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(71) Applicants:
- **Soremartec S.A.**
  **2632 Findel (LU)**
  Designated Contracting States:
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- **Ferrero S.p.A.**
  **12051 Alba (Cuneo) (IT)**
  Designated Contracting States:
  **IT**
- **Ferrero Offene Handelsgesellschaft m.b.H.**
  **35260 Stadtallendorf (DE)**
  Designated Contracting States:
  **DE**

(72) Inventor: **Ferrari, Giovanni**
**I-12062 CHERASCO (Cuneo) (IT)**

(74) Representative: **Rambelli, Paolo et al**
**Jacobacci & Partners S.p.A.**
**Corso Emilia 8**
**10152 Torino (IT)**

## (54) Packaging comprising a product wrapped in a casing of sheet material

(57) Packaging comprising a product (P) and a casing (2) of sheet material wrapped around the product in contact with the side walls thereof, said casing being disposed with its opposite side edges (8, 12) in a mutual overlapping relationship along a side wall of the product, characterised in that said casing (2) comprises a first (4) and a second (6) sheet connected to each other along one of said edges (8, 10) and wherein at least the side edges (12a, 12b) of said first and second sheet opposite to the edge where said connection is provided, are not connected to each other. The packaging of the invention has taut surfaces free from wrinkles, even when packaging products whose surface has depressions or recesses.

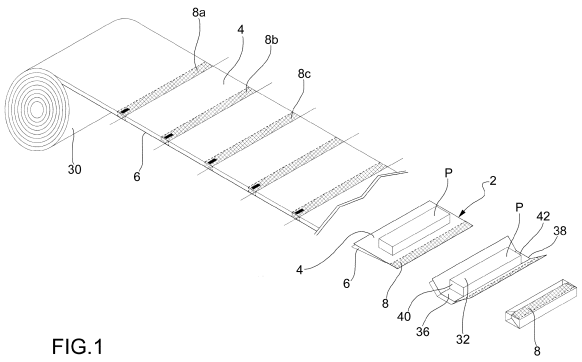


FIG.1

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## Description

**[0001]** The present invention relates to packaging of the type comprising a product and a casing of sheet material wrapped in close contact with the surface of the side walls of the product and with the opposite side edges of the casing disposed in a mutually overlapping relationship along one of the side walls of the product so as to form a tubular casing; said tubular casing is closed at its ends by folding the end portions of the casing which extend beyond the ends of the product into a generally tapering shape turned up on the walls of the product according to methods which are known per se.

**[0002]** The packaging of the invention has been developed with a particular focus on the packaging of a product of elongate shape, i.e. having an extension in one direction (defined here as the longitudinal direction or extension) which is substantially greater than the two directions perpendicular thereto and having a generally prismatic shape, for instance a bar of chocolate and, more particularly, in relation to the packaging of a product of the type mentioned above, in which at least one of the larger lateral surfaces has an irregular profile, for instance comprising planar surface sections alternating with depressions or recesses. A typical example is the KINDER® chocolate bar, which has a planar base surface and an upper surface which has planar surface sections alternating with depressions which define portions for the consumption of the product.

**[0003]** It will nevertheless be appreciated that the packaging principle described below and forming the subject-matter of the invention, while particularly advantageous for products of the type described above, is of general application and is not therefore limited to specific product shapes.

**[0004]** Typically, the chocolate bars of the type described above are packaged using a single sheet of sheet material, for instance a sheet of paper with a metal-coated surface designed to face towards the interior of the casing, or a laminated sheet of paper and aluminium.

**[0005]** It has been observed that, when using this packaging material, the packaging obtained using conventional wrapping machines has surfaces, in contact with irregular surfaces of the product, which are not taut enough but have depressions corresponding to depressions, recesses or like irregularities of the surface of the product, so that they do not optimally meet the aesthetic requirements, which are important and essential in this case, connected with the commercial presentation of the packaged product.

**[0006]** The solution comprising the use of a pair of separate packaging sheets, forming a double casing, although able to improve the aesthetic appearance of the packaged product. is not an ideal and desirable solution from an industrial point of view as it complicates the packaging operation and requires the use of wrapping machines which are necessarily more complex because they have to be provided with two supply lines for the sheets forming the casing.

**[0007]** Italian Utility Model IT 214053 discloses a sachet for the packaging under vacuum of granular products in which the sachet is formed by an inner sheet and an outer sheet joined together at their four lateral edges, with the exception of at least one zone designed to form a channel for the admission of external air into the central air gap formed between the two sheets. A similar solution is disclosed in US Patent Specification 4 727 706. Although the problem resolved by this configuration is one of obtaining a packaging in which the outer surface is smooth and does not reproduce the irregularities of the granular material contained therein, it is evidently a solution whose application is limited to the packaging of products under vacuum and which does not appropriately resolve the packaging problem described above in which the product is not sealed by the packaging sheet.

**[0008]** European Patent Specification EP 0 796 802 A2 discloses a packaging sheet for the production of a multiple bag, composed of two superimposed sheets joined together at their two longitudinal edges by fusion points so as to provide a connection between the two sheets; the purpose of this solution is to increase resistance to perforation without making the sheet less flexible.

**[0009]** The primary object of the present invention is to provide a packaging in which the casing sheet wrapped about the product by the methods described above, has a taut surface free from wrinkles even adjacent to surfaces of the lateral walls of the product which present irregularities and/or depressions.

**[0010]** A further object of the invention is to provide a packaging which, while achieving the primary object described above, may be obtained using wrapping machines having a single spool for the supply of the casing sheet, conventionally used and available for the production of packaging with a single casing sheet. In view of these objects, the invention relates to packaging having the features set out in the appended claims which are an integral part of the present specification.

**[0011]** A further object of the invention relates to the use of a packaging sheet having the features set out in the specification and the appended claims, for packaging a product, in particular a food product of elongate shape, in a casing.

**[0012]** Other advantages and features of the packaging of the invention will become clear from the following detailed description, made with reference to the appended drawings, given by way of non-limiting example, in which:

- Fig. 1 is a diagrammatic perspective view illustrating a sequence of operational packaging stages, starting from a spool of sheet material, according to a first embodiment of the invention;
- Fig. 2 is a plan view of a casing sheet which may be used to produce the packaging of the invention;
- Fig. 3 is a perspective view of the sheet of Fig. 2, shown in a partially open configuration such that the

two sheets forming the casing may be seen;

- Fig. 4 is a diagrammatic view in cross-section showing the configuration into which the casing sheet is folded;
- Fig. 5 is a view in longitudinal section of a packaging of the invention;
- Fig. 6 is a diagrammatic perspective view, corresponding to Fig. 1, using a further embodiment of the casing sheet;
- Fig. 7 is a plan view of a casing of sheet material used in the embodiment of Fig. 6; and
- Fig. 8 is a perspective view of the casing sheet of Fig. 7, shown in a partially open configuration such that the two sheets forming the casing may be seen.

**[0013]** With reference to the drawings, Fig. 2 shows a casing sheet 2 used for the packaging according to a first embodiment. As shown in Fig. 3, said casing is formed by a first and second sheet 4 and 6 superimposed on one another in an overlapping manner, and connected together along a connection zone 8 adjacent to a side edge 10 of the casing.

**[0014]** The casing sheet is generally of quadrilateral shape, in this case rectangular; it will be appreciated, however, that the sides or edges of the casing 10, 12, 14, 16 are not necessarily rectilinear and may obviously have a mixtilinear or wavy extension.

**[0015]** As mentioned above, the packaging of the invention is particularly suited to the packaging of elongate products, in particular bars of chocolate or the like, for instance of the type shown by P in Figs. 1, 5 and 6; the connection zone 8 is then adjacent to one of the larger sides of the casing.

**[0016]** The connection between the two sheets 4 and 6 of the casing may be provided in various ways, depending on the nature of the sheets used, for instance by gluing, by application of an adhesive or by heat sealing. Preferably, the sheet 4, inside the packaging in contact with the side walls of the product P, is a laminated paper/aluminium sheet (with the aluminium foil facing the interior of the packaging) or a sheet of paper with a metal coating facing towards the interior of the packaging. In general, the basis weight of this sheet may be between 12 and 80 g/m$^2$, although the choice of the basis weight is not particularly critical, provided that it is able to keep the sheet suitably flexible.

**[0017]** The sheet 6, which is positioned externally in the packaging, is preferably a film of plastics material, for instance polypropylene or polyethylene, although it will be appreciated that other plastics materials typically used in packaging, for instance polyesters, may also be used. If both sheets 4 and 6 are not formed by heat-sealable materials, their surfaces in contact, in particular in the connection zone 8, may be coated with a heat-sealable varnish.

**[0018]** Similar considerations to those described above also apply to the basis weight of the outer sheet 6; the basis weight of this sheet is preferably between 12 and 80 g/m$^2$.

**[0019]** In the embodiment illustrated in Figs. 1 to 4, the connection zone 8 is limited to a strip adjacent to the larger side of the casing.

**[0020]** In the embodiment shown in Figs. 6 to 8, the connection between two sheets 4 and 6 is also provided at connection zones 18 and 20 adjacent to the smaller sides 14 and 16 of the casing sheet. In both cases, the important aspect of the invention is the fact that the two sheets 4 and 6 are not connected together at least at the edge of the casing opposite the edge (in this case the side 10) where the connection is provided. Thus, in the embodiment of Figs. 2 and 3, the sides or edges 12a and 12b, opposite the side 10, are free, as are the two edges or sides 16a, 16b and 14a, 14b. In the embodiment of Figs. 7 and 8, only the edges or sides 12a and 12b are free (apart from the end sections 22 and 24, whose extension may nevertheless be reduced to a minimum), while the other pairs of sides are connected together at the zones 8, 18 and 20.

**[0021]** The packaging process may be carried out using a wrapping machine with a single supply spool for the casing sheet. With reference to Fig. 1, the continuous casing sheet is wound on a spool 30 from which it is supplied to the packaging stations. The continuous casing sheet comprises a first and a second sheet 4 and 6 which are superimposed and connected to one another along connection zones 8a, 8b, 8c, etc., transverse to the direction of supply of the sheet and spaced from one another at a constant pitch corresponding to the transverse extension of the casing that it is intended to provide. In the packaging stations, the wrapping machine cuts the continuous sheet to the dimensions of the casing sheet 2; after positioning of the product P on the casing sheet, the sheet is wrapped around and in contact with the side walls of the product P, for instance in the configuration shown in Fig. 4. In the preferred embodiment, the edge 12 of the casing 2, at which the sides 12a and 12b of the casing are free, is positioned in contact with the larger side wall 32 of the product and the edge 10 at which the connection zone 8 is provided is folded in a superimposed relationship on the edge 12, so as to form a tubular casing closely adhering to the side walls of the product.

**[0022]** The end flaps of each of the terminal ends of the casing sheet, shown by 36 and 38 in Fig. 1, which extend beyond the end walls 40 and 42 of the product, are connected together by folding, generally in a tapering shape and turned up in contact with the above-mentioned end walls 40 and 42 and on the wall 32. It is preferable to provide for a folding operation of the casing sheet such that the connection zone 8 is disposed partially to cover the folded-up regions of the end flaps.

**[0023]** The method shown in Fig. 6 corresponds to that of Fig. 1 with the sole difference that the continuous casing sheet, as well as having the transverse connection zones 8a, 8b and 8c which connect the two sheets forming the casing sheet, has, at both marginal edges parallel to the direction of supply, continuous connection zones

formed by the sections 18a, 18b and 18c and 20a, 20b and 20c, etc.; it will be appreciated that these connection zones form a continuous connection zone between the two sheets forming the casing sheet wound on the spool. The packaging operations are otherwise similar to those previously illustrated and comprise the cutting of the continuous sheets into casing sheets 2 in which the two superimposed sheets forming the casing are connected together along the marginal regions 8, 18 and 20.

**[0024]** As mentioned above, the packaging of the invention is particularly suited to and advantageous for products which have at least one surface, generally the larger surface, having an irregular profile, for instance with planar sections and depressions, for instance the upper surface of the product P shown in Fig. 5, in which the upper surface of the product has planar sections 40 alternating with depressions 46. As a result of the packaging of the invention, the surface of the casing sheet 50 (Fig. 5) adjacent to and in contact with the irregular surface is nevertheless taut and free from wrinkles and depressions.

**[0025]** Naturally, the principle of the invention remaining the same, the forms of embodiment and details of construction may be varied widely with respect to those described and illustrated, which have been given purely by way of example, without thereby departing from the scope of the appended claims.

## Claims

1. Packaging comprising a product (P) and a casing (2) of sheet material wrapped around the product in contact with the side walls thereof, said casing being disposed with its opposite side edges (8, 12) in a mutual overlapping relationship along a side wall of the product, **characterised in that** said casing (2) comprises a first (4) and a second (6) sheet connected to each other along one of said edges (8, 10) and wherein at least the side edges (12a, 12b) of said first and second sheet opposite to the edge where said connection is provided, are not connected to each other.

2. Packaging according to claim 1, **characterised in that** said first and second sheets (4, 6) of the casing (2) are also connected to each other at their lateral edges (14, 16) which extend transversely with respect to said edge (8, 10) in which said connection is provided.

3. Packaging according to claims 1 or 2, **characterised in that** said edge (8), where the connection between said first and second sheet is provided, is disposed in an overlapping relationship on the opposite edge (12) along said side wall of the product.

4. Packaging according to any one of claims 1 to 3, **characterised in that** said first sheet (4) comprises a sheet of paper with a metal coating, or comprises a laminate of a sheet of paper and a film of aluminium.

5. Packaging according to any one of claims 1 to 4, **characterised in that** said second sheet (6) is a sheet or film of plastics material.

6. Packaging according to claim 5, **characterised in that** said second sheet is of polypropylene or polyethylene.

7. Packaging according to claims 4, 5 or 6, **characterised in that** said first sheet (4) is arranged in contact with the food product, with the metal coating or aluminium foil facing the product.

8. Packaging according to any one of the preceding claims, **characterised in that** said first sheet has a basis weight from 12 to 80 g/m$^2$ and said second sheet has a basis weight from 12 to 80 g/m$^2$.

9. Packaging according to any one of the preceding claims, **characterised in that** the terminal ends of the casing (36, 42) are folded and turned up on said wall (32) of the product on which said opposite side edges of the casing are superimposed.

10. Packaging according to any one of the preceding claims, wherein said product P is a product of generally elongate shape, having at least one main wall with a surface comprising planar regions (44) and concave regions (46).

11. Packaging according to any one of the preceding claims, wherein said product (P) is a food product, in particular a chocolate bar having a main surface comprising flat portions and depressions, defining portions for consumption.

12. Use of a casing sheet (2), comprising a first and a second sheet (4, 6) coupled and connected to one another along a side edge (10) of the casing sheet, and wherein at least the sides (12a, 12b) of said first and second sheet arranged on the side opposite the edge (8, 10) in which said connection is provided are free, for the packaging of a product, particularly an elongate food product, wherein packaging comprises wrapping said casing sheet (2) around the product in contact with the side walls thereof and so as to form a tubular open ended casing and folding the terminal ends (36, 42) so as to close said casing.

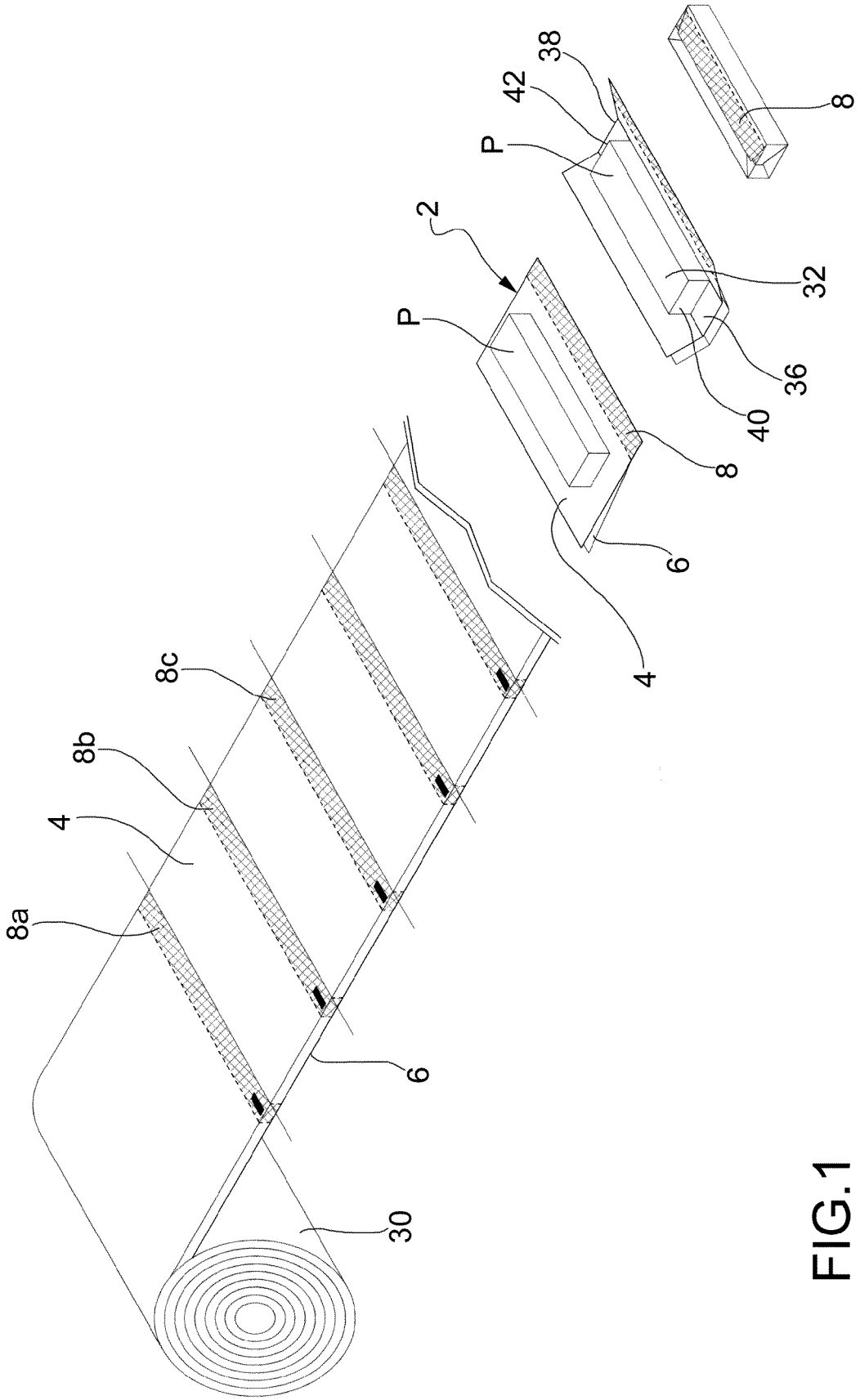
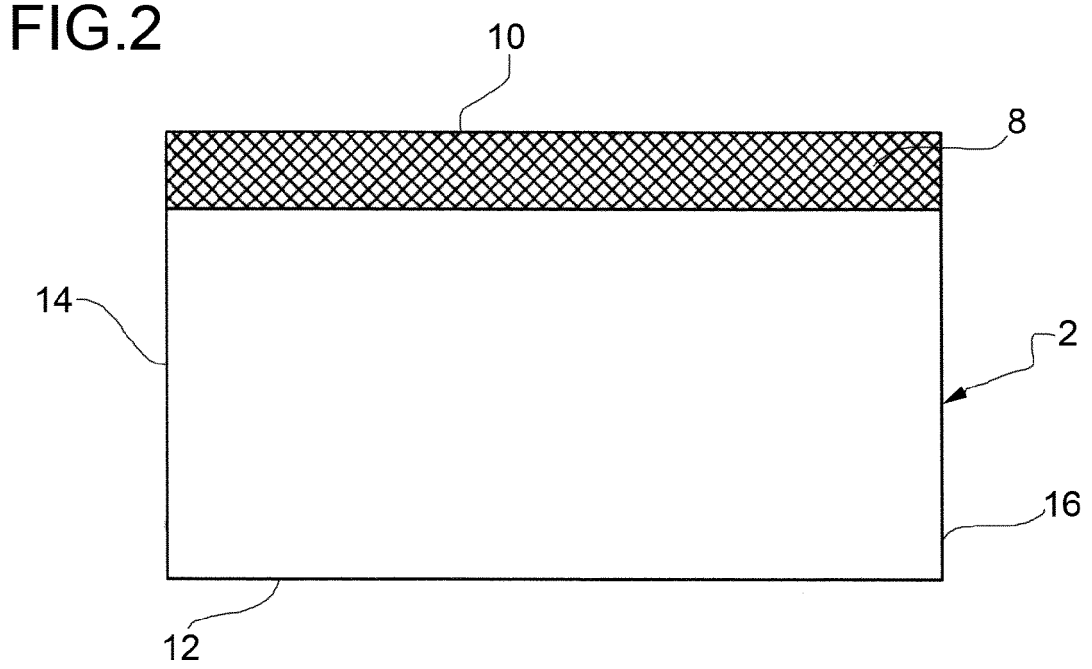



FIG.1

FIG.2



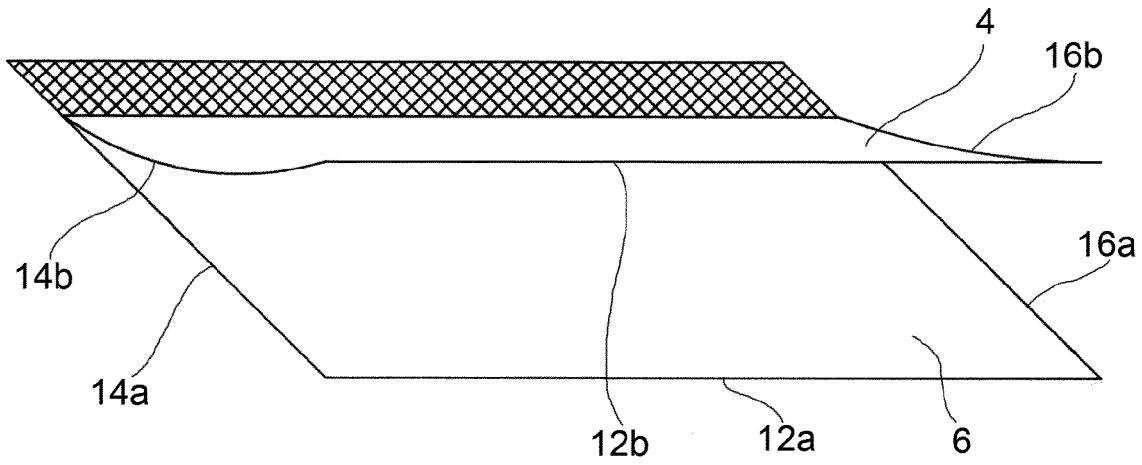




FIG.3

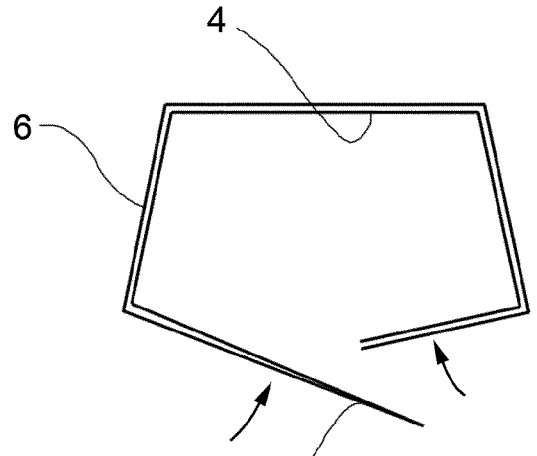



FIG.4

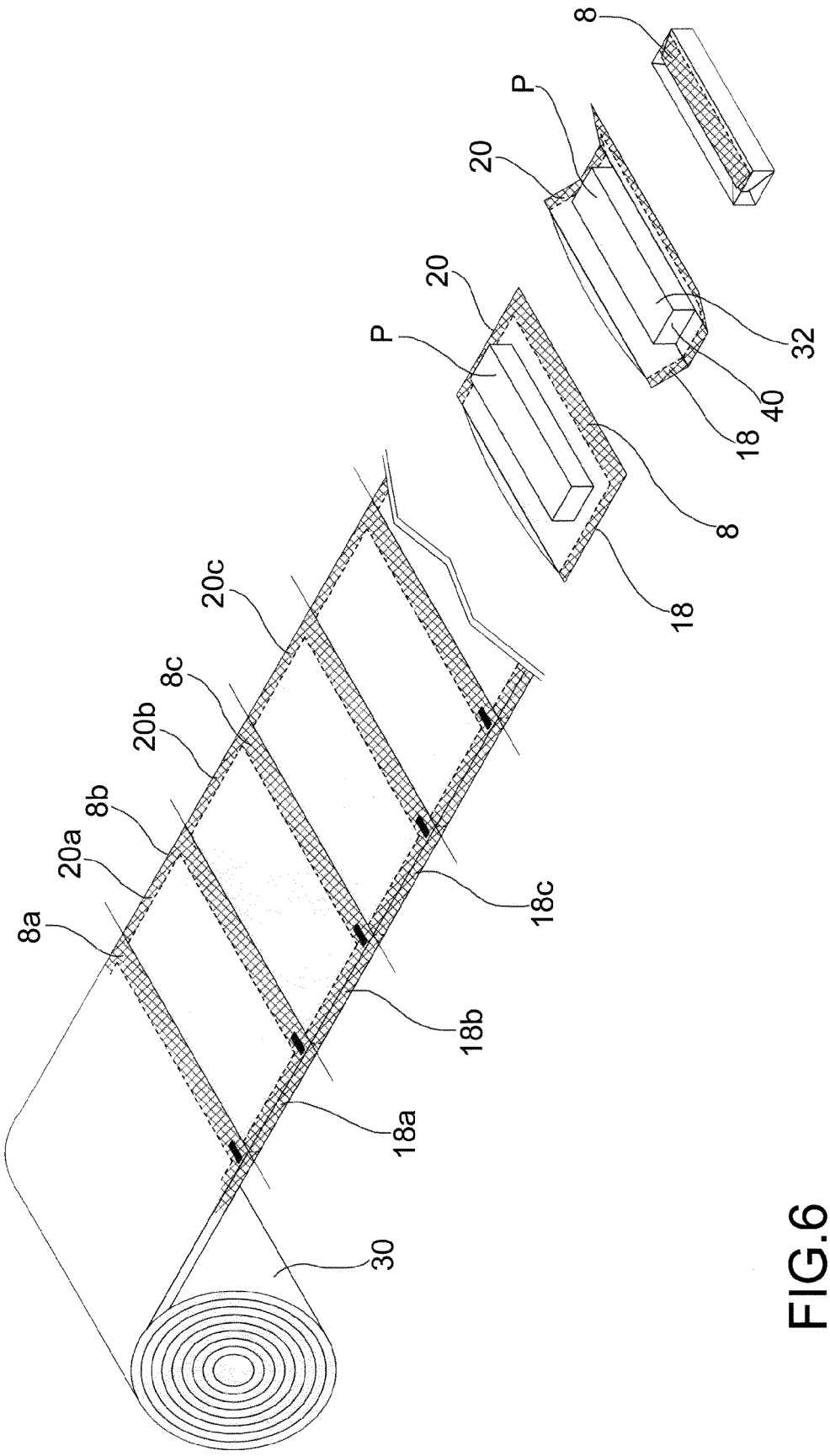



FIG.6

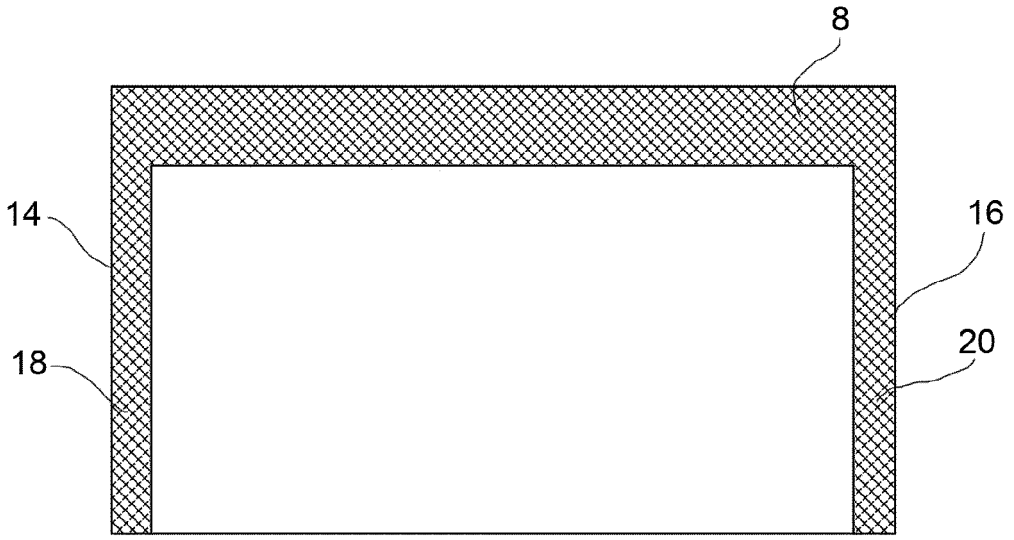



FIG.7

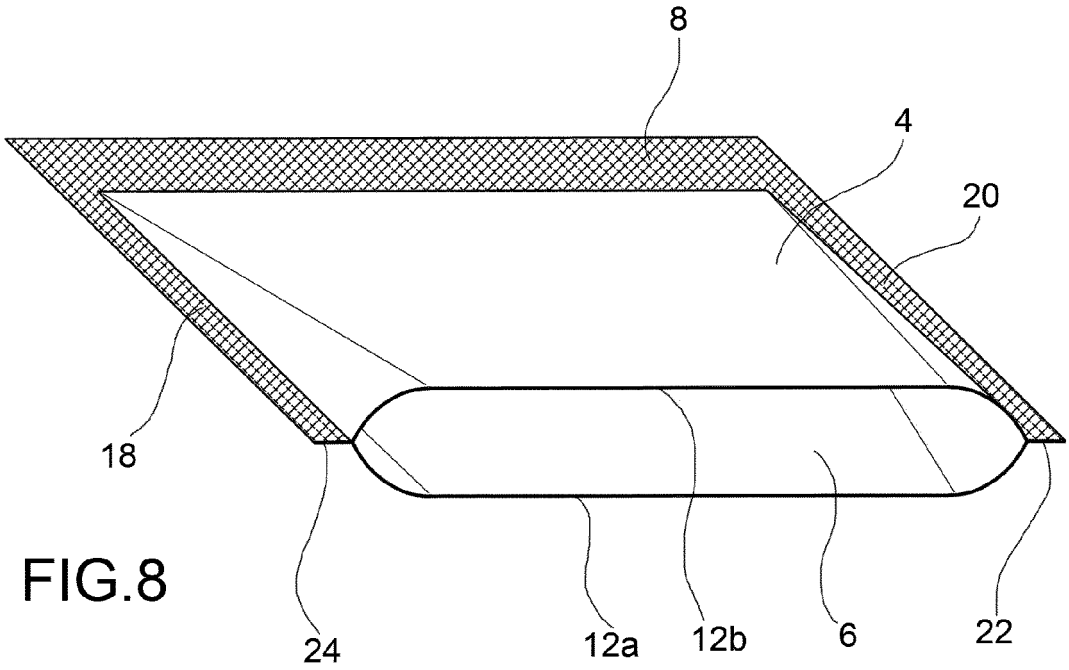



FIG.8

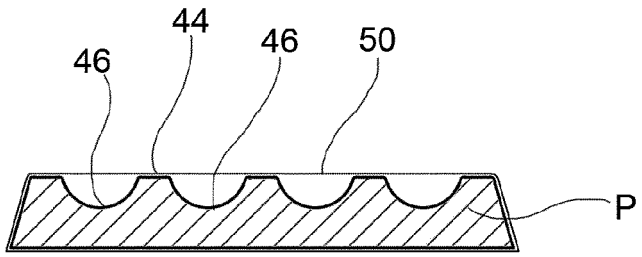



FIG.5

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# EUROPEAN SEARCH REPORT

Application Number
EP 14 15 1844

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| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) |
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B65D

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| The Hague | 14 April 2014 | Zanghi, Amedeo |

CATEGORY OF CITED DOCUMENTS

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