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European Patent Office
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(11) **EP 2 502 849 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
26.09.2012 Bulletin 2012/39

(51) Int Cl.:
B65D 75/58 *(2006.01)* ***B65D 81/32*** *(2006.01)*

(21) Application number: **11159669.8**

(22) Date of filing: **24.03.2011**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

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(54) **Multi-chamber, individually accessible pouch for content dispensing**

(57) A multi-chamber pouch (10,12,14,16,18,20) for dispensing "wet", or "dry" product content, identical or different in nature, from individual ones of sealed chambers of the pouch (10,12,14,16,18,20) through tear-open or nozzle accessible intercouplings.

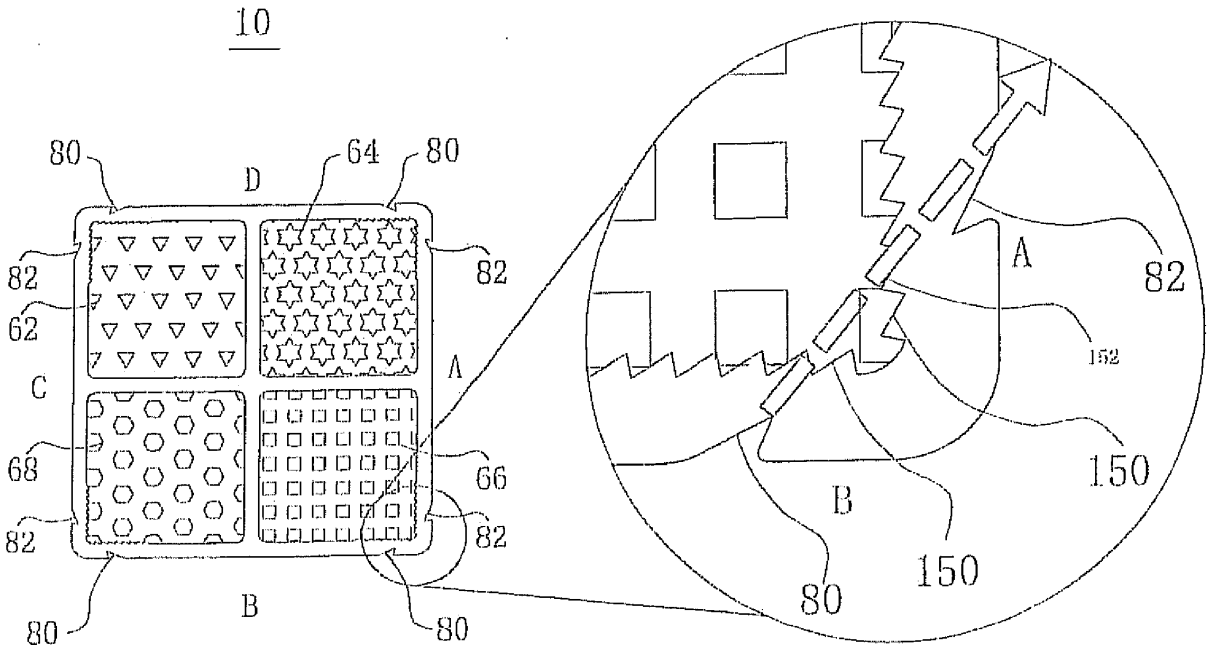

FIG. 2

FIG. 2a

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Description

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

[0001] This invention relates to disposable pouches used as dispensers for wet and dry product contents, in general, and to such disposable pouches for dispensing individual ones of a plurality of products from a multi-chamber pouch, in particular.

DESCRIPTION OF THE RELATED ART

[0002] Disposable, flexible plastic pouches are available to dispense dry or wet product contents such as in ketchup and mustard disposable dispensers employed by take-out food restaurants, in disposable one-dosage dispenser for pharmaceutical companies to distribute medications such as pills, liquid vitamins or ointments, and in dispensers used for delivering beverages as individual servings of juice-type drinks. In those instances, the user opens the dispenser by splitting, cutting or puncturing them -- and in the case of the beverage dispensers, oftentimes employs a straw to carefully pierce the packaging at a predefined location.

[0003] As will become clear from the following description, the present invention is of a multi-chamber pouch of two, three or four chambers -- individual ones of which contain their own product content, and each one of which is individually accessible to obtain the product therein since each chamber is sealed off from the other. As will be readily appreciated by those skilled in the art, the product contents of each chamber may be "dry" for use in the cosmetic industry (with different color foundations, for example, in each chamber), or "wet" for the liquid or flowable candy industry (where the product content can be sucked or squeezed out).

SUMMARY OF THE INVENTION

[0004] In this respect, the invention is of a multi-chamber pouch for dispensing such product contents from any one chamber individually, with each chamber of the pouch including a multi-layered front panel having an outer layer and a heat sealable inner layer, along with a multi-layered back panel also having an outer layer and a heat-sealable inner layer. A dry, liquid or flowable product content is included between the front and back panels, to which access is had from a point outside the chamber. With each chamber being sealed off from every other chamber, and with the heat-sealable inner layers of the front and back panel of each chamber being of substantially the same plastic composition, a tear line in the chamber enclosing the "dry" product content serves as a manner of dispensing the product content to a point on the multi-chamber pouch dedicated to that one chamber as by splitting or cutting, or simply tearing along the dedicated line. For the "wet" liquid or flowable product content to be dispensed, on the other hand, the access can be had by a similar tear line of that chamber, or by a crimping nozzle of the multi-chamber pouch dedicated to the individual chamber's product content -- as with a flowable candy.

[0005] In accordance with a preferred embodiment of the invention, a moisture barrier is included between the inner and outer layers of both the front panel and back panel to increase shelf life, with the central layer of the front panel layer being of a nylon composition and with the central layer of the back panel being of an aluminum foil -- thus enabling the product content to be viewable. With each chamber, the inner layers of both its front panel and its back panel is fabricated of the same plastic composition -- preferably polyethylene. Depending upon ultimate marketing decisions and use, the product contents of each chamber of the two, three or four multi-chamber pouch could be of the "identical" product content, or of "different" product contents.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] These and other features of the invention will be more clearly understood from a consideration of the following description, taken in connection with the accompanying drawings, in which:

FIGURE 1 is an illustration of a preferred construction of each of the multi-layered chambers of the multi-chamber pouch;

FIGURES 2-7 and 9 illustrate sample embodiments of the multi-chamber pouch constructed in accordance with the invention; and

FIGURES 2a, 3a, 4a and 8a are helpful in an understanding of the construction of the tear line manner of opening the individual chambers of FIGURES 2, 3, 4 and 8 respectively.

DETAILED DESCRIPTION OF THE INVENTION

[0007] FIGURES 2, 3 and 4 illustrate 4-chamber, 3-chamber and 2-chamber types of tearable or rip-open pouches 10, 12, 14 constructed according to the invention. FIGURES 5-7, on the other hand, show types of 4-chamber, 3-chamber and 2-chamber nozzle access pouches 16, 18, 20, also according to the invention. As will be appreciated, pouches 10, 12, 14 are useful for dispensing "dry" product content, and flowable candy content product, while pouches 16, 18, 20 are particularly suited for dispensing liquid product content.

[0008] In FIGURE 5, four nozzles 22, 24, 26, 28 are illustrated, of conventional design, to individually and uniquely co-join with the product contents in their individual chambers. For purposes of simplification, and for illustration only, the product contents in each of its chambers 30, 32, 34 and 36 are indicated as being of a "different" liquid flavor. With the chambers 38, 40 and 42 of

FIGURE 6, individual access is illustrated by the nozzles 44, 46 and 48 of that 3-chamber pouch -- where for purposes of illustration, the liquid product content in the chambers 38, 40 and 42 are each indicated as being identical. In the more unusual arrangement of the pouch of FIGURE 7, furthermore, the nozzles 50, 52 and 54 respectively couple to access the individual chambers 56, 58 and 60 of its 3-chamber configuration, indicating two flavor liquids (for example, in chambers 58 and 60) as being "identical" and one flavor liquid (in chamber 56) as being "different". Any one of the chambers of FIGURES 5, 6 and 7 can be accessed through the use of a crimping nozzle sufficient to break a seal into its respective chamber, or to let it just flow therefrom as by a conventional sucking into a user's mouth. Essentially, a conduit is formed between the front and back panels to the dedicated crimping nozzle on the one hand, or to the exiting point on the other hand.

[0009] The 4-chamber rip-open pouch of FIGURE 2 is illustrated as being of different "dry", or "wet" flowable and squeezable product contents in individual ones of its chambers 62, 64, 66 and 68, while the 3-chamber rip openable pouch of FIGURE 3 is illustrated as having product content in each of its chambers 70, 72 and 74 of identical "dry" or "wet" flowable product content. The 2-chamber pouch of FIGURE 4 indicates each of its chambers 76, 78 as having different product content to be dispensed therefrom. As will be more particularly described below, the rip-open characteristic of each of the chambers 62-68, of 70-74 and of 76-78 compose individual pairs of tear points. In the 4-chamber pouch of FIGURE 2, the tear points are indicated at 80, 82 for each of the four chambers, commencing at the sides A, B, C, D of the pouch as noted. In the 3-chamber pouch of FIGURE 3, on the other hand, the respective tear point pairs 80, 82 are adjacent to one another, as they are in the 2-chamber pairs of FIGURES 4 and 9. As will become clear from the following description, the tear line 152 when ripping open each individual one of the chambers 62-68, 70-74 and 76-78 of FIGURES 2, 3 and 4, as shown, will be between each tear point of the respective chamber.

[0010] Each chamber construction of the multi-chamber pouch of the invention is shown by the illustration of FIGURE 1. Multi-layer front and back panels 100 and 120 are shown. The front panel 100 includes an outer layer 102, a center layer 104 and an inner layer 106. The back panel 120 similarly is composed of an outer layer 108, a center layer 110 and an inner layer 112. Laminated together, the front and back panels 100 and 120 can be fabricated of the same compositional layers as each other, or can have different center layers 104, 110which can either be aluminum foil, nylon, or even paper. The center layers 104 and 110 serve as a moisture barrier layer, such that with the center layer of nylon, for example, a user would be able to see the product content inside the chamber either through its front side or back side. With the center layers 104 and 110 both composed of paper or aluminum foil, on the other hand, the moisture barrier protection and strength they each provide to the chamber carries the disadvantage of preventing the consumer from seeing exactly what product is inside the chamber. With the nylon center layer as 104 in the front panel 100, and with an aluminum foil center layer 110 in the back panel 120 of the chamber, the center layers not only add strength to the chamber, provide it with moisture barrier protection, and extend its shelf life, but they better serve to reflect to a prospective purchaser the color of the product content of the chamber.

[0011] To facilitate the sealing of each chamber and to separate one chamber from another, the inner layer 106 of the front panel 100 and the inner layer 112 of the back panel 120 are fabricated of the same plastic composition so that they are able to seal to one another. The outer layers 102 and 108 of the front panel 100 and back panel 120, respectively, can be fabricated of different plastic compositions -- although in a preferred embodiment of the invention, the outer layers 102 and 108 are of the same composition, equal to that of the polyethylene inner layers 106 and 112. Between the front panel 100 and the back panel 120, the product content of each chamber is added and then sealed -- be it in the nature of dry cosmetics, liquids or flowable, squeezable candy.

[0012] FIGURES 2a, 3a, 4a and 8a illustrate by circular magnification an internal zigzag-tooth configuration for individually ripping open any of the chambers of the multi-chamber pouches of FIGURES 2, 3, 4 and 8. For purposes of understanding, FIGURE 8a, for example, repeats the 4-chamber rip pouch of FIGURE 2, with its tear points 80, 82 at its respective sides A, B, C, D. In particular, the zigzag-tooth pattern is shown at 150 through each of the layers 102-112, from one of the tear points (as at 80 in side B), to beyond the adjacent tear point (as at 82 in side A). Such zigzag configuration will be understood to be created in the sealing mode which creates all of the sealed edges of the chambers and pouch, being skewed in the direction of the oncoming tear, from the other tear point. Tearing upwardly from the tear point 80 towards the tear point 82 in the chamber 66 will be seen to guide the tear across the corner of the chamber into the teeth of the zigzag area at the side A in providing a clean tear 152 between either of the two points of each chamber in allowing the corner to be completely removed from that particular chamber -- as more emphatically shown in FIGURE 4a. This enables comfortable access to the contents of the chamber as compared to that typifying prior act splitting and cutting of dispensers of other product contents where pulling off a section of a dispenser frequently results in its contents spraying out in all directions when attempting to squeeze the dispenser to split it open. As will be appreciated, that problem also existed where a crimping nozzle was employed to puncture a dispenser at a particular spot, at which time the application of a sufficient force to split the opening also gave rise to an inadvertent spilling and spraying. With the zigzag feature of the invention, however, the corner is completely removed whether the ripping be upwards

along the tear line 152 of FIGURE 8 in accessing the contents of the chamber 66, or downwardly by ripping along a tear line extending between tear points 80 and 82 to access the contents of the chamber 62 (as in the downward tear of FIGURE 4a). Such zigzagging teeth will be understood to be part of a continuation of V-type cuts, each about 1" long or more, as a fine tooth forming the seal line, extending from ahead of the tear point 80 to beyond the tear point 82.

[0013] While there has been described what are considered to be preferred embodiments of the present invention, it will be readily appreciated that modifications can be made by those skilled in the art without departing from the scope of the teachings herein of providing consumers a variety of product content selections in a multi-chamber pouch, whether the product selections be of a "dry" content, a "wet" or liquid content, or a flowable, squeezable content. Particularly useful with liquid or flowable candy between the front and back panels of the individual chambers, the product content selected will, of course, follow from the intended use of the multi-chamber pouch.

[0014] Thus, in accordance with the teachings of the invention, different chambers of each pouch could be created with different capacities in a manner particularly desirable for the choice of different medications or cosmetics. For example, in the 2-chamber pouch of FIGURE 9, the pouch on the left of the drawing could be designed with a capacity to hold 20 grams of product, while the chamber on the right could be designed to have a capacity of 15 grams of product. And, in like manner, for the chambers of FIGURE 9, as well as for the chambers of the pouches in each of FIGURES 1-8, different mix products could be included in each pouch -- for example, by mixing "wet" and "dry" products in the different chambers. In such manner, a 3-chamber pouch, could have two chambers with "wet" product and one chamber with "dry" product. As with all the chambers of all the FIGURES, access to any one chamber could be had individually, leaving the remaining chambers intact, for later content dispensing.

[0015] For at least such reasons, therefore, resort should be had to the claims appended hereto for a true understanding of the invention.

Claims

1. A multi-chamber pouch for dispensing product contents from any one chamber individually, each chamber including:

a multi-layered front panel having an outer layer and a heat-sealable inner layer;
a multi-layered back panel having an outer layer and a heat-sealable inner layer;
a product content to be selectively dispensed between said front panel inner and said back panel inner layer;
and means for accessing the product content from between said inner layers from a point outside the chamber;
with each chamber being sealable off from every other chamber in the pouch;
and with the heat-sealable inner layers of the front and back panel of each chamber being of substantially the same plastic composition.

2. The multi-chamber pouch of Claim 1, with each chamber including a liquid or flowable candy product to be dispensed and with said means for accessing the liquid or flowable candy product from between said inner layers being from a point outside the chamber.

3. The multi-chamber pouch of Claim 2 wherein each individual chamber includes identical liquid or flowable candy content product between the inner layers of said front and back panels.

4. The multi-chamber pouch of Claim 2 wherein each individual chamber includes different liquid or flowable candy content product between the inner layers of said front and back panels.

5. The multi-chamber pouch of Claim 2 wherein the front panel and back panel of each chamber are composed of three laminated layers each.

6. The multi-chamber pouch of Claim 5 wherein the front panel of each chamber includes a moisture barrier center layer sealed between the inner and outer layers thereof.

7. The multi-chamber pouch of Claim 5 wherein the back panel of each chamber includes a moisture barrier center layer sealed between the inner and outer layers thereof.

8. The multi-chamber pouch of Claim 4 wherein the heat-sealable inner layer of the multi-layer front panel and the heat-sealable inner layer of the multi-layer back panel of each chamber are composed of polyethylene.

9. The multi-chamber pouch of Claim 2 wherein said means for accessing the liquid or flowable candy of each chamber includes a conduit coupled from between the front panel and back panel of the chamber to a crimping nozzle of the multi-chamber pouch dedicated to that individual chamber's product content.

10. The multi-chamber pouch of Claim 1 wherein said means for accessing the product content of each chamber from between the front panel and the back panel of the chamber includes a tear line extending

from a first tear point between the front panel and back panel of the chamber to a second tear point of the multi-chamber pouch dedicated to that individual chamber's product content.

11. The multi-chamber pouch of Claim 10 wherein the tear line cuts across zigzag teeth included on the front and back panels of each chamber extending from ahead of, to beyond, said first and second tear points.

12. A multi-chamber pouch for dispensing product contents from any one chamber individually, each chamber including:

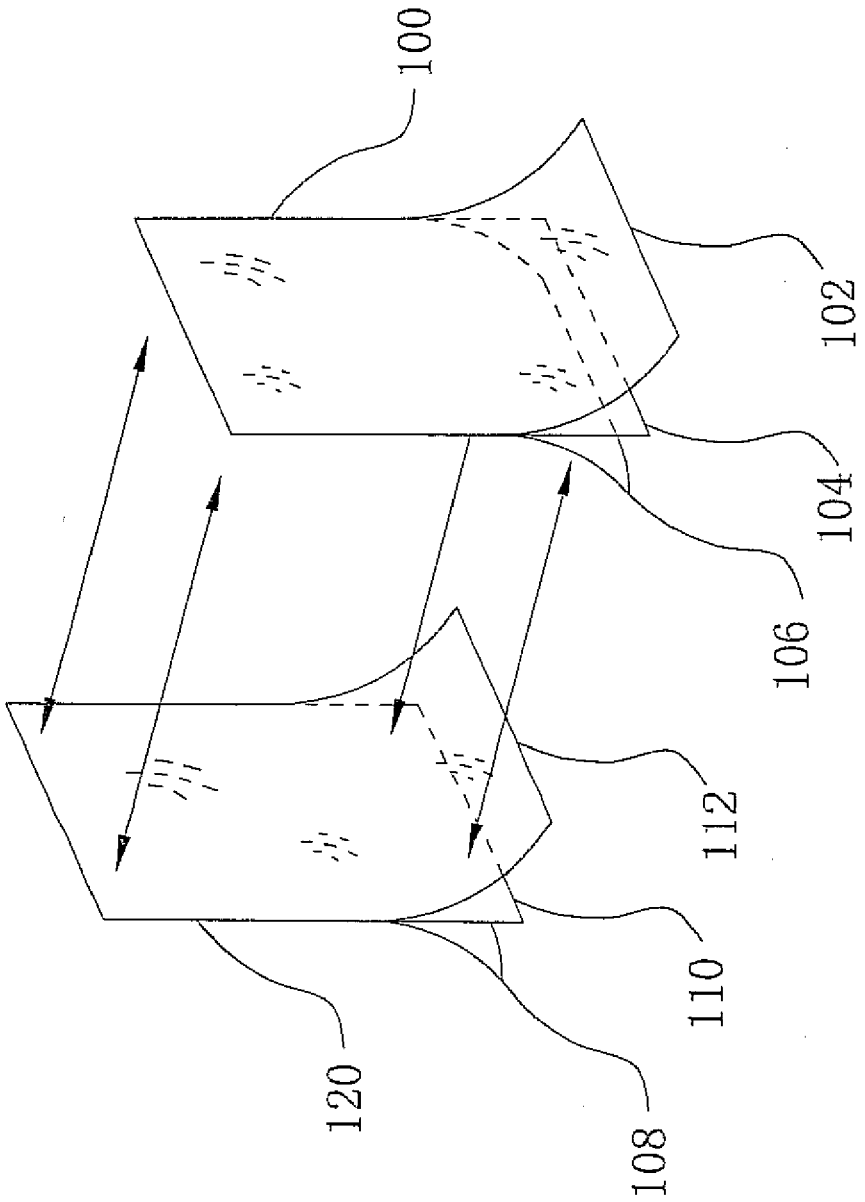
a multi-layered front panel having an outer layer of polyethylene, a central layer of nylon, and an inner layer of polyethylene;
a multi-layered back panel having an outer layer of polyethylene, a central layer of aluminum foil, and an inner layer of polyethylene;
a liquid or flowable candy between the inner layers of each of said front and back panels;
and means for accessing the liquid or flowable candy from a point outside the chamber;
with each chamber being sealable off from every other chamber;
and with the multi-chamber pouch being comprised of two, three or four such chambers, respectively.

13. The multi-chamber pouch of Claim 12 wherein said means for accessing the liquid or flowable candy of each chamber includes a conduit from between the front panel and back panel of each chamber to a crimping nozzle of the multi-chamber pouch dedicated to that individual chamber's liquid or flowable candy product content.

14. The multi-chamber pouch of Claim 11 wherein said means for accessing the liquid or flowable candy of each chamber includes a tear line extending from a first tear point between the front panel and back panel of each chamber to a second tear point of the multi-chamber pouch dedicated to that individual chamber's liquid or flowable candy product content.

15. The multi-chamber pouch of Claim 1 wherein each chamber includes a predetermined "wet" or "dry" product for dispensing the same, as or different from the product to be dispensed from every other chamber of the pouch.

FIG. 1



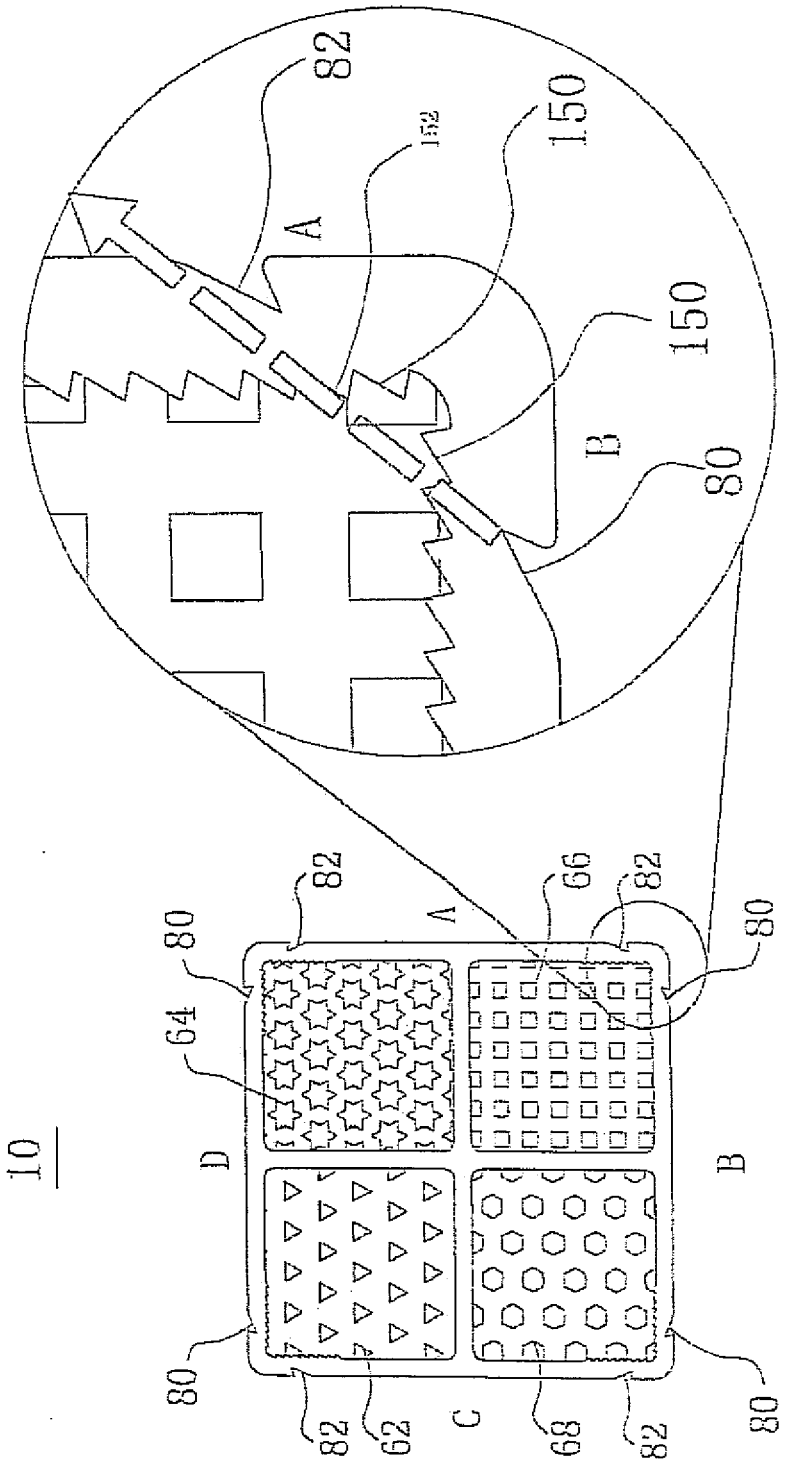


FIG. 2a

FIG. 2

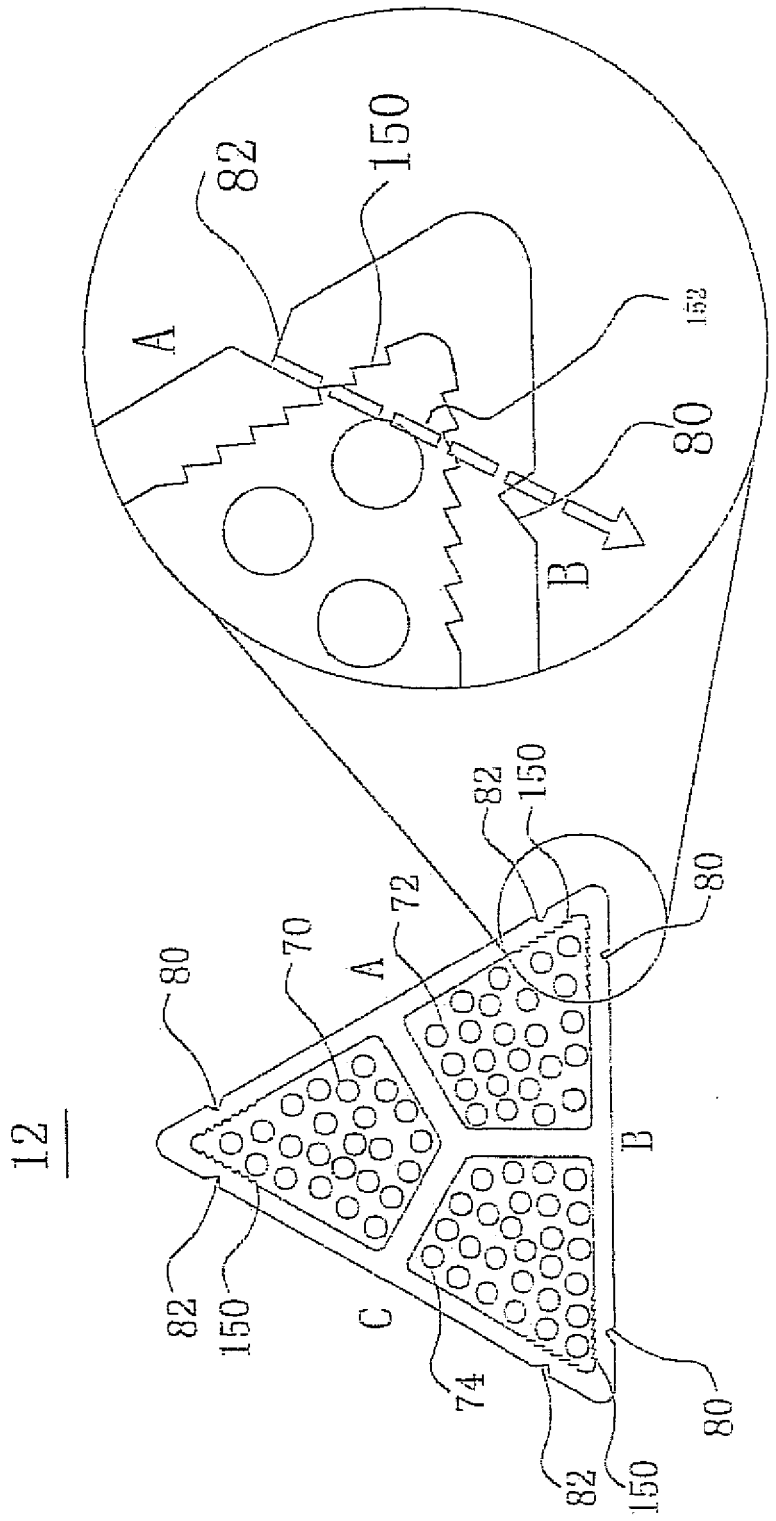


FIG. 3

FIG. 3a

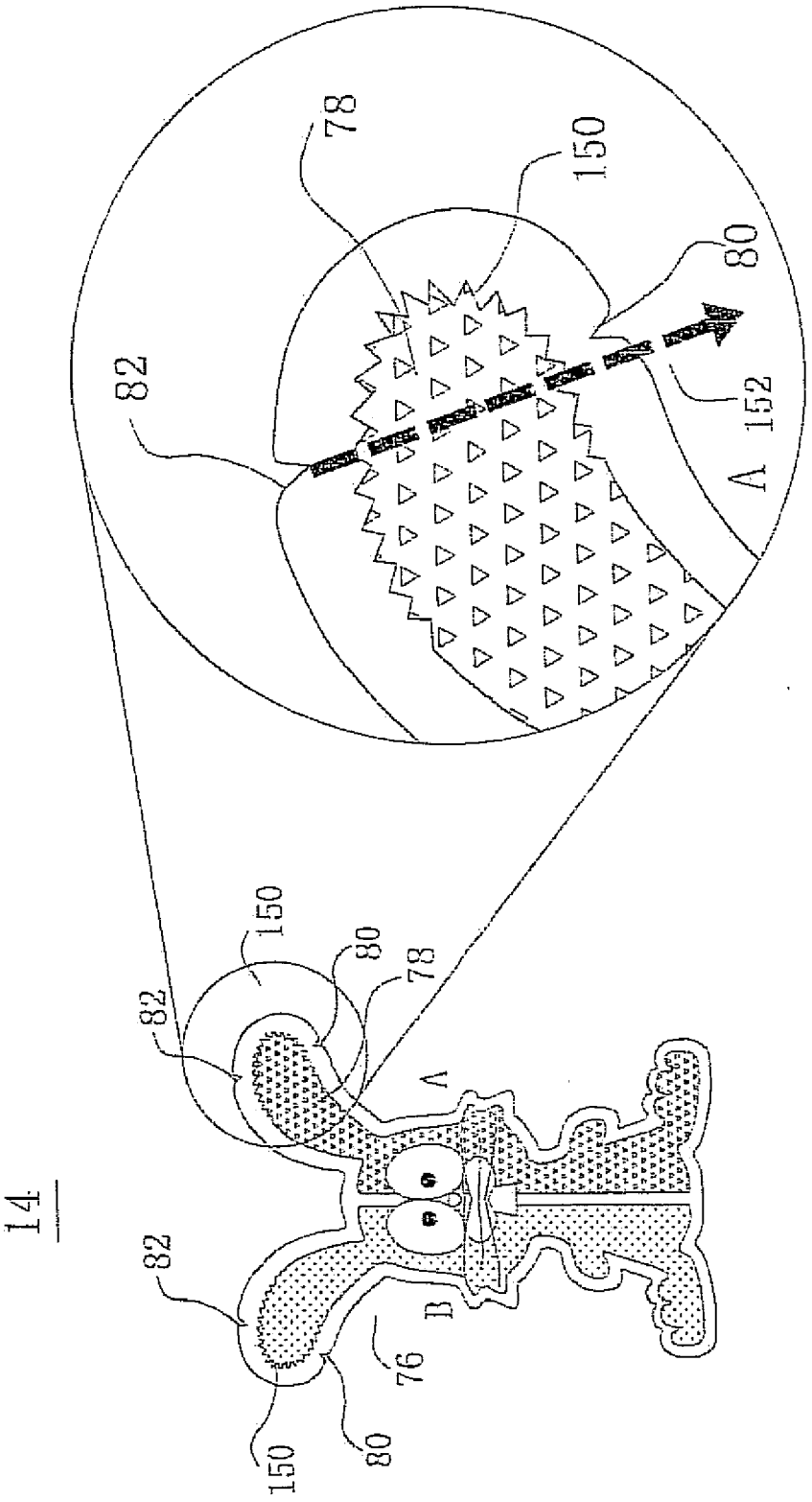


FIG. 4

FIG. 4a

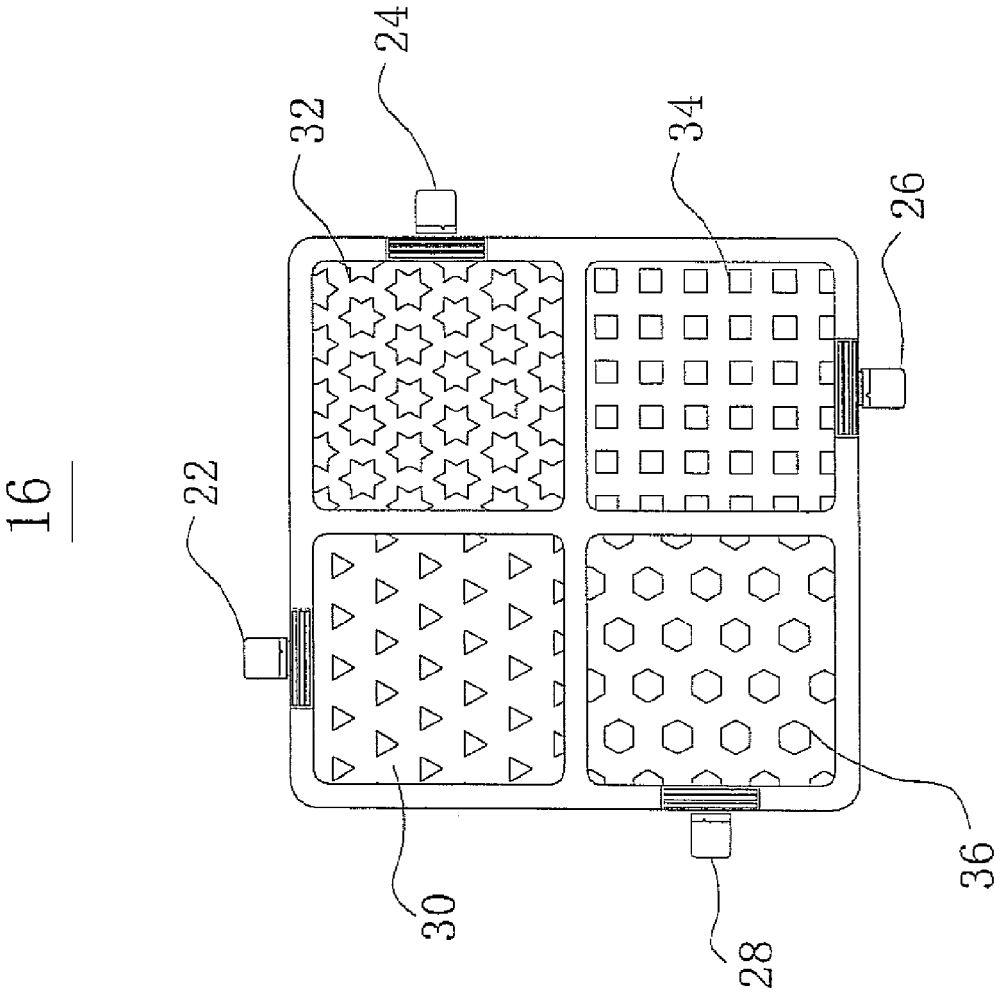


FIG. 5

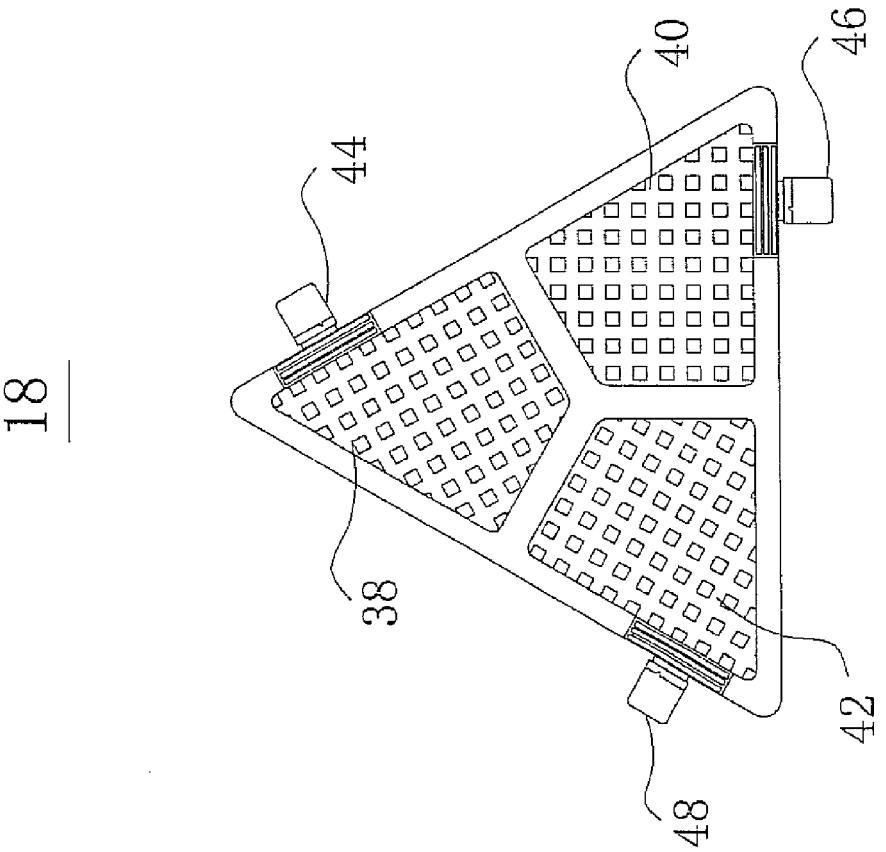


FIG. 6

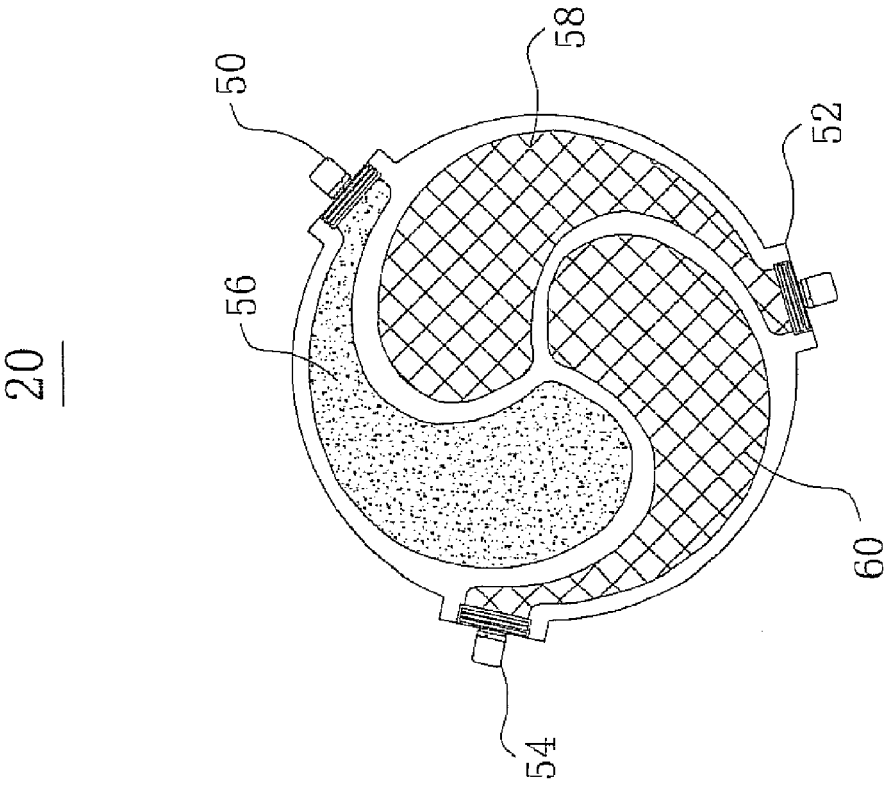


FIG. 7

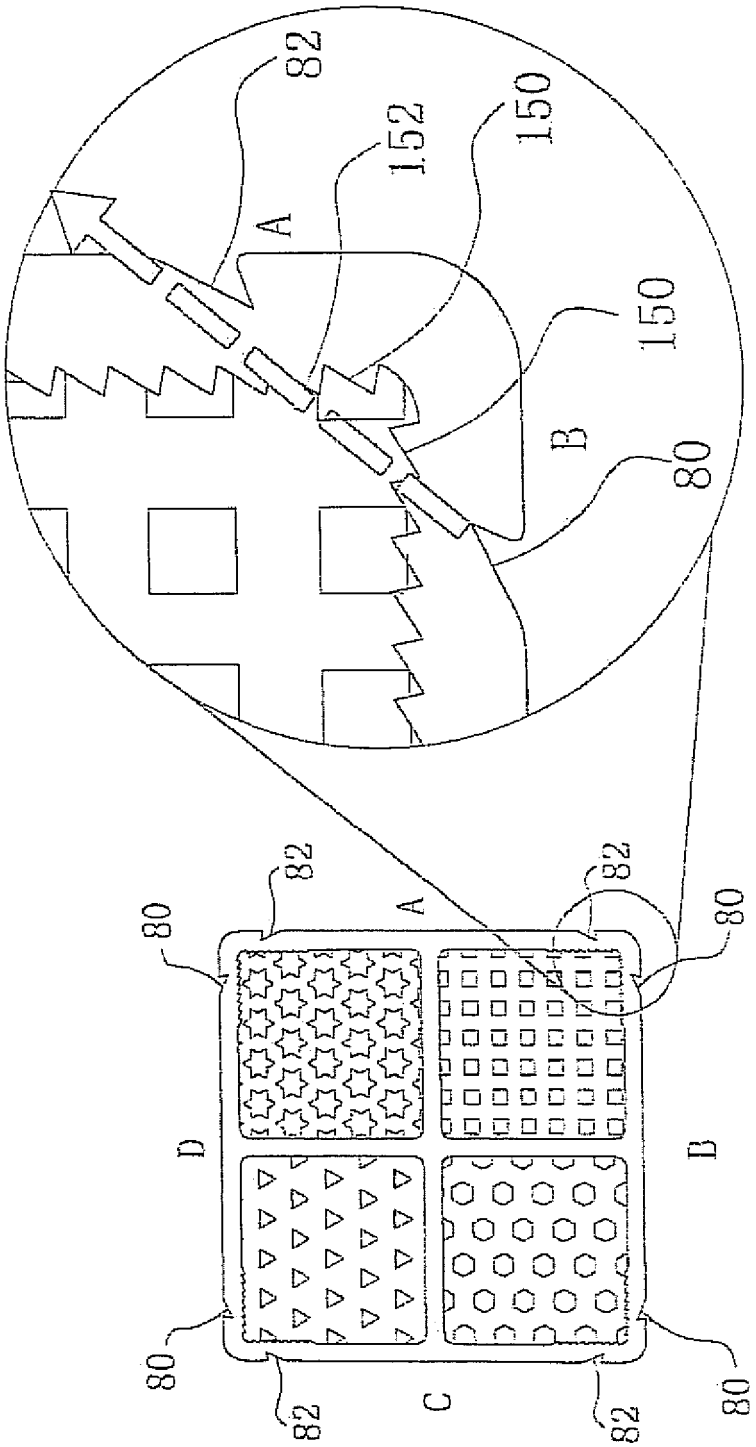


FIG. 8a

FIG. 8

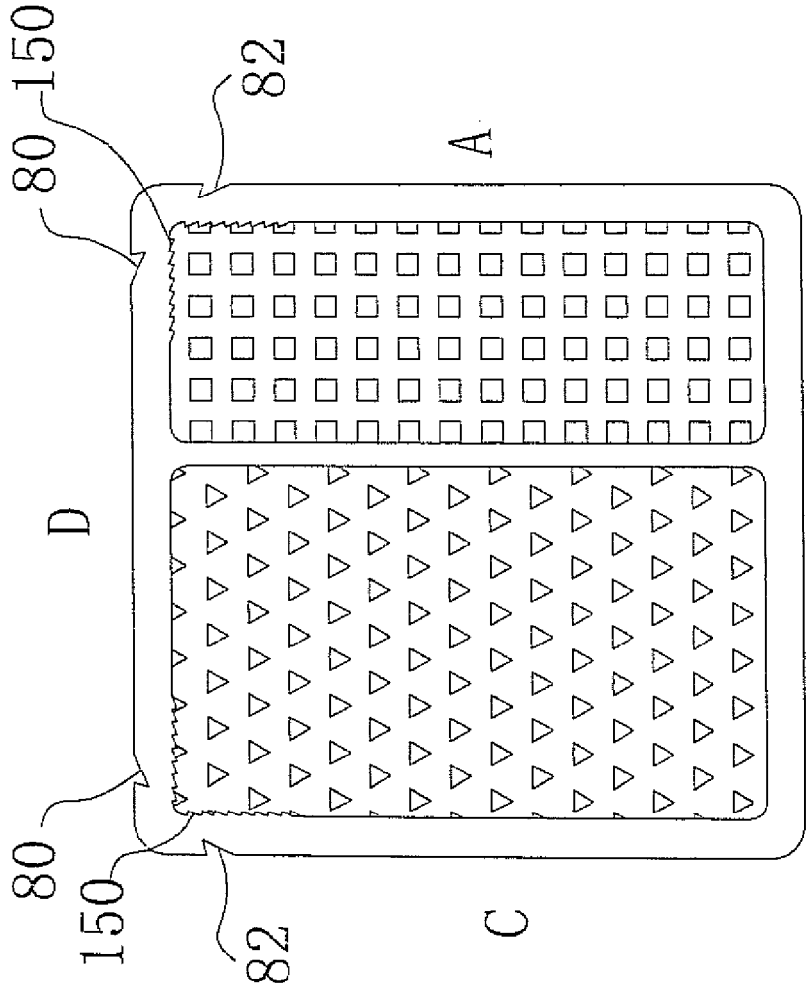


FIG. 9

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EUROPEAN SEARCH REPORT

Application Number
EP 11 15 9669

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 2 760 436 A1 (OREAL [FR]) 11 September 1998 (1998-09-11) * abstract; figures 1,2,3A-3B * * page 6, paragraph 2 - page 12, paragraph 1 * -----	1-15	INV. B65D75/58 B65D81/32
X	US 2 791 324 A (DOW KNOOP HERBERT ET AL) 7 May 1957 (1957-05-07) * column 1, line 55 - column 3, paragraph 2; figures 1,4,6 * -----	1,10,15	
A	EP 1 669 303 A1 (AJINOMOTO KK [JP]) 14 June 2006 (2006-06-14) * abstract; figures 1,2 * * paragraph [0016] - paragraph [0040] * -----	1-15	
A	GB 2 350 102 A (PEPSICO INC [US]) 22 November 2000 (2000-11-22) * abstract; figures 1,2,5,6 * * page 6, line 11 - page 13, paragraph 2 * -----	1-15	
A	US 2005/194060 A1 (HOUWAERT VINCENT [BE] ET AL) 8 September 2005 (2005-09-08) * paragraph [0054] - paragraph [0095]; figures 1-4 * -----	1-15	TECHNICAL FIELDS SEARCHED (IPC) B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	19 July 2011	Segerer, Heiko

CATEGORY OF CITED DOCUMENTS

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19-07-2011

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2760436 A1	11-09-1998	NONE	
US 2791324 A	07-05-1957	NONE	
EP 1669303 A1	14-06-2006	AT 441595 T	15-09-2009
		ES 2329045 T3	20-11-2009
		WO 2005030601 A1	07-04-2005
		US 2006177162 A1	10-08-2006
GB 2350102 A	22-11-2000	CA 2295399 A1	21-11-2000
		US 2002063140 A1	30-05-2002
US 2005194060 A1	08-09-2005	AR 051060 A1	20-12-2006
		AU 2005219419 A1	15-09-2005
		BR PI0508418 A	24-07-2007
		CA 2555042 A1	15-09-2005
		CN 1925825 A	07-03-2007
		CN 101869532 A	27-10-2010
		EP 1725207 A1	29-11-2006
		JP 2007526090 A	13-09-2007
		KR 20070001988 A	04-01-2007
		US 2007144923 A1	28-06-2007
		WO 2005084607 A1	15-09-2005

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