

July 29, 1969

D. S. BABCOCK

3,458,076

TWO-COMPARTMENT PACKAGE

Filed June 26, 1968

2 Sheets-Sheet 1

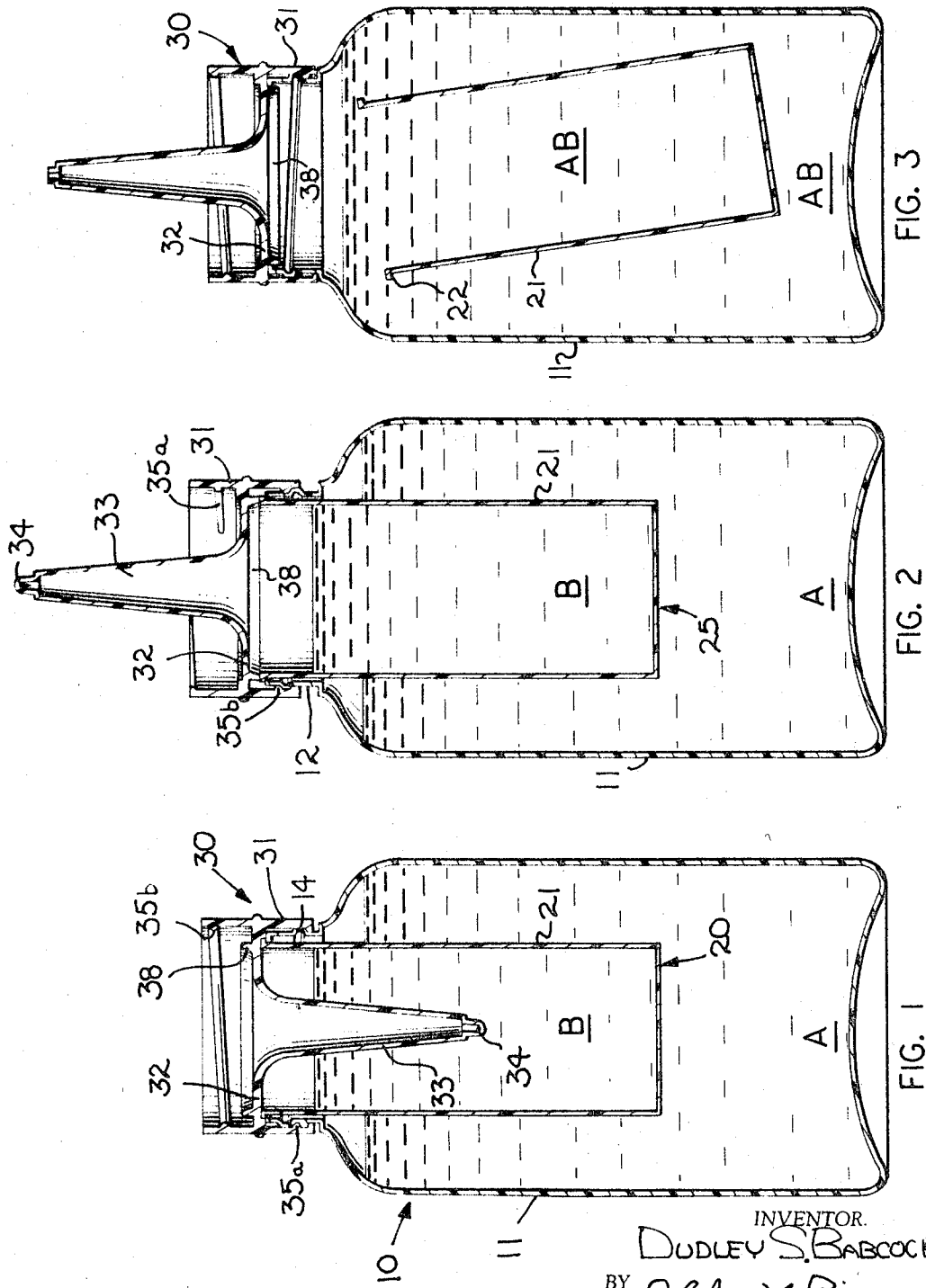


FIG. 3

FIG. 2

FIG. 1

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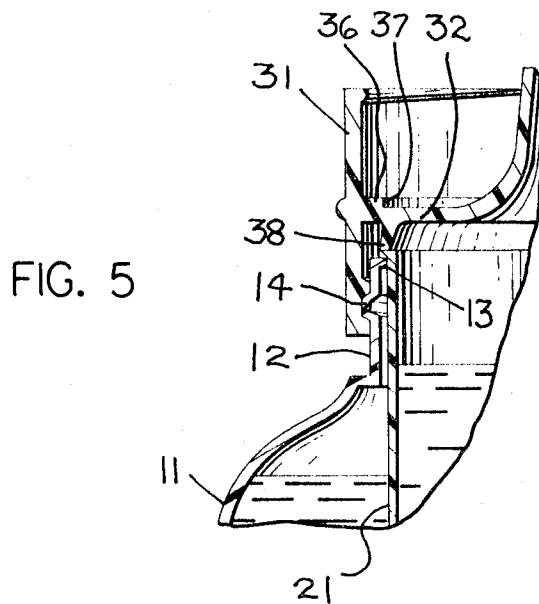
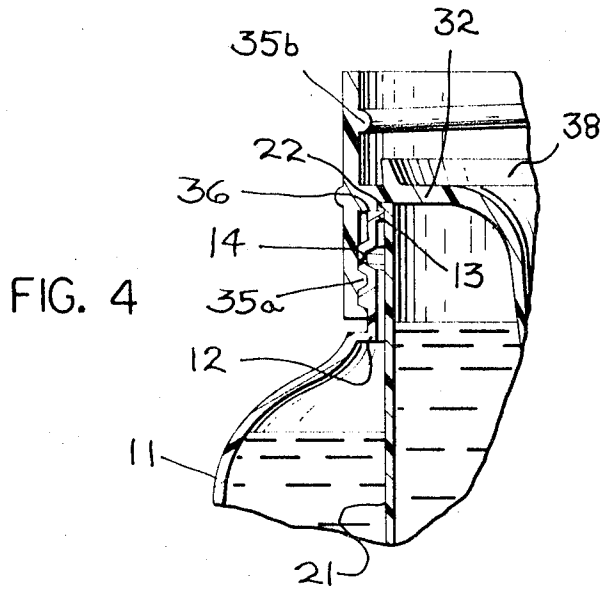
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**TWO-COMPARTMENT PACKAGE**

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12 Claims

**ABSTRACT OF THE DISCLOSURE**

A pair of containers is provided in which the inner container telescopes within the outer container. The outer container has an inwardly directed flange upon which an outwardly directed flange of the inner container is supported. A closure is provided which, when in one position, seals the flange of the inner container against the outer container and which may be moved to another position to force the inner container completely within the outer container.

In the merchandising of certain products, it is frequently desirable to supply two companion products to the consumer in a single package. Thus, many products are, by their very nature, required to be used by the consumer shortly after their manufacture as they lose certain desirable characteristics within a short period of time. And yet, the product can be stored for extended periods of time if a reactive compound thereof is maintained separate from the base compound. In such case, the two compounds may be mixed together to form the desired product shortly before use. In marketing such goods, it obviously is desirable that the reactive compound and the base compound be sold as part of the same package. From an aesthetic as well as a handling standpoint, it is desirable that but a single package be utilized for maintaining such compounds separated.

Accordingly, it is an object of the present invention to provide a package in which two separate products may be contained in a separated condition.

In the past, several attempts have been made to provide a package maintaining such compounds separated. A description of one such container may be had by reference to United States Patent No. 3,347,403.

The present invention provides a package which is more economical and more readily usable than those heretofore known. One of the objections of the prior art packages was either the expense of the package or the fact that it was necessary to manually mix the ingredients from one compartment to the other compartment. The present invention provides a package in which the ingredients from the containers forming the package may be mixed simply by forcing the closure axially downwardly relative to the outer container to force the inner container completely therein. This is possible by virtue of the construction of the two containers and the fact that a single closure is utilized to seal both portions or both containers forming the package.

Accordingly, it is a further object of the present invention to provide a package in which two different products are separated within two individual containers, one of which is telescoped within the other and which are closed by means of a single closure.

It is a further object of the present invention to provide a package as set forth above in which the inner telescoped container may be urged completely within the outer container to mix the respective products by a simple movement of the closure forcing the inner container axially completely within the outer container.

Other objects and advantages of the present invention

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will become readily apparent from the following detailed description taken in conjunction with the annexed sheet of drawings on which:

FIGURE 1 is a cross sectional view of the package of the present invention showing the individual containers in assembled position with the closure member affixed thereto in sealing position.

FIGURE 2 is a view similar to FIGURE 1 showing the closure inverted and in position to urge the inner container completely within the outer container.

FIGURE 3 is a view similar to FIGURE 2 showing the inverted closure in its fully rotated position with the inner container completely within the outer container to permit mixing of the respective contents.

FIGURE 4 is an enlarged fragmentary view of the closure and containers when in the position shown in FIGURE 1.

FIGURE 5 is an enlarged fragmentary view of the closure and containers when in the position shown in FIGURE 2.

Referring now to the drawings, the package includes an outer container 10 having a body portion 11 of any desired cross sectional configuration which terminates at its upper end in a cylindrical neck 12. The neck 12 terminates at its upper end in a radially inwardly directed flange 13 defining a ledge for purposes hereinafter described. Additionally, the neck 12 is provided with means, such as a continuous thread 14, for retaining a closure in engagement therewith. Contained within the outer container 10 is a first product designated by the letter A.

Telescoped within the outer container 10 is an inner container 20, such as a vial, for example. The inner container 20 has a body portion 21 for containing a product B. The body portion 21, although shown as being cylindrical, may be of any desired configuration sized to permit its entry passed the inner edge of the flange 13 into the body portion 11 of the outer container. The body portion 21 of the inner container terminates at its upper end in a radially outwardly directed annular bead or flange 22, the outer periphery of which is slightly larger than the inner periphery of the inwardly directed flange 13. Hence, the inner container 20 may be telescoped within the outer container 10 with the outwardly directed flange 22 supported on the ledge or inwardly directed flange 13. In order that the inner container 20 can be urged completely within the outer container 10, at least one of the flanges 13 or 22 must be readily deformable. And yet, such deformable flange must have sufficient resistance to deformation to retain the inner container in the supported position when it is desired to maintain the respective products A and B separated.

By way of example, the outer container may be blow molded from a thermoplastic material such as high density polyethylene or polyvinyl chloride, in which case the inwardly directed flange 13 will be resilient and readily deformable. The inner container may be a vial formed of a more rigid plastic such as polystyrene or formed of glass. It will be recognized, of course, that these materials are given only by way of example and not limitation as it is possible that the outer container could be formed of a relatively rigid material, and the inner container 20 formed of a material which will permit the outwardly directed flange 22 to be deformed. Furthermore, both the outer container 10 and the inner container 20 could be formed of resilient material.

Affixed to the outer container 10 is a closure 30. The closure 30 has an annular skirt 31 and a panel 32 which extends laterally of the skirt 31 near the axial midpoint thereof. Integrally formed with the panel 32 and extending axially of the skirt 31 is a dispensing spout 33 having a reduced tip 34 which may be snipped off or otherwise

removed (FIGURE 3) to permit dispensing of the product from the package.

The skirt 31 is provided with a first set of threads 35a and a second set of threads 35b on opposite sides of the panel 32. The respective sets of skirt threads 35a and 35b are contoured for engagement with the threads 14 of the outer container. When the spout 33 is extending in a downwardly direction within the inner container 20, the threads 35a of the skirt 31 are engaged with the container threads 14 and the closure 30 functions to maintain the package in a sealed position with the product A being separated from the product B and both products prevented from leaking. In order to insure that the closure 30, when in the sealed position, is not screwed down so tightly as to force the inner container outwardly directed flange 22 past the outer container inwardly directed flange 13, the top panel 32 is formed with an annular ledge 36 which overlies the cylindrical wall of neck 12. Adjacent the annular ledge 36, the top panel is provided with a recessed shoulder 37 which receives the outwardly directed flange 22 when the closure 30 is in the fully sealed position. Thus, when the closure 30 is in the fully sealed position, any excessive downward movement of the closure caused by excessive tightening will cause the annular ledge 36 to be more firmly engaged to the top of the neck 12 and, hence, will prevent the outwardly directed flange 22 from being forced past the inwardly directed flange 14. On the other hand, the recessed shoulder 37 is so contoured with respect to the diameter and thickness of the outwardly directed flange 22 that the top panel 32 sealingly engages the top of such outwardly directed flange 22 when the closure 30 is in a sealing position.

When it is desired to mix the contents of the respective containers 10 and 20, the closure 30 is simply unscrewed from its sealed position of FIGURE 1, inverted, and re-applied as illustrated in FIGURE 2. As may be seen from viewing FIGURE 2, the side of the panel 32 now facing the inside of the respective containers is provided with a downwardly depending annular rib 38. The free end of the annular rib 38 is sized and positioned to engage the top or rim of the inner container 20 as the closure is re-applied to the threads 14 in the position illustrated in FIGURE 2. Continued rotation of the closure 30 into complete engagement with the threads 14 causes the annular rib 38 to be moved axially downwardly and, hence, to force the outwardly directed flange 22 of the inner container past the resilient inwardly directed flange 13 of the outer container, thus causing the inner container to fall completely within the outer container 10. The products A and B contained within the respective containers 10 and 11 are thus brought together in a single chamber and mixed as illustrated at AB in FIGURE 3. The mixed product AB may then be dispensed from the container 10 either by removing the closure 30 or by snipping or cutting the tip 34 therefrom and utilizing the dispensing spout 33.

It will be readily apparent that the present invention will have several modifications and embodiments readily apparent to those skilled in the art. For example, the closure 30 could be provided without the dispensing spout 33 and tip 34. The respective containers may be formed of any desired material subject only to the limitation that one of the flanges 13 or 22 should be deformable to permit the inner container to be urged completely within the outer container 10.

I claim:

1. A multicompartiment package comprising:
  - an outer container having an annular ledge adjacent its upper end,
  - an inner container telescoped within said outer container, said inner container having a radially outwardly extending annular bead sized to overlie said annular ledge and resting thereon,
  - at least one of said annular ledge or said annular bead being deformable to permit said annular bead to be

urged past said annular ledge to the interior of said outer container,

and closure means engaging the upper end of said outer container for closing said package.

2. A multicompartiment package comprising:
  - an outer container having a body portion terminating at its upper end in an annular neck, means on said neck for retaining a closure thereon, and an annular ledge facing inwardly from said neck,
  - an inner container telescoped within said neck, said inner container having a radially outwardly extending annular bead sized to overlie said annular ledge and resting thereon,
  - at least one of said annular ledge or said annular bead being deformable to permit said annular bead to be urged past said annular ledge and into said body portion,
  - and closure means engaged to said neck.

3. The package as defined in claim 2 wherein said annular ledge comprises a radially inwardly directed flange.

4. The package as defined in claim 2, wherein said closure means comprise a single closure engaging and sealing both the inner container and the outer container.

5. The package as defined in claim 2 wherein said closure means comprises a single closure engaging and sealing both the inner container and the outer container when in a first operative position and having means for urging the annular bead of said inner container past said annular ledge to force the inner container completely within said body portion when in a second operative position.

6. The package as defined in claim 2 wherein the means on said neck for retaining a closure comprises a screw thread and the closure means comprises an annular skirt, a transverse panel spanning said skirt and joined thereto near the axial midpoint thereof, first and second sets of threads facing inwardly of said skirt on opposite sides of said panel, said sets formed to respectively engage said screw thread when the closure is in first and second operative positions, means on one side of said transverse panel for sealing both the inner and outer container when the closure is in said first operative position and means on the opposite side of said panel for urging the annular bead of said inner container past said annular ledge to force the inner container completely within said body portion when the closure is in the second operative position.

7. The package as defined in claim 6 wherein the means on the opposite side of said panel includes a downwardly depending annular rib sized to engage the top of the inner container when the closure is in the second operative position.

8. A package for holding two products separately comprising:

- an outer container having a body portion terminating at its upper end in a neck, said neck having a flange extending inwardly therefrom and defining the periphery of a mouth, and means on said neck for retaining a closure thereon,

- an inner container having a body portion sized to telescope within said outer container in the mouth thereof, said inner container body portion terminating at its upper end in an open mouth, said body portion having an outwardly extending flange adjacent said upper end sized to rest upon and be supported by said inwardly extending flange, at least one of said flanges being deformable,

and a closure having an annular skirt and a transverse panel, means for securing said closure to the neck of said outer container in a first sealing position with said transverse panel clamping said outwardly extending flange to said inwardly extending flange to securely retain the inner container in a fixed position within said outer container and further means on said closure to urge the inner container completely within the

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outer container when the closure is moved to a second position.

9. The package as defined in claim 8 wherein said further means on said closure comprises a downwardly depending annular rib sized to engage the top of the inner container to urge it completely within the outer container as the closure is moved to said second position.

10. The package as defined in claim 8 wherein the means on said neck for retaining a closure comprises a screw thread and said closure transverse panel is positioned near the axial midpoint thereof, first and second sets of threads facing inwardly of said skirt on opposite sides of said panel, said sets formed to respectively engage said screw thread when the closure is in said first and second positions.

11. The package as defined in claim 10 further including an annular shoulder on the side of said transverse panel facing inwardly when the closure is in said first position, said annular shoulder encircling the inner container outwardly extending flange radially outwardly therefrom

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and engaging the top of said outer container neck to prevent urging the inner container completely within the outer container when the closure is in said first position.

12. The package as defined in claim 11 wherein said further means on said closure comprises a downwardly depending annular rib sized to engage the top of the inner container to urge it completely within the outer container as the closure is moved to said second position.

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GEORGE T. HALL, Primary Examiner

U.S. Cl. X.R.

206—47; 220—20; 222—129