(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 July 2006 (27.07.2006)

PCT

(10) International Publication Number
WO 2006/078481 A1

(51) International Patent Classification:
*B65D 5/02* (2006.01)

(21) International Application Number:
PCT/US2006/000547

(22) International Filing Date: 5 January 2006 (05.01.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
05000109.8 5 January 2005 (05.01.2005) EP

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

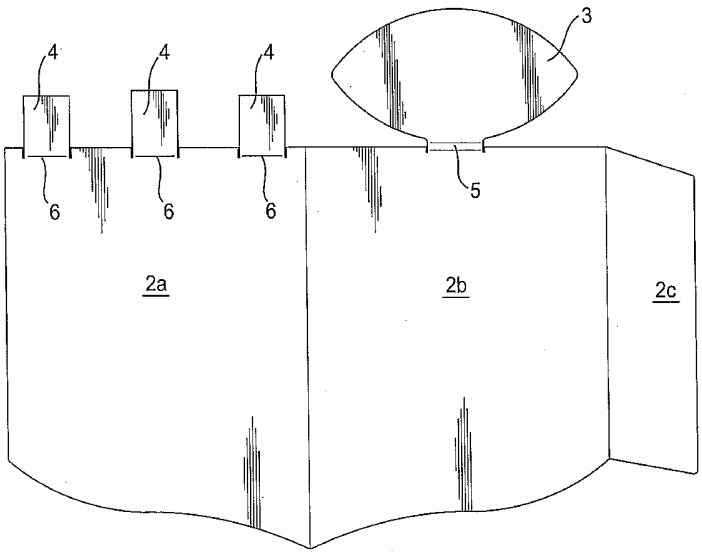
**Published:**

— *with international search report*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: CONTAINER WITH HOLLOW BOTTOM




(57) Abstract: The present invention relates to a container for packaging personal care articles, especially sanitary absorbent articles of personal hygiene. The package container has a hollow bottom being spaced away from the lower end of the container. The hollow bottom is made out of a large bottom flap (3) having the size and shape of the cross section of the container and being held in place by a holding strip (5) and at least one small flap (4) .

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# CONTAINER WITH HOLLOW BOTTOM

## FIELD OF THE INVENTION

The present invention relates to a container for packaging personal care articles, especially sanitary absorbent articles of personal hygiene. The package container has a hollow bottom being spaced away from the lower end of the container. The hollow bottom is made out of a large bottom flap having the size and shape of the cross section of the container and being held in place by a holding strip and at least one small flap.

## BACKGROUND OF THE INVENTION

Packaging containers with oval cross-section and closed bottom are known in the art. Exemplary disclosures can be found in EP 881 151; US 6,152,369 and US 6,170,740. However, all containers suggested by those references have one drawback in common: Their bottom is more or less flat and it has been found that such flat folded bottoms oftentimes tend to be slightly roundish, in other words they are slightly extending beyond the lower end of the sidewalls of the container in a convex manner. As a consequence such containers don't stand very well and oftentimes fall over due to their typically relatively small bottom area.

Therefore, it is an objective of the present invention to provide a container with oval cross-section and a closed bottom, which overcomes the disadvantages of the prior art by having a more stable stand.

A further objective of the present invention is to provide such a container, which is easy and cost-efficient to produce.

## SUMMARY OF THE INVENTION

The present invention provides a container comprising a wall, an upper end and a lower end, said wall having an inner and an outer surface. The container has a lower portion extending from the middle distance between said upper and lower end of said container to said lower end of said container. The lower end of the container is closed by a hollow bottom, which is formed by one large bottom flap having approximately the shape and size of said cross section of said container.

The large bottom flap resides in the interior of the container and is held in place by a holding strip, which is attached to the large bottom flap along a line of connection, which is spaced away from the lower end of the container. The container further comprises a small flap being attached to the large bottom flap approximately opposite to said line of connection. By this configuration the large bottom flap is spaced away from the lower end of the container towards the upper end of the container and thus a hollow bottom is formed. Due to this the container solely stands on the lower edge of its circumferential wall. Thus the problems arising from a non-flat bottom are avoided. In a preferred embodiment the container is formed from one interconnected piece of carton cut-out, which is very economical and provides the possibility of forming the container on the packaging line itself.

## BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 illustrates the interconnected cut-out from which a preferred execution of the container (1) of the present invention is formed.

Figures 2 and 3 illustrate the above cut-out from alternative views

Figure 4 illustrates how the container of the present invention is formed out of the cut-out, namely by folding the two wall portions (2a and 2b) upon themselves and attaching the wall connection flap (2c) to the inside of the opposite wall portion (2a). Further the bottom is formed by folding the large bottom flap (3) onto the three small flaps (4).

Figure 5 illustrates a finished container (1) with closed bottom. It is visible that the large bottom flap (3) is spaced away from the lower end of the container (1) by the holding strip (5) and that the folding lines (6) of the extensions of the wall (2) forming the small flaps (4) and the holding strip (5) are spaced away from the lower end of the container (1).

## DETAILED DESCRIPTION OF THE INVENTION

The container of the present invention is made of rigid material, typically carton board. 'Rigid material' as used herein refers to materials with at least some flexural stiffness, i.e. a significant degree to maintain their original shape. Exemplary rigid materials in the context of the present invention are carton paper, carton board, card board, enforced paper, corrugate or the like or

combinations thereof. Further examples of rigid materials for use herein are plastic or rubber-like polymeric materials with a significant degree to maintain their shape.

"Lower portion of the wall" refers the part of the wall extending from the mid height of said wall, defined by the middle distance between the upper and lower ends of the container, towards the lower end of the container.

"Interior" herein means the inner volume of the container volume, which is enclosed by the wall.

The wall of the container can be made out of one or more wall portions. When the container is made from a flat cut-out of material the wall is typically closed by a wall connection flap, which is bonded to the inside of a wall portion as illustrated in Figure 4. The arrangement of the wall of the container defines the cross section of the container. In one embodiment herein the container herein is substantially cylindrical with an essentially circular or ellipsoidal cross-section. In other embodiments herein the container has a substantially square or rectangular cross-section. Generally, there is basically no limitation in cross-sectional shape of the container.

The hollow bottom of the container is basically formed by a large bottom flap, which is held in place by a holding strip on one side and at least one small flap on the other. The large bottom flap resides in the interior of the container and is spaced away from the lower end of the container. Both the holding strip and the small flap are either attached to the inner surface of the wall or are interconnected extensions of the wall, which are folded against the inner surface of the wall along folding lines. The folding lines can extend along the lower end of the container but are preferably spaced away from the lower end towards the upper end. The spacing away can be facilitated by cuts, as illustrated e.g. in Figures 3, 4 and 5.

The upper end of the container of the present invention can be open or closed. The upper end lower ends of the container preferably have the same cross-sectional shape and are preferably coextensive. However, it is also within the scope of the present invention that the upper and lower ends of the container are not co-extensive, such as in case the side walls of the container have different heights, or in case one or more side walls have a variable height, or in case the walls have an angle other than 90° with respect to a substantially even horizontal surface the container is placed on or have different angles for each wall.

It is furthermore within the scope of the present invention that the cross-section of the container is variable between the upper and lower end of the container. In an embodiment herein the lower of the container has a square shape, whereas the upper end has a substantially ellipsoidal shape. Also the reverse configuration, i.e. circular or ellipsoidal lower end and square upper end are within the scope of the present invention. It will be apparent to the skilled artisan that also numerous other different configurations are possible, which will lead to a variable cross-sectional shape of the container.

In other embodiments the container herein is provided with windows, through which its contents can be seen from outside. These windows can be provided by holes in the wall of the container or by zones in the wall, which are transparent.

According to further embodiments herein the container according to the present invention is provided with means for aiding collapsibility. This is beneficial for improving the disposability of the container, since it requires less space in the garbage container in collapsed state. Means for providing collapsibility are for instance cuts or weakness lines, such as perforations or score lines.

All documents cited in the Detailed Description of the Invention are, in relevant part, incorporated herein by reference; the citation of any document is not to be construed as an admission that it is prior art with respect to the present invention.

While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.

What is claimed is:

1. Container comprising a wall, an upper end and a lower end spaced away from each other by said wall, said wall having an inner and an outer surface and a lower portion extending from the middle distance between said upper and lower end of said container to said lower end of said container, said container further having a cross section, a length extending along said wall and an interior enclosed by said wall, wherein said lower end is closed by a hollow bottom,
said container being characterized in that said hollow bottom is formed by one large bottom flap having approximately the shape and size of said cross section of said container, said large bottom flap residing in said interior of said container and being held in place by a holding strip being attached to said large bottom flap along a line of connection, wherein said line of connection is spaced away from said lower end of said container along said length of said container, said container further comprising a small flap being attached to said large bottom flap approximately opposite to said line of connection.

2. The container of claim 1, wherein said holding strip and said small flap are extensions of said wall on said lower end of said container, wherein said extensions are folded against said inner surface of said wall along folding lines.

3. The container of claim 1, wherein at least one of said holding strip and said small flap are connected to said inner surface of said wall.

4. The container of claim 2, wherein said folding lines are spaced away from said lower end of said container towards said upper end of said container.

5. The container of any of the previous claims, wherein said cross-section varies along said length of said container.

6. The container of any of the previous claims, wherein said container comprises more than one small flap.

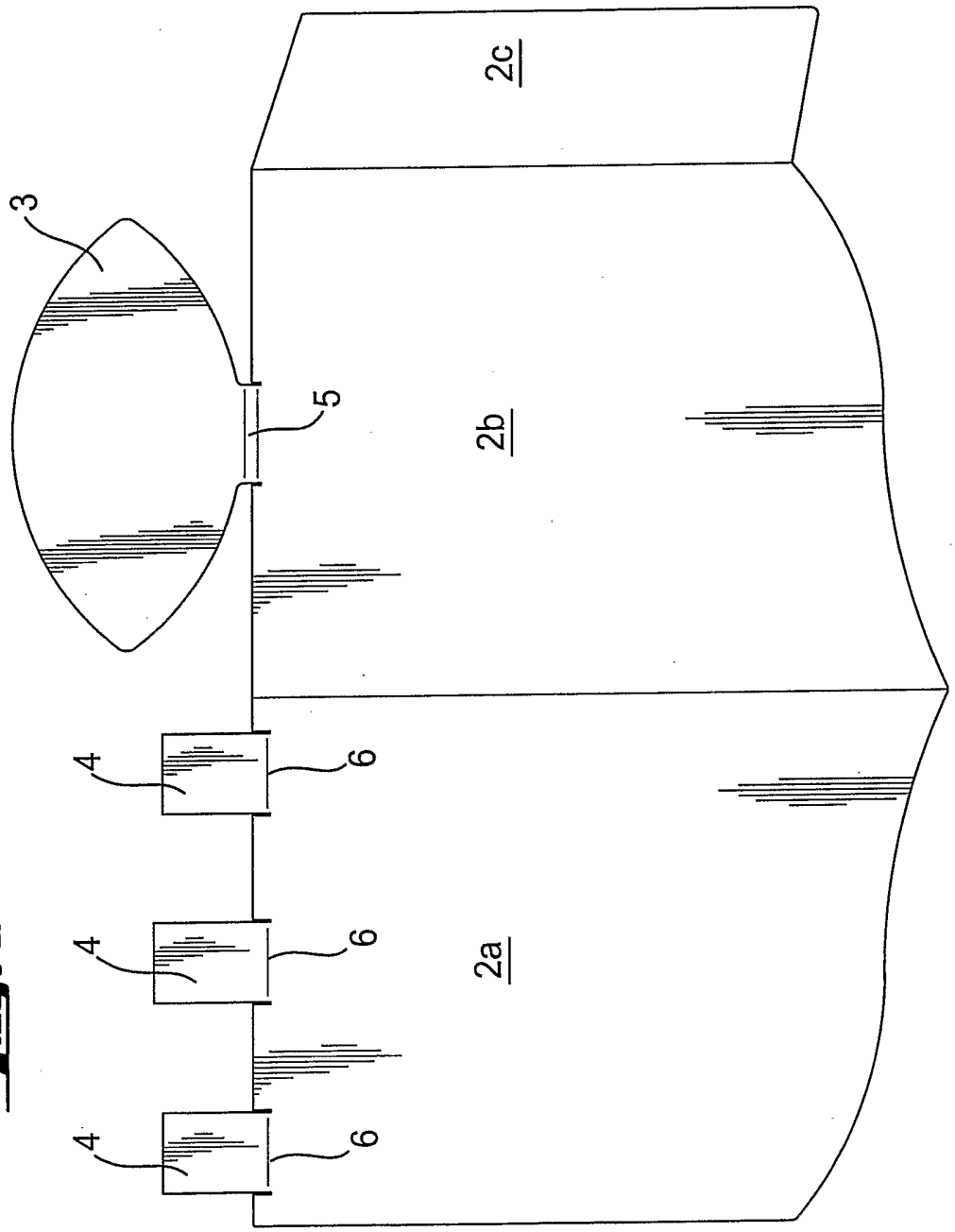



Fig. 1

Fig. 2

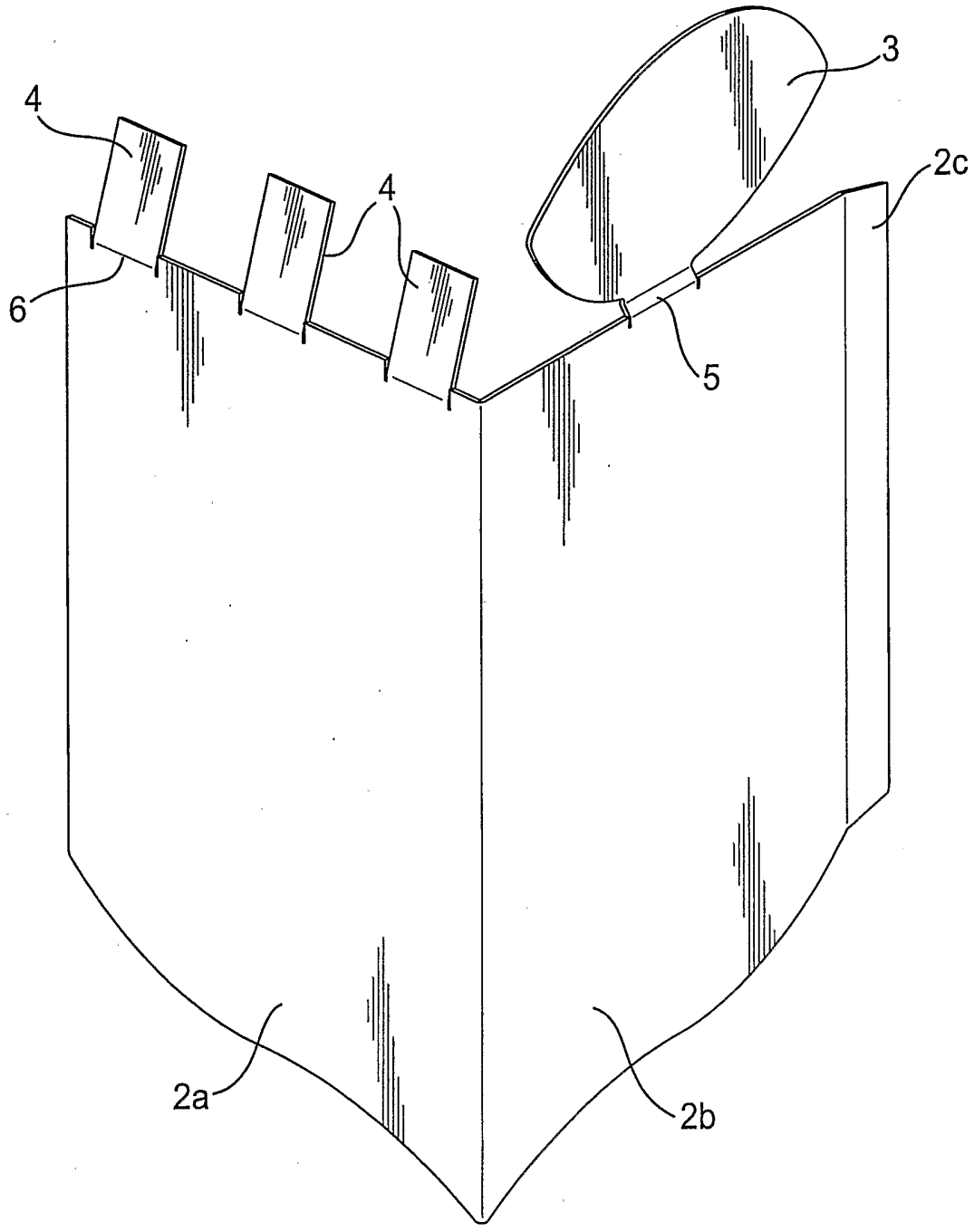


Fig. 3

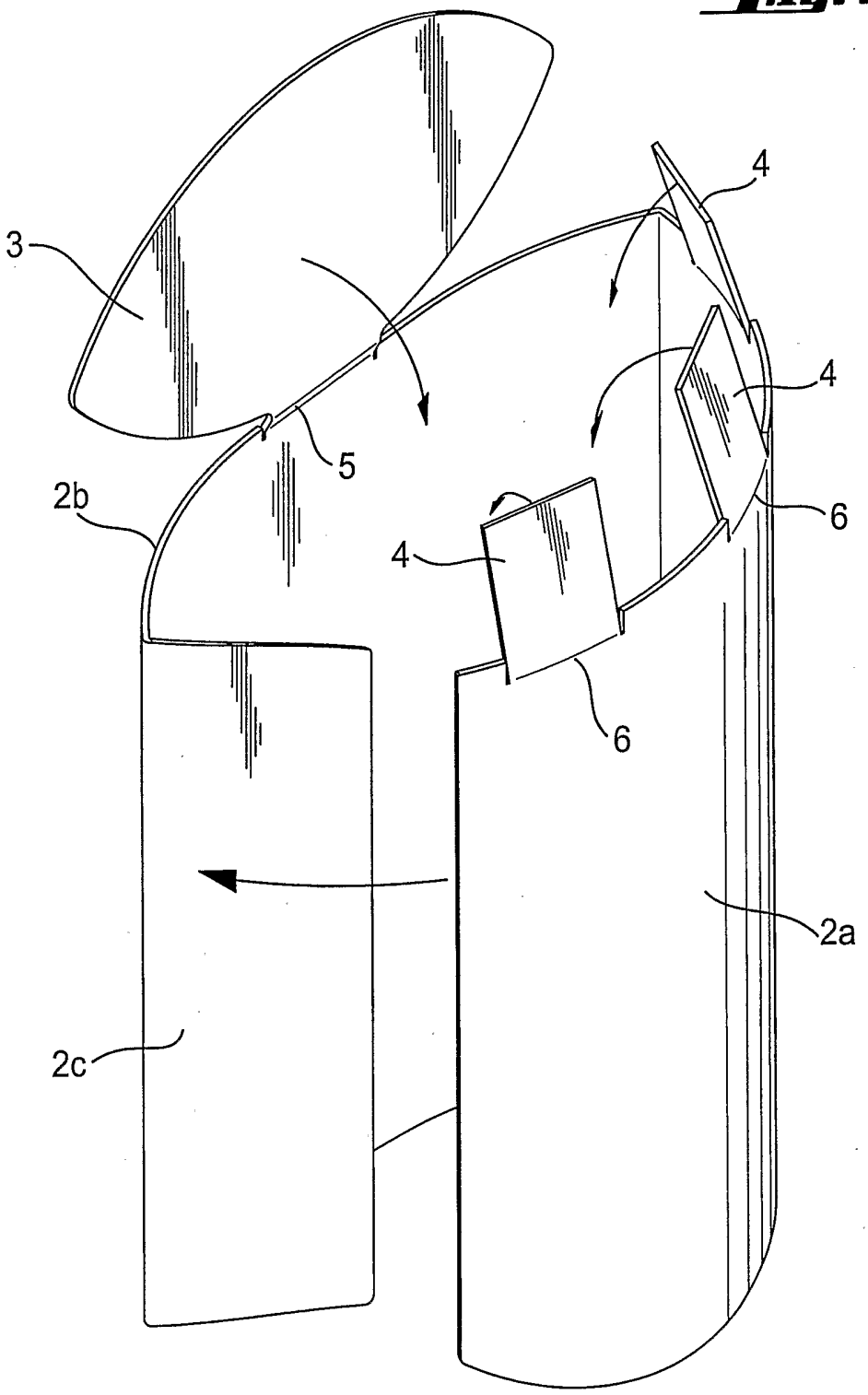


Fig. 4

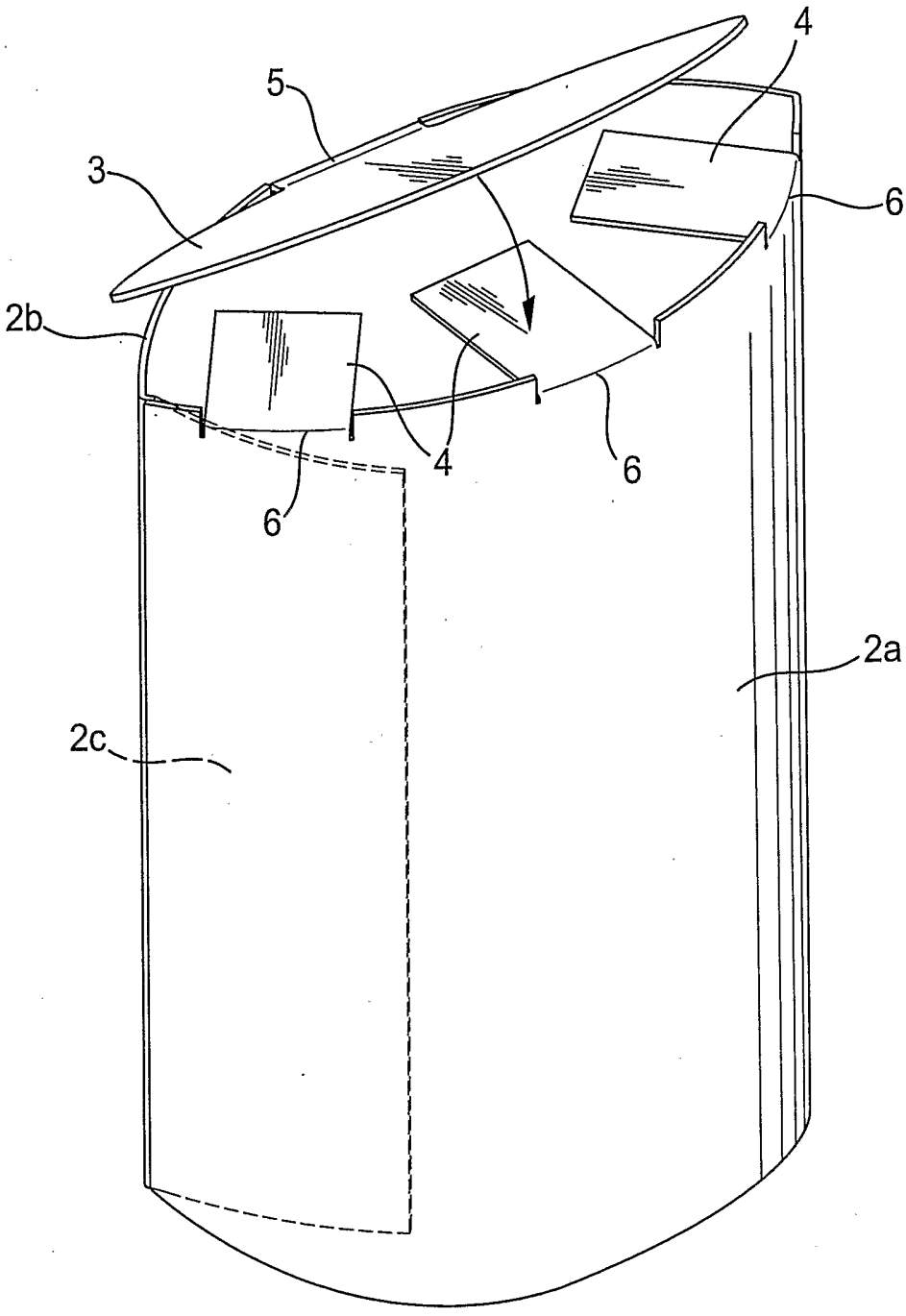
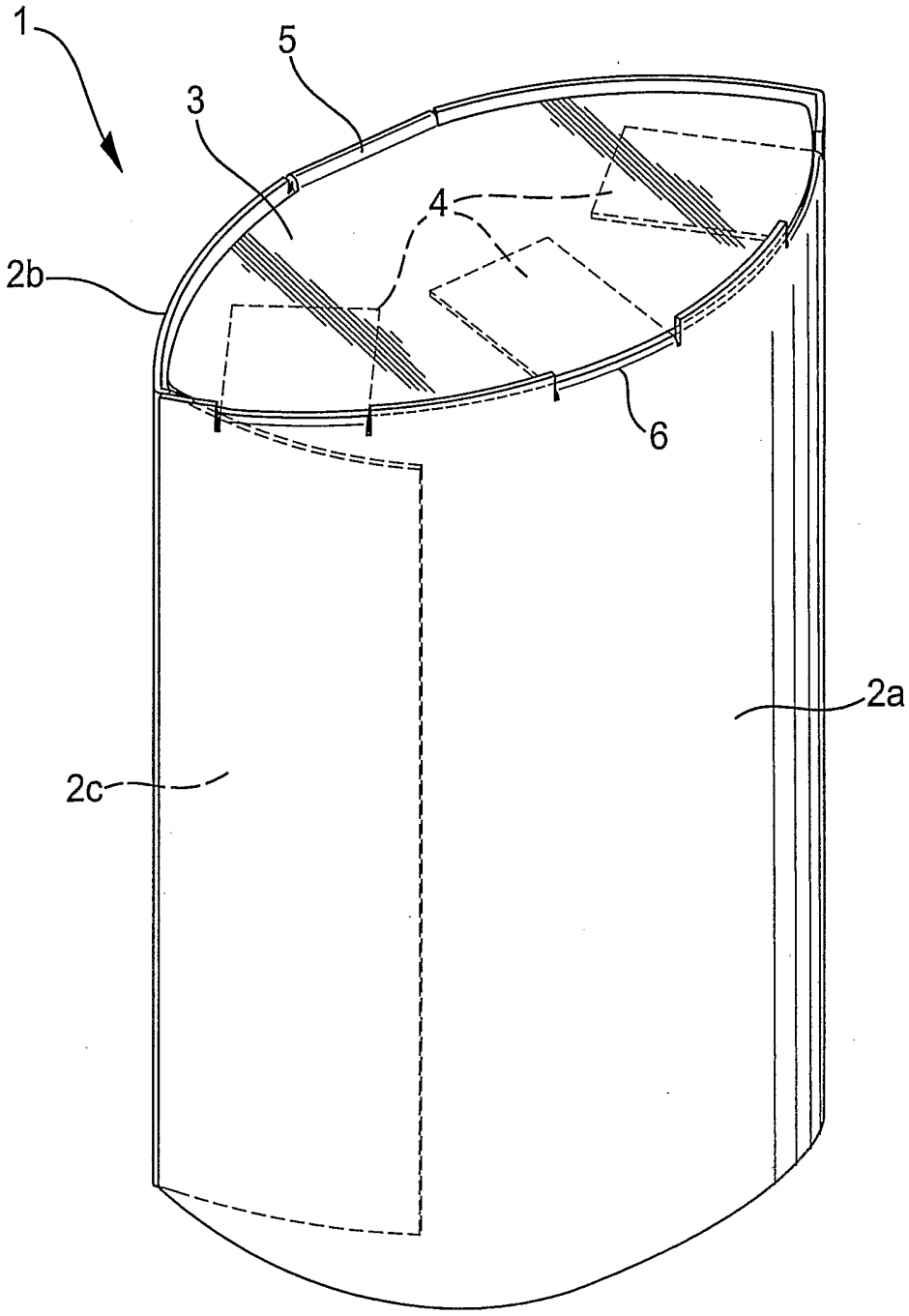


Fig: 5



# INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/000547

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D5/02

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)
B65D

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. |
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| X<br>Y | DE 77 10 912 U1 (HAMMER & CO KG VERPACKUNGSMITTEL)<br>14 July 1977 (1977-07-14)<br>the whole document | 1-4,6<br>5 |
| X | US 1 184 956 A (HOPPKE F)<br>30 May 1916 (1916-05-30)<br>the whole document | 1-3,5,6 |
| X | US 3 157 343 A (KENDALL OVID M)<br>17 November 1964 (1964-11-17)<br>the whole document | 1-3,6 |

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

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

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| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 3 May 2006 | 22/05/2006 |

| Name and mailing address of the ISA/ | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL – 2280 HV Rijswijk<br>Tel. (+31–70) 340–2040, Tx. 31 651 epo nl,<br>Fax: (+31–70) 340–3016 | Visentin, M |

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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Information on patent family members

International application No
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| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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