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- (71) Applicant (for all designated States except US): **PLAY-
TEX PRODUCTS, LLC.** [US/US]; 6 Research Drive,
Shelton, CT 06484 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **DEL SOLAR,
Maria, Alexandra** [US/US]; 444 Bedford Street, Apt. 3G,
Stamford, CT 06901 (US). **SIERRA, Diana** [US/US]; 31
75th Street, Apt. 4B, North Bergen, NJ 07047 (US).
- (74) Agent: **RUGGIERO, Charles, N., J.**; Ohlandt, Greeely,
Ruggiero & Perle, L.L.P., One Landmark Square, 10th
Floor, Stamford, CT 06902 (US).

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(54) Title: FOOD CONTAINER ASSEMBLY

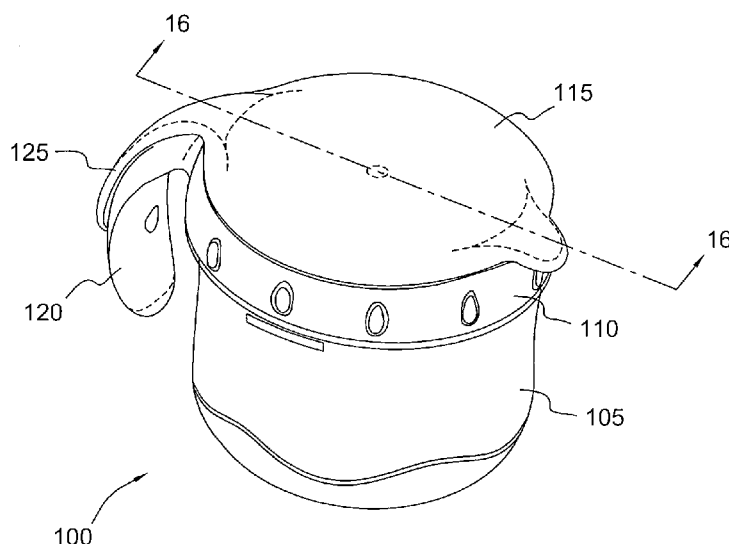


FIG. 1

(57) Abstract: A container assembly provides for a receptacle having an opened end and a collar that is releasably secured to the opened end and that permits access to contents in the receptacle. The container assembly further provides for a lid that is securable to the receptacle and to the collar. The container assembly provides for a receptacle having an opened end and a collar that is releasably connected to the opened end and lid. The container assembly also provides for a hinged connection between the collar and the lid that permits the lid to rotate and pivot relative to the collar and to attach to the receptacle or the collar.



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FOOD CONTAINER ASSEMBLY

BACKGROUND OF THE DISCLOSURE

1. Field of the Disclosure

[0001] The present disclosure relates to a container. More particularly, the present disclosure relates to a food container.

2. Description of Related Art

[0002] Typically, existing containers do not provide a secure mechanism to attach a lid. That is, containers provide a two piece design that has a separate lid and a separate receptacle. This two piece design requires constant monitoring to prevent misplacing or losing the lid. In particular, children that play with containers misplace one of the two pieces.

[0003] Accordingly, there is a need for a container having an attachable and detachable lid that overcomes, alleviates, and/or mitigates one or more of the aforementioned and other deleterious effects of prior art.

BRIEF SUMMARY OF THE DISCLOSURE

[0004] In some embodiments, the present disclosure provides a container having a receptacle, a collar with a handle, and a lid that is both secured to the container to prevent misplacement, yet detachable to allow for quick and efficient cleaning.

[0005] The container has a receptacle, a collar with a handle, and a lid. Preferably, the handle has a portion that is over-molded with a non-slip material. The handle and over-molded material have an opening defined therethrough that receives a pin of the lid. In this manner, the lid is connected to the handle. The pin and over-molded material provide a resilient hinge for movement of the lid

between an open position and a closed position without detachment from the container.

[0006] In other embodiments, the present disclosure provides a container having a receptacle, a collar with a handle, and a lid. The lid can be secured to a top of the collar and a bottom of the receptacle, and is connected to the handle for rotation therebetween.

[0007] In still other embodiments, the present disclosure provides a container having a receptacle and a collar, which container includes flexible petals that allows a user to store and obtain objects in the receptacle, and, at the same time, mitigate objects from spilling out of the receptacle.

[0008] A container assembly having a collar and a receptacle is also provided where the collar, when secured to the receptacle, provides a visual and/or tactile and/or audible indication of proper engagement between the two.

[0009] The above-described and other features and advantages of the present disclosure will be appreciated and understood by those skilled in the art from the following detailed description, drawings, and appended claims.

[0010] A container assembly provides for a receptacle having an opened end and a collar that is releasably secured to the opened end and that permits access to contents in the receptacle. The container assembly further provides for a lid that is securable to the receptacle and to the collar.

[0011] The container assembly provides for a receptacle having an opened end and a collar that is releasably connected to the opened end and lid. The container assembly also provides for a hinged connection between the collar and the lid that permits the lid to rotate and pivot relative to the collar and to be attached to the receptacle or the collar.

[0012] The container assembly provides a receptacle having an opened end

and a closed end, and a collar that is releasable secured to the opened end. The collar includes a handle having an aperture. The container assembly further provides for a lid having a pin that is pivotably and rotatable received in the aperture to permit the lid to be secured to the collar when the container assembly is in a closed configuration or is positioned to be secured to the closed end when the container assembly is in an opened configuration.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0013] FIG. 1 illustrates a container according to an exemplary embodiment of the present disclosure in a closed or a non-use position.

[0014] FIG. 2 illustrates the container of FIG. 1 in an open or a use position.

[0015] FIGS. 3 through 8 illustrate the container of FIG. 1 moving between the closed position of FIG. 1 and the open position of FIG. 2.

[0016] FIG. 9 is a cross-section view of the closed container of FIG. 1 taken along line 16-16 of FIG. 1.

[0017] FIGS. 10 through 13 are close-up enlarged??? cross-sectional views of an exemplary embodiment of the container of FIG. 1.

[0018] FIG. 14 is a cross-section view of the open container of FIG. 2 taken along line 17-17.

[0019] FIG. 15 is a side view of the container of FIG. 2.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0020] Referring to the drawings and in particular to FIGS. 1 and 2, an exemplary embodiment of a container according to the present disclosure is shown and generally referred to by reference numeral 100. Container 100 has a receptacle

105 that can hold one or more food products for consumption by a user. In the non-use position, i.e., FIG. 1, a lid 115 is connected or secured to a top of receptacle 105, thereby safely storing food products in receptacle 105. In the use position, i.e., FIG. 2, lid 115 is connected or secured to a bottom of receptacle 105 thereby allowing a user to withdraw food products from receptacle 105.

[0021] Advantageously, container 100 allows a user to easily open and close receptacle 105 by simply rotating a lid 115. Lid 115 is removably and rotatably secured to a collar 110 as shown in FIGS. 3 through 8. In particular, container 100 has a collar 110 connected or secured thereto and a lid-handle 125 removably and rotatably connected or secured to a collar-handle 120 (discussed in greater detail at FIG. 13). In alternative embodiments, lid 115 is permanently secured to collar 110.

[0022] Referring to FIG. 2, container 100 can be used with solid food products, such as fruit bits or cereal pieces, and has a cover 205. Cover 205 mitigates against food from falling out of receptacle 105 when lid 115 is in the open position. Cover 205 is a flexible cover over-molded onto collar 110. During use, the user can simply push their hand through cover 205 to withdraw food from receptacle 105. In the illustrated embodiment, cover 205 mitigates food spillage via flexible petals and gaps therebetween, and a living hinge. Typically, cover 205 is a thermoplastic elastomer with a preferred durometer in the range of 55-65 Shore-A. Cover 205 can be a translucent or transparent to allow for visible identification of products contained within receptacle 105, or it can also be made of opaque thermoplastic elastomer. The live hinge (not shown) allows the flexible petals to bend inward. The live hinge is created by a decreasing thickness of the thermoplastic elastomer from the circumference of collar 110 toward a center of cover 205.

[0023] It is also contemplated by the present disclosure for container 100 to find use with liquid food products, such as juice or milk, which can be withdrawn from

receptacle 105. Cover 205 can be removed altogether to allow liquid products to be removed from receptacle 105 unimpeded. Alternatively, cover 205 can be a spout or a nipple (not shown) such that the user can withdraw liquid from receptacle 105 through the spout or the nipple when lid 115 is in the open position. The spout or the nipple is protected from contamination when covered by lid 115 in the closed position.

[0024] FIGS. 3 through 8 illustrate container 100 moving between the closed position of FIG. 1 to the open position of FIG. 2. In particular, FIG. 3 and FIG. 7 illustrates container 100 in a first position prior to rotation and, respectively, illustrate container 100 subsequent to removing lid 115 from collar 110 and from receptacle 105. FIGS. 4 through 6 illustrate container 100 during rotation of lid 115, and FIG. 8 illustrates container 100 in an opened position with lid 115 connected to the bottom of receptacle 105.

[0025] Referring to FIG. 9, collar 110 is removably connected to receptacle 105. In this embodiment, receptacle 105 has threads 225 that correspond to matching threads 230 on collar 105. Container 100 has been described heretofore as only having threads 225 and 230 that removably connect receptacle 105 and collar 110. However, the present disclosure contemplates that receptacle 105 and collar 110 can be joined in any removable manner. For example, in some exemplary embodiments, collar 110 may be connected to receptacle 105 via different configurations including, but not limited to, a snap-on connector and a press-fit connection.

[0026] Collar 110 has a molded configuration with a rim formed by a ridge 210. Likewise, lid 115 has a molded configuration with an inner rim in the form of an indentation 215. In this embodiment, ridge 210 fits in indentation 215 and provides a snap closure such that lid 115 can be removably secured to collar 110. In further embodiments, the molded configurations of collar 110 and lid 115 provide an audible noise, e.g., a click, to indicate that lid 115 is secured to ridge 210 of collar 110.

[0027] Referring to FIGS. 10 through 13, rotation of lid 115 with respect to collar 110 and receptacle 105 is described. Advantageously, container 100 provides a flexible hinged connection between lid 115 and collar 110, which allows the lid to both rotate and pivot. In particular, lid 115 is connected or secured to collar 110 and collar 110, in turn, is connected or secured to receptacle 105. Thus, lid 115 rotates with respect to collar 110 and receptacle 105.

[0028] In FIGS. 10 through 13, lid-handle 125 and collar-handle 120 are illustrated with respective axis and an angle of difference θ_0 through θ_3 . Collar-handle 120 has material 920 formed on a gripping portion thereof. Material 920 presents a non-slip and comfortable gripping surface to the user. Collar-handle 120 also has opening 903 defined through the collar-handle and the material 920. Lid-handle 125 has a pin 905 that connects to opening 903 of collar-handle 120.

[0029] In some exemplary embodiments, material 920 can be over-molded onto collar-handle 120 so that the material flows through and into opening 903. In addition, material 920 may be over-molded at the same time cover 205 is molded. Thus, material 920 and cover 205 may be made of the same material and over-molded over collar 115 at the same time. Other methods of providing collar-handle 120 with material 920 are contemplated by the present disclosure such as, but not limited to, co-molding, dipping, spraying and snap-fit connections.

[0030] Further, material 920 has sufficient flexibility, e.g., compression, to allow insertion of pin 905. In some exemplary embodiments, material 920 has a Shore-A durometer of between about 50 to about 70, preferably between about 55 and 65, with about 60 being most preferred, and all subranges therebetween.

[0031] Referring to FIG. 10, pin 905 has a stem 1007 and a distal end 1010. Distal end 1010 has a mushroom shape. Distal end 1010 includes an outer cam surface 1030, a flange 1035, and a locking surface 1033. Material 920 forms an inward facing bowl shape relative to the inside of receptacle 105 about opening

903. Material 920 has an outer cam surface 1015, a locking surface 1020 and a tip 1025.

[0032] Referring to FIG. 10 when lid 115 is secured to receptacle 105, the lid-handle axis and the collar-handle axis converge, e.g. θ_0 equals 0. To connect or secure lid 115 to receptacle 105, lid-handle 125 is secured to collar-handle 120. Pin 905 of lid-handle is inserted into opening 903 of collar-handle 120, and cam surface 1030 of distal end 1010 is pressed against material 920. In particular, cam surface 1030 is pressed against outer cam surface 1015. Outer cam surface 1015, compressible tip 1025, and locking surface 1020 compress to allow pin 903 to pass. Once inserted, outer cam surface 1015, tip 1025 and locking surface 1020 decompress. Tip 1025 decompresses to encompass stem 1007 of pin 905. In addition, locking surface 1020 of material 920 decompresses to provide a resistive surface against locking surface 1033 of pin 903. If removal of pin 903 is desired, locking surface 1020 must be compressed by locking surface 1033 of pin 903.

[0033] Referring to FIG. 11, lid-handle 125 and collar-handle 120 are illustrated in the first position prior to rotation and subsequent to removing lid 115 from either receptacle 105 shown in FIG. 3, or from collar 110 shown in FIG. 7. The first position prior to rotation occurs when lid 115 is disconnected from receptacle 105 or collar 110. In this position, the axis of lid-handle 125 is tilted relative to the axis of collar-handle 120 resulting in divergence and an angle θ_1 between axis of lid-handle 125 and axis of collar-handle 120. Typically, angle θ_1 ranges from 1 degree to 30 degrees. Angle θ_1 is preferably between about 1 degree to about 30, with about 25 degrees being most preferred, and all subranges therebetween. In addition, locking surface 1033 of pin 903 engages locking surface 1020 of material 920 providing resistance against removal of pin 903, and stem 1007 compresses tip 1025 of material 920. The engagement of locking surface 1020 and locking surface 1033 and compression of tip 1025 allow lid 115 to disengage from receptacle 105 or collar 110 while securing lid-handle 125 to collar-handle 120.

[0034] FIG. 11 illustrates a diameter 1107 of stem 1007 and a diameter 1103 of opening 903 at their narrowest point. Diameter 1107 is smaller than diameter 1103 to provide minimal contact between stem 903 with material 920. Material 920 is a flexible material that has a friction coefficient such that a large contact area between stem 903 and material 920 would hamper pivoting and rotating lid 115. Accordingly, diameter 1107 is smaller than diameter 1103 to facilitate pivoting and rotating lid 115.

[0035] In preferred embodiments, lid 115 is removable from collar 110, however, in further embodiments, lid 115 may be permanently secured to collar 110. Lid 115 may be permanently secured to collar 110 by increasing surface contact between stem 1007 and material 920. To increase surface contact, diameter 1107 may be increased, diameter 1103 may be decreased, or some combination of increasing diameter 1107 and decreasing diameter 1103 may be used. In addition, permanently securing lid 115 to collar 110 may be achieved by increasing surface contact between locking surface 1020 and locking surface 1033. That is, a volume of distal end 1010 can be increased, a volume of material 920 may be increased thereby increasing the area of locking surface of 1020, or a combination of increase in volume of distal end 1010 and material 920 may be used. Alternatively, lid 115 may be permanently secured to collar 110 by extending pin 903 through opening 905. In this embodiment, distal end 1010 will reside outside of opening 903 on an opposite side of collar-handle 120 relative to lid-handle 125. During manufacture distal end 1010 may be attached after stem 1007 is extended through opening 903.

[0036] FIG. 12 illustrates lid-handle 125 and collar-handle 120 when lid 115 is in a rotating position, e.g., FIGS. 4 through 6. The rotating position occurs when lid 115 is rotated from the top of receptacle 105 to the bottom of receptacle 105, or vice versa. In this rotating position, the axis of lid-handle 125 is tilted relative to the axis of collar-handle 120 resulting in divergence and an angle θ_2 between axis of lid-handle 125 and axis of collar-handle 120. Typically, angle θ_2 is between about 30 degree to about 60, with about 45 degrees being most

preferred, and all subranges therebetween. Additionally, overlap between θ_1 and θ_2 is contemplated. Angle θ_1 can also overlap prior or subsequent position ranges. Also, locking surface 1033 of pin 903 compresses a first portion of locking surface 1020 of material 920 to achieve angle θ_2 , and a second portion of locking surface 1033 engages a second portion of locking surface 1020 that provides resistance against removal of pin 903. Further, similar to FIG. 11, stem 1007 compresses tip 1025 of material 920. Flange 1035 contacts both the first portion of locking surface 1025 and a bottom surface 1205 of opening 903.

[0037] Referring to FIG. 13, attachment or detachment of lid-handle 125 and collar-handle 120 advantageously allows a user to separate lid 125 and collar 110 for any reason, including cleaning. During these positions, pin 905 of lid-handle 125 is pressed into, or removed from, opening 903 thereby compressing material 920. Typically, when lid-handle 125 is detached from collar-handle 120, the lid-handle axis and the collar-handle axis have a divergence resulting in an angle θ_3 between axis of lid-handle 125 and axis of collar-handle 120. However, it is to be understood that the shape of pin 903 and compression of material 920 allows for a smaller angle θ_3 when lid-handle 125 is connected or secured to collar-handle material 920. Typically, angle θ_3 is between about 60 degree to about 70, with about 65 degrees being most preferred, and all subranges therebetween. During attachment, angle θ_3 ranges from 0 degrees to 90 degrees. For purposes of discussion below, the detachment position is discussed. During detachment, pin 905 of lid-handle is removed through opening 903 of collar-handle 120. Locking surface 1033 of pin 905 compresses locking surface 1020 and tip 1025 (of material 920) until a portion of locking surface 1033 is fully disgorged from opening 903. During this compression, cam surface 1030 of distal end 1010 slides against material 920. In addition, a lower portion of stem 1007 acts as a lever to assist compression of locking surface 1020 and tip 1025. After disgorgement of a portion of locking surface 1033, pin 905 can be fully removed from opening 903.

[0038] Referring to FIG. 14, lid 115 is removably connected to receptacle 105 in this embodiment. Receptacle 105 has a molded configuration with a rim 1410 that corresponds to an outer rim 1405 of lid 115. Rim 1410 is shaped to fit in indentation 1405. Thus, the molded configurations of receptacle 105 and lid 115 provide a snap closure such that lid 115 is connected or secured to the bottom of receptacle 105.

[0039] In further embodiments, the molded configurations of receptacle 105 and lid 115 provide an audible noise, e.g., a click, to indicate that lid 115 is secured to the bottom of receptacle 105. In addition, it is contemplated by the present disclosure for receptacle 105 and lid 115 to be joined in any removable manner. For example, in other embodiments, lid 115 may be connected to receptacle 105 via different configurations including, but not limited to, a snap-on connector and a press-fit connection. Alternatively, in some embodiments, rim 1410 and the rim formed by a ridge 225 (discussed above) are the same size. In such embodiments, lid 115 includes a single indentation that fits both rims.

[0040] FIG. 15 shows identifiers to assure a secure connection between collar 110 to receptacle 105. The identifiers, include but are not limited to, audible, tactile and visual identifiers similar to U.S. Patent Application No. 2009/0242562 to Valderrama et al, incorporated herein by reference. In this embodiment, collar 110 has a diamond indicator 1505 and receptacle 105 has a bar indicator 1510. As discussed above, collar 110 is removably connected to receptacle 105. Receptacle 105 has threads that correspond to matching threads on collar 110. As collar 110 is threaded to receptacle 105, a centerline of diamond indicator 1505 and bar indicator 1510 intersect or align. Intersection of centerline of diamond indicator 1505 and bar indicator 1510 provides a visual cue that collar 110 and receptacle 105 have been securely screwed together. In addition, receptacle 105 and collar 110 may be configured to produce an audible noise, e.g., a click when a secure connection is achieved.

[0041] Collar 110 has finger grips 1415 to assist securing collar 110 to receptacle 105. Finger grips 1415 are raised surfaces molded into collar 110 that provide leverage for fingers to grasp while collar 110 is screwed into receptacle 105.

[0042] While the present disclosure has been described with reference to one or more exemplary embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the present disclosure. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the disclosure without departing from the scope thereof. Therefore, it is intended that the present disclosure not be limited to the particular embodiment(s) disclosed as the best mode contemplated, but that the disclosure will include all embodiments falling within the scope of the appended claims.

We Claim:

1. A container assembly comprising
 - a receptacle having an opened end;
 - a collar that is releasably secured to said opened end and that permits access to contents in the receptacle; and
 - a lid that is securable to said receptacle and to said collar.
2. The container assembly according to claim 1, wherein said collar comprises a handle having an aperture, and wherein said lid comprises a pin that is rotatably and pivotally received in said aperture.
3. The container assembly according to claim 2, wherein rotational and pivotable movement of said pin in said aperture permits said lid to be secured to said collar when the said collar when the container assembly is in a closed configuration or secured to said receptacle when the container assembly is in an opened configuration.
4. The container assembly of claim 2, wherein said pin is releasably received in said aperture.
5. The container assembly of claim 2, wherein said handle further comprises a compressible overmolded material that extends through said aperture that said pin compresses for insertion through said aperture.
6. The container assembly of claim 2, wherein said pin is permanently received in said aperture.
7. The container according to claim 1, wherein said collar comprises an internal threaded surface and an indicator and said receptacle

comprises an outer threaded and an indicator, and wherein after relative rotational movement between said internal threads and said external threads, intersection of a center line of said indicator of said collar and said indicator of said receptacle provides the indication that receptacle and the collar are in a sealed relationship.

8. The device of claim 1, wherein said collar further comprises a cover having a plurality of flexible petals that can be deflected to provide access to contents of the receptacle.
9. The container assembly according to claim 1, wherein said receptacle further comprises a closed end having annular rim, wherein said collar comprises an annular rim, and wherein said lid comprises an annular indentation that mates with said annular rim of said receptacle when the container is in an opened configuration and with said annular rim of said collar when said container is in a closed configuration.
10. A container assembly comprising
 - a receptacle having an opened end;
 - a collar that is releasably connected to said opened end;
 - a lid; and
 - a hinged connection between said collar and said lid that permits the lid to rotate and pivot relative to said collar and to attach to said receptacle or said collar.
11. The container assembly according to claim 10, wherein said collar further comprises a handle, an aperture, and a compressive material that covers said handle and extends through said aperture and thereby forms an annular outer cam surface in said aperture.

12. The container assembly according to claim 11, wherein said lid comprises a pin having a stem and a distal end connected to said stem, and wherein said distal end is pressed against outer cam surface and inserted through said aperture to established said hinged connection.
13. The container assembly according to claim 10, wherein said hinged connection comprises a pin on said lid and an aperture in said collar, and wherein said pin is received through said aperture in a press-fit fashion.
14. The container assembly according to claim 10, wherein said receptacle further comprises a closed end having annular rim wherein said collar comprises an annular rim, and wherein said lid comprises an annular indentation that mates with said annular rim of said receptacle when the container is in an opened configuration and with said annular rim of said collar when said container is in a closed configuration.
15. The container assembly according to claim 10, wherein said collar comprises an internal threaded surface and an indicator and said receptacle comprises an outer threaded and an indicator, and wherein after relative rotational movement between said internal threaded surface and said external threaded surface, intersection of a center line of said indicator of said collar and said indicator of said receptacle provides the indication that receptacle and the collar are in a sealed relationship.
16. The container assembly according to claim 10, wherein said collar further comprises a cover having a plurality of flexible petals that can be deflected to provide access to contents of the receptacle.
17. A container assembly comprising

a receptacle having an opened end and a closed end;

a collar that is releasable secured to said opened end, wherein said collar comprises a handle having an aperture; and

a lid having a pin that is pivotably and rotatable received in said aperture to permit said lid to be secured to said collar when the said collar when the container assembly is in a closed configuration or to be secured to said closed end when said container assembly is in an opened configuration.

18. The container assembly according to claim 17, wherein said handle further comprises a compressible material that extends through said aperture and forms an outer cam surface and a locking surface.
19. The container assembly according to claim 18, wherein said pin comprises a stem and a distal end connected to said stem.
20. The container assembly according to claim 18, wherein insertion of said distal end into said aperture deflects said outer cam surface and said locking surface to permit passage of said distal end.
21. The container assembly according to claim 17, wherein said pin is permanently received in said aperture.
22. The container assembly according to claim 17, wherein said pin is releasable received in said aperture.

23. The container assembly according to claim 18, wherein said compressible material has a Shore-A durometer of between about 50 to about 70.
24. The container assembly according to claim 17, wherein said collar comprises an internal threaded surface and an indicator and said receptacle comprises an outer threaded and an indicator, and wherein after relative rotational movement between said internal threaded surface and said external threaded surface, intersection of a center line of said indicator of said collar and said indicator of said receptacle provides the indication that receptacle and the collar are in a sealed relationship.

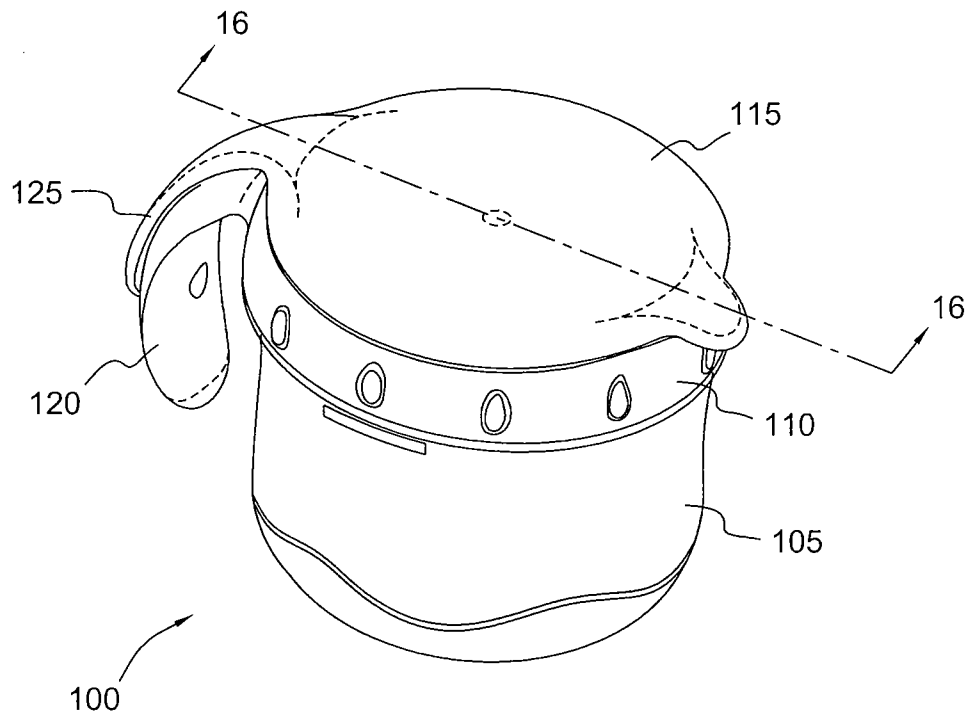


FIG. 1

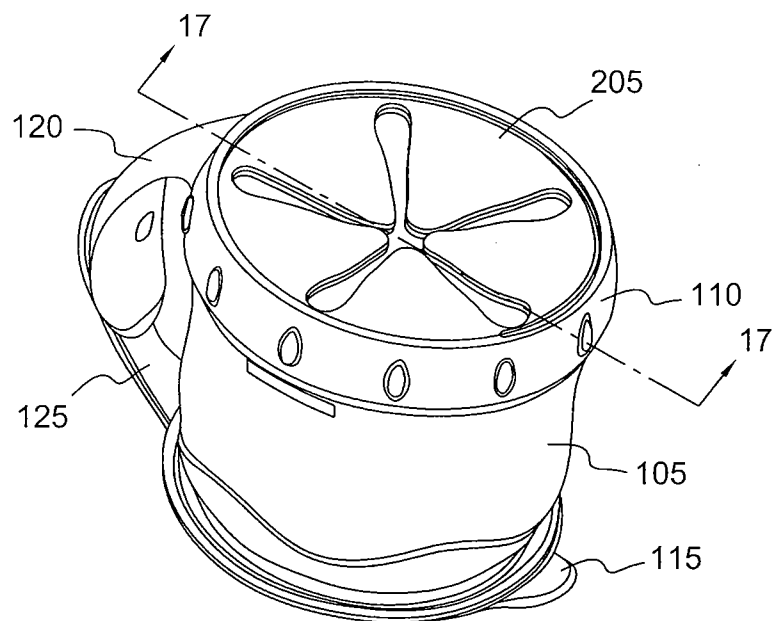


FIG. 2

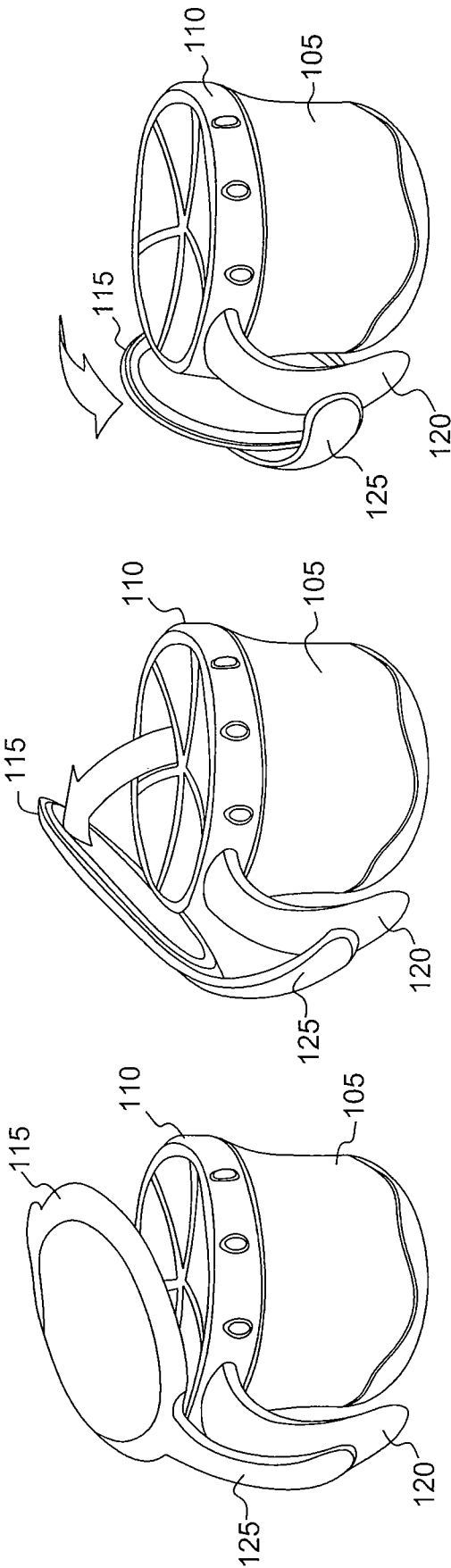


FIG. 3

FIG. 4

FIG. 5

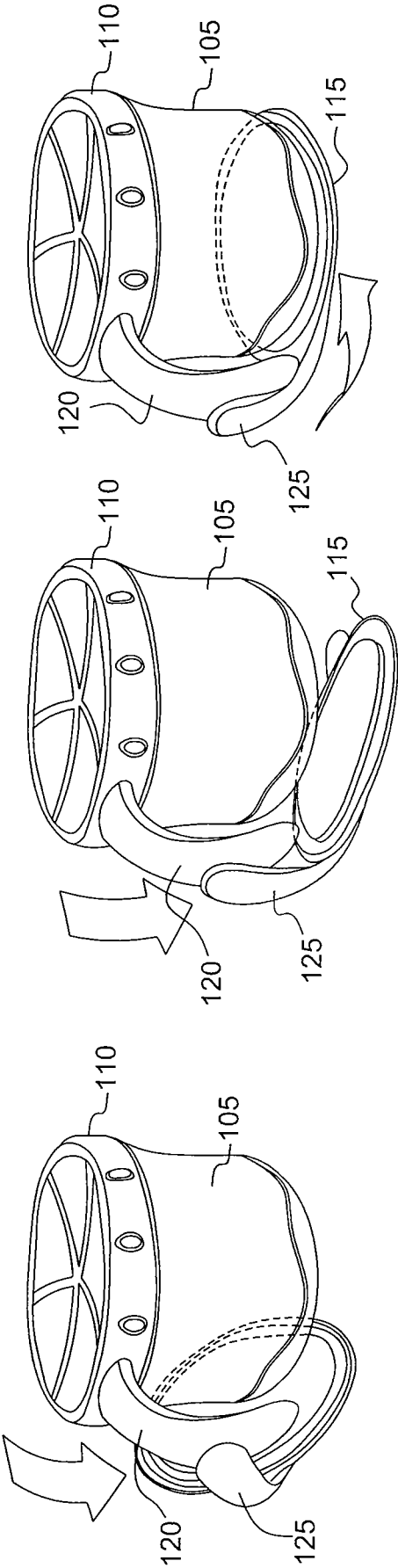


FIG. 6

FIG. 7

FIG. 8

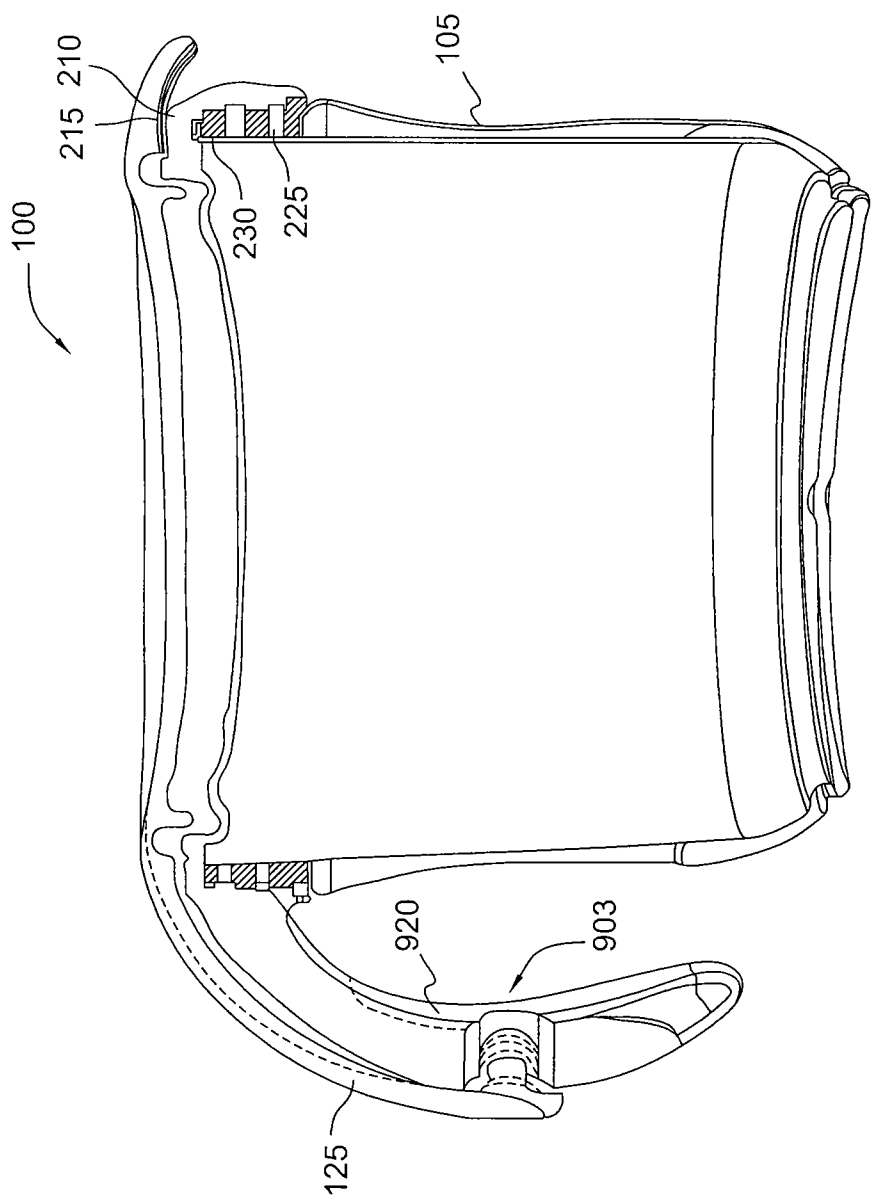


FIG. 9

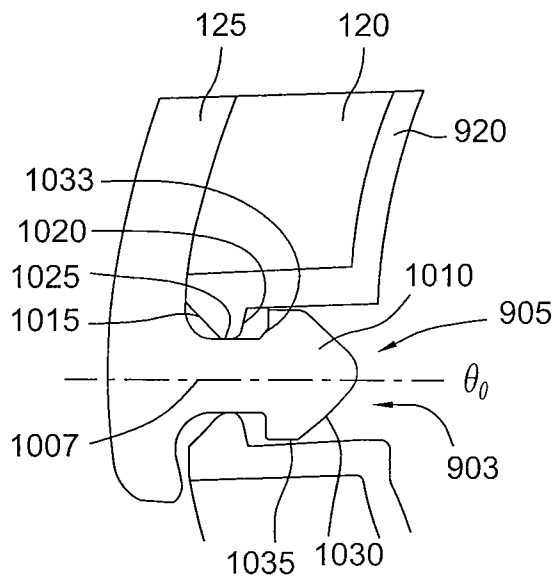


FIG. 10

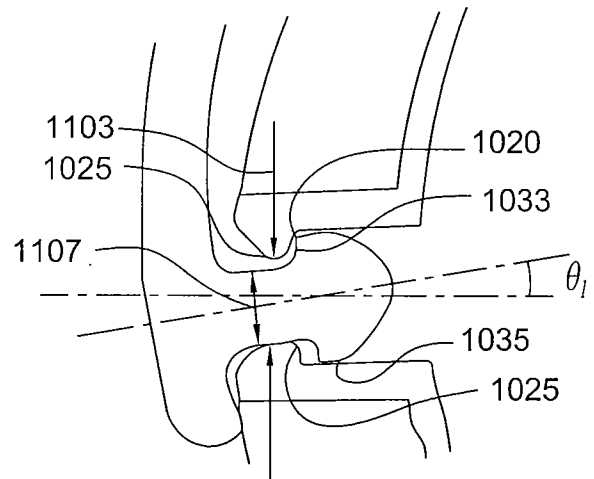


FIG. 11

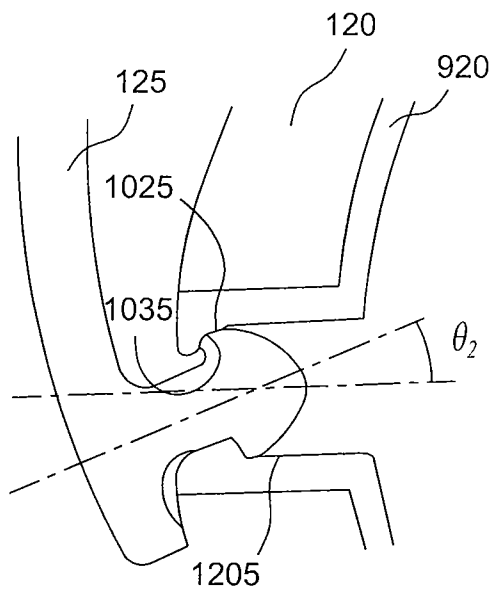


FIG. 12

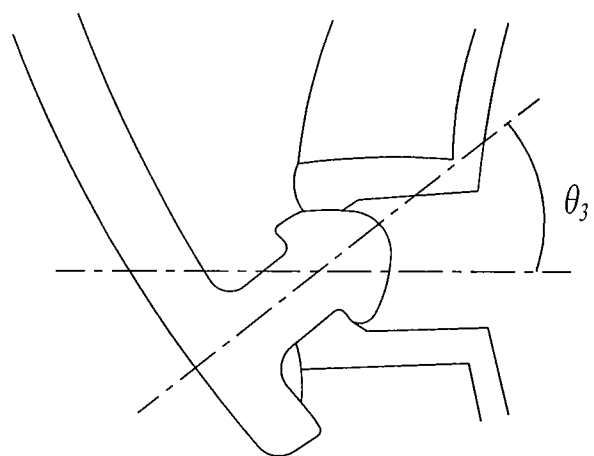


FIG. 13

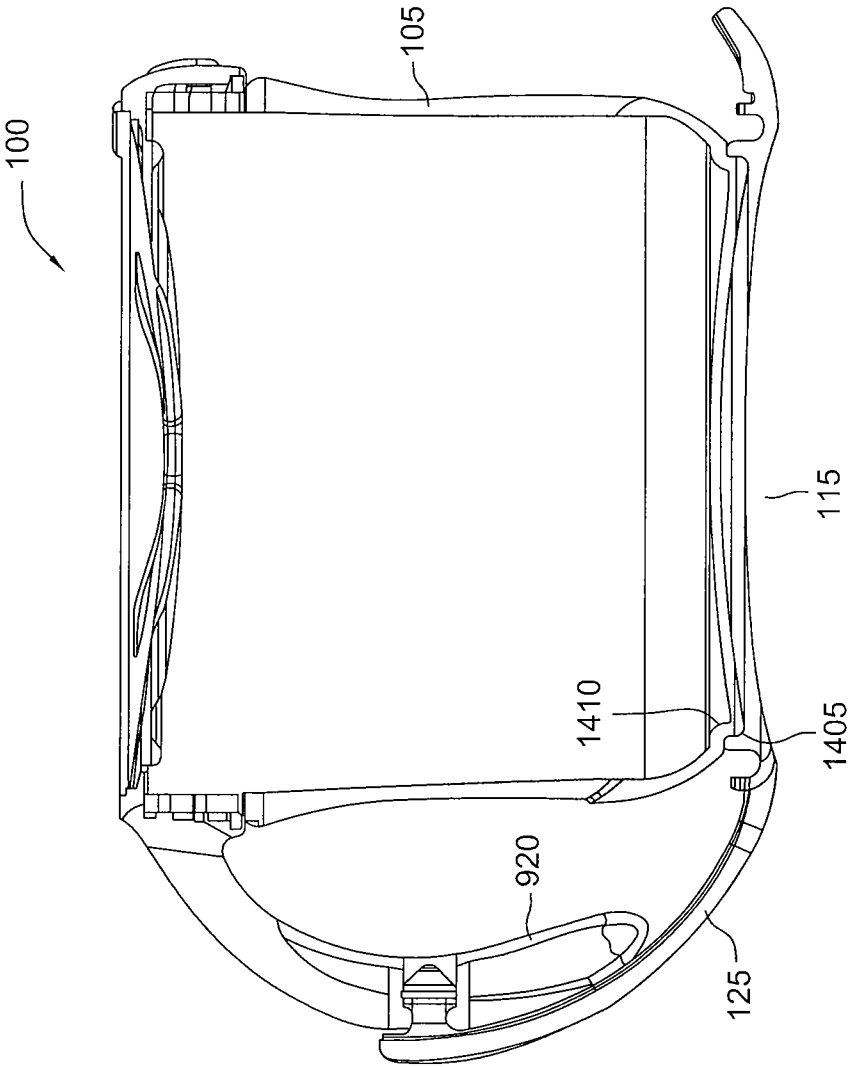


FIG. 14

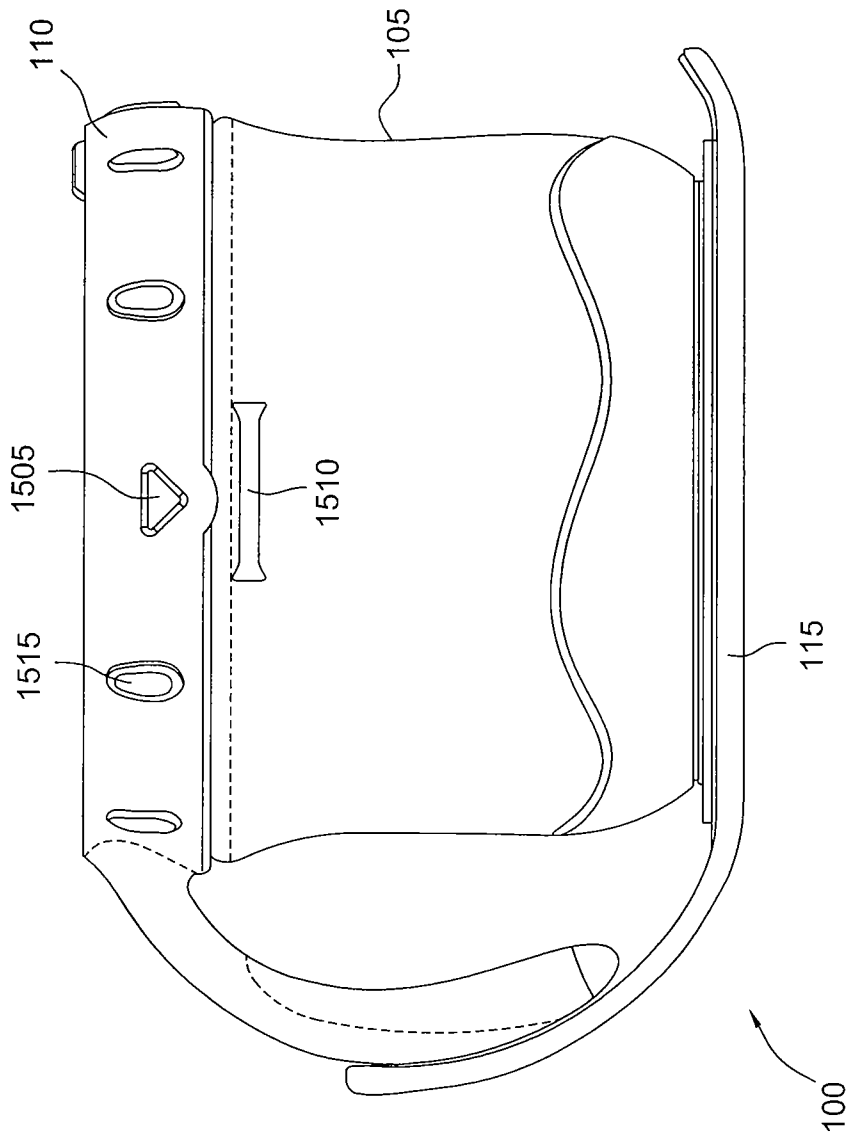


FIG. 15