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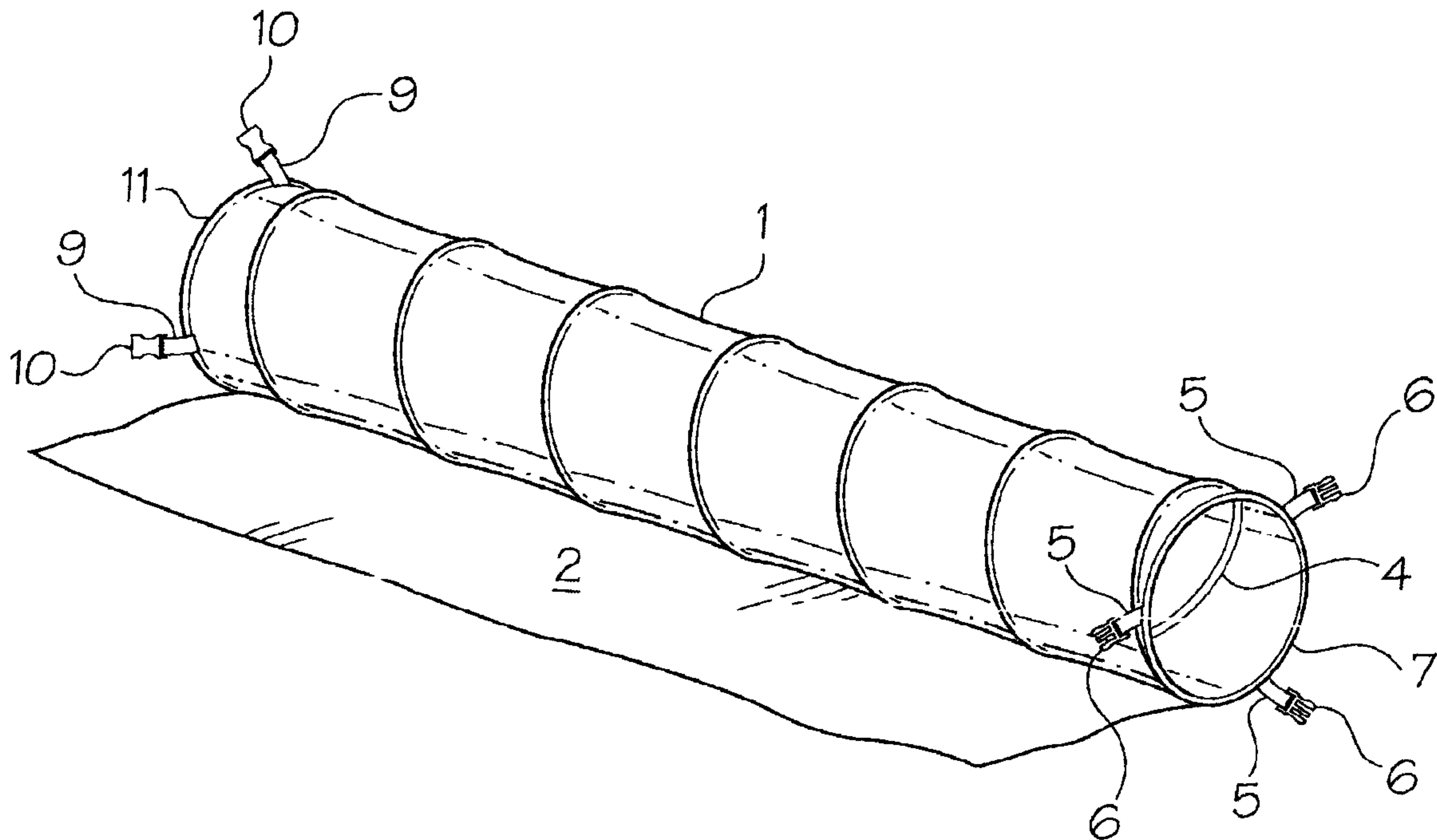
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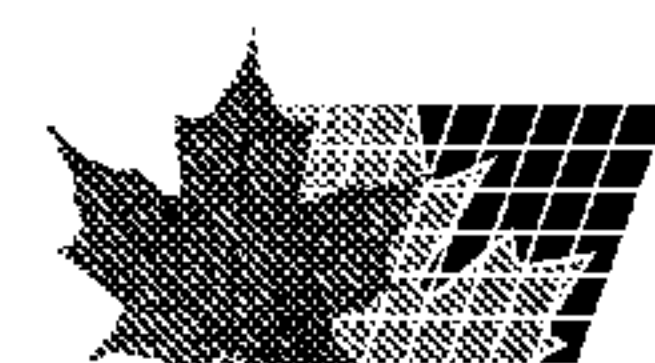
(54) Titre : BARRIERE DE CONTROLE DE DEBIT DE LIQUIDE

(54) Title: FLUID FLOW CONTROL BARRIER



(57) Abrégé/Abstract:

A barrier primarily intended as a silt dam includes an tubular body with a planar skirt extending outwardly from one side thereof for anchoring the barrier to the ground. A helical spring in the body biases the body to an elongated, extended, use position. The body can be collapsed and held in a compact condition for storing or transporting of the barrier by straps on the ends of the body and releasably interengageable buckles on the straps



ABSTRACT

A barrier primarily intended as a silt dam includes an tubular body with a planar skirt extending outwardly from one side thereof for anchoring the barrier to the ground. A helical spring in the body biases the body to an elongated, extended, use position. The body can be collapsed and held in a compact condition for storing or transporting of the barrier by straps on the ends of the body and releasably interengageable buckles on the straps

FLUID FLOW CONTROL BARRIER

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

This invention relates to a portable barrier for controlling the flow of fluid.

5 It will be appreciated from the following that the barrier of the present invention can be used as a silt filter or as a dam. The primary function of the barrier is energy dissipation. Silt-containing water flowing against the barrier is slowed down, thus dissipating the energy of the fluid and allowing silt to settle out of the suspension

10 DISCUSSION OF THE PRIOR ART

Erosion and silt or sediment control barriers are disclosed by a large number of Canadian and US patents and applications including CA 2,381,234 (Bradley), and US 5,158,395 (Holmberg), US 5,951,202 (Brown), US 6,109,835 (Grabhorn), US 6,547,493 (Spangler et al) and US 2003/0010968 (Hendrickson). While existing
15 barriers of the type described in the literature are more or less effective, they tend to be somewhat bulky and/or difficult to use.

GENERAL DESCRIPTION OF THE INVENTION

The object of the present invention is to provide a relatively simple, portable barrier for use, *inter alia*, for slowing and/or filtering silt laden water which is
20 lightweight, collapsible and compact when collapsed.

Accordingly, the present invention relates to a barrier for controlling the flow of fluid comprising flexible, tubular body means having a first end and a second end, the body means being extensible to define an elongated tube and collapsible between said first and second ends; spring means in said body means biasing the

body means to an extended condition; at least one strap means on each said first and second end of the body means; and connector means on said strap means for connecting said first end of the body means to said second end for releasably retaining the body means in a collapsed condition, in which said spring means is compressed, and for connecting said first end of the body means to the second end of a similar body means, whereby a plurality of body means can be connected end-to-end to form an elongated dam.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is described below in greater detail with reference to the accompanying drawings, which illustrate a preferred embodiment of the barrier, and wherein:

Figure 1 is a schematic, isometric view of a barrier in accordance with the invention;

Figure 2 is a partly sectioned isometric view of one end of the barrier of Fig. 1;

Figure 3 is an isometric view of the barrier of Fig. 1 in the collapsed condition; and

Figure 4 is an isometric view of complete and partial barriers interconnected end-to-end to form a dam.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to Figs. 1 to 3, the barrier of the present invention includes an elongated, tubular body 1, and a skirt 2 attached thereto and extending tangentially therefrom. Both the body 1 and the skirt 2 are permeable or impermeable to water. The body 1 and the skirt 2 are preferably formed of a material which is at least partly permeable to water, but impermeable to contaminants such as oil, tar, gravel, soil

and sand. Suitable materials include plastics such as polyethylene and polyesters, burlap and tarpaulin. A preferred material for the body 1 and the skirt 2 is a so-called geotextile or geomembrane such as the woven polypropylene fabric available from Amoco Fabrics and Fiber Company under the trade-mark PROLEX 2006.

5 According to the manufacturer, such fabrics are stabilized to resist degradation due to UV exposure, resistant to common soil chemicals, mildew and insects, and is non-biodegradable.

A helical spring 3 is mounted in the body 1 and extends the entire length thereof. The spring 3 is retained in the body 1 by a strip 4 of fabric, which is sewn to
10 the interior of the body 1 to cover the spring 3 and retain it in position. The spring 3 biases the body 1 to the open, expanded, use condition shown in Fig. 1, but permits compression of the body 1 to the collapsed condition shown in Fig. 3. The skirt 2 is sewn to the side of the body 1 and extends tangentially therefrom in the use position (Figs. 1 and 3) to complete the barrier.

15 Straps 5 with buckle members 6 on the free ends thereof are attached to one end 7 of the tubular body 1. Straps 9 with buckle members 10 complementary to parts 6 are attached to the other end 11 of the body 1. Preferably the straps are equidistant apart at 120° to each other. The members 6 and 10 are separable, plastic, and releasably interlockable, i.e. the buckles 12 formed by connecting the
20 members 6 and 10 together are of the type shown, *inter alia*, in Fig. 10 of the Bakker et al US Patent No. 4,171,555.

For storage or transportation, the body 1 is collapsed by pressing the ends 7 and 11 towards each other. The buckle members 6 and 10 are interconnected to releasably hold the body 1 in the collapsed condition. Upon reaching a workplace,

the buckles 12 are opened to permit the body to return to the extended, use condition. The skirt 2 is stretched out horizontally and the barrier is placed in position on a slope (not shown) with the skirt 2 extending in an uphill direction. The skirt 2 is anchored in position using spikes or ground anchors (not shown). A

5 plurality of barriers are connected end-to-end using the buckles 12 to form a dam. When the body 1 and the skirt 2 are formed of a porous material, which permits the restricted flow of water, upon striking the dam, the water slows down permitting settling of the silt on the skirt 2 and against the body 1. The accumulation of silt on the skirt 2, further anchors the barriers in position.

CLAIMS:

1. A barrier for controlling the flow of fluid comprising flexible, tubular body means having a first end and a second end, the body means being extensible to define an elongated tube and collapsible between said first and second ends; spring means in said body means biasing the body means to an extended condition; at least one strap means on each said first and second end of the body means; and connector means on said strap means for connecting said first end of the body means to said second end for releasably retaining the body means in a collapsed condition, in which said spring means is compressed, and for connecting said first end of the body means to the second end of a similar body means, whereby a plurality of body means can be connected end-to-end to form an elongated dam.
2. The barrier of claim 1, wherein said connector means includes two releasably interlockable members, including a first member attached to said strap means on said first end of said body means, and a second member attached to said strap means on said second end of said body means.
3. The barrier of claim 1 or 2, including a plurality of spaced apart, complementary strap means on each of said first and second ends of said body means.
4. The barrier of claim 1 or 2, including three complementary strap means spaced equidistant apart on each said first and second ends of said body means.
5. The barrier of any one of claims 1 to 4, wherein said body means is formed of a material selected from the group consisting of polyethylene, polyester, burlap, tarpaulin and a geotextile.

6. The barrier of any one of claims 1 to 5, including planar skirt means extending outwardly from one side of said body means for anchoring the barrier to a surface.

7. The barrier of any one of claims 1 to 6, wherein said body means is formed of a woven polypropylene fabric permeable to water and impermeable to contaminants including oil, tar, soil, sand and gravel.

8. The barrier of claim 7, wherein said skirt means is formed of the same material as said body means.

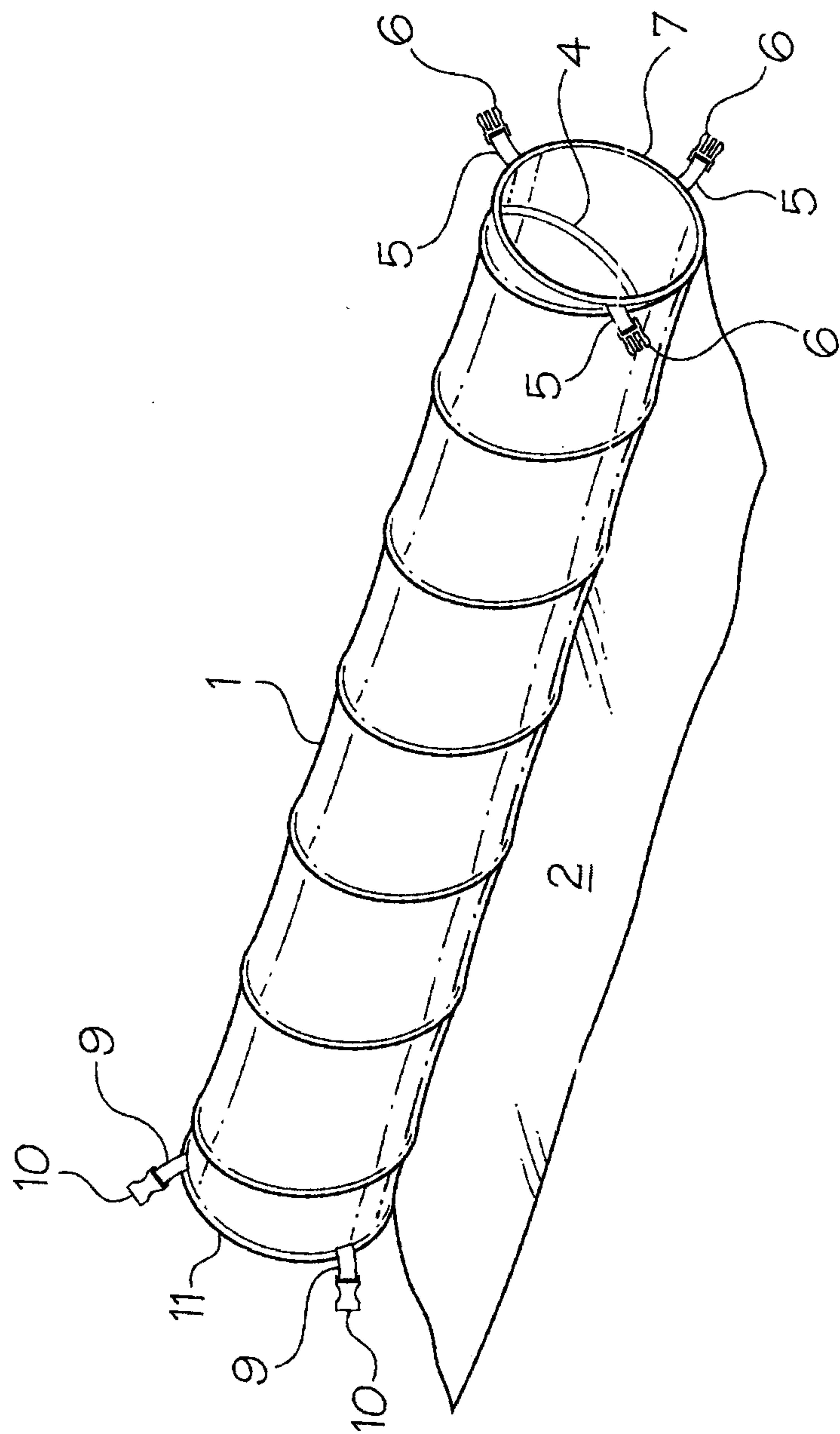


FIG. 1

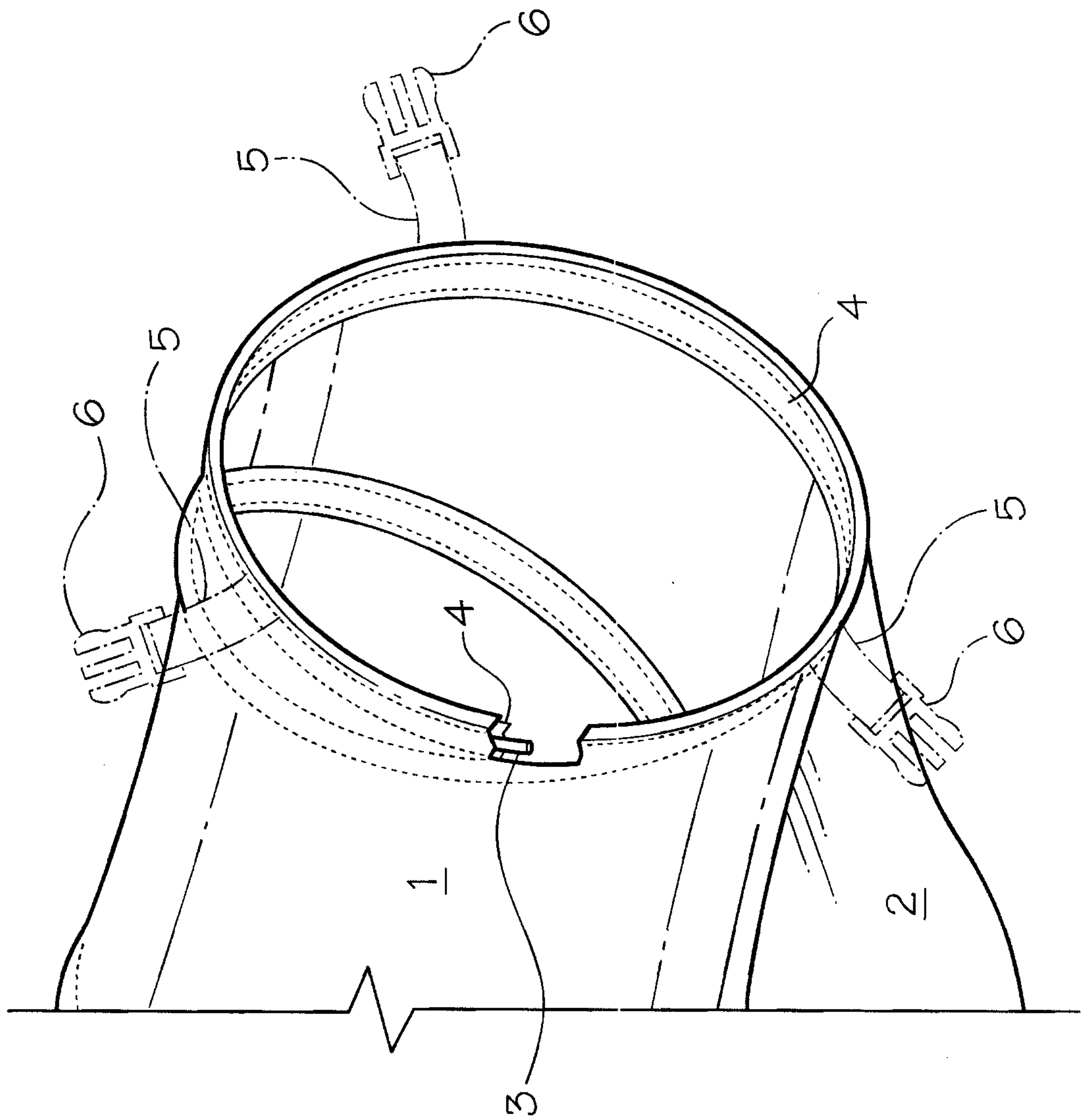


FIG. 2

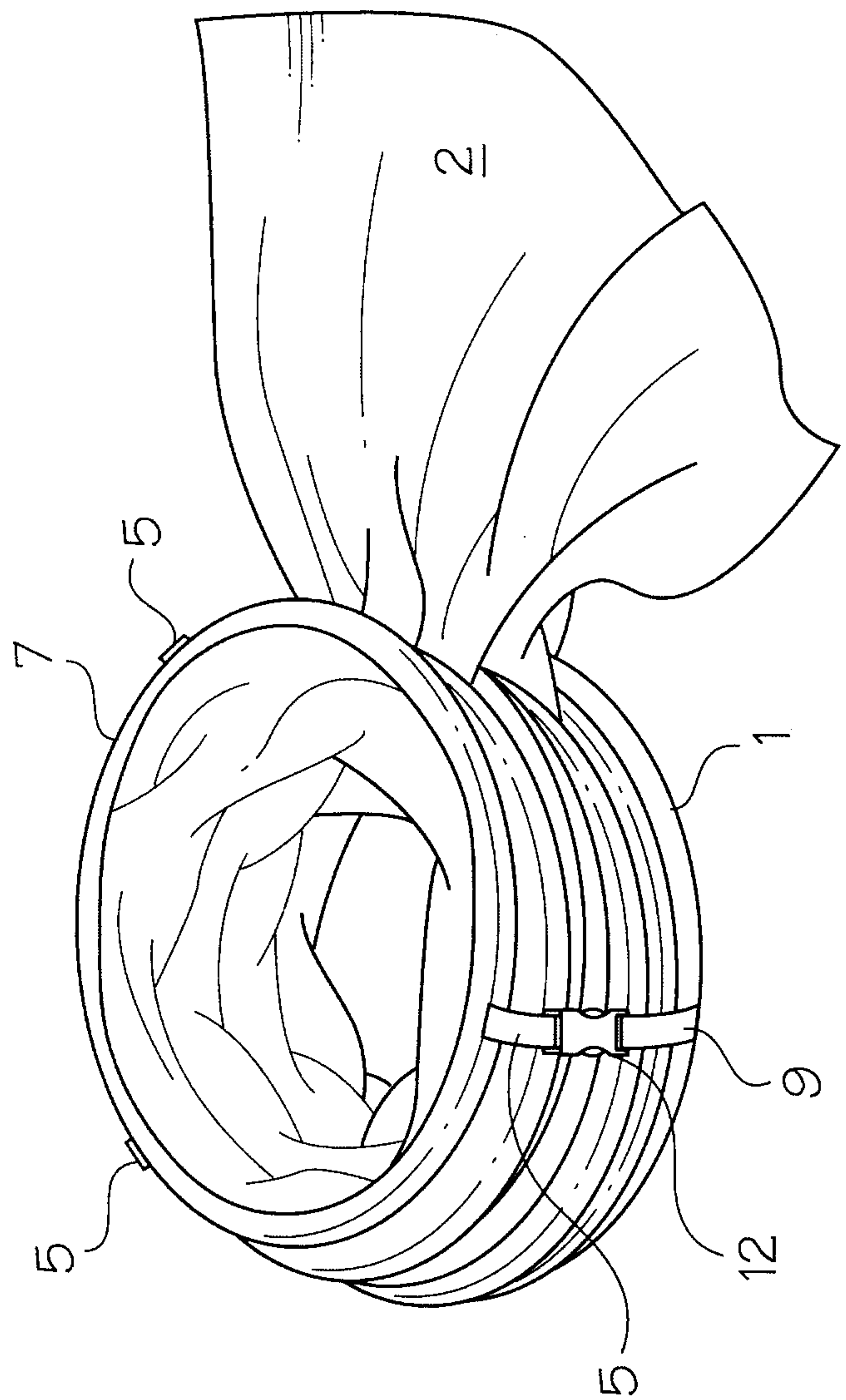


FIG. 3

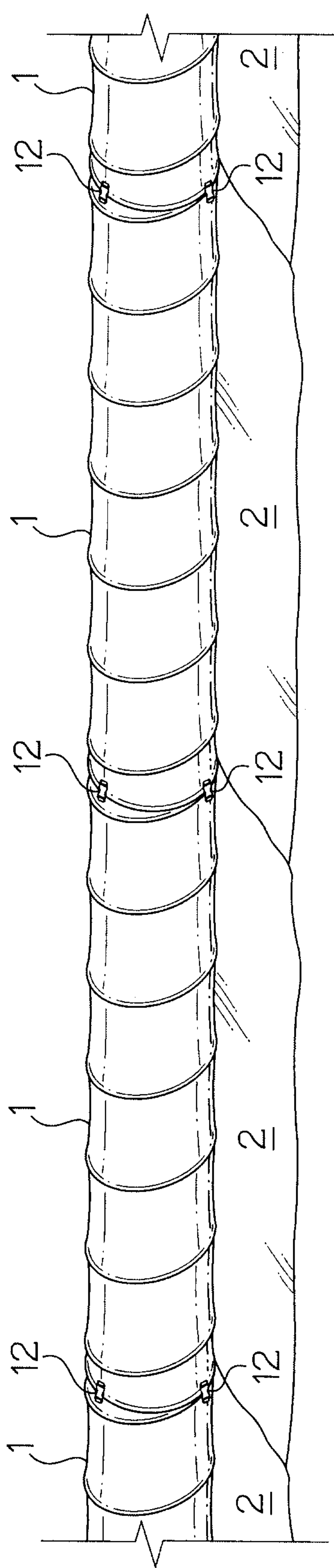


FIG. 4

