

(19)



(11)

EP 4 208 062 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:

05.03.2025 Bulletin 2025/10

(21) Application number: **21773003.5**

(22) Date of filing: **31.08.2021**

(51) International Patent Classification (IPC):

A45D 33/18 ^(2006.01) **A45D 40/00** ^(2006.01)
B65D 55/08 ^(2006.01) **B65D 53/02** ^(2006.01)
B65D 25/16 ^(2006.01) **A45D 34/00** ^(2006.01)

(52) Cooperative Patent Classification (CPC):

A45D 33/18; A45D 40/0068; B65D 25/24;
B65D 43/0231; A45D 2034/005; A45D 2034/007;
A45D 2040/0012; B65D 2543/00092;
B65D 2543/00435

(86) International application number:

PCT/EP2021/074051

(87) International publication number:

WO 2022/073698 (14.04.2022 Gazette 2022/15)

(54) **CONTAINER**

CONTAINER

RÉCIPIENT

(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: **06.10.2020 GB 202015817**

(43) Date of publication of application:

12.07.2023 Bulletin 2023/28

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Description

Technical Field

[0001] The present invention relates generally to a hybrid material container and particularly, although not exclusively, to a wide-mouth hybrid material container such as a jar.

Background

[0002] Thick-walled plastic containers, such as jars used for cosmetics creams, contain a relatively large amount of plastic and are not generally recycled. An example of a hybrid container is known from US 2020/275759A1.

Statements of Invention

[0003] A first aspect of the invention provides a hybrid container according to claim 1 comprising a rigid fibrous outer part and a rigid plastic inner part. The inner part is configured to contain a product and is removably attached to the outer part such that at least a portion of the inner part is disposed inside the outer part.

[0004] This aspect therefore allows for the easy recycling of the hybrid container, through separation of the outer fibrous part from the inner plastic part.

[0005] The outer part is exclusively formed from a single fibrous material.

[0006] The inner part may be exclusively formed from a single plastics material.

[0007] The inner part comprises a rigid first plastic part removably connected to a rigid second plastic part. The first plastic part is disposed substantially within the second plastic part and is configured to contain the product. The second plastic part is removably connected to the fibrous outer part, the fibrous outer part being made of cardboard.

[0008] It may be the case that the first plastic part is formed from a first plastics material and the second plastic part is formed from a second, different, plastics material.

[0009] It may be the case that the first plastic part is exclusively formed from the first plastics material and the second part is exclusively formed from the second plastics material.

[0010] The first plastics material may be is a food approved plastics material.

[0011] The hybrid container may exclusively comprise recyclable materials.

[0012] The inner part may comprise a plastics material composed of at least 30% recycled plastics material.

[0013] The outer part may comprise a recycled fibrous material.

[0014] The inner part may be removably connected to the outer part by a mechanical connection.

[0015] The inner part may be removably connected to

the outer part by an interference fit.

[0016] The inner part may comprise anti-rotation features configured to prevent circumferential movement of the outer part relative to the inner part.

[0017] The inner part may be configured to removably engage with a lid.

[0018] The inner part may define an opening through which the inside of the container is able to be accessed.

[0019] It may be the case that the container is substantially cylindrical and the opening is circular, and the diameter of the opening is at least 60% of the outer diameter of the container.

[0020] A second aspect not forming part of the invention provides a refill capsule configured to form part of a hybrid container according to at least some examples of the first aspect. The refill capsule comprises the first rigid plastic part, a product contained in the first rigid plastic part, and a removable closure disposed on the first rigid plastic part such that the first rigid plastic part and the removable closure together define a sealed space in which the product is contained.

[0021] A third aspect not according to the invention provides a rigid plastic interface component suitable for use as the second rigid plastic part of a hybrid container according to at least some examples of the first aspect. The interface component comprises at least one first engagement feature and at least one second engagement feature. The at least one first engagement feature is configured to mechanically engage with a fibrous outer part of the hybrid container as to resist relative movement of the interface component and the fibrous outer part. The at least one second engagement feature is configured to mechanically engage with a first plastic part of the hybrid container so as to resist relative movement of the interface component and the first plastic part along at least a selected direction.

[0022] The at least one first engagement feature may comprise a rib on an outer surface of the interface component.

[0023] The the at least one second engagement feature may comprise a circumferential edge of the interface component which is located at the top of the interface component in an in-use orientation of the hybrid container.

Brief Description of the Drawings

[0024]

Figure 1 is a schematic representation of an example hybrid jar according to the invention;
Figure 2 comprises various views of an outer part of the example hybrid jar of Figure 1;
Figure 3 comprises various views of a second plastic part of the example hybrid jar of Figure 1;
Figure 4 comprises various views of a first plastic part of the example hybrid jar of Figure 1;
Figure 5 is a side view of an example refill capsule for

the example hybrid jar of Figure 1; and

Figure 6 is a schematic representation of a further example hybrid jar not according

to the invention.

Detailed Description

[0025] The present invention will now be more particularly described, by way of example, with reference to the accompanying drawings.

[0026] Example embodiments are shown and described in sufficient detail to enable those of ordinary skill in the art to embody and implement the systems and processes herein described. It is important to understand that embodiments can be provided in many alternate forms and should not be construed as limited to the examples set forth herein, as long as these fall within the scope of the invention as defined by the appended claims.

[0027] Accordingly, while embodiments can be modified in various ways and take on various alternative forms, specific embodiments thereof are shown in the drawings and described in detail below as examples. There is no intent to limit to the particular forms disclosed. On the contrary, all modifications, equivalents, and alternatives falling within the scope of the appended claims should be included. Elements of the example embodiments are consistently denoted by the same reference numerals throughout the drawings and detailed description where appropriate.

[0028] The invention is not limited in the design and shape of the structure shown in the drawings.

[0029] The terminology used herein to describe embodiments is not intended to limit the scope. The articles "a," "an," and "the" are singular in that they have a single referent, however the use of the singular form in the present document should not preclude the presence of more than one referent. In other words, elements referred to in the singular can number one or more, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises," "comprising," "includes," and/or "including," when used herein, specify the presence of stated features, items, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, items, steps, operations, elements, components, and/or groups thereof.

[0030] Unless otherwise defined, all terms (including technical and scientific terms) used herein are to be interpreted as is customary in the art. It will be further understood that terms in common usage should also be interpreted as is customary in the relevant art and not in an idealized or overly formal sense unless expressly so defined herein.

[0031] In the following description, all orientational terms, such as upper, lower, radially and axially, are used in relation to the drawings and should not be interpreted

as limiting on the invention.

[0032] Each example container according to the present invention comprises a rigid fibrous outer part and a rigid plastic inner part. In each example the inner part is configured to contain a product, and is removably attached to the outer part such that at least a portion of the inner part is disposed inside the outer part. The term "rigid" is intended to mean self-supporting, such that a rigid part is able to maintain a desired shape and configuration without support from any other object.

[0033] The term "removably" is intended to mean that the attached parts can be separated by a user without damaging either of the parts, and without the use of any tools.

[0034] A container formed in accordance with the present invention may, for example, be a cup, pot, tub or a jar. Such a container may be configured to contain a liquid or semi-liquid product such as a cream, paste or gel. Such a container may be configured to contain a powder. The product may be a cosmetics product. In some examples the product may be a food product.

[0035] Hybrid containers according to the invention enable advantageously enable a significant reduction in the amount of plastic comprised in the container compared to a thick-walled plastic jar, because the thickness of the wall is mainly provided by the fibrous part. A further advantage is that, because the fibre part is easily and cleanly separable from the plastic part(s), recycling of each part is facilitated. Hybrid containers according to the invention may exclusively comprise recyclable materials.

[0036] Different aspects and embodiments of the invention may be used separately or together.

[0037] Figure 1 shows a first example hybrid container 1 according to the invention. The hybrid container 1 comprises a rigid fibrous outer part 11 and a rigid plastic inner part 12a, 12b, which is removably attached to the outer part 11 such that at least a portion of the inner part 12a, 12b is disposed inside the outer part 11.

[0038] The inner part 12a, 12b defines an opening 129 through which the inside of the container 1 is able to be accessed. In the particular example of Figure 1, the container 1 is substantially cylindrical and the opening 129 is circular, with a diameter at least 60% of the outer diameter of the container 1. The diameter of the opening 129 may be at least 75% of the outer diameter of the container. The container 1 is therefore a "wide-mouth" container. In other examples the diameter of the opening 129 may be less than 60% of the outer diameter of the container 1.

[0039] In this example the hybrid container 1 is refillable. To enable refilling of the hybrid container 1, the inner part 12a, 12b comprises a rigid first plastic part 12a removably connected to a rigid second plastic part 12b. The manner in which the two-part construction of the inner part 12a, 12b facilitates refilling of the container 1 will become clear from the following discussion.

[0040] Part (i) of Figure 1 is an exploded view of the container 1 which shows the outer part 11, the first plastic

part 12a, and the second plastic part 12b separately, and part (ii) is a perspective view of the container 1 in an intended in-use state.

[0041] Figure 2 shows the outer part 11 in isolation. Part (i) is a perspective view of the outer part 11, part (ii) is an end view; part (iii) is a side view; and part (iv) is a cross-section taken along the line A-A.

[0042] The fibrous outer part 11 is cylindrical. At least in this example, the fibrous outer part 11 does not comprise a base, meaning that at least the first plastic part 12a of the plastic inner part 12a, 12b is visible and accessible from the bottom of the container 1. The cylindrical wall of the outer part 11 may be relatively thick, in order to provide a desired level of rigidity and to emulate the visual appearance and configuration of a thick-walled plastic or glass container.

[0043] The fibrous outer part 11 is formed exclusively from a single fibrous material.

[0044] The fibrous outer part 11 is formed from cardboard. In other other examples, not being part of the invention, the fibrous outer part may be formed from, for example, paperboard, or fibreboard.

[0045] In some examples the fibrous outer part 11 is formed from a recycled fibrous material. The outer part 11 may be formed as a continuous cylindrical portion of material with no seams (as opposed to, for example, a rectangular portion with joined ends). The outer part 11 may be formed by slicing a tube of fibrous material. Such tubes are well-known and widely available, meaning that the fibrous outer part 11 may be very simple and inexpensive to manufacture. Furthermore, this method of manufacturing the fibrous outer part 11 means that the fibrous outer part 11 can be exclusively formed from a single fibrous material, since no bonding agents or the like are required to be used.

[0046] The first plastic part 12a is shown in isolation in Figure 3, in which part (i) is a side view and part (ii) is a view from below. The first plastic part 12a is configured to contain a product, which may be any of the types of product listed above. In this particular example, the first plastic part 12a is configured to contain a cosmetics cream. The first plastic part 12a has a circumferential sidewall 122 that extends upwardly from the edge of a circular base 123. The first plastic part 12a defines the opening 129 and bounds a cavity for containing the product.

[0047] The first plastic part 12a is unitary and is formed exclusively from a single plastics material. The first plastic part 12a may be formed by injection moulding. The first plastic part 12a may be formed by thermoforming.

[0048] The first plastic part 12a may, in some examples, be formed from a food approved plastics material. This will be the case where the container 2 is intended to contain a cosmetic or food product, since the first plastic part 12a directly contacts a product contained by the container 2. The first plastic part 12a may be formed from a recycled plastics material. The first plastic part 12a may be formed from a blend of a recycled plastics

material and a non-recycled plastics material. Such a blend may preferably contain at least 30% recycled plastics material. Such a blend may contain at least 50% recycled plastics material. The first plastic part 12a may be formed from PET, rPET, or a blend of PET and rPET. The first plastic part 12a may be formed from a polyolefin polymer such as polypropylene (PP). In the particular example, the first plastic part 12a is formed from recycled PP (rPP) or from a blend of rPP and PP. Other plastics materials which may be used to form the first plastic part 12a include nylon, polystyrene, TPE (Thermoplastic Elastomer), TPS (Thermoplastic Starch).

[0049] From Figure 2 it can be seen that, in this particular example, the base 123 is concave (with respect to the interior of the container 1), and that the circumferential region of the first plastic part 12a where the base 123 joins the sidewall 122 is curved. The concave base 123 and curved joining region avoids sharp corners from which it is difficult for a user to remove a product contained by the container 1.

[0050] It can also be seen that the first plastic part 12a comprises a rim 124. The rim 124 defines a downward-facing U-shaped circumferential recess. An upper circumferential edge of the second plastic part 12b is received in the recess. The rim 124 therefore provides a mechanical connection between the first and second plastic parts 12a, 12b. In particular, the rim 124 prevents the first plastic part 12a from moving downwardly relative to the second plastic part 12b, whilst permitting the first plastic part 12a to move upwardly relative to the second plastic part 12b. The rim 124 thereby enables the first plastic part 12a to be retained on the second plastic part 12b in a desired position relative to the second plastic part 12b by gravity, in an in-use orientation of the container 2.

[0051] In some examples the circumference of the rim 124 may be sized relative to the circumference of the second plastic part 12b such that there is an interference fit therebetween. In some examples the rim 124 may comprise one or more retention features, such as one or more inwardly extending protrusions, configured to engage with one or more corresponding retention features (such as one or more outwardly extending protrusions) on the second plastic part 12b. Such retention features may create a snap-connection between the first and second plastic parts 12a, 12b. In other examples the first and second plastic parts 12a, 12b may comprise other forms of mechanical retention features, for example configured to create a screw connection or a bayonet connection therebetween. The retention features may provide a more secure connection between the first and second plastic parts 12a, 12b, for example to ensure that the first and second plastic parts 12a, 12b do not become unintentionally separated if a user holds the container in an orientation significantly different to the normal in-used orientation shown in the Figures.

[0052] The second plastic part 12b has the form of a ring, which surrounds the side wall of the first plastic part 12a such that the first plastic part 12a is disposed sub-

stantially within the second plastic part 12b. The second plastic part 12b is unitary and is formed exclusively from a single plastics material. The second plastic part 12b may be formed from a different plastics material to the first plastic part 12a. The second plastic part 12b may be formed by injection moulding. The second plastic part 12b may be formed by thermoforming.

[0053] The second plastic part 12b does not contact a product contained by the container 2, so there is no need for the second plastic part 12b to be formed from a food approved plastics material. The second plastic part 12b may be formed from a recycled plastics material. The second plastic part 12b may be formed from a blend of a recycled plastics material and a non-recycled plastics material. Such a blend may preferably contain at least 30% recycled plastics material. Such a blend may contain at least 50% recycled plastics material. The second plastic part 12b may be formed from PP, rPP, or a blend of PP and rPP. In the particular example, the second plastic part 12b is formed from rPET or from a blend of rPET and PET. Other plastics materials which may be used to form the first plastic part 12a include nylon, polystyrene, TPE, TPS.

[0054] The second plastic part 12b is configured to removably engage with a lid (not illustrated). In the illustrated example, a screw thread 121 is provided on an upper outer surface of the second plastic part 12b, the screw thread 121 being configured to engage with a corresponding screw thread on an inner surface of a lid. The screw thread 121 is provided on a portion of the second plastic part 12b which is not disposed within the outer part 11. In other examples, the second plastic part 12b may be configured to removably engage with a lid via a different mechanism, such as a snap-fit mechanism or bayonet mechanism. It is advantageous for the second plastic part 12b to be configured to engage with a lid, because this means that the outer part 11 does not need to engage with the lid. The outer part 11 may therefore have a very simple construction, which makes it possible to form the outer part 11 from a highly recyclable and inexpensive fibrous material, as described above.

[0055] Figure 4 shows the second plastic part 12b in isolation. Part (i) is a side view; part (ii) is a view from below; part (iii) is a cross-section; part (iv) is a perspective view; and part (v) is an enlarged view of the region A of part (iv).

[0056] The second plastic part 12b is removably attached to the outer part 11 such that a lower (with respect to an intended in-use orientation of the container 1) portion of the second plastic part 12b is disposed inside the outer part 11. The removable attachment is configured such that the outer part 11 and the second plastic part 12b will remain securely attached during normal use of the container 1. The term "normal use" is intended to mean use of the container to store and dispense a product contained therein, and to exclude, for example the manufacturing and disposal stages of the lifecycle of the container 1.

[0057] However; the removable attachment is configured such that when it is desired to dispose of the container 1, the outer part 11 and the second plastic part 12b may easily be separated by a user. Achieving the separation does not require any special tools or the application of a particularly high level of force. However; the removable attachment may be configured such that certain movements or forces not required and not likely to be applied during normal use of the container are required in order to separate the outer part 11 from the second plastic part 12b.

[0058] The attachment between the second plastic part 12b and the outer part 11 is configured to prevent relative movement, in any direction, between the second plastic part 12b and the outer part 11 during normal use of the container 1.

[0059] The attachment between the second plastic part 12b and the outer part 11 is in the form of a mechanical connection, meaning that no bonding agent (such as glue) is used to form the attachment. For example, the second plastic part 12b may be attached to the outer part 11 by a push-fit connection. In the particular illustrated example the second plastic part 12b is connected to the outer part 11 by an interference-fit connection, which is achieved through selecting an appropriate inner diameter of a region of the outer part 11 and an appropriate outer diameter of a corresponding region of the second plastic part 12b. These diameters should be selected to create a desired degree of resistance to relative movement of the outer part 11 and the second plastic part 12b. In particular, the degree of resistance should be high enough to ensure that relative movement does not take place during normal use of the container 1, but low enough that the vast majority of users are able to separate the outer part 11 and the second plastic part 12b without undue difficulty when they wish to dispose of the container 1.

[0060] The second plastic part 12b may comprise at least one first engagement feature on an outer surface of the second plastic part 12b. Such a first engagement feature may, for example, take the form of a circumferential protrusion (not illustrated) configured to facilitate achieving an interference fit with the outer part 11. Such a circumferential protrusion would be provided on a portion of the second plastic part 12b that is disposed within the outer part 11. Such a circumferential protrusion may be sized such that it presses into the fibrous material of the outer part 11, to better resist relative axial movement of the outer part 11 and the second plastic part 12b.

[0061] In some examples such a circumferential protrusion may be resilient, and sized such that it becomes deformed during a process of attaching the inner and outer parts 12, 11. In such examples the degree of resistance to relative movement of the outer part 11 and second plastic part 12b provided by the interference-fit connection will partially depend on the resilience of the circumferential protrusion (a less resilient protrusion will create a stronger resistance to relative move-

ment, and vice versa). The resilience should therefore be selected, in combination with the diameters described above, to create a desired degree of resistance to relative movement.

[0062] In some examples, the at least one first engagement feature may comprise one or more anti-rotation features configured to prevent relative circumferential movement therebetween during normal use. In particular, such anti-rotation features may be configured to prevent relative circumferential movement between the second plastic part 12b and the outer part 11 during the actions of removing and replacing a screw-on lid.

[0063] It can be seen from Figure 4 that the second plastic part 12b comprises anti-rotation features in the form of multiple axially extending ribs 126, which protrude from the outer circumferential surface of the portion of the second plastic part 12b which is disposed inside the outer part 11. The ribs 126 are distributed around the circumference of the second plastic part 12b. The ribs 126 operate to prevent relative circumferential movement between the second plastic part 12b and the outer part 11 during normal use of the container 1.

[0064] It can also be seen from Figure 4 that the second plastic part 12b comprises an outwardly extending circumferential protrusion 125. The outer circumference of this protrusion 125 is greater than the inner circumference of the outer part 11. The protrusion 125 sits against and covers an upper edge of the outer part 11.

[0065] The protrusion 125 thereby protects the upper edge of the outer part 11 and also sets the axial position of the second plastic part 12b relative to the outer part 11.

[0066] The second plastic part 12b further comprises at least one second engagement feature configured to mechanically engage with the first plastic part 12a so as to resist relative movement of the first and second plastic parts 12a and 12b along at least a selected direction. In the illustrated example the upper circumferential edge of the second plastic part 12b mechanically engages with the rim 124 of the first plastic part 12a, and therefore functions as such a second engagement feature. As explained above, the engagement of the upper circumferential edge of the second plastic part 12b with the rim 124 of the first plastic part 12a prevents the first plastic part 12a from moving downwardly (with respect to an in-use orientation of the container 1) relative to the second plastic part 12b.

[0067] In other examples second engagement features may comprise any features configured to resist relative movement of the first and second plastic parts 12a and 12b along further directions. Such second engagement features may comprise one or more hooks or other radially-extending protrusions, configured to engage with one or more radially-extending features on the first plastic part 12a in order to resist upward movement of the first plastic part 12a relative to the second plastic part 12b. In such examples the second engagement features may be configured to only resist upward movement of the first plastic part 12a against a relatively

low degree of force, such as that experienced when the container 1 is inverted relative to the in-use orientation. The second engagement features may be configured to permit upward movement of the first plastic part 12a when a relatively higher degree of force is applied to drive the upward movement, such as a force that may easily be applied by a user wishing to remove the first plastic part 12a from the container 1.

[0068] The example hybrid container 1 is refillable. The container 1 is configured to be refilled by replacing an empty first plastic part 12a with a full first plastic part 12a. The empty first plastic part 12a may then be recycled. The removable connection between the first plastic part 12a and the second plastic part 12b enables the user to easily remove the empty first plastic part 12a from the container and then insert a different, full, first plastic part 12a. The second plastic part 12b and the outer part 11 may be retained by the user and refilled in this manner multiple times (for example until the condition of the outer part 11 and/or the second plastic part 12b degrades enough to warrant replacement of the entire container 1).

[0069] Figure 5 is a side view of an example refill capsule 5 suitable for use with the hybrid container 1. The refill capsule 5 is configured to form part of the hybrid container 1. The capsule 5 comprises a first rigid plastic part 12a which is identical to the first rigid plastic part 12a described above. A removable closure 51 of any suitable type is disposed on the first rigid plastic part 12a such that the first rigid plastic part 12a and the removable closure 51 together define a sealed space. A product is contained within the sealed space. The removable closure 51 may, for example, comprise a film or membrane attached to the upper circumferential edge of the first plastic part 12a by any suitable attachment mechanism.

[0070] Figure 6 shows a second example hybrid container 2 not according to the invention.

[0071] The hybrid container 2 comprises a rigid fibrous outer part 11 and a rigid plastic inner part 22. Features of the second example hybrid container 2 which are substantially identical to equivalent features of the first example hybrid container 1 have been denoted using the same reference numbers and will not be further discussed. In particular, the outer part 11 of the second example hybrid container 2 is substantially identical to the outer part 11 of the first example hybrid container 1. Unlike the first example hybrid container 1, the hybrid container 2 is not intended to be refillable by a consumer. Instead it has a construction which enables it to be formed from just two different recyclable materials, which are easily separated by the consumer. The second example hybrid container 2 may therefore be completely and easily recycled.

[0072] Part (i) is an exploded view of the container 2 which shows the inner and outer parts 22, 11 separately, and part (ii) is a perspective view of the container 2 in an intended in-use state.

[0073] The inner part 22 is configured to contain a product, which may be any of the types of product listed

above. The inner part 22 defines an opening 129 through which the inside of the container 2 is able to be accessed. Like the container 1, the container 2 is a wide mouth container, and the opening 129 has a diameter at least 60% of the outer diameter of the container 2.

[0074] In this example the plastic inner part 22 is unitary and is formed exclusively from a single plastics material. The plastic inner part 22 has a circumferential sidewall, which extends upwardly from the edge of a circular base. The plastic inner part 22 directly contacts a product contained in the container 2. The plastic inner part 22 may be formed in substantially the same manner as the first plastic part 12a or in substantially the same manner as the second plastic part 12b of the first example hybrid container 1. The plastic inner part 22 may be formed from any of the materials described above as being suitable for forming the first plastic part 12a or any of the materials described above as being suitable for forming the second plastic part 12b. In examples in which the container 2 is intended to contain a cosmetic or food product, the plastic inner part 22 is formed from a food approved plastics material. In the particular example, the plastic inner part 22 is formed from rPET or from a blend of PET and rPET.

[0075] Similar to the second plastic part 12b of the example container 1, the inner part 22 is configured to removably engage with a lid by means of a screw thread 121. The screw thread 121 is provided on an upper outer surface of the inner part 22, configured to engage with a corresponding screw thread on an inner surface of a lid. The screw thread 121 is provided on a portion of the inner part 22 which is not disposed within the outer part 11.

[0076] The inner part 22 is removably attached to the outer part 11 such that a lower (with respect to an intended in-use orientation of the container 1) portion of the inner part 22 is disposed inside the outer part 11. That is, the lower portion of the inner part 22 is disposed within the space defined by the inner circumferential wall of the outer part 11. The attachment between the inner part 22 and the outer part 11 is substantially the same as the attachment between the second plastic part 12b and the outer part 11 of the first example hybrid container 1.

Claims

1. A hybrid container (1) comprising a rigid fibrous outer part (11) and a rigid plastic

inner part (12a, 12b); the inner part (12a, 12b) being configured to contain a product; wherein the

inner part (12a, 12b) is removably attached to the outer part (11) such that at least a portion of the inner part (12a, 12b) is disposed inside the outer part (11), wherein the inner part (12a, 12b) comprises

a rigid first plastic part (12a) removably con-

nected to a rigid second plastic part (12b), the first plastic part (12a) being disposed substantially within the second plastic part (12b) and being configured to contain the product; and the second plastic part (12b) being removably connected to the fibrous outer part (11), and wherein the fibrous outer part is made of cardboard.

2. A hybrid container according to claim 1, wherein the outer part (11) is exclusively formed from a single fibrous material.
3. A hybrid container according to claim 1 or claim 2, wherein the inner part (12a, 12b) is exclusively formed from a single plastics material.
4. A hybrid container according to claim 1 or claim 2, wherein the first plastic part (12a) is formed from a first plastics material and the second plastic part (12b) is formed from a second, different, plastics material.
5. A hybrid container according to claim 4, wherein the first plastic part (12a) is exclusively formed from the first plastics material and the second part (12b) is exclusively formed from the second plastics material.
6. A hybrid container according to claim 4 or claim 5, wherein the first plastics material is a food approved plastics material.
7. A hybrid container according to any preceding claim, wherein the container (1) exclusively comprises recyclable materials.
8. A hybrid container according to any preceding claim, wherein the inner part (12a, 12b) comprises a plastics material composed of at least 30% recycled plastics material.
9. A hybrid container according to any preceding claim, wherein the outer part (11) comprises a recycled fibrous material.
10. A hybrid container according to any preceding claim, wherein the inner part (12a, 12b) is removably connected to the outer part (11) by a mechanical connection.
11. A hybrid container according to any preceding claim, wherein the inner part (12a, 12b) is removably connected to the outer part (11) by an interference fit.
12. A hybrid container according to any preceding claim,

wherein the inner part (12a, 12b) comprises anti-rotation features configured to prevent circumferential movement of the outer part (11) relative to the inner part.

13. A hybrid container according to any preceding claim, wherein the inner part (12a, 12b) is configured to removably engage with a lid.
14. A hybrid container according to any preceding claim, wherein the inner part (12a, 12b) defines an opening through which the inside of the container (1) is able to be accessed.
15. A hybrid container according to claim 14, wherein the container is substantially cylindrical and the opening is circular, and wherein the diameter of the opening is at least 60% of the outer diameter of the container.

Patentansprüche

1. Hybridbehälter (1), der ein starres faseriges Außenteil (11) und ein starres Kunststoffinnenteil (12a, 12b) umfasst; wobei das Innenteil (12a, 12b) dazu ausgelegt ist, ein Produkt zu enthalten; wobei das Innenteil (12a, 12b) entfernbar an dem Außenteil (11) befestigt ist, so dass mindestens ein Abschnitt des Innenteils (12a, 12b) innerhalb des Außenteils (11) angeordnet ist, wobei das Innenteil (12a, 12b) ein starres erstes Kunststoffteil (12a) umfasst, das entfernbar mit einem starren zweiten Kunststoffteil (12b) verbunden ist, wobei das erste Kunststoffteil (12a) im Wesentlichen innerhalb des zweiten Kunststoffteils (12b) angeordnet ist und dazu ausgelegt ist, das Produkt zu enthalten; und wobei das zweite Kunststoffteil (12b) lösbar mit dem faserigen Außenteil (11) verbunden ist, und wobei das faserige Außenteil aus Karton gefertigt ist.
2. Hybridbehälter nach Anspruch 1, wobei das Außenteil (11) ausschließlich aus einem einzigen faserigen Material gebildet ist.
3. Hybridbehälter nach Anspruch 1 oder Anspruch 2, wobei das Innenteil (12a, 12b) ausschließlich aus einem einzigen Kunststoffmaterial gebildet ist.
4. Hybridbehälter nach Anspruch 1 oder Anspruch 2, wobei das erste Kunststoffteil (12a) aus einem ersten Kunststoffmaterial und das zweite Kunststoffteil (12b) aus einem zweiten, unterschiedlichen Kunststoffmaterial gebildet ist.
5. Hybridbehälter nach Anspruch 4, wobei das erste Kunststoffteil (12a) ausschließlich aus dem ersten Kunststoffmaterial und das zweite Teil (12b) ausschließlich aus dem zweiten Kunststoffmaterial ge-

bildet ist.

6. Hybridbehälter nach Anspruch 4 oder Anspruch 5, wobei das erste Kunststoffmaterial ein lebensmittelzugelassenes Kunststoffmaterial ist.
7. Hybridbehälter nach einem der vorhergehenden Ansprüche, wobei der Behälter (1) ausschließlich recycelbare Materialien umfasst.
8. Hybridbehälter nach einem der vorhergehenden Ansprüche, wobei das Innenteil (12a, 12b) ein Kunststoffmaterial umfasst, das zu mindestens 30 % aus recyceltem Kunststoffmaterial besteht.
9. Hybridbehälter nach einem der vorhergehenden Ansprüche, wobei das Außenteil (11) ein recyceltes faseriges Material umfasst.
10. Hybridbehälter nach einem der vorhergehenden Ansprüche, wobei das Innenteil (12a, 12b) durch eine mechanische Verbindung lösbar mit dem Außenteil (11) verbunden ist.
11. Hybridbehälter nach einem der vorhergehenden Ansprüche, wobei das Innenteil (12a, 12b) durch eine Übermaßpassung entfernbar mit dem Außenteil (11) verbunden ist.
12. Hybridbehälter nach einem der vorhergehenden Ansprüche, wobei das Innenteil (12a, 12b) Verdrehungsmerkmale umfasst, die dazu ausgelegt sind, eine Umfangsbewegung des Außenteils (11) relativ zu dem Innenteil zu verhindern.
13. Hybridbehälter nach einem der vorhergehenden Ansprüche, wobei das Innenteil (12a, 12b) dazu ausgelegt ist, entfernbar mit einem Deckel in Eingriff zu kommen.
14. Hybridbehälter nach einem der vorhergehenden Ansprüche, wobei das Innenteil (12a, 12b) eine Öffnung definiert, durch die auf das Innere des Behälters (1) zugegriffen werden kann.
15. Hybridbehälter nach Anspruch 14, wobei der Behälter (1) im Wesentlichen zylindrisch ist und die Öffnung kreisförmig ist und wobei der Durchmesser der Öffnung mindestens 60 % des Außendurchmessers des Behälters beträgt.

Revendications

1. Récipient hybride (1) comprenant une partie externe fibreuse rigide (11) et une partie interne plastique rigide (12a, 12b) ; la partie interne (12a, 12b) étant configurée pour contenir un produit ; dans lequel la

- partie interne (12a, 12b) est attachée de manière amovible à la partie externe (11) de telle sorte qu'au moins une portion de la partie interne (12a, 12b) soit disposée à l'intérieur de la partie externe (11), dans lequel la partie interne (12a, 12b) comprend une première partie plastique rigide (12a) raccordée de manière amovible à une deuxième partie plastique rigide (12b), la première partie plastique (12a) étant disposée substantiellement à l'intérieur de la deuxième partie plastique (12b) et étant configurée pour contenir le produit ; et la deuxième partie plastique (12b) étant raccordée de manière amovible à la partie externe fibreuse (11), et dans lequel la partie externe fibreuse est faite de carton.
2. Récipient hybride selon la revendication 1, dans lequel la partie externe (11) est exclusivement formée d'une matière fibreuse unique.
 3. Récipient hybride selon la revendication 1 ou la revendication 2, dans lequel la partie interne (12a, 12b) est exclusivement formée d'une matière plastique unique.
 4. Récipient hybride selon la revendication 1 ou la revendication 2, dans lequel la première partie plastique (12a) est formée d'une première matière plastique et la deuxième partie plastique (12b) est formée d'une deuxième matière plastique différente.
 5. Récipient hybride selon la revendication 4, dans lequel la première partie plastique (12a) est exclusivement formée de la première matière plastique et la deuxième partie (12b) est exclusivement formée de la deuxième matière plastique.
 6. Récipient hybride selon la revendication 4 ou la revendication 5, dans lequel la première matière plastique est une matière plastique approuvée alimentaire.
 7. Récipient hybride selon l'une quelconque des revendications précédentes, dans lequel le récipient (1) comprend exclusivement des matières recyclables.
 8. Récipient hybride selon l'une quelconque des revendications précédentes, dans lequel la partie interne (12a, 12b) comprend une matière plastique composée au moins à 30 % de matière plastique recyclée.
 9. Récipient hybride selon l'une quelconque des revendications précédentes, dans lequel la partie externe (11) comprend une matière fibreuse recyclée.
 10. Récipient hybride selon l'une quelconque des revendications précédentes, dans lequel la partie interne (12a, 12b) est raccordée de manière amovible à la partie externe (11) par un raccordement mécanique.
 11. Récipient hybride selon l'une quelconque des revendications précédentes, dans lequel la partie interne (12a, 12b) est raccordée de manière amovible à la partie externe (11) par un ajustement avec serrage.
 12. Récipient hybride selon l'une quelconque des revendications précédentes, dans lequel la partie interne (12a, 12b) comprend des éléments anti-rotation configurés pour empêcher un déplacement circonférentiel de la partie externe (11) relativement à la partie interne.
 13. Contenant hybride selon l'une quelconque des revendications précédentes, dans lequel la partie interne (12a, 12b) est configurée pour se mettre en prise de manière amovible avec un couvercle.
 14. Récipient hybride selon l'une quelconque des revendications précédentes, dans lequel la partie interne (12a, 12b) définit une ouverture à travers laquelle l'intérieur du récipient (1) est accessible.
 15. Récipient hybride selon la revendication 14, dans lequel le récipient (1) est substantiellement cylindrique et l'ouverture est circulaire, et dans lequel le diamètre de l'ouverture fait au moins 60 % du diamètre externe du récipient.

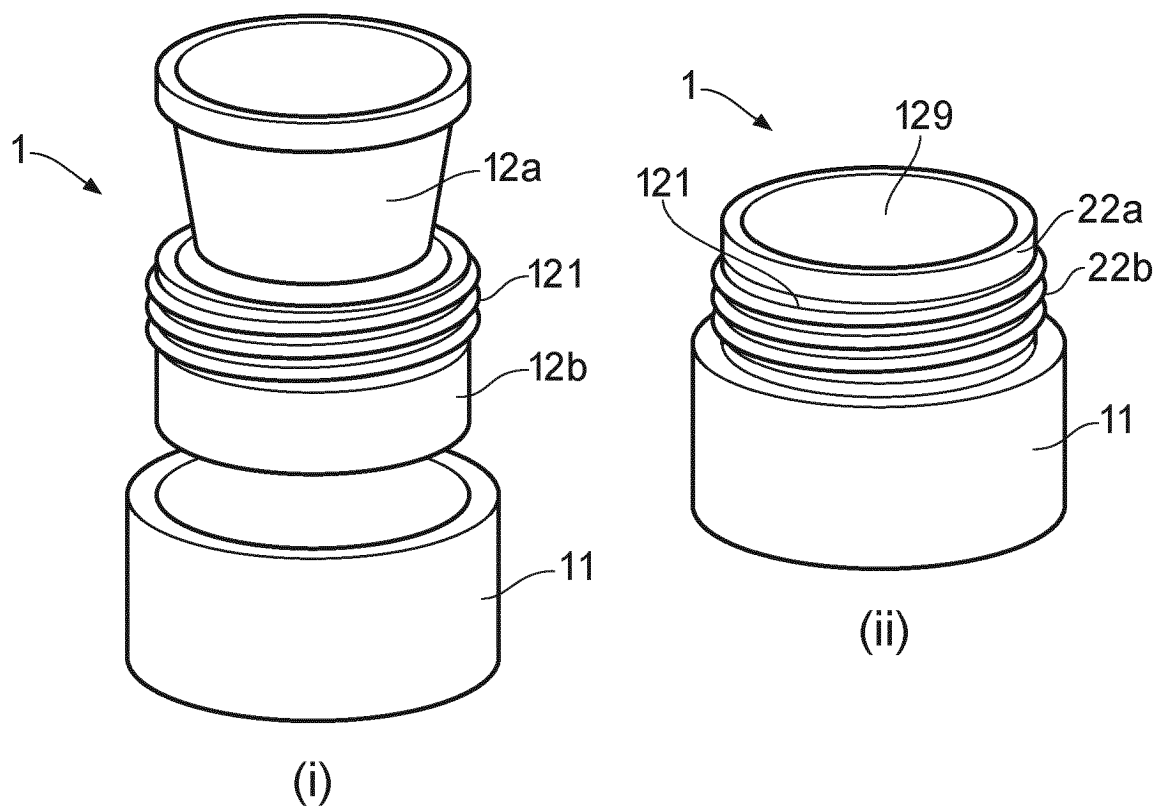


FIG. 1

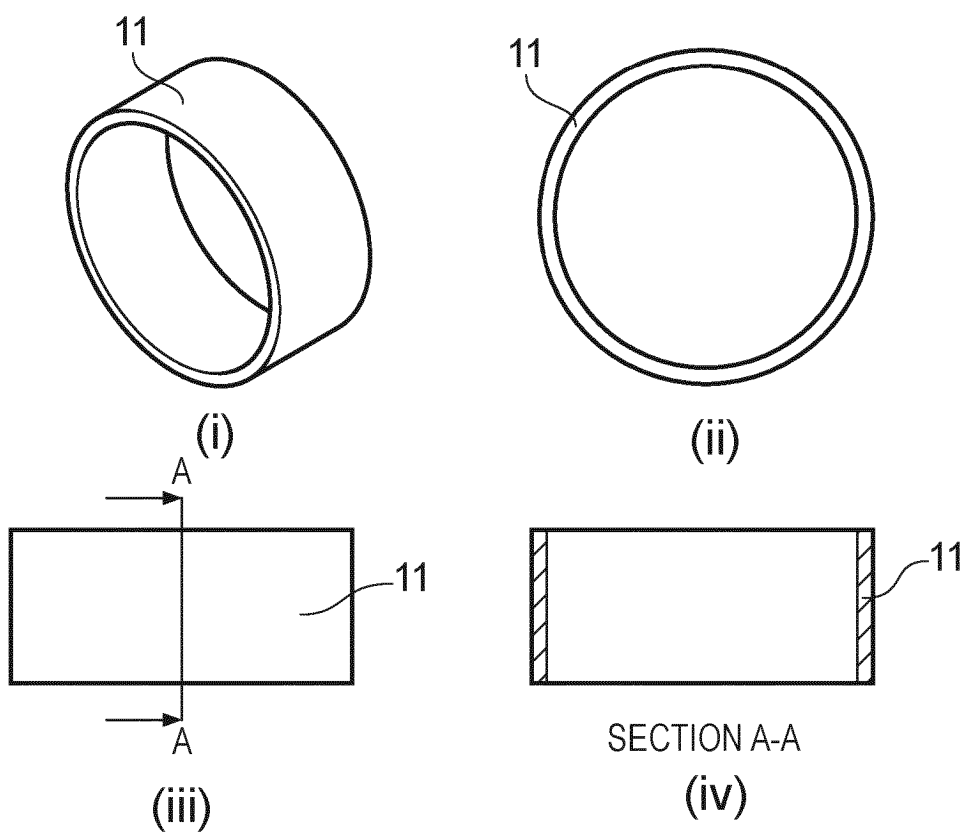


FIG. 2

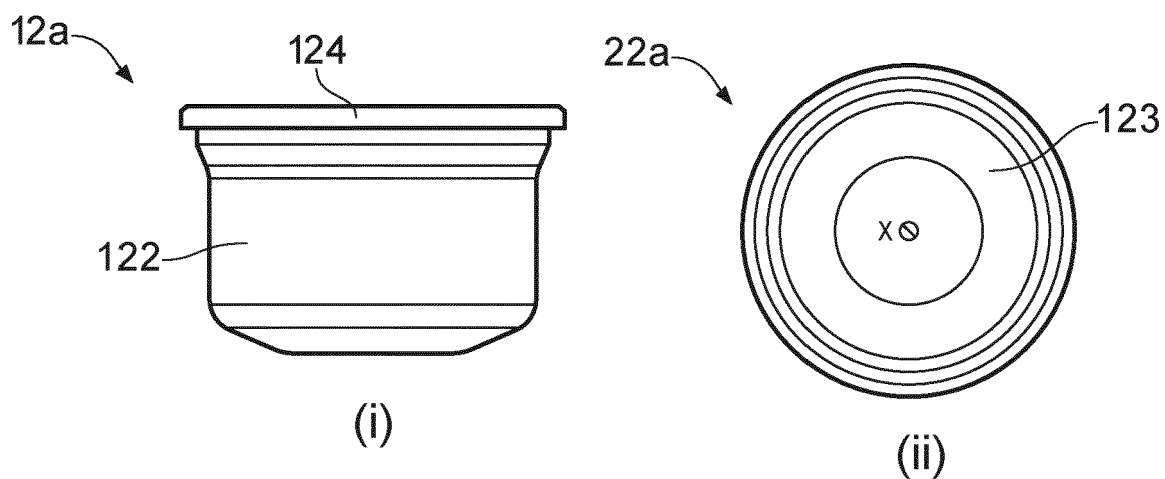


FIG. 3

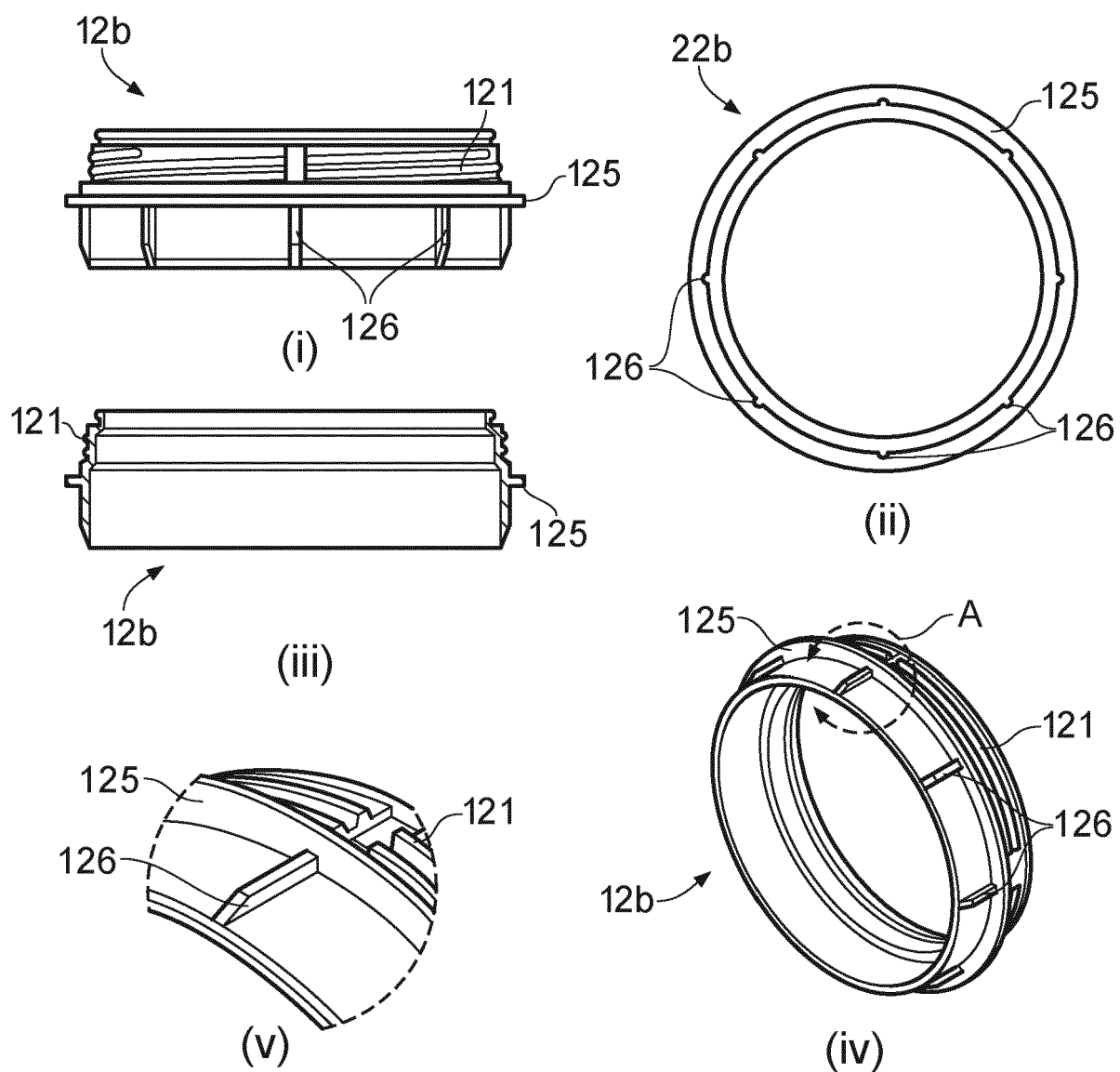


FIG. 4

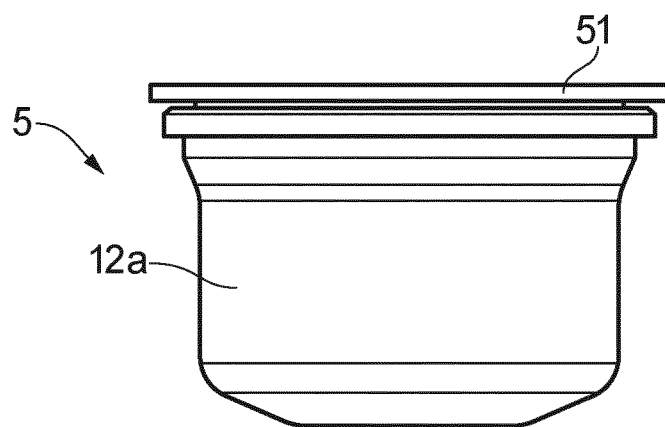


FIG. 5

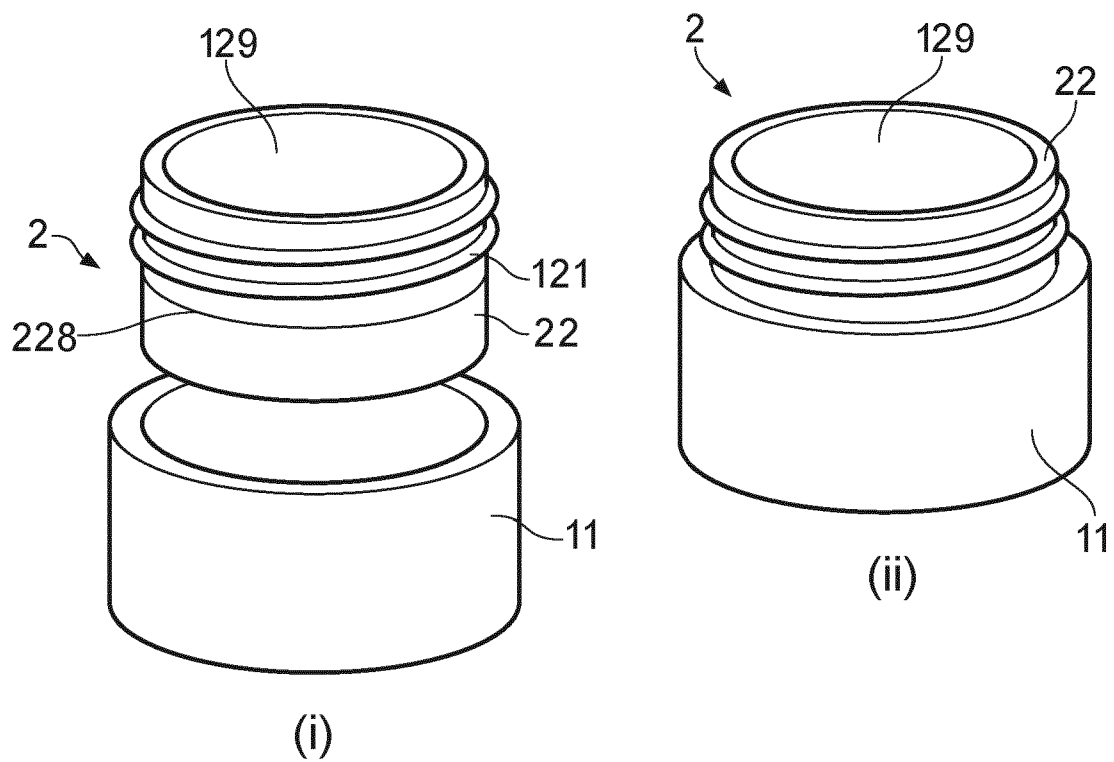


FIG. 6

REFERENCES CITED IN THE DESCRIPTION

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