

June 8, 1965

W. R. MOORE

3,187,918

CONTAINER AND DISPENSER FOR BABY FORMULA

Filed Jan. 28, 1963

2 Sheets-Sheet 1

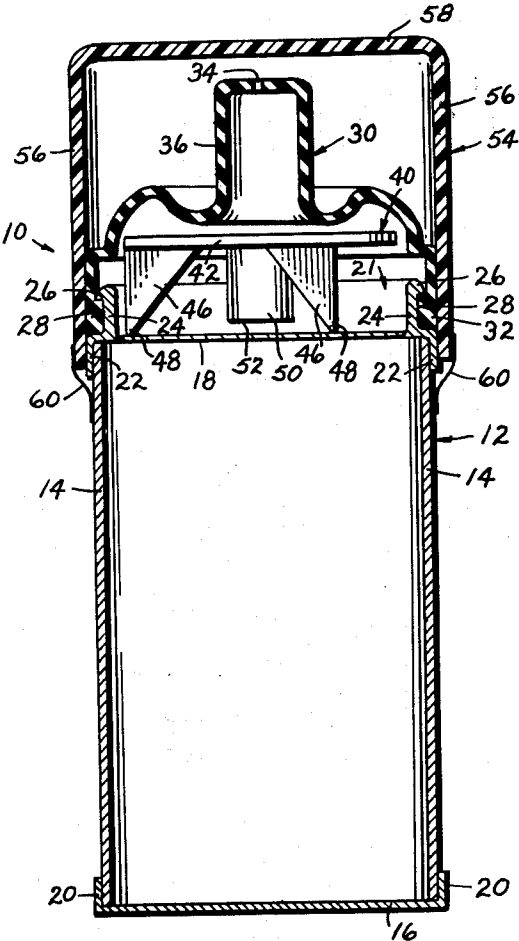


FIG. 1

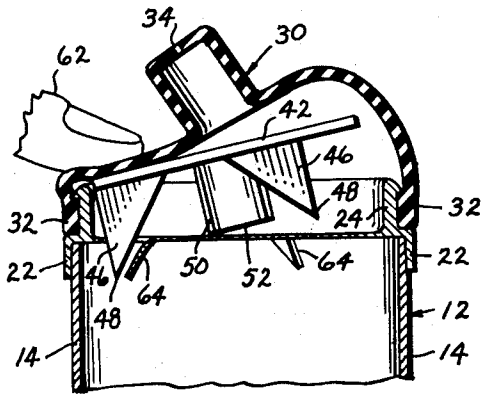


FIG. 3

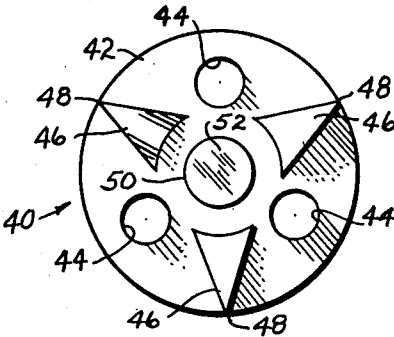


FIG. 2

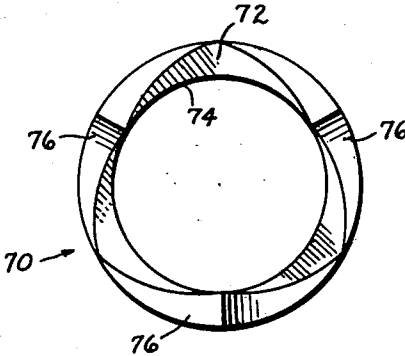


FIG. 5

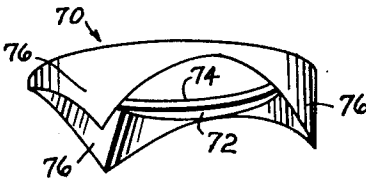


FIG. 4

WILLIAM R. MOORE
INVENTOR

BY *Dunlap, Spry & Hubbard*

ATTORNEYS

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W. R. MOORE

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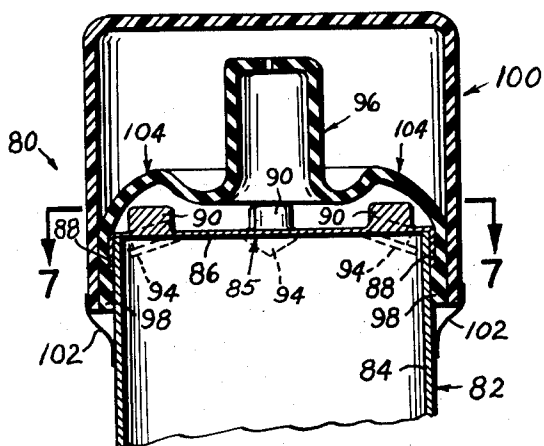


FIG. 6

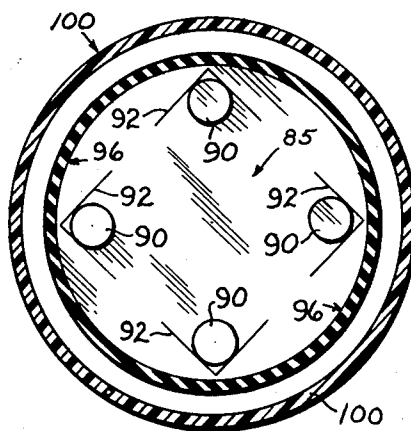


FIG. 7

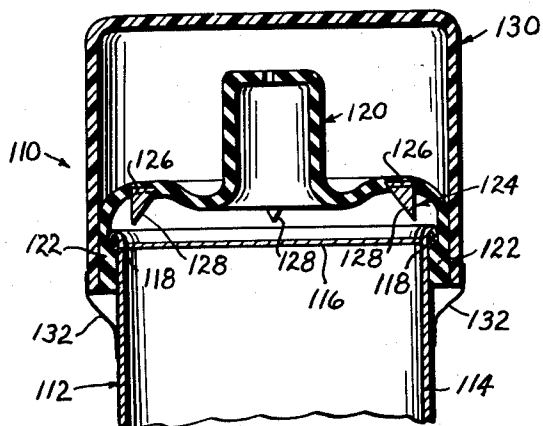


FIG. 8

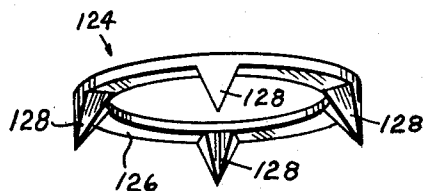


FIG. 9

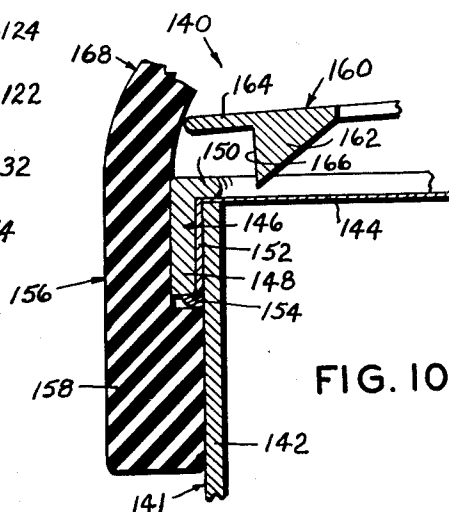


FIG. 10

WILLIAM R. MOORE
INVENTOR.

BY *Dwight F. Hubbard*

ATTORNEYS

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3,187,918 CONTAINER AND DISPENSER FOR BABY FORMULA

William R. Moore, 100 SW. Ranchwood Court,
Oklahoma City, Okla.

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9 Claims. (Cl. 215—11)

The present invention relates to containers and dispensers and more particularly, but not by way of limitation, relates to a device for storing and dispensing formula direct to a baby's mouth in an aseptic condition without preparation.

As is well known by every parent, a major portion of a baby's diet is liquid. In most cases the liquid is a formula prepared by adding water to a powder and is fed from a bottle by means of a nipple. In order to protect the baby's health, great care must be exercised to maintain aseptic conditions during the preparation, bottling, storage and serving of the formula. For example, it is customary to sterilize the bottles or nipples with boiling water or steam. The water used in the formula should also be boiled. Then the water and powder should be carefully measured prior to mixing. After the powder and water are thoroughly mixed, considerable care must be exercised in filling the bottles. Then it is desirable, and is essential in the case of whole milk, to sterilize the bottled liquid by heat for a considerable period of time. Since the filled bottles are not sealed, they must be stored under refrigeration until used. Then it is usually desirable to warm the formula before it is fed to the baby, during which time the baby is invariably crying. To add to the inconvenience, this procedure occurs, to an alarmingly high degree, during the middle of the night. The bottles and nipples must, of course, then be thoroughly washed and cleaned before starting the sterilization and preparation cycle once again.

Even greater inconveniences are usually encountered when travelling with a baby. Refrigeration is seldom available in a private automobile or on a public carrier such as a bus, train or airplane, so that each separate feeding must be prepared using what facilities may be available. Further, changes in water from one locality to another frequently upset the baby's stomach and cause additional problems.

The present invention contemplates a disposable container for shipping, marketing and storing, without refrigeration, and serving, without preparation, a baby's formula in a completely aseptic condition. The novel container and dispenser comprises a sealed container, a flexible dispensing means such as a nipple sealed around at least a portion of the container, and an opening means disposed within the flexible dispensing means and operable by deformation of the flexible dispensing means for opening the container. The liquid within the container is then free to flow around the opening means, which has been remotely operated and therefore is not contaminated, and into the dispensing nipple where it may be taken as desired by the baby. Other aspects of the present invention will hereafter be described in greater detail and pointed out with particularity in the appended claims.

Therefore it is an object of the present invention to eliminate the task of sterilizing nipples and bottles.

Another object of the present invention is to eliminate the task of mixing and bottling baby formula.

Yet another object of the present invention is to provide a container for storing premixed formula at room temperature to thereby eliminate the task of warming a refrigerated bottle.

A still further object of the present invention is to provide a disposable baby formula container and dispenser

to thereby eliminate the task of cleaning bottles and nipples.

Another object of the present invention is to provide a container and dispenser of the type described which includes a disposable dish from which solids can be spoon fed to a baby and which therefore will substantially eliminate the task of washing and cleaning any bottles or dishes otherwise associated with feeding a baby.

Another important object of the present invention is to provide a container and dispenser of the type described which can be very economically manufactured.

Still another object of the present invention is to provide a container and dispenser of the type described which can be economically filled with formula and sealed under aseptic conditions.

Many additional objects and advantages of the present invention will be evident to those skilled in the art from the following detailed description and drawings, wherein:

FIG. 1 is a longitudinal sectional view of a container and dispensing device constructed in accordance with the present invention;

FIG. 2 is a bottom view of the opening means of the device of FIG. 1;

FIG. 3 is a sectional view of the top portion of the device of FIG. 1, and serves to illustrate the manner in which the device is opened;

FIG. 4 is a perspective view of another opening means which may be used in place of the opening means illustrated in FIG. 2;

FIG. 5 is a bottom view of the opening means of FIG. 4;

FIG. 6 is a sectional view through one end of another container and dispensing device constructed in accordance with the present invention;

FIG. 7 is a sectional view taken substantially on lines 7—7 of FIG. 6;

FIG. 8 is a longitudinal sectional view of another container and dispensing device constructed in accordance with the present invention;

FIG. 9 is a perspective view of the opening means of the device of FIG. 8; and,

FIG. 10 is a partial longitudinal sectional view of another container and dispensing device constructed in accordance with the present invention.

Referring now to the drawings, and in particular to FIG. 1, a container and dispensing device constructed in accordance with the present invention is indicated generally by the reference numeral 10. The device 10 comprises a container means, indicated generally by the reference numeral 12, and has cylindrical side walls 14, a flat bottom wall 16, and a relatively thin, flat top wall 18 which can be easily perforated as will presently be described. The bottom wall 16 may be connected to the cylindrical side walls 14 in any suitable manner, but is illustrated as a cap having a peripheral, upwardly extending flange 20 which may be soldered to the cylindrical side walls 14 by conventional canning techniques.

As mentioned, the top wall 18 is relatively thin and is fabricated from a material which may be easily perforated, such as aluminum. The top wall 18 may be molded integral with a cap unit, indicated generally by the reference numeral 21, which also has a depending flange portion 22 which may be telescoped over and soldered to the cylindrical side walls 14 so as to completely seal the container means 12 and the contents therein, and an upwardly extending cylindrical portion 24 which has an out-turned lip portion 26 at the upper end thereof to form an outwardly facing, circumferentially extending groove 28. Of course it will be appreciated that the cap unit 21, as well as the remainder of the container means 12 can be molded from plastic or other synthetic material.

The resilient dispensing means may comprise a nipple means, indicated generally by the reference numeral 30. The nipple means 30 may be of substantially the same construction as the resilient nipples which are presently in extensive use on baby bottles and are commercially available, and has an elastic band portion 32 which is pressed over the lip portion 26 of the cap unit 21 and is seated in the circumferential groove 28. Thus it will be noted that the nipple means 30 is sealed to the container means 12 completely around the relatively thin upper wall 18 which is surrounded by the cylindrical sleeve portion 24. The annular out-turned lip portion 26 securely holds the nipple means 30 in place so that it cannot be easily separated from the container means 12. A small aperture 34 is provided in the upper end of the conventional nipple portion 36 which the baby receives in his mouth, so that liquid within the nipple means 30 can be extracted by suction in the conventional manner.

An opening means, indicated generally by the reference numeral 40, is disposed within the nipple means 30 and between the nipple means 30 and the container means 12. The opening means 40 is comprised of a disc-shaped body portion 42 which may be provided with a plurality of apertures 44, as can be seen in FIG. 2, to facilitate the flow of formula as will presently be described. A plurality of piercing means 46, three being illustrated, extend downwardly from the disc-shaped portion 42 and may engage and rest on the upper wall 18 of the container means 12. It will be noted that the points 48 of the piercing means 46 are disposed at the periphery of the disc-shaped plate 42 in close proximity to the cylindrical sleeve portion 24 so that the top wall 18 may be punctured at spaced points adjacent the side wall 14. Substantially all liquid within the container means 12 can then be extracted regardless of the position in which the container means is held while feeding the baby. A cylindrical portion 50 having a relatively flat lower face 52 extends downwardly from the center of the disc-shaped plate 42 and serves as a fulcrum for withdrawing the piercing means 46 from the upper wall 18, as will hereafter be described.

A cap 54, which may be fabricated from plastic or other economical material, has generally cylindrical side walls 56 and preferably a flat end wall 58. The cylindrical side walls 56 are so dimensioned as to be telescoped down over the resilient band portion 32 of the nipple means 30 to a point adjacent either the depending flange portion 22 or the cylindrical side walls 14 of the container means 12, and preferably fits tightly around the band portion 32 so as to be securely retained in place and also to provide an air-tight seal. A strip of plastic adhesive tape 60 may also be used to provide an integrity seal between the periphery of the cap 54 and the container means 12 to insure the consumer that the cap 54 has not been removed prior to use. Of course, the tape 60 may also provide an air-tight seal and assist in securing the cap 54 in place.

The container and dispensing device 10 may be constructed and filled with liquid in either of two manners. The cylindrical side walls 14 and the bottom wall 16 may be constructed by conventional techniques in the same manner as a standard time can. The bottom wall 16 can first be connected to the side walls 14 by soldering the peripheral flange 20 in the conventional manner, or can be connected by a conventional rolled seam (not illustrated). The container means 12 can then be filled with formula through the open top. The integrally molded cap unit 21 is then placed on the cylindrical side walls 14 and the depending flange portion 22 soldered in place to completely seal the formula within the container means 12. The container means 12 can then be heated to sterilize the liquid as desired.

Next the opening means 40 is merely placed in position on the upper wall 18 and the nipple means 30 secured in place by inserting the elastic band portion 32 in the

groove 28. The cap 54 can then be placed over and around the nipple means 30 and the strip of plastic tape 60 applied to completely seal the nipple and the interior of the cap 54 from the atmosphere. Of course, the opening means 40, the nipple means 30 and the cap 54 should all be assembled with the container means 12 under aseptic conditions so that upon ultimately reaching the consumer all parts within the container means 12 and the cap 54 will be sterile.

Since the liquid within the container means 12 is completely sealed from the atmosphere, there is no need to keep the device 10 under refrigeration. When it is desired to feed the contents of the container means 12 to a baby, the strip of tape 60 and the cap 54 are first removed from the nipple means 30. Then by pressing downwardly upon and deforming the nipple means 30 with a finger 62, substantially as illustrated in FIG. 3, over each of the projections 46, the projections 46 can easily be forced through the thin wall 18 to produce three perforations 64 at circumferentially spaced points adjacent the cylindrical side walls 14. As each successive projection 46 is pressed through the thin upper wall 18, the opposite projection will be withdrawn from the corresponding perforation as the opening means 40 is pivoted about the center fulcrum portion 50 which will not penetrate the thin upper wall by reason of the large surface area 52. It will then be evident that liquid within the container means 12 will be free to flow through the perforations 64 into the nipple means 30 and can there be extracted by the baby from the small aperture 34 in the nipple means 30.

In accordance with another important aspect of the present invention, the cap 54 can be used as a dish in which the solid foods of a baby's diet can be placed during the feeding. Then when the baby's feeding is completed, both the container and dispensing device 10 and the cap 54 can be discarded and thereby substantially eliminate any dishwashing which would otherwise be associated with the feeding. It will also be appreciated that since the container and dispensing device 10 may be stored at room temperature, it is unnecessary to warm the liquid within the container means 12 prior to feeding. This can be of tremendous advantage because the device 10 can be set beside the parent's bed at night or otherwise stored in a convenient place close to the baby, and is ready for immediate use. The container and dispensing device 10 is even more convenient when traveling because a sufficient number of the containers, each containing only a single feeding, can be easily transported without refrigeration, can be served without preparation or heating, and can, of course, then be discarded in a convenient place. The formula will always be mixed with the same water and will be mixed from accurately measured ingredients so as to provide great uniformity. The formula can be canned under considerably better aseptic conditions than can be attained in the home and since human hands do not touch any portion of the formula, the opening means 40, or the portion of the nipple means 30 which is placed in the baby's mouth during the feeding, these aseptic conditions can be strictly maintained.

It will be evident to those skilled in the art that the container and dispensing means can be constructed in accordance with the present invention from a number of different materials, such as conventional tin plated steel, aluminum, or plastic, and by a number of different fabrication methods. For example, the opening means 40 can readily be molded either from a hard plastic or from aluminum and can be molded in any of a substantial number of forms. One such other form for the opening means is indicated generally by the reference numeral 70 (see FIGS. 4 and 5) and comprises a ring portion 72 having a central aperture 74 for both reducing the quantity of material required and for insuring free flow of the formula from the container means 12 to the nipple means 30. Three piercing means 76 are circumferen-

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tially spaced around the periphery of the ring 72. It will be noted that the piercing means 76 are elongated and extend in a curved path around the periphery of the ring 72 so as to sever the thin upper wall 18 of the container means 12 around the periphery so that substantially all of the formula can be extracted from the container means 12 regardless of the horizontal position in which the container may be held as the baby is fed.

Another container and dispensing device constructed in accordance with the present invention is indicated generally by the reference numeral 80 (see FIGS. 6 and 7), and is quite similar to the device 10. The device 80 has a container means 82 which is comprised of a cylindrical side wall 84, the bottom of which is suitably closed by means which is not illustrated, and a cap unit 85. The cap unit 85 has a depending flange skirt portion 88 which is telescoped over and soldered to the cylindrical side wall 84. The top wall 86 is preferably molded from aluminum and includes four upwardly extending raised portions 90 which are circumferentially spaced adjacent the side wall 84, as best seen in FIG. 7. The top wall 86 is then scored along the lines 92, as illustrated in FIG. 7, to such an extent that when the upwardly extending projections 90 are pressed downwardly, the top wall 86 will separate along the scored lines 92 and can be bent downwardly to the positions 94 shown in dotted outline in FIG. 6.

A suitable nipple means, indicated generally by the reference numeral 96, may be substantially identical to the nipple means 30 and may have an elastic band portion 98 which is stretched around the cylindrical wall 84 of the sealed container means 82, preferably at a point below the flange 88 so that the lower edge of the flange 88 will serve as a stop. If desired, the band portion 98 of the nipple means 96 may be secured to the cylindrical wall 84 by a suitable adhesive. A cap 100, substantially identical to the cap 54, may then be placed over the nipple means 96 substantially as illustrated, and a strip of plastic tape 102 used to secure and seal the cap 100 in place. Thus so long as the sealing tape 102 remains intact, the customer is assured that the nipple means 96 and the contents of the container means 82 remain in a perfect sterile condition.

Use of the container and dispensing device 80 is substantially identical to that of the device 10, as described above. However, the container means 82 is opened by pressing downwardly on the resilient nipple means 96 at the points 104 so as to press the raised portions 90 downwardly and break the wall 86 along the scored lines 92. The container means 82 can be filled either through the top or through the bottom as in the case of the device 10. However, the device 80 has fewer separate parts and therefore can in many cases be fabricated and assembled more economically.

Another container and dispensing device constructed in accordance with the present invention is indicated generally by the reference numeral 110 and is shown in FIGS. 8 and 9. The device 110 is comprised of a container means indicated generally by the reference numeral 112, which may be comprised of a conventional cylindrical side wall 114 which may be closed at the bottom by any suitable means (not illustrated). The sealed container means 112 is completed by a top wall 116 which is fabricated from a relatively thin sheet of soft metal, such as aluminum foil or plastic, and which may be connected to the side wall 114 by a conventional rolled seam 118 which is extensively used in the can making industry. Suitable resilient nipple means 120 is sealed to the side wall 114 by a resilient band 122 around the top wall 116. The resilient band 122 is preferably placed below the rolled seam 118 so that the rolled seam will act as a shoulder and assist in retaining the resilient band 122 in place. If desired, the resilient band 122 may be cemented in place by a suitable adhesive.

The nipple means 120 is molded from natural rubber,

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synthetic rubber, or a suitable plastic which will have permanent resiliency, and an opening means, indicated generally by the reference numeral 124, for perforating the upper wall 116 is integrally molded within the nipple means 120. The opening means 124 is molded from a suitable hard material, such as metal or plastic, and is comprised of a ring portion 126 and four downwardly extending, sharpened projections 128. It will be noted that the downwardly extending projections 128 are disposed adjacent to the side walls 114 so that the perforations made thereby in the upper wall 116 will be located adjacent the walls 114 and will assure that all liquid within the container means 112 can be extracted regardless of the position in which the device 110 is held while feeding the baby. A cap 130 may be placed around the nipple means 120 and sealed to the container means 112 by a strip of plastic tape 132, as previously described in connection with the devices 10 and 80.

The device 110 is used in substantially the same manner as the device 10 as previously described. By pressing downwardly on the resilient nipple means 120 in the vicinity of the imbedded ring portion 126 of the opening means 124, the projections 128 can be easily forced through the upper wall 116 to open the sealed container means 112. The resiliency of the nipple 120 will then withdraw the projections 128 from the perforations in the upper wall 116 and the contents of the container 112 will freely flow into the nipple means 120 where it can be extracted by the baby. The device 110 has the advantage that the container means 112 can be filled and sealed by standard canning techniques and equipment for making the rolled type seam 118. It will be appreciated that the container means 112 can be filled through either end, and if filled through the bottom end (not illustrated) the upper wall 116, the nipple means 120 and the cap 130 may be secured in place prior to the time that the container means 112 is filled. The flat top of the cap 130 will serve as a base for the unfilled container means which will then appear as a conventional cylindrical container to conventional canning equipment.

Another container and dispensing device constructed in accordance with the present invention is indicated generally by the reference numeral 140 and is illustrated in the partial sectional view of FIG. 10. The device 140 includes a sealed container means 141 which has a cylindrical side wall 142 and conventional bottom closure means (not illustrated). The upper end of the container means 141 is covered by a thin sheet of aluminum foil 144 or other similar material. The sheet of aluminum foil 144 may be directly connected to the cylindrical side wall 142 but preferably is held in place by a ring, indicated generally by the reference numeral 146, which has a cylindrical depending skirt portion 148 and an intumed lip portion 150. The skirt portion 148 is sized to telescope over the cylindrical wall 142 and a portion 152 of the thin sheet 144, substantially as illustrated, so that a bead of solder 154 may be provided to insure an air-tight circumferential seal between the aluminum foil and the cylindrical wall 142. The intumed lip portion 150 extends inwardly to a point substantially even with the internal face of the cylindrical wall 142. In addition to rigidifying the ring 146 and also the container means 141, the intumed lip portion 150 will also resist pressure which may be built up within the sealed container means 141 during the sterilization of the formula, and will not pull the metallic sheet 144 from the sidewall 142.

A nipple means 156 having an elastic band portion 158 may then be placed around the cylindrical wall 142 at a point below the ring 146 and may be secured in place by suitable cement or adhesive, as previously described, if the shoulder provided by the ring means 146 is insufficient to hold the nipple means securely in place. A suitable opening means 160 is then positioned within the nipple means 156 as previously described in connection with the device 10 or 110. The opening means 160

may be substantially identical to the opening means 40 or 70, or the integrally molded nipple means 120 and opening means 124 may be used with the container means 141 or may be constructed as illustrated in FIG. 10 where-
 in a plurality of projections 162, only one of which is illustrated, may be secured to a ring portion 164 which is illustrated only in cross section in FIG. 10. It will be noted that the ring portion 164 has a diameter corresponding approximately to the internal diameter of the nipple means 156 so as to properly position the projections 162 over the edges of the aluminum foil sheet 144. It will also be noted that the outer edges 166 of the projections 162 are preferably spaced inwardly from the cylindrical wall 142 a short distance so that by pressing on the resilient nipple means 156 at the point 168, the projections 162 may be displaced to the side as well as downwardly through the sheet of aluminum foil 144 to thereby "wallo out" of the perforations made in the thin wall 144 and insure that the formula is free to pass by the projections 162. The device 140 may be used in substantially the same manner as the devices 10, 80 and 110 as described above.

From the above detailed descriptions of several preferred embodiments of the present invention, it will be evident that a novel and highly useful container and dispensing device has been described. It will be appreciated that the features of the several embodiments may be used interchangeably and that the specific construction of the devices can be varied to an appreciable extent without departing from the broad aspects of the invention. Many other ways of fabricating the container means and the opening means will be evident to those skilled in the art. In addition to metal, it will also be evident that the various container means may be fabricated from plastic or any other suitable material in one or more pieces. For example, the container means may comprise a plastic bag wholly or partially contained within a nipple means which may be sealed around the entire bag or sealed to a portion of the surface of the bag.

The container and dispensing device completely eliminates the tedious task of sterilizing bottles, mixing formula and filling the bottles, heating refrigerated formula prior to each feeding, and finally cleaning the bottles and dishes after use. The container and dispensing device maintains the formula under substantially better aseptic conditions than can be attained when mixing and bottling the formula by hand. Further, the device requires no refrigeration and is therefore completely transportable and well suited for use under all conditions and on trips by substantially any mode of transportation.

Having thus described several preferred embodiments of the present invention, it is to be understood that various changes, substitutions and alterations can be made in the several parts and in the combination of the parts without departing from the spirit and scope of the invention as defined by the appended claims.

What is claimed is:

1. A container and dispensing device especially adapted for storing and dispensing baby formula under aseptic conditions comprising:

a sealed container having a wall;

flexible nipple means sealed around a portion of the wall and defining an enclosed space with the wall, said nipple means having an aperture therein for permitting the interior of the nipple to be placed in communication with the exterior thereof, said aperture being of a size to render said nipple substantially impermeable to milk under atmospheric pressure; opening means at least partially positioned in said space and including:

means for piercing at least two spaced openings in the wall of said sealed container by force applied to the opening means through the flexible nipple means; and

means for removing said piercing means from said

openings and automatically retaining said piercing means out of said opening during and after the time that a discontinuously acting force is applied to said opening means through said nipple means whereby, after piercing of the wall of said sealed container, the aperture in said nipple means is placed in communication with the interior of said sealed container, and the contents thereof can flow freely into said nipple means under gravity.

2. A container and dispensing device especially adapted for storing and dispensing baby formula under aseptic conditions comprising:

a sealed container having a wall;

flexible nipple means sealed around at least a portion of the wall and defining an enclosed space with the wall, said nipple means having an aperture therein;

a first piercing means for piercing a first opening in the wall in one location therein when a force is applied to said piercing means through the flexible nipple means; and

a second piercing means for piercing another opening in the wall at a different location from said first opening when a force is applied to said second piercing means through the flexible nipple means; and

means for automatically withdrawing at least one of said piercing means from its respective opening during and after the time when the other piercing means is used to pierce its respective opening whereby the aperture in said nipple means is automatically placed in communication with the interior of said sealed container and the contents of the container can flow freely into said nipple means under gravity.

3. A disposable baby bottle for dispensing baby formula comprising:

a sealed container having a wall;

flexible nipple means sealed around at least a portion of the wall; and

automatically retractable opening means separate from said nipple means and separate from said container and at least partially disposed between the nipple means and the wall for piercing the wall by a force applied to the opening means through the flexible nipple means to automatically place the interior of the sealed container in communication with said nipple means, and for automatically retracting from said opening after the wall has been pierced.

4. A container and dispensing device as claimed in claim 1 wherein said means for removing said piercing means from said openings comprises:

a fulcrum portion secured to said piercing means and positioned on said piercing means to permit said piercing means to automatically pivot about said fulcrum to a retracted position after said discontinuously acting force has been applied to said opening means.

5. A container and dispensing device as claimed in claim 2 wherein said means for automatically withdrawing at least one of said piercing means from its respective opening comprises a fulcrum portion positioned between said first and second piercing means and connected to each of said piercing means and having an end in close proximity to said wall portion whereby piercing of an opening using one of said piercing means will automatically withdraw the other piercing means from an opening said other piercing means has previously made in said wall portion.

6. A container and dispensing device as claimed in claim 2 wherein said means for automatically withdrawing at least one of said piercing means from its respective opening comprises a resilient member integrally formed with said nipple means and secured to said first and second piercing means, said resilient member being spaced from said wall portion in its unstressed relaxed position and individually biasing said first and second piercing means away from said wall portion after said

piercing means have pierced their respective openings.

7. A container and dispensing device especially adapted for storing and dispensing baby formula under aseptic conditions comprising:

a sealed container having a wall;

flexible nipple means sealed around a portion of the wall and defining an enclosed space with the wall, said nipple means having an aperture therein for permitting the interior of the nipple means to be placed in communication with the exterior thereof;

free-floating opening means positioned within said nipple means in said space and comprising:

a generally planar portion and a projection extending generally normal therefrom toward the wall for piercing an opening in the wall of said sealed container by force applied to the opening means through the flexible nipple means; and

means for removing said projection from said opening and automatically retaining said projection out of said opening during and after the time that a discontinuously acting force is applied to said opening means through said nipple means whereby, after piercing of the wall of said sealed container, the aperture in said nipple means is placed in communication with the interior of said sealed container, and the contents thereof can flow freely into said nipple means under gravity.

8. A disposable container and dispensing device especially adapted for storing and dispensing baby formula and under aseptic conditions as defined in claim 1 wherein:

the opening means is connected to the flexible nipple means and comprises at least two spaced projections extending toward the wall,

whereby the wall can be perforated by deforming the nipple means and forcing the projection through the wall.

9. A disposable container and dispensing device especially adapted for storing and dispensing baby formula and under aseptic conditions as defined in claim 2 wherein:

at least a portion of the portion of the wall around which the nipple means is sealed is comprised of a thin metal sheet comprised predominately of aluminum.

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FRANKLIN T. GARRETT, *Primary Examiner*.