

PATENT SPECIFICATION (11)

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- (21) Application No. 274/74 (22) Filed 3 Jan 1974 (19)
 (31) Convention Application No. 351 697 (32) Filed 16 April 1973 in
 (33) United States of America (US)
 (44) Complete Specification published 11 Feb. 1976
 (51) INT. CL.³ B01F 3/08
 (52) Index at acceptance
 BIC 12 18E2B 5



(54) IMPROVEMENTS IN OR RELATING TO A BEVERAGE SHAKER OR RECEPTACLE

(71) We, DART INDUSTRIES INC., a corporation organised and existing under the laws of the State of Delaware, United States of America, of 8480 Beverly Boulevard, Los Angeles, California, 90048, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates generally to a household receptacle. It is an object of this invention to provide a receptacle comprising an assembly of parts, the whole thereof being capable of serving many functions including use as a dispenser, a beverage shaker, a fluid receiver, and a tumbler.

According to this invention there is provided a household receptacle suitable for use as a beverage shaker or a dispenser, said receptacle comprising a container vessel having an open mouth and a mouth rim, a disengageable closure of dome-like configuration having a complementary mouth adapted to engage the mouth of the container vessel and to augment the capacity thereof, and a removable blending element having an annular ring in use positionable on said lower vessel and further being retained in position by said closure, said element also having a plurality of radiating spokes integral with said ring and baffles positioned intermediate said spokes at positions around said annular ring.

In one embodiment of the invention the receptacle comprises a closure member of polyethylene or other plastics material having similar physical properties and a receiving container member. The closure member may have an elevated central wall portion to increase the capacity thereof and a peripherally grooved edge to engage the rim of the container member in a seal-tight relationship. The container member, furthermore, is preferably, but not exclusively also made of polyethylene or other plastics material having similar physical properties.

Embodiments of the invention may be used, for example, as a beverage shaker and dispenser, a dispensing device, or a food

or fluid receiver. Conveniently the closure and container may include specially shaped bottom and top walls to create a desired fluid flow pattern therein. Furthermore, the blending element may be positioned adjacent the top of the container. Such blending element greatly assists the mixing of fluids within the container as the fluids may pass over and around the element upon shaking the receptacle.

Advantageously the capacity of the container member may be increased when the closure is applied thereto in seal tight relationship for storage, packaging and dispensing purposes, the said closure member being provided with an opening in the top wall and with an associated seal therefor.

Preferably the interior of the receptacle may be capable, by reason of resiliency and local distortability of the material utilised in forming the embodiments, of being under a partial vacuum when in a closed position thereby enabling increased sealing engagement between the closure member top wall opening and seal therefor.

In order that the invention may be more readily understood and so that further features thereof may be appreciated the invention will now be described by way of example with reference to the accompanying drawings in which:—

Figure 1 is an exploded view in perspective of a receptacle in accordance with the invention showing a spout and seal therefor forming part of the closure member, the closure member being attachable to a container member,

Figure 2 is a side view of the receptacle of Figure 1 when assembled,

Figure 3 is a top plan view of the closure shown in Figure 1,

Figure 4 is a top plan view of the blending element shown in Figure 1.

Figure 5 is a partial sectional view along the axis line 5—5 of the assembled receptacle shown in Figure 2,

Figure 6 is a sectional view of the blending element taken along line 6—6 of Figure 4, and

Figure 7 is an exploded partial cross-

sectional view of the blending element and closure assembled upon the container.

Referring to the drawings a preferred embodiment of the invention comprises a vessel 10 used as a tumbler or container member, provided with a flared edge or rim 11 and constituting the lower half of the fluid or other media receiving compartment of a receptacle. Vessel 10 is preferably made of an unbreakable resilient and locally distortable material such as polyethylene or similar plastics material to augment sealability with a closure member 12. The closure member 12 for vessel 10 as illustrated in Figures 1 to 3, 5 and 7 has a four-fold function: namely as a removable, seal-tight closure for vessel or tumbler 10; secondly, as a capacity booster therefor; thirdly as an auxiliary feed mouth and dispensing spout for the vessel when the closure member 12 is in seal-tight engagement therewith; and fourthly to retain a blending element 14 in a substantially fixed position in the assembly.

Where the assembly or receptacle is used as a beverage or other food shaker, closure member 12 is removed, the ingredients added to vessel 10, the closure applied at its grooved sealing edge to the vessel rim 11 and finally spout 13 provided in the closure member 12 is covered by a cap 15. Prior to replacing the closure member 12 the blending element 14 is positioned in the vessel on a ledge 16. This element 14 is thereafter securely retained in this position due to the engagement therewith of an annular wall 17 of closure 12 as may best be seen in Figures 5 and 7. The assembly is then shaken and thereafter the spout seal is removed and the assembly serves as a dispenser of any type of the mixed liquid food drink such as malted milk and mixtures used for baking.

Closure member 12, moulded or formed from polyethylene or other plastics material having similar physical characteristics, is round in cross-section and comprises a continuous dome-like side wall 18 terminating in a top wall 19, the latter having a reduced feed and spout functioning neck 20 communicating with an opening 21 in the top wall. Neck 20 is provided with a seal of any desirable type.

The seal for the spout or neck 20 as shown in Figure 1 cooperates with the flared peripheral spout 13 and comprises a conventional cap-like member 15 suitably removably attached to closure top wall 19, for example by hinge pivots 23.

Integral with the lower edge of side wall 18 of closure 12, but radially outwardly spaced therefrom, is an upwardly disposed and grooved peripheral rim defining an upwardly extending peripheral groove having inner and outer walls 24 and 25, the inner wall being spaced from closure side wall 18 by a concentric well 26 including the an-

nular wall 17. The outer wall 25 of the groove has, at its lowermost point as shown in Figure 7, an inner diameter which is smaller than the outer diameter of the rim of the lower vessel. The closure member side wall 18 is smoothly curved inwardly in its progression toward top wall 19 to generate the dome-like configuration mentioned above. This feature is accentuated by the fact that the container or vessel 10 is so shaped (as can be seen in Figure 5) that these together produce a fluid flow pattern that directs fluid in the vicinity of the assembly side walls back toward the centre thereof. This likewise creates a maximum of agitation as the fluid passes over the differently shaped areas of blending element 14 which is discussed more fully hereinbelow.

Closure member 12 is applied to the vessel 10 at the flared portion 27 by hand conformation along the axis of the grooved rim top wall 28 and is removable therefrom by a peeling off type of procedure, namely by applying the forefinger to top wall 19 and the thumb under the flared portion 29 and subsequently supporting the closure member 12 and the vessel 10.

Sealing is effected between the upper part of the inside of the outer defining wall 25 and the inside of the connecting wall 28 relative to the vessel mouth or rim 27 where the lateral dimension of the inside of the outer groove wall 25 is less than the outside diameter or lateral dimension of vessel flared portion 27 as most clearly illustrated in Figure 7, all owing to resiliency of the groove walls 24, 25 and 28.

As is discussed above and as is most apparent from Figure 5, the vessel 10 includes a side wall structure 30 that approximates a bell-shape, the open-end of which terminates with the flared portion or rim 27. Likewise, an integral vessel bottom wall 31 includes a centre positioned internally projecting hemispherical portion 32. This portion 32 acts to direct fluids in the central area of the vessel outwardly towards the side walls 30. Such is, of course, contrary to the flow pattern spoken of above that is generated by the closure member 12. Thus, as the assembly is shaken in use, a fluid flow pattern is created substantially as is shown in Figure 5 by arrows 22. This ensures a maximum mixing in that with such a basic pattern virtually all of a fluid contained by the receptacle will be subjected to various eddy flow patterns as it passes over the differing areas of the blending element 14.

Blending element 14, best depicted in Figures 4 and 6, includes an annular ring member 33 which is of a diameter approximating that of the vessel 10 in the area of ledge 16. Thus as indicated, such member is positionable on that ledge and is retained there by annular wall 17 of closure 12

(Figure 7). This element further includes a plurality of spokes 34 which emanate from a hub 35. Hub 35, further includes two projections 36, extending axially in opposite directions therefrom. These projections 36 serve as handle means that the user may employ in the removal and insertion of the blending element.

In addition to spokes 34 annular ring 33 also has an integral part thereof a plurality of inwardly projecting semi-circular baffles 37. These are spaced intermediate the points of attachment of the spokes with the ring and, of course, tend to disrupt any flow of fluid along or in the area of the walls of the assembly to generate a maximum mixing action with a minimum of obstructions to fluid passing through element 14. Likewise, spokes 34 are of a tear-drop shape thereby presenting a maximum transverse exposure to fluids within the container at their approximate center. This also therefore will combine maximum mixing with minimum obstruction. Each of these elements spokes 34 and baffles 37 are further reinforced by ribs 38 which extend both vertically above and below same. The ribs 38 which are a part of the spokes are of a similar shape as is evident in Figure 6.

It is to be understood that minor changes and variations in the material, integration, location, size and shape of parts may be made to the above described embodiment of the invention within the scope of the appended claims.

WHAT WE CLAIM IS:—

1. A household receptacle suitable for use as a beverage shaker or a dispenser, said receptacle comprising a container vessel having an open mouth and a mouth rim, a disengageable closure of dome-like configuration having a complementary mouth adapted to engage the mouth of the container vessel and to augment the capacity thereof, and a removable blending element having an annular ring in use positionable on said lower vessel and further being retained in position by said closure, said element also having a plurality of radiating spokes integral with said ring and baffles positioned intermediate

said spokes at positions around said annular ring.

2. A household receptacle as claimed in Claim 1 wherein said closure has a peripheral groove radially outwardly spaced from the mouth of said closure, the outer wall of said groove having a smaller inner diameter than the outer diameter of the mouth rim of the container vessel, said groove being removably engageable at the outer wall thereof with said container vessel mouth rim for seal-tight and yieldable engagement therewith.

3. A household receptacle as claimed in Claim 1 or Claim 2 wherein said closure comprises a sidewall structure of a dome-like configuration having on one wall a filling and pouring spout and a removable closure therefore, and wherein said container vessel has adjacent said open mouth a ledge formed on the side wall thereof and includes in an integral bottom wall a centrally positioned internally projecting portion.

4. A household receptacle as claimed in Claim 3 wherein said blending element engages said ledge.

5. A household receptacle as claimed in any one of the preceding claims wherein said spokes of the blending element are of a tear-drop shape and said baffles thereon are inwardly directed semi-circular shaped projections.

6. A household receptacle as claimed in any one of the preceding claims wherein the side wall of said lower vessel is substantially bell-shaped.

7. A household receptacle substantially as herein described with reference to, and as illustrated in the accompanying drawings.

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