



(51) International Patent Classification:  
A61F 13/15 (2006.01)

(21) International Application Number:  
PCT/EP2010/001389

(22) International Filing Date:  
5 March 2010 (05.03.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
201010114228.5 26 February 2010 (26.02.2010) CN

(71) Applicant (for all designated States except US): PURE  
PRECISION LIMITED; P.O. Box 957, Offshore Incorporated  
Corporations Centre, Road Town, Tortola (VG).

(72) Inventor; and

(75) Inventor/Applicant (for US only): TOURNIER, Gaëlle  
[FR/CN]; Flat A, 6th Floor, Everwell Garden, 1Sheung  
Hong Street, Homantin, Kowloon, Hong Kong SAR  
(CN).

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,  
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,  
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,  
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,  
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,  
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,  
NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,  
SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,  
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,  
TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,  
MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM,  
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
ML, MR, NE, SN, TD, TG).

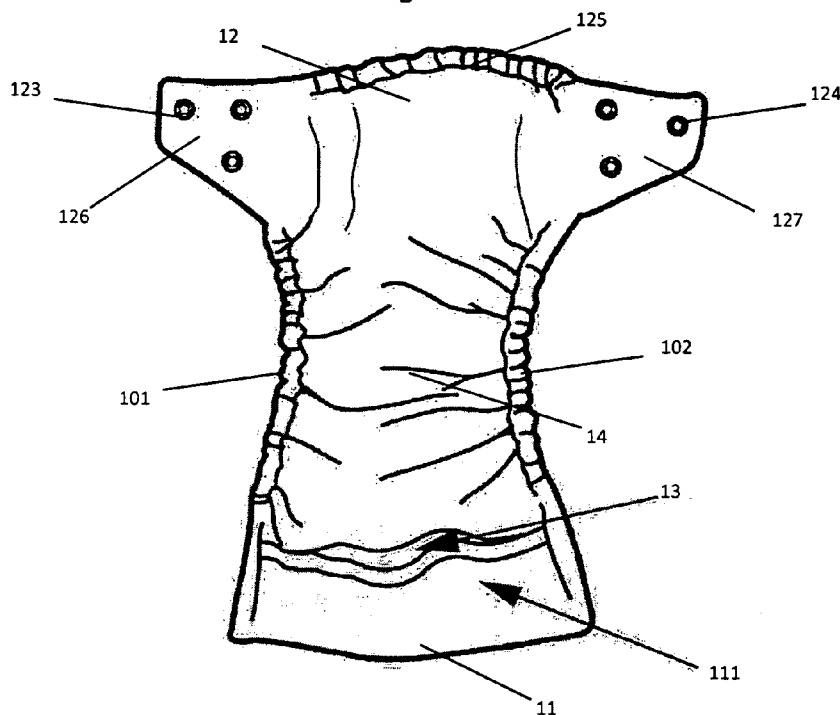
Published:

— with international search report (Art. 21(3))

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,

(54) Title: A DIAPER SHEATH

Fig. 1



(57) Abstract: The present invention provide with a diaper sheath comprising: an inner and outer panel, each of said inner and outer panels having front and back portion connected by an intermediate portion, said front portion of the inner panel having an opening; and a front flap attached to said front portion of said inner panel, and said opening is covered by said front flat. The diaper of the present invention is much easier and convenient to adjust the insert from the opening at the front portion. With the flap at the front portion, parents can choose to use a biodegradable pad to insert in the flap and lay on the top of the inner panel.

# Specification

---

## A diaper sheath

### 5 **Field of the invention**

The present invention relates to a diaper sheath, and more particularly to a hybrid diaper.

### **Background art**

10 On the present market, diapers for infants include the cloth diaper, the disposable diaper and the all-in-one diaper. As regards the diapers for infants, there are the health and sanitation issues, the energy and environment cost issues, as well as the economics involved in using each type.

15 As for use of the cloth diaper, frequent diaper changes are required in order to keep child dry and to help reduce infections such as diaper rash. Cloth diaper absorbs moisture, but it does not necessarily wick moisture away from the body. Thus, it becomes saturated very quickly. For preventing further spread of the  
20 moisture, outer waterproof covers or the so-called all-in-one diapers are used. Said all-in-one diaper combines itself with protective waterproof outer cover. With such covers or

combinations, the parent cannot observe that the diaper is already wet. It has the same technical problem to the disposable diaper. Furthermore, said all-in-one diapers may also include absorbent disposable insert, which can be made of multiple layers of cotton or reusable pads.

As regards the diaper applied, other issue focuses on the comfort of the baby. In order to ensure retention and to prevent leakage but not so tight as to be uncomfortable or hamper blood circulation in the child's legs and to create high humidity or moisture within the diaper, the diaper has essentially to be snug. Said discomfortable or hampering of blood circulation in the child's legs are caused by elastic leg openings.

Further, hook and loop fasteners generally only allow for waist adjustment and do nothing for the leg openings.

Obviously the key issues are to ensure that the baby stays as dry and comfortable as possible and for as long as possible with the least bulk possible.

### **Summary of the invention**

The aim of the present invention is to solve the above technical problem. According to the aim of the present invention, there is provided a diaper sheath comprising:

- an inner and outer panels, each of said inner and outer panels having front and back portion connected by an intermediate portion, said front portion having an opening, each of said panels attached peripherally one to the other in matched contour;

5       - front fastener attached to said front portion of said outer panel

- back fastener attached to back portion of said inner panel, said back fastener is cooperatively fastenable with said front fastener;

- a front flap attached to said front portion of said inner panel,  
10 and said opening is covered by said front flap.

Preferably, said back portion of the inner panel having an opening.

Preferably, the diaper sheath comprising a back flap attached to said back portion of said inner panel.

15       Preferably, said back fastener attached to both ends of said back portion of said inner panel.

Preferably, said front fastener is front plurality of snaps, and said back fastener is back plurality of snaps; said back plurality of snaps is cooperatively fastenable with front plurality of snaps.

20       Preferably, the diaper sheath comprising: intermediate elastic strip attached to said inner and outer panels along each side of said intermediate portion.

Preferably, the diaper sheath comprising: intermediate button attached along each side of said intermediate portion, wherein said intermediate elastic strip has at least one intermediate hole cooperatively fastenable with intermediate button.

5        Preferably, the diaper sheath comprising back elastic strip attached to said inner and outer panels along the edge of said back portion.

Preferably, the diaper sheath comprising: back button attached along the edge of said back portion, wherein said back elastic strip  
10        has at least one back hole cooperatively fastenable with said back button.

Preferably, said inner and outer panels utilize a liquid permeable material; said inner face of said outer panel utilizes an impervious material.

15        Preferably, said inner panel is fleece material made of 100% polyester.

The present invention also provides a diaper comprising: a diaper sheath according to the present invention and a pad fully or partially inserted between said inner and outer panels.

20        Preferably, said pad is a removable, reusable, absorbent pad.

By means of the above technical solution, the present invention of diaper sheath has the technical effects as follows:

( 1 ) The diaper sheath of the present invention is much easier and convenient to adjust the insert from the opening at the front portion.

( 2 ) With the flap at the front portion, parents can choose to  
5 use a biodegradable pad to insert in the flap and lay on the top of the inner panel.

( 3 ) With the fleece of the inner panel, the diaper sheath is extremely comfortable and perfect for the babies gentle new skin.

( 4 ) With the elastic stripe and button, the parent can adjust  
10 the position of the elastic to fit their baby perfectly by simply changing the elastic position.

### **Brief description of the drawings**

For a further understanding of the nature and objects of the  
15 present invention, reference should be made to the following detailed description taken in conjunction with the accompanying drawings, wherein:

Fig.1 is an inside view of the preferred diaper sheath embodiment 1.

20 Fig.2 is an outside view of the preferred diaper sheath embodiment 1.

Fig.3 is an inside view of the preferred diaper sheath

embodiment 1 with a pad.

Fig.4 is an inside view of the preferred diaper sheath embodiment 2.

Fig.5 is an additional figure of partial enlargement of the preferred diaper sheath embodiment 2.

### **Detailed description of the preferred embodiment**

#### **Embodiment 1**

10 The present sheath diaper is illustrated in Fig. 1 as viewed from the inside. The sheath diaper comprising:

- inner and outer panels, each of said inner and outer panels having front and back portion 11, 12 connected by an intermediate portion 14, said front portion 11 of the inner panel having an opening 13, each of said panels attached peripherally one to the other in matched contour, said back portion 12 has two elongated wings 126, 127;

- front plurality of snaps 112, 113, 114 attached to said front portion 11 of said outer panel

20 - back plurality of snaps 123, 124 attached to said two elongated wings 126, 127, said back plurality of snaps 123, 124 is cooperatively fastenable with said front plurality of snaps 112, 113,

114;

- a front flap 111 attached to said front portion 11 of said inner panel, and said opening 13 is covered by said front flap 111. The legs have their own adjustment snaps. The waist also has its own set of snaps. The snaps are great for easy adjustment for the leg  
5 and for the waist.

As shown in Fig. 1-3, the present diaper sheath comprises:

- intermediate elastic strip 101, 102 attached to said inner and outer panels along each side of said intermediate portion 14;
- 10 - back elastic strip 125 attached to said inner and outer panels along the edge of said back portion.

Said intermediate elastic strip 101, 102 and said back elastic strip 125 make the intermediate portion 14 and back portion 12 adjustable.

15 The diaper may further comprise: a removable, reusable, absorbent pad 15 fully or partially inserted between said inner and outer panels and located along said intermediate portion.

With the present diaper sheath, the parent may fill up the diaper sheath with one or two pads and close the opening 13 with  
20 said flap 111 at the front. It is much easier and convenient for the parent to adjust the insert from the front. Once the parent inserts the pad 15 in the diaper, they can adjust it perfectly from the front



opening 13 to insure a perfect positioning. With the front pocket opening then they can easily adjust the pad 15 and put down the flap 111. This makes it ideal for adjustment while the baby is wearing it.

5 In the present embodiment, said inner panel utilizes a liquid permeable material, and said outer panel utilizes an impervious material. Said inner panel is fleece material made of 100% polyester, and said outer panel is plastic.

After repeated washes, the fabric will still be white and not  
10 stained, as said fabric is made of fleece. With the diaper sheath being washed and washed this is a major benefit. Parents can always be insured they have a nice clean looking diaper. We could use any other fabric like organic cotton, bamboo or others but do stain. However, fleece does not stain. Secondly, fleece is  
15 hypoallergenic making it perfect for babies gentle new skin.

Another added feature to the present invention is that with the flap 111 at the front, parents can choose to use a biodegradable pad 15 to insert in the flap 111 and lay on top of the fleece. With  
said added feature to use disposable pad 15, this makes it the  
20 perfect diaper. If the baby has stooled already and it is not expected that will occur in the next several hours when out, the disposable insert from the front becomes practicable and convenient for both

boys and girls.

## Embodiment 2

As shown in Fig. 4 and 5, the diaper sheath further comprising:

5 intermediate buttons 103, 104 attached along each side of said intermediate portion 14, wherein said intermediate elastic strip 101 has at least one intermediate hole cooperatively fastenable with said intermediate button 103. The elastic stripes 101, 102 also have numbers that attach to 1 button at each side. The parents can  
10 adjust the position of the elastic strips 101, 102 to fit their baby perfectly by simply changing the elastic position.

The buttons 103, 104 is not removable which is safer and tidier. In addition, the buttons 103, 104 slips into the special opening 13 and disappear under the flap 111. It makes it invisible and does not  
15 touch the baby skin. With the numbers, the parent can recall the appropriate tightness each time and as and when the baby grows to adjust.

The diaper sheath of the present invention may further  
20 comprise back button attached along the edge of said back portion, wherein said back elastic strip has at least one back hole cooperatively fastenable with said back button.

In addition, the diaper sheath of the present invention may further comprise a back flap attached to said back portion of said inner panel. Because of the place where the opening 13 will be situate (not immediately at the top part of the diaper), there will less space for the pad 15 and hence holding it better. The back of the nappy will also be fully closed.

The present invention also encompasses a diaper sheath according to present claims 1 or 12, further comprising any additional feature(s) or combination of features which are disclosed in the specification, the drawings and the claims.

Because many varying and different embodiments may be made within the scope of the inventive concept herein taught, and because many modifications may be made in the embodiments herein detailed in accordance with the descriptive requirement of the law, it is to be understood that the details herein are to be interpreted as illustrative and not in any limiting sense.

## Claims

---

1. A diaper sheath comprising:

- inner and outer panels, each of said inner and outer panels having  
5 front and back portion connected by an intermediate portion, said  
front portion of the inner panel having an opening, each of said  
panels attached peripherally one to the other in matched contour;
- front fastener attached to said front portion of said outer panel
- back fastener attached to back portion of said inner panel, said  
10 back fastener is cooperatively fastenable with said front fastener;
- a front flap attached to said front portion of said inner panel, and  
said opening is covered by said front flap.

2. The diaper sheath according to claim 1, wherein said back  
portion of the inner panel having an opening.

15 3. The diaper sheath according to claim 1 or 2, further comprising: a  
back flap attached to said back portion of said inner panel.

4. The diaper sheath according to claim 1, wherein said back  
fastener attached to both ends of said back portion of said inner  
panel.

20 5. The diaper sheath according to claim 1 or 4, wherein said front  
fastener is front plurality of snaps, and said back fastener is back  
plurality of snaps; said back plurality of snaps is cooperatively

fastenable with front plurality of snaps.

6. The diaper sheath according to claim 1, further comprising: intermediate elastic strip attached to said inner and outer panels along each side of said intermediate portion.

5 7. The diaper sheath according to claim 6, further comprising: intermediate button attached along each side of said intermediate portion, wherein said intermediate elastic strip has at least one intermediate hole cooperatively fastenable with intermediate button.

10 8. The diaper sheath according to claim 1, further comprising: back elastic strip attached to said inner and outer panels along the edge of said back portion.

9. The diaper sheath according to claim 8, further comprising: back button attached along the edge of said back portion, wherein said  
15 back elastic strip has at least one back hole cooperatively fastenable with said back button.

10. The diaper sheath according to claim 8, wherein said inner panel utilizes a liquid permeable material; said outer panel utilizes an impervious material.

20 11. The diaper sheath according to claim 8, wherein said inner panel is fleece material made of 100% polyester.

12. A diaper comprising: a diaper sheath according to any one of

claims 1-11, and a pad fully or partially inserted between said inner and outer panels.

13. The diaper according to claim 12, wherein said pad is a removable, reusable, absorbent pad.

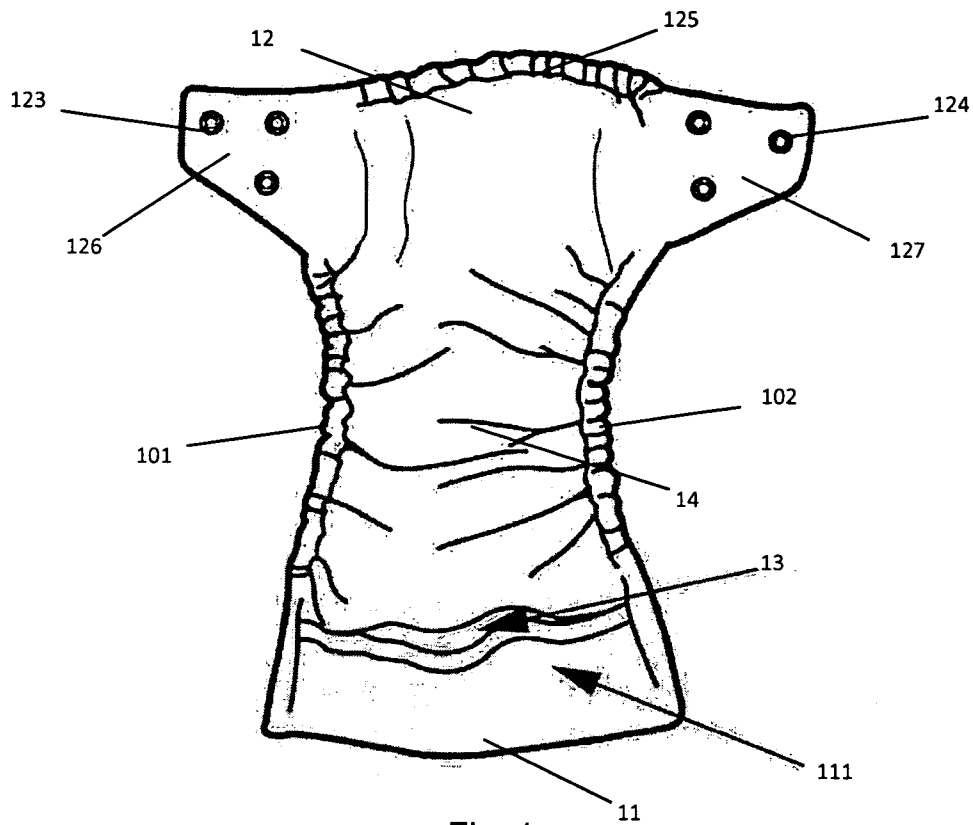


Fig. 1

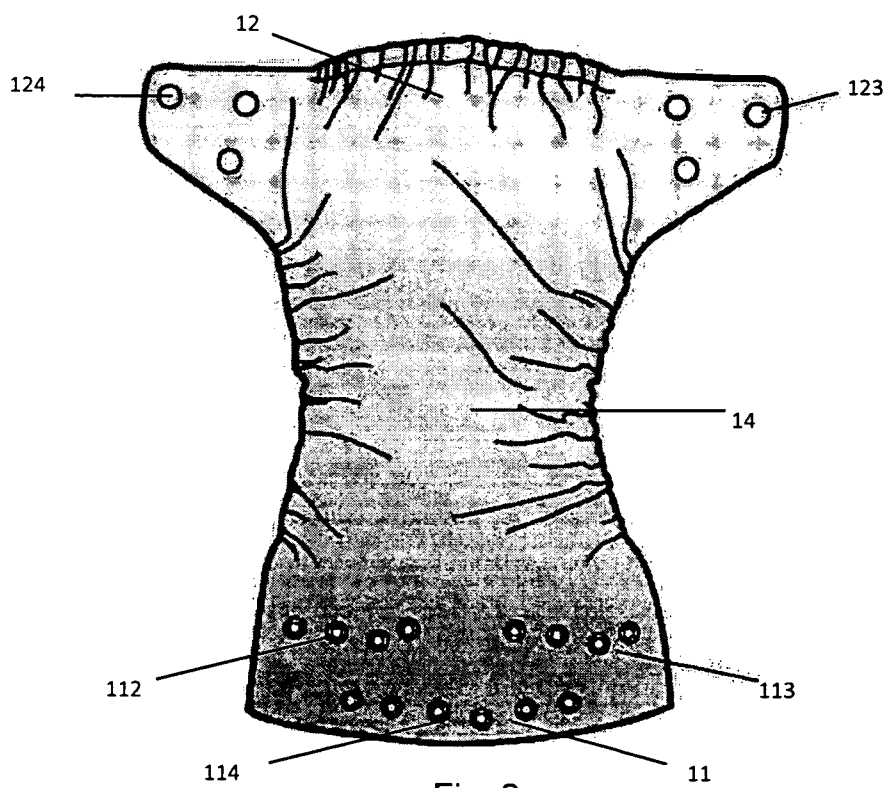


Fig. 2

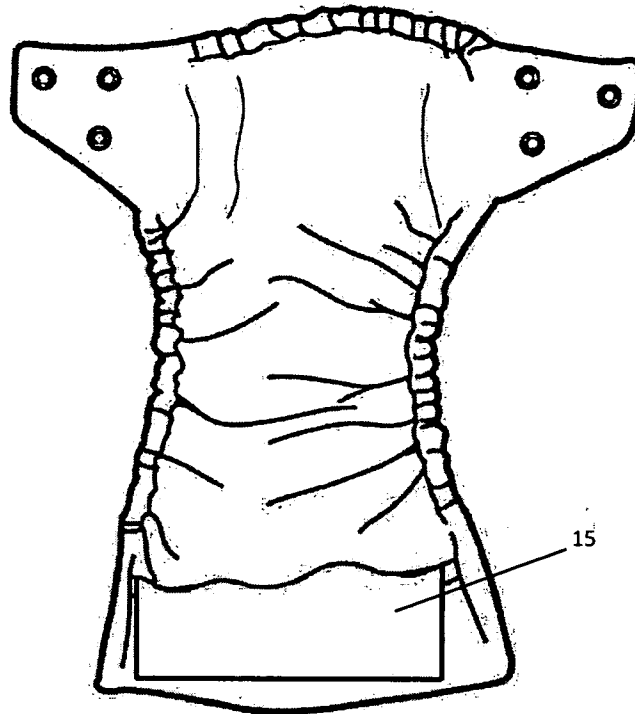


Fig. 3

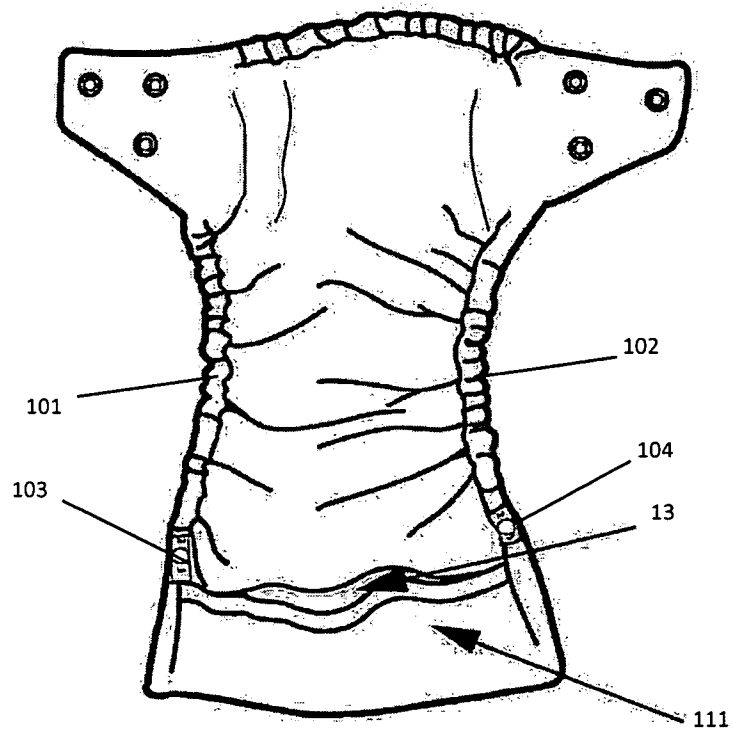


Fig. 4



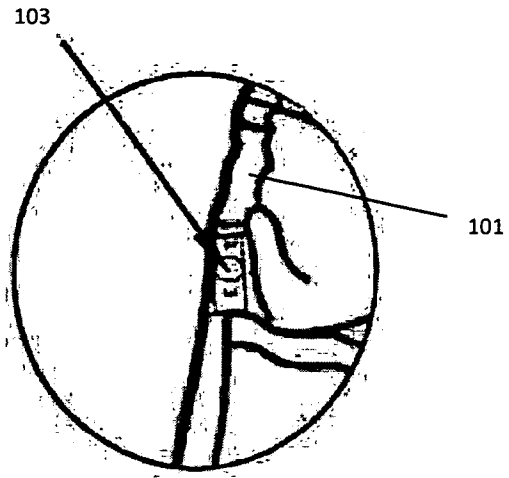


Fig. 5

## INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2010/001389

**A. CLASSIFICATION OF SUBJECT MATTER**

INV. A61F13/15

ADD:

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 452 052 A (RICHARDSON RACHEL KATHERINE [GB]) 25 February 2009 (2009-02-25) page 2 - page 4; figures 1-3	1-6, 8, 10-13
Y	-----	7, 9
X	CA 2 120 840 A1 (LEE PETER H T [CA]) 9 October 1995 (1995-10-09) claims 1-34; figures 1-3	1-6, 8, 10-13
Y	-----	7, 9
X	WO 90/06066 A1 (BABYROOS PTY LTD [AU]) 14 June 1990 (1990-06-14) claims 1-15; figures 1-3	1-6, 8, 10-13
Y	-----	7, 9
X	US 5 613 959 A (ROESSLER THOMAS H [US] ET AL) 25 March 1997 (1997-03-25) figures 7, 8	1
	----- -/--	



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

3 December 2010

Date of mailing of the international search report

16/12/2010

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040,  
Fax: (+31-70) 340-3016

Authorized officer

Gennari, Silvia

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2010/001389

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 2008/030984 A2 (LABIT JENNIFER LYNN [US]; LABIT JAMES ANDREW [US]) 13 March 2008 (2008-03-13) * abstract; claim 1; figures 1-6 -----</p>	1-13

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2010/001389

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2452052	A	25-02-2009	NONE
CA 2120840	A1	09-10-1995	NONE
WO 9006066	A1	14-06-1990	NONE
US 5613959	A	25-03-1997	NONE
WO 2008030984	A2	13-03-2008	US 2008065039 A1 13-03-2008 US 2010087794 A1 08-04-2010