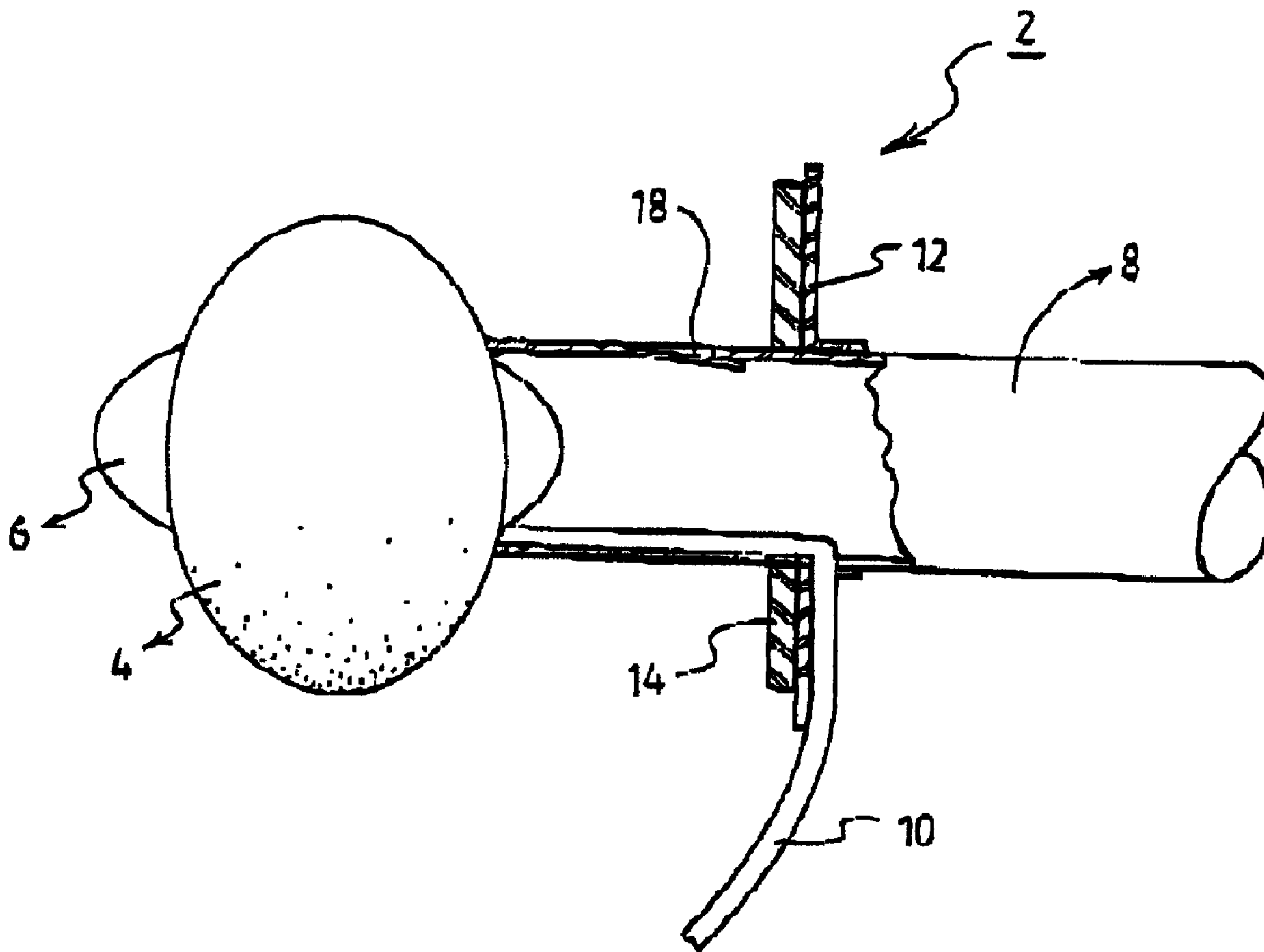




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(54) Titre : DISPOSITIF DE COLOSTOMIE AMELIORE  
(54) Title: IMPROVED COLOSTOMY DEVICE



(57) Abrégé/Abstract:

An improved colostomy device is provided for preventing the external and internal balloons from being pushed into the upper part of the rectum as well as preventing the leakage of liquids and gases with its perfect air-tight feature and for helping insert the

(57) **Abrégé(suite)/Abstract(continued):**

colostomy device to the patients. When composing a colostomy device with internal and external balloons and a drainage hose, a fixing aid is disposed on the external side of the drainage hose and the front end sides of the rim of the supporting tube is wrapped by a protection membrane between the internal and external balloons.

**Abstract of the Disclosure:**

An improved colostomy device is provided for preventing the external and internal balloons from being pushed into the upper part of the rectum as well as preventing the leakage of liquids and gases with its perfect air-tight feature and for helping insert the colostomy device to the patients. When composing a colostomy device with internal and external balloons and a drainage hose, a fixing aid is disposed on the external side of the drainage hose and the front end sides of the rim of the supporting tube is wrapped by a protection membrane between the internal and external balloons.

**Improved Colostomy Device****Technical Field**

5           The present invention relates to an improved medical  
colostomy device for containing or helping to pass stool. The  
device is inserted into the rectum of patients who can't control  
stool output, who are in a coma, or who are bedridden and need long  
term treatment. The device, if needed, is inserted into the rectum  
10 and after a certain passage of time is used, to help pass stool via  
evacuation through the drainage hose.

**Background**

15           In general, there are many medical colostomy devices composed  
of various parts. For example, such a device was disclosed in Korea  
Patent No. 103444, entitled "Medical Colostomy Device Kateta",  
published May 1, 1996. As shown in this patent, a medical colostomy  
device has the following parts: internal and external balloons  
20 disposed on the internal and external sides and the rim of a  
supporting tube, an extension part which consists of a number of  
air tubes and round tubes connected with the external balloon.

The extension is disposed on the rim of the external balloon  
making internal and external balloons. The extension part expands  
25 and contracts freely. An exhausting tube is disposed under the  
supporting tube forming a thin membrane along the external balloon,  
and an air tube, and a round tube. A connecting tube is disposed  
under the internal and external balloons and a supply tube which  
goes through the connecting tube.

30           Accordingly, the above medical colostomy device takes an  
important role in managing patients who can't control stool output,  
or who are in a coma or who need long term treatment as the result  
of a stroke and cannot control bowel function or who need an enema.  
But there are some problems with the device when placed in the  
35 rectum such as the internal and external balloons being pushed into  
the upper part of rectum, the leakage of liquids and gases as the

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supplying tube for injection and air and connecting tube are connected separately with the outside of exhausting tube so the gap between rectum and anus can not be closed fully, and the accumulation of liquids and gases from the rectum in the space  
5 between the anus and drainage hose.

Another example, as shown in Korea Utility Model No. 109896, entitled "Medical Colostomy Device" and published September 18, 1997, a medical colostomy device forms the supplying tube and the  
10 internal tube as an integration disposed on the internal and external tubes, a connecting tube with a joint tube under the external tube, a holder on the angled part of the supplying tube, an air supplying tube, an injection supplying tube, a washing fluid supplying tube connected with the internal and external tubes of  
15 above supplying tube, connecting socket can be inserted and installed connecting with washing fluid case, air cylinder and supplying tube.

Accordingly, the above device is effective for patients, who have colostomy on their abdomens after rectum cancer surgery etc. or who should be on long-term bed rest, without any inconvenience  
20 or bad effects. It is, however, uncomfortable for patients whose anuses are worn-out from having loose bowels, who are incontinent or who are stricken with paralysis.

Another example, as shown in Korea Utility Model No. 118334, entitled "Tubes of Medical Colostomy Device" and published February  
25 26, 1998, in composing the internal wall thickly with elastic material to maintain the original shape of the vacant slab, when extending under the lower side of the external balloon in which the vacant slab is formed, making it air-tight is successful when  
expanding internal and external balloons.

30 For the above case, even though air is supplied for expanding the external balloon, making it air-tight is achieved perfectly without any gap, as it contacts with the external tube closely when expansion of the internal balloon is formed inside the external balloon.

But the tubes are pushed into the upper rectum and the leakage of liquids and gases happens as tubes for air supplying are located outside of the exhausting tube.

5 The above device can hurt a patient's body as the edges of the supporting tube formed between the internal and external tubes rub against the inner walls and it's difficult to insert into the patients with small anuses.

#### 10 Summary of Invention

Accordingly, it is desirable to eliminate the above problems, to help control bowel output and enemas easily, and to prevent the tubes from being pushed into the upper part of the rectum making it perfectly air-tight when in use. This device can be used by patients who cannot control bowel movements, those who are bedridden, those who have frequently loose bowels with worn-out anuses, and those who are stricken with paralysis.

20 It is also desirable to insert a colostomy device into the anus without causing any damage on the inner wall, especially for patients who have small anuses.

In accordance with an aspect of the present invention, there is provided a medical colostomy device that is insertable into the anus without causing damage to the inner wall of the anus, comprising a supporting tube, a drainage hose extending from the supporting tube, an external balloon disposed around the supporting tube, a supply tube connected to the external balloon to expand or deflate the external balloon after insertion into the anus, and wherein the supporting tube is foldable when the external balloon is deflated to facilitate insertion into the anus.

To achieve the desired features described above when composing a colostomy device with internal and external

balloons and drainage hose, the fixing aid may be disposed on the external side of the drainage hose which is a little distant from the tubes, and the supply tube for supplying air to the internal and external balloons may be connected to the  
5 internal and external balloons through the inside of the drainage hose.

For the above fixing aid, a holder made from elastic material may be adhered and composed on the external side of the drainage hose and a detachable duplex adhesive plate may  
10 be disposed on the whole side of the holder.

In executing the present invention, air ring can be used for a holder and a fixing band disposed long on both sides is used with a holder of which the width is composed narrowly.

A colostomy device with the above composition can be  
15 selected and used according to the conditions of applicable patients.

A protection cover made from soft and elastic material such as silicon and disposed on the rim of the external side of the support tube composing a colostomy device, may cover  
20 angles of the support tube.

In case of patients who have small anuses, after letting out air from the internal and external balloon, the

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colostomy device is folded by half and is easily inserted into the anus with a protective cover wrapped at the front end part.

5 Brief Description of the Drawings

FIG 1 is a side view of the present invention

FIG 2 is a side view of the other exemplified figure

FIG 3 is a side view of the other exemplified figure

10 FIG 4 is a conditional view of the duplex adhesive plate of the present invention

FIG 5 is a conditional view of the duplex adhesive plate of the present invention

FIG 6 is a side view of the other exemplified figure

15 FIG 7 is a side view of FIG 6

FIG 8 is a partial cross-sectional view of the other exemplified figure

FIG 9 is an exemplifying view of the present invention for inserting the colostomy device easily.

20

Descriptions of major parts of this invention as shown on the drawings.

(2) Colostomy device

(4) External balloon

25 (6) Internal balloon

(8) Drainage hose

(10) Air supply tube

(11) Fixing band

(12) Holder

30 (14) Duplex detachable plate

(15) Support tube

(16) Air ring

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- (17) Protection cover
- (18) Check valve
- (19) Protection membrane

5 Best Mode for Carrying Out the Invention

Detailed descriptions of the present invention are provided as follows according to the attached drawings.

As a conditional view of a colostomy device(2), FIG 1  
10 includes a ring configured external balloon(4), an elastic thin membrane, an internal balloon (6) disposed within the external balloon(4), a supporting tube between the external and internal balloon and a fixing aid on the external side of the drainage hose(8) for preventing tubes from being  
15 pushed into the upper part of the rectum when a colostomy device is used(2), for the general colostomy device in which a drainage hose(8) is connected and disposed under the external balloon(4).

As the above fixing aid, a holder(12) is adhered on  
20 the external side of the drainage hose(8) as an integration type by a thin silicon-like material as shown in FIG 1 and connects the round detachable duplex adhesive plate(14) to the whole side.

As an example, air ring(16) can be used as an  
25 alternative for the holder(12).

As another example, the width of the holder(13) is adhered narrowly as an integration type on the external side of the drainage hose(8) as shown in FIG. 6 composing fixing band(11) disposed long on both end sides is used for  
30 applicable patients by attaching to the anus.

To prevent leakage of liquids and gases through the inserted part while using the device in the present

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invention, the air supply tube(10) which is for supplying or exhausting air to/from the internal and external balloons(4) and (5) is connected to the internal and external balloons(4) and (6) through the inside of the drainage hose(8) after passing through the thin holder(13).

The check valve(18) which runs one way only from the outer drainage hose(8) to the inner drainage hose(8) is on the drainage hose(8) between the external balloon(4) and the fixing aid. In executing the present invention, covering the edges of the supporting tube(15) with the above protection membrane(19), the silicon-like soft and elastic material which is composed on the rim of the supporting tube(15) between the internal and external balloon (4) and (6) as shown in FIG. 8, the colostomy device can be easily inserted without any damage to the inner walls of the anus.

In case of patients with small anuses who need to install the colostomy device(2), it is difficult to insert the internal balloon(6) with air supplied, so the internal and external balloon (4) and (6) should be deflated as shown in FIG 9, a colostomy device(2) is folded by half lengthwise for volume reduction and it is easily inserted into the anus with the other protection cover(17) made from soft material wrapped at the front end part. After completing installation, the internal and external balloons (4) and (6) are supplied with air and become expanded, thereafter the protection cover(17) is taken off from them and is exhausted out during bowel movement or injection.

Unexplained (20) is the rectum, and unexplained (22) is the anal tube.

The present invention composed as above, is for containing bowel movements or helping to pass stool,

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installing it in the rectum of the patients who can't control bowel movements, who are in a coma or who are bedridden and need long term treatment., The device if needed, is used conveniently for enemas and works in the following manner.

As shown in FIG 2, when the colostomy device(2) is installed and used on the anus of a patient, the fixing aid on the external side of the drainage hose(8) contacted to the anus of the patient supporting it, prevents the internal and external balloons (4) and (6), from being pushed into the upper part of rectum(20) when the colostomy device is used(2).

When a holder(12) is used for the above fixing aid, making it air-tight is done perfectly since the duplex adhesive plate(14) is inserted on the whole side of the holder(12) and adhered around the anus.

The above duplex adhesive plate(14) with free bends features excellent air-tight effect since the shape changes and adapts to the shape of the anus.

The material for this duplex adhesive plate(14) should be elastic and harmless to people without causing any adverse skin reaction. When an air ring is used for the fixing aid in the present invention as shown in FIG 3, the air ring(16) prevents leakage of liquids and gases from the rectum, adhering the external tube closely to the wall of the rectum during injection.

The adhesive plate(14) is impossible to use for patients who have inflammation and skin damage, so the fixing band(11) with adhesive part composed on the end part of the band as shown in FIG 6 should be used. When using the fixing band(11), the position of the colostomy device(2) can be fixed adhering around the anus of the

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patient as shown in FIG 7.

When the colostomy device(2) provided in the present invention, is installed in the rectum(20) located at the anus of a patient as shown in FIG 2, there is no leakage of liquids and gases and no gap between the drainage hose(8) and anus since the air supply tube(10) is inserted inside the drainage hose(8).

The drainage hose(8) located inside the anal tube with check valve(18) which runs one way only from the outer drainage hose(8) to the inner drainage hose(8) prevents the leakage of liquids and gases.

The drainage hose(8) formed on the external side of the fixing aid, can be removed if necessary, especially in the case of ambulatory patients, using it during injection and bowel movement without any inconvenience.

In composing the present invention, the protection membrane(19) is disposed on the rim of the supporting tube(15) as shown in FIG. 8 and the colostomy device can be easily inserted without causing any damage to the inner walls of the anus covering the edges of the supporting tube(15) by the protection membrane(19) as the internal balloon located in the supporting tube(15) supplies air when the external tube removes air, when the colostomy device is installed to the anus of a patient.

In case of patients with small anuses, it is easy to insert the colostomy device(2). First, let air out as shown in FIG 9 and then fold the colostomy device(2) in half. Then wrap the front end part in the protection cover(17) and insert the device to the anus of a patient.

30

### Industrial Applicability

- 10 -

Accordingly, the present invention relates to a colostomy device which can be used for incontinent patients and/or for movement with the following positive effects; preventing the internal and external balloons from being pushed into the upper part of the rectum by the fixing aid while using the device, preventing the leakage of liquids and gases, protecting the epidermis around the anus by the check valve of the drainage hose which drains any liquids or gases that enter the space between the anal tube and drainage hose, and facilitating easy installation of the colostomy device.

1. A medical colostomy device that is insertable into the anus without causing damage to the inner wall of the anus, comprising:
  - a supporting tube,
  - a drainage hose extending from the supporting tube,
  - an external balloon disposed around the supporting tube,
  - a supply tube connected to the external balloon to expand or deflate the external balloon after insertion into the anus, and wherein the supporting tube is foldable when the external balloon is deflated to facilitate insertion into the anus.
2. The medical colostomy device of claim 1, wherein the supporting tube is foldable lengthwise.
3. The medical colostomy device of claim 2, further comprising a protection cover that is made from soft material for use during insertion into the anus, the protection cover being located on a front end of the supporting tube after the supporting tube has been folded.
4. The medical colostomy device of claim 3, wherein the protection cover is removable from the front end of the supporting tube upon expansion of the external balloon after insertion into the anus.
5. The medical colostomy device of claim 4, wherein the protection cover may be exhausted out through the drainage hose after removal from the front end of the supporting tube.
6. The medical colostomy device of any claims 1-5, further comprising an internal balloon disposed within the external balloon.

7. The medical colostomy device of claim 6, wherein a protection membrane of soft elastic material is disposed on a rim of the supporting tube between the external and internal balloons.

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FIG. 1

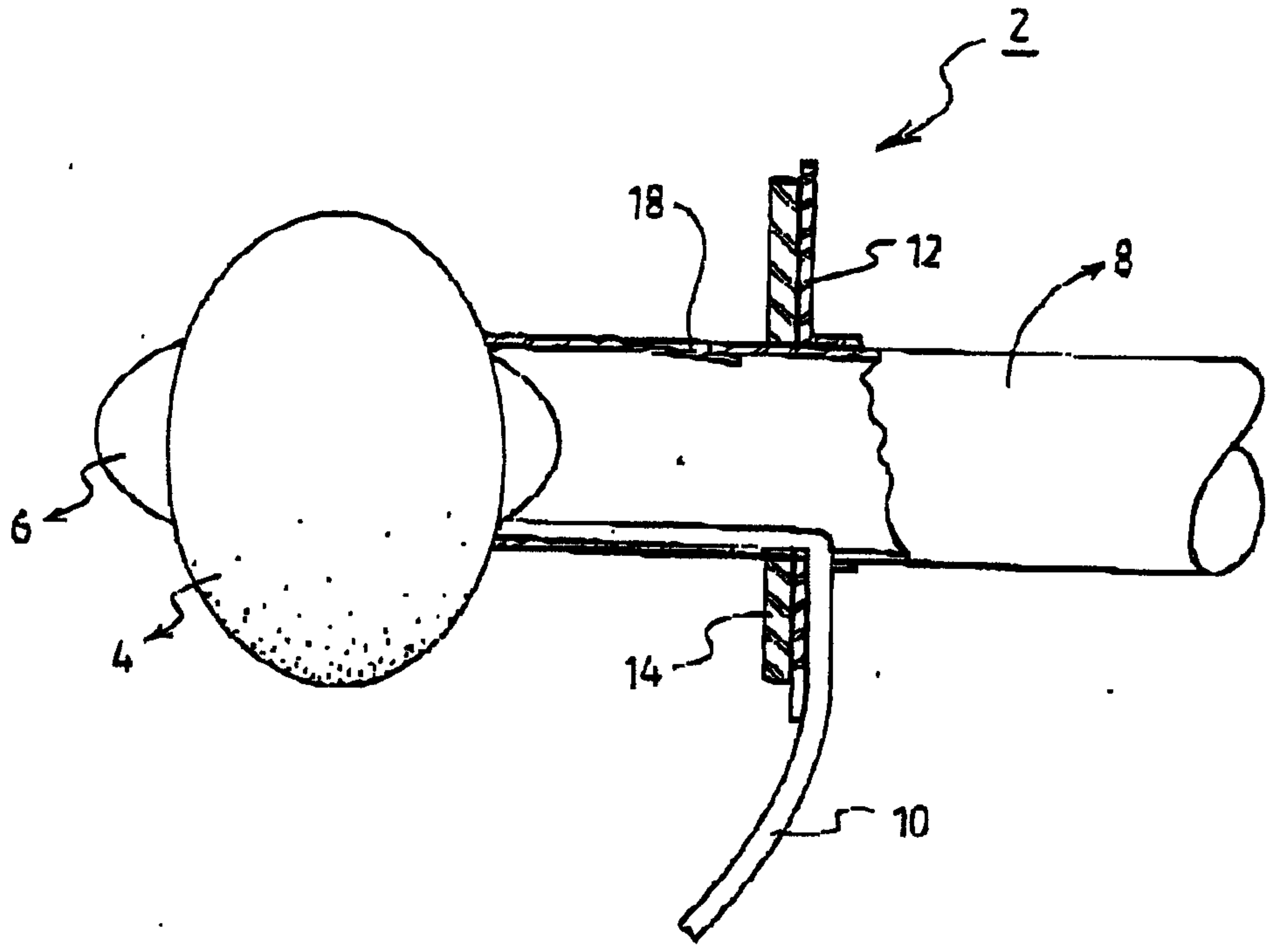
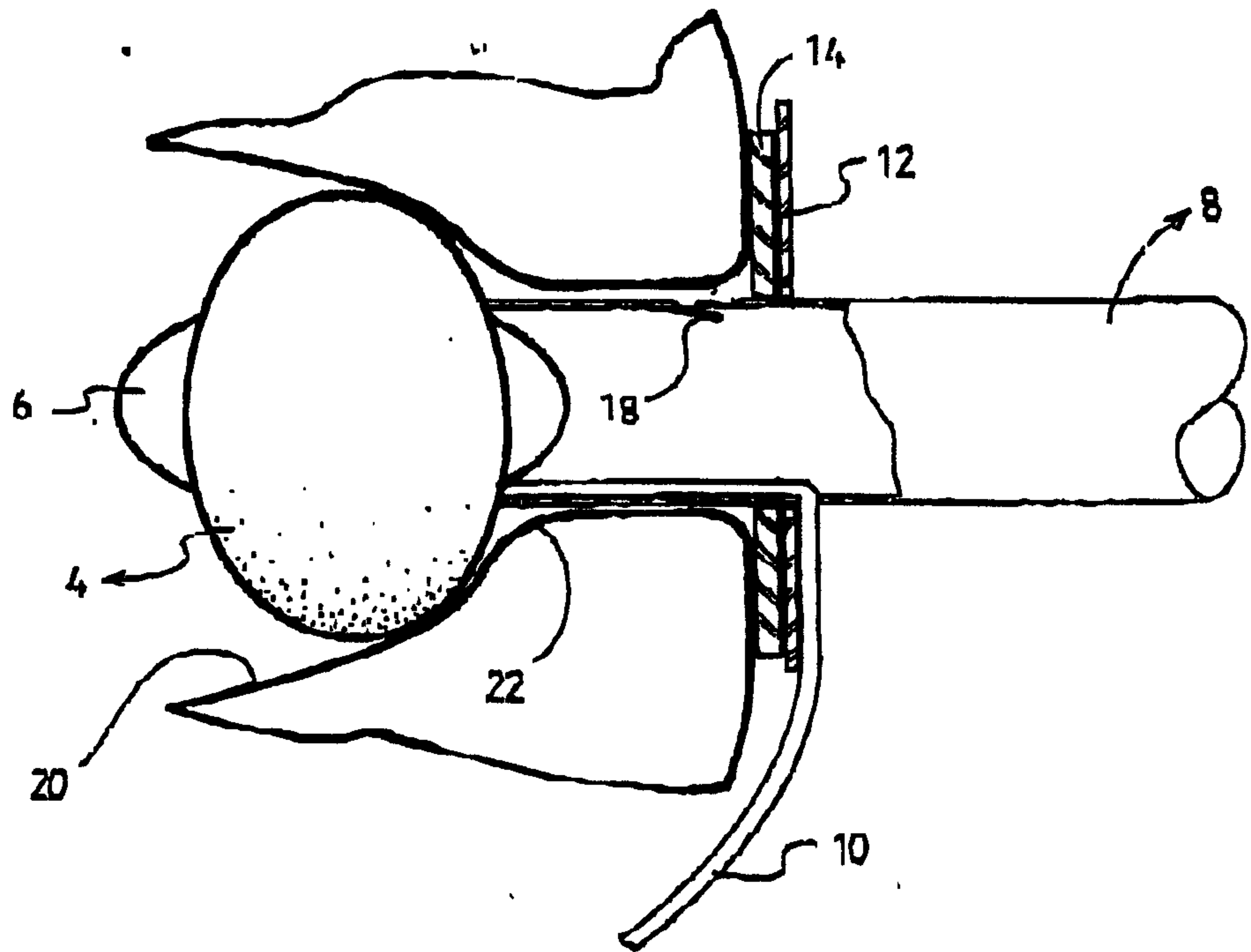


FIG. 2



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FIG. 3

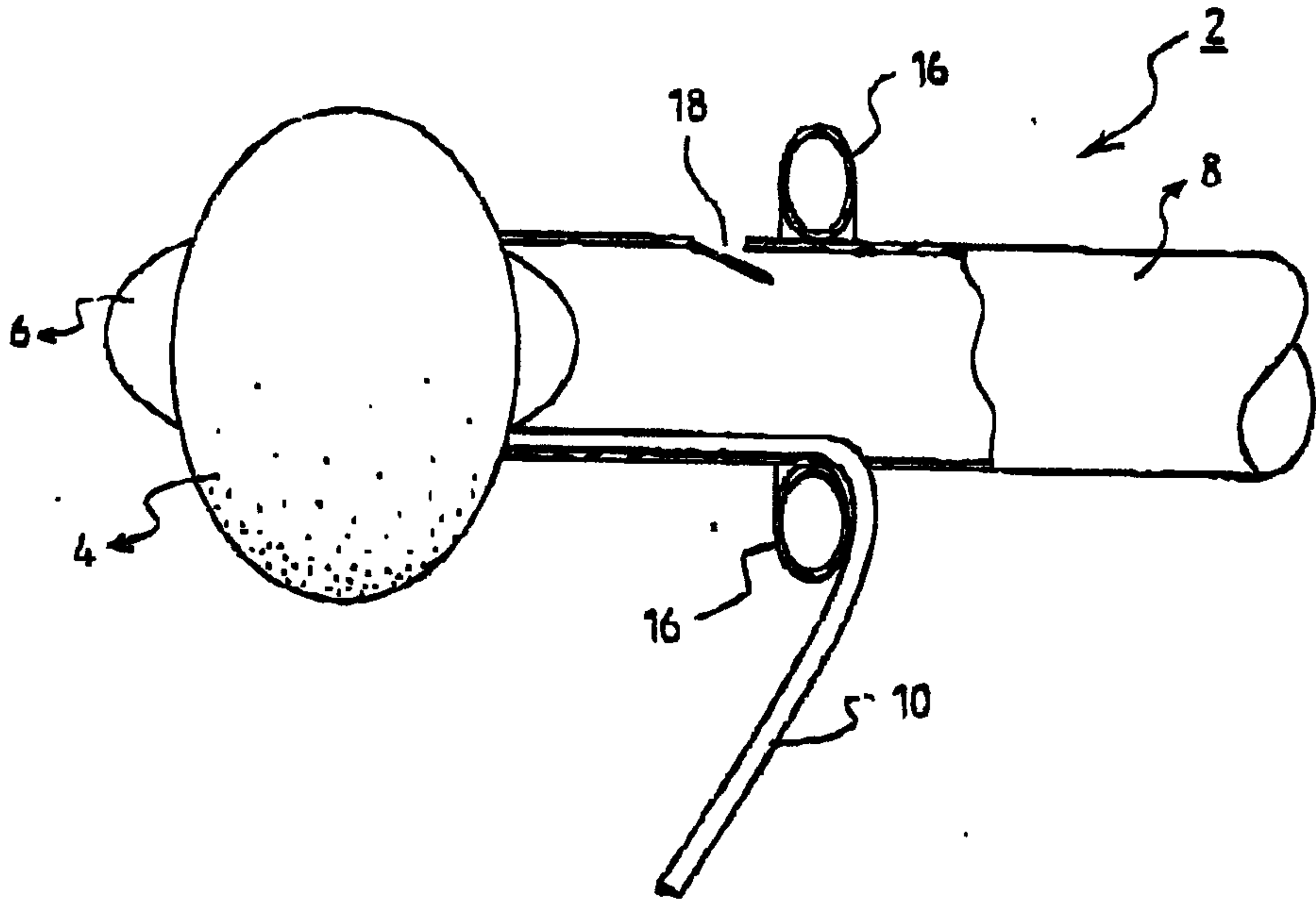


FIG. 4

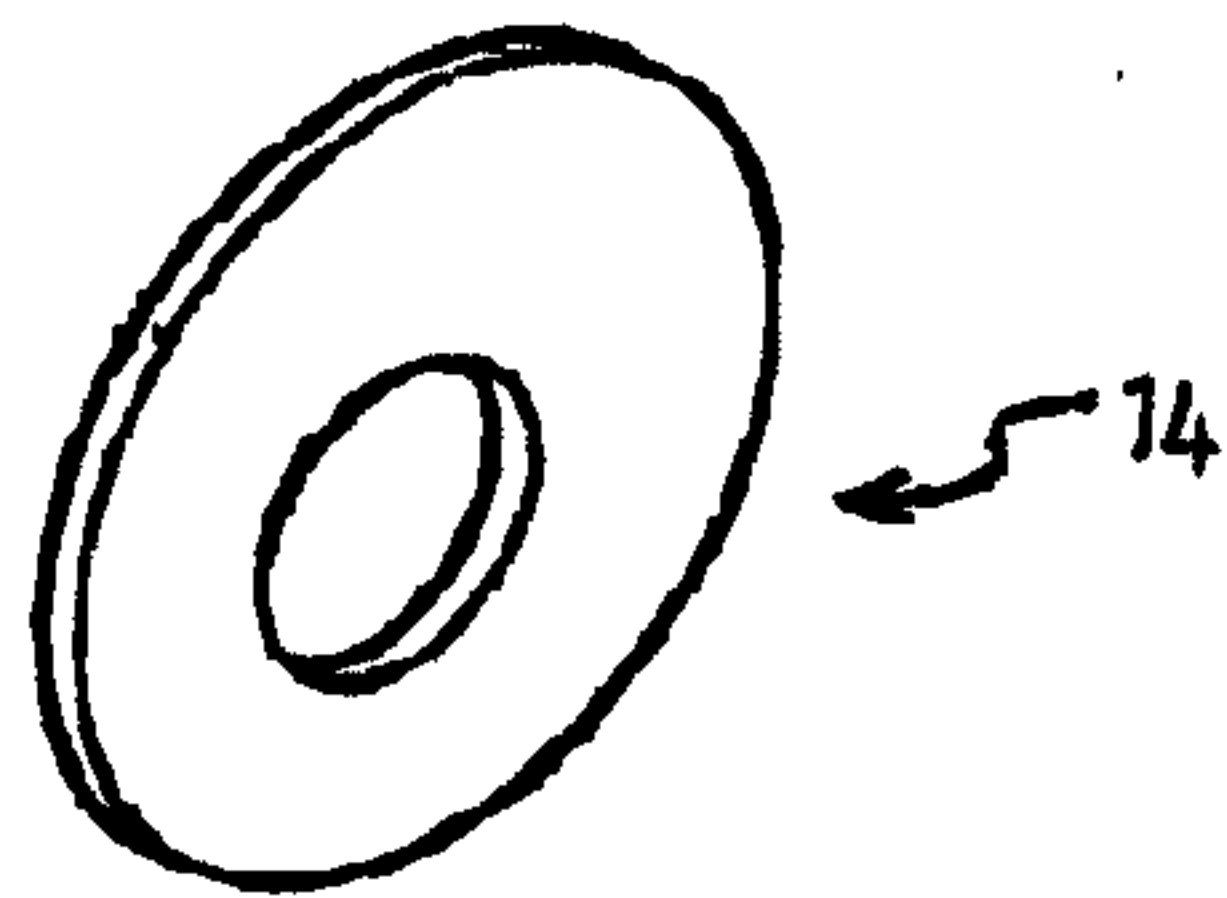
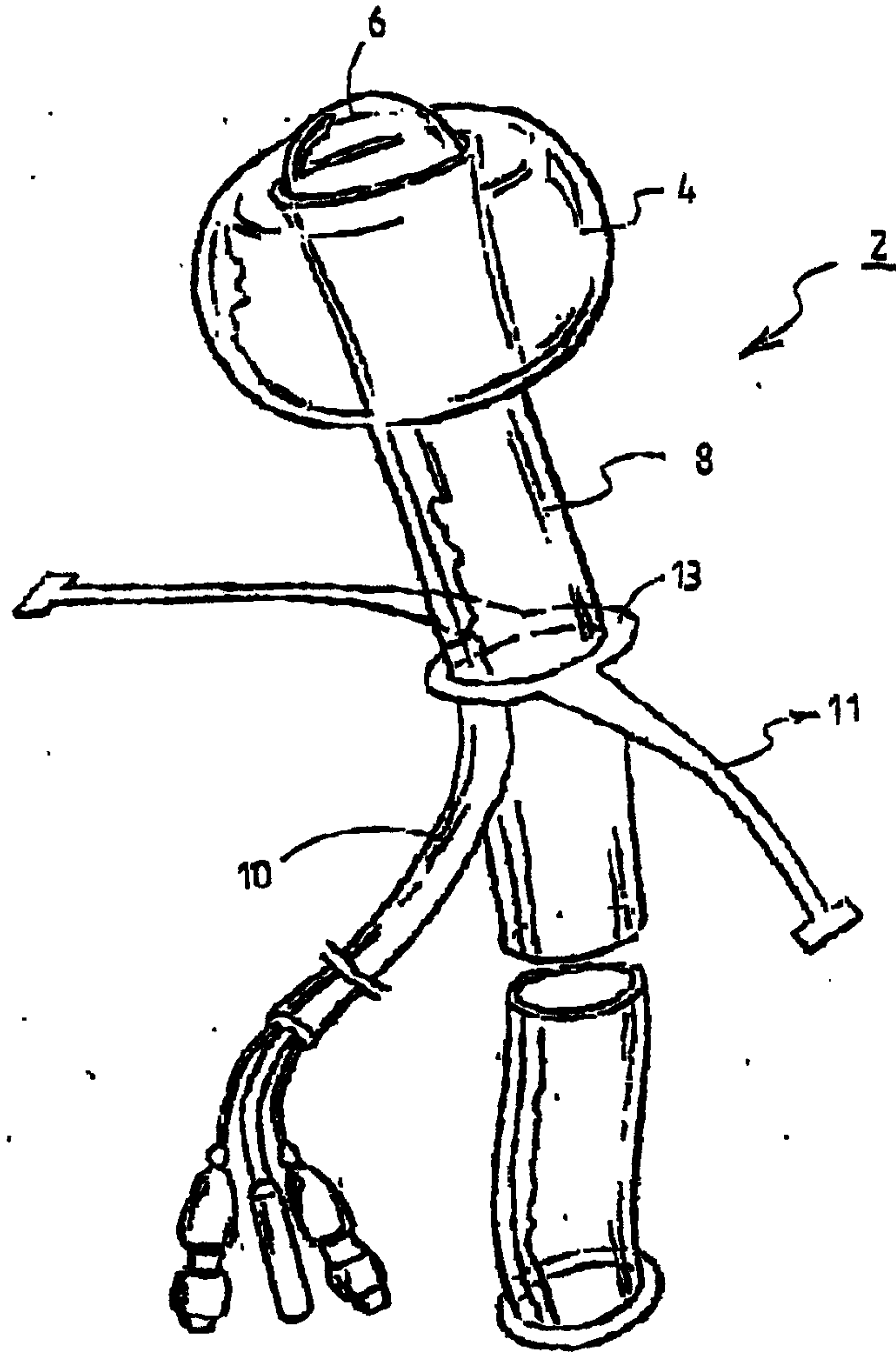


FIG. 5



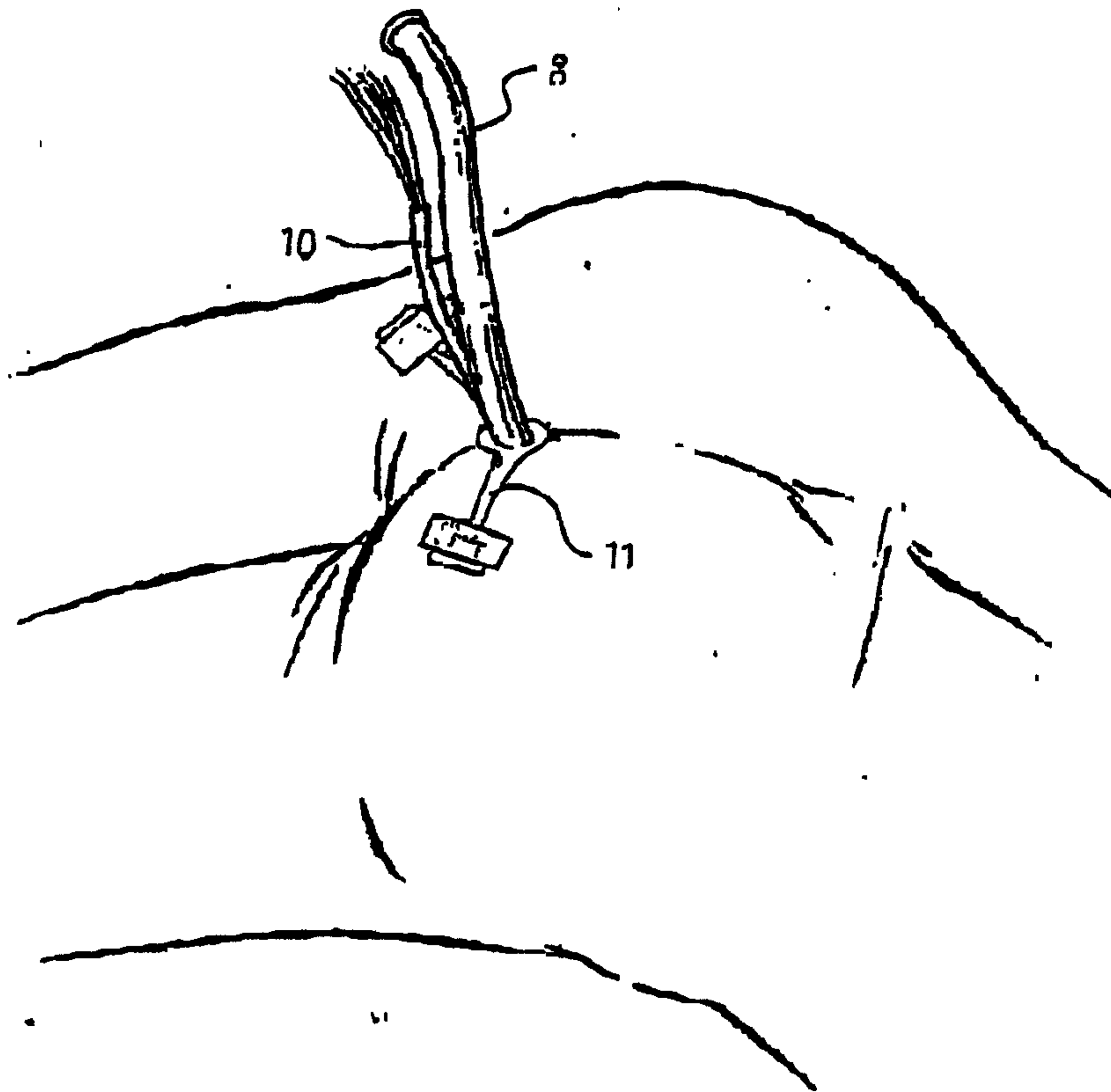
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FIG. 6



4/5

FIG. 7



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FIG. 8

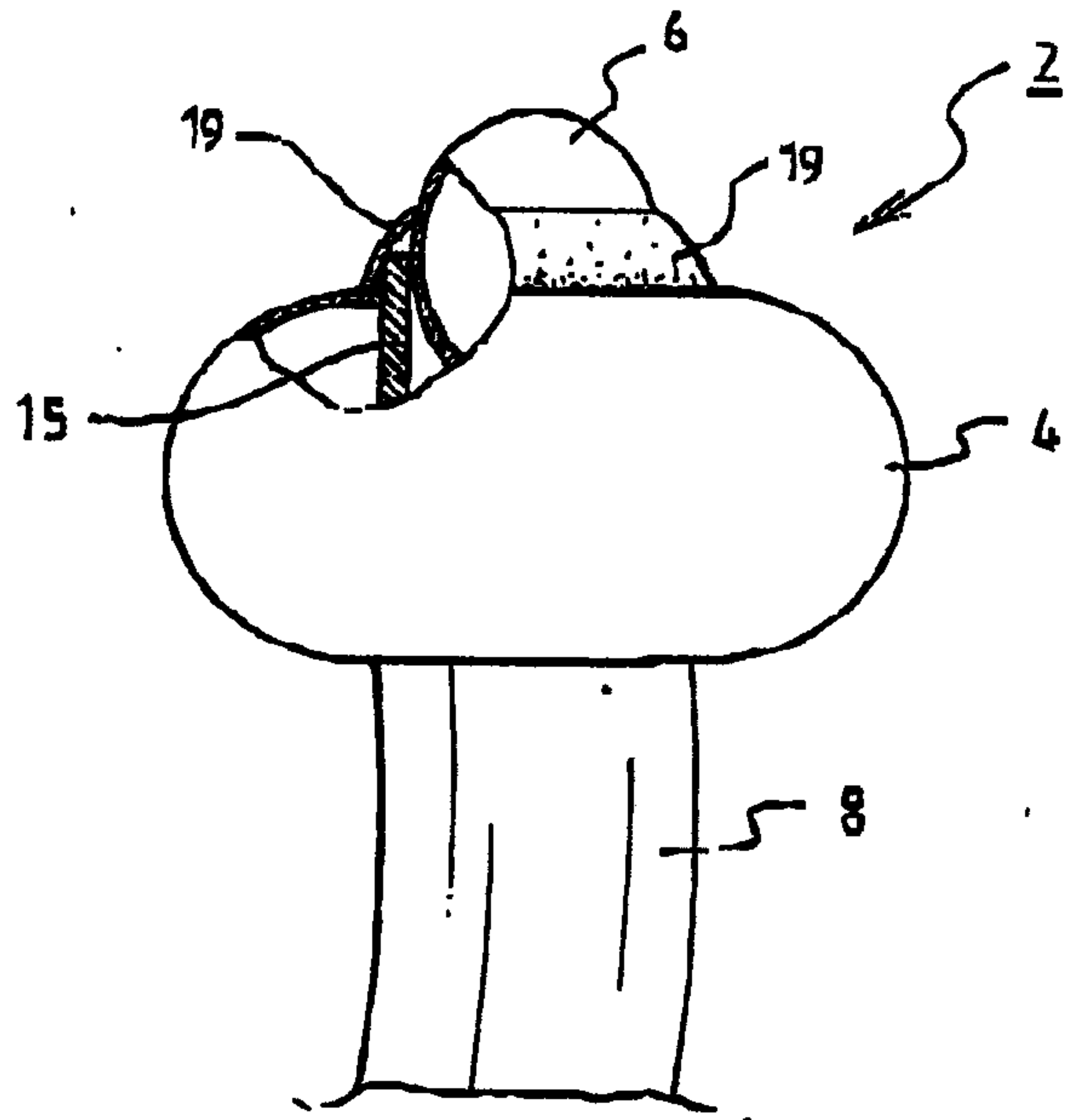


FIG. 9

