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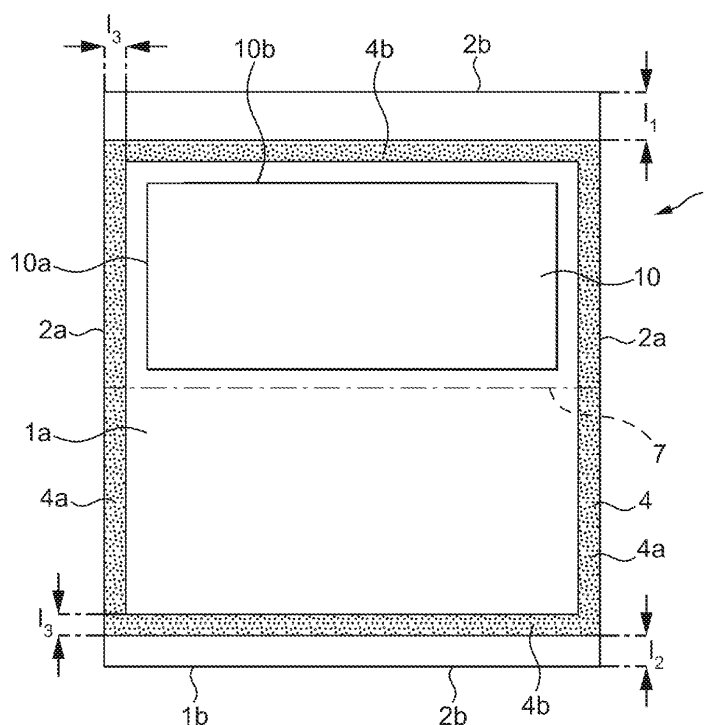
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(54) **Easy opening packaging for food products**

(57) The present invention proposes a packaging (1) for a food product (10), said packaging (1) being of a flexible material and having a substantially rectangular shape, the packaging (1) being folded around the food

product (10) and being sealed on at least three side portions (L1,B1,B2) of the packaging (1), wherein a longitudinal sealed side portion (L1) of the packaging (1) extends two free adjacent flap portions (5a,5b) extending freely from the sealed portion (2b).



**FIG. 1**

## Description

### Field of the Invention

[0001] The present invention relates to a packaging for a food product and particularly for performance bars as well as performance bars enclosed in such a packaging. Energy bars or protein bars are considered illustrative representatives of such performance bars.

### Background of the invention

[0002] Packages for food products are well known from the prior art and primarily serve the purpose of conserving the freshness and taste of the packed product. Therefore, the packages are often sealed and thus impermeable to moisture and gas.

[0003] An additional purpose of the package is to provide consumer information such as the name of the product and the contained ingredients thereof.

[0004] Such food products can be wrapped by means of flow wrapping as described in WO 2006/100084 A1 such that a longitudinal sealing seam and two transversal sealing seams can be provided at the side portions of the product to effectively seal the packaging. Thereby, two peripheral strips which have different widths are folded on top of each other on the external side of the packaging. The folded strips are then adhered to the external side of the packaging by means of a cold-bonding agent.

[0005] EP 1 288 139 A1 relates to a package for generally block-shaped food products, wherein one of the side portions of the packaging comprises two flap portions formed at a backside of the food product which are free of adhesive. According to this embodiment, accessibility of the food product is enhanced.

[0006] The invention particularly deals with the field of performance bars. Performance bars (such as e.g. energy bars, protein bars etc.) are meant to be consumed in completely different conditions than e.g. chocolate bars. Performance bars are often consumed during training or competitions. Thus the packaging thereof has to be opened with wet or sweaty hands, during running, during cycling etc. Thus the packaging sometimes has to be opened with a single hand and/or using the mouth (lips, teeth,...).

[0007] On the other hand, the rapid flow-wrapping process somewhat stands in contradiction to an easy opening mechanism.

[0008] Therefore, opening means for the packaging of such a food product are sought-after which further enhance the accessibility of the product and enable an intuitive opening of the packaging.

[0009] Moreover, the present invention aims at providing a bigger surface for consumer information at a front or rear side of the packaging.

[0010] Preferably the opening of the packaging should maintain the packaging as one coherent piece in order to avoid littering of smaller pieces of the packaging.

[0011] The present invention seeks to address the above-described problems. The invention also aims at other objects and particularly the solution of other problems as will appear in the rest of the present description.

### Object and summary of the invention

[0012] In a first aspect, the invention proposes a packaging for a food product such as e.g. a performance bar. The packaging is made from a flexible material. The packaging is folded around the food product at one side and sealed on the remaining side portions of the packaging. Thereby two adjacent flap portions extend at at least one of the side portions of the packaging. The flap portions are connected at their end adjacent to the associated sealed side portion. The flap portions extend freely and linearly thereof essentially in the main plane of the food product. Thus the flap portions are essentially not folded. Moreover, the lateral side portions of the packaging are not sealed to their full length such that the flap portions (5a,5b) are not joined together at said lateral side portions (B1,B2).

[0013] Accordingly, since the flap portions extend linearly away the main surfaces of the packaging, the communication area provided at the front and rear surface of the packaging is enlarged.

[0014] With a sealed package according to the present invention, a food product can be effectively protected against environmental influences such as humidity or gas in order to enable a long stability upon storage of the food product. Moreover, the opening characteristic of the packaging is enhanced due to the two free flap portions protruding from the longitudinal sealed side portion of the packaging. Hence, a consumer may easily open the packaging by tearing apart the two free adjacent flap portions.

[0015] The packaging material is preferably made from plastics, paper or metal foil or compound foils thereof known in the field of packaging of food products.

[0016] It should be understood that the free adjacent flap portions are preferably provided at one of the longitudinal side portions of the packaging. However, the free flap portions may as well be provided at any edge portion of the food product to enhance accessibility thereof.

[0017] In a preferred embodiment, the flap portions are preferably protruding from the side portion of the packaging to different extents. Thus, an intuitive opening of the packaging is enabled since the two overlapping flap portions effectively suggest the opening mechanism of the packaging to a consumer.

[0018] In a preferred embodiment, the flap portion which protrudes to a greater extent from the side portion of the packaging is located at a rear surface of the packaging. Thus, the opening mechanism is indicated to a customer looking at the front surface of the food product, since both overlapping flap portions are visible.

[0019] In a preferred embodiment, the sealing portions formed at the side portions adjacent to the side portions

which extends two free adjacent flap portions are designed such that they do not extend over the flap portions. Hence, the flap portions are freely moveable with respect to each other along their whole width. Accordingly, a consumer may tear apart the flap portions at any position along the side portion of the packaging at which the flap portions are located.

**[0020]** The two adjacent flap portions preferably comprise grip enhancing elements provided at an inner and/or outer surface of the flap portions. Accordingly, the handling of the flap portions is improved such that the flap portions can be grabbed and torn apart in order to open the packaging. Thereby, the grip elements may be formed as an integral part of the flap portions of the packaging. In addition, the grip elements may be additional means connected to the flap portions of the packaging.

**[0021]** In a preferred embodiment, the grip elements comprise a surface modulation such as e.g. a pattern of embossments. Moreover, the grip elements may comprise a pattern of holes or apertures. Furthermore, the grip elements may be any other physical or chemical means, added or present as an integral part of the flap portions, increasing the friction between the two flap portions such that the flap portions are prevented from sticking to one another. Thereby, grip elements may be designed equal or different for each of the two adjacent flap portions. Grip elements may be present on one or both flap portions.

**[0022]** According to this, an attraction between the two flap portions such as an electrostatic attraction or an attraction due to moisture present between the flap portions can effectively be prevented. Thus, the easy opening of the packaging is maintained even if the packaging is subjected to environmental influences thereon such as moisture or electrostatic charge.

**[0023]** The grip elements may as well comprise material adhered onto the flap portions. Such a material may be for example a specific coating applied to the flap portions in order to further enhance the handling of the flap portions. The coating may be applied to one or both of the flap portions.

**[0024]** In a preferred embodiment, sealing of the packaging is obtained by a sealing film which is used on its own or added to other layers of packaging material. Thereby, the sealing film is preferably a heat-sealable peelable film comprising thermoplastic material such as polyolefin. Accordingly, at least to a portion of the packaging thermoplastic material is applied in order to enable a sealing of at least three side portions of the packaging.

**[0025]** In a preferred embodiment, the heat-sealable film is a co-extruded film. The co-extruded film comprises a bulk layer of relatively inexpensive resin material and a thinner peelable sealant layer. The bulk layer provides a cushioning effect when sealing and gives the film a body. This has the advantage that the thickness of the peelable film can be adjusted to meet the particular packaging needs. Moreover, the co-extruded film can then be laminated to other layers of the packaging material. Ac-

cordingly, the barrier and/or printing properties can be enhanced.

**[0026]** In general, the co-extruded heat-sealable film may be designed to enable an adhesive or cohesive peel thereof. Thereby, depending on the choice of the used resin materials, durability and barrier properties of the sealing are enhanced.

**[0027]** It should be understood that instead of a heat-sealable co-extruded peelable film, a heat-sealable coating or a cold seal adhesive e.g. on acrylic basis may be applied in order to enable effective sealing of the packaging.

**[0028]** When a user grabs the two free adjacent flap portions and tears them apart, the peelable film used for sealing the packaging is peeled off from one side of the packaging to be sealed by the film and thus, the packaging is opened without destroying the packaging material.

**[0029]** Moreover, additional reclosing means may be provided for enable a reclosing of the packaging. Accordingly, a user may open and thus, reclose the packaging. Thereby, the number of possible opening and reclosing operations depends on the strength and durability of said reclosing means.

It has been found that for products with an adhesive surface a re-closable effect can advantageously be obtained without reclosing means. The package can simply be re-closed due to the adhering between the product and the packaging material.

**[0030]** The packaging is preferably applied to the food product by means of flow-wrapping. Hence, fast and convenient packaging of the food product is obtained.

**[0031]** In a second aspect, the invention proposes a method for packing a food product by means of a packaging according to any of the preceding claims, said method comprising the steps of: placing the food product on an inner surface of the packaging; folding the packaging around a longitudinal edge of the food product to enclose the food product such that two overlapping flaps are formed at an opposite longitudinal edge of the food product, wherein the overlapping flaps protrude from said opposite longitudinal edge to different extents; and sealing side portions of the packaging such that the flaps formed at the longitudinal side portion of the packaging are sealed together at an axis parallel to a longitudinal edge of the food product and are freely movably with respect to each other.

**[0032]** Accordingly, it is possible to effectively wrap and seal a food product such that an enhanced opening mechanism is formed at a longitudinal side portion of the packaging.

**[0033]** Moreover, the method preferably comprises the step of sealing two opposite lateral side portions of the packaging at an axis parallel to a lateral edge of the food product such that flaps formed at the longitudinal edge of the food product are not joined together. Thus, the two adjacent flap portions formed at a longitudinal side portion of the packaging are freely moveable with respect

to each other. Accordingly, a consumer may grab the two free flap portions and open the packaging by tearing the flap portions and thus the packaging material apart.

**[0034]** The flap portions preferably extend freely from 5 to 35 mm, more preferable from 10 to 30mm. If the free flap portions are of different length the difference. It is preferred that the difference in the free length extended is at least between 2 to 5mm.

**[0035]** It should be understood that the packaging and the method for packing according to the present invention are not limited to be applied to block-shaped food products but can be applied to any food product or food products of different shape such as energy bars, chocolate bars, cereals, powders, etc. Moreover, more than one food products may be packed within the packaging according to the present invention.

### Brief description of the drawings

**[0036]** Further features, advantages and objects of the present invention will become apparent for the skilled person when reading the following detailed description of embodiments of the present invention, when taking in conjunction with the figures of the enclosed drawings.

Fig. 1 shows a schematic top view of a preferred embodiment of the packaging according to the present invention before being folded and sealed.

Fig. 2 shows a schematic top view of a preferred embodiment of the packaging according to the present invention after being folded and sealed.

Fig. 3 shows a perspective side view of a preferred embodiment of the packaging according to the present invention, wherein the flap portions are separated by the fingers of a consumer.

Fig.4 shows a cross-sectional view of a packaged product according to the present invention.

### Detailed description of embodiments

**[0037]** As shown by figure 1 which relates to a schematic top view of a preferred embodiment of the packaging 1 according to the present invention before being folded and sealed, the packaging 1 is preferably rectangular shaped and comprises two opposite lateral edges 2a and two opposite longitudinal edges 2b. Thereby, the packaging 1 is preferably a flat foldable and flexible material. Preferably the packaging 1 does not have distinct side walls (in contrast to the packaging known from EP 1 288 139 A1).

**[0038]** Moreover, the packaging 1 comprises an inner surface 1a onto which a food product 10 is placed and an outer surface 1b. The outer surface 1b constitutes the front and rear surface 3a,3b (see figure 2) of the pack-

aging 1 when the packaging 1 has been folded and sealed. On top of the inner surface 1a, a food product 10 is placed. Preferably the food product 10 is a relatively flat rectangular (and not block-shaped) food product. Especially the rim portion of the food product may be flat - unlike the vertical side walls of chocolate bars). However, any other forms or designs of food products may be positioned within the packaging 1.

**[0039]** The food product 10 comprises two longitudinal edges 10b and two lateral edges 10a. Preferably, the food product 10 is arranged with one of its longitudinal edges 10b in parallel to a predefined fold line 7 of the packaging 1. Thereby, the fold line 7 is preferably located in parallel to longitudinal edges 2b of the packaging 1.

**[0040]** It should be understood that other food products of different shape, e.g. of round or triangular shape, may be positioned within the packaging 1. Thereby, an arrangement of a longitudinal edge 10b in parallel to fold line 7 is not necessarily required as long as the food product is small enough to be wrapped by the packaging 1.

**[0041]** Preferably, the fold line 7 is asymmetrically arranged with respect to the two longitudinal edges 2b of the packaging 1. Hence, when folding the packaging 1 about the fold line 7, one of the longitudinal edges 2b protrudes to a greater extent from the fold line 7 than the other longitudinal edge 2b (see figure 2).

**[0042]** As shown in figure 1, a sealing material 4 is applied to the inner surface 1a of the packaging 1. However, a frame of heat-sealable coating or a cold-seal adhesive may be applied to the packaging 1 as well.

**[0043]** The sealing frame 4 preferably comprises two parallel lateral side portions 4a and two parallel longitudinal side portions 4b. The lateral side portions 4a are preferably arranged in parallel to the lateral edges 2a of the packaging 1. As shown in figure 1, the lateral side portions 4a of the frame 4 are arranged directly at the lateral edges 2a such that the edges 2a are effectively sealed together in case the packaging 1 is folded about the fold line 7.

**[0044]** The longitudinal side portions 4b of the frame 4 are preferably located at a certain distance  $l_1$  respectively  $l_2$  from the longitudinal edges 2b of the packaging 1. The side portions 4a of the frame thus do not go all the way to the edge 2b of the packaging.

**[0045]** Moreover, the longitudinal side portions 4b of the frame 4 are preferably arranged in parallel to and at equal distance to the fold line 7. Hence, when the packaging 1 is folded about the fold line 7, the longitudinal side portions 4b of the frame 4 are made to overlap. Hence, effective sealing of the longitudinal side portions 2b of the packaging 1 is enabled.

**[0046]** Thereby, preferably only one half of the indicated sealing frame 4 in figure 1 which is separated to the other half by fold line 7 is applied to the packaging 1. Hence, by folding the packaging 1 about fold line 7, the sealing frame 4 is made to interact with the corresponding other half of the indicated frame 4. Accordingly, effective sealing of the packaging 1 is enabled.

**[0047]** Preferably, the sealing frame 4 is of equal width  $l_3$ . However, the longitudinal side portions 4b and the lateral side portions 4a may be of different width. Accordingly, the strength of the sealing can be adjusted to given needs for the lateral and longitudinal side portions 2a, 2b of the packaging 1.

**[0048]** Moreover, embossments (not shown) may be formed in the sealing 4 in order to enhance the sealing strength. The embossments are preferably formed by applying a pressure to the portions of the packaging during the sealing process.

**[0049]** Figure 2 relates to a schematic top view of a preferred embodiment of the packaging 1 according to the present invention after being folded and sealed. As can be seen in figure 2, the packaging 1 in its folded state comprises a front 3a and a rear surface 3b. The packaging further comprises four side portions L1, L2, B1, B2. The lateral side portions B1, B2 correspond to the lateral side portions 2a of the packaging 1. The longitudinal side portion L1 is formed by longitudinal side portions 2b and the opposite longitudinal side portion L2 corresponds to fold line 7. In its folded state, the packaging 1 is sealed at three side portions L1, B1, B2. Thereby, the longitudinal side portion L1 opposite to the fold line 7 extends two free adjacent flap portions 5a, 5b. The flap portions 5a, 5b are joined together by means of the longitudinal sealing frame portion 4b.

**[0050]** As can be seen in figure 2, the flap portions 5a, 5b are extending along the whole longitudinal side 2b of the packaging 1. Hence, a big grab area is provided for a consumer which intends to open the packaging 1.

**[0051]** Moreover, the lateral side portions B1, B2 are not sealed at their full length such that the flaps 5a, 5b are not joined together at the side portions B1, B2. Accordingly, the flap portions 5a, 5b are free to move with respect to each other along the whole longitudinal side portions L1. Thereby, the longitudinal sealing portion 4b constitutes a joint of the two flap portions 5a, 5b.

**[0052]** The longitudinal side portions 2b of the packaging 1 constitute the edges of the flap portions 5a, 5b. The flap portions 5a, 5b are preferably protruding in parallel to the front and rear surface 3a, 3b of the packaging 1. Thereby, the flap portions 5a, 5b are protruding from the sealed longitudinal side portion 4b to different extents according to the lengths  $l_1$  and  $l_2$ . Thereby, the lengths  $l_1$  and  $l_2$  can be varied and adjusted to given needs. Preferably, the length  $l_1$  and  $l_2$  are chosen such that the flap portions 5a, 5b can be easily separated by means of the fingers of a consumer.

**[0053]** In a preferred embodiment, the flap portion 5b which is located on a rear side 3b of the folded packaging 1 is protruding to a greater extent from the longitudinal side portion L1 than the other flap portion 5a which is located on a front side 3a of the folded packaging 1. Hence, a consumer may easily separate the flap portions 5a, 5b with the fingers as indicated in figure 3.

**[0054]** The two flap portions 5a, 5b are preferably equipped with grip elements 6a, 6b. Said grip elements

6a, 6b are preferably embossments formed in the flap portions 5a, 5b. Thereby, the embossments 6a, 6b are preferably provided at inner and/or outer surfaces 7a, 7b of the flap portions 5a, 5b as indicated in figure 3. Preferably, the flap portions 5a, 5b are individually embossed.

**[0055]** Moreover, other grip elements such as apertures or wholes can be applied to the flap portions 5a, 5b. Accordingly, the friction between the flap portions 5a, 5b is enhanced and a consumer may easily grab the flap portions 5a, 5b. Thereby, the opening of the packaging 1 is facilitated, since the grip of the flap portions 5a, 5b during the opening of the packaging 1 is enhanced.

**[0056]** As can be seen in figure 3, the grip elements 6a, 6b are preferably formed only at the flap portions 5a, 5b and thus are not overlapping with the sealing 4, in particular the longitudinal sealing portion 4b of the packaging 1.

**[0057]** According to the described embodiment, a consumer may easily grab the flap portions 5a, 5b with the fingers and thus, tear the flap portions 5a, 5b apart in order to open the packaging 1. By tearing the flap portions 5a, 5b apart from each other, the longitudinal portion 4b and consequently the lateral portions 4a of the peelable film 4 are peeled from at least one side of the packaging 1. Accordingly, an easy and convenient opening of the packaging 1 is enabled.

**[0058]** Although the present invention has been described with reference to preferred embodiments thereof, many modifications and alternations may be made by a person having ordinary skill in the art without departing from the scope of this invention which is defined by the appended claims.

**[0059]** For example, it may as well be possible to apply both longitudinal side portions L1 and L2 with the described inventive flap portions 5a, 5b in order to further enhance the opening of the packaging 1. Moreover, the flap portions 5a, 5b may be of different shape such as being slightly rounded or having a predefined radius of curvature.

**[0060]** In Figure 4 a cross-sectional view of the food product 10 is shown. The packaging is folded around the food product 10 at the side L2. The flat food product defines a main plane P in the length and width direction (and thus perpendicular to the relatively small height of the product). The free flaps 5a, 5b essentially are arranged without folding in this plane, i.e. in an angle of preferably less than 45° to this main plane.

## Claims

1. A packaging (1) for a food product (10) such as a performance bar, said packaging (1) being of a flexible material and preferably having a substantially rectangular shape, the packaging (1) being folded around the food product (10) at one side (L2) and being sealed on the remaining side portions (L1, B1, B2) of the packaging

(1),  
wherein

- two adjacent flap portions (5a,5b) extend at at least one of the side portions (L1) of the packaging (1), 5
- the flap portions (5a,5b) are connected at their end adjacent to the associated sealed side portion (L1), and
- the flap portions (5a,5b) extend freely and linearly thereof essentially in the main plane of the food product, and 10

wherein lateral side portions (B1,B2) of the packaging are not sealed to their full length such that the flap portions (5a,5b) are not joined together at said lateral side portions (B1,B2). 15

2. A packaging according to claim 1, wherein the two adjacent flap portions (5a,5b) extend to different extents. 20
3. A packaging according to claim 1 or 2, wherein seals (4a) formed at the side portions (B1,B2) perpendicular to the longitudinal side portions (L1, L2) of the packaging (1) are designed such that they do not extend over the flap portions (5a,5b). 25
4. A packaging according to any of claims 1 to 3, wherein the two adjacent flap portions (5a,5b) comprise grip elements (6a,6b) provided at an inner or outer surface (7a,7b) of the flap portions (5a,5b). 30
5. A packaging according to claim 4, wherein the grip elements (6a,6b) are formed as an integral part of the flap portions (5a,5b) of the packaging (1). 35
6. A packaging according to claim 4, wherein the grip elements (6a,6b) are formed as additional means connected to the flap portions (5a, 5b) of the packaging (1). 40
7. A packaging according to any of claims 4 to 6, wherein the grip elements (6a,6b) comprise a surface modulation such as e.g. embossments. 45
8. A packaging according to any of claims 4 to 7, wherein the grip elements (6a,6b) comprise a pattern of holes or apertures. 50
9. A packaging according to any of claims 4 to 8, wherein the grip elements (6a,6b) comprise material adhered onto the flap portions (5a,5b). 55
10. A packaging according to any of claims 4 to 9, wherein the grip elements (6a,6b) are designed differently for each of the flap portions (5a,5b).

11. A packaging according to any of the preceding claims, wherein the seal (4) of the packaging comprises a heat-sealable peelable film, a heat-sealable coating or a cold seal adhesive.

12. A packaging according to any of the preceding claims, wherein the packaging (1) is applied to the food product (10) by means of flow wrapping.

13. A method for packing a food product by means of a packaging according to any of claims 1 to 12, said method comprising the steps of:

- placing the food product (10) on an inner surface (1a) of the packaging (1),
- folding the packaging (1) around a longitudinal edge (10b) of the food product (10) to enclose the food product such that two overlapping flaps (5a,5b) are formed at an opposite longitudinal edge (10b) of the food product, wherein the overlapping flaps (5a,5b) extend linearly from said opposite longitudinal edge preferably to different extents, and
- sealing side portions (L1,B1,B2) of the packaging (1) such that the flaps (5a,5b) formed at the longitudinal side portion (L1) of the packaging (1) are sealed together at an axis parallel to a longitudinal edge (10b) of the food product (10) and are extend freely therefrom.

14. A method for packing a food product according to claim 13, comprising the step of sealing two opposite lateral side portions (B1,B2) of the packaging (1) at an axis parallel to a lateral edge (10a) of the food product (10) such that flaps (5a,5b) formed at the longitudinal edge (L1) of the food product (10) are not joined together.

15. A food product contained within a packaging according to any of claims 1 to 12, the food product being a bar such as a energy bar, a nutritional bar or a performance bar.

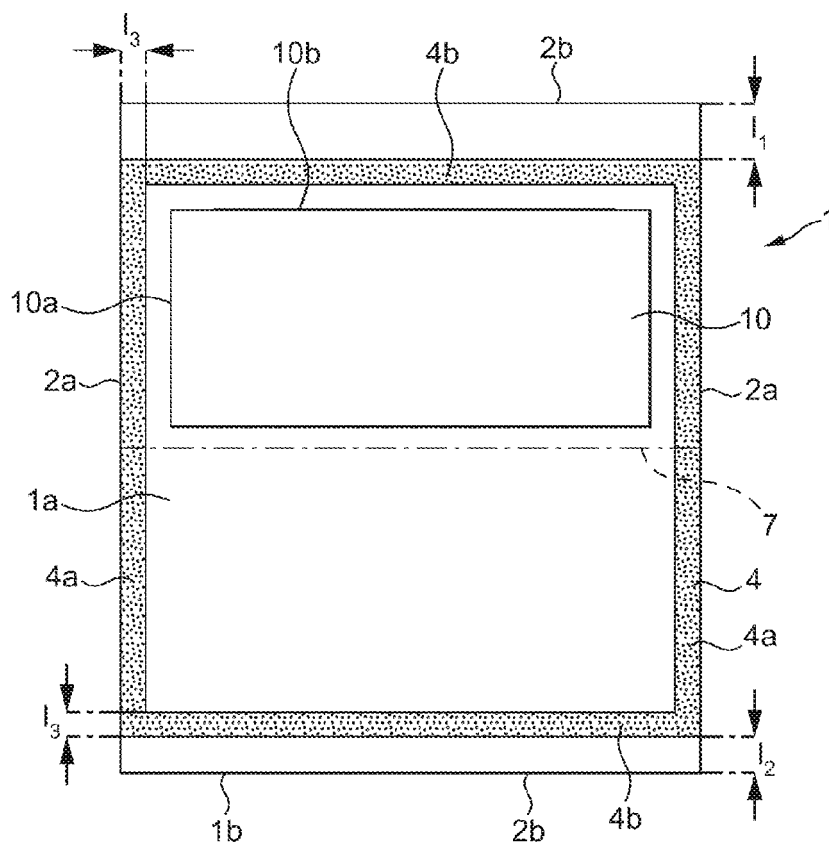


FIG. 1

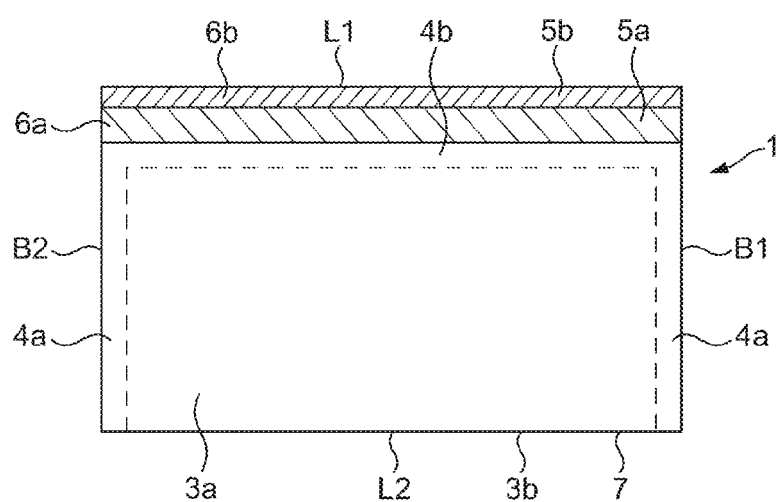


FIG. 2

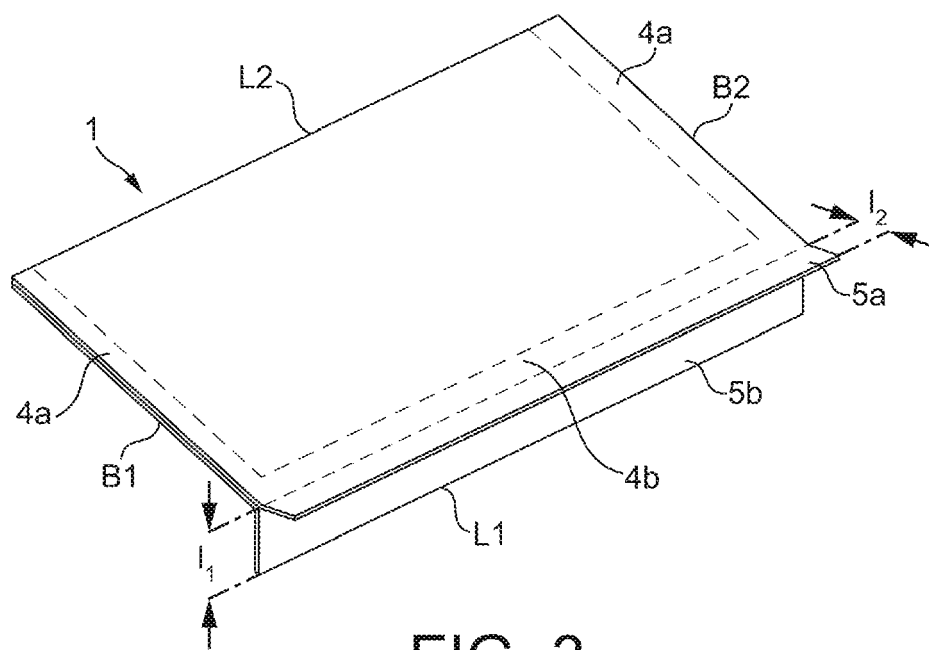


FIG. 3

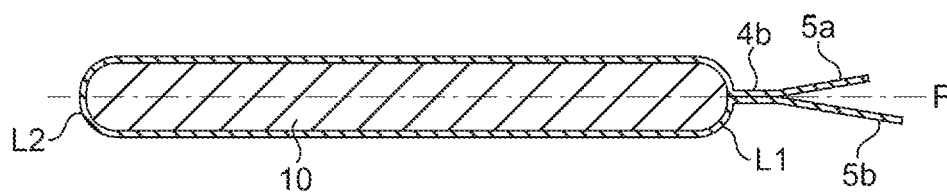


FIG. 4



## EUROPEAN SEARCH REPORT

Application Number  
EP 08 15 9314

| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | DE 201 13 173 U1 (TEICH AG WEINBURG [AT])<br>11 October 2001 (2001-10-11)                                                          | 1,3-5,<br>11-15                                      | INV.<br>B65D75/20                       |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | * page 2 - page 6; figures 1-3 *                                                                                                   | 7,8                                                  |                                         |
| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US 2 751 074 A (RINGLEN ARTHUR G ET AL)<br>19 June 1956 (1956-06-19)                                                               | 1-6,<br>9-11,13,<br>14                               |                                         |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | * column 1, line 44 - column 3, line 39;<br>figures 1-8 *                                                                          | 7,8                                                  |                                         |
| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | FR 2 499 837 A (MENSA OLIVERAS NURIA [ES])<br>20 August 1982 (1982-08-20)                                                          | 1-5,<br>9-11,13,<br>14                               |                                         |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                    | 7,8                                                  |                                         |
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| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US 2 197 113 A (PIAZZE THOMAS E)<br>16 April 1940 (1940-04-16)<br>* page 1, line 36 - page 2, line 61;<br>figures 1-5 *            | 7,8                                                  | TECHNICAL FIELDS<br>SEARCHED (IPC)      |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US 2006/188180 A1 (OTSUBO HIROFUSA [US])<br>24 August 2006 (2006-08-24)<br>* paragraph [0015] - paragraph [0019];<br>figures 1,2 * | 6                                                    | B65D                                    |
| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                    |                                                      |                                         |
| Place of search<br>Munich                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                    | Date of completion of the search<br>13 February 2009 | Examiner<br>Augustin, Wolfgang          |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone<br/>Y : particularly relevant if combined with another document of the same category<br/>A : technological background<br/>O : non-written disclosure<br/>P : intermediate document</p> <p>T : theory or principle underlying the invention<br/>E : earlier patent document, but published on, or after the filing date<br/>D : document cited in the application<br/>L : document cited for other reasons<br/>.....<br/>&amp; : member of the same patent family, corresponding document</p> |                                                                                                                                    |                                                      |                                         |

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 08 15 9314

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13-02-2009

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