



(51) International Patent Classification:

B65D 3/26 (2006.01) B65D 41/16 (2006.01)

B65D 43/02 (2006.01) B65D 55/08 (2006.01)

B65D 43/08 (2006.01) B65D 41/46 (2006.01)

B65D 3/28 (2006.01)

(21) International Application Number:

PCT/AU2021/050516

(22) International Filing Date:

27 May 2021 (27.05.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2020901754 28 May 2020 (28.05.2020) AU

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(81) Designated States (unless otherwise indicated, for every

kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

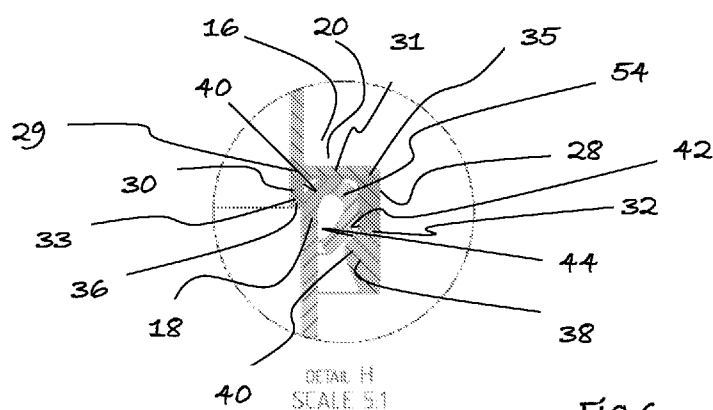
(84) Designated States (unless otherwise indicated, for every

kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: CONTAINER AND SEAL ASSEMBLY



(57) Abstract: The invention relates to a seal assembly for releasably attaching a first body and a second body with respect to each other, the seal assembly comprising a first rim attached to the first body and a second rim attached to the second body, the first rim is adapted to receive the second rim, wherein the second rim is adapted to be selectively displaced between a contracted condition when received by the first rim, and a decompressed condition when removed from the first rim. The invention also relates to a container comprising the seal assembly; a cup and neck assembly adapted to be attached to each other via the seal assembly for defining the container; a primary and refill pack comprising the cup and neck assembly; and a kit comprising the primary and refill pack. A tamper-evident feature for attachment to the neck assembly is also provided.



CONTAINER AND SEAL ASSEMBLY

TECHNICAL FIELD

[0001] The present invention relates to packaging, in particular containers and its seals used for assembling the containers

[0002] The invention has been devised particularly, although not necessarily solely, in relation to environmentally friendly and recyclable packaging such as containers for storing liquids, semi-solids or dry products.

BACKGROUND ART

[0003] The following discussion of the background art is intended to facilitate an understanding of the present invention only. The discussion is not an acknowledgement or admission that any of the material referred to is or was part of the common general knowledge as at the priority date of the application.

[0004] Packaging is a major source of environmentally unfriendly non-recyclable waste. This is particularly true because, products (such as foods and personal care products, for example: liquid soaps and disinfectants, creams, shampoos and hair conditioner) need to: (1) be properly stored to avoid deterioration ensuring an appropriate shelf-life, and (2) be able to deliver the product in a relatively easy manner.

[0005] For example, personal care products are currently stored in plastic containers comprising means for delivering products such as manually operated pumps, which are attached to the plastic containers containing the products.

[0006] Currently, the plastic containers that are used in conjunction with the manually operated pumps are made out of coloured polyethylene terephthalate (PET). The fact that these bottles are coloured, renders the bottles unsuitable for recycling.

[0007] Further, another disadvantage of these PET bottles comprising manually operated pumps is that, the pumps will not permit fully emptying the bottles; thus, always a residue of the product remains in the bottles. Extraction of the residue requires removal of the pump from the opening of the bottle neck and, for example, using a

relative dangerous cutting process to gain access to the interior of the bottle or locating the bottles upside down and supporting them on the bottle neck for the residue to slowly move towards the opening of the bottleneck.

[0008] Furthermore, the cost of each pump is relatively high, thus increasing the overall cost of the product. Solutions have been developed that include providing a so-called primary pack including the bottle and the pump, and a refill pack including only the bottle permitting re-use of the pump of the primary pack once the primary pack has been consumed. Thus, this solution still results in disposable of the non-recyclable bottle. Moreover, refilling the bottles of the primary pack has proven to be impractical.

[0009] Therefore, a huge amount of non-recycle waste is being generated, due to the great acceptance of the above described packaging.

[0010] There is a current trend to focus on generating a sustainable packaging model by using as much as possible renewal resources for production of packaging materials. In fact, the Australian Packaging Covenant Organisation (APCO) has set several targets to be achieved by the year 2025, which are:

1. 100% reusable, recyclable or compostable packaging,
2. 70% of plastic packaging being recycled or composted,
3. 30% of average recycled content included in packaging, and
4. phase out of problematic and unnecessary single-use plastics packaging.

[0011] It is against this background that the present invention has been developed.

SUMMARY OF INVENTION

[0012] According to a first aspect of the invention there is provided a seal assembly for releasably attaching a first body and a second body with respect to each other, the seal assembly comprising a first rim attached to the first body and a second rim attached to the second body, the first rim is adapted to receive the second rim, wherein the second rim is adapted to be selectively displaced between a contracted condition

when received by the first rim, and a decompressed condition when removed from the first rim.

[0013] Preferably, the second rim comprises a curved rim.

[0014] Preferably, the curved rim comprises material of an upper edge of the second body that has been curled over towards the outer surface of the second body.

[0015] Preferably, the curved rim defines a curved surface.

[0016] Preferably, the second rim comprises a free end spaced apart from an outer surface of the second body.

[0017] Preferably, the first rim comprises a groove for receiving the second rim.

[0018] Preferably, the groove is adapted to apply, at particular locations of the second rim, pressing forces when the second rim is inserted in the groove.

[0019] Preferably, the first rim comprises a first wall and a second wall arranged in a spaced apart relationship with respect to each other defining the groove

[0020] Preferably, the first and second walls are adapted to abut particular locations around the periphery of the second rim.

[0021] Preferably, the second rim is configured to have spring-like properties.

[0022] Preferably, the second rim is adapted to apply reactive forces against the inner and outer walls.

[0023] Preferably, the first wall is adapted to abut an inner surface of the second rim and the second wall is adapted to abut an outer surface of the second rim, when the second rim is within the first rim.

[0024] Preferably, the second wall is longer than the first wall.

[0025] Preferably, the first wall comprises a distal end, and the second wall comprises a distal end, both distal ends comprise free ends and inner surfaces for

abutment against the particular locations of the second rim where the pressing forces are applied to.

[0026] Preferably, the second wall comprises a protrusion at its distal end.

[0027] Preferably, the protrusion is configured to define a curved surface adapted for abutment against the curved surface of the second rim.

[0028] Preferably, the second rim comprises material of an upper edge of the second body that has been curled over towards the outer surface of the second body.

[0029] Preferably, the second body comprises a cup for containment of a product.

[0030] Preferably, the first body comprises a neck assembly adapted to receive delivery means for extracting the product from the cup and delivering the product to a user.

[0031] Preferably, the delivery means comprise a manually operated pump.

[0032] Preferably, the cup and the neck assembly are made out of environmentally recyclable materials.

[0033] Preferably, the cup is made from paper including foil lining to provide barrier characteristics and a paper based outer surface.

[0034] Preferably, neck assembly is made from polypropylene (PP).

[0035] Preferably, the cup comprises an upper edge comprising the second rim.

[0036] Preferably, the upper edge is adapted to releasably receive a membrane.

[0037] According to a second aspect of the invention there is provided a container comprising a first body and a second body, and the seal assembly in accordance with the first aspect of the invention for attachment of the first and second body with respect to each other.

[0038] Preferably, the first body comprises a neck assembly, and the second body comprises a cup.

[0039] Preferably, the first body comprises a neck assembly adapted to receive delivery means for extracting the product from the cup and delivering the product to a user.

[0040] Preferably, the delivery means comprises a manually operated pump.

[0041] Preferably, the cup and the neck assembly are made from environmentally recyclable materials.

[0042] Preferably, the cup is made from paper including foil lining to provide barrier characteristics and a paper based outer surface.

[0043] Preferably, neck assembly is made from polypropylene (PP).

[0044] Preferably, the cup comprises an upper edge comprising the second rim.

[0045] Preferably, the upper edge is adapted to releasably receive a membrane.

[0046] According to a third aspect of the invention there is provided a cup for containment of a product and for attachment to a neck assembly having a first rim, the cup comprising a second rim to be received within the first rim, wherein the second rim is adapted to be selectively displaced between a contracted condition when received by the first rim, and a decompressed condition when removed from the first rim.

[0047] Preferably, the second rim comprises a curved rim.

[0048] Preferably, the curved rim is defined by material from an upper edge of the second body that has been curled over towards the outer surface of the cup.

[0049] Preferably, the curved rim defines a curved surface for abutment to a curved surface of the first rim.

[0050] Preferably, the second rim comprises a free end spaced apart from an outer surface of the second body.

[0051] Preferably, the second rim is adapted to apply reactive force against inner and outer walls of the first rim.

[0052] Preferably, the second rim is configured to have spring-like properties.

[0053] Preferably, the cup is made from paper including foil lining to provide barrier characteristics and a paper based outer surface.

[0054] According to a fourth aspect of the invention there is provided a neck assembly for attachment to a cup having a second rim adapted to be selectively displaced between a contracted condition when received by the first rim, and a decompressed condition when removed from the first rim, the neck assembly comprising a first rim for receiving the second rim, the first rim comprises a first wall and a second wall arranged in a spaced apart relationship with respect to each other, wherein the first and second wall are adapted to abut particular locations around the periphery of the second rim.

[0055] Preferably, the first wall is adapted to abut an inner surface of the second rim and the second wall is adapted to abut an outer surface of the second rim, when the second rim is within the rim.

[0056] Preferably, the second wall is longer than the first wall.

[0057] Preferably, the first wall comprises a distal end, and the second wall comprises a distal end, both distal ends comprise free ends and inner surfaces for abutment against the particular locations of the second rim where the pressing forces are applied to.

[0058] Preferably, the second wall comprises a protrusion at its distal end.

[0059] Preferably, the protrusion is configured to define a curved surface adapted for abutment against a curved surface of the second rim.

[0060] Preferably, the second rim is adapted to apply reactive force against the inner and outer walls.

[0061] Preferably, the second rim is configured to have spring-like properties.

[0062] Preferably, neck assembly is made from polypropylene (PP).

[0063] According to a fifth aspect of the invention there is provided a primary pack comprising a cup in accordance with the third aspect of the invention and a neck assembly in accordance with the fourth aspect of the invention attached with respect to each other, and a delivery means attached to the neck assembly and fluidly connected to the interior of the cup.

[0064] Preferably, the cup comprises a membrane for sealing of the interior of the cup.

[0065] Preferably, the cup and the neck assembly are releasably attached with respect to each other.

[0066] According to a sixth aspect of the invention there is provided a refill pack comprising a cup in accordance with the third aspect of the invention, the cup comprises a membrane for sealing of the interior of the cup.

[0067] According to a seventh aspect of the invention there is provided a kit comprising a primary pack in accordance with the fifth aspect of the invention and a refill pack in accordance with the sixth aspect of the invention.

[0068] According to a seventh aspect of the invention there is provided a container comprising the cup in accordance with the third aspect of the invention comprising the first rim, and a neck assembly comprising a second rim adapted to receive the first rim of the cup for sealingly and releasably attaching the cup and the assembly for defining the container.

[0069] According to an eight aspect of the invention there is provided a tamper-evident feature for attachment to a neck assembly according to the fourth aspect of the invention, the tamper-evident feature comprising a security ring adapted to be releasably attached to the lower edge of the second wall, the security ring comprising at least one cut-out having a flap, wherein the flap is configured to be deflected towards the outer surface of the container onto which the neck assembly is attached impeding

removal of the neck assembly from the cup unless a force is applied that would damage at least one portion of the container.

[0070] Preferably, the security ring comprises a comprises an upper band and a lower band, the lower band being releasably attached to the upper band permitting peeling-off of the lower band from the upper band, wherein the lower band comprises the flap.

[0071] According to a ninth aspect of the invention there is provided a neck assembly comprising the tamper-evident feature according to the eight aspect of the invention.

[0072] According to a tenth aspect of the invention there is provided a container comprising a neck assembly comprising the tamper-evident feature according to the eight aspect of the invention, the container comprising a cup having an upper curled rim for receiving the neck assembly having the tamper-evident feature.

BRIEF DESCRIPTION OF THE DRAWINGS

[0073] Further features of the present invention are more fully described in the following description of several non-limiting embodiments thereof. This description is included solely for the purposes of exemplifying the present invention. It should not be understood as a restriction on the broad summary, disclosure or description of the invention as set out above. The description will be made with reference to the accompanying drawings in which:

Figure 1 is a cross-sectional view along the line G-G shown in figure 2 of a particular arrangement of a container in accordance with an embodiment of the invention;

Figure 2 is a top view of the container shown in figure 1;

Figure 3 is a top perspective view of a particular arrangement of a neck assembly, in accordance with the present embodiment of the invention, of the container shown in figure 1;

Figure 4 is a cross-sectional view along the line G-G shown in figure 2 of the neck assembly shown in figure 3;

Figure 5a is a cross-sectional view along the line G-G shown in figure 2 of a particular arrangement of a cup in accordance with the present embodiment of the invention, of the container shown in figure 1;

Figure 5b shows a detail I of the upper rim of the cup shown in figure 5a;

Figure 6 shows detail H of the upper rim of the container shown in figure 1;

Figure 7a and 7b are blueprints depicting a particular arrangement of a container in accordance with the present embodiment of the invention;

Figure 8 a cross-sectional view along the line G-G shown in figure 12 of a particular arrangement of a container in accordance with the present embodiment of the invention comprising the neck assembly shown in figure 10;

Figure 9 shows a detail H of the upper rim of the container shown in figure 8;

Figures 10 to 12 are, respectively, a side view, top perspective view and top of the neck assembly of the container shown in figure 10; and

Figures 13 and 14 are blueprints of a particular arrangement of the neck assembly including a particular arrangement of the tamper evident feature in accordance with the present embodiment of the invention.

DESCRIPTION OF EMBODIMENT(S)

[0074] Figure 1 shows a particular arrangement of a container 10 in accordance with an embodiment of the invention. As will be described with reference to the method of operation of the container 10, the container 10 is particularly useful because it provides a solution to the environmentally unfriendly use of problematic and unnecessary single-use plastic packaging. This is particularly true because, the parts that make up the container 10 are manufactured in its entirety from environmentally friendly recyclable materials.

[0075] As shown in figure 1, the container 10 comprises a cup 12 and a neck assembly 14. The cup 12 is adapted to store a particular product (for example, personal care products such as body creams, shampoo, hair conditioners, disinfectants among others). The neck assembly 14 comprises a neck 24 adapted for receiving delivery means such as a manually operated pump allowing extraction of the product from the cup 12.

[0076] The cup 12 comprises an upper edge 36 adapted to receive, at a first instance a releasable top (such as a removeable membrane) for sealing of the cup 12 to preserve and impede exit of the product stored within the cup 12. Upon removal of the membrane, the upper edge 36 may receive the neck assembly 14 to permit delivery of the product to locations exterior of the cup 12 such as hands and body parts of users of the product, or surfaces for cleaning purposes in case the product contained in the cup 12 are cleaning products.

[0077] In accordance with the present embodiment of the invention, the neck assembly 14 and the cup 12 are adapted to be releasably attached to each other via a seal assembly 16 (see figure 6) defined by particular arrangements of rims 18 (see figure 5a) and 20 (see figure 4) of the cup 12 and the neck assembly 14. The rims 18 and 20 are configured in such a manner that the cup 12 may be manufactured of a recyclable material such as paper material; thus, rendering the cup 12 and the neck assembly 14 fully recyclable.

[0078] Figure 3 shows the neck assembly 14 detached from the cup 12. As shown, the neck assembly 14 comprises a body having a cover 22 and a neck 24.

[0079] The particular arrangement of the cover 22 comprises a dome 26 having a lower rim 29. The cover 22 also comprises a flange 28 surrounding the lower rim 29 (see figures 3 and 4) of the cover 22.

[0080] The flange 28 comprises a projection 30 protruding from the flange 28 and extending an angular section around the outer periphery of the flange 28. As will be described with reference to the method of operation of the container 10, the projection 30 facilitates removal of the neck assembly 14 once the product within the cup 12 has run out requiring replacement of the cup 12 (that is attached to the neck assembly 14) with a new cup 12 filled with product.

[0081] Further, the flange 28 comprises the rim 20 that is adapted to releasably attach the rim 18 of the cup 12 to define the seal assembly 16 shown in figure 6.

[0082] As shown in figure 6, the flange 28 comprises a surface 31 extending outward from the lower rim 29 of the cover 22 defining an outer edge 35. The flange 28 extends at a particular location adjacent the lower edge 33 of the cover 36; in this manner, an inner wall 30 (the first wall) is defined. Further, the flange 28 comprises an outer wall 32 (the second wall) extending from the outer edge 35 of the flange 28.

[0083] The outer wall 32 is longer than the inner wall 30. In particular, the inner wall 30 extends a particular distance (the first distance) from the location of the lower rim 29 of the dome 26 where the flange 28 protrudes away from the cover 22. This particular distance is smaller than the distance (the second distance) that the outer wall 32 extends away from the edge 35 of the flange 28 – see figure 6.

[0084] The inner wall 30 and the outer wall 32 are arranged in a spaced apart relationship with respect to each other defining a groove 34 between the walls 30 and 32.

[0085] The groove 34 is adapted to receive the rim 18 of the cup 12 in such a manner that the seal assembly 16 (shown in figure 6) is defined releasably attaching the cup 12 and the neck assembly 14. The seal assembly 16: (1) impedes unintentional removal of the neck assembly 14 from the cup 12, as well as (2) defines a seal impeding leaking of the product (contained within the cup 12) through the seal assembly 16 defined by both rims 18 and 20.

[0086] Due to the particular configuration of the rims 18 and 20, the seal assembly 16 allows attaching the cup 12 and the neck assembly 14 in a releasably and sealing manner.

[0087] In particular, the rim 20 is configured to apply, at particular locations of the rim 18 of the cup 12, pressing forces when the rim 18 is inserted in the groove 34. This particular configuration of the rim 20 (together with the particular configuration of the rim 18 to be described below) define the seal mentioned in the previous paragraphs that: (1) ensures a proper releasable attachment of the neck assembly 14 to the cup 12, and

(2) impedes leaking of product through the seal assembly 16 defined by both rims 18 and 20.

[0088] Referring in particular to figures 4 and 6, as mentioned before, the rim 20 comprises spaced apart inner and outer walls 30 and 32; this defines the groove 34, which receives the rim 18 of the cup 12.

[0089] The inner wall 30 comprises a distal end 36, and the outer wall 32 comprises a distal end 38 (i.e. a projection 38). Both distal ends 36 and 38 comprise free ends and inner surfaces 40 and 42 for abutment against the particular locations of the rim 18 where the pressing forces (when the rim 18 is inserted in the groove 34) are applied to.

[0090] Further, the outer wall 32 at its distal end 38 comprises a bump-like protrusion 40. The protrusion 40, as shown in figure 6, is configured to define a curved surface 44 adapted for abutment against a particular portion of the rim 18 of the cup 12 when the cup 12 and the neck assembly 14 are attached to each other. The curved surface 44 also applies a pressing force to that particular portion of the rim 18.

[0091] Referring now to figures 5a and 5b, as shown in figure 5a, the cup 12 comprises an upper edge 46 on which the neck assembly 14 will be releasably attached.

[0092] The upper edge 46 comprise the rim 18, which is adapted to be selectively displaced between (1) a compressed condition upon receiving the neck assembly 14 to secure the neck assembly 14 to the cup 12, and (2) a decompressed condition when removing the neck assembly 14.

[0093] In the particular arrangement shown in figure 5b, the upper edge 46 comprises the rim 18 configured as a curved rim 18. The curved rim 18 has a first end 48 attached to the upper edge 46, and a second end 50 located adjacent the outer surface 52 of the cup 12 at a location adjacent the upper edge 46 of the cup 12. The second end 50 is a free end being spaced apart from the outer surface of the cup 12.

[0094] The fact that rim 18 is configured as a curved rim 18 defines a curved surface 54. The curved surface 54 is adapted to abut the inner surface 44 of the rim 20 of the cup 12 when having attached the neck assembly 14 to the cup 12 – see figure 6.

[0095] The particular configuration of the rim 18 is particularly useful because when the rim 18 is inserted in the rim 20 of the neck assembly 14, the rim 18 acts as a spring. In particular, the rim 18 when compressed due to the inner surface 44 applying pressing forces to the curved surface 54, the rim 18 applies an opposite force (a reactive force) against the inner surface 44; thus, forming a seal that: (1) secures the neck assembly 14 to the cup 12 impeding unintentional removal of the neck assembly 14 from the cup 12, and (2) defines a non-leaking seal impeding leaking of the product contained in the cup 12, if the container 10 is, for example, inadvertently lying horizontally on a surface.

[0096] In the particular arrangement shown in the figures, the rim 18 may be defined by material of the upper edge 36 of the cup 12 that has been curled over towards the outer surface of the cup 12.

[0097] As mentioned before, the cup 12 and the neck assembly 14 are made out environmentally recyclable materials. In particular, the cup 12 may be made out of paper, for example, recyclable laminated paper including foil lining to provide barrier characteristics. Also, the outer surface due to being paper based can be attractively decorated/printed using offset, digital or flexographic printing technology.

[0098] The neck assembly 14 may be made out of polypropylene (PP) and certified as recyclable per the tool provided to that effect by the APCO's Packaging Recyclability Evaluation Portal (PREP).

[0099] Further, as mentioned before, the container 10 may comprise delivery means such as a manually operated pump or any other means for extracting the product contained in the container 12 for use of the product by a user.

[00100] In a particular arrangement, the pump comprises, for example, a lotion pump assembly. Currently, the lotion pumps are typically not recyclable due to the multitude of components that these pumps are made from and the complexity and multiple of materials that conform the pump. However, the pumps, in accordance with the present embodiment of the invention, are reusable components, thus reducing the purchase costs of the container 10 in view that a single pump needs to be bought, which then may be reused.

[00101] Similarly, the neck assembly 14, even though being fully made out of environmentally recyclable materials, in accordance with the present embodiment of the invention, is also a reusable component, thus reducing the purchase costs of the container 10 in view that a single neck assembly 14 needs to be bought, which then may be reused.

[00102] The cup 12 together with the membrane that seals the cup 12 prior use of the product contained in the cup 12, due to being fully made out of environmentally recyclable materials can be, once emptied, crushed and disposed according to accepted recycling guidelines.

[00103] In accordance with the present embodiment of the invention, the user of the container 12 is presented with two options for purchase.

[00104] A first option is a finished primary pack, which includes the container 12 with the delivery means (such as a manually operated pump) including the cup 12 being sealed via the membrane to contain and preserve the product within the cup. The primary pack is typically purchased only for the first time for subsequently purchasing the refill packs to be described below.

[00105] A second option is the refill packs. The refill packs include exclusively the cup 12 containing the product and the membrane for peeling off by the consumer prior attachment of the neck assembly 14. The refill packs are purchased one or more times after having bought the primary pack including the pump and the neck assembly.

[00106] In operation, a user buys for the first time a primary pack, after the primary pack has been emptied (or at least after the pump is unable to draw any more of the product contained therein), the user may unclip the neck assembly 14 from the now emptied cup 12 using the projection 30 extending away from the flange 28 (see figure 3). In this respect, an advantage is that due to being able to remove the neck assembly 14 any residual product left over in the cup may be removed from the primary pack once the pump is not able to draw any more product out of the cup 12. Currently, conventional products require a relative dangerous cutting process of the container 10 with the intention to remove any product remaining in the cup 12, or long waits with the open containers located upside down.

[00107] Once the user needs to use a refill pack, the user can then remove the membrane from the cup 12 of the refill pack (the cup 12 comprising the membrane) and securely attaching the neck assembly 14 to the rim 20 of the cup 12 via a pressing force to insert the rim 18 of the cup 12 into the groove 34 of the rim 20 of the neck assembly 14.

[00108] Modifications and variations as would be apparent to a skilled addressee are deemed to be within the scope of the present invention.

[00109] For example, figures 8 to 12 show an alternative arrangement of a container 10 and its neck assembly 14 in accordance with the present embodiment of the invention. This alternative arrangement of container 10 comprises a tamper evident feature to provide an indication to a user of the content of the container 10 that non-authorised removal of the neck assembly has occurred.

[00110] This alternative arrangement comprises a cup 12 as previously described and shown in figures 1 to 7 and an alternative arrangement of a neck assembly 14.

[00111] The particular alternative arrangement of neck assembly 14 shown in figures 8 to 14 comprises the tamper evident feature 56. The tamper evident feature 56 comprises a tamper-evident band 58 (also referred to as security ring 58) of the type releasably attached to the lower edges of lids of containers, which upon their removal from the lid permit opening of the container after having peeled-off the security ring 58 from the lid.

[00112] Further, the tamper-evident feature 56 also comprises one more flaps 60 associated with the security ring 58 which are configured in such a manner to abut the outer surface of the container 10, in particular just below the rim 18 (see for example figure 9), impeding removal of the neck assembly 14 from the cup 12 unless a force of such a magnitude is applied that would damage at least the upper edge of the cup 12 (such as its rim 18). The damage would be clearly visible; thus, the feature 56 acts as a tamper-evident feature 56.

[00113] Referring now to figure 9, figure 9 depicts a blown-up view of the detail H referred to in figure 8.

[00114] The security ring 58 is attached to lower edge of the outer wall 32. As shown in figure 9, the security ring 58 comprises an upper band 62 and a lower band 64. The lower band 64 is releasably attached to the upper band 62 permitting peeling-off of the lower band 64 from the upper band 62. As can be seen in figure 90, a wedge indentation 92 indents into the outer surface of the security ring 58 defining a joint, for releasably attaching the upper and lower band 62 and 64, defined by a portion of the security ring 58 of reduced thickness; in this manner, the lower band 64 is releasably attached to the upper band 62.

[00115] Further, the security ring 58 may comprise one or more flaps 60 which are attached, through the lower end of each flap 60 to the lower band 64 as shown in figure 10.

[00116] In the particular arrangement shown in figures 10 and 11, the security ring 58 comprises cut-outs 64 allowing the flaps 60 (attached to the lower band 62) to be deflected such that the flaps 60 (in particular their upper end 66) abut the outer surface of the container 10, in particular just below the rim 18 - see figure 9. As mentioned before, when the flaps 60 abut the inner surface of the cup 12, the neck assembly 14 cannot be freely removed without damaging at the least the upper rim 18 of the cup 12.

[00117] In operation, the user of the product contained in the container 10, initially purchases the container 10 as shown in figure 8, with the tamper-evident feature 56 intact providing an indication to the user that no non-authorised opening of the container has occurred. The user, with the container 10 with the tamper-evident feature 56 intact upon completion of the product contained in the container 10, removes the neck assembly 14 after having removed the security ring 58. Removal of the security ring 58 occurs by pulling the tab 94 (see figure 12) for peeling off the security ring 58 from the neck assembly 14. At this stage, the user may crash the cup 12 and disposes it in the appropriate recycling stream and purchases a cup 12 (closed via a membrane) for attachment 14 to the previously used neck assembly 14. At this stage, no tamper-evident feature is required in view that the container 12 is kept under control of the user; thus, no longer a danger exists that non-authorised opening of the container may occur.

[00118] Further, it should be appreciated that the scope of the invention is not limited to the scope of the embodiments disclosed. By way of example, the container 10 has been described with reference to the containers comprising delivery means such as a

pump, which need to be secured to necks of neck assemblies 14. However, in alternative embodiments of the invention, the seal assembly 16 as shown in figure 1 may be applied to other type of containers such as containers that comprise dry produce in the form flours or other dry products such as sugars, salts, and yeast, among others.

[00119] For example, typically, dry produce such as yeast are stored in containers made out of paper and metals with a plastic lid that is releasably attached to the upper rim of the containers. In accordance with these alternative embodiments of the invention, the seal assembly 16 in accordance with the present embodiment of the invention could be applied to this type of containers that store dry produce.

[00120] Throughout this specification, unless the context requires otherwise, the word "comprise" or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

CLAIMS

1. A seal assembly for releasably attaching a first body and a second body with respect to each other, the seal assembly comprising a first rim attached to the first body and a second rim attached to the second body, the first rim is adapted to receive the second rim, wherein the second rim is adapted to be selectively displaced between a contracted condition when received by the first rim, and a decompressed condition when removed from the first rim.
2. A seal assembly according to claim 1 wherein the second rim comprises a curved rim.
3. A seal assembly according to claim 2 wherein the curved rim comprises material of an upper edge of the second body that has been curled over towards the outer surface of the second body.
4. A seal assembly according to claims 2 or 3 wherein the curved rim defines a curved surface.
5. A seal assembly according to any one of claims 1 to 4 wherein the second rim comprises a free end spaced apart from an outer surface of the second body.
6. A seal assembly according to any one of claims 1 to 5 wherein the first rim comprises a groove for receiving the second rim.
7. A seal assembly according to claim 6 wherein the groove is adapted to apply, at particular locations of the second rim, pressing forces when the second rim is inserted in the groove.
8. A seal assembly according to claims 6 or 7 wherein the first rim comprises a first wall and a second wall arranged in a spaced apart relationship with respect to each other defining the groove
9. A seal assembly according to claim 8 wherein the first and second walls are adapted to abut particular locations around the periphery of the second rim.

10. A seal assembly according to any one of claims 1 to 9 wherein the second rim is configured to have spring-like properties.
11. A seal assembly according to any one of claims 8 to 10 wherein the second rim is adapted to apply reactive forces against the inner and outer walls.
12. A seal assembly according to any one of claims 8 to 11 wherein the first wall is adapted to abut an inner surface of the second rim and the second wall is adapted to abut an outer surface of the second rim, when the second rim is within the first rim.
13. A seal assembly according to any one of claims 8 to 12 wherein the second wall is longer than the first wall.
14. A seal assembly according to any one of claims 1 to 4 wherein the first wall comprises a distal end, and the second wall comprises a distal end, both distal ends comprise free ends and inner surfaces for abutment against the particular locations of the second rim where the pressing forces are applied to.
15. A seal assembly according to any one of claims 1 to 14 wherein the distal end of the second wall is adapted to be deformed for removal of the first body from the second body.
16. A seal assembly according to claims 14 or 15 wherein the second wall comprises a protrusion at its distal end.
17. A seal assembly according to claim 16 wherein the protrusion is configured to define a curved surface adapted for abutment against the curved surface of the second rim.
18. A seal assembly according to any one of claims 1 to 17 wherein the second rim comprises material of an upper edge of the second body that has been curled over towards the outer surface of the second body.
19. A seal assembly according to any one of claims 1 to 18 wherein the second body comprises a cup for containment of a product.

20. A seal assembly according to any one of claims 1 to 19 wherein the first body comprises a neck assembly adapted to receive delivery means for extracting the product from the cup and delivering the product to a user.
21. A seal assembly according to claim 20 wherein the delivery means comprise a manually operated pump.
22. A seal assembly according to claims 20 or 21 wherein the cup and the neck assembly are made out of environmentally recyclable materials.
23. A seal assembly according to any one of claims 20 to 22 wherein the cup is made from paper including foil lining to provide barrier characteristics and a paper based outer surface.
24. A seal assembly according to any one of claims 20 to 24 wherein neck assembly is made from polypropylene (PP).
25. A seal assembly according to any one of claims 19 to 24 wherein the cup comprises an upper edge comprising the second rim.
26. A seal assembly according to claim 25 wherein the upper edge is adapted to releasably receive a membrane.
27. A container comprising a first body and a second body, and the seal assembly as defined in claims 1 to 27 for attachment of the first and second body with respect to each other.
28. A container according to claim 27 wherein the first body comprises a neck assembly, and the second body comprises a cup.
29. A container according to claims 27 or 28 wherein the first body comprises a neck assembly adapted to receive delivery means for extracting the product from the cup and delivering the product to a user.
30. A container according to claim 29 wherein the delivery means comprises a manually operated pump.

31. A container according to any one of claims 28 to 30 wherein the cup and the neck assembly are made from environmentally recyclable materials.
32. A container according to any one of claims 28 to 31 wherein the cup is made from paper including foil lining to provide barrier characteristics and a paper based outer surface.
33. A container according to any one of claims 28 to 32 wherein neck assembly is made from polypropylene (PP).
34. A container according to any one of claims 28 to 33 wherein the cup comprises an upper edge comprising the second rim.
35. A container according to claim 34 wherein the upper edge is adapted to releasably receive a membrane.
36. A cup for containment of a product and for attachment to a neck assembly having a first rim, the cup comprising a second rim to be received within the first rim, wherein the second rim is adapted to be selectively displaced between a contracted condition when received by the first rim, and a decompressed condition when removed from the first rim.
37. A cup according to claim 36 wherein the second rim comprises a curved rim.
38. A cup according to claim 37 wherein the curved rim is defined by material from an upper edge of the second body that has been curled over towards the outer surface of the cup.
39. A cup according to any one of claims 37 or 38 wherein the curved rim defines a curved surface for abutment to a curved surface of the first rim.
40. A cup according to any one of claims 36 to 39 wherein the second rim comprises a free end spaced apart from an outer surface of the second body.
41. A cup according to any one of claims 36 to 40 wherein the second rim is adapted to apply reactive force against inner and outer walls of the first rim.

42. A cup according to any one of claims 36 to 41 wherein the second rim is configured to have spring-like properties.

43. A cup according to any one of claims 36 to 42 wherein the cup is made from paper including foil lining to provide barrier characteristics and a paper based outer surface.

44. A neck assembly for attachment to a cup having a second rim adapted to be selectively displaced between a contracted condition when received by the first rim, and a decompressed condition when removed from the first rim, the neck assembly comprising a first rim for receiving the second rim, the first rim comprises a first wall and a second wall arranged in a spaced apart relationship with respect to each other, wherein the first and second wall are adapted to abut particular locations around the periphery of the second rim.

45. A neck assembly according to claim 44 wherein the first wall is adapted to abut an inner surface of the second rim and the second wall is adapted to abut an outer surface of the second rim, when the second rim is within the rim.

46. A neck assembly according to claims 44 or 45 wherein the second wall is longer than the first wall.

47. A neck assembly according to any one of claims 44 to 46 wherein the first wall comprises a distal end, and the second wall comprises a distal end, both distal ends comprise free ends and inner surfaces for abutment against the particular locations of the second rim where the pressing forces are applied to.

48. A neck assembly according to any one of claims 44 to 47 wherein the second wall comprises a protrusion at its distal end.

49. A neck assembly according to claim 48 wherein the protrusion is configured to define a curved surface adapted for abutment against a curved surface of the second rim.

50. A neck assembly according to claims 44 to 49 wherein the second rim is adapted to apply reactive force against the inner and outer walls.

51. A neck assembly according to any one of claims 44 to 50 wherein the second rim is configured to have spring-like properties.
52. A neck assembly according to any one of claims 44 to 51 wherein neck assembly is made from polypropylene (PP).
53. A primary pack comprising a cup as defined in any one of claims 36 to 43 and a neck assembly as defined in any one of claims 44 to 52 attached with respect to each other, and a delivery means attached to the neck assembly and fluidly connected to the interior of the cup.
54. A primary pack according to claims 53 wherein the cup comprises a membrane for sealing of the interior of the cup.
55. A primary pack according to claims 53 or 54 wherein the cup and the neck assembly are releasably attached with respect to each other.
56. A refill pack comprising a cup as defined in claim 36 to 43 wherein the cup comprises a membrane for sealing of the interior of the cup.
57. A kit comprising a primary pack as defined in any one of claims 53 to 55 and a refill pack as defined in claim 56.
58. A container comprising the cup as defined in any one of claims 36 to 43 and a neck assembly comprising a second rim adapted to receive the first rim of the cup for sealingly and releasably attaching the cup and the assembly for defining the container.
59. A container as described and substantially shown in figures 7a and 7b.
60. A seal assembly as described and substantially shown in figures 7a and 7b.
61. A cup as described and substantially shown in figures 7a and 7b.
62. A neck assembly as described and substantially shown in figures 7a and 7b.
63. A tamper-evident feature for attachment to a neck assembly, the tamper-evident feature comprising a security ring adapted to be releasably attached to the

lower edge of the second wall, the security ring comprising at least one cut-out having a flap, wherein the flap is configured to be deflected towards the outer surface of the container onto which the neck assembly is attached impeding removal of the neck assembly from the cup unless a force is applied that would damage at least one portion of the container.

64. A tamper-evident feature according to claim 63 wherein the security ring comprises a comprises an upper band and a lower band, the lower band being releasably attached to the upper band permitting peeling-off of the lower band from the upper band, wherein the lower band comprises the flap.

65. A tamper-evident feature a neck assembly comprising the tamper-evident feature as defined in claims 63 or 64.

66. A container comprising a neck assembly comprising the tamper-evident feature defined in claims 63 or 64, the container comprising a cup having an upper curled rim for receiving the neck assembly having the tamper-evident feature.

67. A tamper-evident feature as described and substantially shown in figures 13 and 14.

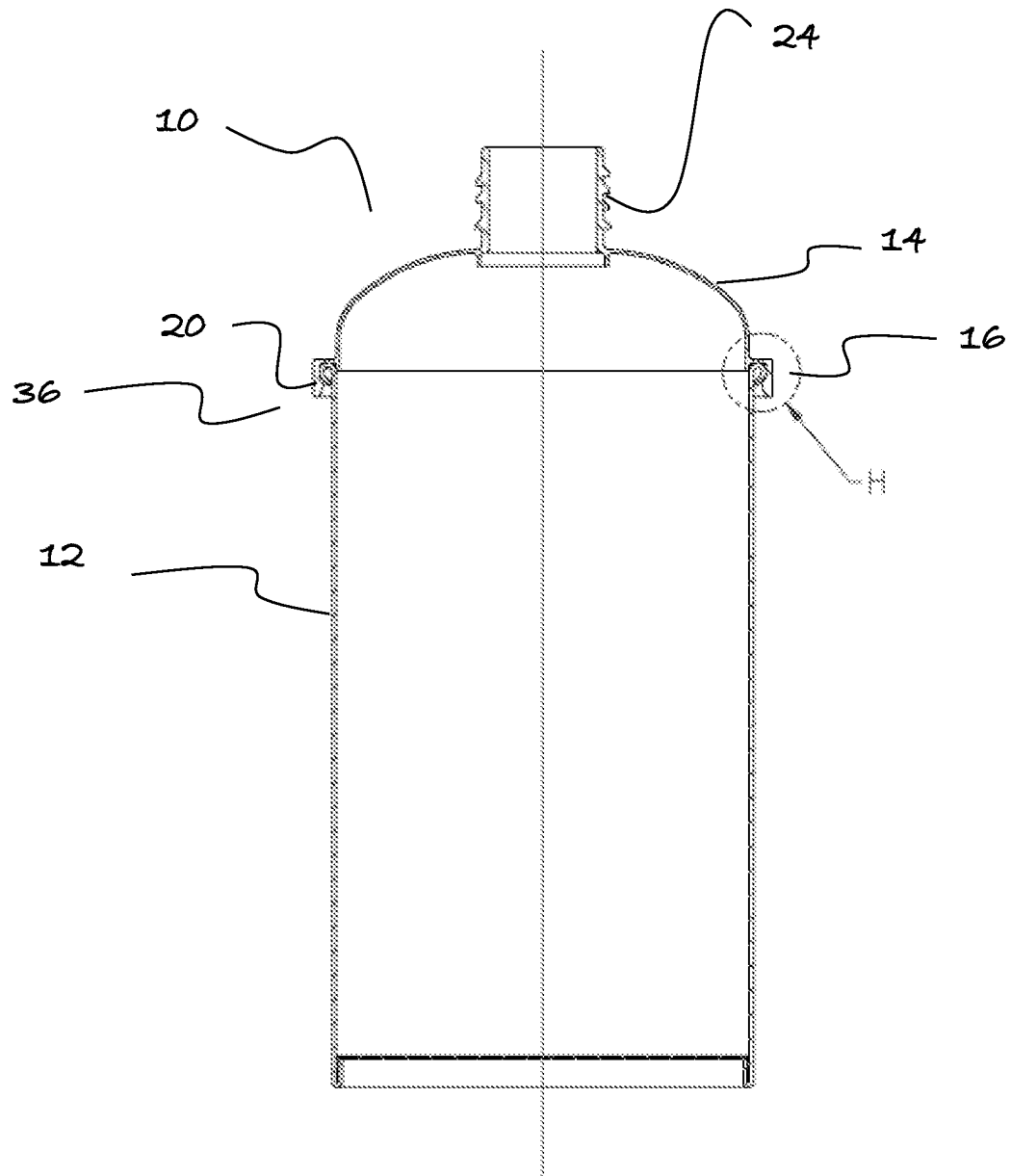


Fig 1

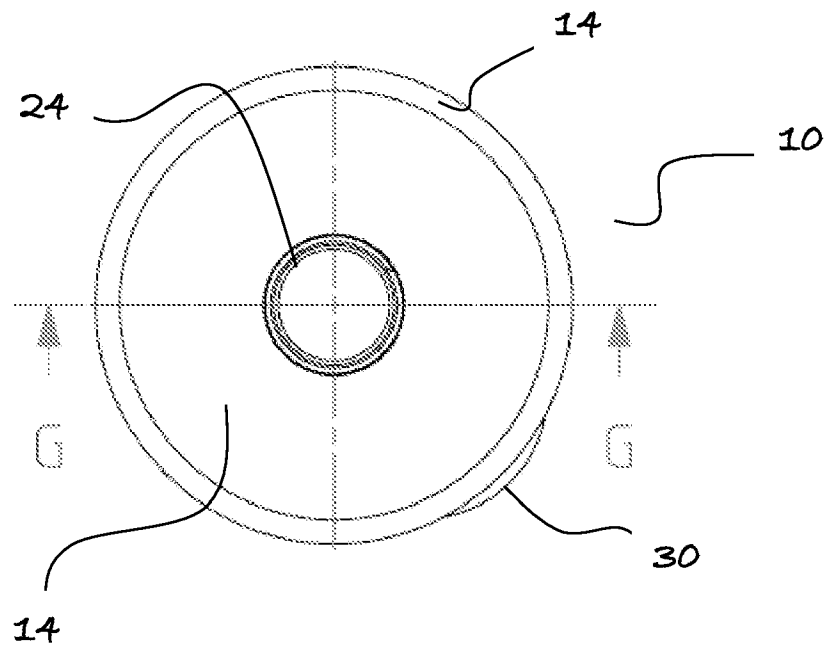


Fig 2

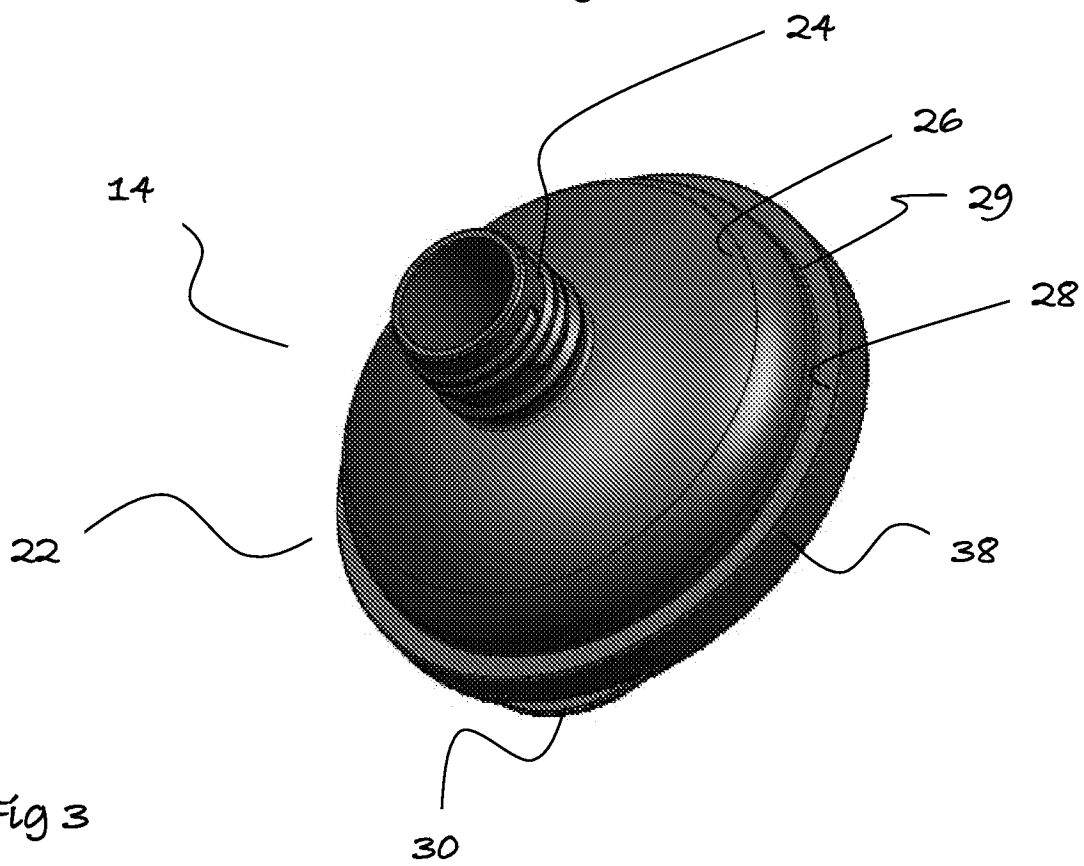


Fig 3

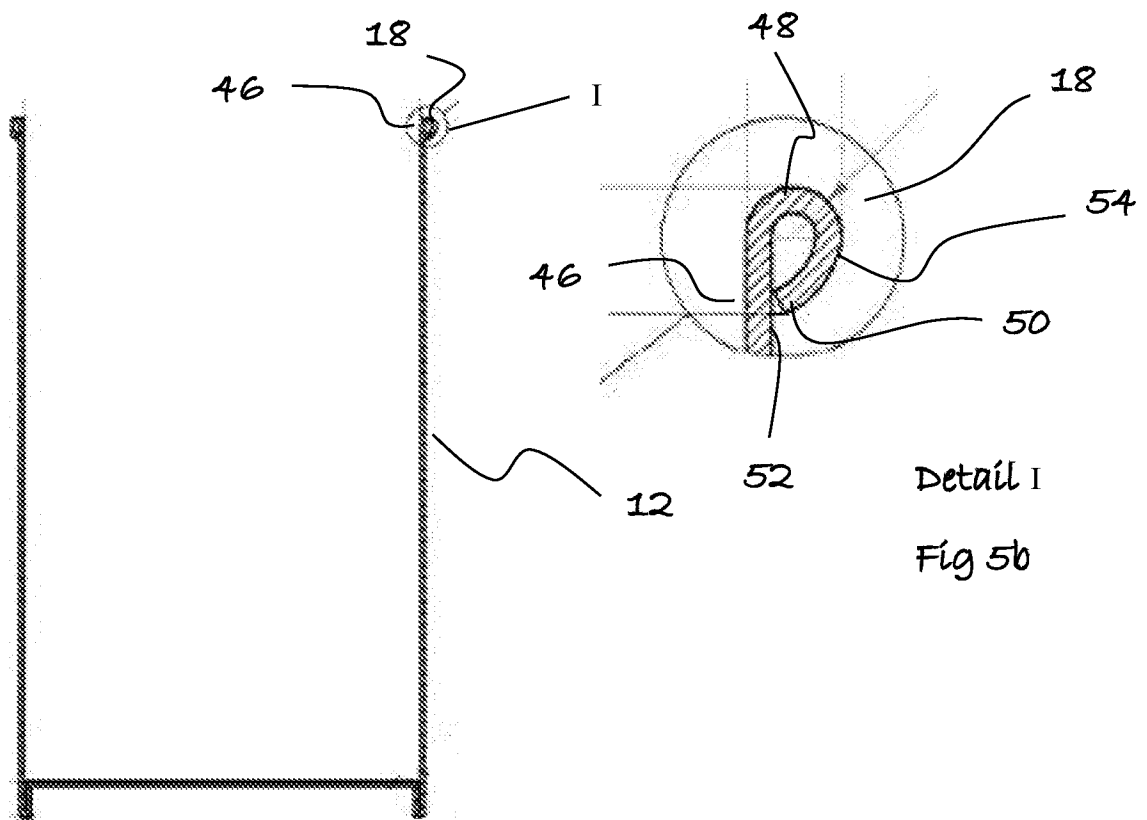
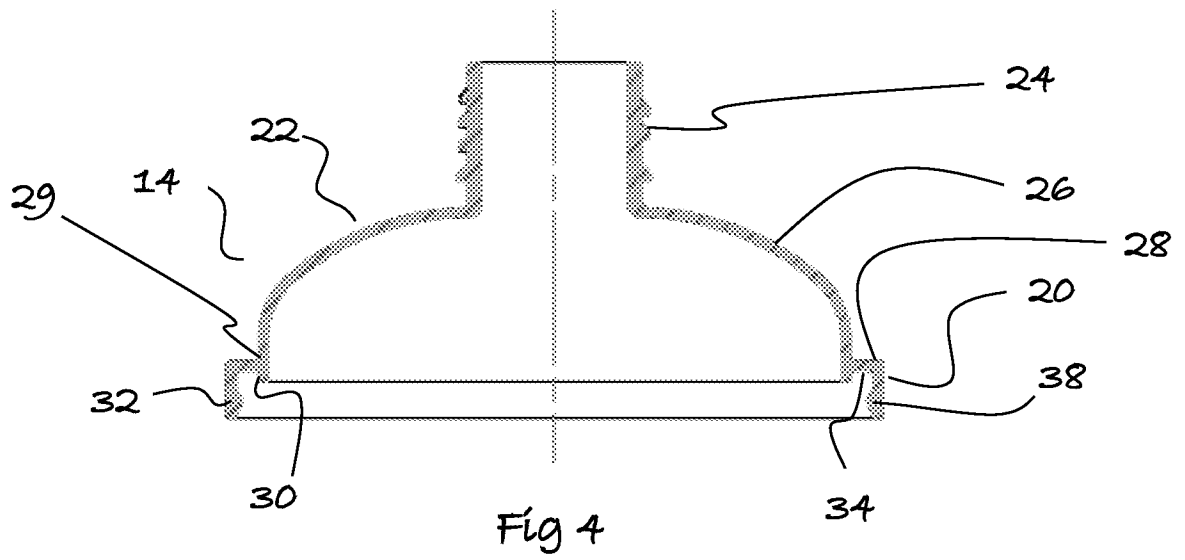


Fig 5a

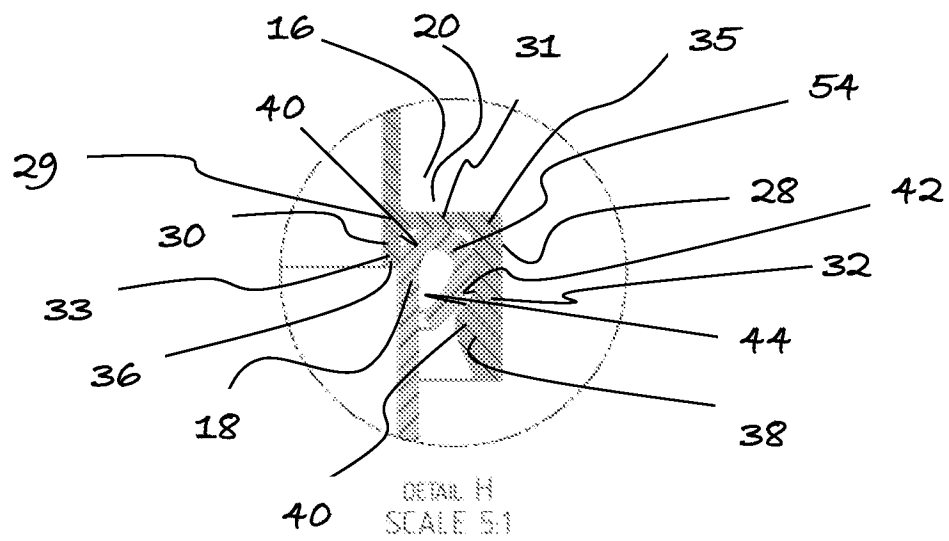


Fig 6

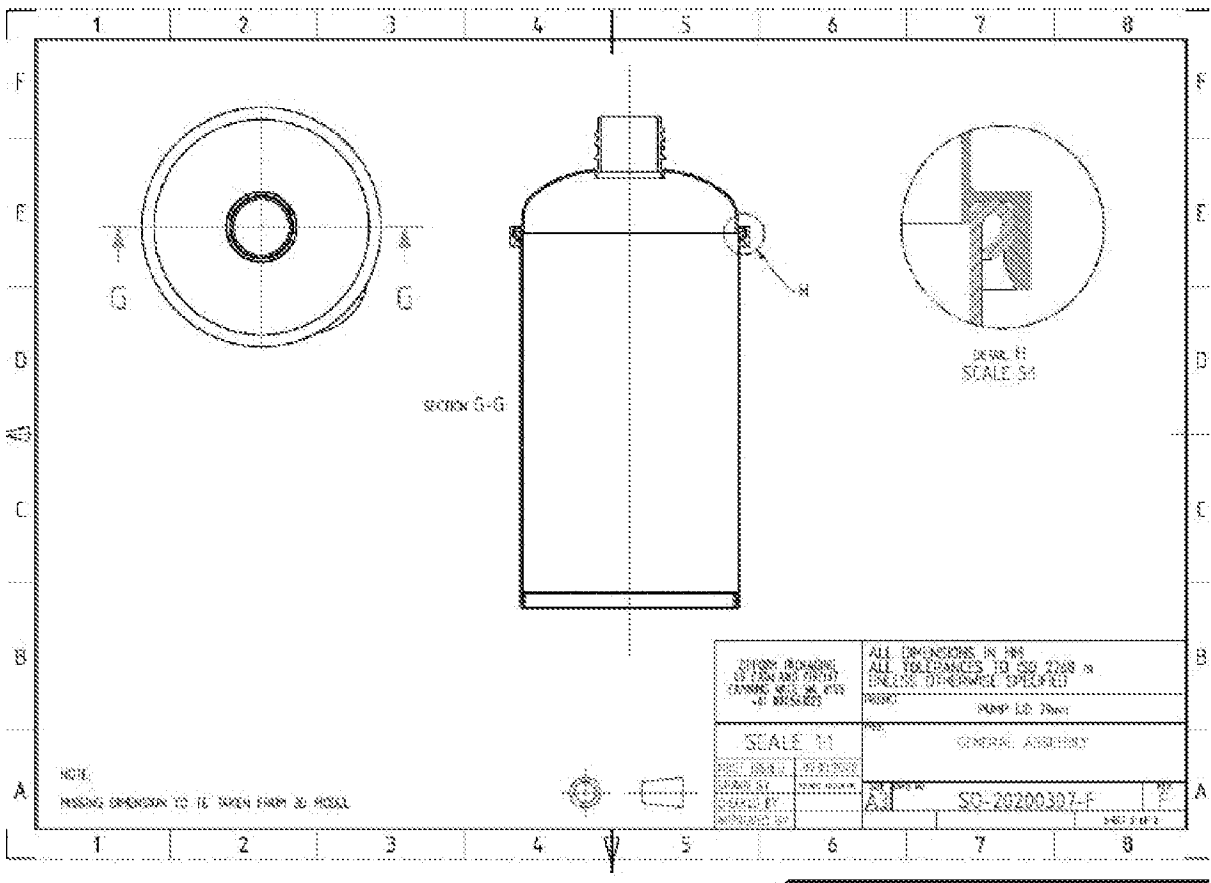


Fig 7a

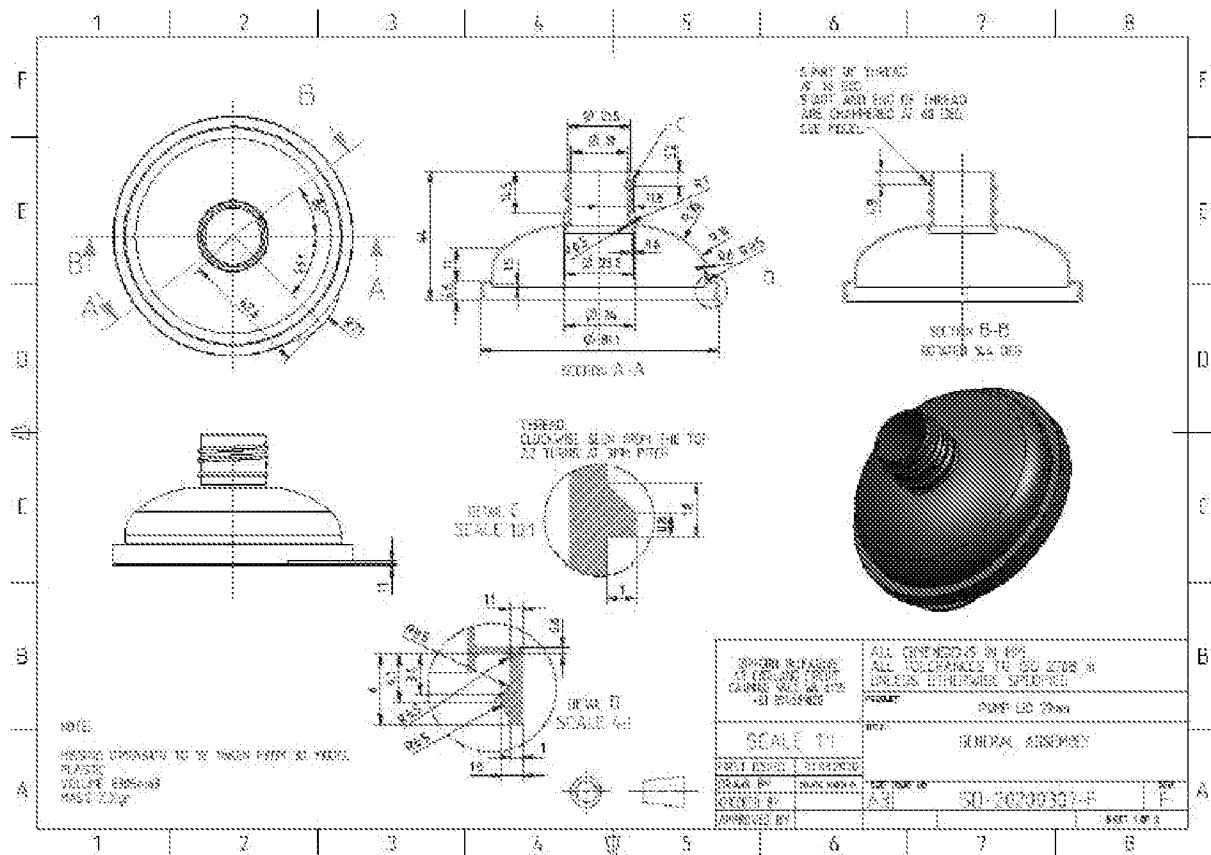


Fig 7b

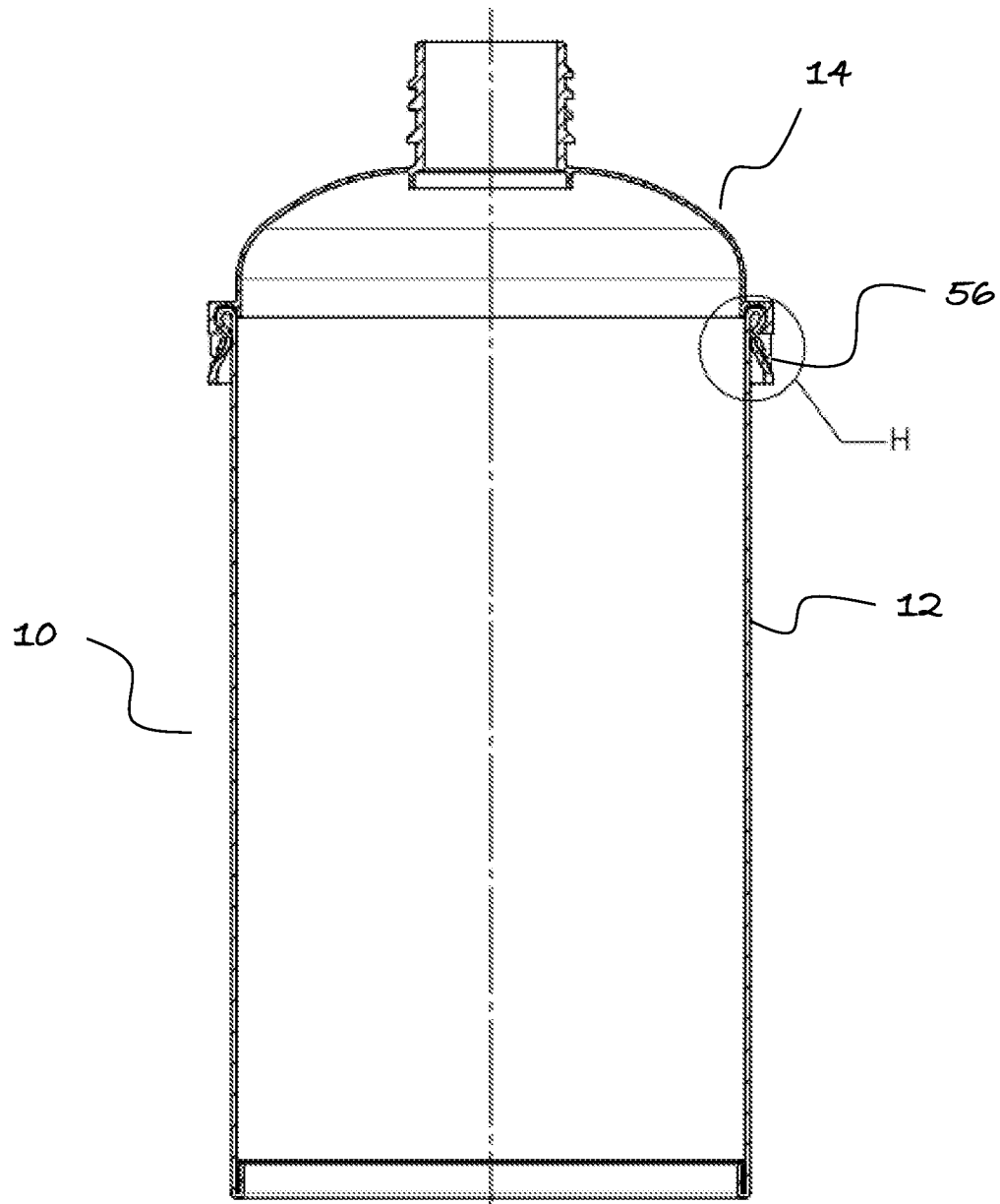


Fig 8

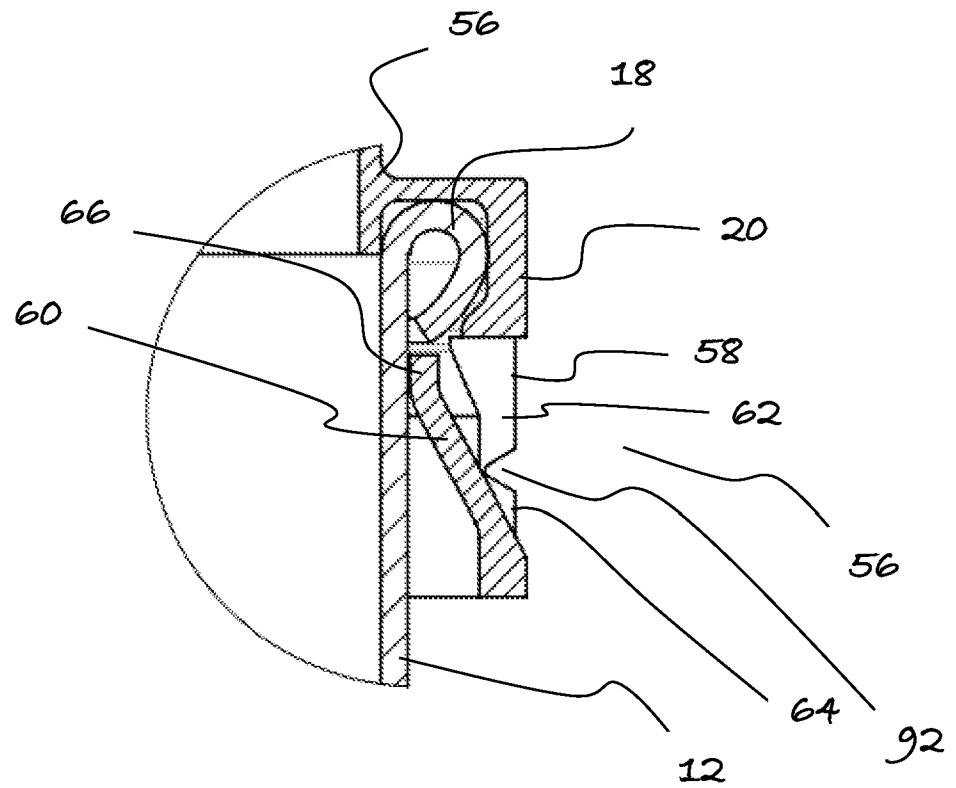


Fig 9

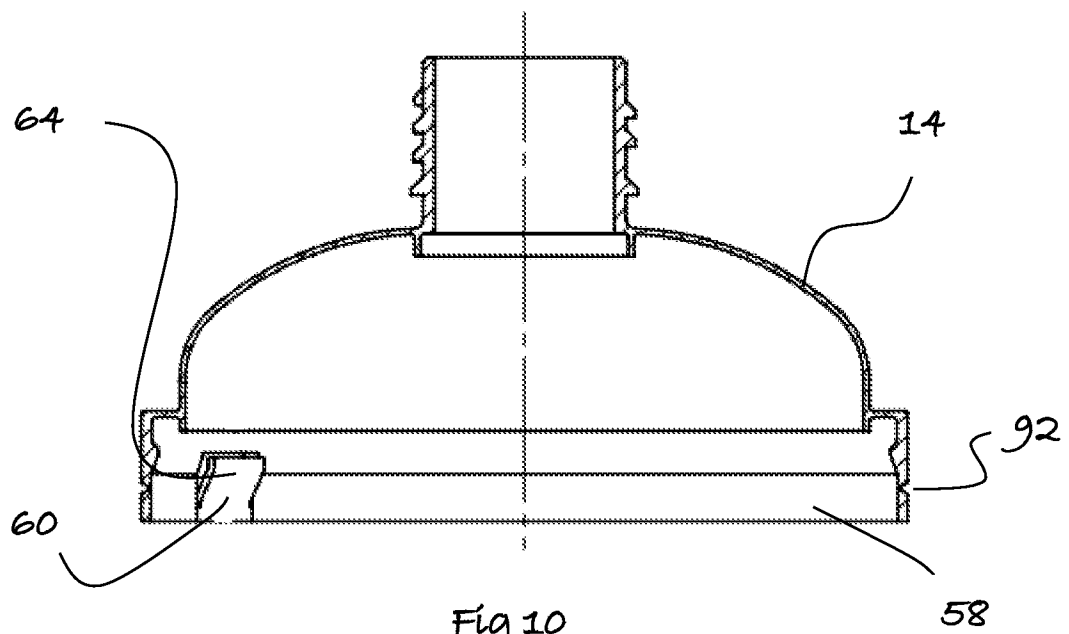


Fig 10

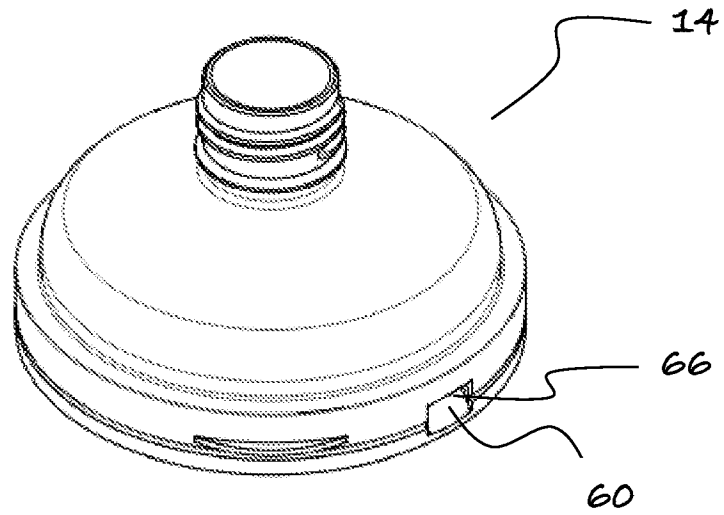


Fig 11

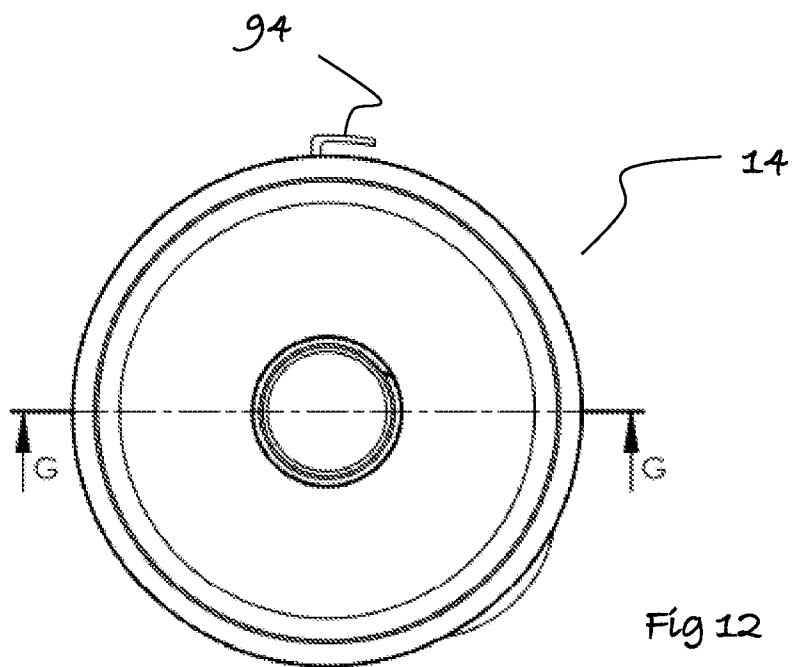


Fig 12

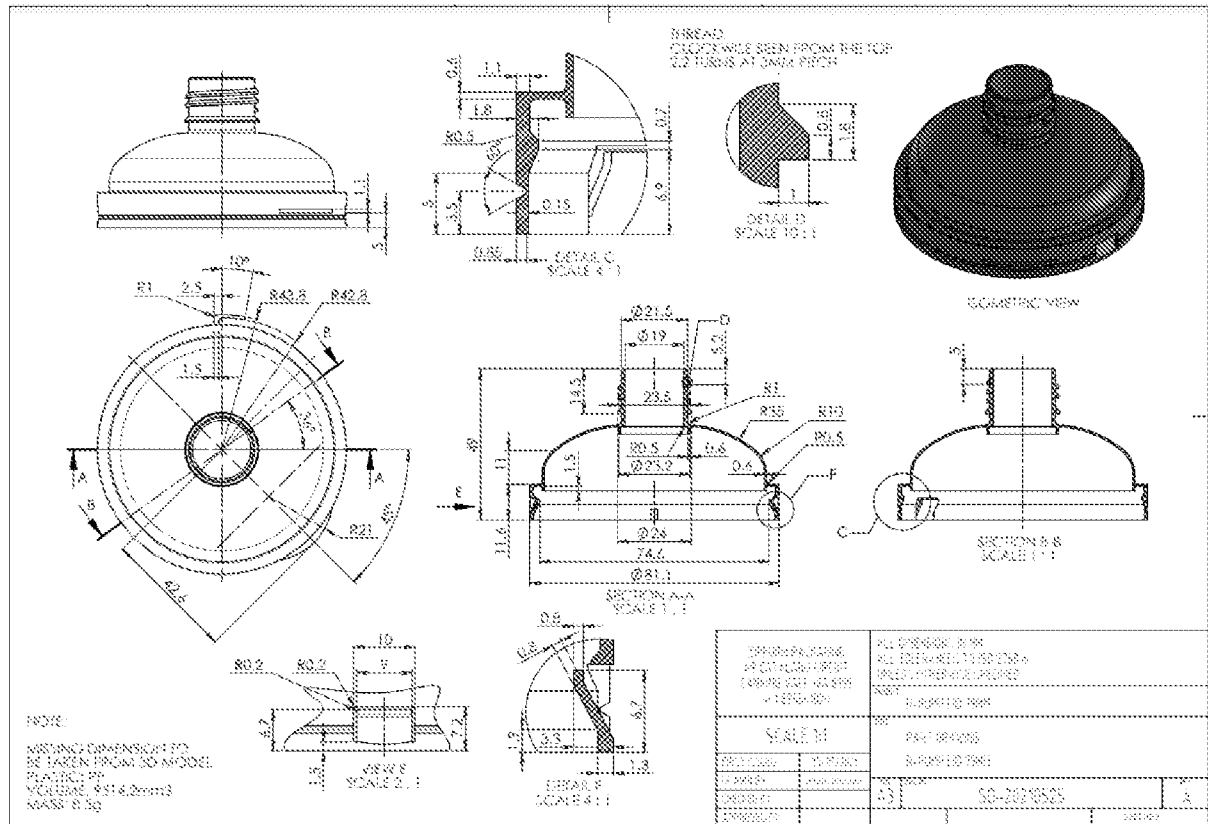


Fig 13

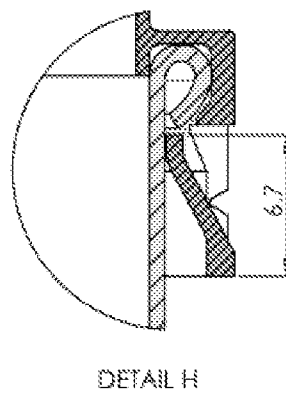


Fig 14

CORRECTED VERSION**INTERNATIONAL SEARCH REPORT**

International application No.
PCT/AU2021/050516

A. CLASSIFICATION OF SUBJECT MATTER		
B65D 3/26 (2006.01) B65D 43/02 (2006.01) B65D 43/08 (2006.01) B65D 3/28 (2006.01) B65D 41/16 (2006.01) B65D 55/08 (2006.01) B65D 41/46 (2006.01) B65D 43/02 (2006.01)		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
WPIAP & EPODOC: IPC & CPC; (B65D3/[,28, 26], B65D15/[08, 24, 04, 16], B65D41/[16,46], B65D43/[0214, 0218, 06, 0208, 0235], B65D55/08, B65D[2543/[00555, 00638, 00657],2401/15]): KEYWORDS;(CONTAINER, CUP, VESSEL, RESILIENT, FLEX, ELASTIC, ROLL, U_SHAPE, LIP, RIM, PAPER, FIBRE, CELLULOSE, LID, COVER, TOP DEFORM, PUSH, CUT OUT, FLAP, WING, TAMPER) and like terms in various combinations. GOOGLE INTERNET; KEYWORDS (PAPER, CUP, BOWL, CONTAINER, LIP, RIM, MOUTH ROLL, OVER TURN, ELASTIC, DEFORM, FLEX, CUT OUT, FLAP, TAMPER, ZIPFORM PACKAGING PTY LTD, DAVID GEORGE KILPATRICK) and like terms in various combinations and AUSPAT & EspaceNet Applicant and Inventor Names. and AUSPAT, EspaceNet and internal databases provided by IP Australia Applicant and Inventor Names.		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Documents are listed in the continuation of Box C	
☒ Further documents are listed in the continuation of Box C ☒ See patent family annex		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "D" document cited by the applicant in the international application "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 19 August 2021		Date of mailing of the international search report 20 August 2021
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA Email address: pct@ipaustalia.gov.au		Authorised officer Stefan Ochsenbein AUSTRALIAN PATENT OFFICE (ISO 9001 Quality Certified Service) Telephone No. +61262832269

INTERNATIONAL SEARCH REPORT		International application No.
C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		PCT/AU2021/050516
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1854733 A1 (SONOCO DEVELOPMENT, INC.) 14 November 2007 Figures 1-3 Items 12, 14, 16, 18, 20, 22, 24, 26, 30, 32, 40, 42, 44, 54, 56, 60, 62, 64, Column 6 Line 10 and Paragraphs 21 & 26	1-58
X	US 4051951 A (SMITH) 04 October 1977 Figures 1-5 Items 10-13, 15, 31, 31-39 & 46 and Column 3 Lines 61-63, Column 1 Line 7, 20 & 22	1-25, 27-32, 34, 36-53, 55-56 & 58
X	GB 2011867 A (SOCIETE INDUSTRIELLE ET COMERCIALE DE TRANSFORMATION PLASTIQUE) 18 July 1979 Figures 1-2 Items 1-10 and Lines 103-105 & 113	1-14, 16-23, 25, 27-32, 34, 36-46, 48-51, 53, 55 & 58
X	US 6056144 A (STRANGE et al.) 02 May 2000 Figures 3-8 Items 10-12, 15, 18, 20, 22, 30, 32, 36 & 40 and Column 1 Line 9	1-14, 16-23, 25, 27-32, 34, 36-46, 48-51, 53, 55 & 58
X	WO 2016054720 A1 (STANPAC INC.) 14 April 2016 Figures 2-6 Items 10, 15, 20, 40, 60, 72, 100 & 102	63-66
X	EP 355949 A1 (JOHNSEN & JORGENSEN PLASTICS LIMITED) 28 February 1990 Figures 1-3 Items 1-5 & 10-13	63-66
A	EP 3473560 A1 (BILLERUDKORSNAS AB) 24 April 2019 Whole Document	1-58
A	EP 1002731 A1 (SONOCO PRODUCTS COMPANY) 24 May 2000 Whole Document	1-58
A	US 4026459 A (BLANCHARD) 31 May 1977 Whole Document	1-58
A	US 2010084361 A1 (DAYTON et al.) 08 April 2010 Whole Document	1-58

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
the subject matter listed in Rule 39 on which, under Article 17(2)(a)(i), an international search is not required to be carried out, including
2. ☒ Claims Nos.: **59-62 & 67**
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
See Supplemental Box
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See Supplemental Box for Details

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.

Supplemental Box**Continuation of Box II**

The claims do not comply with Rule 6.2(a) because they rely on references to the description and/or drawings.

Continuation of: Box III

This International Application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept.

This Authority has found that there are different inventions based on the following features that separate the claims into distinct groups:

- INVENTION I: Claims 1-35 are directed to a seal assembly comprising a first rim and a second rim, wherein the first rim is (suitable) adapted to receive the second rim. The feature of a seal assembly comprising a first rim and a second rim, wherein the first rim is (suitable) adapted to receive the second rim and further appended features directed to relationship between the first and second rim is specific to this group of claims.
- INVENTION II: Claims 36-43 are directed to a cup comprising a second rim wherein the second rim is (suitable) adapted to be selectively displaced between a contracted condition and a decompressed condition. The feature of a cup comprising a second rim wherein the second rim is (suitable) adapted to be selectively displaced between a contracted condition and a decompressed condition and further appended features directed to the cup is specific to this group of claims.
- INVENTION III: Claims 44-52 are directed to a neck assembly the neck assembly comprising a first rim, the first rim comprises a first wall and a second wall arranged in a spaced apart relationship with respect to each other. The feature of a neck assembly the neck assembly comprising a first rim, the first rim comprises a first wall and a second wall arranged in a spaced apart relationship with respect to each other and further appended features directed to the neck or lid is specific to this group of claims.
- INVENTION IV: Claims 53-55 are directed to a primary pack comprising the cup of claim 36 and the neck of claim 44 attached with respect to each other and a delivery means attached to the neck assembly and fluidly connected to the interior of the cup. The feature of a delivery means attached to the neck assembly and fluidly connected to the interior of the cup and further features directed to the fluid delivery system is specific to this group of claims.
- INVENTION V: Claim 56 is directed to a refill pack comprising the cup of claim 36 wherein the cup comprises a membrane for sealing of the interior of the cup. The feature of a membrane for sealing of the interior of the cup is specific to this group of claims.
- INVENTION VI: Claims 57 are directed to a kit comprising the primary pack of claim 53 and the refill pack of claim 56. The feature of the primary pack of claim 53 and the refill pack of claim 56 is specific to this group of claims.
- INVENTION VII: Claim 58 is directed to a container comprising the cup of claim 36 and a neck assembly comprising a second rim. The feature of a neck assembly comprising a second rim is specific to this group of claims.
- INVENTION VIII: Claims 63-66 are directed to a tamper-evident feature comprising a security ring the security ring comprising at least one cut-out having a flap. The feature of a tamper-evident feature comprising a security ring the security ring comprising at least one cut-out having a flap is specific to this group of claims.

PCT Rule 13.2, first sentence, states that unity of invention is only fulfilled when there is a technical relationship among the claimed inventions involving one or more of the same or corresponding special technical features. PCT Rule 13.2, second sentence, defines a special technical feature as a feature which makes a contribution over the prior art.

When there is no special technical feature common to all the claimed inventions there is no unity of invention.

However there are no features common to all of the claimed inventions.

In the above groups of claims, the identified features may have the potential to make a contribution over the prior art but are not common to all the claimed inventions and therefore cannot provide the required technical relationship. Therefore there is no special technical feature common to all the claimed inventions and the requirements for unity of invention are consequently not satisfied *a priori*.

All additional search fees were paid, therefore the International Search Report and the Written Opinion of the International Searching Authority was carried out on all **INVENTIONS I-VIII: Claims 1-58 & 63-66.**

INTERNATIONAL SEARCH REPORT		International application No.			
Information on patent family members		PCT/AU2021/050516			
This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.					
Patent Document/s Cited in Search Report		Patent Family Member/s			
Publication Number	Publication Date	Publication Number	Publication Date		
EP 1854733 A1	14 November 2007	EP 1854733 A1	14 Nov 2007		
		EP 1854733 B1	28 Oct 2009		
		BR PI0702279 A	02 Jan 2008		
		CA 2587823 A1	08 Nov 2007		
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		AU 2014408671 B2	02 Nov 2017		
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		AU 2017232086 B2	27 Sep 2018		
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		CO 2017003463 A2	30 Jun 2017		
		CR 20170126 A	19 May 2017		
		EP 3204307 A1	16 Aug 2017		
		MX 2017004377 A	22 Jun 2017		
		PE 20170614 A1	24 May 2017		
		US 2017305615 A1	26 Oct 2017		
		EP 355949 A1	28 February 1990	EP 0355949 A1	28 Feb 1990
				AU 3656489 A	01 Feb 1990
CN 1039770 A	21 Feb 1990				
JP H0272064 A	12 Mar 1990				
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					

INTERNATIONAL SEARCH REPORT Information on patent family members		International application No. PCT/AU2021/050516	
This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.			
Patent Document/s Cited in Search Report		Patent Family Member/s	
Publication Number	Publication Date	Publication Number	Publication Date
		ZA 894294 B	28 Feb 1990
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001. Form PCT/ISA/210 (Family Annex)(July 2019)			

INTERNATIONAL SEARCH REPORT		International application No.	
Information on patent family members		PCT/AU2021/050516	
This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.			
Patent Document/s Cited in Search Report		Patent Family Member/s	
Publication Number	Publication Date	Publication Number	Publication Date
EP 3473560 A1	24 April 2019	EP 3473560 A1	24 Apr 2019
		EP 3473560 B1	03 Mar 2021
EP 1002731 A1	24 May 2000	EP 1002731 A1	24 May 2000
		EP 1002731 B1	23 Jun 2004
		BR 9907447 A	15 Aug 2000
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INTERNATIONAL SEARCH REPORT		International application No.	
Information on patent family members		PCT/AU2021/050516	
This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.			
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