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3,097,757

CONTAINER-DISPENSER FOR INFANT FEEDING

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3 Claims. (Cl. 215-11)

The present invention relates to an improved container-dispenser for use in the feeding of fluids or liquids to infants. More particularly, the invention relates to an improved container-dispenser, comprising, a fluid containing package, for baby's formula, fruit juices, sterilized water and similar fluids, and a fluid-dispensing nipple, for selectively attaching in a secure manner to the package.

The fluid containing package according to the concepts of this invention may be, as shown, a package of paper or other suitable fluid impervious material in the form of a tetrahedron. The package may be generally of the form produced by the apparatus disclosed in U.S. Patent No. 2,741,079, and additionally has constructional features at the upper corner or apex, as described below, for purposes of the invention.

The apparatus according to Patent No. 2,741,079 has a feature that as the package tetrahedrons are formed, the packages may be filled with fluid through a supply pipe. The package making apparatus and the supply pipe, when maintained in an antiseptic or sterile condition, can be used to package pre-mixed formula and other foods for infant care and feeding.

The fluid dispensing nipple employed according to the concepts of the invention in combination with the tetrahedral fluid container package embodies certain novel concepts of applicant's U.S. Patent No. 2,513,896; particularly the inclusion of structural means for preventing the passage of air bubbles into the stream of fluid or liquid being withdrawn from the container through the nipple; and additionally has constructional features, as described below, for purposes of the invention.

The improved fluid container-dispenser according to the invention is intended to be disposable after being emptied. For example, a mother could use a standard pre-mixed baby formula packaged in the container. In the event of travel, the same standard formula could be available at a drug store or pharmacy. The package and nipple could be wrapped, either integrally or separately, in a sterile manner so that they would be readily available for use in infant feeding. Alternatively, quantities of pre-mixed formula could be purchased by the mother in the container-dispensers for use at home and for easy carrying and use while traveling.

These and other advantages of the invention, as well as the objects thereof, will be apparent in view of the following disclosure and the attached drawing.

In the drawings:

FIG. 1 is a perspective view of a fluid container-dispenser according to the invention, the nipple having been detached from the package for purposes of illustration;

FIG. 2 is a side view of the container-dispenser; and

FIG. 3 is an enlarged fragmentary view in section, partially broken away, to show details of the fluid containing package and dispensing nipple.

Referring to the drawing, a preferred form of container-dispenser according to the invention is indicated generally by the numeral 10. The tetrahedral fluid containing package is indicated generally by the numeral 11. The fluid dispensing nipple is indicated generally by the numeral 12.

The package 11 has a bottom portion 14 and three side portions 15. The portions 14 and 15 are generally pyramidal in shape and are interconnected in a suitable manner as by a bottom flange 16 and side flange 17 to form a fluid containing package. At the upper corner or apex of the three side portions 15, the package 11 has a prefer-

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ably circular opening 18 communicating with the interior of the package.

Referring to FIG. 1, if desired for sealing the contents of a filled package 11, the opening 18 may be closed by a suitable plastic sheet or film or cap 19 (indicated by chain lines). The seal 19 would be manually removed before attachment of the nipple 12.

The nipple 12 is formed of a suitable resilient, elastic rubber or rubber-like material as a one-piece molded or formed article. The closed upper or outer end, of somewhat bulbous shape, constitutes a mouthpiece 22. The mouthpiece 22 has one or more preferably axially disposed delivery apertures 23 of small diameter through which liquid is withdrawn from the container 11 by suction applied externally to the mouthpiece 22, as is well understood.

Inwardly of the mouthpiece 22, the nipple 12 has a tubular axial extension or body portion 24 terminating at its lower or inner end in a downwardly and outwardly rounded breast portion 25.

Inwardly of the breast portion 25, the nipple has a preferably slightly enlarged diameter axial extension or stem portion 26 communicating with the body portion 24 to provide a conduit or channel for flow of liquid from the package 11 when suction is applied to the mouthpiece 22.

Coaxially of the stem portion 26 is a circular neck portion 27 spaced outwardly from the outer wall of stem portion 26 to provide a substantially annular cavity 28. The upper wall of cavity 28 is vented to the atmosphere by a plurality of venting apertures 29, which apertures are of small diameter and extend through the breast portion 25 of the nipple. As described in applicant's prior Patent No. 2,513,896, the annular cavity 28 and venting apertures 29 make it practically impossible for any air bubbles to be drawn into the infant's mouth with the stream of liquid passing through portions 24, 26, and so reduces one of the causes of colic in infants. As the liquid is withdrawn, subatmospheric pressure is established in the package 11 and air will be drawn into the bottle through one or more of the vent apertures 29 in such a manner as to commingle with air above the liquid and not enter directly into the stream of withdrawn liquid.

Below or inwardly of the breast portion 25, and radially outwardly of the stem portion 26 and neck portion 27, the nipple 12 has a resilient skirt portion 30 elastically biased to adhere to the sides 15 of the package 11 adjacent to and below the circular opening 18. As shown, the skirt portion 30 is trihedral, with each of the three sides 31 being substantially pyramidal in shape. Beginning at its upper edge, each side 31 of the skirt portion 30 diverges outwardly down and away from the outer side of the circular neck portion 26 to define a circumferentially continuous, inwardly biased skirt portion 30, for secure attachment of the nipple 12 to the package 11.

Referring specifically to FIG. 3, when the axial portion of the nipple 12 is inserted and closely fitted through the opening 18, which has a diameter such as to closely confine and contact the outer sides of the neck portion 26, the sides 31 of the skirt portion 30 will be deflected outwardly to the full line position. However, the natural resiliency and elastic bias formed in the skirt portion 30 will cause the sides to tend to move downwardly and inwardly to the chain line position and frictionally and elastically secure the nipple 12 to the package 11.

Though not generally required, if the package 11 and nipple 12 are distributed commercially as a pre-filled complete unit 10, a simple clip means 35, indicated by the dotted lines in FIG. 2, may be fitted over the side flange 17 to ensure continuing attachment of the nipple

12 to the package 11 during shipment, storage before use, etc.

What is claimed is:

1. A container-dispenser for use in the feeding of edible fluids to infants, comprising, a polyhedral container with a fluid dispensing nipple removably attached thereto, said container having a bottom portion and side portions, there being an opening at the apex of said side portions communicating with the interior of said container, said nipple having a mouthpiece, an axial stem inserted and closely fitted through said container opening to provide a conduit for flow of fluid from within said container to said mouthpiece, and a resilient polyhedral skirt portion located radially outwardly of said stem portion and being elastically biased to adhere in close fit to said container side portions adjacent to and below said container opening.

2. A nipple for use in the feeding of edible fluids to infants, comprising, a bulbous mouthpiece portion having at least one delivery aperture therethrough, a tubular body portion extending downwardly and outwardly from said mouthpiece portion to a rounded breast portion, an axial stem portion inwardly of said breast portion and communicating with said tubular body portion to provide a conduit therethrough to said apertured mouthpiece portion, a neck portion located coaxially of said stem portion and connected to said breast portion to form a substantially annular cavity, the upper end of said cavity being vented through venting apertures extending through the breast portion, and a resilient polyhedral skirt portion connected to and disposed below said breast portion and located outwardly of said stem portion and said neck portion, the sides of said polyhedral skirt portion being elastically biased to adhere to the sides of a polyhedral container at the apex thereof.

3. A one-piece nipple formed of elastomeric material for use in the feeding of edible fluids to infants, comprising,

a bulbous mouthpiece portion having at least one delivery aperture therethrough,

a tubular body portion extending downwardly from said mouthpiece portion and terminating in a downwardly and outwardly rounded breast portion,

an axial stem portion inwardly of said breast portion and communicating with said tubular body portion to provide a conduit therethrough to said apertured mouthpiece portion,

a neck portion located coaxially of said stem portion and connected to said breast portion to form a substantially annular cavity,

the upper end of said cavity being vented through a plurality of venting apertures extending through the breast portion,

and a resilient trihedral skirt portion connected to and disposed below said breast portion and located outwardly of said stem portion and said neck portion, the sides of said trihedral skirt portion extending divergently downwardly and being elastically biased to adhere frictionally and elastically to the sides of a disposable tetrahedral container at the apex thereof.

References Cited in the file of this patent

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