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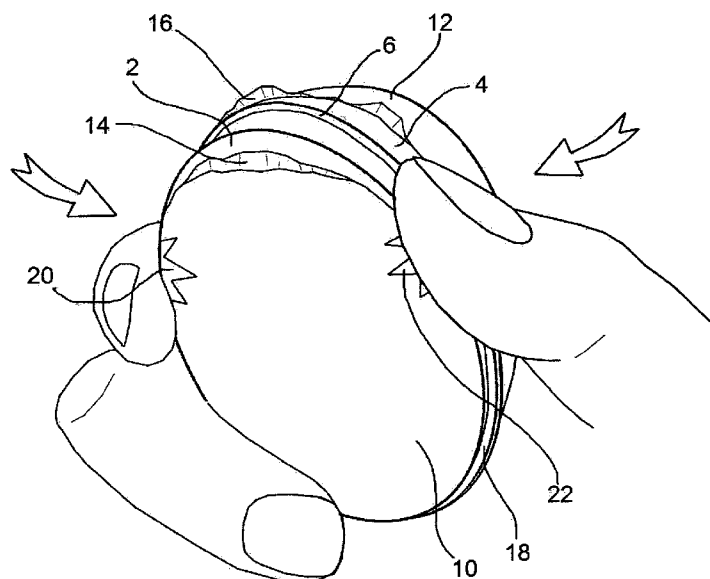
Declarations under Rule 4.17:

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[Continued on next page]

(54) Title: PACKAGING FOR AN OVOIDAL BODY WITH EASY OPENING SYSTEM

FIG.4



(57) Abstract: Packaging for a food product, comprising: a hollow body (1) made of alimentary material and formed by a pair of half-shells (2, 4) which have an opening with an ovoidal contour and are sealed together along the respective contours (6) of the opening, and including an accessory or surprise article (S, 8), and a cover wrapping (9) of said hollow body (1), which is formed by a pair of wrapping half-shells (10, 12) made of foil material, where each wrapping half-shell (10, 12) has a form matching the respective half-shell of alimentary material (2, 4) and has a respective flange (14, 16) surrounding and projecting from the contour (6) of its opening, and in which said wrapping half-shells (10, 12) are connected together, in a disengageable manner, by means of a mutual interference fit of said flanges (14, 16), said hollow body has a form with rotational symmetry about the greater axis of symmetry of said ovoidal contour; the plane defined by the sealed contours of the opening of said half-shells of alimentary material (2, 4) substantially coincides with the joining plane of said flanges (14, 16). The cover wrapping (9) of

said hollow body (1) has signalling means (20, 22) which identify on the wrapping specific pressure areas where application of a pressure causes the separation of the wrapping half-shells (10, 12) and the half-shells of alimentary material (2, 4).



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Packaging for an ovoidal body with easy opening system

The present invention relates to a packaging for a food product, of the type comprising a hollow body made of alimentary material and formed by a pair of half-shells which have an opening with a generally ovoidal contour and are sealed together along the respective contours of the opening, and including an accessory or surprise article which is preferably housed inside an auxiliary container made of plastic.

Products of this type are widely known commercially, for example by the trade name KINDER SORPRESA.

Typically, products of the abovementioned type have a wrapping consisting of thin foil material, generally aluminium, which adheres closely to the hollow body.

The solution generally adopted for forming this wrapping is that of using a single - generally flat - foil and wrapping it around the article to be packaged, reproducing with automatic or semi-automatic apparatus the same sequence of operations which could be performed by a human operator; wrapping the aluminium foil so that it adheres closely to an ovoidal body produces a random or apparently random distribution of folds in the region of the cusp or base of the wrapped body.

With this solution, although satisfactory, removal of the wrapping foil by the consumer is complicated to a certain degree or in any case not immediately possible since it is required to identify the free edges of the foil, which are generally folded onto the body, in order to be able to perform removal thereof.

Moreover, once the wrapping foil has been removed, the consumer must perform a second operation in order to open the hollow alimentary body and gain access to the surprise article inside. This second operation, in many cases, results in disintegration of the half-shells with the undesirable formation of small- and large-size fragments of alimentary material.

An alternative solution, which is used in particular for wrapping food products (such as chocolate or sugar-based bodies), which have a shape more complex than an ovoidal shape, is that of inserting the body inside two pre-formed leaves of aluminium foil, each of which faithfully reproduces the outline of a respective half of the product. The two leaves of wrapping foil thus obtained are then joined together, for example by means of heat-sealing, making use of a coating of heat-meltable material present on the surfaces facing each other along an equatorial line of the product, with elimination of the residual aluminium foil parts projecting beyond the sealing zone, by means of punching.

This solution is described, for example, in DE 17 84 647 U.

The drawback of this solution consists mainly in the presence of a projection, in the form of a rib or flange, along an equatorial line of the product.

The object of the present invention is to provide a packaging, specifically intended for a hollow body with an ovoidal form, which facilitates opening of the packaging, preventing, at least to a significant degree, the random disintegration of this product into crumbs or fragments, and thus facilitating removal of the surprise article contained in the hollow body.

In view of this object, the invention relates to a packaging for a food product, having the characteristic features defined in Claim 1.

Further preferred characteristic features of the packaging according to the invention are defined in the dependent claims which follow.

In particular, the invention is based on the recognition of the fact that, when a hollow body with a generally ovoidal form, having a rotational symmetry and formed by two half-shells which are sealed together, is packaged inside two matching half-shells of foil material, connected together in a disengageable manner by means of a flanging operation (described in greater detail below), ensuring that the flanging plane is coplanar with the joining plane of the two half-shells of chocolate or similar alimentary material, it is possible to cause

opening of the packaging, with separation of the wrapping and alimentary material half-shells, by exerting a manual pressure on specific areas of the packaging; in particular, it is possible to identify, particularly in the region of the cusp of the wrapping, two specific pressure areas, where a pressure, exerted for example by the consumer's finger-tips, allows separation of the half-shells forming the packaging.

In particular, this separation may be performed without causing breakage or fragmentation of the chocolate half-shells. In particular, these pressure areas are positioned in the region of the cusp of the packaging, along the abovementioned joining plane and on opposite sides of the greater axis of the ovoidal profile of the opening of the half-shells.

Further characteristic features and advantages of the packaging according to the invention will become clear from the detailed description which follows, provided with reference to the accompanying drawings in which:

- Fig. 1 is a cross-sectional view which shows the component parts of the packaging in a partially exploded configuration prior to joining together of the wrapping half-shells;
- Figs. 2a-2d are schematic views which show an example of the sequence of operations for joining together the half-shells of foil material;
- Fig. 3 is a perspective view of the packaging according to the invention; and
- Fig. 4 is a perspective view which shows, in schematic form, the operation of opening the packaging, with separation of the half-shells.

With reference to the accompanying drawings, the packaging according to the invention comprises a hollow body 1, with a thin wall, made of alimentary material, typically chocolate, having a generally ovoidal shape.

The term "ovoidal", as used in the present description, is to be understood as including both bodies with an egg shape and rounded bodies which have at least one rounded cusp portion; also to be regarded as included are generally ellipsoidal forms; these consist of bodies with a rotational symmetry along the greater axis of symmetry of the contour of the openings of the half-shells which form the body. Similar considerations apply as regard the definition of two-dimensional geometric bodies, defined as being oval.

The body 1 is formed by two half-shells 2 and 4, which have an opening with a generally oval profile and which are sealed together along the mating edges 6 of the respective opening profile. These half-shells are generally obtained by techniques known per se of draining or moulding and it is understood that they may consist of several layers, for example two layers made of milk chocolate and white chocolate respectively.

Sealing together of the two half-shells 2 and 4 is generally obtained by means of slight heating of the mating edges 6; direct sealing, without the use of filler material, is preferred.

The hollow body 1 usually has, arranged inside it, an accessory or a surprise article S which, usually, is generally enclosed in an auxiliary container 8 made of plastic.

The hollow body 1 is inserted inside a wrapping of foil material 9, which is typically a thin aluminium foil, with a thickness of about 10-30 μm . In turn, the wrapping 9 is formed by two half-shells 10 and 12 which have a form matching the respective half-shell 2 and 4 of alimentary material such that their inner wall surface adheres closely to the outer surface of the respective half-shell 2 and 4 of alimentary material.

The abovementioned wrapping half-shells 10 and 12 may be obtained using drawing techniques known per se. The wrapping half-shells 10 and 12 are characterized by the presence, along the profile of their opening, of a flange 14 and 16, respectively. In the illustration according to Fig. 1, the flanges 14 and 16 are shown in a facing relationship, namely in the configuration which precedes joining together thereof (described below), where they lie in a plane which substantially coincides with the sealing plane defined by the contours 6 of the opening of the two half-shells of alimentary material.

The production method for obtaining the configuration shown in Fig. 1 may be performed using the methods described in DE 17 84 647 U.

This production method envisages, for example, the following operations:

- forming the wrapping half-shells 10 and 12 from a respective flat foil of wrapping material in a respective drawing mould, resulting in a half-shell provided with a flat flange

surrounding the respective opening profile;

- inserting the hollow body 1 formed by the two alimentary half-shells 2 and 4 already sealed together, inside one of the wrapping half-shells, ensuring that the sealing plane of the two half-shells 2 and 4 of alimentary material coincides with the flange plane; this operation may be performed with the wrapping half-shell 10 and 12 supported in the same drawing mould or in an auxiliary mould;
- arrangement of the second pre-drawn wrapping half-shell above and against the upper surface of the hollow body, with the respective flanges of the wrapping half-shells 10 and 12 in a facing relationship; this operation is generally performed, performing simultaneously or subsequently a punching operation along the flange contour of the half-shells so as to obtain respective flat flanges 14 and 16 with a uniform radial width.

Alternatively, the operation may be performed using a drawing mould formed by two plates which are hinged together in book fashion with respective matching impressions, using a single foil of wrapping material for both the impressions. In this case, following the drawing operation which results in the formation of wrapping half-shells connected together, the hollow body 1 is positioned in one of the impressions on top of the pre-drawn wrapping foil and the two moulding plates are turned one over the other, performing simultaneously or subsequently a punching operation in order to obtain the abovementioned flanges with separation of the two wrapping half-shells 10 and 12.

From the configuration shown in Fig. 1, the method for obtaining the packaged product according to the invention envisages an operation for joining together and connecting in a disengageable manner the respective flanges 14 and 16. This operation may be defined as a flanging operation or, to use the technical jargon, a caulking operation.

The term "caulking", which in mechanical terminology is used to indicate the operation of upsetting the edge of nailed plates, is used in the present description in a broad sense to indicate an operation involving deformation, folding and/or upsetting the flange edges so that these flange edges are connected together in a manner which is disengageable, for example by the action of a stress which tends to cause separation thereof. It is understood that the connection of the flanges does not involve sealing or heat-sealing operations or the

application of adhesives which would make this connection permanent.

Figs. 2a-2d show an operating sequence, which provides an example of the abovementioned caulking operation. In these figures, for the sake of simplicity, only the wrapping half-shells 10 and 12 have been shown, without illustrating the half-shells 2 and 4 of alimentary material; it is understood, however, that the abovementioned operating sequence illustrated by way of example is performed with the hollow body 1 already inserted between the two wrapping half-shells 10 and 12.

Starting with the configuration shown in Fig. 2a, corresponding to that shown in Fig. 1:

- a first operation involving folding of the flange edges 14 and 16 in a direction (F1) perpendicular to the plane of the abovementioned flanges and in an intermediate position of the flange width is performed, resulting in the configuration according to Fig. 2b, where the flange portion 14a, 16a is substantially perpendicular to the flange portion 14b, 16b adjacent to it;
- a folding operation is then performed in the direction of the arrows F2, parallel to the original plane of the two flanges, so as to obtain the configuration according to Fig. 2c;
- an upsetting operation in the direction of the arrows F3 perpendicular to and inclined with respect to the original plane of the flanges is then performed in order to obtain the configuration according to Fig. 2d; this upsetting operation is generally performed so as to cause clinching only of the flange portion 14a and 16a, which has been folded onto the neighbouring portion.

In the case where the flange portion 14a or 16a, respectively, has a length greater than the neighbouring flange portion 14b, 16b, the free end of the flange may be arranged, following upsetting, adjacent to the ovoidal wrapping wall.

The outcome of the abovementioned caulking operation is to obtain an annular rib 18 which surrounds the equatorial region of the packaged product and which lies in a plane substantially coinciding with the sealing plane of the contours of the opening of the two alimentary half-shells 2 and 4.

It is understood that the method of implementing the caulking operation may vary greatly with respect to that shown; for example, the operation may be equally well performed by means of folding or upsetting of the flange edges, such that a portion limited by the terminal end of the flange edges moves towards or nearly touches the outer surface of the wrapping, while maintaining the presence of the abovementioned equatorial rib or flange.

According to a characteristic feature of the packaging according to the invention, the cover wrapping of the hollow body has signalling means 20 and 22 which identify in the wrapper and on the packaging specific pressure areas, namely areas where a compressive stress directed towards the inside of the hollow body and exerted by the user, for example using two fingers of the hand, is able to cause disengagement of the flange edges which had been caulked with the almost simultaneous separation, at least partially, of the wrapping half-shells as well as the half-shells of alimentary material.

The precise positioning of the abovementioned signalling means 20 and 22 allows the consumer to perform this separation, while keeping the two half-shells of alimentary material substantially intact, without the formation of troublesome fragments. In particular, the abovementioned signalling means 20 and 22 are positioned in the region of the cusp of the packaging, on at least one of the wrapping half-shells 10 and 12 and along the equatorial clinching rib 18. These signalling means 20 and 22 are preferably positioned in a position opposite to each other with respect to the greater axis of the ovoidal contour of the abovementioned caulking rib 18.

These signalling means 20 and 22 may, for example, consist of graphic symbols which are formed on the wrapping, such as, for example, symbols in the form of an arrow, the pointed end of which indicates the pressure points, or symbols which represent the imprints of finger-tips, or other circumscribed areas, for example with a circular or star shape, having a colour different from the colour which characterizes the neighbouring regions of the wrapping foil.

In another embodiment, the signalling means 20 and 22 may consist of a portion of the clinching rib 18 which has a transverse width (i.e. width of this rib projecting in the plane

in which this rib lies) smaller than the generally uniform width of this rib, or also portions of this rib, where the rib itself has been flattened beforehand and therefore is situated substantially close to the wrapping wall.

As shown in Fig. 4, opening of the packaging may thus be performed easily by exerting a simple compressive action on the signalling means 20 and 22. This compressive action causes opening of the wrapping half-shells 10 and 12 and the chocolate half-shells 2 and 4 in the region of cusp; thereafter, the consumer may perform separation of the half-shells. A further advantage consists in the fact that it is possible to separate the half-shells with the wrapping half-shells 10 and 12 still adhering to the half-shell 2 and 4 of alimentary material which is thus protected from contact with resting or support surfaces prior to consumption thereof.

Obviously, without modifying the principle of the invention, the constructional details and embodiments may be greatly varied with respect to that described and illustrated purely by way of example without departing from the scope of the claims which follow.

CLAIMS

1. Packaging for a food product packaging, comprising:
 - a hollow body (1) made of alimentary material and formed by a pair of half-shells (2, 4) which have an opening with an ovoidal contour and are sealed together along the respective contours (6) of the opening, and including an accessory or surprise article (S, 8), and
 - a cover wrapping (9) of said hollow body (1), which is formed by a pair of wrapping half-shells (10, 12) made of foil material, where each wrapping half-shell (10, 12) has a form matching the respective half-shell of alimentary material (2, 4) and has a respective flange (14, 16) surrounding and projecting from the contour (6) of its opening, characterized in that said wrapping half-shells (10, 12) are connected together, in a disengageable manner, by means of a mutual interference fit of said flanges (14, 16), said hollow body has a form with rotational symmetry about the greater axis of symmetry of said ovoidal contour, and the plane defined by the sealed contours of the opening of said half shells (2, 4) of alimentary material substantially coincides with the joining plane of said flanges (14, 16).
2. Packaging according to Claim 1, characterized in that the cover wrapping (9) of said hollow body (1) has signalling means (20, 22) which identify on the wrapping specific pressure areas, where application of a pressure causes the separation of the wrapping half-shells (10, 12) and the half-shells (2, 4) of alimentary material.
3. Packaging according to Claims 1 or 2, characterized in that said wrapping half-shells (10, 12) are connected together by means of an operation involving folding/upsetting of the respective flanges (14, 16).
4. Packaging according to Claim 3, characterized in that said wrapping half-shells (10, 12) are connected together by positioning said flanges (14, 16) in a facing and mutually folded relationship of said facing flanges, performed once or several times.
5. Packaging according to any one of Claims 1 to 4, characterized in that, following

joining together, said flanges (14, 16) are folded so as to form a rib (18) projecting from the ovoidal wall of the packaging.

6. Packaging according to any one of Claims 2 to 5, characterized in that said signalling means (20, 22), defining the pressure areas, are arranged in the cusp region of at least one of the wrapping half-shells (10, 12), along said joining plane and on opposite sides with respect to the greater axis of said ovoidal contour.

7. Packaging according to any one of Claims 2 to 6, characterized in that said signalling means (20, 22) comprise graphic symbols formed on the wrapping foil.

8. Packaging according to Claim 7, characterized in that said graphic symbols comprise circumscribed areas of the wrapping with a colouring different from the colouring of the wrapping in the zones adjacent thereto.

9. Packaging according to Claim 7, characterized in that said signalling means (20, 22) comprise a portion of said rib (18), resulting from joining together of said flanges (14, 16), having a projecting width smaller than the projecting width of adjacent zones of said rib.

10. Packaging according to any one of the preceding claims, characterized in that said wrapping half-shells (10, 12) consist of drawn aluminium foils.

11. Packaging according to any one of the preceding claims, characterized in that said hollow body (1) with rotational symmetry has at least one tapered end part.

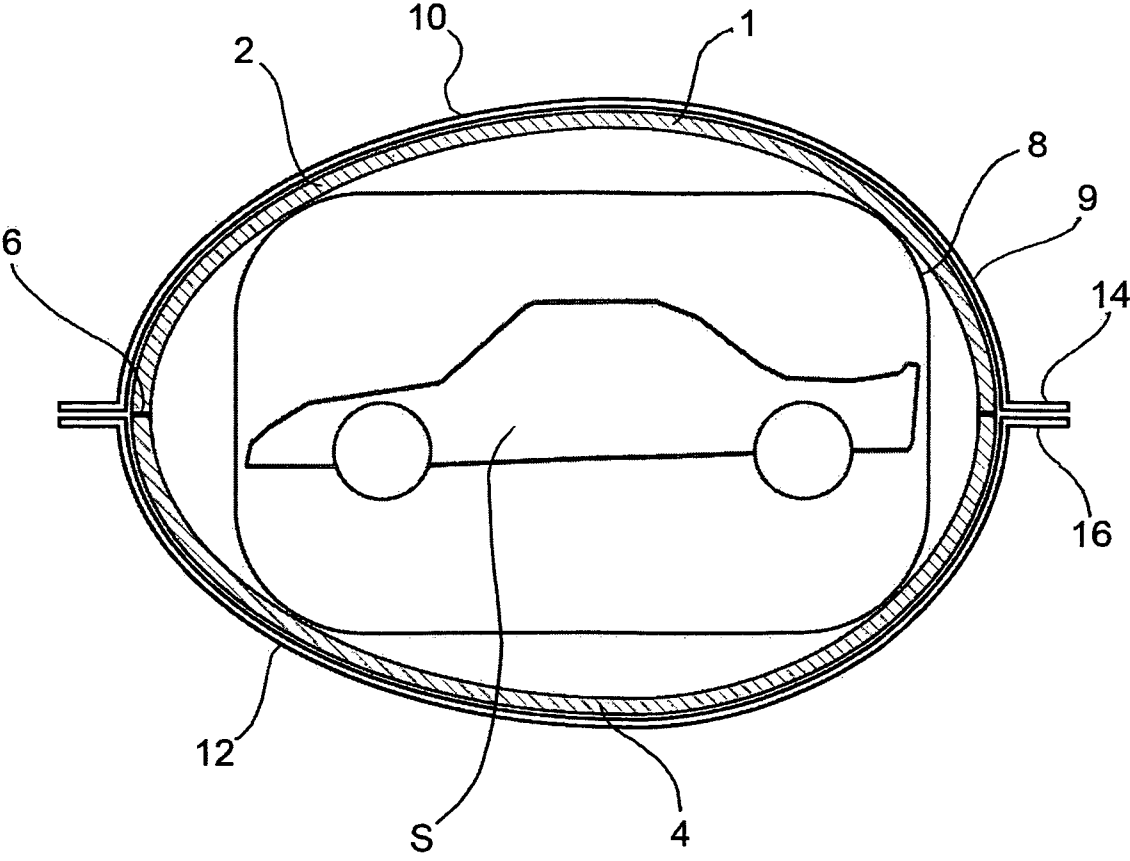
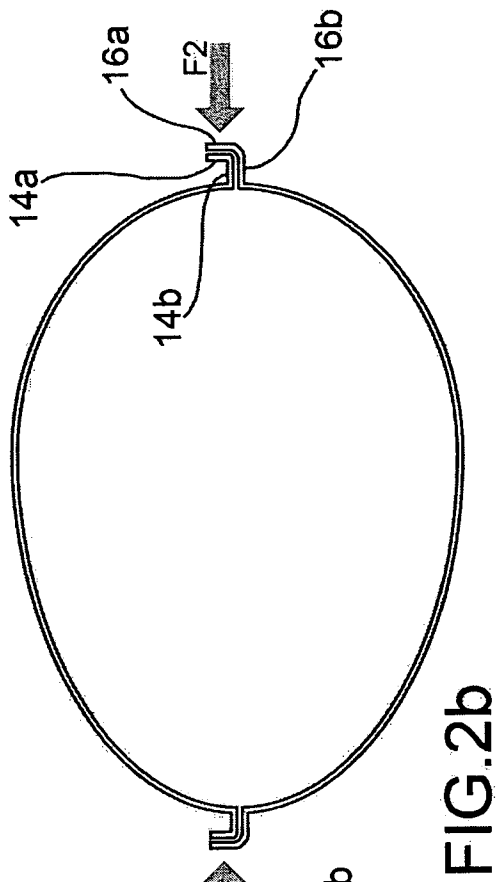
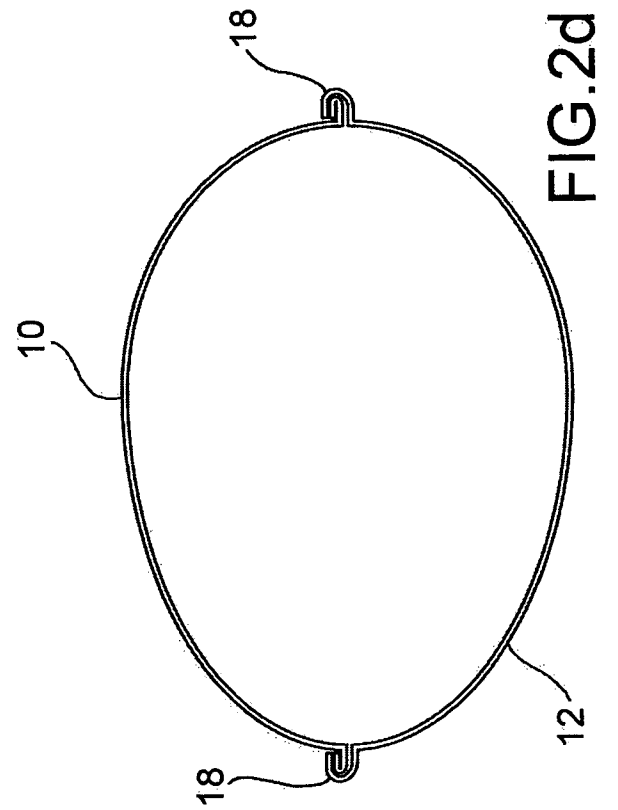
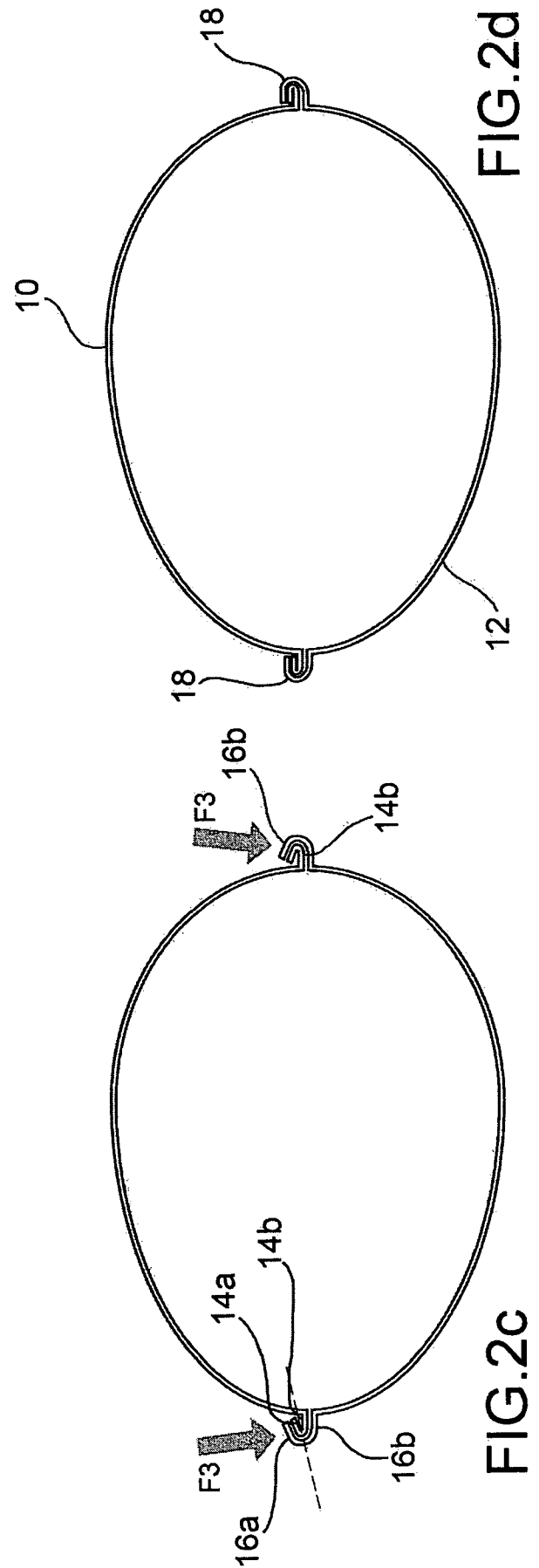
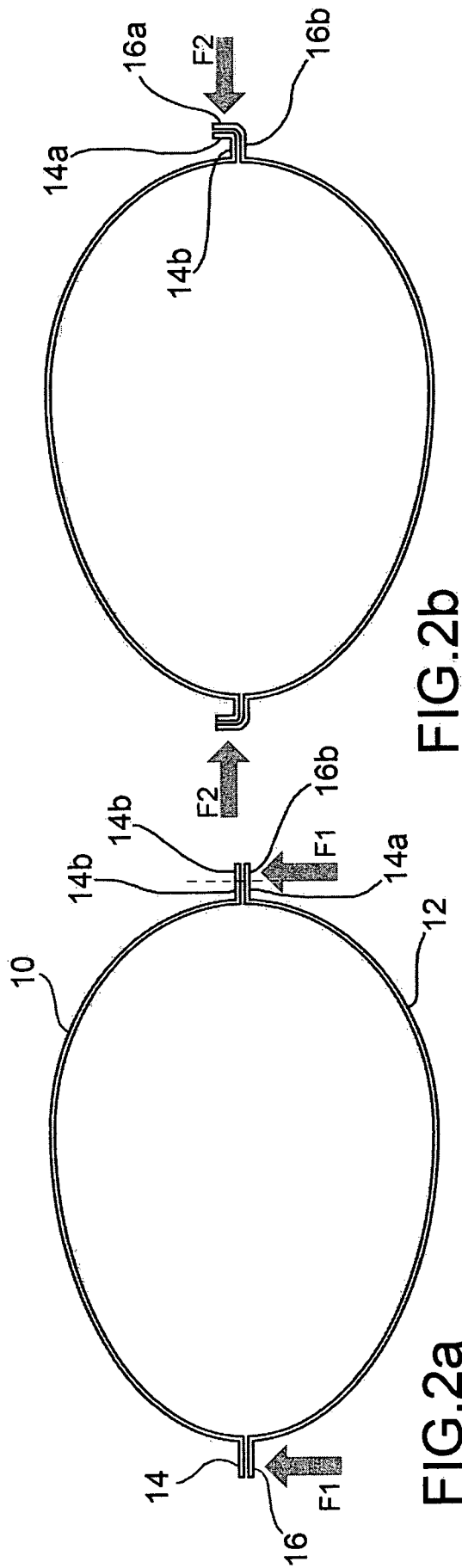
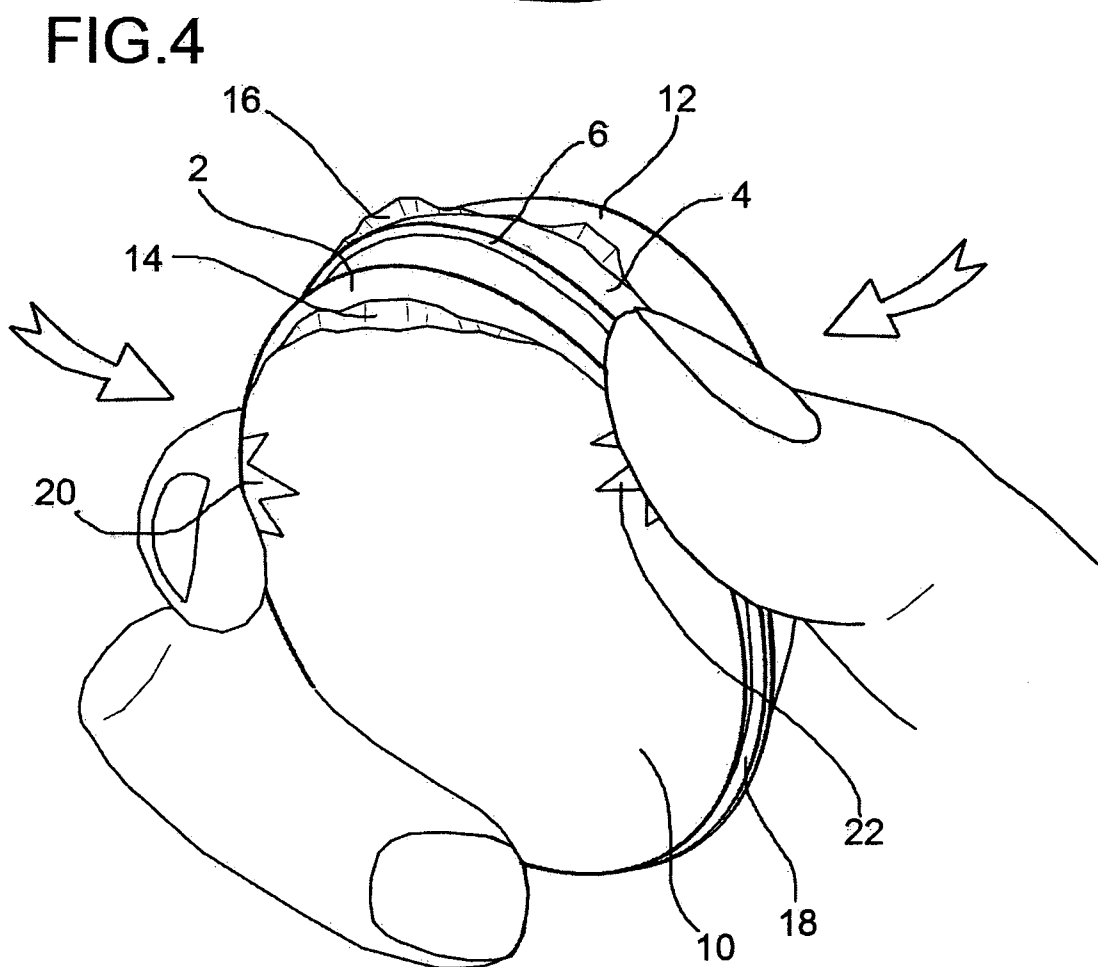
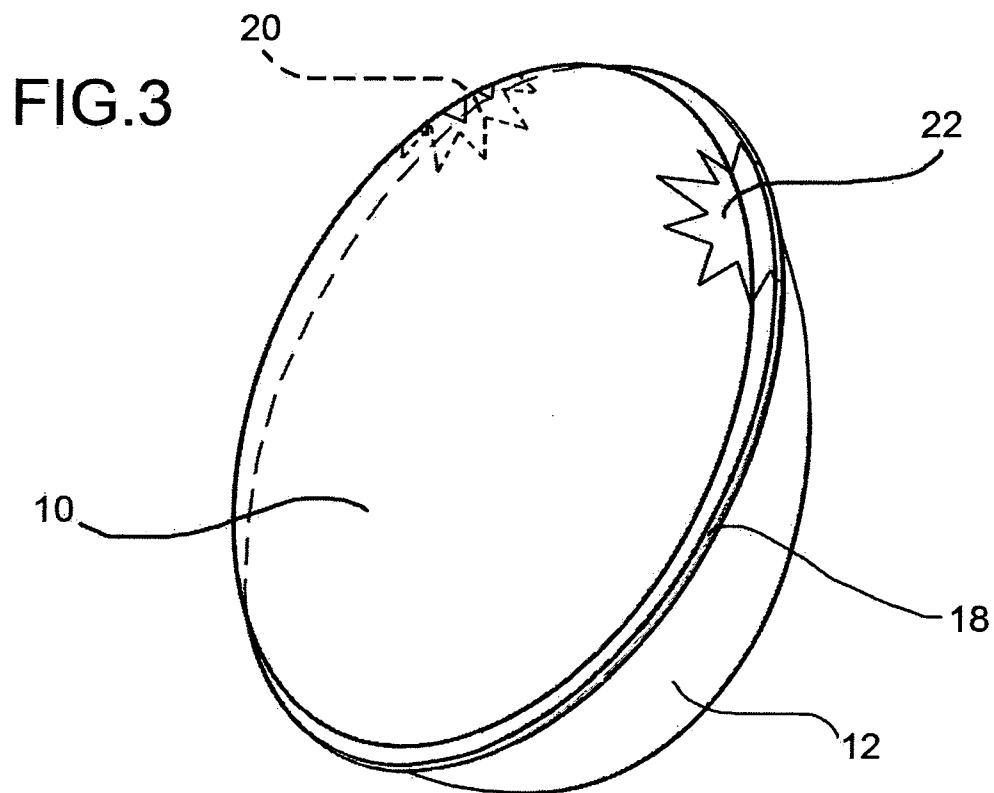


FIG.1



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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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.
X	EP 1 110 863 A (SOREMARTEC SA [BE]; FERRERO SPA [IT]; FERRERO OHG [DE]) 27 June 2001 (2001-06-27) paragraph [0017] - paragraph [0031]; figures 1-6	1-11
A	US 2006/062874 A1 (SINICHKO HENRY [CA] ET AL) 23 March 2006 (2006-03-23) figures 7-9	1-11



Further documents are listed in the continuation of Box C.



See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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