



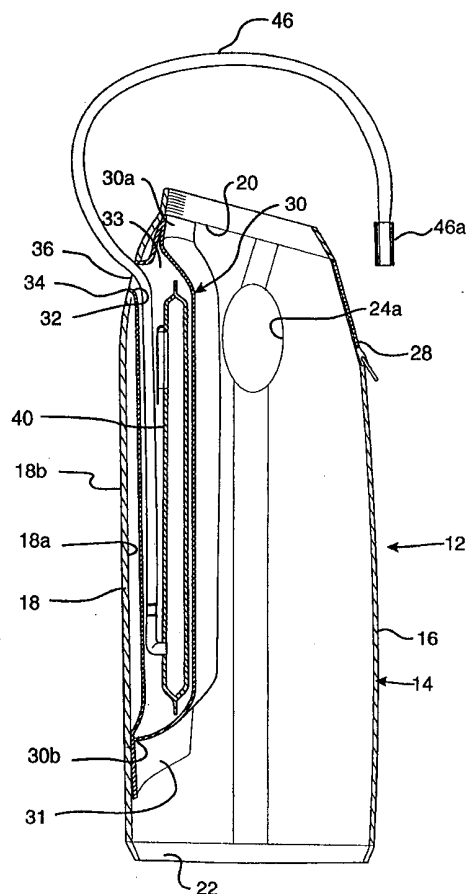
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : A41D 13/00, A45F 3/20	A1	(11) International Publication Number: WO 99/01045 (43) International Publication Date: 14 January 1999 (14.01.99)
<p>(21) International Application Number: PCT/CA97/00767</p> <p>(22) International Filing Date: 16 October 1997 (16.10.97)</p> <p>(30) Priority Data: 60/051,140 30 June 1997 (30.06.97) US</p> <p>(71) Applicant (for all designated States except US): 9001-6262 QUEBEC INC. [CA/CA]; 30, rue des Grands-Lacs, St-Augustin-de-Desmaures, Québec G3A 2E6 (CA).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): GARNEAU, Louis [CA/CA]; 246, chemin de la Butte, St-Augustin-de-Desmaures, Québec G3A 1W7 (CA).</p> <p>(74) Agent: MARTINEAU, François; Lespérance & Martineau, Bureau 700, 1440, rue Sainte-Catherine ouest, Montréal, Québec H3G 1R8 (CA).</p>	<p>(81) Designated States: AU, CA, JP, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p>Published With international search report.</p>	

(54) Title: SPORTS SHIRT WITH INTEGRAL WATER POUCH

(57) Abstract

The sports shirt (12) of the invention is made of an elastic fabric and has an elongated, flexible, integral inner pocket (30) fixedly and permanently installed on the inner surface of the shirt's back side. The elongated pocket (30) is sown at its upper and lower extremities to the shirt fabric, and defines an inner chamber (33) which holds an elongated, flexible water pouch (40) correctly sized to fit therein. The pocket (30) and the sports shirt define respective openings (32, 34) registering with each other at the upper rear portion of the sports shirt, and the pocket is sown to the sports shirt around this opening. Closure means such as a zip fastener (38) allows the openings to be closed, to selectively prevent access to the pocket inner chamber. A flexible plastic tube (46) freely depends inside the water pouch, at the bottom extremity thereof, passes through the pouch wall by means of a sealing valve (44), and extends freely outside the pocket inner chamber through the openings (32, 34). Preferably, the tube is provided at its outer free end with a bite valve (46a), which allows liquid flow therethrough only when lateral pressure is applied thereon, e.g. by biting the valve. With this sports shirt, a sports person can carry a pouch filled with water in a stable fashion while practising a sport, e.g. cycling or cross-country skiing.



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- 1 -

TITLE OF THE INVENTION: SPORTS SHIRT WITH INTEGRAL WATER
POUCH

FIELD OF THE INVENTION

5 The present invention relates to water pouches,
and more particularly to a drinking system that allows
cyclists and other sports persons to drink anytime he
desires.

10 BACKGROUND OF THE INVENTION

 U.S. patent No. 5,060,833 issued in 1991 to J.M.
Edison et al. shows a pack sack carried by a sports person
in a conventional fashion, i.e. the pack sack rests on the
sports person's back and is provided with a pair of
15 shoulder straps that extend around the shoulders of the
sports person, for support thereof. A water pouch is sized
to fit inside the pack sack and a flexible plastic tube
extends from the water pouch, exteriorly of the pack sack
and into the person's mouth. This outer free end of the
20 tube is provided with a bite valve, which allows liquid
flow therethrough only when lateral pressure is applied
thereon, i.e. by biting the valve. The tube interiorly
extends into the water pouch, near its bottom end. A
sports person thus equipped can drink water without using
25 his hands, by drinking directly from the water pouch by
means of the flexible tube.

 The main disadvantage of the Edison device is the
unsteady support thereof on the person's back. Indeed,
while accomplishing sporting activities, the sports person
30 will often accomplish sudden body movements, and
consequently the water-filled pack sack will be prone to
undesirably moving to one side and the other of the
person's back, thus hampering the person in his movements.

 Another disadvantage of the Edison pack sack is
35 that it is likely that the water therein will freeze if it
is used during winter sporting activities, such as cross-

- 2 -

country skiing, since it is directly submitted to the cold ambient air.

U.S. patent No. 5,601,207 issued on February 11, 1997 to J.R. Paczonay, shows a bite valve that can be used
5 on the outer free end of the flexible drinking tube. This bite valve comprises a hollow, tubular, resilient main body having one end wall which prevents the water from freely flowing out of the valve. The end wall of the valve comprises a number of parallel through-slits. When
10 pressure is applied in a direction parallel to the slits, the latter will form openings in the bite valve to allow the water to flow therethrough.

OBJECTS OF THE INVENTION

15 It is the gist of the invention to provide a sports shirt having an integral pocket which can stably hold a water pouch therein.

It is another object of the present invention that the sports shirt be designed to allow the water to
20 benefit from the body heat of the wearer, to prevent the water therein from freezing during cold weather.

SUMMARY OF THE INVENTION

The present invention relates to a drinking
25 system that allows cyclists and other sports persons to drink anytime he desires.

More particularly, the present invention is a sports shirt having a main body adapted to fit onto a wearer's torso and defining a front and a rear fabric panel
30 integrally linked to each other, said rear panel defining an inner and an outer face and having an opening therethrough, said sports shirt comprising an internal pocket attached to said rear panel and located against said inner face, with said pocket also having an opening
35 therethrough;
wherein said sports shirt is destined to carry a water

- 3 -

pouch sized to fit in said pocket, the water pouch of the type having a water tube outwardly extending from an interior water-storing chamber therein, with the tube outwardly extending through said pocket and back panel openings for allowing water to be drunk by the wearer of said sports shirt through the tube.

The present invention also relates to a sports shirt comprising:

a) a flexible main body destined to fit onto a wearer's torso and defining a front and a rear fabric panels integrally linked to each other, said rear panel defining an inner and an outer face and having an opening therethrough;

b) an internal, flexible pocket fixedly attached to said rear panel and located against said inner face, said pocket having an opening therethrough; and

c) a water pouch, having a flexible, water-tight inner water-storing chamber sized to fit inside said pocket and entirely carried therein, said water pouch further having a water tube fluidingly connected to said water-storing chamber and outwardly extending therefrom through said rear panel and pocket openings and consequently out of said pocket, so as to allow the wearer of said sports shirt to drink water from the water pouch through said tube, while concurrently carrying said water pouch on his back; wherein said water pouch is stably supported on the shirt wearer's back and accidental displacement of said water pouch relative to the wearer's back is hampered by the fact that said pocket is squeezed between said shirt rear panel and the wearer's back.

Preferably, the sports shirt further comprises support means, for stably supporting said water pouch inside said pocket when said sports shirt is worn, consequently helping to prevent accidental displacement of said water pouch on the wearer's back.

Preferably, said support means comprises an

- 4 -

elastic sports shirt main body, the latter being biased into a constricting position onto the wearer's torso, said main body back panel concurrently snugly engaging said pocket carrying said water pouch, so as to prevent both
5 said water pouch and said pocket from accidental displacement on the shirt wearer's back.

Preferably, said support means further comprises elastic pocket walls which are biased into a constricting position onto said water pouch to continuously engage the
10 water pouch, be it entirely empty of or partially or completely filled with liquid, so as to prevent it from accidentally moving relative to said pocket.

Advantageously, said sports shirt main body defines a neckline, a waistline and a pair of sleeves, said
15 pocket being elongated and defining an upper and a lower end, said pocket being attached to said shirt rear panel at its said upper end near said neckline and at its lower end over said waistline, and said pocket laterally extending short of said sleeves and being centered therebetween.

Preferably, said pocket and main body rear panel
20 openings register with one another to form a single mouth, said pocket being attached to said rear panel all around said mouth.

Preferably, said mouth further comprises closure
25 means, for selectively allowing closure of said mouth.

Advantageously, said water pouch freely fits into said pocket and can be selectively inserted or removed therefrom.

Preferably, said pocket is made of a thermally
30 insulating material for helping to prevent important temperature gradients of the liquid carried in said water pouch.

The present invention also relates to a sports shirt comprising:

35 a) an elastic fabric main body adapted to fit onto a wearer's torso and defining front and rear elastic fabric

- 5 -

panels integrally linked to each other, said rear panel defining an inner and an outer face;

5 b) a flexible, thermally insulating, elongated pocket having an upper and a lower end, said pocket being located inside said main body against said inner face and being attached in a widthwisely centered fashion relative to said rear panel at its said upper and lower ends;

10 c) a mouth opening, through said rear panel and said pocket, with said pocket being attached to said rear panel around said mouth opening; and

15 d) an elongated, flexible water pouch having a water-tight water-storing chamber sized to fit inside said pocket and entirely carried therein, said water pouch having a water tube fluidingly connected to said water-storing chamber and extending therefrom outwardly of said pocket through said mouth opening, so as to allow the wearer of said sports shirt to drink water from the water pouch through said tube while concurrently carrying said water pouch on his back;

20 wherein said pocket collapses on said water pouch at all times so as to conformingly fit thereon, and said water pouch and pocket are stably supported against accidental lateral displacement by the engagement of said elastic main body thereon.

25

BRIEF DESCRIPTION OF THE DRAWINGS

In the annexed drawings:

30 Figure 1 is a side elevation of a cyclist as he would be positioned when mounted on a bicycle, the cyclist wearing the sports shirt according to the invention and operatively biting into the water pouch bite valve of the sports shirt;

35 Figures 2 and 3 are front and rear elevations, respectively, of the sports shirt of the invention;

Figure 4 is a front elevation of the sports shirt

- 6 -

of the invention, with the front fabric panel being cut in the middle and opened sideways for clarity of the view, thus showing the interior face of the rear shirt fabric panel and the water pouch sewed thereon;

5 Figure 5 is a side cross-sectional view of the sports shirt; and

 Figures 6 and 7 are a front and side elevation of a preferred model of water pouch which can be carried by the sports shirt of the invention.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

 Figure 1 shows a cyclist 10 as he would be positioned when riding a bicycle. Cyclist 10 wears on his torso a sports shirt 12 according to the invention.

15

 Figures 2 to 5 show that sports shirt 12 has a main body 14 of conventional shape, defining a front and a rear fabric panel 16 and 18 integrally linked to each other to form main body 14. Main body 14 further defines an upper neckline 20, a lower waistline 22 and a pair of sleeves 24, 26. The sports shirt is also shown to comprise a short zipper 28 on the upper portion of front panel 16, although this is optional. It is understood that the sports shirt could be of a different type, e.g. a jacket or a sleeveless shirt.

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 The main body rear panel 18 defines an inner face 18a facing interiorly of said main body 14 and an outer face 18b opposite inner face 18a.

30

 An elongated inner pocket 30 is fixedly attached, e.g. sown, to the rear panel inner face 18a. Pocket 30 has a generally rectangular shape and defines an upper end 30a attached at the shirt neckline 20 and a lower end 30b attached above the shirt waistline 22. The stitches form horizontal lines at 30a and 30b. The material of pocket 30 can downwardly extend beyond lower end 30b at 31, to improve the attachment integrity of pocket 30 upon shirt main body 14, since the stitches can then extend through

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- 7 -

the material of pocket 30 without being near its lower edge. As shown in figure 4, pocket 30 widthwisely extends short of the sleeve openings 24a, 26a, and is widthwisely centered on rear panel 18, so as to prevent the balance of the wearer to be compromised when pocket 30 is loaded.

Pocket 30 defines in inner chamber 33 (figure 5) and has an opening 32 registering with an opening 34 in rear panel 18. Pocket 30 is fixedly attached, e.g. sown, to the rear panel 18 around openings 32, 34 which thus form a widthwise mouth 36 located slightly under the neckline 20 on rear panel 18 (figure 5). Mouth 36 is preferably provided with closure means, such as a zipper 38 or the like, which allows selective partial or complete closure of mouth 36.

Figures 6 and 7 show a water pouch 40 according to a preferred prior art embodiment. Water pouch 40 comprises a flexible water-storing chamber 42 of generally rectangular shape, having a water-tight lower outlet 44 which is fluidingly connected to a flexible tube 46. Pouch 40 further comprises an upper water port 48 provided with a removable plug 50. The pouch storing chamber 42 can be emptied or filled through water port 48, and the water then can be sealingly kept inside chamber 42 by installing plug 50. The pouch chamber 42 is made of a water-tight material, such as a suitable plastic, as known in the art.

Tube 46 is provided at its outer free end with a bite valve 46a, which can be of the type shown in the Paczonnay patent discussed in the "Background of the Invention" section of the present specification.

As shown in figure 5, water pouch 40 is sized to fit into the inner chamber 33 of pocket 30, with the lower output 44 being located near pocket lower end 30b, and with tube 46 extending out of pocket 30 through mouth 36, and concurrently out of the shirt main body 14. Figure 1 shows that the outwardly extending tube 46 can thus be held at its bite valve 46a by the mouth 52 of the cyclist 10, while

- 8 -

he is riding, to drink water without the use of his hands.

The flow of the water is controlled by the pressure applied by the cyclist with his teeth on bite valve 46a. Mouth opening 36 allows water pouch 40 to be inserted into and removed from pocket 30 at all times, for filling water pouch 40 with liquid, or emptying it. The zipper 38 can be partially closed when water pouch 40 is installed in pocket 30, to prevent the water pouch 40 from accidentally sliding out of pocket 30, while allowing the passage of tube 46 outwardly of pocket 30, as shown in figure 3.

The material composing the pocket 30 can be an elastic material, although this is only optional. The elastic material would collapse into a constricting position upon the water pouch 40 at all times. This is especially advantageous, for two reasons:

a) water pouch 40 will be better supported, and thus prevented from undesirable accidental displacement inside pocket 30, by the elastic material being biased onto water pouch 40; and

b) the water pouch 40 and pocket 30 assembly will always take up as less space as possible this way, since little or no free space will remain between water pouch 40 and pocket 30.

Thus, when water pouch 40 is gradually emptied of its liquid, pocket 30 will gradually collapse thereon and the two above-mentioned advantages will remain whether the water pouch is empty, full or partially full of liquid.

The fact that pocket 30 is not attached along its side edges to the rear panel 18 of the sports jacket or shirt, allows the material to collapse onto the water pouch without the whole sports shirt rear panel being drawn along therewith.

Most preferably, and according to the preferred mode to carry out the invention, the material composing pocket 30 is thermally insulating, so as to prevent the

- 9 -

water from becoming rapidly warm under the heat generation of the shirt wearer's body. However, the pocket material could allow a slight thermal conduction therethrough, especially if the sports shirt is to be used in winter sports such as cross-country skiing: in this latter case, the water would benefit from the body heat generation, remaining in its liquid state instead of freezing under the cold ambient air temperature.

In this respect, it is thus noted that the sports shirt according to the present invention is destined to be used for a wide variety of sports, such as cycling, cross-country skiing, hiking (especially one-day trips in which no other pack-sack is used), and any other sport in which it may be useful. It is envisioned that different pocket thermal properties be provided depending on the intended use of the sports shirt, e.g. a sports shirt destined to be used in winter sporting activities would preferably require a greater pocket thermal insulation.

Most preferably, and according to the preferred mode to carry out the invention, the material composing the shirt body 14 is elastic, so as to collapse into a constricting position onto the wearer's torso at all times. This way, the pocket 30 and water pouch 40 will be more stably held onto the wearer's back, by the shirt body rear panel 18 which snugly engages the pocket 30 at all times, to prevent movement thereof relative to the shirt wearer's torso, especially lateral displacement, which would occur under sudden movements of the sport shirt wearer.

Thus, it can be seen that the sports shirt according to the invention is advantageous when compared to the known prior art pack sack carried water pouches, in that it holds and supports the water pouch in a much more stable manner. Moreover, the back of the cyclist being free of any gear (pack sack), it is now possible for advertisements to be printed on the shirt rear panel outer surface and remain visible during sporting activities, such

- 10 -

as cyclist race competitions.

Preferably, the sports shirt main body 14 is made of polyester. Several layers with different polyester densities and compositions can be used, for example one
5 layer of elastic body-tight material, one layer of absorbing tissue and one layer of loosely meshed material. However, the preferred material and composition of the sports shirt main body 14 will be suitably chosen by the person skilled in the art.

10 Any minor modifications to the present invention which do not deviate from the scope thereof, are considered to be included therein.

For example, it is envisioned that there be provided a loop strap (not shown) on the outer surface of
15 the shirt main body, for holding the water pouch tube along the wearer's torso, even when the bite valve is not engaged by the wearer's teeth.

- 11 -

CLAIMS:

1. A sports shirt having a main body adapted to fit onto a wearer's torso and defining a front and a rear fabric panel integrally linked to each other, said rear panel defining an inner and an outer face and having an opening therethrough, said sports shirt comprising an internal pocket attached to said rear panel and located against said inner face, with said pocket also having an opening therethrough;

wherein said sports shirt is destined to carry a water pouch sized to fit in said pocket, the water pouch of the type having a water tube outwardly extending from an interior water-storing chamber therein, with the tube outwardly extending through said pocket and back panel openings for allowing water to be drunk by the wearer of said sports shirt through the tube.

2. A sports shirt comprising:

a) a flexible main body destined to fit onto a wearer's torso and defining a front and a rear fabric panels integrally linked to each other, said rear panel defining an inner and an outer face and having an opening therethrough;

b) an internal, flexible pocket fixedly attached to said rear panel and located against said inner face, said pocket having an opening therethrough; and

c) a water pouch, having a flexible, water-tight inner water-storing chamber sized to fit inside said pocket and entirely carried therein, said water pouch further having a water tube fluidingly connected to said water-storing chamber and outwardly extending therefrom through said rear panel and pocket openings and consequently out of said pocket, so as to allow the wearer of said sports shirt to drink water from the water pouch through said tube, while concurrently carrying said water pouch on his back;

- 12 -

wherein said water pouch is stably supported on the shirt
wearer's back and accidental displacement of said water
pouch relative to the wearer's back is hampered by the fact
that said pocket is squeezed between said shirt rear panel
5 and the wearer's back.

3. A sports shirt as defined in claim 2, further
comprising support means, for stably supporting said water
pouch inside said pocket when said sports shirt is worn,
10 consequently helping to prevent accidental displacement of
said water pouch on the wearer's back.

4. A sports shirt as defined in claim 3, wherein
said support means comprises an elastic sports shirt main
15 body, the latter being biased into a constricting position
onto the wearer's torso, said main body back panel
concurrently snugly engaging said pocket carrying said
water pouch, so as to prevent both said water pouch and
said pocket from accidental displacement on the shirt
20 wearer's back.

5. A sports shirt as defined in claim 4, wherein
said support means further comprises elastic pocket walls
which are biased into a constricting position onto said
25 water pouch to continuously engage the water pouch, be it
entirely empty of or partially or completely filled with
liquid, so as to prevent it from accidentally moving
relative to said pocket.

30 6. A sports shirt as defined in claim 4, wherein
said sports shirt main body defines a neckline, a waistline
and a pair of sleeves, said pocket being elongated and
defining an upper and a lower end, said pocket being
attached to said shirt rear panel at its said upper end
35 near said neckline and at its lower end over said
waistline, and said pocket laterally extending short of

- 13 -

said sleeves and being centered therebetween.

5 7. A sports shirt as defined in claim 2, wherein said pocket and main body rear panel openings register with one another to form a single mouth, said pocket being attached to said rear panel all around said mouth.

10 8. A sports shirt as defined in claim 7, wherein said mouth further comprises closure means, for selectively allowing closure of said mouth.

15 9. A sports shirt as defined in claim 2, wherein said water pouch freely fits into said pocket and can be selectively inserted or removed therefrom.

20 10. A sports shirt as defined in claim 2, wherein said pocket is made of a thermally insulating material for helping to prevent important temperature gradients of the liquid carried in said water pouch.

11. A sports shirt comprising:

25 a) an elastic fabric main body adapted to fit onto a wearer's torso and defining front and rear elastic fabric panels integrally linked to each other, said rear panel defining an inner and an outer face;

30 b) a flexible, thermally insulating, elongated pocket having an upper and a lower end, said pocket being located inside said main body against said inner face and being attached in a widthwisely centered fashion relative to said rear panel at its said upper and lower ends;

c) a mouth opening, through said rear panel and said pocket, with said pocket being attached to said rear panel around said mouth opening; and

35 d) an elongated, flexible water pouch having a water-tight water-storing chamber sized to fit inside said pocket and entirely carried therein, said water pouch having a

- 14 -

water tube fluidingly connected to said water-storing
chamber and extending therefrom outwardly of said pocket
through said mouth opening, so as to allow the wearer of
said sports shirt to drink water from the water pouch
5 through said tube while concurrently carrying said water
pouch on his back;
wherein said pocket collapses on said water pouch at all
times so as to conformingly fit thereon, and said water
pouch and pocket are stably supported against accidental
10 lateral displacement by the engagement of said elastic main
body thereon.

Fig. 1

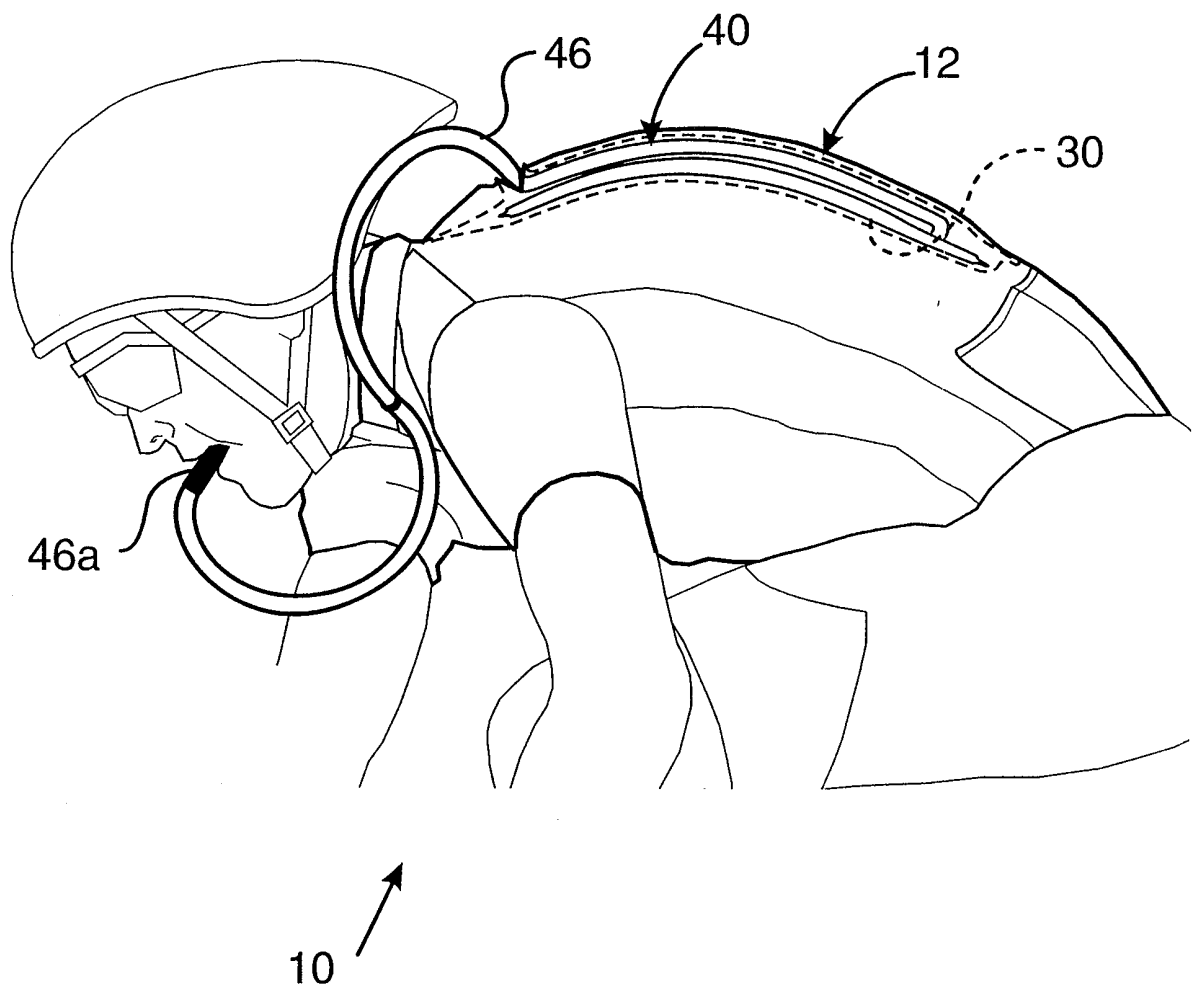


Fig. 2

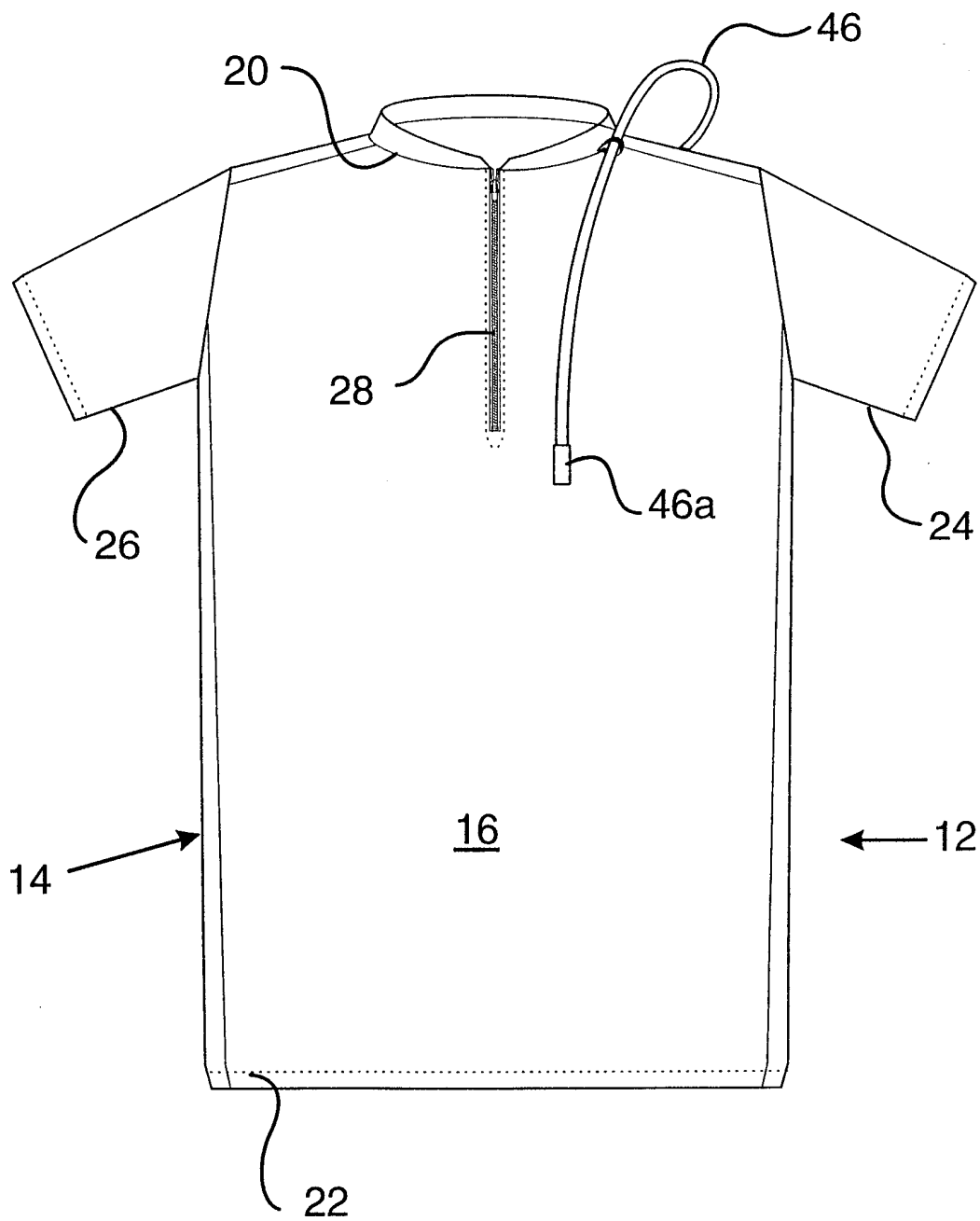


Fig. 3

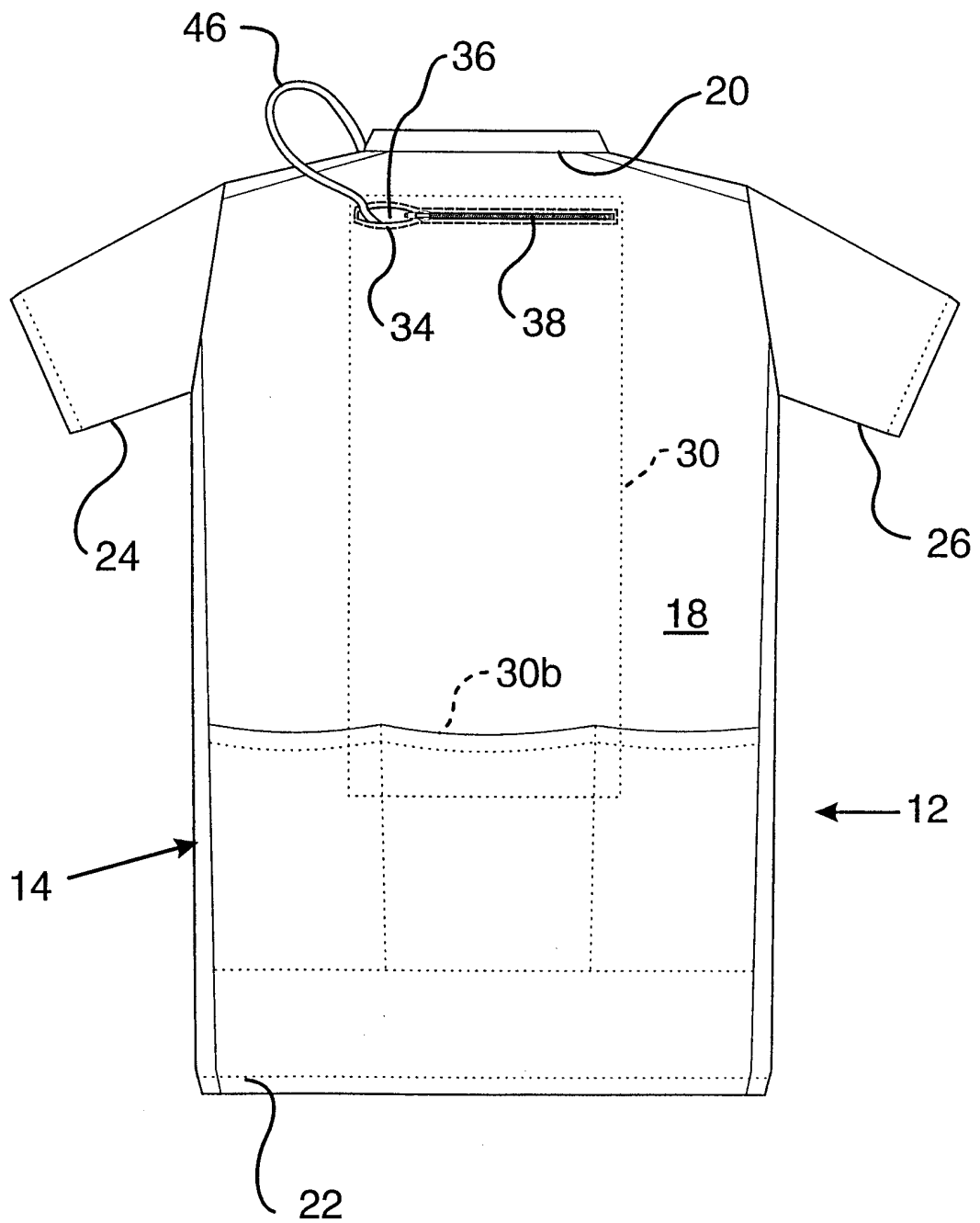


Fig. 4

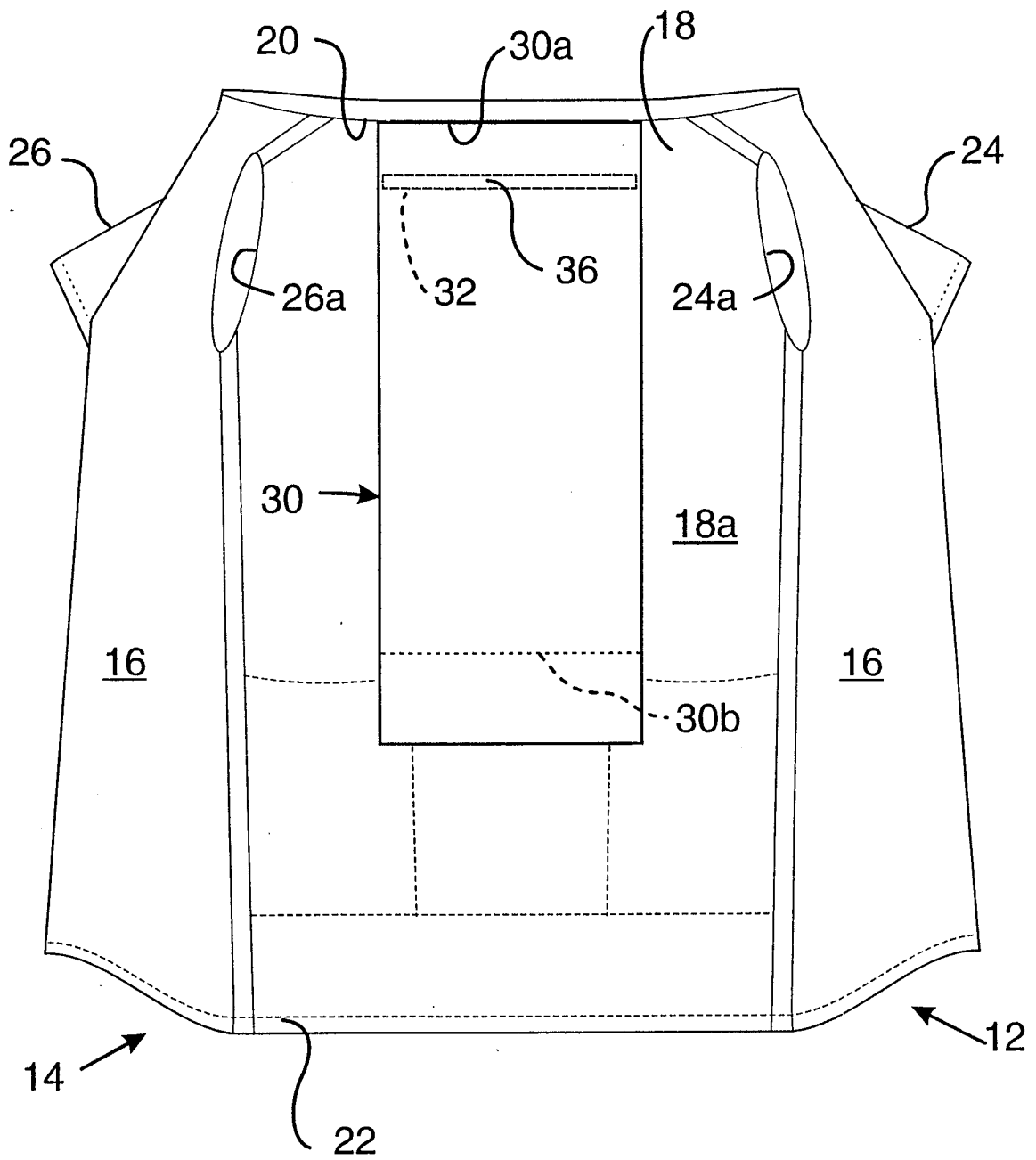


Fig. 5

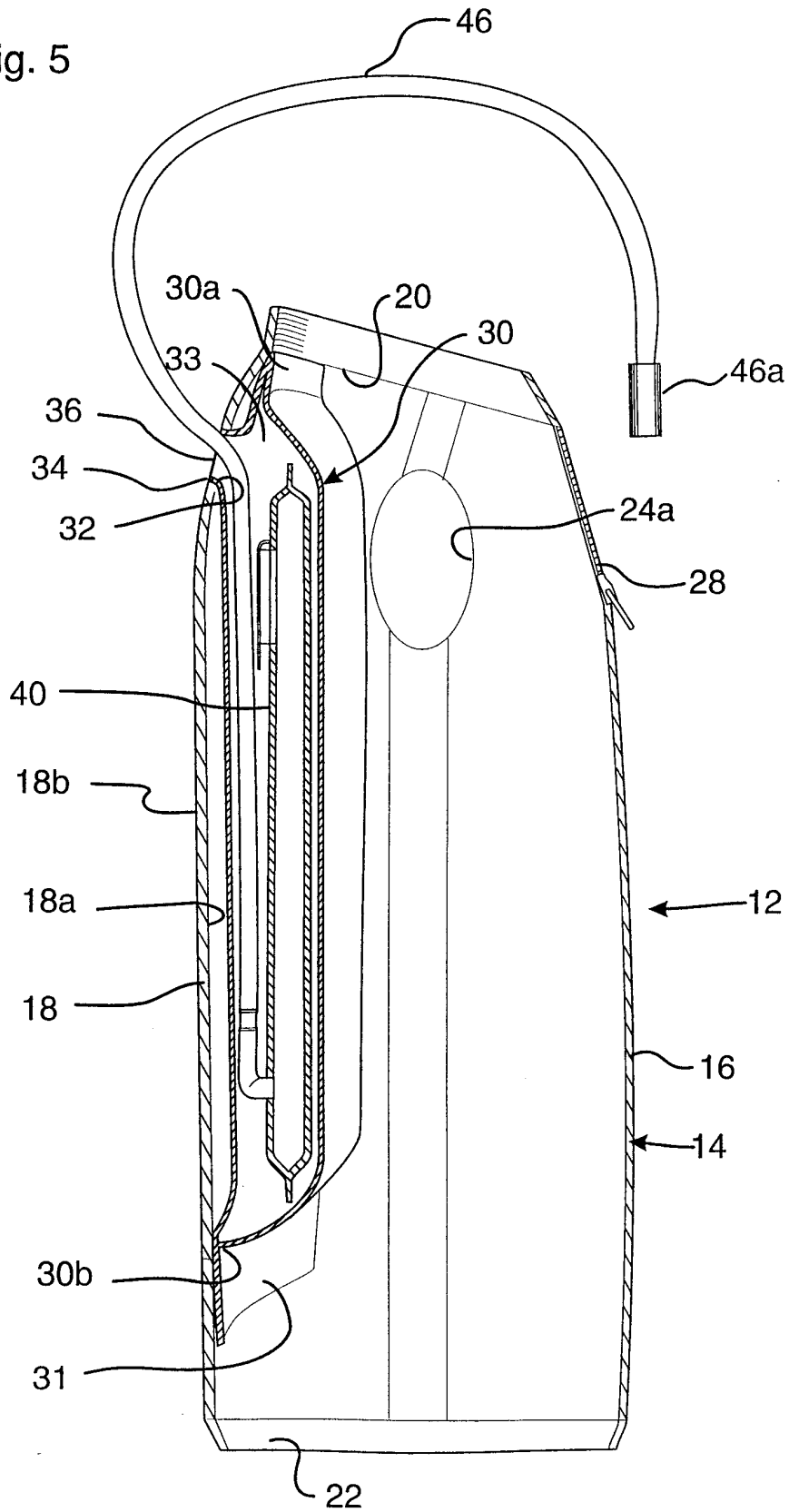
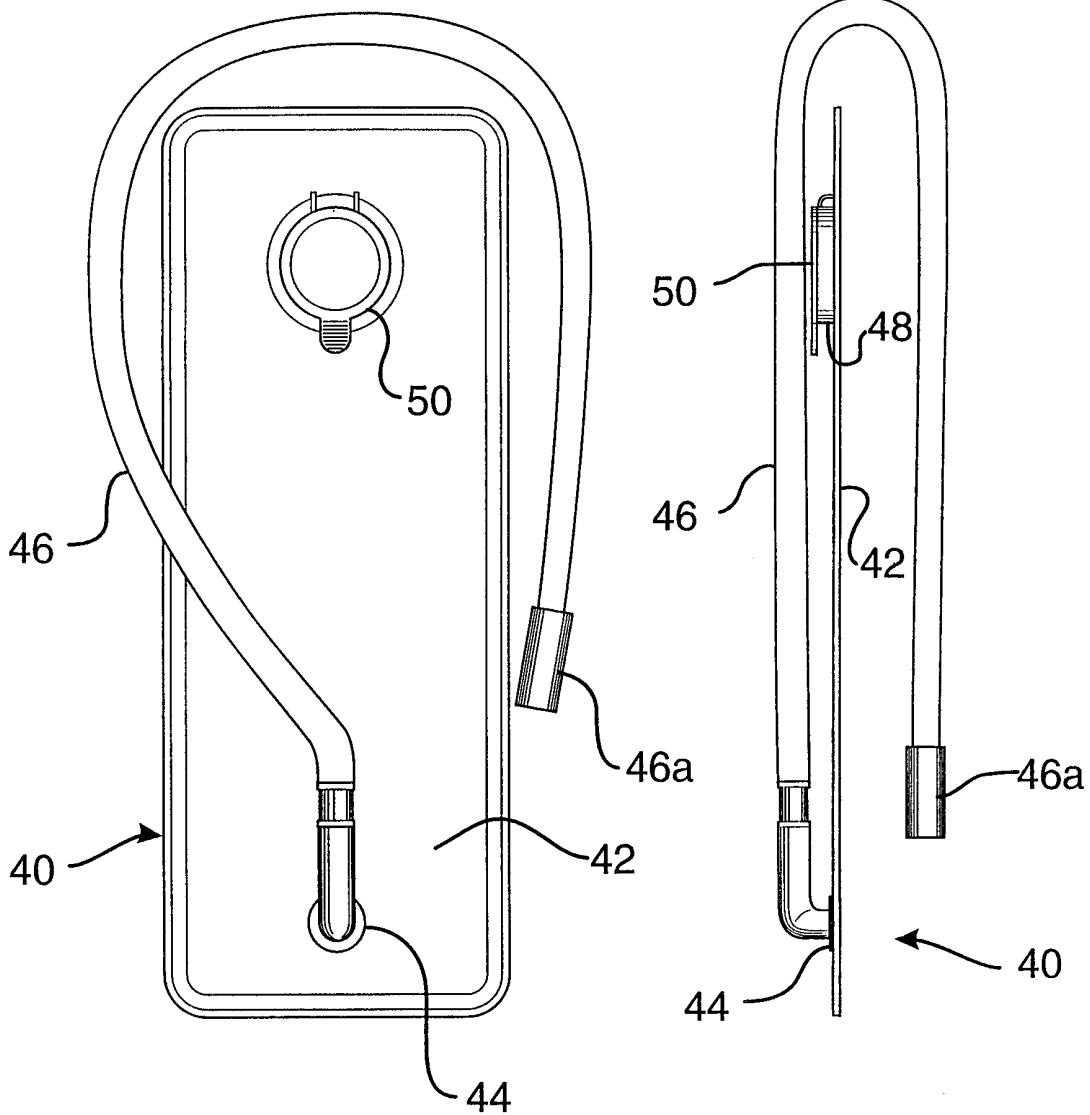


Fig. 6

Fig. 7



INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 97/00767

A. CLASSIFICATION OF SUBJECT MATTER IPC 6 A41D13/00 A45F3/20		
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) IPC 6 A41D A45F		
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)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 723 686 A (DEGRE 7 ENTREPRISE UNIPERSONNELLE A RESP. LIMITEE) 23 February 1996	1-3, 9, 10
A	see the whole document ---	11
A	DE 87 03 047 U (KIENLE W.) 13 August 1987 see claims 1,4,5,7,9; figure 1 ---	1
A	WO 97 03586 A (BEDON J. F.) 6 February 1997 see page 8, line 15 - page 10, line 17; figures 1-2B -----	1
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Date of the actual completion of the international search <div style="text-align: center; font-weight: bold;">26 February 1998</div>	Date of mailing of the international search report <div style="text-align: center; font-weight: bold;">11/03/1998</div>	
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer <div style="text-align: center; font-weight: bold;">Garnier, F</div>	

INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No
PCT/CA 97/00767

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