



(12)

EUROPEAN PATENT APPLICATION

(43)

Date of publication:
17.04.2019 Bulletin 2019/16

(51)

Int Cl.:
B65D 47/24 (2006.01) B65D 47/20 (2006.01)

(21)

Application number: 18198689.4

(22)

Date of filing: 04.10.2018

(84) Designated Contracting States: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR Designated Extension States: BA ME Designated Validation States: KH MA MD TN	(72) Inventors: • Cozzolino, Steven C Garden City, NY New York 11530 (US) • Treacy, Lyndon Garden City, NY New York 11530 (US)
(30) Priority: 06.10.2017 US 201715726663	(74) Representative: Johnson, Emma Elizabeth Forresters IP LLP Skygarden Erika-Mann-Strasse 11 80636 München (DE)
(71) Applicant: Lifetime Brands, Inc. Garden City, NY 11530 (US)	

(54)

TILTABLE LID ASSEMBLY

(57)

A tiltable lid assembly includes a base (10) that is secured to a cup (6) that holds a liquid substance. The base has an opening (12) that is aligned with an opening on the cup. A cap assembly (4) is secured to the base and includes a first seal (22) for sealing the opening of the base and a second seal (24) for sealing an air vent (18) on the base. The cap assembly is tiltable along an axis, wherein in a first position, the cap assembly is in a level, non-inclined position and the first and second seals seal the opening and the air vent, respectively. In a second position, the cap assembly is inclined and the first and second seals are displaced from the opening and air vent. Releasable locking means (36, 42) secures the cap assembly in the first and second position.

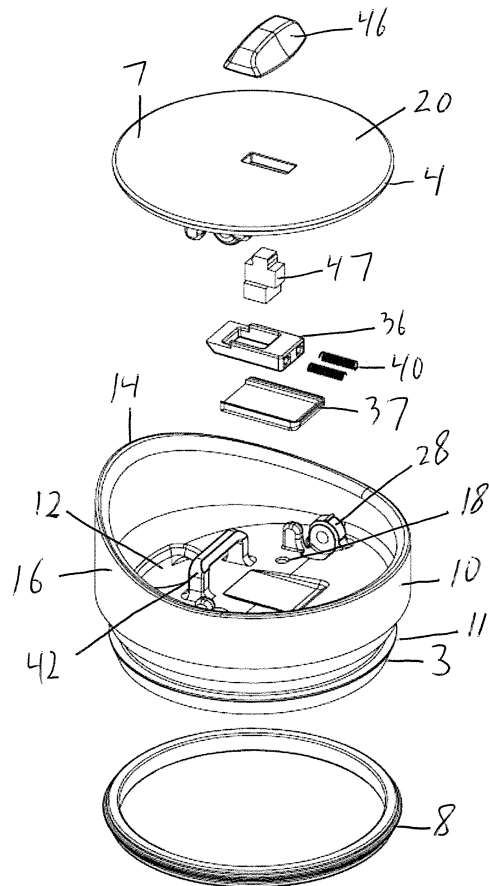


FIG. 2

Description

BACKGROUND

1. Technical Field

[0001] The present principles generally relates to lids for sealing cups, more particularly, it relates to a tiltable lid assembly which seals a cup in an effective and efficient manner.

2. Description of Related Art

[0002] Cups and containers for holding liquid beverages or food products must be configured to securely seal the contents of the cup in order to prevent the contents from accidentally flowing out of the spout which may lead to injury to the user or damage to property. Many cups, such as travel mugs, have been developed which have lids that releasably seal a cup. However, many existing cups do not have lids that securely seal the spout/opening of the cup. Furthermore, many known cups have lids with sealing means that are cumbersome to activate or deactivate by the user. Additionally, many existing cups do not clearly indicate whether the spout is in an opened or closed position. Many of the existing lids also have structures that are overly complex and are subject to degradation over time.

[0003] Accordingly, it is an aspect of the invention to provide a lid assembly that is configured to be releasably locked in both a position in which the spout and the air vent are opened and the user may drink from the cup and in a position in which the spout and air vent are sealed closed.

[0004] It is another aspect of the invention to provide a lid assembly that has releasable locking means which permits the user to easily open or close the spout and the air vent.

[0005] It is another aspect of the invention to provide a lid assembly that clearly indicates to the user whether the spout and air vent are opened or closed.

[0006] It is a further aspect of the invention to provide a lid assembly that is cost effective to manufacture.

SUMMARY OF THE INVENTION

[0007] In accordance with the present principles, a tiltable lid assembly is provided. The tiltable lid assembly includes a base configured to be secured to a cup that holds a liquid substance. The cup includes an opening for release of the liquid substance. The base includes a first end having an opening that is aligned with the opening in the cup to permit release of the liquid substance from the cup portion. A cap assembly is secured to the base. The cap assembly includes a first end having a first seal that is configured to be positioned over the opening of the base to seal the liquid substance within the cup and a second end opposite the first end. The cap assembly

is configured to be tiltable along an axis, wherein in a first position on the axis the first seal is positioned within the opening on the base to prevent the liquid substance from flowing out of the opening and in a second position on the axis the first seal is displaced from the opening on the base to permit the liquid substance to flow out of the opening.

[0008] A cup is also provided. The cup includes a cup portion that is configured to hold a liquid substance. The cup portion includes an opening for release of the liquid substance. A base is configured to be secured to the cup. The base includes a first end having an opening that is aligned with the opening in the cup to permit release of the liquid substance from the cup portion. A cap assembly is secured to the base. The cap assembly includes a first end having a first seal that is configured to be positioned over the opening of the base to seal the liquid substance within the cup portion and a second end opposite the first end. The cap assembly is configured to be tiltable along an axis, wherein in a first position on the axis the first seal is positioned within the opening on the base to prevent the liquid substance from flowing out of the opening and in a second position on the axis the first seal is displaced from the opening on the base to permit the liquid substance to flow out.

[0009] A method for releasably locking a tiltable lid assembly that seals a cup in an open or closed position is also provided, the tiltable lid assembly having a base and a cap assembly. The method includes the steps of locking the tiltable lid assembly in the open position starting from the closed position by: releasing releasable locking means, depressing a second end of the cap assembly to incline an opposed first end of the cap assembly and activating releasable locking means. The method also includes the steps of locking the tiltable lid assembly in the closed position starting from the open position by: releasing releasable locking means, depressing a first end of the cap assembly so that the cap assembly is in a level, non-inclined orientation and activating releasable locking means.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The features and advantages of the present invention will be more readily understood from a detailed description of the exemplary embodiments taken in conjunction with the following figures. Referring now to the drawings in which like numerals represent the same or similar elements:

FIG. 1 shows an exploded view of a cup having the tiltable lid assembly of the present invention;

FIG. 2 shows an exploded view of the tiltable lid assembly and releasable locking means of the present invention;

FIG. 3 shows a side view of the tiltable lid assembly locked in a sealed position;

FIG. 4 shows a side view of the tiltable lid assembly

in an unlocked position with the first end inclined;
 FIG. 5 shows a side view of the tiltable lid assembly locked in an unsealed position;
 FIG. 6 shows a bottom perspective view of the cap assembly;
 FIG. 7 shows a perspective view of the tiltable lid assembly in a level, non-inclined position;
 FIG. 8 shows a perspective view of the tiltable lid assembly in an inclined position; and
 FIG. 9 shows a flow diagram showing a method for releasably locking a tiltable lid assembly that seals the cup in an open or closed position.

DETAILED DESCRIPTION

[0011] In accordance with the present principles, a tiltable lid assembly 2 is provided. The tiltable lid assembly 2 is configured to be secured to a cup 6 or container that holds a substance, such as a liquid beverage or food product. The cup 6 or container may comprise a body having a bottom wall, side walls and an open top.

[0012] As shown in FIG. 1, the tiltable lid assembly 2 includes a base 10 and a cap assembly 4. The tiltable lid assembly 2 is configured to be attached to the body of the cup 6 over the opening. The base 10 of the tiltable lid assembly may have a collar portion 3 configured to be secured to the cup 6. In one embodiment, the collar portion 3 is secured to the cup by a press fit. In this embodiment, it is preferable that the tiltable lid assembly 2 includes a gasket 8 to provide an interference fit between the tiltable lid assembly and the cup 6. The gasket 8 also helps provide an air tight seal between the tiltable lid 2 and the cup 6. In alternative embodiments, the collar portion 3 includes threads 11 which permit the collar portion to be screwed onto the cup 6. In this embodiment, the gasket 8 may be positioned on a thread 11 and the gasket seals against the rim or the inside wall of the cup.

[0013] The base 10 has raised sidewalls 16 extending around its circumference. In one embodiment, the sidewalls 16 may have an increased height at the first end 14 of the base. As shown in FIG. 2, the base includes an opening 12 on the first end which serves as a spout for the substance held in the cup. The substance may travel from the cup, through the opening and up the sidewalls 16 to reach the user's mouth. The sidewalls 16 are dimensioned to provide a controlled flow of the liquid substance to the user's mouth. The base 10 also includes an air vent 18 that is configured to allow gas to flow from the cup through the air vent in order to permit the substance to flow smoothly from the cup through the opening 12.

[0014] The cap assembly 4 is configured to be secured to the base 10 in order to cover the base and releasably seal the substance inside of the cup. As shown in FIGS. 1-2, the cap assembly 4 preferably has a relatively planar top surface 20. The cap assembly 4 includes a first end 7 and a second end 9 that is configured to be aligned with and overlie corresponding first and second ends 14,

17 of the base. The top surface 20 of the cap assembly may be dimensioned to have an area that substantially covers the portion of the base 10 that is surrounded by the sidewalls 16.

[0015] As shown in FIG. 6, the bottom portion 5 of the cap assembly may include a first seal 22 and a second seal 24. The seals 22, 24 may be overmolded or otherwise secured to the bottom portion 5 of the cap assembly. The first seal 22 is positioned on the first end 7 of the cap assembly and has dimensions that are configured to sealingly cover the opening 12 of the base. For example, the first seal 22 may be dimensioned so that a distal portion of the first seal may be received within the opening 12 of the base and completely cover the opening to prevent substances in the cup from flowing out of the opening. In one embodiment, the first seal 22 may be dimensioned to have a width that gradually increases from the distal end 23 to the bottom surface of the cap assembly.

[0016] The second seal 24 on the cap assembly 4 is configured to sealingly cover the air vent 18 on the base 10. The second seal 24 may be configured so that the distal portion 1 of the second seal may be received within the air vent 18 and completely cover the air vent to prevent gas from flowing through the air vent. The second seal 24 may be dimensioned with an increasing width from the distal end 25 to the bottom surface of the cap assembly. In the embodiment shown in Fig. 6, the second seal 24 is in the form of a plug which is configured to be received within the air vent 18 to seal the air vent. While the embodiments shown in FIGS. 1-6 include an opening 12 and air vent 18 in the base that is configured to be sealed by the first and second seals 22, 24, in other embodiments the base 10 may have additional openings and the cap assembly 4 has corresponding seals to sealingly close such openings.

[0017] In embodiments, the cap assembly 4 may be configured to be releasably secured to the base 10. For example, the bottom portion 5 of the cap assembly may have fastening means 26 which is configured to be releasably secured to fastening means on the base 10. In the embodiment shown in FIGS. 1, 2 and 6, the base 10 may include a pair of mounting brackets 28 having recesses which are configured to receive raised circular protrusions 30 on a pair of arms 32 on the bottom of the cap assembly. The fastening means 26 releasably fastens the cap assembly 4 to the base 10 while the point of securement serves as a fulcrum which allows the cap assembly to pivot and provide a tilting motion to the cap assembly 4 when secured to the base 10. While the embodiments in FIGS. 1, 2 and 6 show a pair of mounting brackets 28 and arms 32, other fastening means known in the art may be used to releasably secure the cap assembly 4 to the base 10. In alternative embodiments, the cap assembly 4 may be permanently secured to the base 10 by any other means known in the art.

[0018] The tiltable lid assembly 2 also includes releasable locking means 34 which is configured to secure the cap assembly 4 in a plurality of positions with respect to

the axis which it tilts about. For example, as shown in FIG. 3, the releasable locking 34 means is configured to secure the cap assembly 4 in a position wherein the first and second seals 22, 24 seal the opening 12 and air vent 18 of the base 10. In this position, the lid is locked in a sealed condition which ensures that the opening and air vent are closed. As shown in FIG. 7, in this position, the top surface 20 of the cap assembly may preferably have a substantially planar top that is easily viewable by the user as being in a level, non-inclined orientation. This permits the user to readily determine that the tiltable lid assembly 2 is in a sealed position which prevents liquid or air from being released from the cup.

[0019] As shown in FIG. 5, the releasable locking means 34 is configured to secure the cap assembly 4 in a position where the first and second seals 22, 24 are displaced from the opening 12 and air vent 18 of the base 10, respectively, and liquid contents of the cup and air may flow out of the opening and air vent. As shown in FIG. 8, in this position, the substantially planar top surface 20 of the cap assembly is easily viewable by the user as being in an inclined orientation. The top surface of the cup assembly may be inclined in this position approximately 5-60 degrees towards the first end 14 of the cap assembly. This permits the user to view the top surface 20 of the cap assembly and easily determine whether the opening/spout 12 is in an open position where the substance may freely flow out of the cup.

[0020] In the embodiment shown in FIGS. 2-5, the releasable locking means 34 includes a latch 36 that is connected to the cap assembly 4. The latch 36 has a distal end portion 38. The latch 36 also includes biasing means 40 that is positioned adjacent the latch. The biasing means 40 may be a spring, a magnet or any other biasing means known in the art. The biasing means 40 is configured to force the distal end 38 of the latch to extend towards the first end 14 of the base. The releasable locking means 34 may include an enclosure 37 which encloses the components of the releasable locking means on the cap assembly 4 except for the distal end 38 of the latch. The enclosure 37 may have an aperture that is configured to permit the latch 36 to extend outside of the enclosure. The base 10 includes a locking member 42 that includes an aperture 44 that is configured to receive the distal end 38 of the latch. When the distal end 38 of the latch is received in the aperture 44, the biasing means 40 maintains the distal end of the latch within the aperture to prevent axial motion of the cap assembly 4.

[0021] In embodiments, the tiltable lid assembly 2 also includes a tab 46 that is connected to the releasable locking means 34 which is configured to permit the user to apply pressure opposing the biasing force to release the releasable locking means and permit axial motion of the cap assembly 4. The tab 46 is preferably positioned on the top surface 20 of the cap assembly. As shown in FIG. 2, for example, the tab 46 may be connected to the releasable locking means by a post 47.

[0022] As shown in FIG. 4, when the user slides the

tab 46 towards the second end 9 of the cap assembly, the distal end 38 of the latch is displaced from the aperture 44 and the securement by the releasable locking means 34 is released. When the user releases the tab 46, the biasing means 40 forces the distal end 38 of the latch towards the first end 7 of the cap assembly.

[0023] As shown in FIG. 4, when the cap assembly 4 is secured in a position where the first and second seals 22, 24 seal the opening 12 and air vent 18, the sliding of the tab 46 in a direction toward the second end 9 of the cap assembly opposes the biasing means to release the locking means and also naturally exerts downward force on the second end 9 of the cap assembly to incline the first end 7 of the cap assembly and decline the second end.

[0024] As shown in FIG. 5, when the user releases the tab 7 while the cap assembly 4 is in an inclined orientation, the distal end 38 of the latch is forced against a resting surface 48 on the locking member which secures the cap in the inclined position. The resting surface 48 preferably has dimensions that are configured to be complementary to the shape of the distal end in order to reduce friction of the distal end against the resting surface. For example, in the embodiment shown in Fig. 5, the distal end 38 of the latch is slanted upwardly approximately 45 degrees and the resting surface 48 is slanted downwardly at a similar angle.

[0025] The releasable locking means 34 are configured so that the user may push down on the inclined portion of the top surface 20 of the cap assembly to oppose the biasing force and force the distal end 38 of the latch away from the resting surface 48 to release the releasable locking means. This permits the user to easily release the securement provided by the releasable locking means. Alternatively, the user may slide the tab 46 towards the second end 9 of the cap assembly to release the releasable locking means 34. The user can then tilt the lid to a level position with gentle downward pressure on the first end 7 of the cap assembly. When the user releases the tab 46, the distal end 38 of the latch is forced into the aperture 44 of the locking member 42 to secure the tiltable lid assembly 2 in a sealed position.

[0026] Referring to FIG. 9, a method 200 for releasably locking a tiltable lid assembly that seals a cup in an open or closed position is provided. As previously described, the tiltable lid assembly may include a base and a cap assembly. The method 200 includes locking the tiltable lid assembly in the open position starting from the closed position by performing the following steps. In block 205, the releasable locking means are released. As previously described, the releasable locking means may be released by sliding a tab that is connected to the releasable locking means towards the second end of the cap assembly to oppose the biasing force and release the distal end of the latch, from the aperture of the locking member.

[0027] In block 210, the second end of the cap assembly is depressed to incline an opposed first end of the cap assembly. As previously described, the sliding of the

tab that is connected to the releasable locking means towards the second end of the cap assembly may be sufficient to naturally depress the second end of the cap assembly and incline the first end of the cap assembly.

[0028] In block 220 the releasable locking means are activated. For example, the tab may be released so that the biasing force forces the distal end forward into a locked open position.

[0029] The method also includes locking the tiltable lid assembly in the closed position starting from the open position by performing the following steps. In block 230, the releasable locking means are released. As previously described, the releasable locking means may be released by the user depressing the inclined first end of the cap assembly. Alternatively, the user may slide the tab towards the second end to release the releasable locking means. In block 240, the first end of the cap assembly is depressed so that the cap assembly is in a level, non-inclined orientation. In block 250, the releasable locking means is activated. For example, the user may release the tab so that the latch is forced into the aperture of the locking member by the biasing means to secure the tiltable lid assembly in a closed position.

[0030] It should be understood, of course, that the specific form of the invention herein illustrated and described is intended to be representative only, as certain changes may be made therein without departing from the clear teachings of the disclosure. Features of embodiments of the invention may be combined with features of any other embodiment. Features of multiple embodiments may be combined.

[0031] Although the illustrative embodiments have been described herein with reference to the accompanying drawings, it is to be understood that the present principles is not limited to those precise embodiments, and that various changes and modifications may be effected therein by one of ordinary skill in the pertinent art without departing from the scope or spirit of the present principles. All such changes and modifications are intended to be included within the scope of the present principles as set forth in the appended claims.

Claims

1. A tiltable lid assembly, comprising:

a base configured to be secured to a cup that holds a liquid substance, said cup including an opening for release of the liquid substance;
said base including a first end having an opening that is configured to be aligned with the opening in the cup to permit release of the liquid substance from the cup portion;
a cap assembly secured to the base, said cap assembly including a first end having a first seal that is configured to be positioned over the opening of the base to seal the liquid substance within

the cup and a second end opposite said first end; said cap assembly is configured to be tiltable along an axis, wherein in a first position on the axis the first seal is positioned within the opening on the base to prevent the liquid substance from flowing out of the opening and in a second position on the axis the first seal is displaced from the opening on the base to permit the liquid substance to flow out of the opening.

2. The tiltable lid assembly of claim 1, wherein the tiltable lid assembly includes releasable locking means that secures the cap assembly in the first and second position.

3. The tiltable lid assembly of claim 2, wherein the releasable locking means comprises:

a latch connected to the cap assembly, said latch having a distal end portion;
biasing means connected to the cap assembly that is configured to exert force on the latch; and
a locking member secured to the base, said locking member having an aperture configured to receive the distal end portion of the latch;
wherein in the first position, the biasing means is configured to force the distal end portion of the latch into the aperture of the locking member to secure the first seal within the opening of the base to prevent the liquid substance from flowing out of the opening; and
wherein in the second position, the biasing means is configured to force the distal end portion of the latch against a resting surface of the locking member to secure the first seal in a position that is displaced from the opening on the base to permit the liquid substance to flow out of the opening.

4. The tiltable lid assembly of claim 3, wherein:

the cap assembly has a substantially planar top surface;
in the first position, the cap assembly is in a level, non-inclined position; and
in the second position, the cap assembly is in an inclined position.

5. The tiltable lid assembly of claim 4, wherein the top surface of the cap assembly in the second position is inclined towards the first end of the cap assembly between 5-60 degrees.

6. The tiltable lid assembly of any of the preceding claims, wherein:

the base includes an air vent that is configured to permit gas in the cup to flow therethrough;

- the cap assembly includes a second seal that is configured to be positioned within the air vent to seal the air vent;
 wherein when the cap assembly is in the first position, the second seal is positioned within the air vent to seal the air vent and when the cap assembly is in the second position, the second seal is displaced from the air vent.
7. The tiltable lid assembly of any of claims 3 to 6, wherein the releasable locking means further includes a tab that is connected to the latch, said tab being configured to move the distal end portion of the latch away from the locking member and release the releasable locking means when slid by the user towards the second end of the cap assembly.
8. The tiltable lid assembly of claim 7, wherein the tab is positioned on a substantially planar top surface of the cap assembly.
9. The tiltable lid assembly of any of the preceding claims, wherein the tiltable lid assembly includes fastening means to releasably secure the cap assembly to the base.
10. The tiltable lid assembly of claim 9, wherein the fastening means comprises mounting brackets having recesses that are configured to receive protrusions on a pair of arms; wherein the fastening means is configured to permit the cap assembly to pivot along the axis when the cap assembly is releasably secured to the base.
11. A cup, comprising:
 a cup portion configured to hold a liquid substance, said cup portion including an opening for release of the liquid substance; and
 a tiltable lid assembly configured to be secured to the cup portion, according to any of claims 1 to 10.
12. A method for releasably locking a tiltable lid assembly that seals a cup in an open or closed position, said tiltable lid assembly having a base and a cap assembly, comprising the steps of:
 to lock the tiltable lid assembly in the open position starting from the closed position:
 releasing a releasable locking means;
 depressing a second end of the cap assembly to incline an opposed first end of the cap assembly;
 activating the releasable locking means;
 and
- to lock the tiltable lid assembly in the closed position starting from the open position:
 releasing the releasable locking means;
 depressing a first end of the cap assembly so that the cap assembly is in a level, non-inclined orientation; and
 activating the releasable locking means.
13. The method of claim 12, wherein the step of locking the tiltable lid assembly in the open position starting from the closed position further includes the steps of:
 sliding a tab that is connected to the releasable locking means towards the second end of the cap assembly to release the releasable locking means; and
 releasing the tab when the first end of the cap assembly is inclined to activate the releasable locking means.
14. The method of claim 12, wherein the step of depressing the first end of the cap assembly releases the releasable locking means.
15. The method of claim 12, wherein the step of locking the tiltable lid assembly in the closed position starting from the open position further includes the steps of:
 sliding a tab that is connected to the releasable locking means towards the second end of the cap assembly to release the releasable locking means;
 depressing the first end of the cap assembly; and
 releasing the tab when the first end of the cap assembly is in a level, non-inclined position to activate the releasable locking means.
16. The method of claim 13, wherein the sliding of the tab towards the second end to release the releasable locking means depresses the second end of the cap assembly to incline the first end of the cap assembly.

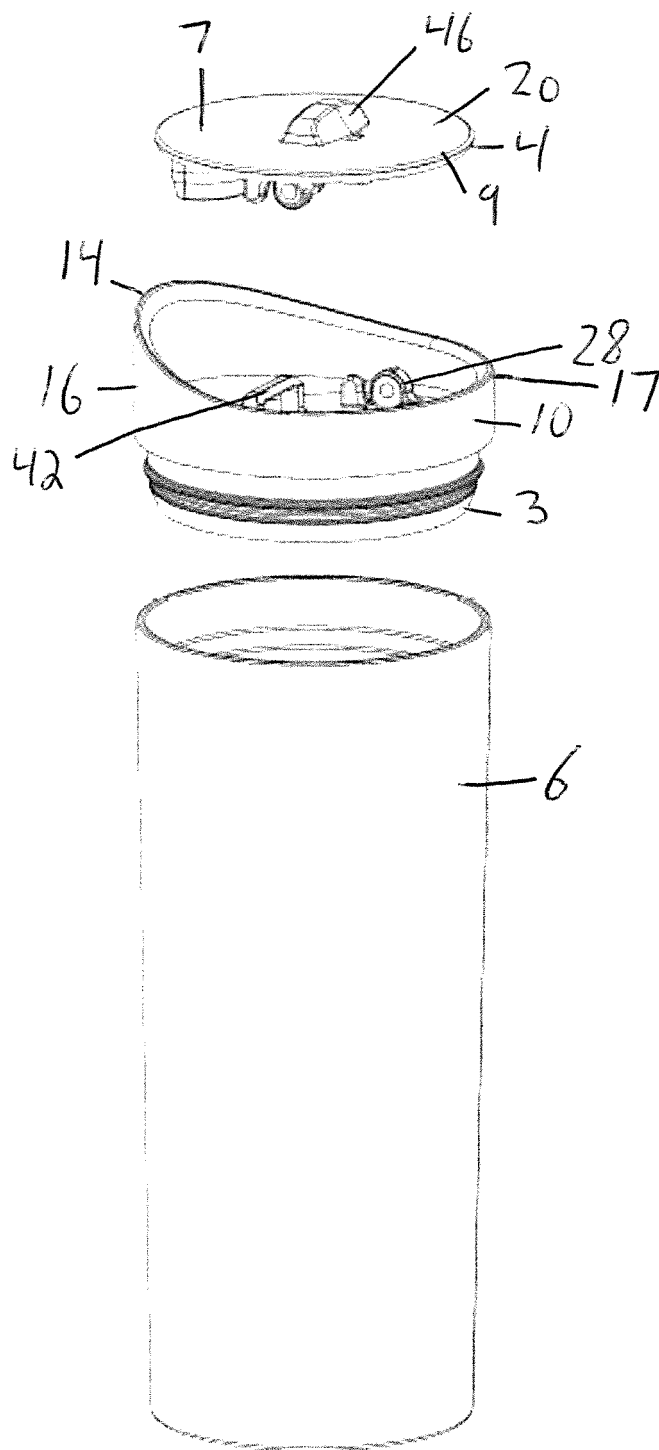


FIG. 1

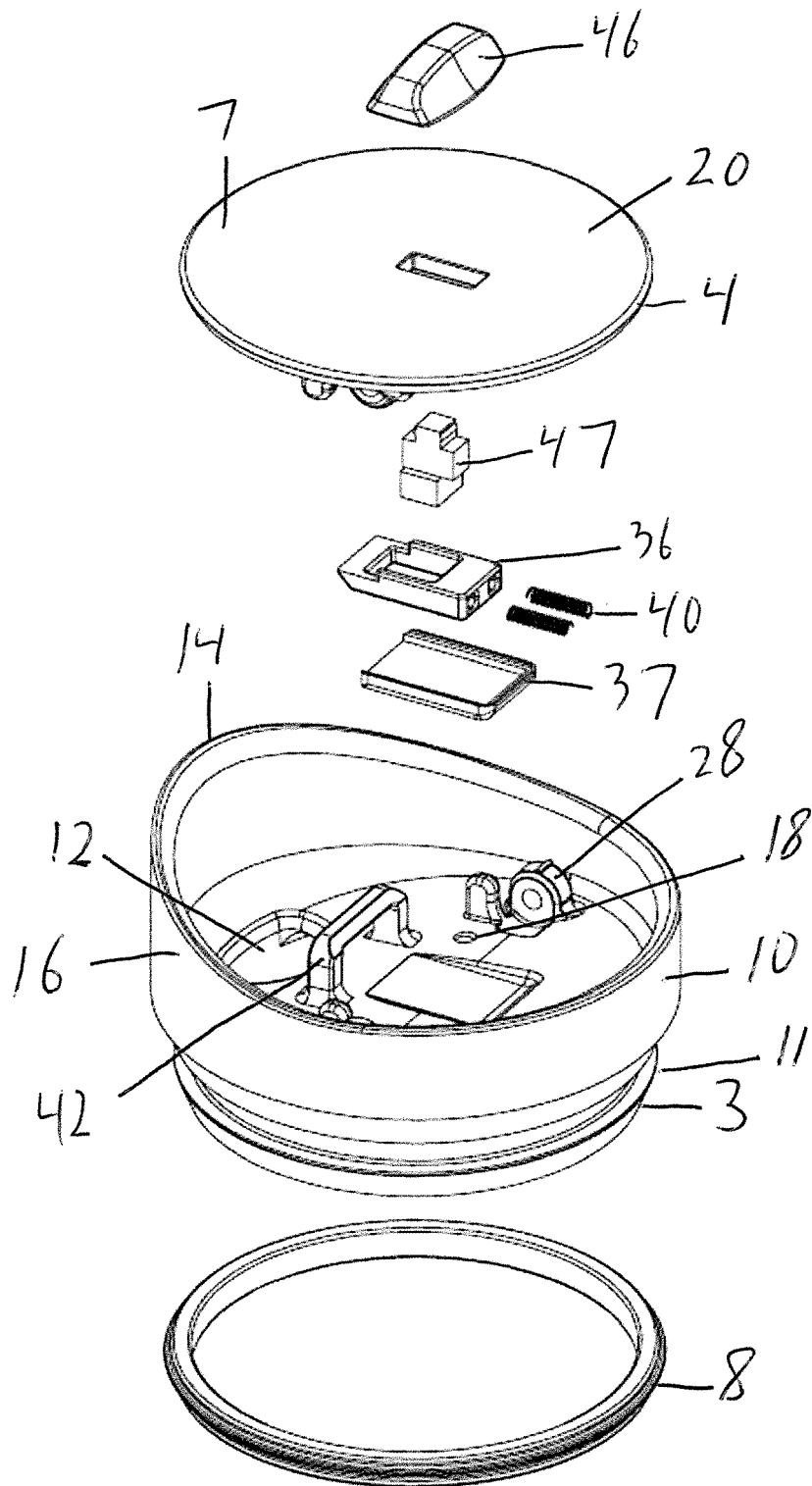


FIG. 2

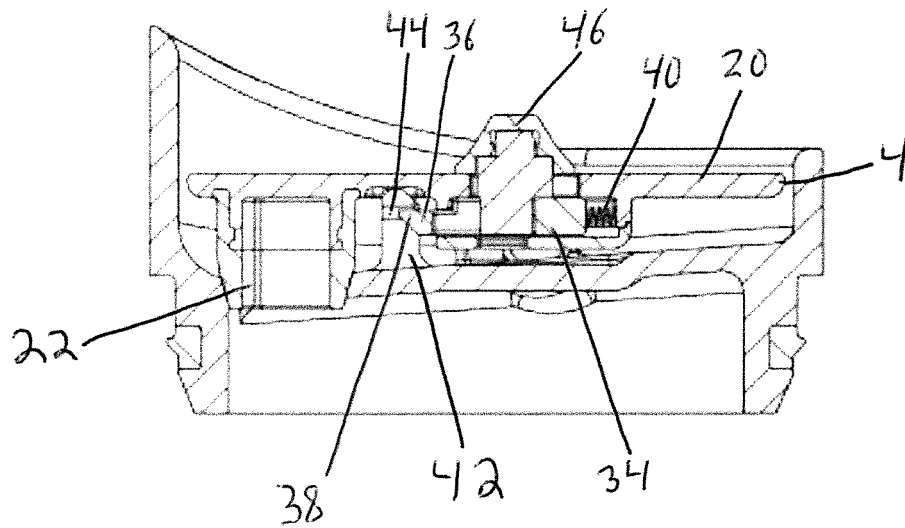


FIG. 3

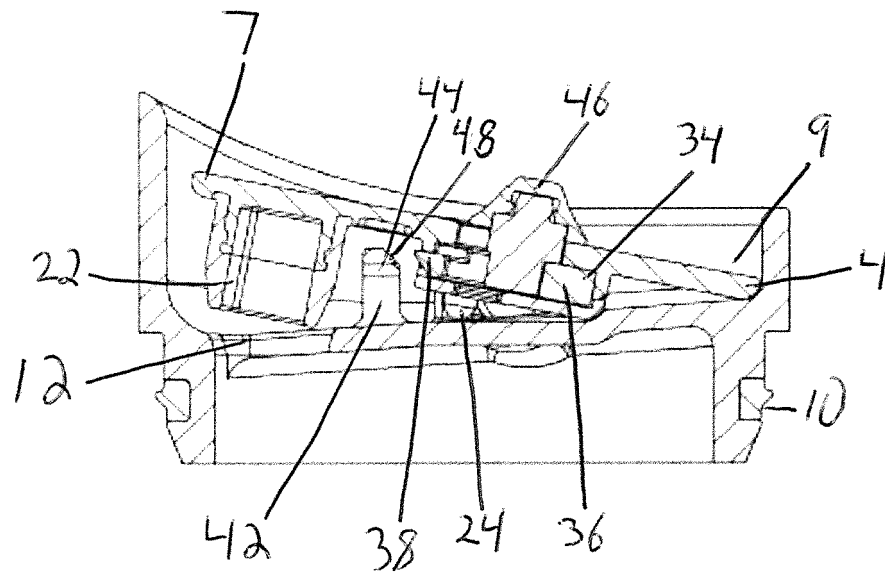


FIG. 4

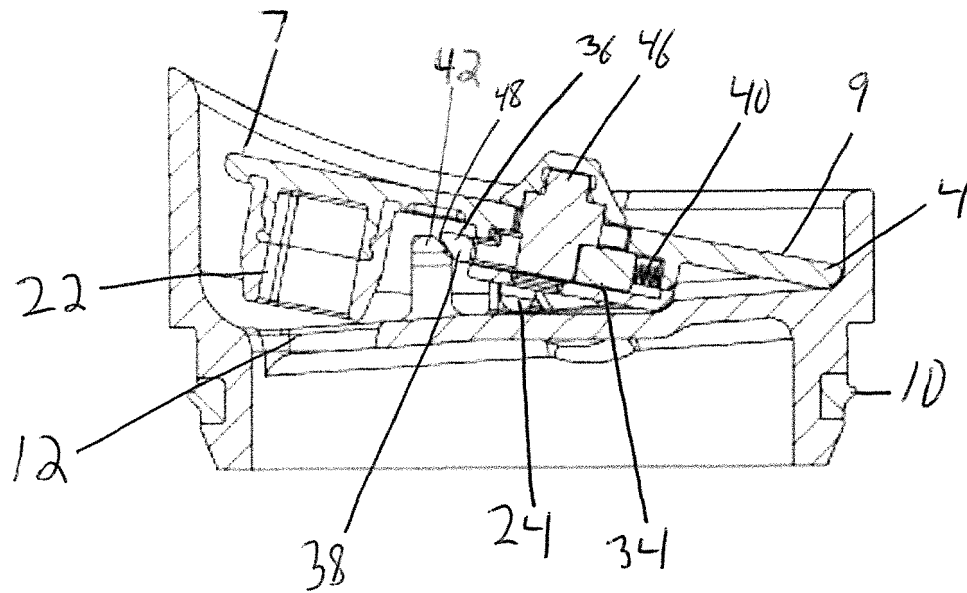


FIG. 5

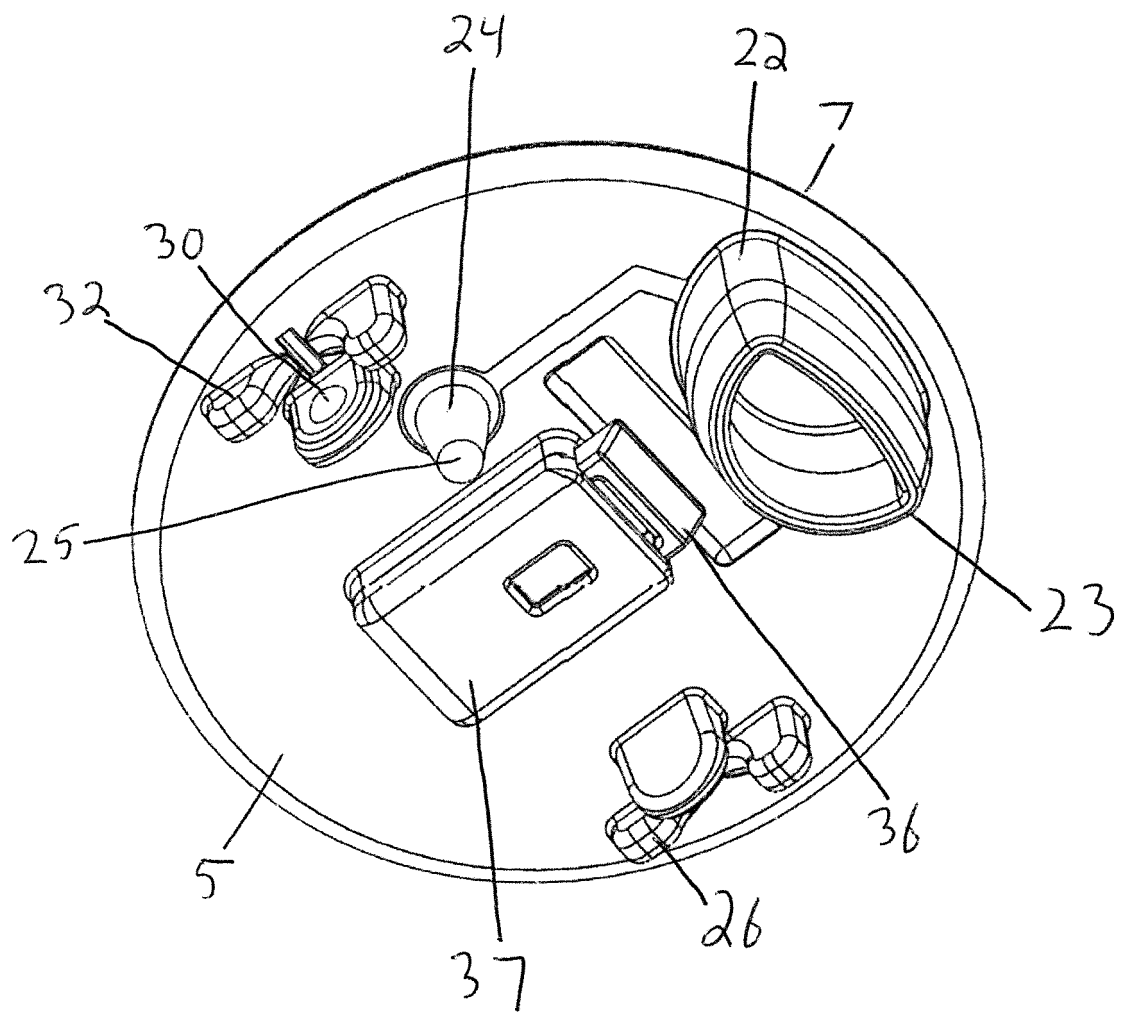


FIG. 6

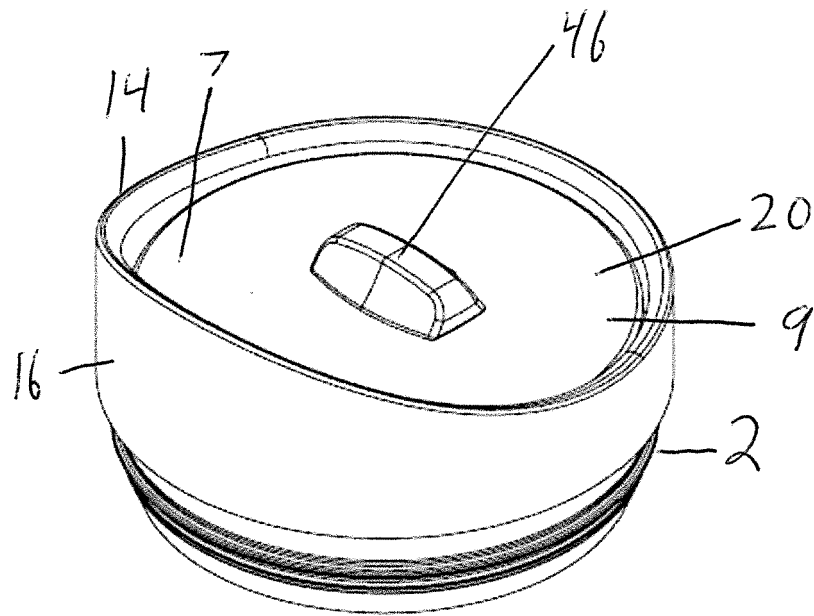


FIG. 7

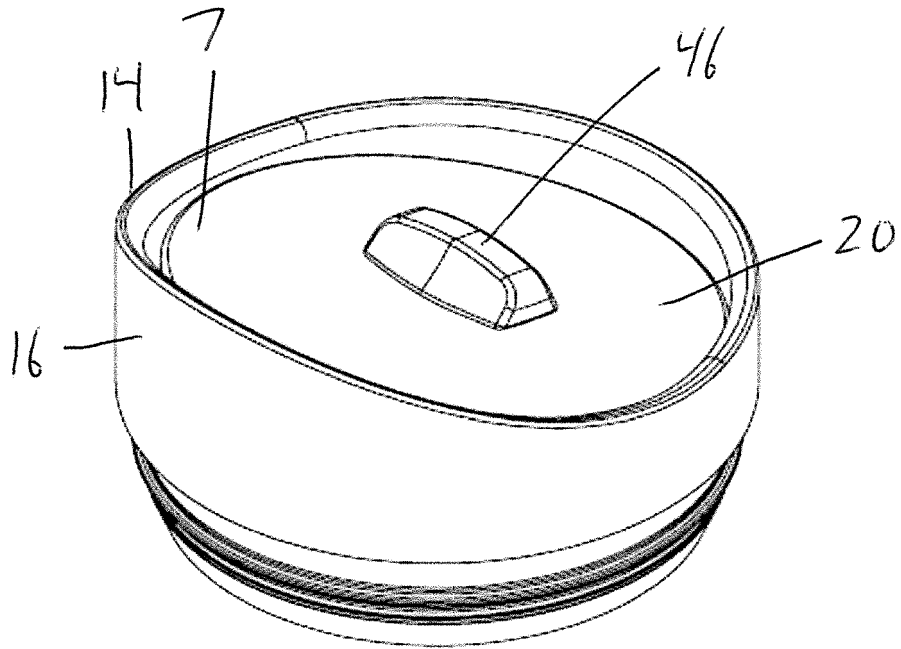
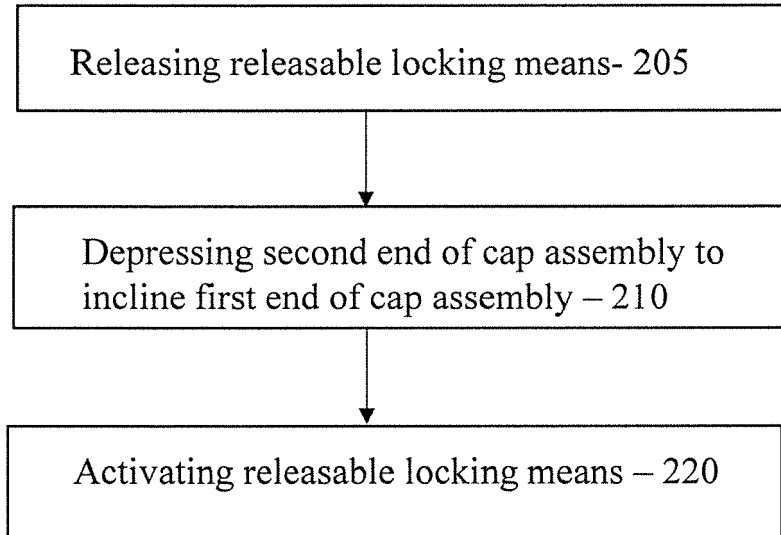
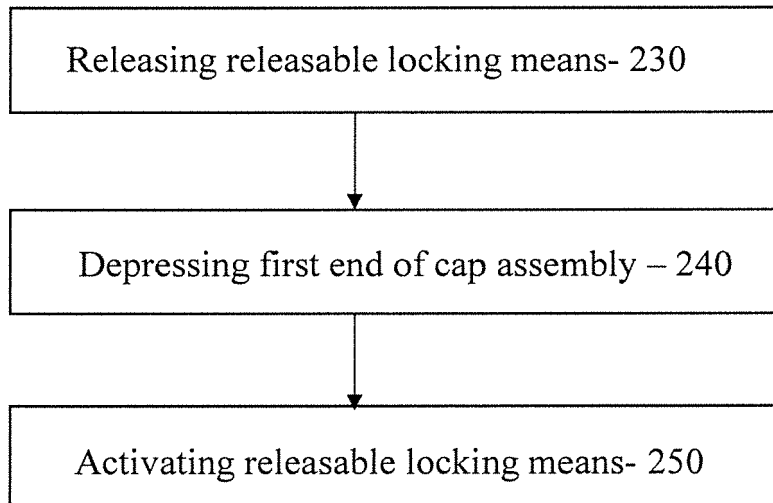


FIG. 8

**LOCKING TILTABLE LID ASSEMBLY IN THE OPEN
POSITION STARTING FROM THE CLOSED POSITION**



**LOCKING TILTABLE LID ASSEMBLY IN THE
CLOSED POSITION STARTING FROM THE OPEN
POSITION**



200

FIG. 9



EUROPEAN SEARCH REPORT

Application Number
EP 18 19 8689

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	EP 2 103 539 A1 (DART IND INC [US]) 23 September 2009 (2009-09-23) * paragraph [0019] - paragraph [0022]; figures 1, 4, 5, 7 *	1,2,6, 9-11 12	INV. B65D47/24 B65D47/20
X A	US 5 579 961 A (ZIMMERMAN LARRY G [US]) 3 December 1996 (1996-12-03) * column 2, line 6 - line 44; figures 6-7 *	1,2,9-11 12	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D A47J A47G
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 6 March 2019	Examiner Bridault, Alain
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

 1
EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 18 19 8689

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

06-03-2019

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2103539 A1	23-09-2009	AT 522447 T	15-09-2011
		AU 2009200891 A1	08-10-2009
		CA 2655704 A1	21-09-2009
		CN 101549769 A	07-10-2009
		DK 2103539 T3	31-10-2011
		EP 2103539 A1	23-09-2009
		ES 2372657 T3	25-01-2012
		JP 2009227342 A	08-10-2009
		KR 20090101105 A	24-09-2009
		MY 154494 A	30-06-2015
		PL 2103539 T3	31-01-2012
		PT 2103539 E	06-10-2011
		US 2009236373 A1	24-09-2009

US 5579961 A	03-12-1996	NONE	
