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

(11) (21) (C) **2,142,352**
(86) 1993/07/23
(87) 1994/03/03
(45) 2000/02/08

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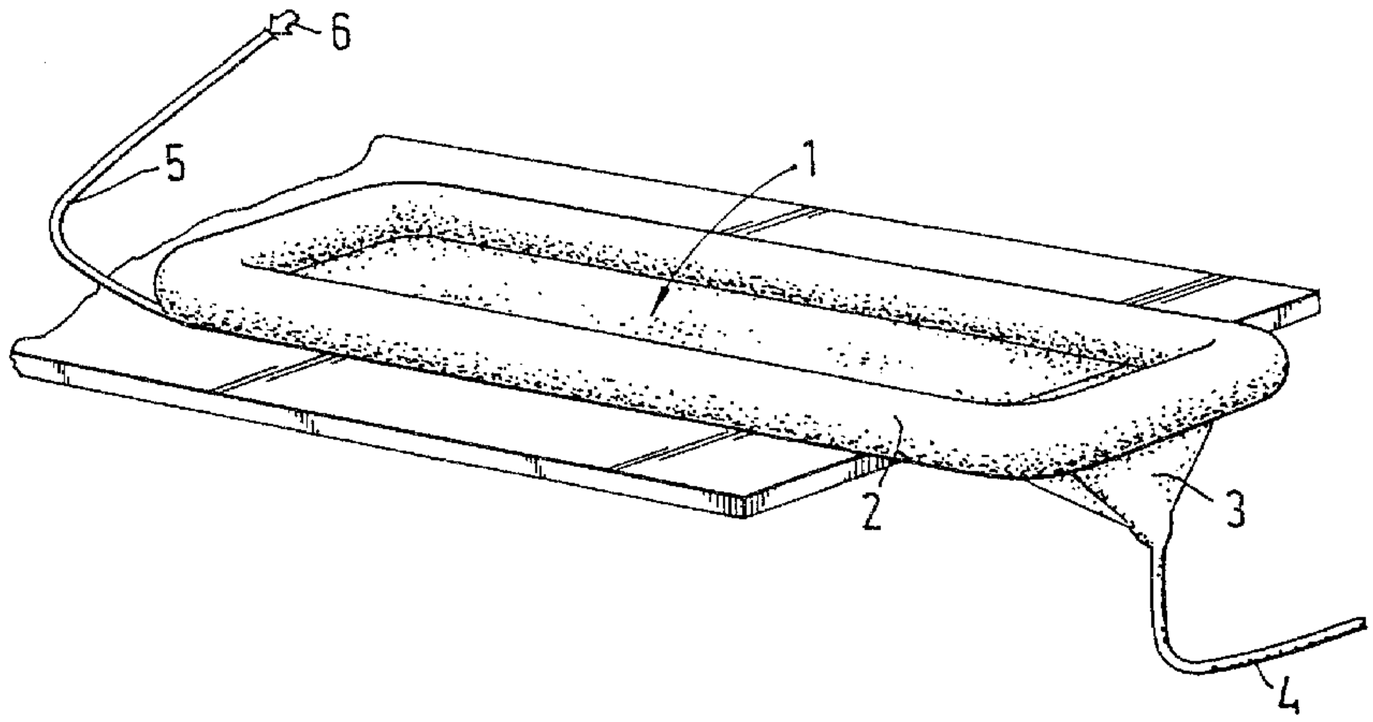
(51) Int.Cl.[6] A61J 1/05, A61M 1/00, A61B 19/00
(30) 1992/08/14 (9217337.6) GB

(54) **MODULE POUR LA RECUPERATION DE LIQUIDES**
(54) **WASTE PRODUCT COLLECTION UNIT**



(57) Une unité de collecte de déchets comporte une base (1), des parois gonflables (2) de confinement solidement fixées à ladite base (1), et une poche (3) destinée à recueillir des produits liquides, semi-liquides et solides dangereux. Les parois (2) sont gonflées au moyen d'un tube de raccord (5) doté d'une soupape antiretour (6). La poche qui recueille les déchets liquides présente un tube de sortie (4) qui permet de les prélever et de les confiner en toute sécurité. Après utilisation, on peut sceller l'unité à l'aide de moyens collables placés sur les bords libres des parois de ladite unité.

(57) A waste product collection unit has a base (1) with inflatable walls (2) enclosing and securely attached to the base (1) and a pouch (3) to contain hazardous liquids, semisolids and solids. The walls (2) are inflated by means of a connecting tube (5) with a non-return valve (6). The pouch into which waste liquids collect has an outlet tube (4) by which liquids may be safely drawn off and contained. After use, the unit is sealed by use of adherable means provided on the free edges of the walls of the unit.

2142352

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 :
A61G 13/10, A61B 19/08
A61M 1/00

A1

(11) International Publication Number: WO 94/04114

(43) International Publication Date: 3 March 1994 (03.03.94)

(21) International Application Number: PCT/GB93/01571

(22) International Filing Date: 23 July 1993 (23.07.93)

(30) Priority data:
9217337.6 14 August 1992 (14.08.92) GB

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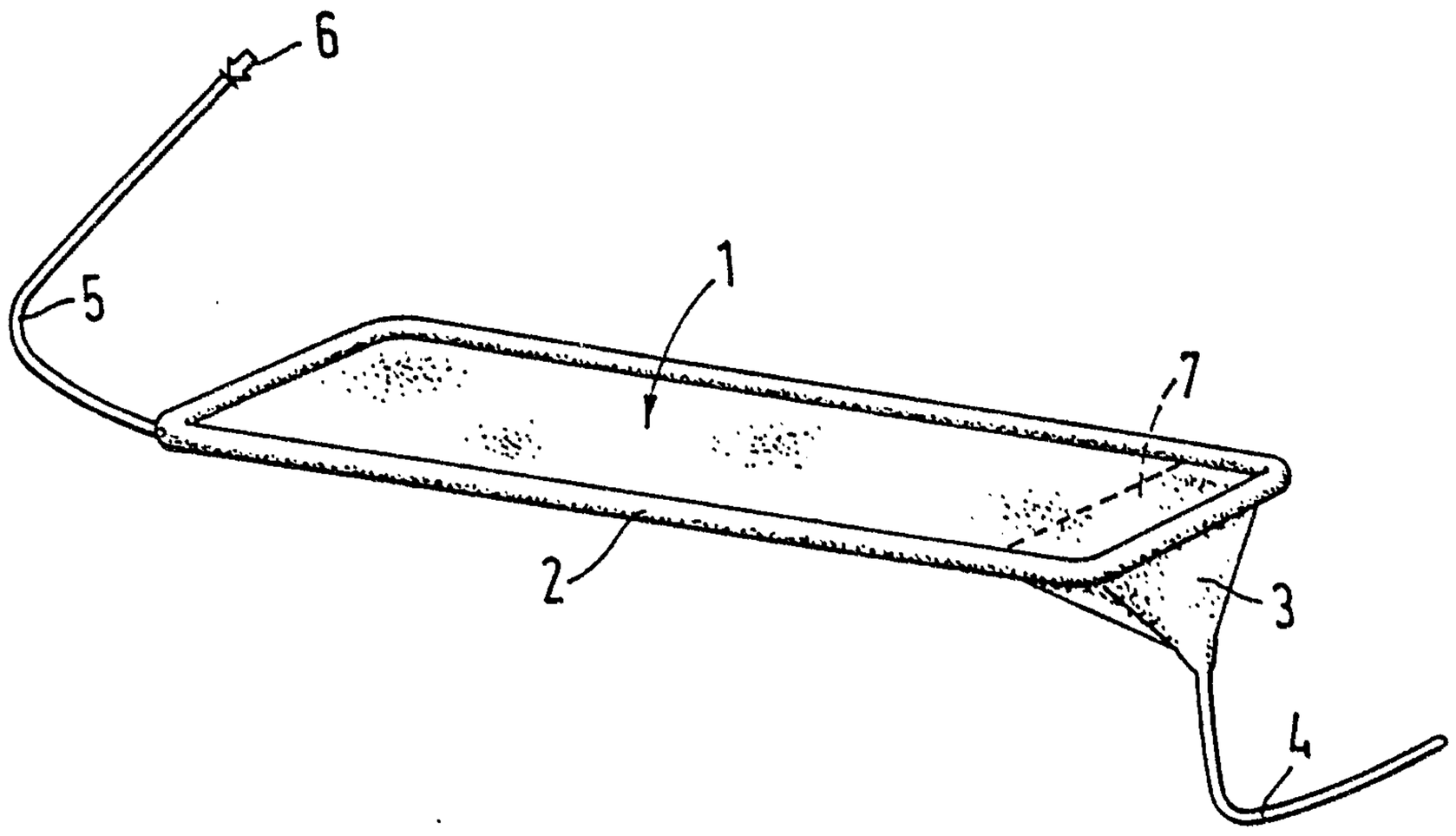
(81) Designated States: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(54) Title: WASTE PRODUCT COLLECTION UNIT



(57) Abstract

A waste product collection unit has a base (1) with inflatable walls (2) enclosing and securely attached to the base (1) and a pouch (3) to contain hazardous liquids, semisolids and solids. The walls (2) are inflated by means of a connecting tube (5) with a non-return valve (6). The pouch into which waste liquids collect has an outlet tube (4) by which liquids may be safely drawn off and contained. After use, the unit is sealed by use of adherable means provided on the free edges of the walls of the unit.

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WASTE PRODUCT COLLECTION UNIT

This invention relates to a waste product collection unit. More particularly it relates to such a unit for use in a substantially sterile environment, such as an operating theatre.

Increasingly, professionals in the medical and veterinary sciences are becoming aware of the risks of contracting infectious diseases from the body parts and fluids of man and animals.

It is well-known that the viruses causing HIV, possibly leading to AIDS, and hepatitis and other related diseases, are transmitted from the body fluids, especially blood, of an infected person.

If any such fluid enters the bloodstream of a doctor, surgeon or veterinary surgeon, during the course of operating on the patient, there is a grave danger of infection. During an operation, there may be large amounts of fluid present, both the blood of the patient and irrigation fluids diluting that blood, and these fluids may spread beyond the immediate area and there is a danger that they will contact the surgeon.

Currently used collection units for hazardous body fluids and materials, are often bulky, do not allow the safe disposal of collected waste and they are not easily sterilised for the aseptic techniques required in the operating theatre for sterile procedures.

There is disclosed in US-A-759,084 (Eggers) and in US-A-1,741,836 (Gilbert) a waste product collection unit according to the pre-characterising portion of claim 1 hereof. These devices are constructed so that they can be cleaned after use, in preparation for re-use. The devices include generally C-shaped inflatable walls as seen in plan view defining an outlet opening in said walls for the escape of liquid waste.

A very significant shortcoming of such prior proposals lies in their inability to meet the needs of modern operating conditions and nursing conditions which demand careful disposal rather than re-use of such equipment. Risks of cross-infection of the patient during an operation can be reduced by collecting the fluids in any receptacle. However, extremely high standards of care, in relation to the risk of cross-infection of health care workers from patients with transmissible diseases, are desired in relation to the proper disposal of body tissues and liquids which inevitably remain on the surface of such a device after a surgical procedure and these conditions cannot be met by the prior art.

It is believed that it is these shortcomings that have hindered the introduction of such devices for use in surgical procedures. As a result, the current practice at least so far as the UK is concerned involves the use of receptacles such as kidney dishes to accommodate fluids, and surgical drapes or the like to absorb and entrap liquids and solids which inevitably escape or overflow from the kidney dishes.

There is disclosed in US-A-4,615 334 (Jaeger), a surgical pad adapted for use with a speculum blade insertable into the vaginal cavity of a patient and comprising a pad for collecting tissue and having an adhesive surface area covered by a removable strip to permit the pad to be

folded onto itself and adhesively secured together to enclose the collected tissue. The pad is formed with perforations 32 to permit the inflow of a saline solution and the outflow of this solution containing disolved blood, in order to clean the entrapped tissue. Such a device is intended merely to mechanically retain tissue and to permit liquid contaminents therefrom to escape.

Accordingly, there is a considerable need for improvements in relation to the avoidance of contamination of surgical staff by the waste products of surgical procedures, and an object of the present invention is to provide improvements in this area generally, and in particular in relation to the disposal of such waste products.

According to the invention there is provided a waste product collection unit for use in surgical procedures and the like as defined in the accompanying claims.

In an embodiment of the invention the tubes for removing liquid waste from the unit and for inflation of the walls thereof are so elongate that the remote ends thereof, adapted for connection repsectively to inflation means and exhaustion means, are adapted to extend outside the substantially sterile environment.

An embodiment of the invention will now be described by way of example with reference to the accompanying drawings, in which:

Fig 1 shows in perspective the waste product collection unit in its deflated mode prior to use;

Fig 2 shows a side view of the waste product collection unit after it has been inflated for use;

Fig 3 shows the unit in position for use, placed to overlap the edge of a table;

Fig 4 shows an exhaustion system for the waste liquid.

Referring now to the drawings the waste product collection unit comprises a base 1 with inflatable walls 2 enclosing and securely attached to the base and a pouch 3 into which waste liquids collect and can be drawn off through an outlet tube 4.

The unit is packed into a container and sterilised for release only when it is within a desired substantially sterile environment, such as an operating theatre table.

In order to inflate the walls to a required size a tube 5 connected to the inflatable walls is provided. Tube 5 may have a non-returnable valve at its end 6, which is adapted to be connectable to an air line, compressed air source, hand pump or even the mouth of an operator. Tube 5 is so long that it extends outside the sterile environment so that non sterile inflation means can be used, although a sterile hand pump could be produced for use in the sterile environment.

Waste material such as blood and tissue passes to a sieve 7 which separates the base 1 from the pouch 3. The sieve allows passage of liquid but retains solid and semisolid material.

The outlet tube 4 is also so long that it extends outside the sterile environment. The remote end of the tube 4 is adapted to be connected to a source of vacuum via a waste liquid collection bottle 8, which may be situated outside of the sterile environment. Alternatively, the remote end of the tube 4 may be connected to a closed collection bag.

The inflatable walls 2 may be stored in deflated condition to save space and, when inflated, they prevent the spillage of waste liquids by containing them. The interior of the unit is adapted to receive that part of the body of the patient which is to be operated upon. The inflatable walls 2 will deform to allow that part of the body to lie comfortably within the unit. During operative procedures on the living they allow part of the patient only to be draped over the edge without the fear of producing pressure necrosis of the tissues resting on the wall of the device while maintaining a barrier to the leakage of liquid where the body part rests on the inflated wall.

In order to allow the safe removal of the waste products contained by the unit, the liquid may be drawn down the outlet tube 4 into a disposable container 8, as illustrated in Figure 4. After use, the unit is disposable, along with any potentially hazardous fluids or solids still contained therein. The outlet tube 4 may be sealed by means of a clip 9. The residual waste in the unit is contained therein by virtue of adhering together the inflatable walls by means of a strip of adhesive tape or self-sealing edges (not shown) prior to or after the walls have been deflated, as illustrated in Figure 5.

Alternatively, a sheet of material may be placed over the unit and adhered to the adhesive tape on the walls 2. The tape is covered by a release layer during the course of use, after which the release layer is removed, allowing a sheet to be adhered thereto or the walls adhered one to the opposite other. The thus sealed unit may then be disposed of safely.

The material of which the unit is made is of plastics material or other elastomeric material such as rubber.

C L A I M S

1. A waste product collection unit for use in surgical procedures and the like, said unit comprising:

a) a base (1)

b) inflatable walls (2) having an inlet inflation tube (5); and

c) a liquid collection area (3) communicating with said base for the collection of liquid therefrom and having an outlet tube (4) for removal of collected liquid;

characterised in that

d) said unit is adapted for use in a substantially sterile environment by the provision of sealing means for said waste products within said unit after use, so as to produce a sealed waste product containment envelope;

e) said sealing means for said waste products within said unit comprising said inflatable walls (2) being in surrounding relation to said base (1) so as to maintain a barrier to leakage of liquid therefrom;

f) said sealing means for said waste product within said unit further comprising adherable means on the free edges of said inflatable walls which are in surrounding relation to said base; and

g) said inflatable walls (2) serving, in use, to raise and support said adherable means with respect to said base (1) so as to define a sealable waste product containment volume within said walls and within said adherable means.

2. A unit as claimed in Claim 1, characterised in that said adherable means comprises at least one strip of adhesive tape protected by a release strip.

3. A unit as claimed in either Claim 1 or Claim 2, characterised in that opposed portions of the walls,

optionally the portions on either side of a median plane of the base, are adapted to be adhered together to seal the interior.

4. A unit as claimed in either Claim 1 or Claim 2, characterised in that a sheet of material is provided to form a cover for the unit, sealing the interior thereof by adhesion to said adherable means.

5. A unit as claimed in any one of the preceding claims, characterised in that said inlet and outlet tubes (5, 4) are so elongate that remote ends thereof, adapted for connection respectively to inflation means and exhaustion means, are adapted to extend outside the substantially sterile environment.

6. A unit as claimed in any one of the preceding claims, characterised in that the outlet tube is provided with means to seal it after use.

7. A unit as claimed in any one of the preceding claims, characterised in that the collection area (3) is separated from the base (1) by a sieve means.

8. A unit as claimed in any one of the preceding claims, characterised in that said exhaustion means comprises a vacuum pump and/or a liquid receiver.

9. A unit as claimed in any one of the preceding claims, characterised in that said inflation means comprises a source of compressed air or pump means and a non-return valve.

10. A unit as claimed in any one of the preceding claims, characterised in that the unit, prior to use, is sterile and is packaged so to remain while outside the substantially sterile environment.

AMENDED SHEET

FIG. 1.

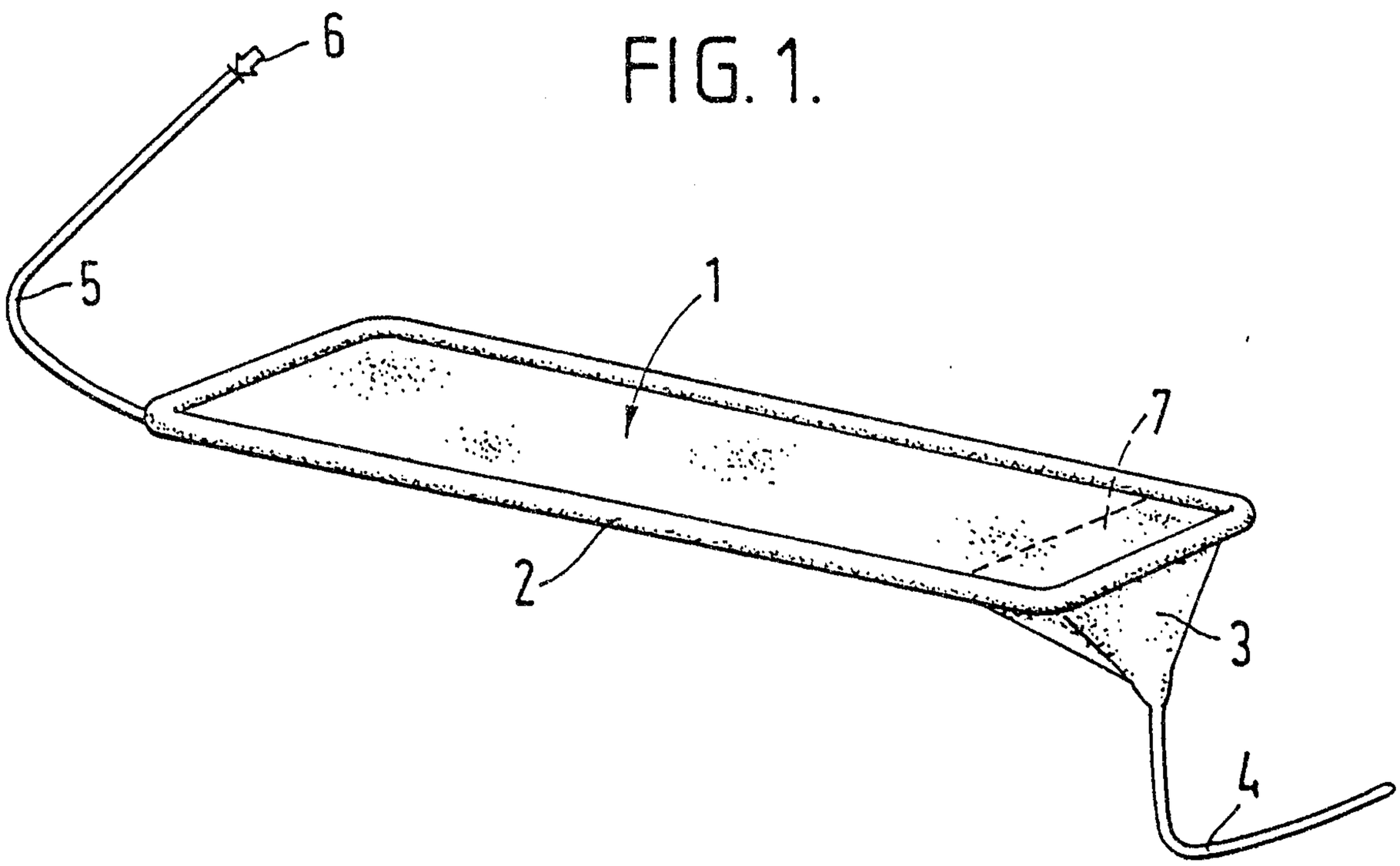

FIG. 2.

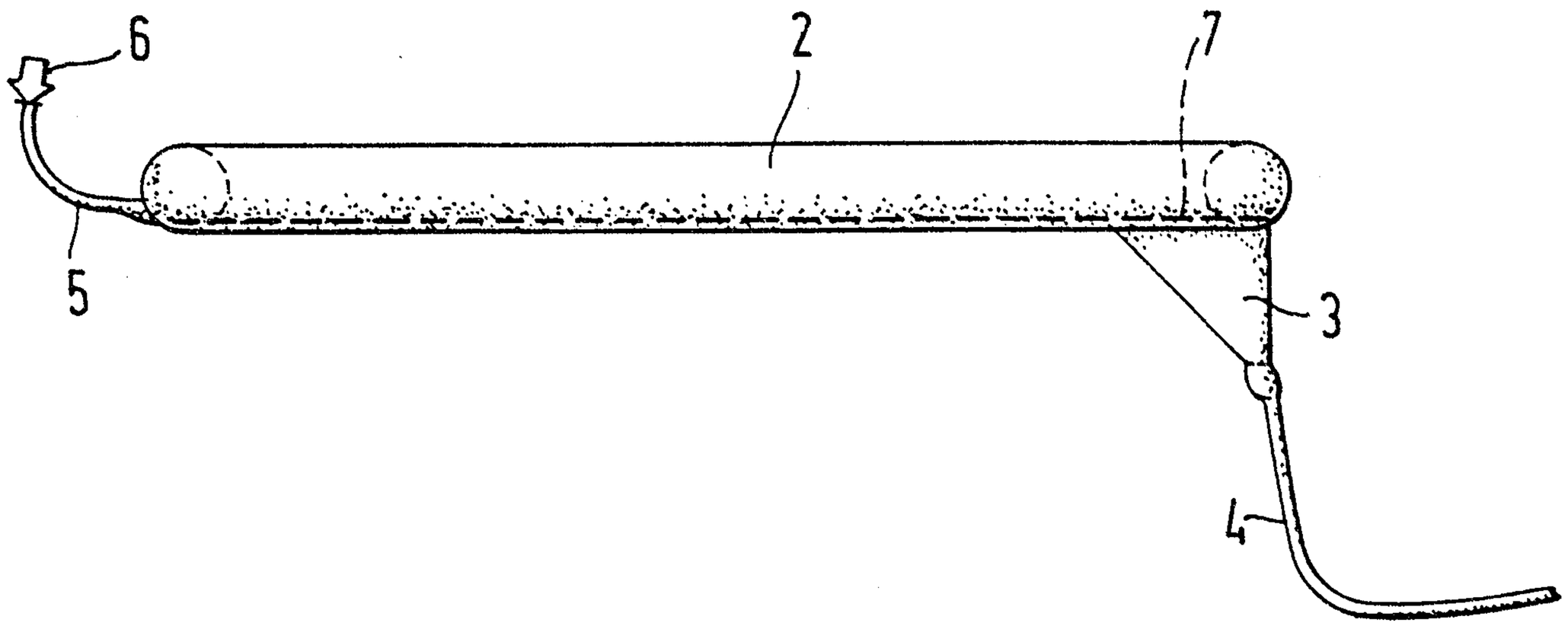

FIG. 3.

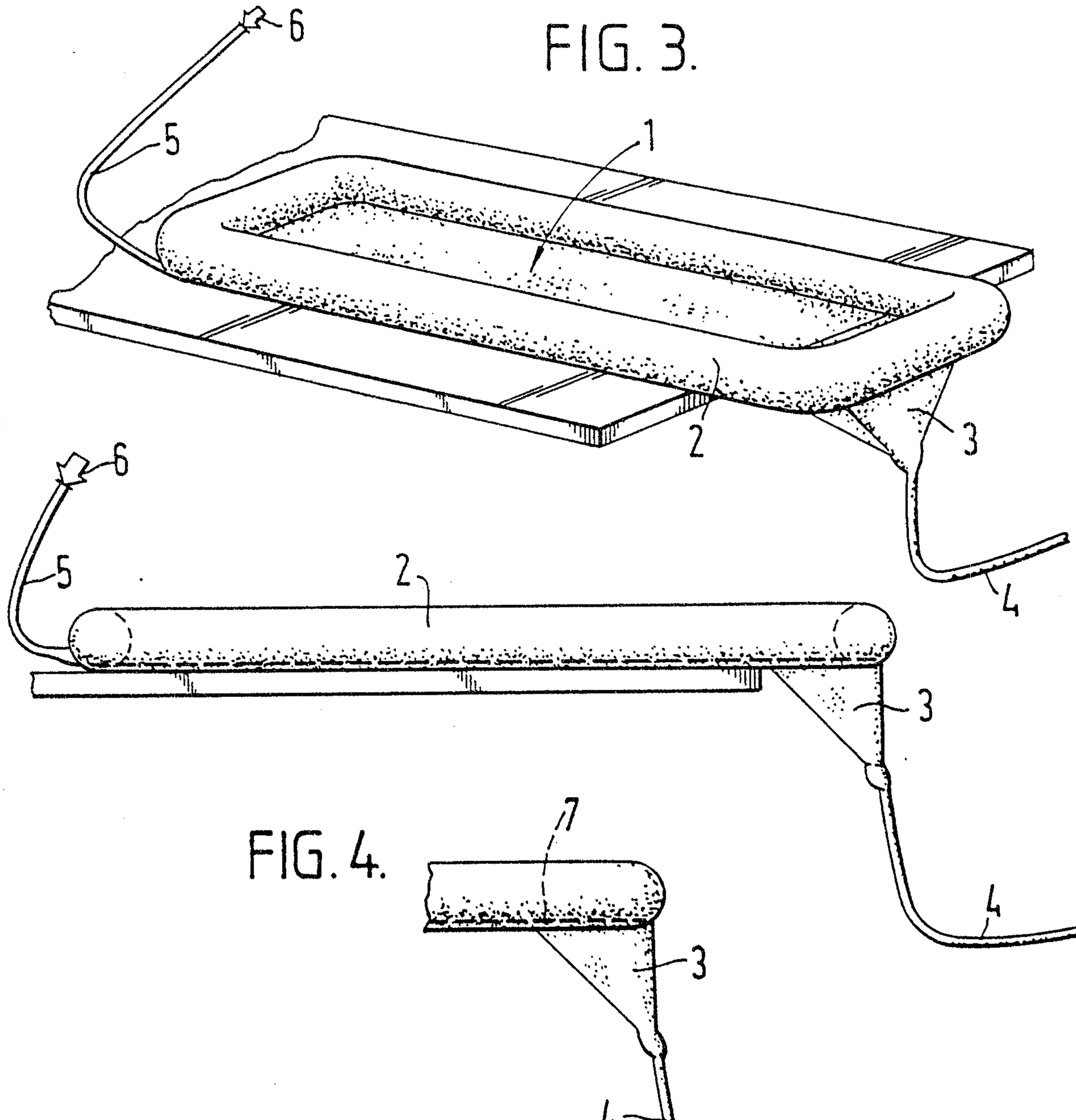

FIG. 4.

FIG. 5.