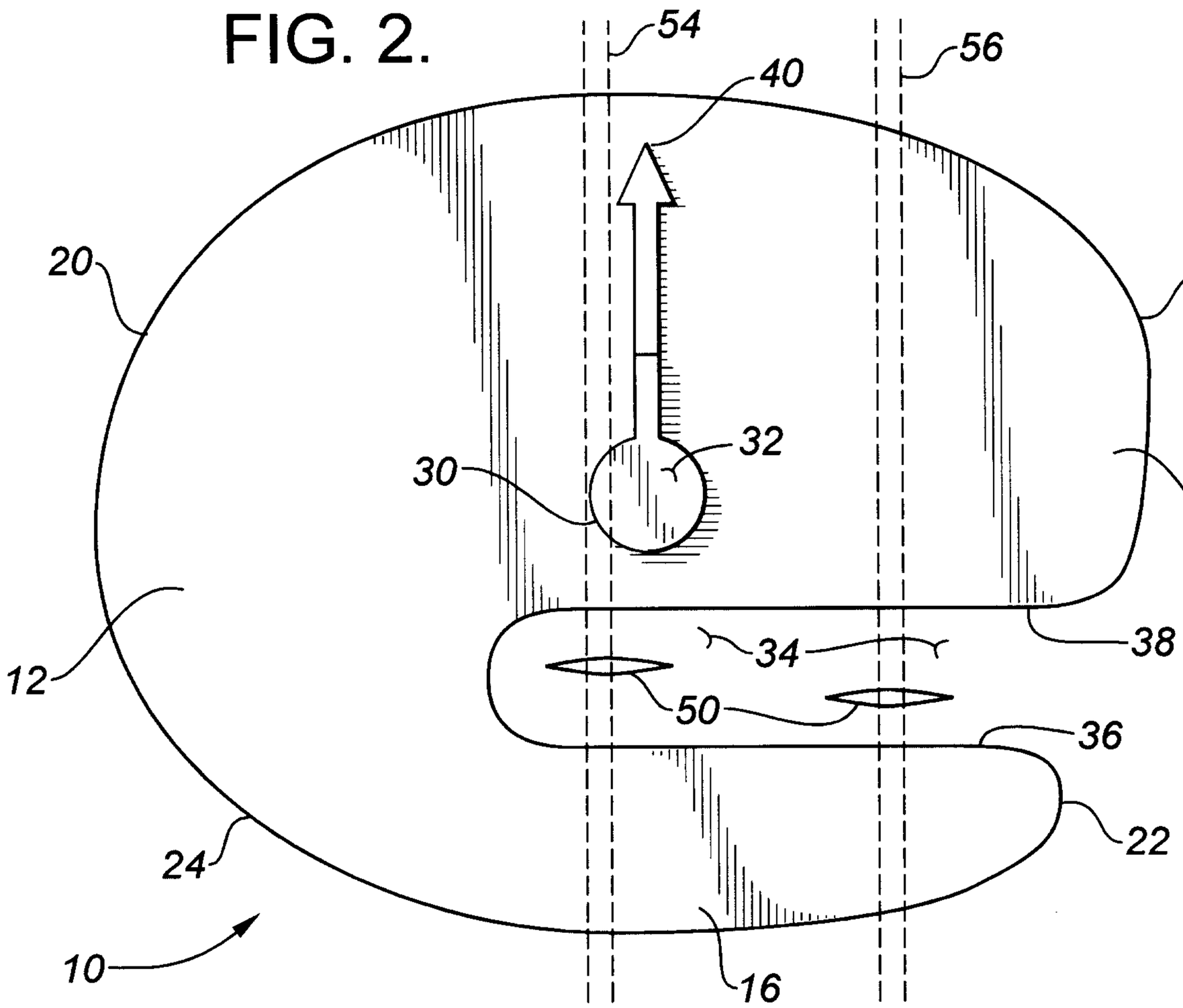

12
20
28
32
40
14
30
24
34
16
18
36
38
10
22

FIG. 2.


54
56
40
20
18
30
32
14
12
34
38
50
36
24
22
10
16

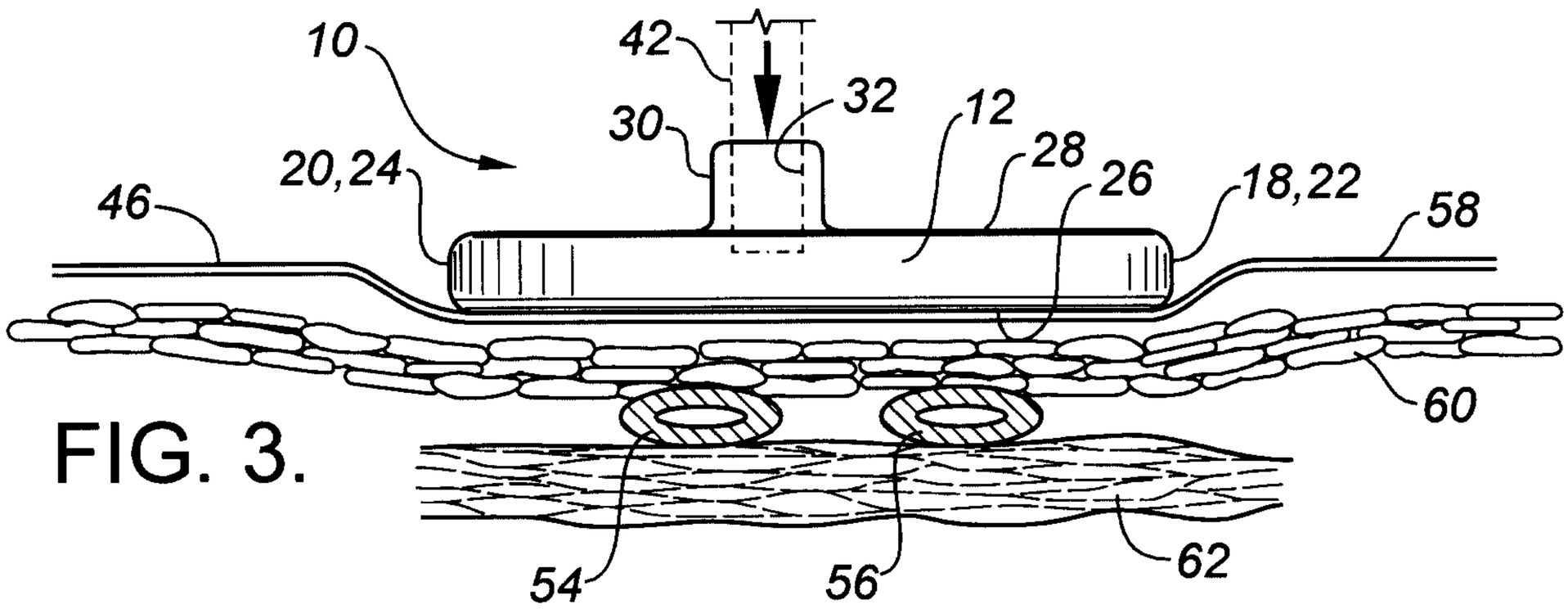


FIG. 3.

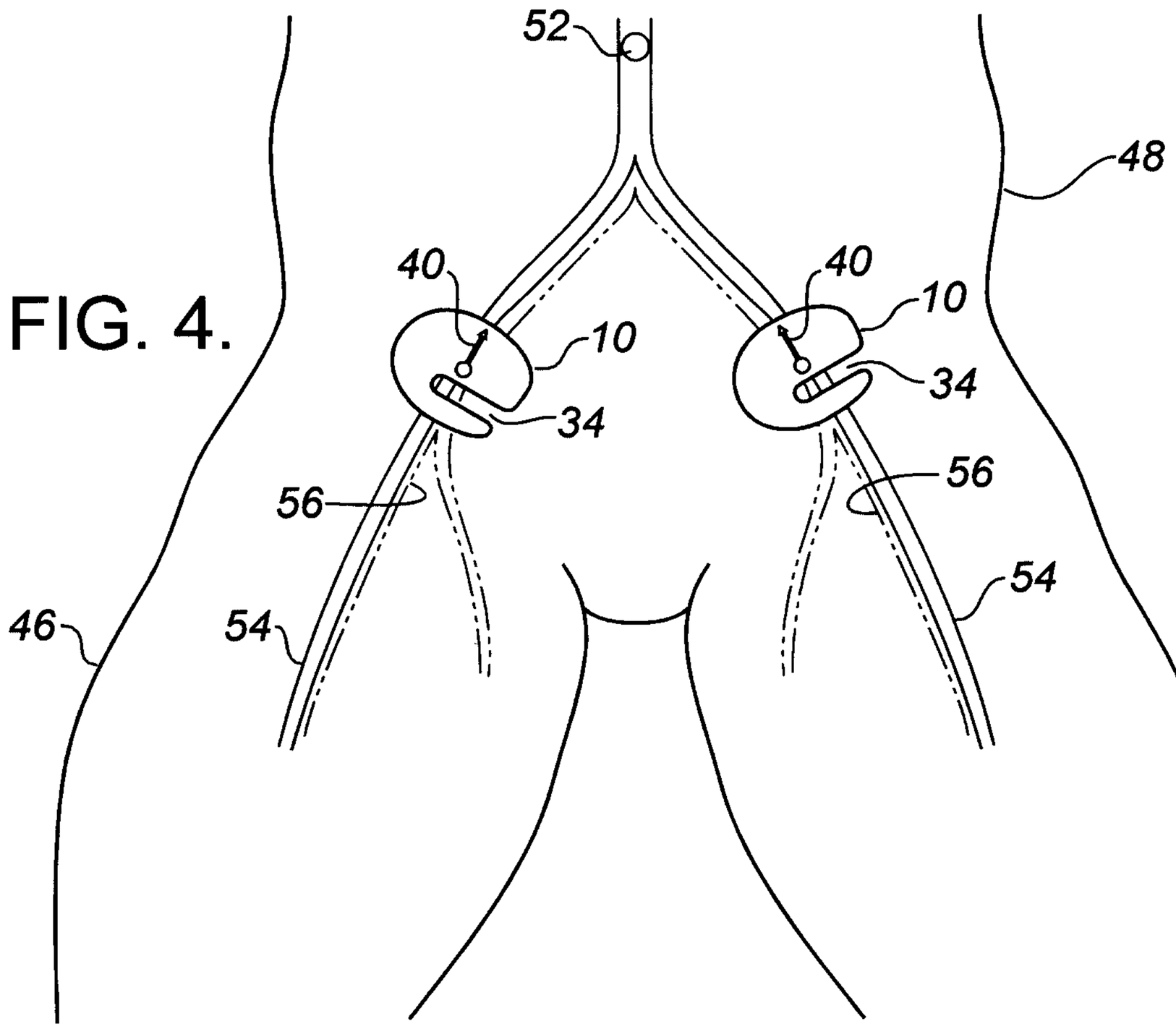


FIG. 4.

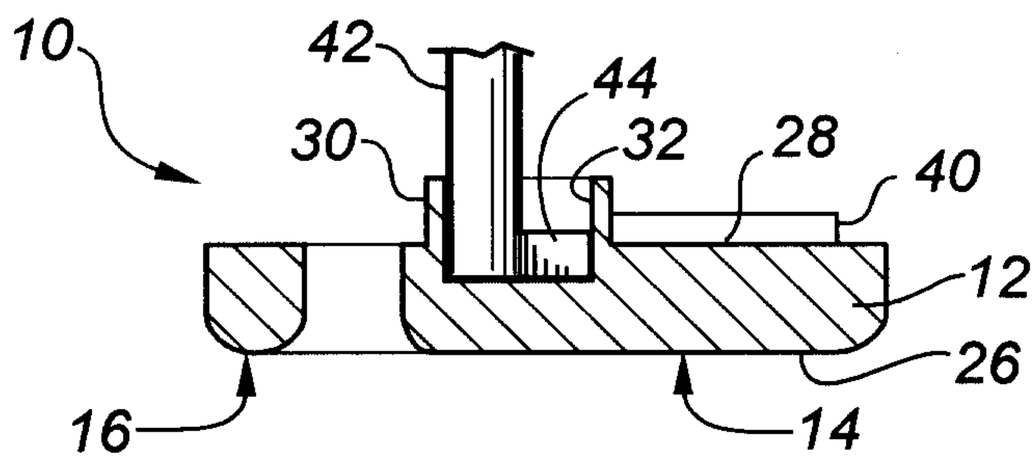


FIG. 5.