

Jan. 8, 1957

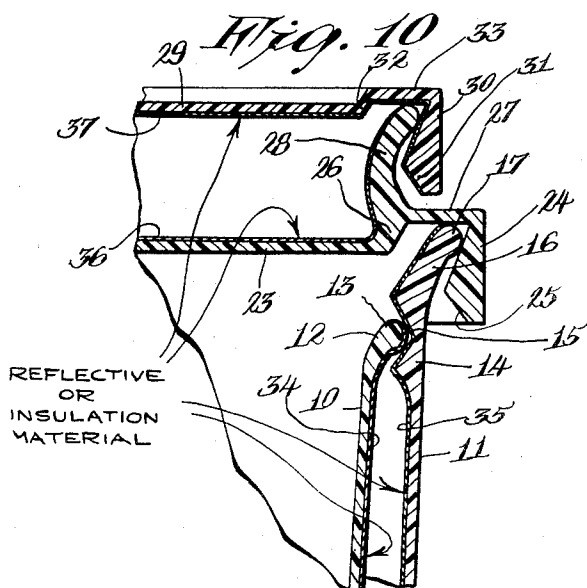
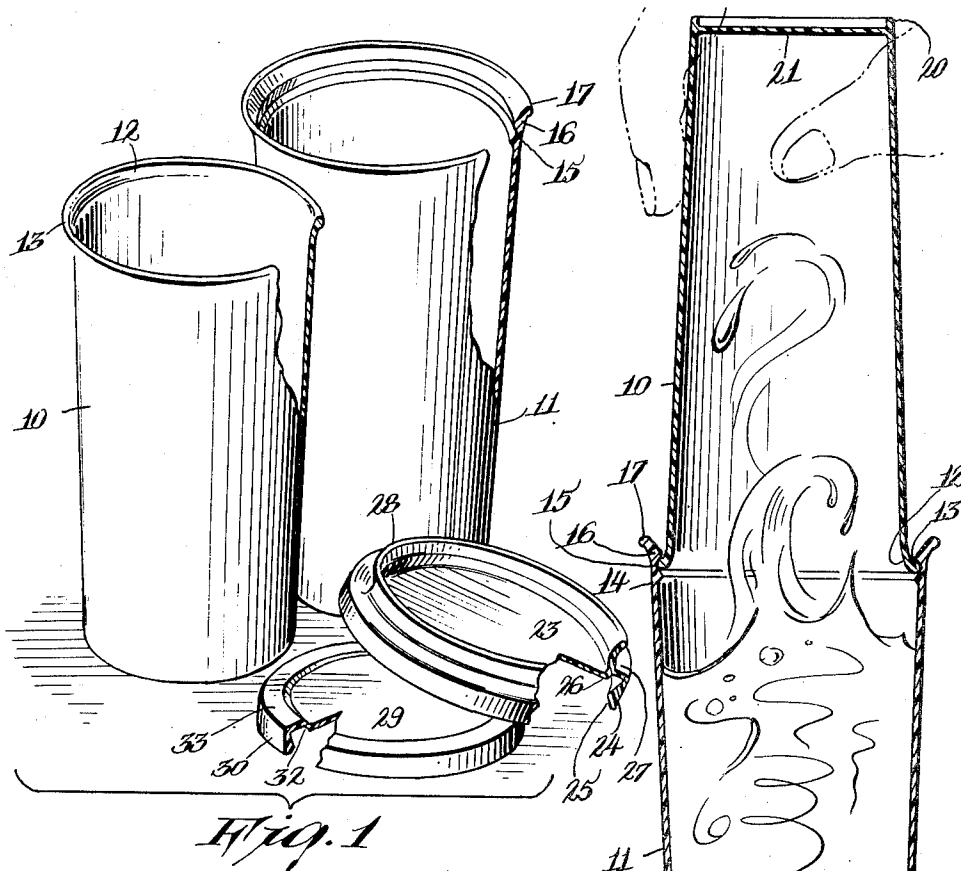
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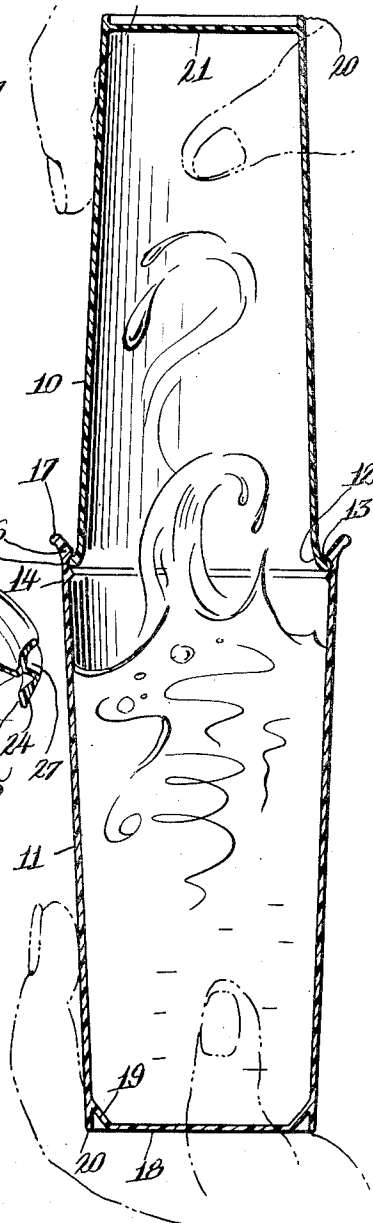
DOUBLE-WALLED TUMBLER AND SEAL

Filed Jan. 12, 1953.

3 Sheets-Sheet 1



REFLECTIVE
OR
INSULATION
MATERIAL



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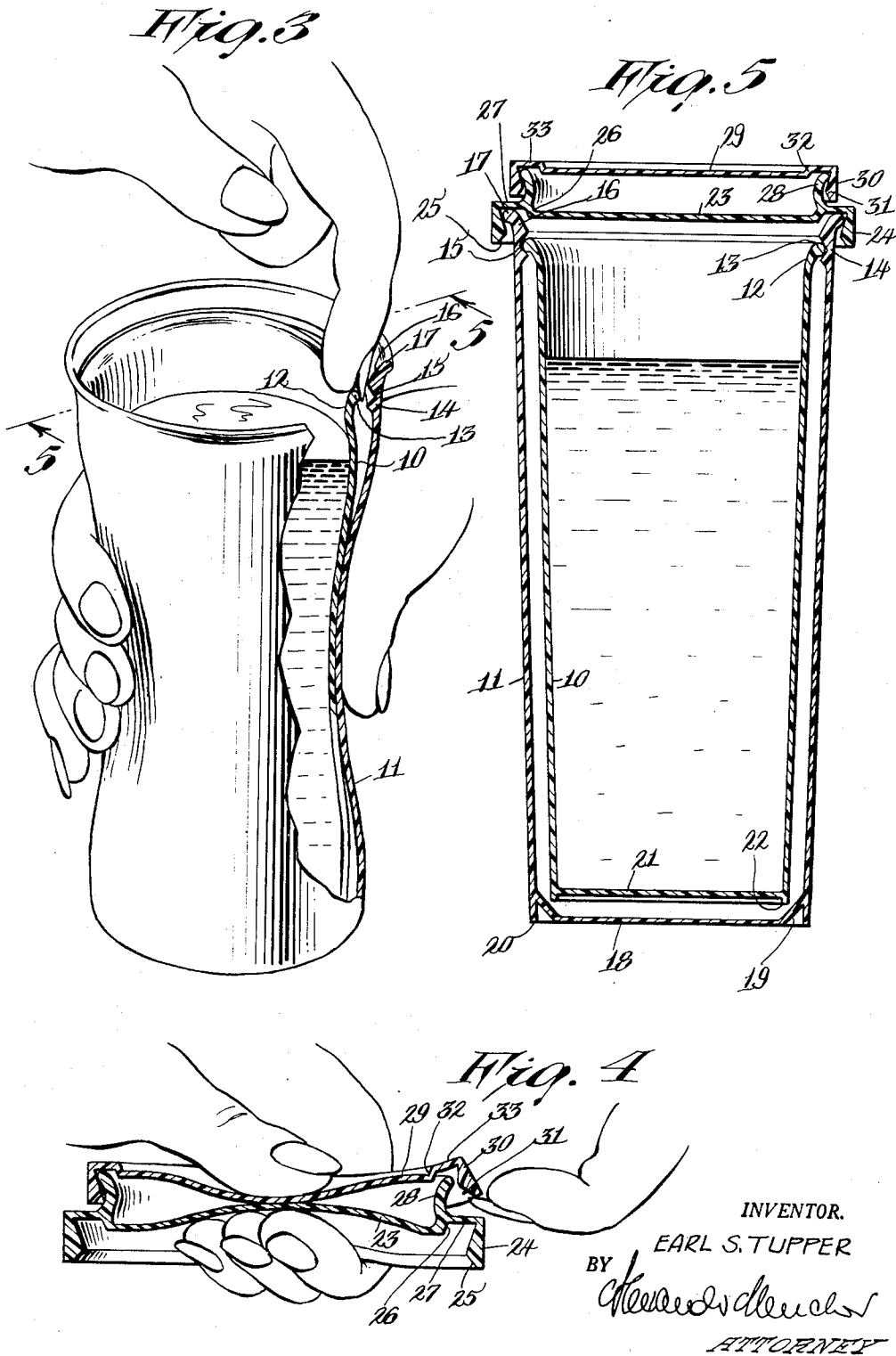
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DOUBLE-WALLED TUMBLER AND SEAL

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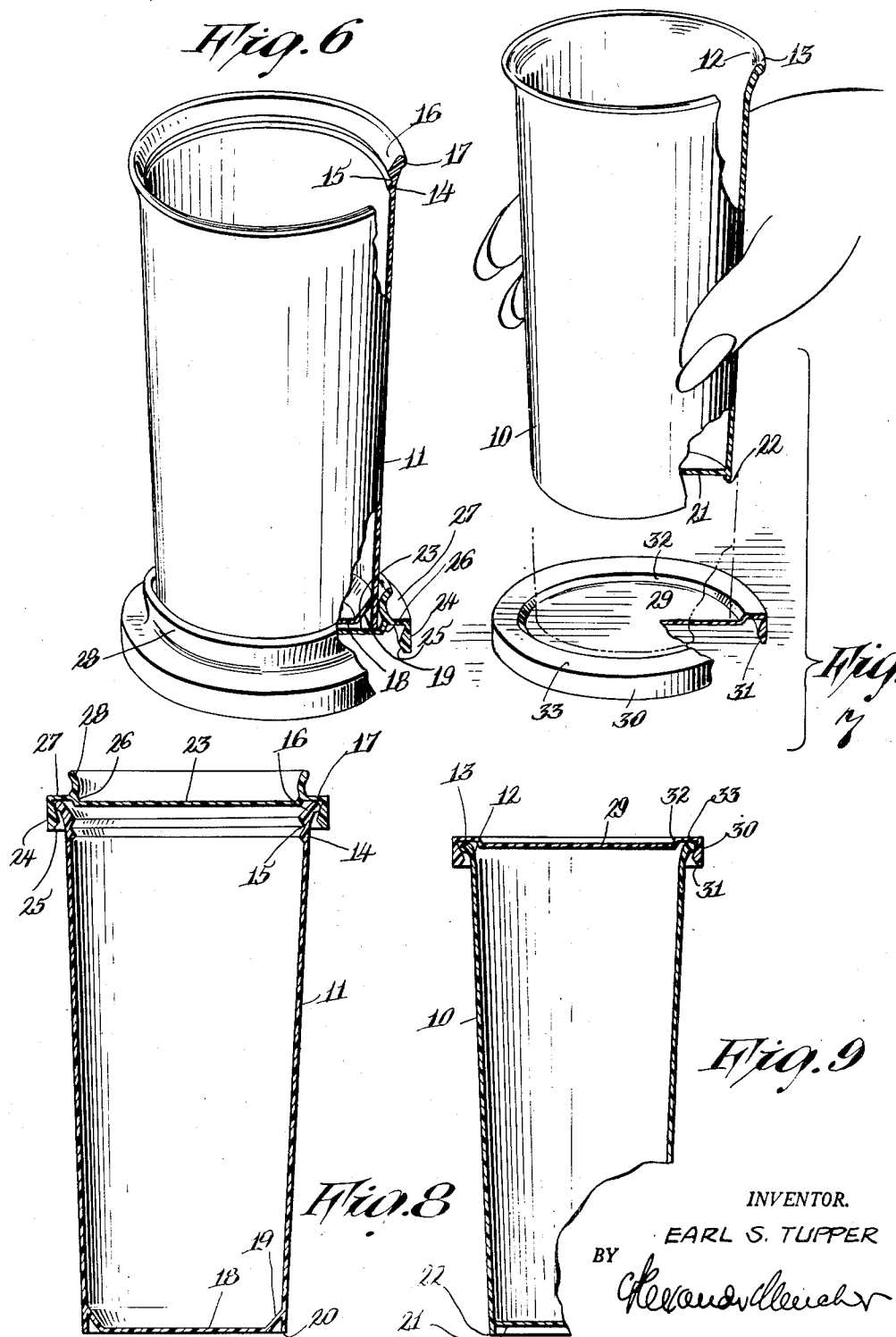
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DOUBLE-WALLED TUMBLER AND SEAL

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DOUBLE-WALLED TUMBLER AND SEAL

Earl S. Tupper, Upton, N. Y.

Application January 12, 1953, Serial No. 330,716

5 Claims. (Cl. 150-0.5)

This invention relates generally to a vacuum type of receptacle made of engageable parts which are capable of independent and cooperative uses to serve other functions including purposes of a beverage shaker, a pair of tumblers, a pair of coasters and an auxiliary receptacle.

The main object of the invention resides in the provision of a double-walled vacuum type of receptacle made of a pair of nested, spaced and interengaging vessels and having a removable closure member, the said receptacle and sealing member being formed of polyethylene or other material having similar physical characteristics.

A further object of the invention resides in the provision of a vacuum type of receptacle having a double-walled vacuum type of closure member, the upper wall of said closure member being in the form of a sealing member whereby the closure member is capable of serving as an auxiliary vacuum type of receptacle to store food, pharmaceuticals and other articles.

Another feature of the invention resides in the provision of a vacuum type of receptacle wherein the engageable parts form air-tight joints when in engagement and wherein the parts are easily disassembled; the said receptacle being resilient but locally distortable for performing the functions set forth hereinafter.

Another object of the invention resides in the use of material helpful to functioning of specified structure, said material being polyethylene or other plastic material having similar characteristics; said material having resiliency with local distortability and does not absorb and is not readily wetted by water, is odorless; resistant to acids, solvents and other chemicals, will not soften at ordinary temperatures, is unbreakable, has flexibility; is frictional and waxy to the touch, is light in weight, is unaffected at working temperatures and affords a sterile medium for and consequently is resistant to mildews, microorganisms and insects.

The device herein embodies some of the structure described in U. S. Patent Number 2,487,400 granted to the applicant herein on November 8, 1949.

A further feature of the invention resides in the provision of a vacuum type of receptacle wherein the parts are moldable by compression or injection, which is economical to manufacture, durable, easy to clean, and sanitary and efficient in operation.

Other incidental features of the invention will hereinafter appear in the progress of the disclosure and as pointed out in the appended claims.

Accompanying this specification are drawings showing forms of the invention wherein:

Figure 1 is a view in perspective of the vacuum type receptacle parts disassembled and shown partly in section and comprising tumblers and closure member parts.

Figure 2 is a longitudinal sectional view of the tumblers in sealed engagement with each other at the rim portions for the formation of a cocktail shaker type of device.

Figure 3 is a view in perspective of the tumblers shown

2

in Figure 1 in nested and partial engagement with each other, the said view being partly in section and being shown either in the process of creating a partial vacuum between the tumbler walls prior to complete engagement, or in the process of initially disengaging the rim of the inner tumbler from the outer tumbler.

Figure 4 is a view in section showing the closure member parts in engagement and wherein the central walls thereof are squeezed together either for purposes of removal of the upper sealing member from the main body of the closure member or for purposes of creating a partial vacuum between the respective walls prior to complete engagement.

Figure 5 is a sectional view along the length of the tumblers when in internal engagement with one another to produce a double-walled receptacle and having a double-walled closure member serving as a top seal for the receptacle.

Figure 6 is a view in perspective showing the larger tumbler partly in section and standing on one part of the closure member serving as a coaster.

Figure 7 is a view in perspective of the smaller tumbler partly in section and shown in the process of being lifted from another part of the closure member.

Figure 8 is a longitudinal view of the large tumbler shown in sealed position by the main part of the closure member, said view being in section.

Figure 9 is a longitudinal sectional view of the small tumbler shown in sealed position by the cover part of the closure member.

Figure 10 is an enlarged and partial sectional view of the complete and closed double-walled vacuum type receptacle embodying the use of reflective or insulating surfaces.

In accordance with the invention herein, there are provided a pair of conventional tumblers of different sizes permitting one to nest within the other, numeral 10 indicating the smaller and numeral 11 indicating the larger of the tumblers. These tumblers are preferably formed of a resilient and locally distortable material such as polyethylene or other material having similar physical characteristics.

Tumbler 10 as shown is provided with an outwardly flared lip 12 terminating in a rounded rim or bead 13, while larger tumbler 11 is provided with an outwardly flared portion which may be thickened as at 14 to accommodate a peripheral notch on the inner face such as V notch 15, said portion 14 terminating in a peripheral rim 17.

The bottom of tumbler 11 indicated by numeral 18 is laterally and inwardly spaced from the bottom peripheral edge 20 and is secured to the side wall by a concentric and outwardly inclined wall 19. The bottom wall 21 of tumbler 10 horizontally extends to the side wall but is vertically offset from the bottom edge 20 thereof.

When tumblers 10 and 11 are in the process of being nested together, inclined wall 19 of tumbler 11 serves as a centering bearing for the bottom edge 20 of tumbler 10 before engagement is effected between rim 13 of tumbler 10 within notch 15 of tumbler 11 as seen in Figure 5. Upon engagement of rim 13 with notch 15, bottom edge 22 of tumbler 10 is elevated from the inclined side wall 19 of tumbler 11 and the inner tumbler 10 is freely suspended from tumbler 11. However, where relative displacement of the tumblers 10 and 11 takes place as by movements, dropping and squeezing as will hereinafter appear, inner tumbler 10 is prevented from engaging or fully contacting the inner surface of the walls of tumbler 11 by both the inclined wall 19 and the flared portion 12 engaging notch 15 at bead 13.

Thus, and as shown in Figure 3, it is very simple to

3

engage tumblers 10 and 11 by introducing 10 into 11 and forcefully inserting rim 13 into notch 15. The inner diameter of notch 15 is slightly smaller than the outer diameter of rim 13 for sealing purposes. When rim 13 has been almost fully forced into notch 15 as shown in Figure 3, the outer tumbler 11 is squeezed while a portion of rim 13 is held in disengagement by the fingernail to drive the air out of the space between the tumbler walls thereby to form a partial vacuum. The fingernail engaging rim 13 and separating it from a part of notch 15 is thereafter released and full engagement is effected between rim 13 and notch 15.

In separating the tumblers 10 and 11, the same procedure shown in Figure 3 is followed such as squeezing the walls of the tumblers together and a fingernail inserted adjacent the point of squeezing to engage a displaced portion of rim 13. In this way, both the partial vacuum is broken and the tumblers separated from each other by sliding motion of the finger or fingernail along the rim 13.

The closure member is comprised of two parts; the main part consists of a central wall 23 having a peripheral and upwardly extending grooved rim comprised of an outer wall 24 having an offset inner face portion 25, an inner wall 26, a connecting wall 27 and a concentric, upwardly extending wall 28 along or offset from inner wall 26, said wall 28 as shown being outwardly flared and serving as an auxiliary neck for a sealing or auxiliary cover of the closure member. The cover has a central wall 29, an upwardly extending peripheral grooved rim consisting of an outer wall 30 having an offset inner face portion 31, an inner wall 32 and a connecting wall 33.

The parts making up the closure member are made of polyethylene or other material having similar physical characteristics.

It is to be observed that when tumblers 10 and 11 are in engaged position the faces thereof in the air-gap therebetween may be provided with insulating or reflective lining material indicated by numerals 34 and 35. Similarly, the portions of the sealing cover and the main body of the closure member may be provided with insulating or reflective material indicated respectively by numerals 37 and 36 respectively. The linings mentioned serve as non-conductors to prevent absorption of cold or heat by the walls of the tumblers themselves and add to the insulating qualities of the vacuum type of receptacle.

In Figure 2 is shown the combination of tumblers 10 and 11 engaging one another at opposing rim portions between bead 13 and notch 15 to form a cocktail shaker. In this connection, it is to be observed that a partial vacuum can be created by squeezing the member 11 and also the member 10 before full engagement between rim 13 and notch 15. Because the tumblers 10 and 11 are made of polyethylene or other similar material having similar physical characteristics, a live seal is effected since the rim 13 has a greater outer dimension than the inner dimension of notch 15. For disengaging tumblers 10 and 11 the partial vacuum is broken by squeezing tumbler 10 and disengaging a portion of rim 13 from notch 15, whereupon the remaining rim part is peeled from the remaining portion of notch 15.

When tumblers 10 and 11 are required to serve the purpose of independent tumblers as shown in Figures 6 and 7, each tumbler may be provided with a coaster obtained from the closure member parts. Thus the larger tumbler 11 utilizes the main part of the closure member, the neck portion 28 serving as a surrounding and guiding wall while tumbler 10 utilizes the sealing cover of the closure member as a coaster resting within the depressed central wall 29 and surrounded by the inner groove wall 32.

In the utilization of tumblers 10 and 11 for independent use with sealing members and as shown in Figures 8 and 9, the closure member part wall 24 has a smaller inner lateral dimension than the outer lateral dimension of rim 17 whereby an effective and a live seal is pro-

4

vided; while in connection with the cover seal shown for tumbler 10, wall 30 similarly has a smaller inner lateral dimension than the outer lateral dimension of rim 13. It is furthermore to be observed that the inner faces of walls 24 and 30 of the closure member parts are downwardly and inwardly tapered whereby the seal becomes tighter as the sealing parts are progressively pulled for removal purposes.

By referring to Figure 4, it is further understood that the inner lateral dimension of wall 30 of the closure member covering part is less than the outer lateral dimension of neck 28 whereby an effective seal is made possible between the parts.

In practice, tumbler 10 is capable of snapping on to tumbler 11 when the former is inverted to form a sealed air and liquid-tight shaker with a partial vacuum produced by squeezing either or both tumblers before sealing. When lip 12 is engaged by V notch 15, the resultant shaker is held together both by lock and vacuum.

After a beverage or other fluid is mixed in the shaker so formed, the contents may be poured into tumbler 10 and the latter dropped into the larger or outer tumbler 11 to form a double-walled tumbler. The use of an outer tumbler in such an assembly eliminates exposed sweating of the receptacle and preserves the coolness of the drink.

During fitting of tumbler 10 inside tumbler 11, a vacuum therebetween is created, as has heretofore been mentioned, by squeezing the wall of the outer tumbler inwardly. As shown in Figure 3 the space between the opposing walls in the air space is reduced and thereafter lip 12 is made to engage in V notch 15 resulting in the production of a partial vacuum. Thus is presented an open double-walled vacuum tumbler. This type of double-walled vacuum tumbler is further designed to receive a seal, but as shown and described, the seal is also of the double-walled vacuum type resulting in a closed vessel having double walls throughout. Of course, it is understood that the double-walled vacuum tumbler can utilize any type of seal which is not double-walled.

I wish it understood that minor changes and variations in the size, material, integration and location of parts may all be resorted to without departing from the spirit of the invention and the scope of the appended claims.

I claim:

1. A receptacle comprising a pair of plastic and resilient vessels substantially of similar shape and of differing over-all dimensions for interfitting and opposite engagement between the rim of the smaller vessel and the rim area of the larger vessel, said vessels being capable of selectively serving as a double-walled vacuum and coverable type of receptacle when in interfitting position and as a shaker when in oppositely engaged position, the smaller vessel having a flared rim and the larger vessel having a rim marginal portion provided with an intermediate groove on the inner face adapted to be sealably engageable with the said flared rim when the smaller vessel is either in spaced interfitting position depending from said groove or when the smaller vessel is axially opposed to the larger vessel.

2. A receptacle comprising a pair of plastic and resilient vessels substantially of similar shape and of differing over-all dimensions for interfitting and opposite engagement between the rim of the smaller vessel and the rim area of the larger vessel, said vessels being capable of selectively serving as a double-walled vacuum and coverable type of receptacle when in interfitting position and as a shaker when in oppositely engaged position, the smaller vessel having an expanded rim and the larger vessel having a flared rim marginal portion of enlarged thickness, the inner wall of said flared rim marginal portion at the lower end having a continuous groove adapted to be sealable engageable with said expanded rim when the smaller vessel is either in spaced interfitting position depending from said groove or when

5

the smaller vessel is axially opposed to the larger vessel, the said flared rim marginal portion being adapted to receive a covering member when the vessels are in interfitting position.

3. A receptacle as set forth in claim 2 wherein there is provided a cover member sealably engageable with said flared rim marginal portion of the larger vessel when the vessels are in interfitting position, said cover member being comprised of a pair of spaced walls.

4. A receptacle comprising a pair of vessels substantially of similar shape and of differing over-all dimensions for interfitting and opposite engagement between the rim of the smaller vessel and the rim area of the larger vessel, one of the vessels being of resilient material, the smaller vessel having an expanded rim, the larger vessel having a continuous groove on the inner side of the marginal rim portion for sealable engagement with said expanded rim of the smaller vessel, said larger vessel having a bottom wall having a peripheral and upwardly inclined side wall portion serving as a bottom stop for the smaller vessel.

6

5. A receptacle as set forth in claim 2 wherein at least one of said vessels at least at the expanded rim of the smaller vessel or at the rim marginal portion of the larger vessel is formed of a locally deformable plastic and resilient material.

References Cited in the file of this patent

UNITED STATES PATENTS

178,622	Ford	June 13, 1876
663,733	Crane	Dec. 11, 1900
664,472	Fenn	Dec. 25, 1900
913,337	Wiffin	Feb. 23, 1909
925,781	Mathy	June 22, 1909
1,281,966	Irwin	Oct. 15, 1918
2,487,400	Tupper	Nov. 8, 1949
2,614,727	Robinson	Oct. 21, 1952
2,626,647	Barton	Jan. 27, 1953
2,679,875	Baldanza	June 1, 1954
2,695,645	Tupper	Nov. 30, 1954