(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 785 607 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
21.12.2016 Bulletin 2016/51

(21) Application number: **12790859.8**

(22) Date of filing: **16.11.2012**

(51) Int Cl.:
B65D 43/02 *(2006.01)* ***B65D 85/78*** *(2006.01)*

(86) International application number:
PCT/EP2012/072855

(87) International publication number:
WO 2013/079339 (06.06.2013 Gazette 2013/23)

(54) CLOSURE LID

VERSCHLUSSDECKEL

COUVERCLE DE FERMETURE

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **28.11.2011 EP 11191007**

(43) Date of publication of application:
08.10.2014 Bulletin 2014/41

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(56) References cited:
EP-A1- 0 276 333
EP-A1- 2 336 047
DE-U1-202008 002 929
US-A- 3 559 843
US-A1- 2006 157 544

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Description

Field of the Invention

[0001] The present invention relates to a closure lid for a packaging for non-food or food products like frozen confectionery, such as ice-cream cups or ice-cream cone sleeves, to a packaging comprising such a closure lid, and to a packaged frozen confectionery product.

Background of the Invention

[0002] Frozen confectionery products are often packaged in individual portions. Common examples are ice-cream cones and also ice-cream cups or tubs. Ice-cream cones comprising a wafer and an ice cream filling are typically wrapped in a cone-shaped sleeve which is commonly made of a paper and aluminum foil laminate substrate rolled into a cone shape with a tip at one end and an opening on the other end. Ice-cream tubs are also commonly made of a cardboard or paper and aluminum foil laminate substrate having a substantially cylindrical or frustum shape and having an opening at one end while being closed at the other end by a base member fixed to the packaging wall. The aluminum foil in the packaging material provides a certain form stability and a moisture barrier. The open end of the packaging is usually closed by a cardboard or plastic lid. The upper end of the packaging is usually crimped down towards the centre of the cone or packaging to hold the lid to the product.

[0003] A typical packaging for an ice-cream cone is disclosed in US 2006/0157544 A1. The sleeve is made from a polymer film and is crimped down to hold a lid. Alternatively, the opening of the packaging can be closed by a press-in recessed lid having a flat center portion and an upward turned outer edge. The lid may be sealed to the sleeve by a snap-in structure or by an adhesive or heat seal operation.

[0004] EP 0 276 333 A1 shows a packaging for an ice-cream cone, the sleeve and lid of which are made of a liquid impermeable and transparent material. The lid is glued into the opening of the sleeve.

[0005] US 3 559 843 A discloses a container for the storage of foodstuff which comprises a bowl and a removable and deformable lid movable between a convex and a concave position.

[0006] It has become more and more important to provide a sustainable and recyclable packaging, and manufacturers would thus like to have a packaging that can be recycled easily unlike the present laminates. Another reason to seek for an alternative to the aluminum and paper laminate is the target to eliminate metals from any such packaging. During production products are checked for metal parts with metal detectors, and the aluminum present in the packaging of common ice-cream cone sleeves thus requires special equipment. The use of a packaging not containing any metal would allow for a use of more simple and thus less expensive detectors. However, paper or cardboard sleeves lack the shape memory provided by the aluminum in the usual composite sleeves, and cannot be crimped down for holding the lid in the usual way.

[0007] Further, the lids being glued or heat sealed into the opening of the packaging require a laborious and complex and thus cost-wasting manufacturing process to provide the lid onto the packaging. In addition, lids being glued or sealed to the opening cannot be easily removed from the packaging once the consumer wants to consume the product. Such lids thus call for an easy-to-open feature which must be provided in or on the packaging thus further increasing the complexity of the packaging and manufacturing steps.

[0008] Furthermore, the conventional crimped or glued lids are not always easy to open.

Object of the invention

[0009] The present invention aims to improve on the above-mentioned drawbacks, and an object thereof is to provide a closure lid which can be used for easily and securely closing and opening of a packaging for food products, such as ice-cream cones or tubs, independent of the packaging material. Furthermore, the present invention also aims at providing a packaging solution that is more attractive and provides a certain playfulness to consumers.

Summary of the invention

[0010] According to a first aspect of the invention, there is provided a closure lid for a packaging for food products like frozen confectionery, such as ice-cream cups or ice-cream cone sleeves, comprising a plate-shaped centre member, an outer ring dimensioned to conform with the packaging, and a circumferential non-continuous flange member extending essentially in a right angle from the circumference of the outer ring,
wherein the lid is designed such that the plate-shaped centre member can manually be changed between a convex configuration and concave configuration, and wherein said change translates into a change of the angular position of the flange member relative to the plane defined by the outer ring, and wherein depending on said angular position, the flange member is in contact with an inner wall or an outer wall of the packaging or not.

[0011] By means of the closure lid according to the invention there is no need to crimp down the packaging or to seal the lid to the packaging for holding the lid. In a closed state of the packaging, the lid is simply held on the packaging by the flange member which is in contact with an inner or an outer wall of the packaging to securely and close the opening of the packaging. Hence, there is no need for an additional adhesive application or heat sealing to fix the lid onto the packaging. As the flange member can be easily tilted by a transfer of the domed centre member from a convex to a concave configuration

(and the other way around), the flange member can be moved between a position of being in tight and flush contact with the inner or outer wall of the packaging and a position where the flange member is distanced from the inner or outer wall of the packaging to allow for an easy removal of the lid without the need of any additional easy-to-open features.

[0012] The flange member preferably comprises at least one slit in an axial direction with respect to the lid to form said non-continuous flange member. In a more preferred embodiment, the flange member comprises a plurality of slits in an axial direction with respect to the lid to divide the flange member in a plurality of flange portions, which slits are preferably evenly distributed over the circumference of the flange member. The slits thus constitute a possible solution for enabling the flange member to carry out the change of angular position in case the plate-shaped centre member is manually transferred between its convex and concave configuration. As the flange member is provided over the whole circumference of the packaging and the flange portions are also evenly distributed over said circumference, the pressure of the flange member applied onto the packaging wall to securely hold the lid thereon is well distributed.

[0013] In a preferred embodiment, the flange portions taper to an end distanced from the circumference of the plate-shaped centre member. Hence, in case the flange portions are lying on the surface of the outer wall of a cone- or frustum-shaped packaging body (i.e. cone, truncated cone or cup) without any overlap, thus allowing tight contact to the wall of the packaging.

[0014] According to the invention, the lid comprises an outer ring extending around the plate shaped centre member. Preferably, the ring member lies in the plane defined by the circumferential edge of the plate-shaped centre member. Further, the transition between the domed centre member and the ring member as well as the transition between the ring member and the flange member is substantially inflexible.

[0015] By means of this configuration or layout of the plate-shaped centre member, the domed centre member can be easily transferred between the convex and concave configuration while allowing a sufficient stiffness of the whole plate-shaped centre member such that the transfer of the domed centre member can be securely and sufficiently translated to the flange member or flange portions to obtain a change of their angular portion.

[0016] The lid is preferably made of a rigid plastic material.

[0017] According to a second aspect of the invention, there is provided a packaging for food products, such as frozen confectionary like ice cream, having an opening being closed by a lid according to any of the preceding claims. A shape memory of the packaging is not required as the closure lid or better its flange member or flange portions are in tight and contact over the whole circumference of the packaging. The choice of possible materials for the packaging is thus increased with respect to common packaging. Further, the positioning and fixing of the lid on the (opening of) the packaging is very convenient and only relatively simple tools are necessary for assembly.

[0018] Preferably, the flange member is in contact with an inner or outer wall of the packaging in case the plate-shaped domed centre member defines a convex configuration thus being exposed or protruding or extending away from the packaging or at least extending in a direction to the opening or away from the inside of the packaging, and the flange member is distanced from the inner or outer wall of the packaging in case the plate-shaped domed centre member defines a concave configuration thus extending to an inside of the packaging. The lid of the packaging can thus be easily removed by simply pushing onto the domed centre member exposing from the packaging to manually transfer it from its convex to its concave configuration. When doing so, the flange member or flange portions are brought in a condition in which they are distanced from the packaging wall to allow for the user to remove the lid without using any additional easy-to-open feature.

[0019] Preferably, the outer contour of the plate-shaped centre member or ring member defined by the circumferential edge of the plate-shaped centre member matches the contour of the opening. Hence, a tight closure and sealing of the packaging can be attained when using the lid.

[0020] The packaging preferably is an ice-cream cup or an ice-cream cone sleeve.

[0021] According to a third aspect of the invention, there is provided a packaged frozen confectionary product comprising a packaging according to the invention having the lid according to the invention as well as a frozen confectionery product. The frozen confectionery product can be an ice-cream cone, bulk ice cream or any other frozen dessert. Obviously, the packaging can also be used for other food and non-food products.

[0022] Further features, advantages and objects of the present invention would come apparent for the skilled person when reading the following detailed description of embodiments of the present invention, when taking in conjunction with the figures of the enclosed drawings.

Brief Description of the Drawings

[0023]

Figure 1 shows a perspective view of a packaging having a closure lid according to a first embodiment of the invention as well as method steps for opening said packaging.

Figure 2 shows a perspective view of a packaging having a closure lid according to a variant being not in accordance with the scope of protection of the invention as well as method steps for opening said packaging.

Figure 3 shows a schematical side view of the packaging and closure lid according to figure 2 as well as method steps for providing the lid onto the packaging.

Detailed Description of the Invention

[0024] Figures 1 and 2 show perspective side views of a packaging 1 having a closure lid 20 according to a first and second embodiment of the invention.

[0025] The packaging 1 may comprise a conical sleeve 10 (only the upper part of which is shown in figures 1 and 2) which preferably consists of a paper sheet rolled into a cone. Alternatively, the packaging 1 may comprise a cup 11 (as shown in figures 1 and 2) preferably having the shape of a cylinder or a truncated cone and being made of paper or cardboard. Other materials can also be used. The lid can for example be used with plastic cups or with cone sleeves made from virtually any material. The packaging 1 preferably has a circular cross-section, but it can also have a polygonal cross section (e.g., square or equilateral triangle), provided the panel sizes are equal all around the packaging.

[0026] The material of the packaging 1 is not limited to the materials mentioned above, but can be made of any (preferably flexible) material like paper, cardboard, rigid plastics (e.g. polypropylene (PP), polyethylene (PE), polystyrene (PS), polyethylene terephthalate (PET) or polylactic acid (PLA)) or composites. Particularly, paper and cardboard are renewable materials and can be recycled thus having a reduced impact on the environment. In case paper or cardboard is used, the packaging can be provided with a coating to form a moisture barrier.

[0027] Further, the packaging 1 can have additional optical and/or functional features. It can, for instance, be provided with a transparent window or even be completely transparent. Further, the packaging 1 can have a smooth, roughened or irregular surface provided with embossings, engravings or any other kind of three-dimensional structure. The packaging 1 can also carry a perfume, for example an aroma relating to the flavor of the frozen confectionery contained therein.

[0028] The packaging can be used for all kinds of food products, particularly for frozen confectionery products (like ice cream) or any other frozen or chilled products. The packaging 1 can thus be an ice-cream cup or tub or an ice-cream cone sleeve or the like.

[0029] The packaging 1 has an opening 12 to fill in or bring in the food product and also to provide an access to said food product for the consumer. To protect the food product from environmental influences, the opening 12 is closed by a closure lid 20 (in the following also referred to as lid). The lid 20 alone is also part of the invention and will thus be described in detail herein.

[0030] The lid 20 according to the invention comprises a plate-shaped centre member 21, an outer ring 210 dimensioned to conform with the packaging 1, and a circumferential non-continuous flange member 22 extending essentially in a right angle from the circumference of the outer ring 210. The lid 20 is designed such that the plate-shaped centre member 21 can manually be changed between a convex configuration (see figure 1a and 2a) and a concave configuration (see figure 1b and 2b) wherein the plate-shaped centre member 21 is domed. Said change translates into a change of the angular position of the flange member 22 relative to the plane defined by the outer ring 210, and depending on said angular position, the flange member 22 is in contact with an inner wall 13 or an outer wall 14 of the packaging - the packaging thus being closed - or not.

[0031] Preferably, the ratio of the diameter "d" of the plate-shaped centre member 21 and the height "h" of the flange member 22 is about 1/3 to 1/20, preferably 1/5 to 1/8. Further, the ratio of the diameter "d" of the plate-shaped centre member 21 and the height "H" of the domed plate-shaped centre member with respect to the plane defined by the circumferential edge of the plate-shaped centre member preferably is about 1/5 to 1/20, more preferably about 1/8 to 1/12.

[0032] The flange member 22 is designed to be selectively in plane contact with an inner wall 13 (figure 1) or an outer wall 14 (figure 2) of the packaging 1 as will be described herein.

[0033] Figure 1 shows an embodiment of the invention in which the lid 20 is placed in the opening 12 of the packaging 1 for closing said packaging 1. According to this embodiment, the lid 20 is placed in the packaging 1 such that the flange member 22 extends from the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 in a direction towards the opening 12 of the packaging 1, preferably such that the end 24 of the flange member 22 being most distanced from (the circumferential edge 23 of) the plate-shaped centre member 21 is substantially flush with the circumferential edge 15 of the packaging 1 having the opening 12. In a closing condition, the plate-shaped centre member 21 is in its convex configuration, i.e. it is domed to extend from the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 in the same direction as the flange member 22 that is in a direction towards the opening 12 of the packaging 1. In this case, the flange member 22 is tilted towards the inner wall 13 of the packaging 1 to apply a pressure onto the inner wall 13 thus providing for a tight and plane contact between the lid 20 (the flange member 22) and the inner wall 13 of the packaging 1.

[0034] To open the packaging 1, the lid 20 or better the domed plate-shaped centre member 21 is manually transferred from its convex configuration as shown in figure 1a to its concave configuration as shown in figure 1b by pushing onto the domed portion (preferably its centre portion) of the plate-shaped centre member 21 as indicated by arrow P1. In the concave configuration, the domed plate-shaped centre member 21 extends in a direction towards the inside of the packaging 1. The transfer from the convex configuration to the concave config-

uration translates into a change of angular position of the flange member 22 relative to the plane defined by the circumferential edge 23 of the plate-shaped centre member 21. Preferably, this comes about since the transition between the plate-shaped centre member 21 and the flange member 22 is stiff, preferably (substantially) inflexible (e.g. as being made of plastic materials or the like). Due to the change of angular position, the flange member 22 is tilted towards a centre of the lid 20 (as indicated by arrow P2 in figure 1b) such that the flange member 22 is distanced from the inner wall 13 of the packaging as shown in figure 1b. As in this position or configuration the flange member 22 does not apply a force onto the inner wall 13, the lid 20 is merely loosely placed in the opening 12 of the packaging 1 and can therefore be easily removed from the packaging 1 as indicated by arrow P3 in figure 1c. For a removal of the lid 20, the flange member 22 can be used as a gripper means to grasp and detach the lid 20.

[0035] It is noted that the lid 20 can also be placed in the opening 12 of the packaging 1 for closing said packaging 1 in a way that the flange member 22 extends from the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 in a direction towards the inside of the packaging 1, preferably such that the plate-shaped centre member 21 is substantially flush with the circumferential edge 15 of the packaging 1 having the opening 12. In a closing condition, the plate-shaped centre member 21 is then in its concave configuration, i.e. it is domed to extend from the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 in the same direction as the flange member 22 that is in a direction towards the inside of the packaging 1. To open the packaging 1, the domed plate-shaped centre member 21 is manually transferred from its concave configuration to its convex configuration in which it extends from the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 in a direction away from the inside of the packaging 1. Therefore, the consumer needs to pull at the plate-shaped centre member 21. A gripper member can be provided to extend from the plate-shaped centre member to an outside of the packaging 1 to allow for an easy transfer of the plate-shaped centre member into the convex configuration. The gripper member can be a knob, a pin or any other three-dimensional structure to allow for a user to grasp and pull it. In the convex configuration, the flange member 22 is distanced from the inner wall 13 of the packaging 1 as described above such that the lid 20 can then be easily removed from the packaging 1 to expose the opening 12.

[0036] According to another embodiment as shown in figure 2, the lid 20 is placed onto the opening 12 of the packaging such that the lid 20 lies with its plate-shaped centre member 21, preferably with the circumferential edge thereof, on the circumferential edge 15 of the packaging 1 forming or surrounding the opening 12. According to this embodiment, the flange member 22 extends from the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 in a direction towards the packaging 1. In a closing condition, the plate-shaped centre member 21 is in its convex configuration, i.e. it is domed to extend from the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 in a direction opposite to the extension of the flange member 22 that is in a direction away from the packaging 1. In this case, the flange member 22 is tilted towards the outer wall 14 of the packaging 1 to apply a pressure onto the outer wall 14 thus providing for a tight and plane contact between the lid 20 (the flange member 22) and the outer wall 14 of the packaging 1.

[0037] To open the packaging 1, the lid 20 or better the domed plate-shaped centre member 21 is manually transferred from its convex configuration as shown in figure 2a to its concave configuration as shown in figure 2b by pushing onto the domed portion (preferably its centre portion) of the plate-shaped centre member 21 as indicated by arrow P4. In the concave configuration, the domed plate-shaped centre member 21 extends in a direction towards the inside of the packaging 1. Due to the transfer from the convex configuration to the concave configuration, a change of angular position with respect to the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 is translated to the flange member 22. Hence, the flange member 22 is tilted to be distanced from the outer wall 14 of the packaging 1 as indicated by arrow P5 shown in figure 2b. As the flange member 22 does thus not apply a force on the outer wall 14, the lid 20 is only loosely placed onto the packaging 1 and can therefore be easily removed from the packaging 1 as indicated by arrow P6 in figure 2c.

[0038] To allow for a change of angular position, the circumferential flange member 22 non-continuously extends over the circumference of the lid 20 or better the plate-shaped centre member 21. Therefore, the circumferential non-continuous flange member 22 preferably comprises at least one slit or a plurality of slits 26 in an axial direction A with respect to the lid 20 to divide the lid 20 in at least one or a plurality of flange portions 25. The number of slits 26 corresponds to the number of flange portions 25 forming the flange member 22. In case only one slit 26 is provided in the flange member 22, there is only one non-continuous flange portion 25 present. In case of "x" slits 26 provided in the flange member 22, the flange member 22 is divided into the same number of "x" flange portions 25 as can be seen in figures 1 and 2. In a preferred embodiment, the lid 20 comprises 3 to 80 flange portions 25, more preferably 12 to 15. However, the invention is not limited thereto.

[0039] In a preferred embodiment, the slits 26 are evenly distributed over the circumference of the flange member 22 thus forming flange portions 25 being evenly distributed over the whole circumference of the plate-shaped centre member 21. Preferably, the flange portions 25 each taper to an end distanced from the circumference of the plate-shaped centre member 21 as can

be clearly seen in figures 1 and 2. Hence, the flange portions 25 do not overlap in any angular position to securely obtain a plane and thus tight contact between the flange member 22 and the inner wall 13 or outer wall 14 of the packaging 1.

[0040] AS already mentioned above, the plate-shaped centre member 21 comprises an outer ring member 210 which outer circumference forms the circumferential edge 23 of the plate-shaped centre member 21, and a centre member 211 filling the inside of the ring member 210 and camber or extending from the plane defined by the circumferential edge 23 so as to be manually transferable between both the convex and the concave configuration. The ring member 210 lies in the plane defined by the circumferential edge 23 of the plate-shaped centre member 21. The transition between the domed centre member 211 and the ring member 210 as well as the transition between the ring member 210 and the flange member 22 preferably is (substantially) inflexible. By means of said layout, the ring member 211 securely enables to translate the transfer of the plate-shaped centre member 21 between the convex and concave configuration into the change of the angular position of the flange member 22. This comes about since the transfer of the domed centre member 211 between the convex and concave configuration results in the ring member 210 to be tilted with respect to the plane defined by the circumferential edge 23 of the plate-shaped centre member 21. Due to the stiff and preferably inflexible transitions between the domed centre member 211, the ring member 210 and the flange member 22, the tilt of the ring member 210 is translated to the flange member 22 resulting in the change of angular position of the flange member 22 as already described above. The ring member 210 thus increases a secure change of angular position of the flange member 22 while the (substantially) inflexible transition also aims for a secure, tight and plane contact of the flange member 22 with the inner wall 13 or outer wall 14, respectively.

[0041] The outer contour of the plate-shaped centre member 21 or ring member 210 defined by the circumferential edge of the plate-shaped centre member 21 preferably matches the contour of the opening 12 to provide a lid 20 enabling a secure, tight, plane and flush closure of the packaging 1.

[0042] Preferably, the ratio of the diameter "d" of the plate-shaped centre member 21 and the width "W" of the ring member 210 is about 1/10 to 1/25, more preferably about 1/12 to 1/20.

[0043] The lid 20 is preferably made of a plastic material and can be partly or completely transparent, colored, printed or labeled. Typical plastic materials are polypropylene (PP), polyethylene (PE), polystyrene (PS), polyethylene terephthalate (PET) or polylactic acid (PLA). Preferably, the plate-shaped centre member 21 (including the ring member 210 and the domed centre member 211) and the flange member 22 are integrally formed. The lid 20 being made of plastic materials, for instance, allows for a rigid and (substantially) inflexible transition between the respective members thereof and thus for a secure change of angular position of the flange member 22.

[0044] A method for opening the packaging 1 being closed by a lid 20 according to the invention has already been described above. In the following, a method for closing a packaging 1 for food products like frozen confectionary, such as ice-cream cups or ice-cream cone sleeves, having an opening, will be described with reference to figure 3.

[0045] In a first step as depicted in figure 3a, the packaging 1 (sleeve or cup or the like) is preferably introduced in and then held by a socket or pocket 30 which is not the object of the present invention and will thus not be described in detail herein.

[0046] In a second step, the closure lid 20 having the plate-shaped centre member 21 and the circumferential non-continuous flange member 22 extending essentially in a right angle from the circumference of the plate-shaped centre member 21 is preferably placed above the opening 12 of the packaging 1.

[0047] In a third step, the lid 20 is lowered to place the lid 20 (a) either (with its plate-shaped centre member 21) onto the opening 12 or (b) in the opening 12 such that the plate-shaped centre member covers the opening 12.

[0048] Regarding option (a), the plate-shaped centre member 21 is placed with its outer circumferential portion or the ring member 210 onto the opening 12 such that the flange portions 25 extend downward so as to extend from the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 in a direction towards the packaging 1. The flange member 22 is distanced from the outer wall 14 of the packaging 1 as can be seen in figure 3b. Further, the plate-shaped centre member 21 is in its concave configuration, i.e. extends in a direction towards an inside of the packaging 1.

[0049] Regarding option (b), the plate-shaped centre member 21 is placed in the opening 12 such that its circumferential edge 23 preferably circumferentially touches the inner wall 13 of the packaging 1. The flange member 22 extends (i) towards an opening 12 of the packaging 1 or (ii) towards an inside of the packaging 1.

[0050] Regarding option (i), the flange member 22 extends from the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 in a direction towards the opening 12 of the packaging; i.e. away from the inside of the packaging 1. The domed plate-shaped centre member 21 extends in a direction towards the inside of the packaging 1 thus having a concave configuration.

[0051] Regarding alternative option (ii), the flange member 22 extends from the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 in a direction towards the inside of the packaging 1, i.e. away from the opening 12. The domed plate-shaped centre member 21 is in its convex configuration and thus extends in a direction towards the opening 12 of the pack-

aging 1.

[0052] In a fourth step, the flange member 22 or the flange portions 25 are made to change their angular position relative to the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 to bring the flange member 22 in plane and tight contact with the inner wall 13 or outer wall 14 of the packaging 1 as will be described herein. This is exemplarily shown in figure 3c (see arrow P7) .

[0053] Regarding options (a) and (b)(i), the change of the angular position of the flange member 22 can be attained by the plate-shaped centre member 21 being transferred from its concave configuration to its convex configuration in which the plate-shaped centre member 21 is domed to extend from the plane defined by the circumferential edge 23 of the plate-shaped centre member 21 in a direction away from the inside of the packaging 1. The transfer can be attained by applying a suction force to a side of the plate-shaped centre member 21 exposed to an outside of the packaging 1 such that it is transferred from its concave to its convex configuration as indicated by arrows P8. To apply a suction force, any commonly known suction device can be used.

[0054] Regarding option (b)(ii), the change of the angular position of the flange member 22 can be attained by the plate-shaped centre member being transferred from its convex configuration to a concave configuration in which the plate-shaped centre member 21 is domed to extend from the plane defined by the circumferential edge of the plate-shaped centre member 21 in a direction towards the inside of the packaging 1. The transfer can be attained by simply pushing onto the side of the plate-shaped centre member 21 exposed to an outside of the packaging 1 such that it is transferred from its convex to its concave configuration.

[0055] Then, the packaging 1 is securely and tightly closed by the lid 20 while the package material does not need to have a shape memory and can thus be made from a variety of materials including paper or cardboard or any other (preferably flexible) material such as a rigid plastic.

[0056] It is noted that neither the dimensions of the lid nor of the packaging itself are limited by the invention. The same applies to the shapes and cross-sectional forms of these features as long as being covered by the invention according to the appended claims. All features of the embodiments can be combined in any possible way as long as being covered by the scope of the invention as given by the appended claims.

Claims

1. A packaging (1) for food products, such as frozen confectionary like ice cream, having an opening (12) being closed by a lid (20) wherein the closure lid (20) for the a packaging (1) comprises:
   a plate-shaped centre member (21), an outer ring (210) dimensioned to conform with the packaging (1), and a circumferential non-continuous flange member (22) extending essentially in a right angle from the circumference of the outer ring (210),
   wherein the lid (20) is designed such that the plate-shaped centre member (21) can manually be changed between a convex configuration and concave configuration, and
   wherein said change translates into a change of the angular position of the flange member (22) relative to the plane defined by the outer ring (210), and
   wherein depending on said angular position, the flange member (22) is in contact with an inner wall (13) of the packaging or not, and wherein the lid (20) is placed in the packaging (1) such that the flange member (22) extends from the plane defined by the circumferential edge (23) of the plate-shaped centre member (21) in a direction towards the opening (12) of the packaging (1).

2. The packaging according to claim 1, wherein the circumferential non-continuous flange member (22) comprises at least one slit (26) in an axial direction (A) with respect to the lid (20).

3. The packaging according to claim 1 or 2, wherein the circumferential non-continuous flange member (22) comprises a plurality of slits (26) in an axial direction (A) with respect to the lid (20) to divide the flange member (22) in a plurality of flange portions (25).

4. The packaging according to claim 3, wherein the slits (26) are evenly distributed over the circumference of the flange member (22).

5. The packaging according to claim 3 or 4, wherein the flange portions (25) taper to an end distanced from the circumference of the plate-shaped centre member (21).

6. The packaging according to any of the preceding claims, wherein the plate-shaped centre member (211) is formed integrally with the outer ring (210).

7. The packaging according to claim 6, wherein the plate-shaped centre member (211) and the outer ring (210) are formed integrally with the flange member (22) .

8. The packaging according to any of the preceding claims, wherein the lid (20) is made of a plastic material.

9. The packaging (1) according to claim 8, wherein the flange member (22) is in contact with an inner wall (13) of the packaging (1) when the plate-shaped centre member (21) is in a convex configuration forming a dome extending outside of the packaging (1), and the flange member (22) is not in contact with the inner wall (13) or the outer wall (14) of the packaging (1) when the plate-shaped centre member (21) is in a concave configuration forming a concavity extending towards the inside of the packaging (1).

10. The packaging (1) according to any of preceding claims **characterized in that** it is an ice-cream cup or an ice-cream cone sleeve.

11. Packaged frozen confectionary product comprising a packaging (1) according to any of the preceding claims and a frozen confectionery product.

Patentansprüche

1. Verpackung (1) für Nahrungsmittelprodukte wie z. B. gefrorene Süßwaren, etwa Eiscreme, mit einer Öffnung (12), die mit einem Deckel (20) verschlossen ist, wobei der Verschlussdeckel (20) für die Verpackung (1) umfasst:

ein plattenförmiges Mittelteil (21), einen Außenring (210), der so bemessen ist, dass er der Verpackung (1) entspricht, und ein umlaufendes, nicht durchgehendes Flanschelement (22), das im Wesentlichen in einem rechten Winkel aus dem Umfang des Außenrings (210) verläuft,
wobei der Deckel (20) so ausgelegt ist, dass das plattenförmige Mittelteil (21) manuell zwischen einer konvexen und einer konkaven Konfiguration umgestellt werden kann, und
wobei die Umstellung zu einer Veränderung der Winkelposition des Flanschelements (22) gegenüber der durch den Außenring (210) gebildeten Ebene führt, und wobei je nach der genannten Winkelposition das Flanschelement (22) mit einer Innenwand (13) der Verpackung in Kontakt tritt oder nicht, und wobei der Deckel (20) in der Verpackung (1) so angeordnet ist, dass das Flanschelement (22) aus der durch den umlaufenden Rand (23) des plattenförmigen Mittelteils (21) gebildeten Ebene in einer Richtung zur Öffnung (12) der Verpackung (1) verläuft.

2. Verpackung nach Anspruch 1, wobei das umlaufende, nicht durchgehende Flanschelement (22) mindestens einen Schlitz (26) in einer Richtung axial (A) in Bezug auf den Deckel (20) umfasst.

3. Verpackung nach Anspruch 1 oder 2, wobei das umlaufende, nicht durchgehende Flanschelement (22) eine Vielzahl von Schlitzen (26) in einer Richtung axial (A) in Bezug auf den Deckel (20) umfasst, um das Flanschelement (22) in eine Vielzahl von Flanschabschnitten (25) zu unterteilen.

4. Verpackung nach Anspruch 3, wobei die Schlitze (26) über den Umfang des Flanschelements (22) gleichmäßig verteilt sind.

5. Verpackung nach Anspruch 3 oder 4, wobei die Flanschabschnitte (25) an einem vom Umfang des plattenförmigen Mittelteils (21) entfernten Ende konisch zulaufen.

6. Verpackung nach einem der vorstehenden Ansprüche, wobei das plattenförmige Mittelteil (211) in einem Stück mit dem Außenring (210) gefertigt ist.

7. Verpackung nach Anspruch 6, wobei das plattenförmige Mittelteil (211) und der Außenring (210) in einem Stück mit dem Flanschelement (22) gefertigt sind.

8. Verpackung nach einem der vorstehenden Ansprüche, wobei der Deckel (20) aus einem Kunststoffmaterial hergestellt ist.

9. Verpackung (1) nach Anspruch 8, wobei das Flanschelement (22) mit einer Innenwand (13) der Verpackung (1) in Kontakt tritt wenn sich das plattenförmige Mittelteil (21) in einer konvexen Konfiguration befindet und eine Kuppel bildet, die aus der Verpackung (1) heraus ragt, und das Flanschelement (22) nicht mit der Innenwand (13) oder der Außenwand (14) der Verpackung (1) in Kontakt tritt, wenn sich das plattenförmige Mittelteil (21) in einer konkaven Konfiguration befindet, die eine Wölbung zur Innenseite der Verpackung (1) bildet.

10. Verpackung (1) nach einem der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** es sich um einen Eiscreme-Becher oder die Hülse für eine Eiswaffel handelt.

11. Verpacktes, gefrorenes Süßwarenprodukt, umfassend eine Verpackung (1) nach einem der vorstehenden Ansprüche und ein gefrorenes Süßwarenprodukt.

Revendications

1. Conditionnement (1) pour produits alimentaires, tels qu'une confiserie congelée de type crème glacée, possédant une ouverture (12) étant fermée par un couvercle (20) dans lequel le couvercle de fermeture (20) pour le conditionnement (1) comprend :

un élément central en forme de plaque (21), un anneau externe (210) dimensionné pour prendre la forme du conditionnement (1), et un élément de rebord circonférentiel non continu (22) s'étendant pratiquement à angle droit à partir de la circonférence de l'anneau externe (210),
dans lequel le couvercle (20) est conçu de telle sorte que l'élément central en forme de plaque (21) peut être manuellement changé entre une configuration convexe et une configuration concave, et
dans lequel ledit changement se traduit par un changement de la position angulaire de l'élément de rebord (22) par rapport au plan défini par l'anneau externe (210) et dans lequel, en fonction de ladite position angulaire, l'élément de rebord (22) est en contact avec une paroi interne (13) du conditionnement ou non, et dans lequel le couvercle (20) est placé dans le conditionnement (1) de telle sorte que l'élément de rebord (22) s'étend à partir du plan défini par le bord de circonférence (23) de l'élément central en forme de plaque (21) dans une direction allant vers l'ouverture (12) du conditionnement (1).

2. Conditionnement selon la revendication 1, dans lequel l'élément de rebord circonférentiel non continu (22) comprend au moins une fente (26) dans une direction axiale (A) par rapport au couvercle (20).

3. Conditionnement selon la revendication 1 ou 2, dans lequel l'élément de rebord circonférentiel non continu (22) comprend une pluralité de fentes (26) dans une direction axiale (A) par rapport au couvercle (20) pour diviser l'élément de rebord (22) en une pluralité de parties de rebord (25).

4. Conditionnement selon la revendication 3, dans lequel les fentes (26) sont uniformément réparties sur la circonférence de l'élément de rebord (22).

5. Conditionnement selon la revendication 3 ou 4, dans lequel les parties de rebord (25) s'effilent vers une extrémité éloignée de la circonférence de l'élément central en forme de plaque (21).

6. Conditionnement selon l'une quelconque des revendications précédentes, dans lequel l'élément central en forme de plaque (211) est formé de façon solidaire avec l'anneau externe (210).

7. Conditionnement selon la revendication 6, dans lequel l'élément central en forme de plaque (211) et l'anneau externe (210) sont formés de façon solidaire avec l'élément de rebord (22).

8. Conditionnement selon l'une quelconque des revendications précédentes, dans lequel le couvercle (20) est constitué d'un matériau en plastique.

9. Conditionnement (1) selon la revendication 8, dans lequel l'élément de rebord (22) est en contact avec une paroi interne (13) du conditionnement (1) lorsque l'élément central en forme de plaque (21) se trouve dans une configuration convexe formant un dôme s'étendant à l'extérieur du conditionnement (1), et l'élément de rebord (22) n'est pas en contact avec la paroi interne (13) ou la paroi externe (14) du conditionnement (1) lorsque l'élément central en forme de plaque (21) se trouve dans une configuration concave formant une concavité s'étendant vers l'intérieur du conditionnement (1).

10. Conditionnement (1) selon l'une quelconque des revendications précédentes, **caractérisé en ce qu**'il s'agit d'une coupe de crème glacée ou d'un cornet de crème glacée.

11. Produit de confiserie congelé emballé comprenant un conditionnement (1) selon l'une quelconque des revendications précédentes et un produit de confiserie congelé.

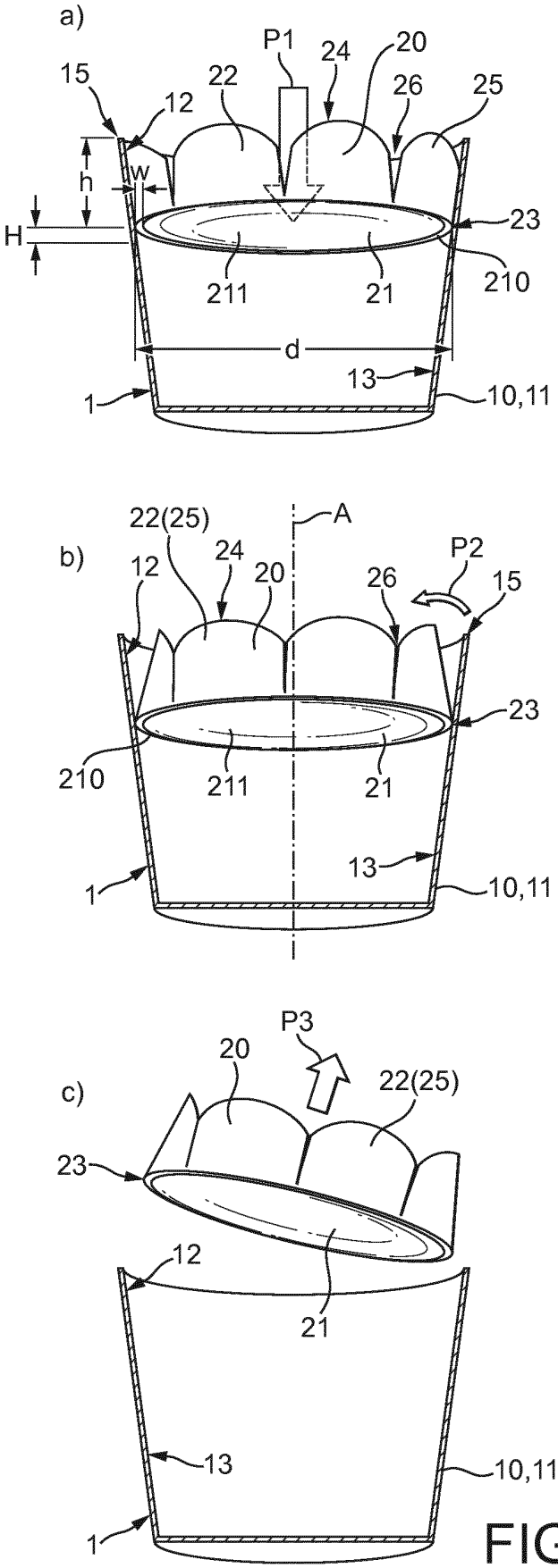

a)
P1
24
20
15
22
26
25
12
h
w
H
23
211
21
210
d
13
1
10,11
b)
22(25)
A
24
P2
12
20
26
15
23
210
211
21
13
1
10,11
c)
P3
20
22(25)
23
12
21
13
10,11
1

FIG. 1

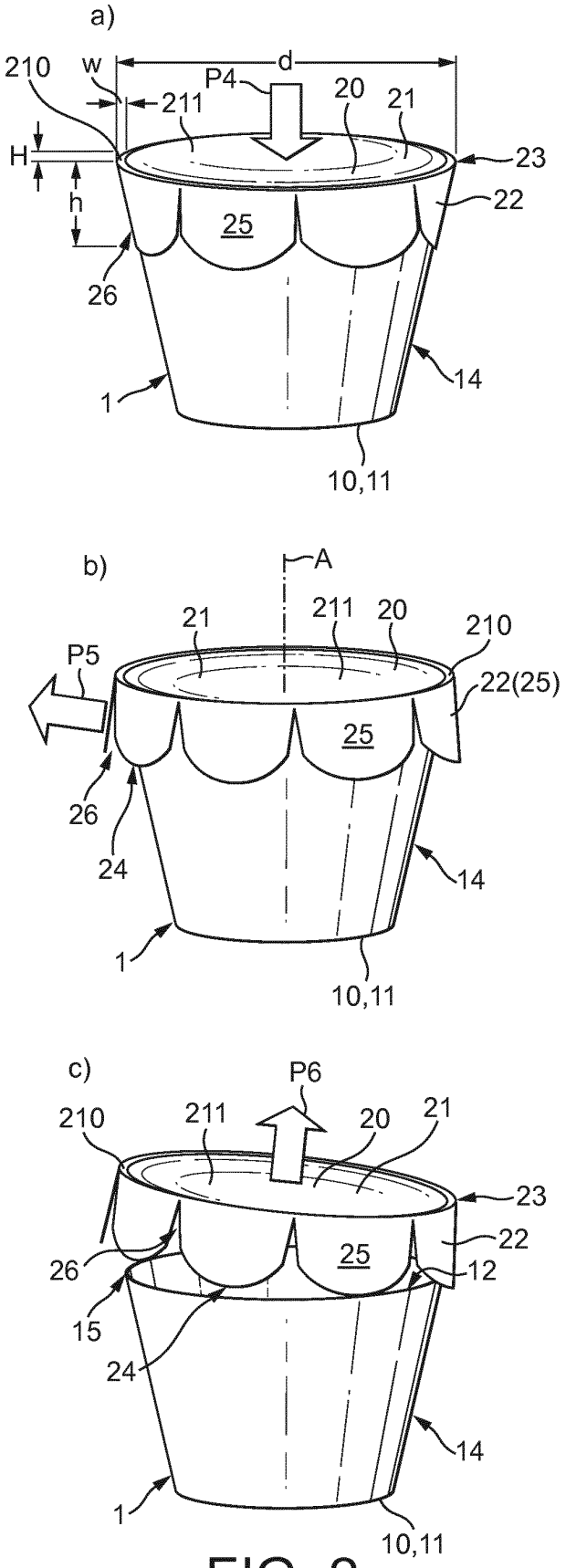

a)
210
w
d
P4
211
20
21
H
23
h
22
25
26
14
1
10,11
b)
A
21
211
20
210
P5
22(25)
25
26
24
14
1
10,11
c)
P6
210
211
20
21
23
22
26
25
12
15
24
14
1
10,11

FIG. 2

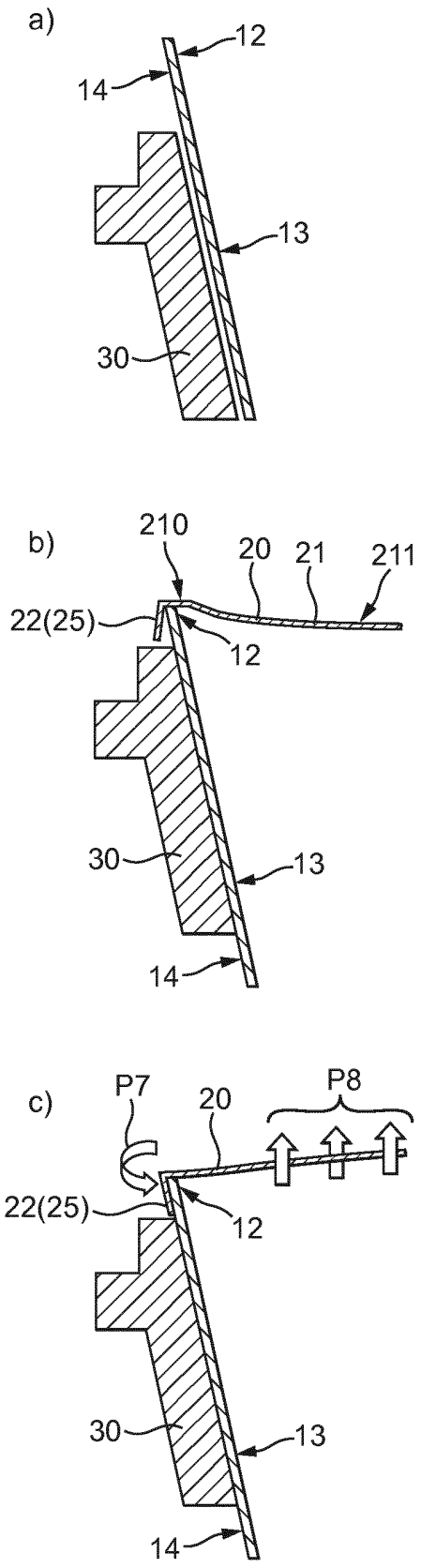

a)
12
14
13
30
b)
210
20
21
211
22(25)
12
30
13
14
c)
P7
20
P8
22(25)
12
30
13
14

FIG. 3

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 20060157544 A1 **[0003]**
- EP 0276333 A1 **[0004]**
- US 3559843 A **[0005]**