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(54) **A hermetically sealable container and the method for manufacturing the container**

Hermetisch versiegelbarer Behälter und Verfahren zur Herstellung des Behälters

Contenant scellable hermétiquement et procédé de fabrication du contenant

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Description

[0001] This invention relates to the preservation of fresh food products and, in particular, concerns a container comprising a tub to hold and display the products and a sealing barrier, which may be sealed to the tub to define a closed and isolated containment cavity hermetically sealed from the surrounding environment.

[0002] The invention also relates to a method for manufacturing the container.

[0003] For the packaging and preservation of fresh products tub containers are employed in which the walls of the tub are made of a paper material and coated with waterproofing film layers made from material compatible, on the one hand, with the products to be contained and, on the other, with the heat treatments (e.g. for preservation purposes) applied to the above-mentioned products and to the container.

[0004] The thicknesses of the paper material are normally relatively high - even if measurable in millimetres - so as to grant a structural rigidity to the tub adequate for its purpose.

[0005] The film materials consist, on the other hand, of thinner coatings applied to the layer of cellulose material to make it impermeable and non-breathable with respect to the content and the outside environment.

[0006] The sealing barriers are normally made from film, of an identical nature to the films used for coating the paper material, which are stretched over the tub after filling and then heat sealed to the edges of the tub to hermetically seal the inside space, thereby preserving the contents.

[0007] Maintaining the palatability, eye appeal and hygiene characteristics of the preserved products is closely linked to the degree of hermetic sealing. In addition, in order to extend shelf inert gases may also be introduced into the tub cavity with the aim of both protecting the contained product against the possibility of interaction with oxidising agents and/or contaminants in the atmosphere, and balancing the internal pressure of the container with the external atmospheric pressure to make the penetration of air inside the cavity more difficult.

[0008] A much desired objective of the above-mentioned technology is the obtainment of methods to increasingly extend the shelf life of the products. However, for containers made from paper material, such a result is always difficult to achieve as the manufacturing of the container by deep drawing a flat sheet of paper material forms thin folds - as is particularly evident inside the corners of the container and inside the cavity - with overlapping of the materials thereby forming channels which, even though they are narrow, are practically uninterrupted and may bring the outside environment into communication with the inside cavity of the container.

[0009] Document DE-A-38 14 520, which is regarded as the closest prior art, discloses a container comprising a tuck located on the surrounding wall.

[0010] In a solution proposed by the same Applicant

to overcome this problem (ref. patents EP 1.365.964 and EP 1.792.844) the containers are provided with a specially shaped edge designed to join together the fold channels making them lead to a sort of collective passage shaped so as to be sealable with a greater degree of security in terms of hermetic seal.

[0011] This solution was found to be completely satisfactory in terms of the hermetic seal.

[0012] However, it must be stressed that the need for a high degree of hermetic seal may not be separated from the structural considerations required for the edge of the container to provide adequate rigidity to the container itself.

[0013] Consequently, the fundamental problem to be solved remains that of providing edge structures able to substantially provide an equally effective answer to the contrasting aspects of the problem concerning, on the one hand, hermetic seal and, on the other, structural rigidity.

[0014] The main aim of this invention is therefore to provide a container whose sealing and structural strength characteristics are substantially equivalent to each other in terms of relative importance.

[0015] Another aim of this invention is to provide a container able to provide a longer shelf life compared with prior art containers.

[0016] A further aim of the present invention is to provide containers which may be manufactured economically, bearing in mind that they are substantially single-use disposable containers.

[0017] Yet another aim of the present invention is to provide a fully biodegradable and fully compostable container without residue of any kind in the environment when disposed of as waste.

[0018] The technical characteristics of this invention according to the above-mentioned aims may be clearly inferred from the content of the appended claims, in particular claims 1 and 10 and any of the claims directly or indirectly dependent on claim 1 or 10.

[0019] The advantages of the invention are apparent from the detailed description which follows, with reference to the accompanying drawings which illustrate preferred, non-limiting embodiments of it provided merely by way of example and in which:

- figure 1 is a schematic plan view, from above, of the container according to this invention;
- figure 2 is a view of the container of figure 1, along a cross-section in the plane II - II of figure 1, and shown at an enlarged scale;
- figure 3 is an enlarged view of a first detail of the container shown in figure 2;
- figure 4 is an enlarged view of a further detail of the container shown in figure 2;
- figure 5 is an enlarged view of a second detail defining a preferred embodiment of the container 2. With reference to the accompanying drawings, the numeral 1 denotes as a whole a hermetically sealable

container to hold and display perishable products, in particular fresh food products.

[0020] The container 1 essentially comprises (see figure 2) a tub 2 and a sealing barrier 3 which may be reciprocally heat sealed to define a cavity 4 to hold the product closed and isolated from the surrounding environment.

[0021] The tub 2 has a top edge 5 running continuously along its border and comprises a wall 6 surrounding the containment cavity 4, consisting of a first stratiform element 7 made of cellulose material coated on both sides, in a first embodiment, by layers 8 of film material (see in particular figure 3), or, in a second embodiment (see in particular figure 5), coated only on the inside of the cavity 4 by a single layer 8.

[0022] More in detail, the first stratiform element 7 is made from paper material with a thickness of a few millimetres. The single or double layer 8 of film material, which is much thinner, consists of films of material compatible with the product to be contained and/or with the heat treatment the product is to undergo in association with the container 1.

[0023] The heat treatment may be of the most generic type, since it may include, for example, both the cooling and low-temperature preservation, and, if necessary, the heating of the product together with its container, before consumption.

[0024] Possible materials used for forming the film coating layer 8 may be polymeric film materials selected, for example, from the family of polyethylene materials or, also, from the family of polypropylene materials.

[0025] However, an even better choice, especially in view of the environmental impact of waste generated by the use of the containers 1, may make use of materials of a biological origin to form the film coating layer 8, that is, those biomass materials which have come to be known as "bioplastic".

[0026] Use of these materials enables - as will become more evident in the rest of this description - completely environmentally compatible waste to be obtained, which is fully degradable and compostable without leaving any residue.

[0027] Figure 2 shows that the container 1 comprises a tuck 9 remote to the containment cavity 4 and having an edge 10 and a tongue 11. The tuck 9 is located on the surrounding wall 6, and, in more detail, is monolithically integrated in the wall 6 itself of which it forms a more peripheral part.

[0028] The container 1 also comprises, preferably but without limiting the scope of the invention, an annular element 14 made of cellulose material coated on both sides with layers 8 of film material identical to those of the wall 6 surrounding the cavity 4 of the tub 2.

[0029] The annular element 14 has a perimeter edge, labelled 16, and may be associated with a top zone 15 of the tub 2 - which substantially comprises the edge 5 and the upper part of the wall 6; the purpose of the annular

element 14 is to structurally stiffen the top zone 15, that is, the container 1 as a whole.

[0030] The tuck 9 may be bent back onto itself to at least partially cover the top edge 5 of the tub 2, in a remote location with respect to the wall 6 surrounding the cavity 4.

[0031] In this regard, more particularly, the tuck 9 has an edge 10 and a tongue 11 which may be overlapped after bending (see arrows F11 in figure 2).

[0032] The perimeter edge 16 of the annular element 14 is placed between the edge 10 and the tongue 11 of the tuck 9. In this way, the edge 10 and the tongue 11 may be heat sealed, at the two distinct partitions 12 and 13 of a same layer 8 of film material, to the two opposite faces of the edge 16 of the annular element 14.

[0033] After heat sealing, the tuck 9 may be permanently associated directly to the sealing barrier 3 which covers it along the entire border of the container 1.

[0034] In the case of a double film layer 8, this association may be obtained by heat sealing, whilst in the case of a single film layer 8, the inner side without the layer may be joined to the barrier 3 by gluing with special adhesives compatible with the use of the container 2 (already well known in prior art).

[0035] The above-mentioned composition of the container 1 makes it evident that in virtue of the overlapping of several stratiform paper elements and in virtue also of the jointing by gluing or heat sealing provided between the film layers 8 placed between one stratiform element and the other, the container 1 has a high overall structural rigidity accompanied also by a high degree of hermetic seal. With regard to this last aspect, it may be seen that a single space is formed between the barrier 3 and the wall 6, glued or heat sealed together at the tongues 11, which is fully closed and, therefore, prevents any possible communication with the outside environment.

[0036] If the presence of the annular stiffening element 14 is also considered it may be noted that as a result of the surface extension and the multiplicity of heat seals between the layers of film material 8 facing each other, the intercommunication between the inside chamber 4 and the environment surrounding the closed container 1 is made even more difficult, which leads to a further increase in the hermetic seal of the container 1.

[0037] The degree of hermetic seal of the container 1 is increased even further by the contribution of a further characteristic visible in figure 2 and shown even more clearly in figure 4. It may be seen from the figures that the tongue 11, the barrier 3 and the surface 17 or 5, 6 and 12 inside the container 1, that is, the surface of the annular element 14 facing towards the barrier 3, also delimit a maze-like passage 18 functionally placed between the containment cavity 4 of the tub 2 and the outside environment.

[0038] The presence of this passage 18 constitutes a considerable obstacle to the penetration into the chamber 4 of air coming from the outside of the container 1, and an equally considerable obstacle to the escape to

the outside of the chamber 4 of the gases present in the product containment cavity 4.

[0039] The container 1 described above may be obtained with a method comprising the following essential steps:

- shaping to the form of a tub 2 a first stratiform element 7 made of cellulose material coated on one or both sides with a layer 8 of film material;
- bending a tongue 11 of a perimeter tuck 9 of the first stratiform element 7 back onto itself with simultaneous overlapping over the edge of the first stratiform element 7 (see arrows F11 in figure 2); and
- sealing the container 1, after filling with the products, by gluing or heat sealing of a sealing barrier 3 in direct contact with the tuck 9.

[0040] The method may also, advantageously comprise:

- a step of associating to the tub 2 an annular element 14 made of cellulose materials coated on both sides with layers 8 of film material; and
- a step of heat sealing the annular element 14 to overlap with the inside faces 17 or 5, 6 and 12 of the tub 2; before the tongue 11 of the tuck 9 is bent back onto itself.

[0041] This makes it possible to interpose the peripheral edge 16 of the annular element 14 and to heat seal it monolithically to the tuck 9 making the structure of the container 1 even more rigid and also contributing to an increase in the hermetic seal of the container 1.

[0042] The invention described herein is susceptible of industrial application and may be modified and adapted in several ways without thereby departing from the scope of the inventive concept. Moreover, all the details of the invention may be substituted by technically equivalent elements.

Claims

1. A hermetically sealable container to hold and display perishable products, in particular fresh food products, comprising a tub (2) and a closing barrier (3) which may be reciprocally heat sealed to define a cavity (4) to contain the product closed and isolated from the surrounding environment; the tub (2) having a top edge (5) and comprising a wall (6) surrounding the containment cavity (4), which has a first stratiform element (7) made of cellulose material coated, at least on the inner side of the cavity (4), by a layer of (8) film material, a tuck (9) located on the surrounding wall (6), permanently associable at least to the sealing barrier (3) and having an edge (10) and a bent tongue (11); the container (1) being **characterised in that** it comprises an annular element (14) made

of cellulose material coated on both sides by layers (8) of film material, the annular element (14) being associated with a top zone (15; 5, 6) of the tub (2) to make it structurally more rigid; the annular element (14) having a perimeter edge (16) which is inserted between the edge (10) and the tongue (11) of the tuck (9) and heat sealed to relative partitions (12, 13) of a single layer (8) of film material of the edge (10) and tongue (11).

2. The container according to claim 1, **characterised in that** the tuck (9) is permanently associated at least to the barrier (3) by gluing.

3. The container according to claim 1, in which the first stratiform element (7) made of cellulose material is coated on both sides by layers (8) of film material, **characterised in that** the tuck (9) may be heat sealed at least to the sealing barrier (3).

4. The container according to any of the foregoing claims, **characterised in that** the material of the film coating layer (8) is a material compatible with the product to be contained and/or with the heat treatment which the product is to undergo in association with the container (1).

5. The container according to any of the foregoing claims, **characterised in that** the material of the film coating layer (8) is a polymeric material selected from the family of polyethylene materials.

6. The container according to any of the foregoing claims from 1 to 4, **characterised in that** the material of the film coating layer (8) is a polymeric material selected from the family of polypropylene materials.

7. The container according to any of the foregoing claims from 1 to 4, **characterised in that** the material of the film coating layer (8) is a biomass material.

8. The container according to any of the foregoing claims, **characterised in that** the tuck (9) is located on the surrounding wall (6), outside the containment cavity (4) of the tub (2).

9. The container according to any of the foregoing claims, **characterised in that** the tongue (11), the barrier (3) and at least one surface (17; 5, 6, 12) on the inner side of the container (1) delimit a maze-like passage (18) functionally placed between the containment cavity (4) of the tub (2) and the outside environment.

10. A method for manufacturing containers, display items, for perishable products, in particular fresh food products, in which the container (1) comprises a tub (2) and a sealing barrier (3) which may be re-

ciprocally heat sealed, the method comprising the following steps

- shaping to the form of a tub (2), having a containment cavity (4) and a wall (6) surrounding the containment cavity (4), a first stratiform element (7) made of cellulose material coated, at least on the inner side defining the containment cavity (4), with a layer (8) of film material;
- associating the tub (2) to an annular element (14) made of cellulose material coated on both sides with layers (8) of film material; the method being **characterised in that** it comprises the steps of:

- heat sealing the annular element (14) to overlap with an inside face (17; 5, 6, 12) of the tub (2);
- bending a tongue (11) of a perimeter tuck (9) of the first stratiform element (7) back onto itself with the interposing of a peripheral edge (16) of the annular element (14);
- heat sealing the tongue (11) of the tuck (9) to the edge (16) of the annular element (14);
- sealing the container (1), after filling with the products, by permanent association of a sealing barrier (3) in direct contact with the tuck (9).

11. The method according to claim 10, **characterised in that** the sealing step is carried out by gluing together the barrier (3) and the tuck (9).

12. The method according to claim 10, in which the first stratiform element (7) made of cellulose material is coated on both sides by layers (8) of film material, **characterised in that** the sealing step between the tuck (9) and the barrier (3) is performed by heat sealing.

Patentansprüche

1. Hermetisch versiegelbarer Behälter zum Bereithalten und Präsentieren von verderblichen Produkten, insbesondere Frischkostprodukten, umfassend eine Wanne (2) und eine abdichtende Abdeckung (3), die miteinander heißgesiegelt werden können, um einen Hohlraum (4) zu definieren, der das Produkt abgeschlossen und von der Umgebung isoliert enthält; wobei die Wanne (2) einen oberen Rand (5) hat und eine den Einschließungshohlraum (4) umgebende Wand (6) aufweist, die ein erstes geschichtetes Element (7) hat, das aus Zellulosematerial hergestellt ist, das mindestens an der Innenseite des Hohlraums (4) mit einer Schicht (8) aus Folienmaterial versehen ist, sowie eine Lasche (9), die sich an der Umfassungswand (6) befindet und mindestens mit

der abdichtenden Abdeckung (3) dauerhaft verbunden werden kann und eine Kante (10) und eine gebogene Zunge (11) hat; wobei der Behälter (1) **dadurch gekennzeichnet ist, dass** er ein ringförmiges Element (14) aufweist, das aus Zellulosematerial hergestellt ist, das beidseitig mit Schichten (8) aus Folienmaterial versehen ist, wobei das ringförmige Element (14) mit einer oberen Zone (15; 5, 6) der Wanne (2) verbunden ist, um ihr eine größere Strukturfestigkeit zu verleihen; wobei das ringförmige Element (14) einen Umfangsrandstreifen (16) hat, der zwischen der Kante (10) und der Zunge (11) der Lasche (9) eingefügt und auf jeweilige Bereiche (12, 13) einer Einzelschicht (8) aus Folienmaterial an der Kante (10) und der Zunge (11) heißgesiegelt ist.

2. Behälter nach Anspruch 1, **dadurch gekennzeichnet, dass** die Lasche (9) durch Kleben mindestens mit der Abdeckung (3) dauerhaft verbunden ist.

3. Behälter nach Anspruch 1, wobei das erste geschichtete Element (7), hergestellt aus Zellulosematerial, beidseitig mit Schichten (8) aus Folienmaterial versehen ist, **dadurch gekennzeichnet, dass** die Lasche (9) mindestens an die abdichtende Abdeckung (3) heißgesiegelt werden kann.

4. Behälter nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das Material der Folienbeschichtung (8) ein mit dem aufzunehmenden Produkt und/oder mit der Wärmebehandlung, der das Produkt in Verbindung mit dem Behälter (1) unterzogen werden soll, verträgliches Material ist.

5. Behälter nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das Material der Folienbeschichtung (8) ein Polymerwerkstoff ist, der aus der Familie der Polyethylene ausgewählt ist.

6. Behälter nach einem der vorhergehenden Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** das Material der Folienbeschichtung (8) ein Polymerwerkstoff ist, der aus der Familie der Polypropylene ausgewählt ist.

7. Behälter nach einem der vorhergehenden Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** das Material der Folienbeschichtung (8) ein Biomassematerial ist.

8. Behälter nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** sich die Lasche (9) an der Umfassungswand (6), außerhalb des Einschließungshohlraums (4) der Wanne (2) befindet.

9. Behälter nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Zunge (11), die Abdeckung (3) und mindestens eine Oberfläche (17; 5, 6, 12) an der Innenseite des Behälters (1) einen labyrinthartigen Durchgang (18) abgrenzen, der funktionsbedingt zwischen dem Einschließungshohlraum (4) der Wanne (2) und der äußeren Umgebung angeordnet ist.

10. Verfahren zum Herstellen von Behältern, Präsentationmitteln, für verderbliche Produkte, insbesondere Frischkostprodukte, wobei der Behälter (1) eine Wanne (2) und eine abdichtende Abdeckung (3), die miteinander heißgesiegelt werden können, umfasst, wobei das Verfahren die folgenden Schritte umfasst:

- spanloses Umformen in die Form einer Wanne (2) mit einem Einschließungshohlraum (4) und einer Wand (6), die den Einschließungshohlraum (4) umgibt, einem ersten geschichteten Element (7), das aus Zellulosematerial hergestellt ist, das mindestens an der Innenseite, die den Einschließungshohlraum (4) abgrenzt, mit einer Schicht (8) aus Folienmaterial versehen ist;

- Verbinden der Wanne (2) mit einem ringförmigen Element (14), das aus Zellulosematerial hergestellt ist, das beidseitig mit Schichten (8) aus Folienmaterial versehen ist; wobei das Verfahren **dadurch gekennzeichnet ist, dass** es die Schritte umfasst:

- Heißsiegeln des ringförmigen Elements (14) derart, dass es mit einer Innenseitenfläche (17; 5, 6, 12) der Wanne (2) überlappt;

- Zurückbiegen einer Zunge (11) einer Umfangslasche (9) des ersten geschichteten Elements (7) auf sich selbst bei gleichzeitigem Einschieben eines Umfangsrandstreifens (16) des ringförmigen Elements (14);
- Heißsiegeln der Zunge (11) der Lasche (9) an den Randstreifen (16) des ringförmigen Elements (14);

- Versiegeln des Behälters (11) nach dem Befüllen mit den Produkten durch dauerhaftes Verbinden, in Direktkontakt, einer abdichtenden Abdeckung (3) mit der Lasche (9).

11. Verfahren nach Anspruch 10, **dadurch gekennzeichnet, dass** der Versiegelungsschritt ausgeführt wird, indem die Abdeckung (3) und die Lasche (9) zusammengeklebt werden.

12. Verfahren nach Anspruch 10, wobei das erste geschichtete Element (7), hergestellt aus Zellulosematerial, beidseitig mit Schichten (8) aus Folienmaterial

versehen ist, **dadurch gekennzeichnet, dass** der Versiegelungsschritt zwischen der Lasche (9) und der Abdeckung (3) ausgeführt wird, die heißgesiegelt werden.

Revendications

1. Un contenant scellable hermétiquement pour contenir et exposer des produits périssables, en particulier des produits alimentaires frais, comprenant une barquette (2) et une barrière de fermeture (3) qui peuvent être réciproquement thermoscellées pour définir une cavité (4) de logement du produit, fermée et isolée de l'environnement extérieur ; la barquette (2) présentant un bord supérieur (5) et comprenant une paroi (6) entourant la cavité (4) de logement, ayant un premier élément stratiforme (7) réalisé en matériau cellulosique revêtu, au moins sur le côté intérieur de ladite cavité (4), par une couche (8) de matériau pelliculaire, et un repli (9) situé sur la paroi (6) périphérique elle-même, pouvant être associé de façon permanente à la barrière de scellage (3) et ayant un bord (10) et une patte repliée (11) ; le contenant (1) étant **caractérisé en ce qu'il** comprend un élément annulaire (14) réalisé en matériau cellulosique revêtu des deux côtés par des couches (8) de matériau pelliculaire, l'élément annulaire (14) étant associé à une zone supérieure (15; 5, 6) de la barquette (2) pour la rendre structurellement plus rigide ; l'élément annulaire (14) ayant un bord périphérique (16) qui est inséré entre le bord (10) et la patte (11) du repli (9) et thermoscellé à des portions (12, 13) correspondantes d'une couche (8) de matériau pelliculaire du bord (10) et de la patte (11).

2. Le contenant selon la revendication 1, **caractérisé en ce que** le repli (9) est associé de façon permanente au moins à la barrière (3) par collage.

3. Le contenant selon la revendication 1, où le premier élément stratiforme (7) réalisé en matériau cellulosique est revêtu des deux côtés par des couches (8) de matériau pelliculaire, **caractérisé en ce que** le repli (9) peut être thermoscellé au moins à la barrière de scellage (3).

4. Le contenant selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le matériau de la couche (8) de revêtement pelliculaire est un matériau compatible avec le produit à loger et/ou avec le traitement thermique auquel le produit doit être soumis en association avec le contenant (1).

5. Le contenant selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le matériau de la couche (8) de revêtement pelliculaire est un matériau polymérique sélectionné dans la famille

des matériaux polyéthyléniques.

6. Le contenant selon l'une quelconque des revendications précédentes de 1 à 4, **caractérisé en ce que** le matériau de la couche (8) de revêtement pelliculaire est un matériau polymérique sélectionné dans la famille des matériaux polypropyléniques. 5
7. Le contenant selon l'une quelconque des revendications précédentes de 1 à 4, **caractérisé en ce que** le matériau de la couche (8) de revêtement pelliculaire est un matériau d'origine biologique. 10
8. Le contenant selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le repli (9) est situé sur la paroi (6) périphérique, à l'extérieur de la cavité de logement (4) de la barquette (2). 15
9. Le contenant selon l'une quelconque des revendications précédentes, **caractérisé en ce que** la patte (11), la barrière (3) et au moins une surface (17; 5, 6, 12) du côté intérieur du contenant (1) délimitent un méat labyrinthique (18) fonctionnellement placé entre la cavité de logement (4) de la barquette (2) et l'environnement extérieur. 20
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10. Un procédé pour fabriquer des contenants, présentoirs, pour des produits périssables, en particulier des produits alimentaires frais, où le contenant (1) comprend une barquette (2) et une barrière de scel- 30
lage (3) qui peuvent être réciproquement thermoscellées, le procédé comprenant les phases suivantes
 - donner la forme d'une barquette (2), ayant une 35
cavité de logement (4) et une paroi (6) entourant ladite cavité de logement (4), à un premier élément stratiforme (7) réalisé en matériau cellulosique revêtu, au moins sur le côté intérieur dé-
finissant la cavité de logement (4), d'une couche 40
(8) de matériau pelliculaire ;
 - associer la barquette (2) à un élément annulaire (14) réalisé en matériau cellulosique revêtu des deux côtés de couches (8) de matériau pelliculaire ; le procédé étant **caractérisé en ce qu'il** comprend les phases consistant à : 45
 - thermosceller l'élément annulaire (14) en le superposant à une face intérieure (17; 5, 6, 12) de la barquette (2) ; 50
 - replier sur elle-même une patte (11) d'un repli (9) périphérique du premier élément stratiforme (7) avec interposition d'un bord (16) périphérique de l'élément annulaire (14) ; 55
 - thermosceller la patte (11) du repli (9) au bord (16) de l'élément annulaire (14) ;
 - sceller le contenant (1), après l'avoir rempli

avec les produits, en associant de façon permanente une barrière de scellage (3) en contact direct avec le repli (9).

11. Le procédé selon la revendication 10, **caractérisé en ce que** la phase de scellage est effectuée par collage réciproque de la barrière (3) et du repli (9).
12. Le procédé selon la revendication 10, où le premier élément stratiforme (7) réalisé en matériau cellulosique est revêtu des deux côtés de couches (8) de matériau pelliculaire, **caractérisé en ce que** la phase de scellage entre le repli (9) et la barrière (3) est effectuée par thermoscellage.

FIG.1

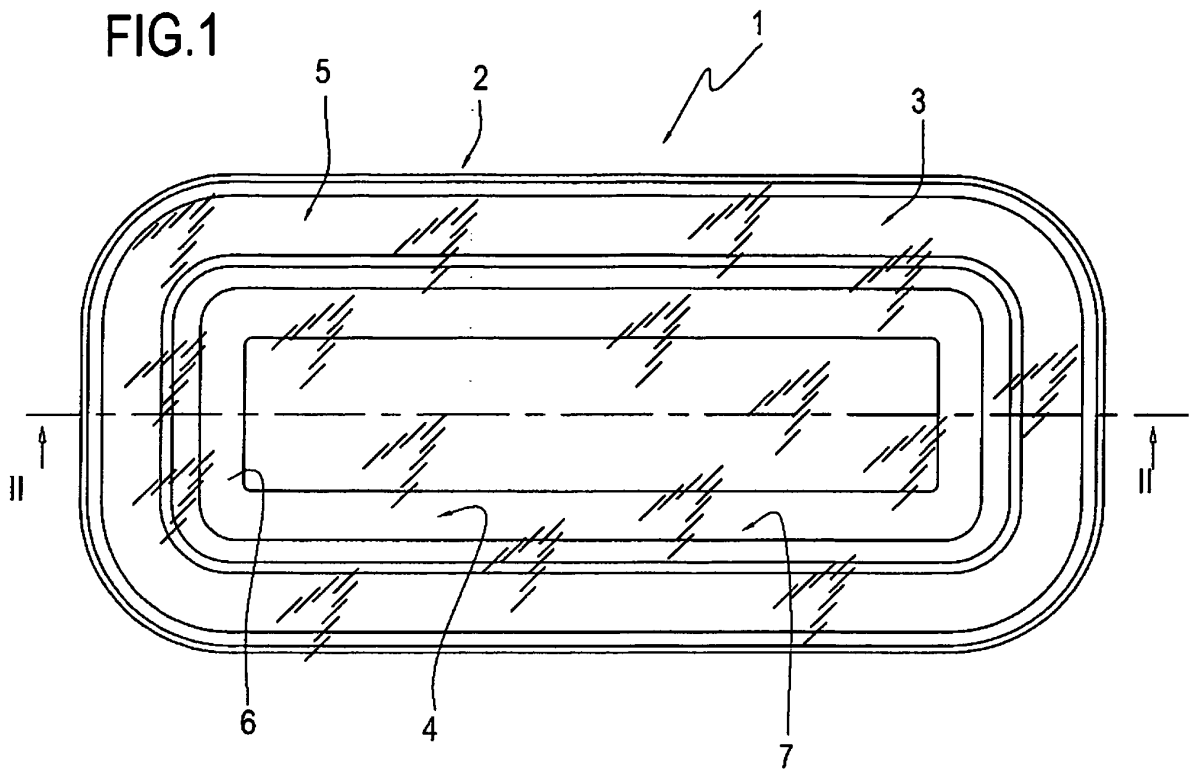


FIG.4

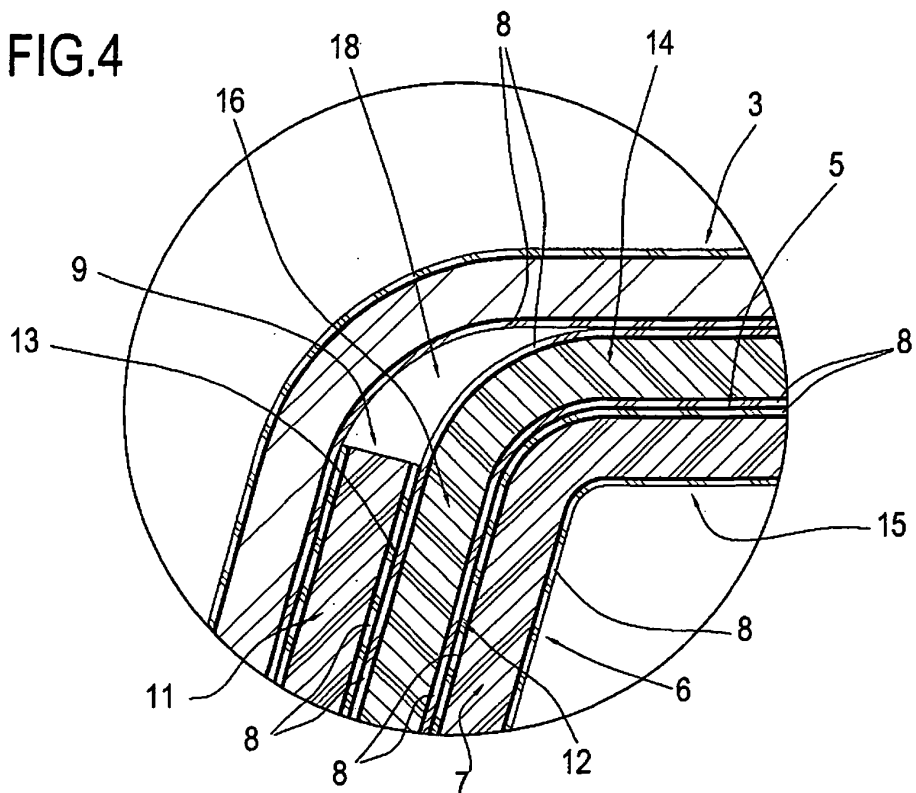


FIG.2

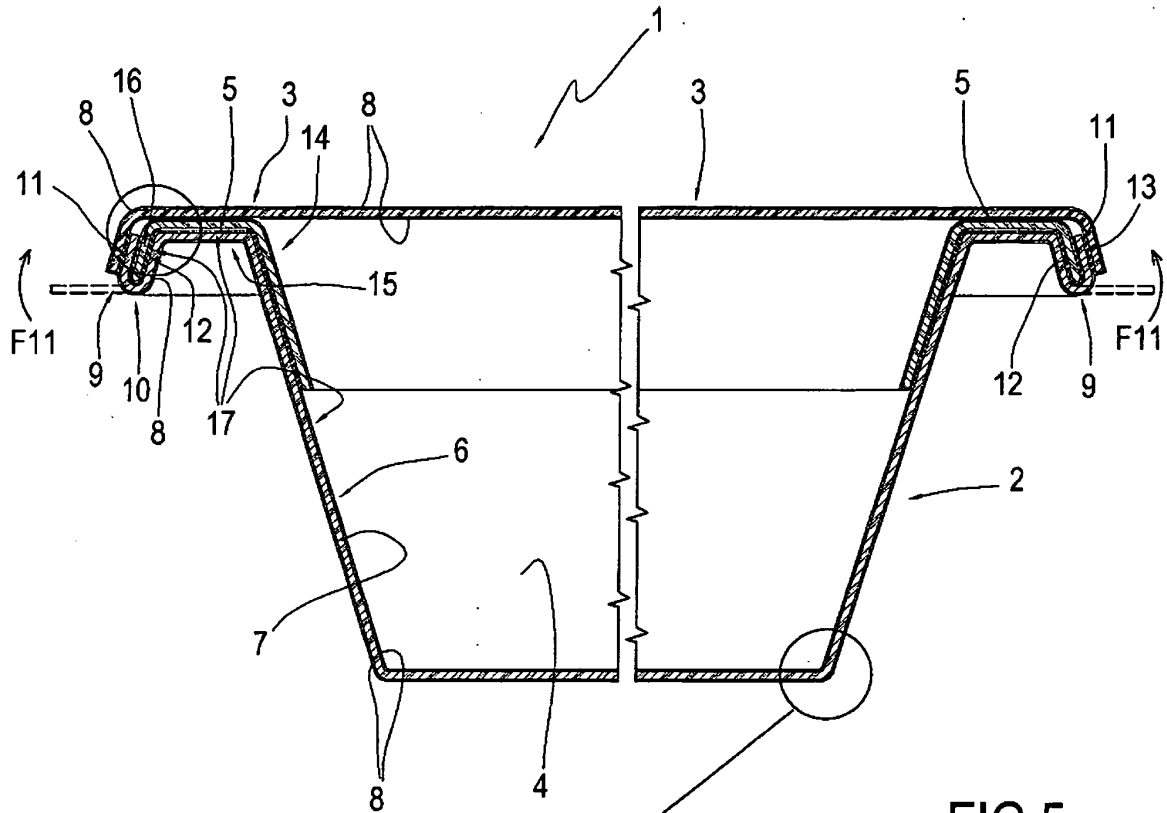


FIG.3

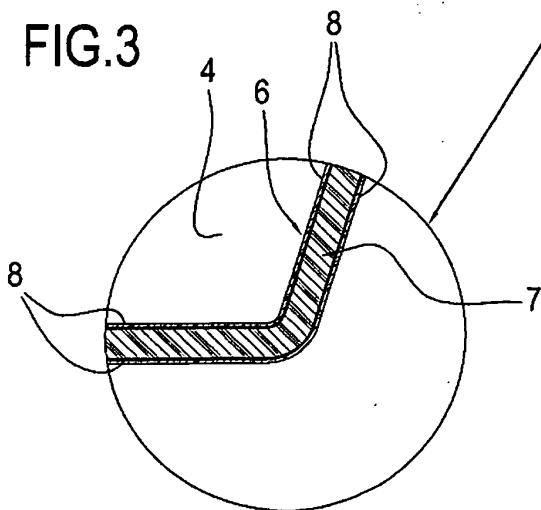
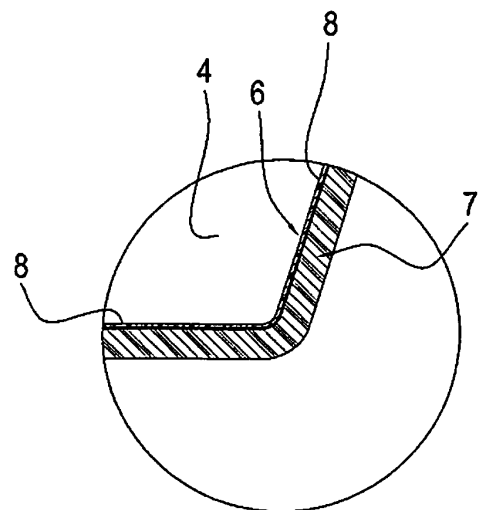


FIG.5



REFERENCES CITED IN THE DESCRIPTION

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