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(54) **Bag with two compartments for steaming food products**

(57) The invention is directed to a microwaveable double bag comprising an inner perforated bag (20) of a thermoplastic flexible material, a substantially impermeforated, moisture-proof outer bag (10) of a thermoplastic flexible material and an absorbing pad (30), fastened to the inner surface of the outer bag. Said double bag is used to package food products (40) that require a suitable humidity level for their proper storage and/or thawing, cooking or re-heating. In use, the pad contained in

the double bag is suitably moisturized with the required amount of steam-generating liquid, e.g. water, wine, etc., before, during or just after loading the food product into the inner bag, the atmosphere within the package is optionally modified to increase the shelf-life of the food product and the double bag is then closed, with the inner bag inside the outer one. The package obtained can then be stored and passed into the microwave oven when the steam thawing, and/or cooking and/or re-heating of the packaged product is desired.

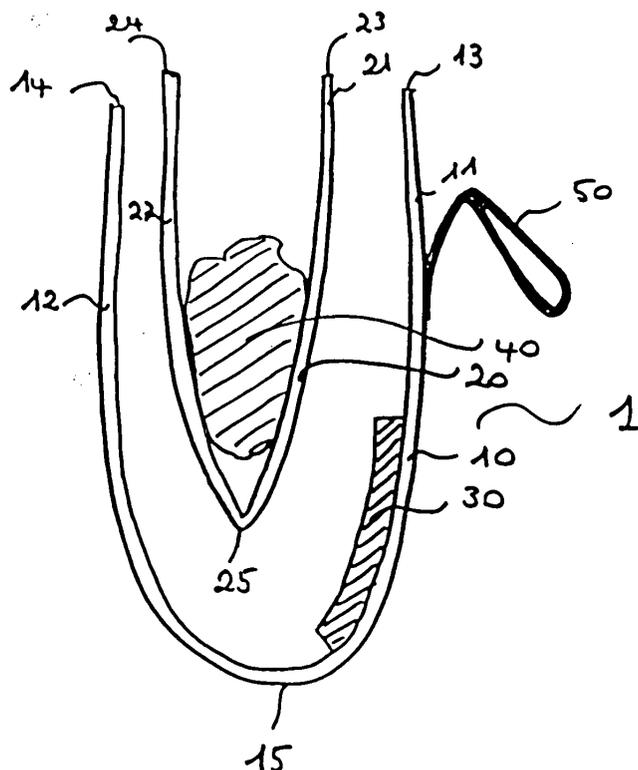


Fig. 1

Description

[0001] The present invention relates to an improved storage and cook-in flexible container for use in the packaging of food products that require moisturized conditions for their proper storage and/or thawing and/or cooking and/or re-heating.

[0002] The invention also relates to a food product stored and cooked or re-heated in said flexible container and to a method of packaging a food product using said flexible container.

BACKGROUND OF THE INVENTION

[0003] It is widely known that for many fresh food products the ideal storage conditions require a humid environment, with a suitable amount of moisture uniformly distributed in the environment where the product is stored, to avoid on the one hand the accelerated dehydration of the food product that occurs in dry conditions and on the other hand the growth of mould that may occur in case of wetting or over humidification of the product.

[0004] It is also known that steam cooking of fresh food products is a very good cooking method as it preserves the organoleptic qualities (aroma and taste) of the products and maintains most of the vitamins and nutritional factors contained therein.

[0005] The advantage of using steam is also recognized in connection with the thawing, re-heating or cooking of frozen foods where the use of a steam environment greatly enhances the taste and aroma of the defrosted products. This particularly when a single step thawing/cooking or thawing/reheating is carried out.

[0006] EP-A-1,053,944 describes a package for the storage and cook-in or re-heat of a food product, said package comprising a tray with a perforated false bottom upon which it is placed the food product, a moisturized pad positioned between the bottom and the false bottom of the tray and a thermoplastic film covering the product and closing the package. The product is thus stored under moisturized but not wet conditions and is then cooked, directly into the package, by placing the package into a microwave oven.

[0007] The advantages of this packaging system are remarkable as the products, packaged under the suitable moisturized conditions are maintained fresh for a long period of time and when they are passed into the microwave oven within the package, they are steam-cooked without being boiled.

[0008] The above system however has several disadvantages as the use of rigid receptacles such as trays, and particularly double bottom trays, requires a huge amount of space in the packaging facility merely for storing the packaging materials; the cost of such a package is high mainly because of the cost of the double bottom trays that are required; and finally the weight and volume of plastic material to be disposed of by the end consum-

er after usage is very high.

[0009] There is therefore the need to find a way to avoid all the above problems, maintaining however the advantages offered by the particular packaging system.

SUMMARY OF THE INVENTION

[0010] The solution offered by the present invention is a microwaveable double bag of thermoplastic flexible material having at least an inner perforated bag, an outer bag and an absorbing pad, fastened to the inner surface of the outer bag.

[0011] In use, just before loading the product in the inner bag of the double bag package, the pad is suitably moisturized with the required amount of water, aromatized water or any other suitable liquid capable of generating steam, the food product is then loaded into the inner perforated bag, and the double bag is closed, with the inner bag inside the outer one. The sequence of the above steps can also be slightly altered in that the pad can be moisturized while loading the food product into the inner bag or soon after having loaded it but before closing the double bag.

[0012] The package thus obtained can then be stored (if the food product is a frozen product under frozen conditions), while dehydration of the packaged product is controlled, and can be passed into the microwave oven when thawing, and/or reheating and/or cooking of the packaged product is desired.

[0013] A first object of the present invention is therefore a microwaveable double bag comprising an inner perforated bag of thermoplastic flexible material, an outer bag of thermoplastic flexible material and an absorbing pad fastened to the inner surface of the outer bag.

[0014] A second object is a food package comprising a food product, and a microwaveable double bag with an inner perforated bag of thermoplastic flexible material containing said food product and an outer bag of thermoplastic flexible material with a pad moisturized with a steam-generating liquid fastened to its inner surface, said outer bag containing the inner bag with the food product.

[0015] A third object is a method of packaging a food product in a flexible container suitable for storage and microwave treatment of the food product (including in this term any thawing and/or cooking and/or re-heating), said method comprising loading the food product into the inner perforated bag of a microwaveable double bag comprising in addition to the inner perforated bag of thermoplastic flexible material also an outer bag of thermoplastic flexible material with a moisturized pad fastened to its inner surface, optionally modifying the atmosphere within the package to increase the shelf-life of the product to be packaged and closing the double bag.

[0016] As used herein the term "double bag" includes the case where the two bags are separated and are just inserted one within the other to make a double bag, as

well as the case where the two bags are permanently fastened one to the other. In this latter case, this can be achieved e.g. by attaching one or both the top edges of the inner perforated bag to the inner walls of the outer bag or by joining the two bags along a line parallel to one or both the top edges of the two bags, either by continuous or discontinuous seams.

[0017] As used herein the term "microwaveable" when referred to the package according to the present invention means that under the conditions required for thawing, cooking or re-heating the packaged product into a microwave oven, the packaging material is substantially not deformed (by melting or softening and re-shaping upon cooling) and does not release more than 60 ppm of global contaminants to the packaged food in contact therewith.

[0018] In the actual practice, packaging materials that withstand a heat treatment at 121 °C for ½ hour (conditions that are drastic enough not to be reached normally in microwave cooking) without deforming and without releasing more than 60 ppm of contaminants, are considered to be "microwaveable" according to most of the food laws.

[0019] Examples of thermoplastic materials suitable for the manufacture of the flexible package of the invention include polyolefins (such as propylene-based polymers or preferably crosslinked polyethylene-based polymers), polyesters, nylons and any other thermoplastic material that under the conditions of use will not be altered by the microwaves.

[0020] Monolayer or multi-layer films can be employed in the manufacture of the double bag according to the present invention. There is no need to use the same type of materials for the inner and the outer bag. If the two bags are fastened together by heat-sealing, the two surfaces that will be fastened together need of course to be heat-sealable and the thermoplastic materials employed will be suitably selected to provide for such heat-sealability. If it is desired to use a modified atmosphere within the package during storage, the thermoplastic material used for the outer bag needs to have gas barrier properties and multi-layer films with a core EVOH and/or nylon layer will be preferred.

[0021] The thickness of the thermoplastic films used for the inner and the outer bag is not particularly critical and will be selected mainly on the basis of the size of the bag and of the weight of the product to be packaged. Films up to 60 µm are typically employed even if thicker films may as well be suitably used. Preferred films will have a thickness comprised between about 10 and about 45 µm, and more preferred films will have a thickness comprised between about 14 and about 35 µm.

[0022] Any pad currently known and used for absorbing fluids from the packaged food products, can be employed in the double bag of the present invention provided it is suitable for microwave applications. Pads for use in microwave processes are known in the literature and are now commercially available. As an example

pads for microwave applications are described e.g. in US-A-5,552,169.

[0023] When the food product to be packaged is a fresh food product, any contact between the packaged product and the liquid in the pad should be possibly prevented. In such a case therefore the pad may be covered by a plastic film. This however is only preferable and not necessary as the contact between the packaged product and the liquid in the pad can be prevented in several other ways.

[0024] In the double bag according to the present invention, the inner bag is perforated to allow the steam generated during the cooking step to reach the product. The inner bag may be uniformly perforated or only partially perforated. "Uniformly perforated" means that the perforations are substantially evenly spaced apart from each other over the entire surface area of the inner bag.

[0025] Whenever it is important to avoid direct contact of the food product with the liquid contained in the pad during storage, this can be achieved by perforating only part of the inner bag containing the food product, e.g. only one panel thereof, and the double bag is then manufactured in such a way that the imperforated part, e.g. the imperforated panel, of the inner bag will overlay the pad. Alternatively this can be achieved by using a uniformly perforated inner bag but keeping the food product separated from the wet pad by e.g. enclosing the pad in a thermoplastic film perforated only on the surface that faces the inner surface of the outer bag to which it is fastened, or using an outer bag longer than the inner one by more than half the length of the pad and positioning the pad (that in such a case not necessarily is covered by a plastic film) on the bottom of the outer bag, etc.

[0026] The number and size of the perforations in the inner bag should be sufficient to allow the steam to reach the product and uniformly cook it. While it would be sufficient to have a single hole to allow the steam to reach the product in the inner bag, it is generally preferred to have at least 1 perforation per 10 cm², typically at least 3 perforations per 10 cm², more preferably at least 5 perforations per 10 cm², and even more preferably at least 1 perforation per cm². The average diameter of said perforations is typically from about 100 to about 1,000 µm, as this is the average size of the holes that are made in-line, by mechanical punching or electrical burning through, in the manufacture of perforated films. Larger holes or smaller holes (e.g. made by laser perforators) could however be foreseen. The number of holes per cm² could then be increased (for smaller holes) or reduced (for the larger ones). Or it can be foreseen an inner bag with a combination of holes of different size.

[0027] The outer bag is of essentially imperforated, moisture proof, material.

[0028] The outer bag may optionally contain a single or a limited number of holes used as vent hole(s) during the cooking or re-heating step. Preferably the outer bag

contains only one vent hole that is covered by a label (with gas barrier properties if a modified atmosphere package is envisaged) that is removed just before placing the package in the microwave oven for cooking or re-heating the product.

[0029] In another preferred embodiment the outer bag does not contain vent holes but has a weak seal or part of it, which opens up when the overpressure within the package reaches a certain threshold value. Still alternatively the outer bag is imperforated but is of a size suitable to contain the steam generated during the cooking step without bursting. More sophisticated systems, involving the use of valves, can also be foreseen even if such systems may bring about an increase in the cost of the package and are therefore not preferred.

[0030] The outer bag may be printed with e.g. information relating to the content of the bag and the conditions of storage, and thawing, cooking or re-heating. If the double bag contains at least a vent hole and a label covering it, said information can alternatively be printed on the label that hides the vent hole.

[0031] The films for the inner and outer bags are preferably transparent, as the customer should be allowed to look into the package. It is however possible in line of principle to use colored films or opaque films, in particular for those parts of the bags where the presence of the pad will not allow anyway to see through the packaging material.

[0032] The pad is fastened to the inner surface of the outer bag by any suitable means. It can be adhered by a hot melt spot or it may be heat-sealed thereto or it can be secured by one or more strips of thermoplastic film that extend across the pad and are fastened to the outer bag inner surface by e.g. heat-sealing, thus keeping the pad in place.

[0033] While commercial pads are typically rectangular in shape, pads of any shape could be suitably employed in the manufacture of the double bag of the present invention. While in line of principle they may have the same size as the flattened outer bag, it is preferred in practice to keep their size up to 2/3 the surface of the flattened outer bag and preferably up to 1/2 of said surface. The size and thickness of the pad will be suitably selected also depending on the amount of liquid that needs to be released by the pad during thawing, cooking or re-heating and therefore on the amount of liquid that needs to be absorbed by the pad at the packaging step.

[0034] The film used for the inner perforated bag is preferably a solid-state oriented and heat-shrinkable film. This is achieved by obtaining first a thick sheet (so-called primary tape) by conventional extrusion, co-extrusion, or extrusion-coating techniques; quickly cooling said tape to slow down crystallization of the resins; re-heating said tape to a temperature that is higher than the T_g of all the resins making up the tape and lower than the melting temperature of at least one of said resins (the so-called orientation temperature); and stretch-

ing the heated tape in either one or both longitudinal and transverse directions, to obtain an oriented film that tends to shrink back to the unoriented state when heated to a temperature close to the orientation temperature.

5 Using an oriented heat-shrinkable film, the heat generated during cooking will thus shrink the film of the inner bag. This may be useful to keep the packaged product in place and maintain its original shape also during the cooking step. It is also possible, using a heat-shrinkable film for the inner bag, to shrink it just after the packaging step. This will allow keeping the packaged product in place also during storage.

10 **[0035]** The use of a heat-shrinkable film for the inner bag however is only preferred but not necessary and any type of packaging film, whether oriented or non-oriented, shrinkable or non-shrinkable, can be employed for the inner bag.

15 **[0036]** In line of principle the outer bag should not shrink under the conditions of cooking, as the rapid increase in pressure within the package by the steam generation would be further increased if the volume of the outer bag decreases by a shrinking effect.

[0037] Therefore the outer bag is preferably made of a non-oriented thermoplastic film or of an oriented and heat-set thermoplastic film or of an oriented thermoplastic film that has however only a minimum shrink at the temperature reached in the cooking step.

20 **[0038]** The two bags when fastened one to the other in a stable manner can be attached continuously and uniformly along a line that can be a line parallel to the bag mouth of both bags or that may be a line parallel to the mouth of the outer bag and corresponding to the mouth of the inner bag. Alternatively these two bags can be attached also in a discontinuous or intermittent manner along said line. Any means suitable to attach the two bags together and that can withstand a microwave treatment can be employed, such as any type of sealing, e.g. hot wire or heated bar sealing, ultrasounds sealing, RF sealing (if the resins used for the bags are RF sealable), and the like, the use of hot melt or pressure sensitive adhesives that can withstand a microwave treatment, etc.

25 **[0039]** The two bags can be made separately, one outer bag with the pad fastened to its inner surface, and an inner perforated bag. In such a case preferably, but not necessarily, at least one of the dimensions of the inner bag is smaller than the corresponding dimension of the outer bag. These two separated bags are then combined by introducing the inner bag into the outer one. This can be done either before or after the pad is moisturized and either before or after the product to be packaged is loaded into the perforated inner bag. The last step in the packaging process is that the mouth of the double bag is closed. The mouths of the two bags may be closed either separately or, preferably, they are closed altogether by any suitable means, typically by flattening them and heat sealing with a sealing bar, or by gather sealing or by clipping with a microwaveable

clip. It is also possible to use reusable closure means, with mateable male and female closure means.

[0040] Alternatively the double bag of the present invention can be made starting from two continuous flat webs, one of the perforated film for the inner bag and the other one of the substantially imperforated film for the outer bag with attached, at a certain distance determined by the width of the end double bag, an absorbing pad. The two flat webs are superimposed with the pad in-between, they are joined at least along one longitudinal edge or along a line parallel to one longitudinal edge, by a continuous or discontinuous seam, folded longitudinally and converted into double bags by transversely seal cutting the folded webs. Still alternatively the double bag of the present invention can be manufactured starting from two center-folded films, an inner perforated film for the inner bag and an outer substantially imperforated film, bearing the pad attached to its inner surface, for the outer bag. The two films can then be fastened together along both longitudinal edges or along lines parallel and close to both longitudinal edges and converted into bags by a series of transverse seal cuts. With this process it is possible to fasten the pad in the fold on the bottom of the film used for the outer bag and employ for the inner bag a center-folded film with a width smaller than that of the film for the outer bag so that in the end double bag the inner one will be shorter than the outer one and any contact between the product to be loaded in the inner bag and the liquid in the pad positioned in the bottom of the outer bag will be prevented.

[0041] According to a preferred embodiment of the present invention in all these alternative methods at least one discontinuity in the fastening of the two webs or bags is present in order to leave a passage for the liquid that should moisturize the pad before use. If such a discontinuity is not present, the perforations in the inner bag are preferably large enough to allow the smooth flow of the moisturizing liquid through them before loading the product.

[0042] The size of the double bag according to the present invention is not critical as the same principle can apply to small consumer units, such as packages for e.g. 100 to 500 g of food product or even less, to medium size consumer units, such as packages for e.g. 500 to 2,000 g of food product, to so-called bulk consumer units, the type of packages that are suitable for the catering/food service industry, such as packages for e.g. 2,000 to 5,000 g of food product or even more.

[0043] In a preferred embodiment the double bag has an elongated handle that outwardly extends from the package and is mainly useful to remove the package from the oven at the end of the cooking step. By using the handle the end user will be able to remove the package from the oven without subjecting his or her hands to the high temperature of the package and of the steam that is given off by the package. Said handle may be attached to the inside or the outside of anyone of the two bags, it may be of any suitable material and have

any shape, as a length of film sufficiently resistant not to break with the weight of the packaged product and sufficiently long to allow prehension by the user hand at a suitable distance from the body of the package, would fit. Preferably however said handle is attached to the outer-surface of the outer bag.

[0044] Alternatively a cardboard label may be stuck to the outermost surface of the double bag and be used to grasp the bag with the fingers at the end of the cooking step, the cardboard acting as an insulating material.

[0045] The microwaveable double bag of the present invention can be employed for the storage and thawing, cooking or re-heating of a variety of products such as fresh food products, e.g. vegetables, fruits, fish, and the like, a variety of cooked food products such as for instance processed meat, e.g. sausages, and a variety of frozen foods, including ready meals or frozen raw products. The amount of steam-generating liquid to be absorbed by the pad in the packaging process and the type of liquid to be used can be easily optimized by the person skilled in the art in view of the specific type and weight of product to be packaged.

BRIEF DESCRIPTION OF THE DRAWINGS

[0046]

Fig. 1 is a cross-section view of a first embodiment of the double bag according to the present invention where the inner and the outer bags are separated. Fig. 2 is a perspective front view of a double bag of the first embodiment where the inner and the outer bags are separated and 2a is a front view of the same bag that has been closed.

Fig. 3 is a cross-section view of a second embodiment of the double bag according to the present invention where the inner and the outer bag are fastened together.

Fig. 4 is a perspective front view of a double bag of the second embodiment where the inner and the outer bag are fastened together as illustrated in Fig. 3.

Fig. 5 is a cross-section view of a third embodiment of the double bag according to the present invention where the inner and the outer bag are fastened together in a way different from the second embodiment.

Fig. 6 is a perspective front view of a double bag according to the third embodiment where the inner and the outer bag are fastened together as illustrated in Fig. 5.

Fig. 7 is a perspective front view of a double bag where the inner is eccentrically arranged with respect to the outer bag and the two bags are fastened together only on one side.

Fig. 8 is a schematic view of a preferred process of making the double bag of the present invention.

Fig. 9 is a schematic view of another process of

making the double bag of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0047] Fig. 1 shows a first embodiment 1 of the double bag system according to the present invention where the inner bag and the outer bag are not fastened together at the time the product to be packaged 40 is loaded therein. The outer bag 10 has a front panel 11 with a top edge 13 and a rear panel 12 with a top edge 14 that are united at the bottom either by a fold in the film or by a seam 15. The inner bag 20 has a front panel 21 with a top edge 23 and a rear panel 22 with a top edge 24 that are united at the bottom either by a fold in the film or by a seam 25. 30 is a pad fastened to the inner surface of the outer bag 20. Before loading the product 40 in the inner bag 20 or after loading the product but before closing the double bag, the pad 30 is moisturized by pouring any suitable steam-generating liquid (water, wine, aromatized water, etc.) therein. Alternatively the pad 30 may be moisturized first and then fastened to the inner surface of the outer bag 10.

[0048] Fig. 2 shows the same embodiment in a perspective front view where the same numerals as in Fig. 1 are used to identify the same parts. The outer bag front panel 11 and the rear panel 13 are united at side edges 16 and 17 either by a fold in the film or typically by a seam. The inner bag front panel 21 and rear panel 23 are united at side edges 26 and 27 to create a bag. The inner bag 20 bears perforations 28. 18 indicates the optional vent hole in the outer bag and 19 is the removable label that close the vent hole until the package is put into a microwave oven. 30 is the pad that is drawn in dotted lines to indicate that it is attached to the inner surface of the outer bag.

[0049] Fig. 2a refers to the same embodiment wherein however once the product has been loaded and the pad moisturized, the mouth of the double bag is closed by welding altogether the four film webs, i.e. the front panel of the outer bag 11, the front panel of the inner bag 21, the rear panel of the inner bag 22, and the rear panel of the outer bag 12, by heat-sealing. Alternatively, but not shown in the Figures, the mouth of both bags can be gathered and either sealed or clipped using a microwaveable clip.

[0050] Another embodiment of the double bag according to the present invention is shown in Figs. 3 and 4. Fig. 3 is a cross-section view and Fig. 4 is a perspective front view of a double-bag 2 where the edges 23 and 24 of the inner bag 20 are fastened to the inner walls of the outer bag. More particularly in these Figures the edge 23 of the inner bag is fastened to the inner surface of the front panel 11 of the outer bag 10, along a line *a*, continuous, and the edge 24 of the inner bag is fastened to the inner surface of the rear panel 12 of the outer bag 10 along a line *b*, discontinuous. 30 is the pad, 18 the optional vent hole, 19 is the label covering the vent hole,

and 28 are the perforations in the inner bag.

[0051] An advantage of this embodiment resides in the possibility of closing the double bag by heat-sealing together only the two panels 11 and 12 of the outer bag 10, e.g. by heat-sealing the flattened bag with a sealing bar, along a line positioned between the edges 13 and 14 of the outer bag 10 and the welding lines *a* and *b*.

[0052] Still another embodiment of a double bag according to the present invention is shown in Figs. 5 and 6, a cross-section view and a perspective front view respectively of a third embodiment 3 of the double bag of the invention, where the inner and the outer bags are fastened together by a continuous *a* or a discontinuous *b* seam, along a line parallel to the edges of both bags and close thereto.

[0053] Fig. 7 shows another embodiment where the inner bag is eccentrically inserted into the outer bag and the two bags are fastened together only in few points with a discontinuous seam. This may be achieved by spots of a microwaveable hot melt adhesive or by heat-sealing.

[0054] A process for making industrially the double bag according to the present invention where the two bags are fastened is shown in Fig. 8. The process there schematically described comprises the following steps

- i. unwinding a continuous flat web of the thermoplastic film used for the outer bag 10,
- ii. fastening the pads 30 to said flat web at a distance suitably selected in view of the width of the end double bag,
- iii. aligning and overlaying a continuous flat web of the perforated film used for the inner bag 20 with and onto the first thermoplastic web used for the outer bag 10,
- iv. attaching the two webs along two lines *a* and *b* parallel to the overlaying edges of the film webs or corresponding to said overlaying edges,
- v. folding the double web along a longitudinal folding line *c*, with the web 10 as the outer web;
- vi. converting the folded web into double bags, each one containing at least one pad 30, by transversely seal cutting it.

It is also possible to use in said process an overlaying web 20 that has a width smaller than that of the underlying web 10. Said overlaying web 20 can then be centered on the web 10, provided it is wide enough to extend over and cover entirely the pads 30 or it can be aligned with the underlying web 10 but positioned eccentrically over the pads and the two longitudinal edges 23 and 24 of said flat overlaying web 20 are then attached to the underlying web 10.

Fig. 9 illustrates an alternative method of manufacturing a double bag of the present invention that involves the following steps :

- vii. unwinding a continuous flat web of the thermoplastic film used for the outer bag 10

viii. fastening the pads 30 to said flat web at a distance suitably selected depending on the width of the end double bag,

ix. folding longitudinally the web 10 with the fastened pads 30 inside and feeding it to a pouch making machine,

x. forwarding to the same machine a second continuous film web 20, folded longitudinally, with a transverse web width smaller than the transverse web width of the first film web 10, and attaching the two webs together along the parallel edges, with a continuous seam *a* and/or a discontinuous seam *b*, e.g. by passing them through heated rolls and counter- (or compression) rolls,

xi. seal-cutting the folded webs to form double bags each one containing at least one pad 30.

[0055] Although the present invention has been described with reference to some specific embodiments of the double bag and the food package of the present invention, it is to be understood that these embodiments are given merely to illustrate the principles and applications of the invention but that modifications and variations may be devised which are within the spirit and scope of the present invention.

Claims

1. A microwaveable double bag comprising an inner perforated bag of thermoplastic flexible material, an outer bag of thermoplastic flexible material and an absorbing pad fastened to the inner surface of the outer bag. 30
2. The microwaveable double bag of claim 1 wherein the inner perforated bag and the outer bag are permanently fastened one to the other. 35
3. The microwaveable bag of claim 2 wherein one or both the top edges of the inner perforated bag are attached to the inner walls of the outer bag or the two bags are fastened together along a line parallel to one or both the top edges of the two bags, either by continuous or discontinuous seams. 40 45
4. The microwaveable bag of claim 1 wherein the film used for the inner perforated bag is a solid-state oriented and heat-shrinkable film. 50
5. The microwaveable bag of claim 1 wherein the film used for the outer bag essentially does not shrink at the cooking or re-heating conditions. 55
6. The microwaveable bag of claim 1 wherein the outer bag contains a single or a limited number of holes used as vent hole(s) during the cooking or re-heating step, covered by a removable label. 55
7. The microwaveable bag of claim 1 or 6 wherein the outer bag as well as the label covering the optional vent hole(s) has gas barrier properties.
8. A food package comprising a food product, and a microwaveable double bag according to any of the preceding claims, with an inner perforated bag containing said food product and an outer bag with a pad moisturized with a steam-generating liquid fastened to its inner surface, said outer bag containing the inner bag with the food product. 5 10
9. A method of packaging a food product in a flexible container suitable for storage and microwave treatment of the food product, said method comprising loading the food product into the inner perforated bag of a microwaveable double bag according to any of preceding claims 1 to 7, moisturizing the pad fastened to the inner surface of the outer bag of said double bag with the suitably selected steam-generating liquid, either before, during or after loading the product into the inner bag, and closing the double bag. 15 20
10. The method of packaging of claim 9 wherein a double bag according to claim 7 is employed and the atmosphere within the package is modified to increase the shelf life of the packaged product before hermetically closing the double bag. 25

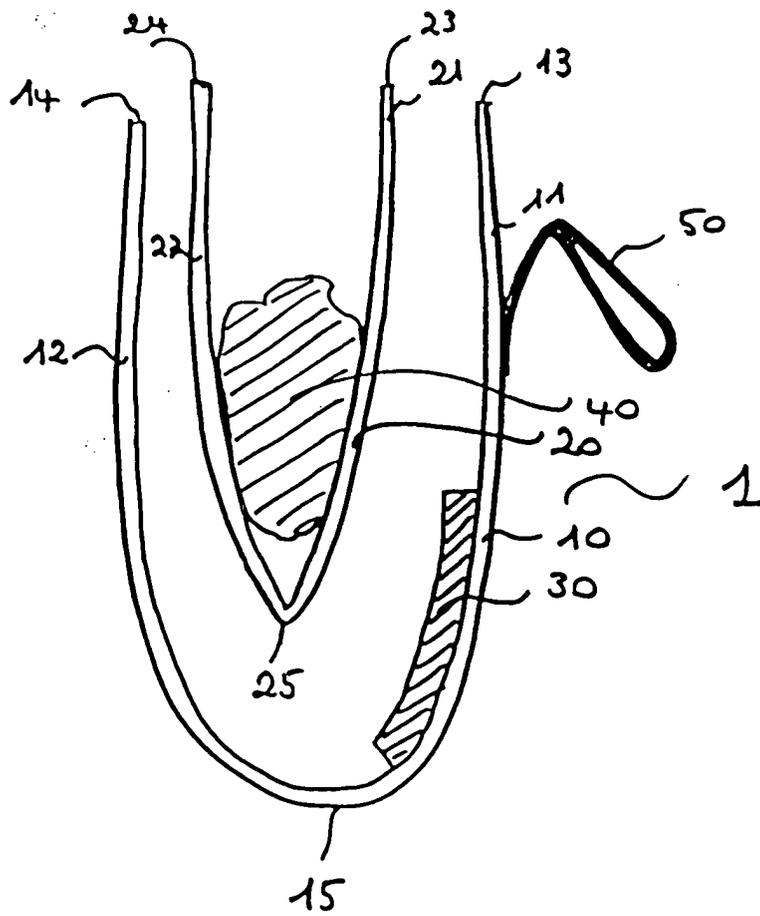


Fig. 1

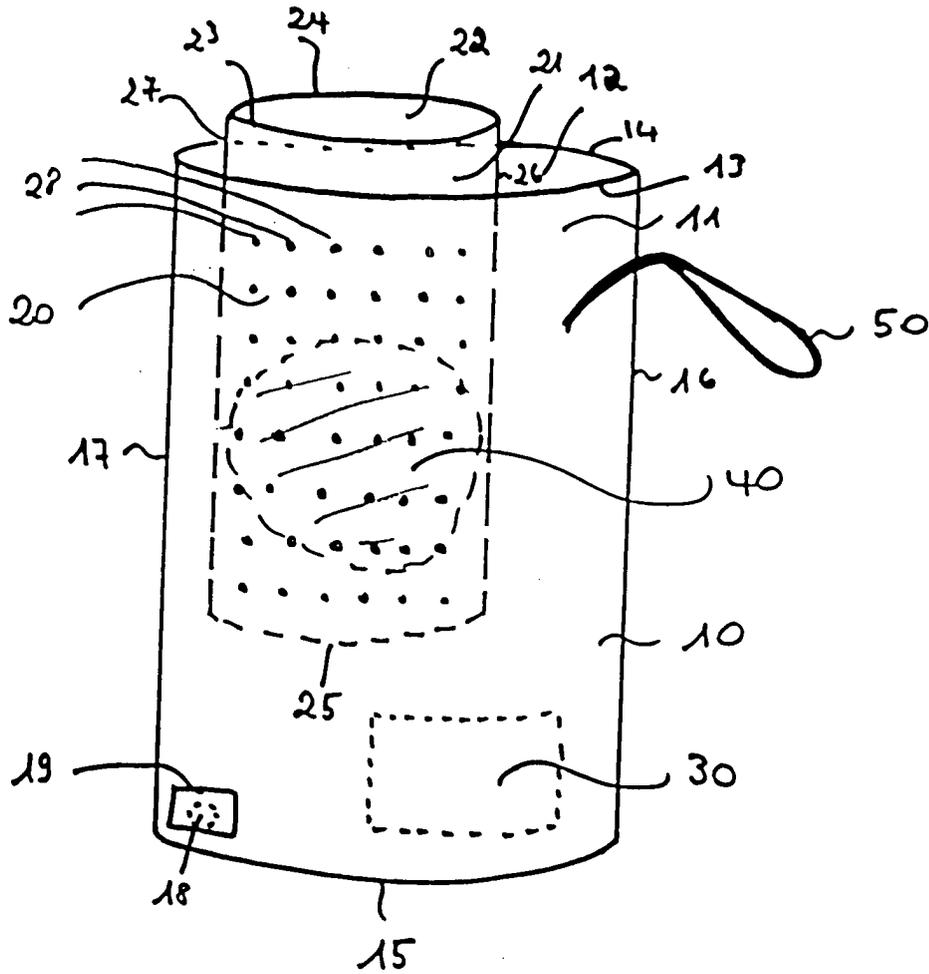


Fig. 2

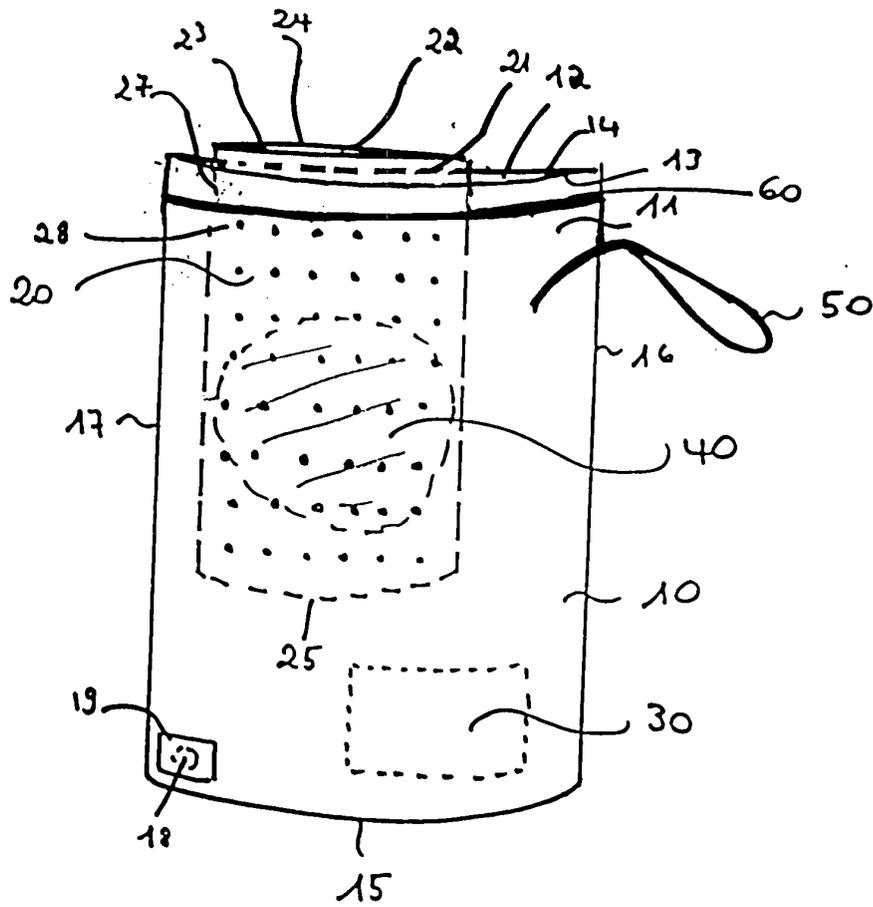
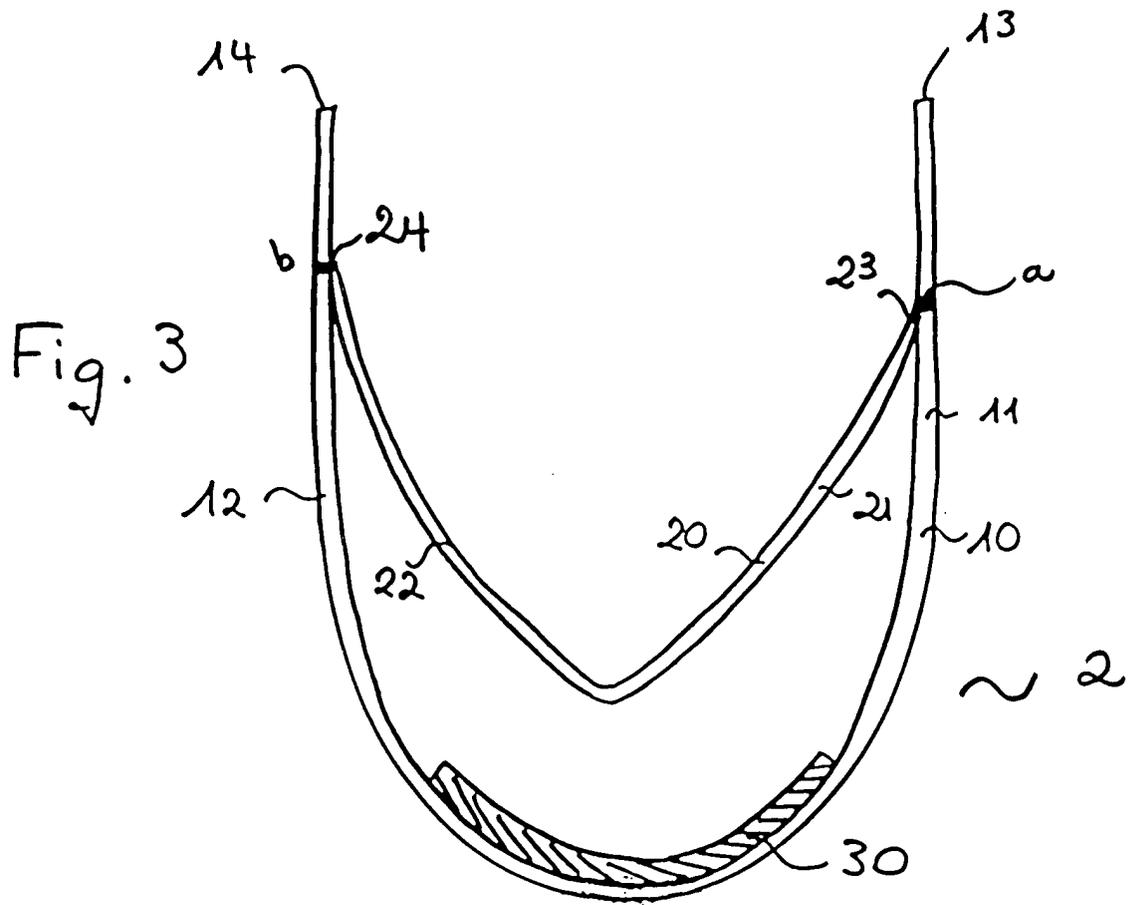


Fig. 2a



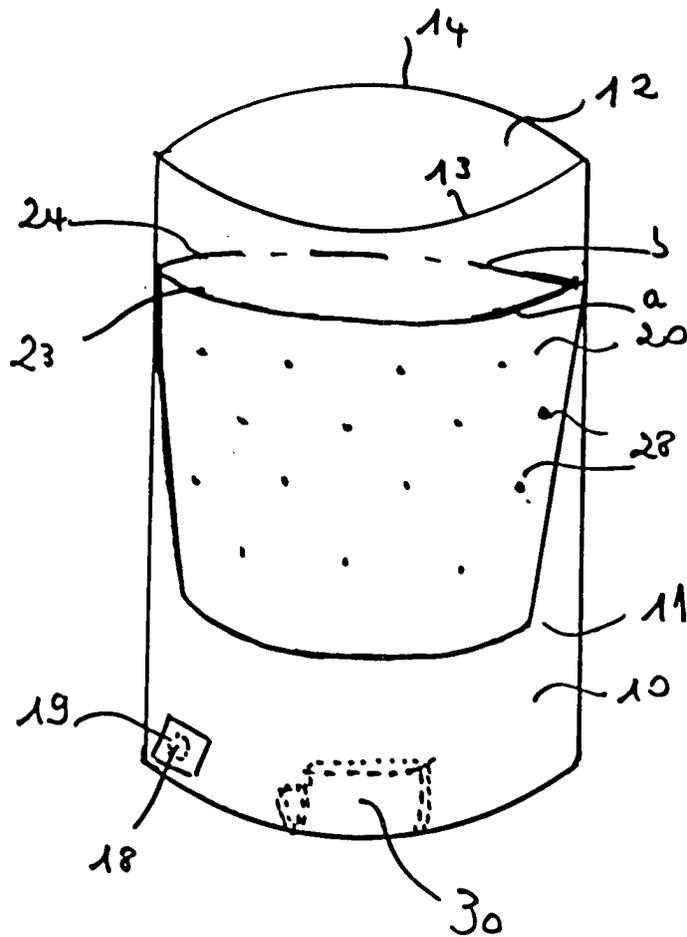


Fig. 4

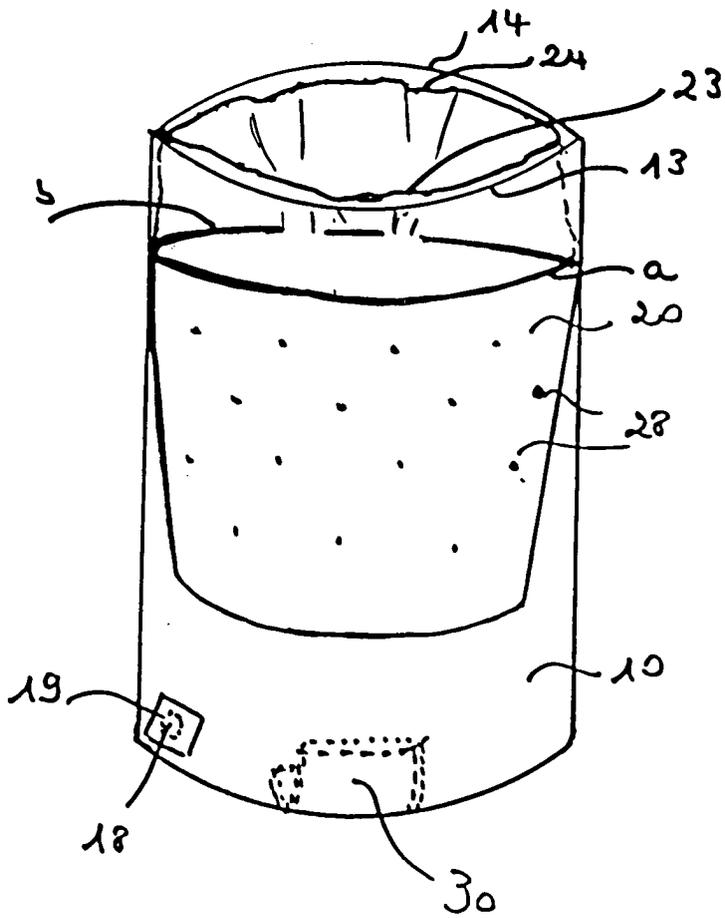


Fig. 6

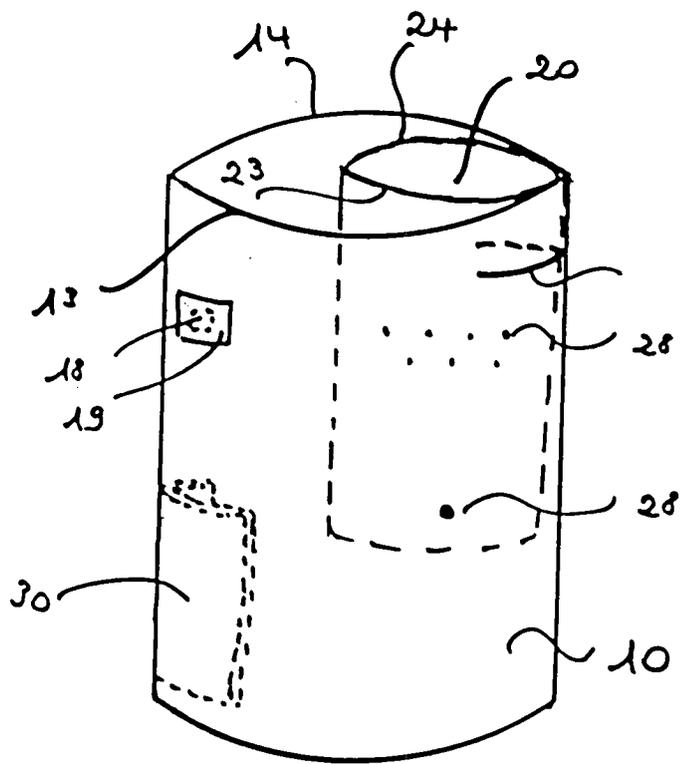
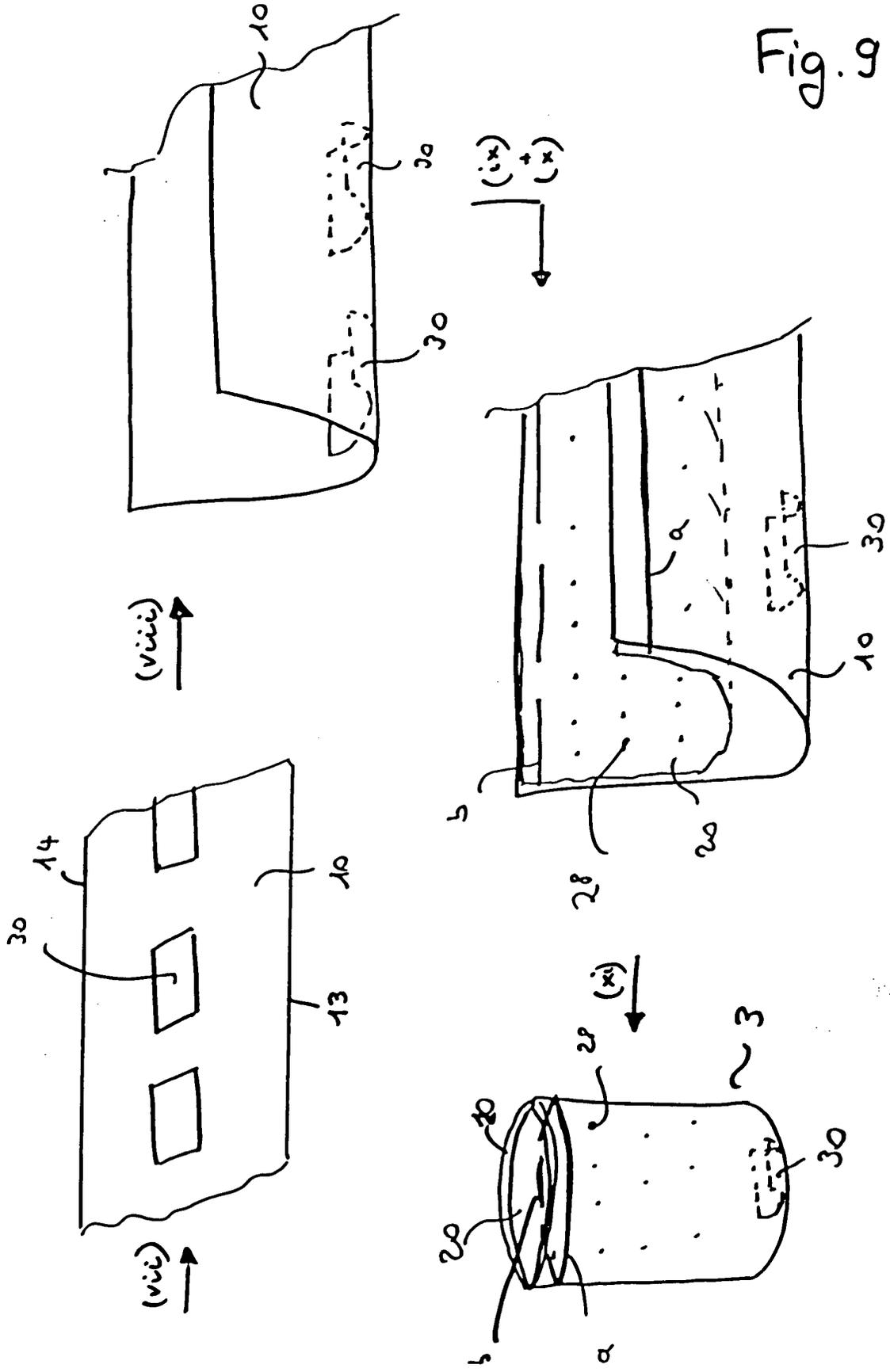


Fig. 7





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