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(54) **DISPOSABLE DRINKING CONTAINER**

WEGWERFBARER TRINKBEHÄLTER

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Description

Technical Field

[0001] This invention relates to a disposable, single use drinking container. The drinking container is particularly suitable for use by infants or the elderly who have difficulty taking liquid from a container having a conventional drink dispensing opening.

Background of the invention

[0002] Single use, disposable drinking containers are popular, at least in part, because of their convenience. Furthermore, single use containers can offer assured cleanliness and hygiene in view of the use of proven sterilisation techniques and impervious seals applied at the time of manufacture and/or packaging. One type of single use drinking container that has become popular is derived from sports drink bottles having a nozzle that is operable by the mouth or fingers of the user to seal and unseal the bottle. Sports persons such as cyclists commonly used previous forms of these bottles, but the bottle was sold without contents and it was necessary to fill the bottle from a source of drinking liquid before use. The convenience of the pre-filled, single use, disposable form of the sports drink bottle resulted in a large increase in commercial, non-carbonated soft-drink sales, particularly those drinks directed to replenishment of minerals or nutrients during or following sporting activity.

[0003] Infants, and sometimes the infirm elderly, often require or desire drinking from a special container having a nipple or teat for dispensing the liquid into the child's mouth. The most common form of infant drinking container is a simple re-useable nursing bottle with a cap having a nipple or teat made from rubber or plastic fitted thereto. In order to provide a child with a drink it is necessary to open a separate container of drinking fluid, fill the nursing bottle and replace the cap having the nipple or teat. Between uses the bottle must be washed, and preferably sterilised. It thus becomes problematic for a child carer to provide an infant with a drink from a nursing bottle, especially when away from the home and laden with other children's paraphernalia.

[0004] Several patents disclose single-use infant feeding closures incorporating a nipple attached to a container and covered with an overcap which can be completely removed for consumption of the container contents. For example French Patent 1,538,103 and U.S. Patents 3,301,423, 3,477,603, 3,572,533 and 3,567,060 all describe closures of the aforementioned type wherein the nipple is attached directly to the container mouth (or secured from beneath), allowing the entire overcap to be removed when the container is readied for use. The overcap, in these instances, is removable through operation of a ring-pull structure which tears across the (typically metal) overcap and exposes the nipple underneath. With the exception of US 3,301,423 each of the described closures requires a sealing disk or the like positioned between the nipple and the container interior to seal the container contents and/or retain the nipple on the container mouth.

[0005] Another form of infant feeding assembly involving an overcap, nipple and sealing disk is disclosed in United States Patent 3,655,083 (Eberhardt, et al). The closure described therein essentially comprises three components: a sealing disk which covers and seals the mouth opening of a fluid container, a nipple positioned over the sealing disk, and a protective shroud and retaining ring structure. The protective shroud and retaining ring is a unitary sheet metal structure which covers the nipple exterior and serves to clamp it onto the container neck. With the closure in its sealed condition the protective shroud clamps the sealing disk against the container mouth to prevent liquid from the container reaching the nipple. The protective shroud can be deformed to detach it from the the retaining ring thereby exposing the nipple and releasing pressure on the sealing disk to allow liquid to reach the nipple interior.

[0006] United States Patent 4,015,740 (Hurst) discloses a infant feeding bottle and closure which also essentially comprises a three component closure structure in which a sealing portion is located between a feeding nipple and the container liquid contents. A single piece cap is provided to hold and cover the nipple on the container when sealed. As with the Eberhardt construction, the liquid in the container is prevented from reaching the nipple by the sealing portion (closure member 24) which is held in place between the nipple and container mouth. A central part of the cap can be removed from over the nipple to expose it for use. This action also dislodges the sealing portion from beneath the nipple which allows liquid to reach the nipple interior.

Summary of the Invention

[0007] In accordance with the present invention, there is provided, a disposable infant drinking container comprising:

a container body for holding a drinking liquid, the container body having an open mouth;
a cap having a cap rim and sealing portion, the sealing portion being integrally formed with the cap rim and projecting centrally therefrom; and
a flexible nipple having an infant suckling portion and a base flange portion held in place over the open mouth of the container body by the cap rim which is attached to the container body around the mouth;
characterized in that:
the cap scaling portion has a hollow interior that interfits with the suckling portion of the nipple with an inner surface of the sealing portion closely surrounding the nipple end;
the nipple is secured to the container body by the cap rim with the nipple in fluid communication with

the container body through the mouth opening and the nipple suckling portion received in the hollow interior of the cap sealing portion integral with the cap rim; and

the cap is constructed with a frangible section between the cap rim and sealing portion for removal of the sealing portion from the cap rim whilst the cap rim remains on the container body.

[0008] In one form of the invention, the cap rim is annular and the frangible section is constructed to rupture and allow the sealing portion to be broken away from the cap rim upon a lateral force being applied between the cap rim and sealing portion.

[0009] The cap is preferably moulded in a single piece from a plastics material. The frangible section of the cap may comprise a ring of reduced wall thickness. Preferably, separation of the sealing portion from the cap rim creates a central round aperture in the cap rim through which the suckling portion of the nipple projects.

[0010] In one form of the invention the cap rim is secured to the container body by way of a downwardly extending flange with a screw threaded engagement to the container body. The cap rim may also or alternatively be irremovably attached to the container body.

[0011] In one form of the invention the nipple suckling portion centrally projects from the base flange portion with the peripheral flange held between a rim of the container body defining the open mouth and the cap rim to thereby secure the nipple to the container body. The nipple may be constructed with a bending region between the base flange portion and suckling portion which facilitates partial inversion of the nipple by displacement of an end of the nipple suckling portion toward the plane of the base flange portion.

Brief Description of the Drawings

[0012] The invention is described in greater detail hereinafter, by way of example only, with reference to an embodiment thereof illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of the upper portion of a drinking container according to an embodiment of the invention;

Figure 2 is a perspective view of the upper portion of the drinking container of Figure 1 illustrating removal of the sealing portion;

Figures 3 and 4 are perspective views illustrating the drinking container top with sealing portion removed and nipple extended for use;

Figure 5 is a central cross-sectional view through the top portion of the drinking container according to an embodiment of the invention;

Figure 6 is a cross-sectional view of a nipple for use in an embodiment of the invention; and

Figure 7 is a cross-sectional view of the nipple in a fully retracted configuration.

Detailed Description of the Preferred Embodiments

[0013] A drinking container 100 according to an embodiment of the present invention is shown in various and views in Figure 1 to 5. The container 100 comprises a container body 12 which is of generally cylindrical form and has a flat base at the bottom end thereof and a mouth 18 having a round opening at the top end. The container body 12 may comprise, for example, a bottle constructed from a plastics material, such as recyclable PET plastics or the like, as is known for the construction of dunking bottles. The preferred form of the bottle is relatively small, for example having a liquid storage capacity of about 100 to 250 millilitres, so as to be suitable for consumption by infants.

[0014] The container 100 also comprises a cap assembly 110 which fits on the mouth 18 of the container body so as to, in use, seal the mouth opening. The cap assembly includes a cap rim 112, which has a flat annular portions 114 and a downwardly extending flange portion 116. For ease of reference, the flange portion 116 is referred to has downwardly extending because, when the cap assembly is fitted to the container body and the container is set on its base, the flange extends downward from the annular portion 114 with respect to the upwardly facing outer surface thereof. The inner circumference of the flanged portion 116 is constructed to be marginally larger than the outer circumference of the container mouth 18, so that the cap rim 112 can be fit over the container mouth 18 where the underside (downward facing) surface of the annular portion is adjacent the lip edge of the mouth. In use, the cap rim 112 is firmly secured to the container body 12 at the mouth 18. The cap rim and container body may be connected to each other in any convenient way, such as by adhesive, heat-sealing, or interference fit by interlocking or interfitting circumferential ridges and/or grooves formed on the cap rim and container mouth. Alternatively the inner surface of the cap rim and outer surface of the container body mouth may be formed with helical screw threads so that they can be threadedly interengaged and screwed onto one another until sealed.

[0015] As described, the cap assembly 110 comprises a cap rim 112 with a flat annular upper surface 114 and a downwardly extending flange portion 116 by which the cap rim is secured to the mouth of the container body. The cap assembly is also manufactured with a centrally located and integrally moulded, removable sealing portion 120. The sealing portion 120 projects upwardly from the centre of the cap rim, above the flat annular surface 114, and is attached to the inner edge of the annular portion by way of a frangible marginal wall section 115 (indicated with the aid of a dashed line in Figure 1).

[0016] The cap assembly 110 also includes a flexible nipple 130, an example of which is shown in cross-section in Figure 6. The nipple base has a substantially flat an-

nular peripheral flange portion 132, from which extends an outstanding suckling portion 134. The nipple 130 fits within the cap assembly 110 (seen best in Figure 5) such that the flange 132 lies against the underneath surface of the cap rim annular portion 114. With the cap assembly fitted to the container body, opposed pressures from surfaces of the cap rim and container mouth secure the nipple to the container.

[0017] The nipple 130 is preferably constructed from a relatively soft, inert, non-toxic and mouldable material which is suitable for infants to place in their mouths. Silicone rubber is one suitable material, and other materials, such as plastics and/or rubbers, will be readily apparent to those skilled in the art. The nipple is preferably formed by moulding, and the type of moulding technique employed may depend upon the material from which the nipple is to be constructed.

[0018] The container body 12 of the disposable, prefilled drinking container 10 is preferably constructed from a plastics material, such as recyclable PET or other plastics material suitable for drink containers as are known in the art. Other materials for construction of the container body 12 may alternatively be employed, such as glass, metal or laminated cardboard, but plastic is preferred for various reasons including its light weight and the ability to easily seal containers made from plastics. Manufacturing of the container body preferably entails moulding in a known manner, the details of which may depend upon the material of construction. The technique of blow-moulding, for example, may be employed.

[0019] The cap rim is preferably also constructed from plastic, although other suitable materials may be readily apparent to those skilled in the art. The cap rim may be constructed from a different type of plastic than the container body, and may be formed from, for example, a suitable density of polyethylene or polypropylene. Of course the manufacturing technique utilised for forming the cap rim may also vary depending upon the material used, and injection moulding may be found appropriate for suitable materials.

[0020] At the time of manufacture, the container body is formed and then filled with a drinking liquid. The cap assembly comprising the moulded nipple positioned within the unitary cap is then fitted and sealed thereto, sealing the container liquid contents and nipple therein. The cap-rim may be attached to the mouth of the container body in any appropriate manner which is apparent to those skilled in the art, such as by use of adhesives or heat sealing. However, in the preferred form of the invention, the attaching portion of the nipple itself is utilised for sealing of the cap assembly to the container body. As shown particularly in Figure 5, the flange 132 of the nipple may be arranged to interpose between the inner surface of the cap rim and the edge of the container body mouth so that when the cap assembly is fitted to the container body the nipple flange provides a seal therebetween. This is particularly advantageous where the nipple is constructed from a relatively soft material such as silicone rubber which allows some compression and provides excellent sealing characteristics.

[0021] Whilst the seal may be provided by the nipple flange, it is still necessary that the cap rim be secured to the container body, and it is preferred that this is achieved using interfitting ridges and/or grooves formed around the outer circumference of the containers body mouth and the inner circumference of the cap rim flange. The tolerances of fit between the cap rim and container body mouth are such that, when the corresponding ridges and/or grooves are securely interengaged, a pressure is applied to the nipple flange between the mouth edge and cap rim so as to provide a good seal.

[0022] As an alternative, the inner surface of the cap rim and the outer surface of the container body mouth may be formed with helical screw threads so that they can be threadedly interengaged, and screwed on to one another until sealed.

[0023] As can be seen in the cross-sectional view of the cap rim and scaling portions shown in Figure 5, the sealing portion 120 is hollow in construction and shaped much like the suckling end of the nipple itself. The inner surface of the end of the sealing portion is shaped to conform quite closely to the shape of the external surface of the end of the nipple. This allows the end of the nipple to be accommodated within the hollow interior of the sealing portion whilst the container is in the sealed condition, which has several advantages. For example, with the inner surface of the sealing portion closely surrounding the end of the nipple which contains the drinking aperture, the possibility of leakage of liquid from the container body through the aperture and into the space within the cap assembly is minimised. Liquid cannot freely flow through the nipple drinking aperture as the aperture is too small to permit that and in any event abuts against the sealing portion surface. The drinking aperture may in fact be in the form of a small slit or the like which does not allow liquid to pass therethrough in the absence of a pressure differential or deformation of the nipple at the aperture. Since the sealing portion is moulded from the same plastic material as the cap rim, it is relatively rigid so as to substantially prevent deformation of the nipple. Furthermore, a relative increase in pressure in the container body, such as may occur if the container is squeezed or dropped, causes the nipple end with the aperture to be pressed more firmly against the inner surface of the sealing portion end, further relieving the likelihood of liquid leakage. A ridge may additionally be formed around the inner surface of the sealing portion towards the end thereof, so as to marginally impinge around the outer surface of the nipple towards the end to seal the nipple end from the space which exists between the nipple outside and cap inside surfaces.

[0024] It is preferred that the sealing portion 120 not project from the cap rim to the full extent of the nipple 130, as the greater the extent of the sealing portion projection the greater the possibility that the seal between the sealing portion and the cap rim may be broken inad-

vertently. Accordingly it is preferred that the sealing portion only project a fraction of the length of the nipple extent, such as about half of the nipple length. For example, if the longitudinal length of the nipple is of the order of 3 to 4 centimetres then the extent of the sealing portion projection may be of the order of 1.5 to 2 centimetres. This then requires that the nipple be partially collapsed or inverted beneath the cap rim as shown in Figure 5.

[0025] In this form of the drinking container (100), as mentioned, the sealing portion 120 is formed integrally with the cap rim 112, so that the cap rim and sealing portion are manufactured together, making both manufacture and assembly of the drinking container easier. The cap rim and sealing portion are moulded with an annular thinned wall frangible section (115) therebetween where the sealing portion 120 breaks away from the cap rim 112, in use. As seen in the Figures, for example, the sealing portion extends upwards from the flat surface 114 of the cap rim to a generally vertically extending section (124) which then curves over in a hemispherical end section (126), the inner diameter of which closely matches the outer diameter of the end of the nipple (see Figure 5). With the close fit of the nipple end within the end of the sealing portion interior the possibility of leakage of liquid from the container body through the aperture in the nipple end is greatly reduced. Because the outer circumference of the hemispherical nipple end portion is closely matched to the inner circumference of the hemispherical sealing portion, if a relative increase in internal pressure occurs within the container body this tends to press the flexible nipple more tightly against the sealing portion inner surface to prevent leakage from the end thereof.

[0026] The annular thinned wall section (115) between the cap rim and the sealing portion may only be of the order of a millimetre or so in width, and is preferably one millimetre or less in thickness. The actual wall thickness may vary depending upon the material from which the cap rim and sealing portion are moulded, and also upon the desired force which is required to be applied in order to cause the sealing portion to frangibly break away from the cap rim. For example the wall thickness at the marginal frangible portion can be made slightly thicker if greater strength is required over ease of opening, or vice versa for the opposite.

[0027] In the preferred form of the invention the sealing portion is provided with laterally extending flat tab portions 128 which project from opposing sides of the exterior of the sealing portion. These tab portions are provided to facilitate the application of a transverse force by the user to the sealing portion in order to break the sealing portion 120 away from the cap rim 112. For example, the user may grasp the bottle with two hands and press on the tabs 128 on each side of the sealing portion with the thumbs in order to break off the sealing portion without difficulty.

[0028] Since the sealing portion 120 in this form of the invention projects somewhat from the cap rim and the nipple end is disposed therewithin with the container sealed, it is apparent that the nipple is not fully "collapsed" when the sealing portion is in place. However, since the sealing portion preferably does not project to the full extent of the nipple, the nipple is nevertheless partially collapsed inside the cap assembly when sealed. When the sealing portion is removed, the sealing portion is pressed from the side and tilted to break the frangible seal, as illustrated in Figure 2. The end of the nipple remains inside the sealing portion during this operation until the sealing portion is completely removed from the cap rim (Figures 3 and 4). Upon complete removal the nipple suckling portion is drawn fully out to its extended configuration by the frictional forces resulting from the relatively close fit between it and the interior of the sealing portion, which is increased by any compression applied at the time to the sides of the sealing portion upon such removal. It is nevertheless possible for the nipple to be capable of complete retraction into the "collapsed" configuration which may be useful particularly if the entire contents of the bottle are not consumed at once and it is desired to store the bottle with a reduced likelihood of contamination of the nipple. With the nipple in the collapsed configuration, even if no cover is utilised, the likelihood of any contamination is greatly reduced because the nipple does not project above the surface 114 of the cap rim and so the possibility of contact with any unhygienic surface or object is lessened.

[0029] An overcap (not illustrated) may also be supplied with the pre-filled drink container, and this may be placed over the cap rim for storage of the unfinished bottle to further shield the nipple from contamination. The overcap being disposed over the sealing portion during transport and sale, may aid in avoiding inadvertent breakage of the sealing portion, for example. The mass packaging of the bottles may also be arranged so as to protect the projecting sealing portion during shipping and the like. For example, cardboard packages, pallets or the like adapted for sipping and/or storage of the bottles may be constructed with recessed portions into which the sealing portions project and are relatively protected from breakage.

[0030] In another alternative, the sealing portion 120 itself may be constructed to enable it to be replaced into the opening formed in the cap rim upon removal of the sealing portion. For example, the sealing portion 120 can be formed with one or more circumferential rims (not shown in the drawings) located marginally above the frangible wall section at which it connects to the cap rim, adapted to hold the sealing portion in cap rim opening to shield the retracted nipple. A circumferential rim of slightly larger diameter than that of the cap rim opening would allow the base of the sealing portion to be pressed back into the opening without passing through too far. The sealing portion would then be held in the opening by interference fit between the edge of the opening and the edge of the sealing portion, and prevented from over-insertion by the circumferential rim. If the edge of the

sealing portion does not provide sufficient interference fit with the edge of the cap rim opening once the two have been separated, an additional appropriately sized circumferential rim positioned slightly below and closely spaced with the rim may be provided to prevent over-insertion. The spacing between the two rims, in that instance, may correspond to the thickness of the material of the cap rim at the edge of the opening. Alternatively, circumferential rims formed on the scaling portion 120 may not be desired, and instead lugs or the like may be formed of the tabs 128 adjacent the base of the sealing portion, for the purpose of holding the sealing portion in the cap rim opening for re-closure of the bottle after unsealing. In any event, it is preferred that the nipple be recessed into the container in its collapsed configuration before replacement of the sealing portion.

[0031] The process of unsealing and opening the drinking container 100 for use is illustrated in the sequence of Figures 1, 2 and 3. Figures 1 shows the bottle in the seated condition with the sealing portion 120 integrally formed with the cap rim 112. In order to use the bottle, the sealing portion 120 must be removed, and this is done by first, applying a lateral force to the projection of the sealing portion. For example, whilst grasping the bottle with the hands a force can be applied to the tabs 128 with the thumbs. This causes the frangible thinned wall section 115 to rupture, thus breaking the seal formed by the cap. The sealing portion 120 is then levered away from the cap rim 112, as shown in Figure 2. As the sealing portion is levered away from the cap rim the nipple 130 having its end fitted within the sealing portion, is drawn out through the aperture left by the sealing portion. With the sealing portion totally removed, the nipple 130 extends fully from the bottle, ready for use, as seen in Figures 3 and 4.

[0032] Figure 6 is a cross-sectional view of a nipple 130. As can be seen in the drawing, the nipple base has a substantially flat annular peripheral flange portion 132 from which extends the outstanding suckling portion 134 of the nipple. The nipple shown is constructed with a circumferential groove 136 at about half-way along the extent of the nipple between the flanged base and the nipple end 138. This circumferential groove may comprise a thinned wall section with the groove formed thereby toward the interior of the nipple, as shown. The groove or thinned wall facilitates the stability of the nipple in the "collapsed" configuration referred to above. Furthermore, the connecting portion 140 of the nipple intermediate the base and suckling portions may be constructed so as to curve smoothly from the flanged base to the transversely extending projecting suckling portion, and the cross-sectional curvature may be arcuate so that the nipple may be easily moved between the extended and collapsed configurations. With the connecting portion 140 of the nipple constructed to be substantially parallel to the plane of the flange portion 132 where the two portions meet, it is not difficult to press the nipple downwardly from the extended to the collapsed configuration since no significant bending is required at any region of the nipple other than at the groove or thinned wall section mentioned above. It has been found most suitable for the connecting portion of the nipple to curve smoothly from the inner diameter of the base flange to the extent of the midpoint groove. Figure 7 illustrates the nipple 130 in cross-section in its collapsed configuration.

[0033] Because the nipple 130 is intended to be used only once, the wall thickness of the nipple construction need not be as thick as re-useable nipples, which enables a saving of material used in the moulding process. For example, the wall of most of the nipple 130 may be of the order of 0.5 to 1.5 millimetres in thickness, with thicker material (e.g. 2 millimetres) at the base flange 132. Additionally, the hemispherical end section at which the liquid aperture (not shown) is provided may also be constructed with a slightly thicker wall material. As shown in the drawings, the nipple end portion may be slightly enlarged in diameter as compared to the tubular shaft thereof, for ease of use by an infant.

[0034] In view of the advantageous sealing characteristics of the drinking containers herein described, drinking containers constructed in accordance with the present invention are particularly well suited for pre-filled single use applications in which the bottle contents are inserted and then the cap assembly with nipple applied to hygienically seal the contents in the container. It may of course be desirable to sterilise the bottle and cap assembly before insertion of the contents and assembly, but this may be done in any convenient manner as known to those skilled in the art. Of course care should also be taken with regard to hygiene during assembly, such as by application of a sterilising steam jet or the like to the interior of the cap assembly immediately before sealing to the container body.

[0035] Depending upon the contents and the filling technique, a pre-filled single use drinking bottle according to an embodiment of the invention may be supplied for mass consumption by provision at supermarkets and the like. Of course drinking liquids for infants are currently available in this way but, as mentioned above, typically these require transferral to a drinking container such as a re-useable baby bottle with its inherent drawbacks and disadvantages both in terms of hygiene and convenience. Furthermore, the present invention is easily applicable to medical uses such as the delivery of orally taken pharmaceuticals for vaccination or treatment of infants, or merely for feeding of infants in post-natal wards of hospitals where sterile contents are particularly important and usage of bottled products is high. Furthermore, the invention may find useful application in delivery of pharmaceuticals or feeding of infants in remote, perhaps famine stricken parts of the world where sterilisation of bottles and contents on site is not possible or difficult. The pre-filled single use drinking bottles also address another difficulty which can arise in the supply of drinking nutrients to famine stricken children which is the wrongful mixing and dilution of formulas and the like in circumstances

where the drinking fluid can be tampered with or must be mixed before use.

[0036] It will be immediately apparent to those skilled in the art that the shape of the container and in particular the container body is unimportant to the principles of the invention, and whilst a bottle/jar shape has been described and illustrated herein, many other container shapes, constructed from many different materials, may alternatively be employed.

[0037] Throughout this specification, unless the context requires otherwise, the word "comprise", or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

[0038] The foregoing detailed description of the present invention has been presented by way of example only, and is not intended to be considered limiting to the invention which is defined in the claims appended hereto.

Claims

1. A disposable infant drinking container comprising:

   a container body (12) for holding a drinking liquid, the container body having an open mouth (18);
   a cap (110) having a cap rim (112) and sealing portion (120), the sealing portion being integrally formed with the cap rim and projecting centrally therefrom; and
   a flexible nipple (130) having an infant suckling portion (134) and a base flange portion (132) held in place over the open mouth of the container body by the cap rim which is attached to the container body around the mouth;
   wherein
   the cap sealing portion (120) has a hollow interior that interfits with the suckling portion (134) of the nipple with an inner surface of the sealing portion closely surrounding the nipple end, so that the nipple suckling portion (134) received in the hollow interior of the cap sealing portion (120) is integral with the cap rim; and wherein the cap (110) is constructed with a frangible section (115) between the cap rim (112) and sealing portion (120) for removal of the sealing portion from the cap rim;
   characterized in that:
   the nipple (130) is secured to the container body (12) by the cap rim (112) with the nipple in fluid communication with the container body through the mouth opening (18) and
   the cap rim remains on the container body (12), whilst the sealing portion is removed.

2. A disposable drinking container as claimed in claim 1, wherein the cap rim (112) is annular and the frangible section (115) is constructed to rupture and allow the sealing portion to be broken away from the cap rim upon a lateral force being applied between the cap rim and sealing portion (120).

3. A disposable drinking container as claimed in claim 1 or 2, wherein the cap (110) is moulded in a single piece from a plastics material.

4. A disposable drinking container as claimed in claim 1 or 2, wherein the cap rim (112) is irremovably attached to the container body (12).

5. A disposable drinking container as claimed in claim 1 or 2, wherein the cap rim (112) is secured to the container body by way of a downwardly extending flange (116) with a screw threaded engagement to the container body (12).

6. A disposable drinking container as claimed in claim 2 or 3, wherein the frangible section (115) of the cap (110) comprises a ring of reduced wall thickness.

7. A disposable drinking container as claimed in claim 1, wherein the nipple suckling portion (134) centrally projects from the base flange portion (132) with the peripheral flange held between a rim (16) of the container body (12) defining the open mouth (18) and the cap rim (112) to thereby secure the nipple (130) to the container body (12), and the nipple is constructed with a bending region (136, 140) between the base flange portion and suckling portion which facilitates partial inversion of the nipple by displacement of an end (138) of the nipple suckling portion toward the plane of the base flange portion (132).

8. A disposable drinking container as claimed in claim 1 or 2, wherein separation of the sealing portion (120) from the cap rim (112) creates a central round aperture in the cap rim through which the suckling portion (134) of the nipple projects.

Patentansprüche

1. Wegwerfbarer Trinkbehälter für Kleinkinder, umfassend:

   einen Behälterkörper (12) zur Aufnahme von Trinkflüssigkeit, wobei der Behälterkörper einen offenen Mund (18) aufweist;
   eine Kappe (110) mit einem Kappenrand (112) und einem Verschlussabschnitt (120), wobei der Verschlussabschnitt integral mit dem Kappenrand ausgebildet ist und mittig davon vorsteht; und einen flexiblen Nippel (130) mit einem Kleinkindsaugabschnitt (134) und einem Basis-

flanschabschnitt (132), der durch den Kappenrand, der an dem Behälterkörper um den Mund herum angebracht ist,
örtlich über dem offenen Mund des Behälterkörpers gehalten wird;
worin der Kappenverschlussabschnitt (120) einen hohlen Innenraum aufweist, der mit dem Saugabschnitt (134) des Nippels in Eingriff steht, wobei eine Innenoberfläche des Verschlussabschnitts das Nippelende eng umschließt, so dass der Nippelsaugabschnitt (134), der im hohlen Innenraum des Kappenverschlussabschnitts (120) aufgenommen ist, mit dem Kappenrand einstückig ist; und
worin die Kappe (110) mit einer Sollbruchstelle (115) zwischen dem Kappenrand (112) und dem Verschlussabschnitt (120) konstruiert Ist, um den Verschlussabschnitt von dem Kappenrand zu entfernen;
dadurch gekennzeichnet, dass der Nippel (130) an dem Behälterkörper (12) durch den Kappenrand (112) gesichert ist, während der Nippel durch die Mundöffnung (18) mit dem Behälterkörper in Fluidverbindung steht; und der Kappenrand an dem Behälterkörper (12) verbleibt, während der Verschlussabschnitt entfernt wird.

2. Wegwerfbarer Trinkbehälter nach Anspruch 1, worin der Kappenrand (112) ringförmig ist und die Sollbruchstelle (115) so konstruiert ist, dass sie bricht und erlaubt, dass der Verschlussabschnitt von dem Kappenrand weggebrochen wird, wenn zwischen dem Kappenrand und dem Verschlussabschnitt (120) eine seitliche Kraft ausgeübt wird.

3. Wegwerfbarer Trinkbehälter nach Anspruch 1 oder 2, worin die Kappe (110) einstückig aus Kunststoffmaterial gegossen ist.

4. Wegwerfbarer Trinkbehälter nach Anspruch 1 oder 2, worin der Kappenrand (112) unlösbar an dem Behälterkörper (12) angebracht ist.

5. Wegwerfbarer Trinkbehälter nach Anspruch 1 oder 2, worin der Kappenrand (112) an dem Behälterkörper über einen sich nach unten erstreckenden Flansch (116) mit einer Schraube gesichert ist, die mit dem Behälterkörper (12) in Gewindeeingriff steht.

6. Wegwerfbarer Trinkbehälter nach Anspruch 2 oder 3, worin die Sollbruchstelle (115) der Kappe (110) einen Ring mit reduzierter Wanddicke aufweist.

7. Wegwerfbarer Trinkbehälter nach Anspruch 1, worin der Nippelsaugabschnitt (134) mittig von dem Basisflanschabschnitt (132) vorsteht, wobei der Umfangsflansch zwischen einem Rand (16) des Behälterkörpers (12), der den offenen Mund (18) definiert, und dem Kappenrand (112) gehalten wird, um hierdurch den Nippel (130) an dem Behälterkörper (12) zu sichern, und der Nippel mit einem Biegebereich (136, 140) zwischen dem Basisflanschabschnitt und dem Saugabschnitt konstruiert ist, der das teilweise Umkehren des Nippels erleichtert, indem ein Ende (138) des Nippelsaugabschnitts zur Ebene des Basisflanschabschnitts (132) verlagert wird.

8. Wegwerfbarer Trinkbehälter nach Anspruch 1 oder 2, worin eine Trennung des Verschlussabschnitts (120) von dem Kappenrand (112) eine runde Mittelöffnung in dem Kappenrand erzeugt, durch die der Saugabschnitt (134) des Nippels vorsteht.

Revendications

1. Conteneur de boisson jetable pour nourrisson, comportant :

un corps de conteneur (12) destiné à contenir un liquide à boire, le corps de conteneur ayant une embouchure ouverte (18),
un bouchon (110) ayant un pourtour de bouchon (112) et une partie d'étanchéité (120), la partie d'étanchéité étant formée en un seul bloc avec le pourtour de bouchon, et faisant saillie de manière centrale à partir de celui-ci, et
une tétine souple (130) ayant une partie d'allaitement de nourrisson (134) et une partie de rebord de base (132) maintenue en place au-dessus de l'embouchure ouverte du corps de conteneur par l'intermédiaire du pourtour de bouchon qui est fixé sur le corps de conteneur autour de l'embouchure,
dans lequel
la partie d'étanchéité de bouchon (120) a un intérieur creux qui raccorde mutuellement la partie d'allaitement (134) de la tétine avec une surface intérieure de la partie d'étanchéité entourant l'extrémité de tétine de manière serrée, de sorte que la partie d'allaitement de tétine (134) reçue dans l'intérieur creux de la partie d'étanchéité de bouchon (120) est en un seul bloc avec le pourtour de bouchon, et dans lequel le bouchon (110) est construit avec un tronçon fragile (115) entre le rebord de bouchon (112) et la partie d'étanchéité (120) pour un enlèvement de la partie d'étanchéité à partir du rebord de bouchon,
caractérisé en ce que
la tétine (130) est fixée sur le corps de conteneur (12) par le pourtour de bouchon (112), avec la tétine en communication de fluide avec le corps de conteneur à travers l'ouverture d'embouchure (18), et

le pourtour de bouchon reste sur le corps de conteneur (12) tandis que la partie d'étanchéité est enlevée.

2. Conteneur de boisson jetable selon la revendication 1, dans lequel le pourtour de bouchon (112) est annulaire, et le tronçon fragile (115) est réalisé pour se rompre et pour permettre à la partie d'étanchéité d'être arrachée du pourtour de bouchon lorsqu'une force latérale est appliquée entre le pourtour de bouchon et la partie d'étanchéité (120).

3. Conteneur de boisson jetable selon la revendication 1 ou 2, dans lequel le bouchon (110) est moulé en une seule pièce à partir d'une matière plastique.

4. Conteneur de boisson jetable selon la revendication 1 ou 2, dans lequel le pourtour de bouchon (112) est fixé de manière inamovible sur le corps de conteneur (12).

5. Conteneur de boisson jetable selon la revendication 1 ou 2, dans lequel le pourtour de bouchon (112) est fixé sur le corps de conteneur au moyen d'un rebord s'étendant vers le bas (116) avec une vis en prise vissée sur le corps de conteneur (12).

6. Conteneur de boisson jetable selon la revendication 2 ou 3, dans lequel le tronçon fragile (115) du bouchon (110) comprend un anneau d'une épaisseur de paroi réduite.

7. Conteneur de boisson jetable selon la revendication 1, dans lequel la partie d'allaitement de tétine (134) fait saillie centralement à partir de la partie de rebord de base (132) avec le rebord périphérique maintenu entre un pourtour (16) du corps de conteneur (12) définissant l'embouchure ouverte (18) et le pourtour de bouchon (112), pour fixer ainsi la tétine (130) sur le corps de conteneur (12), et la tétine est réalisée avec une zone d'incurvation (136, 140) entre la partie de rebord de base et la partie d'allaitement, qui facilite une inversion partielle de la tétine par un déplacement d'une extrémité (138) de la partie d'allaitement de tétine vers le plan de la partie de rebord de base (132).

8. Conteneur de boisson jetable selon la revendication 1 ou 2, dans lequel une séparation de la partie d'étanchéité (120) à partir du pourtour de bouchon (112) crée une ouverture ronde centrale dans le pourtour de bouchon à travers laquelle la partie d'allaitement (134) de la tétine fait saillie.

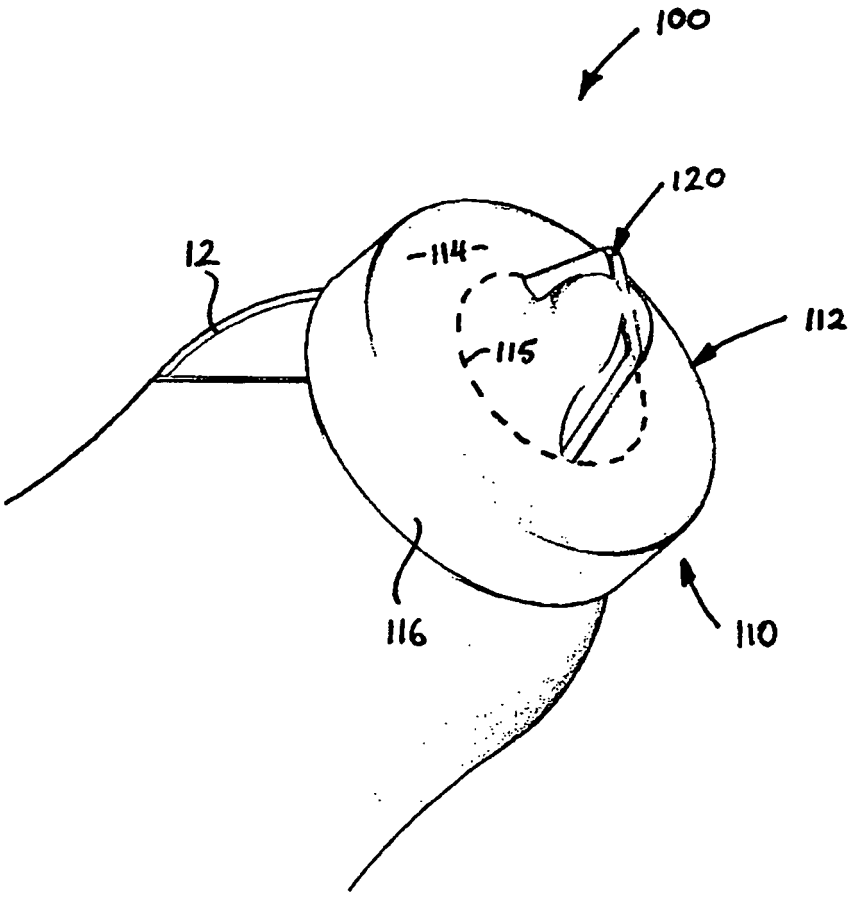


Figure 1

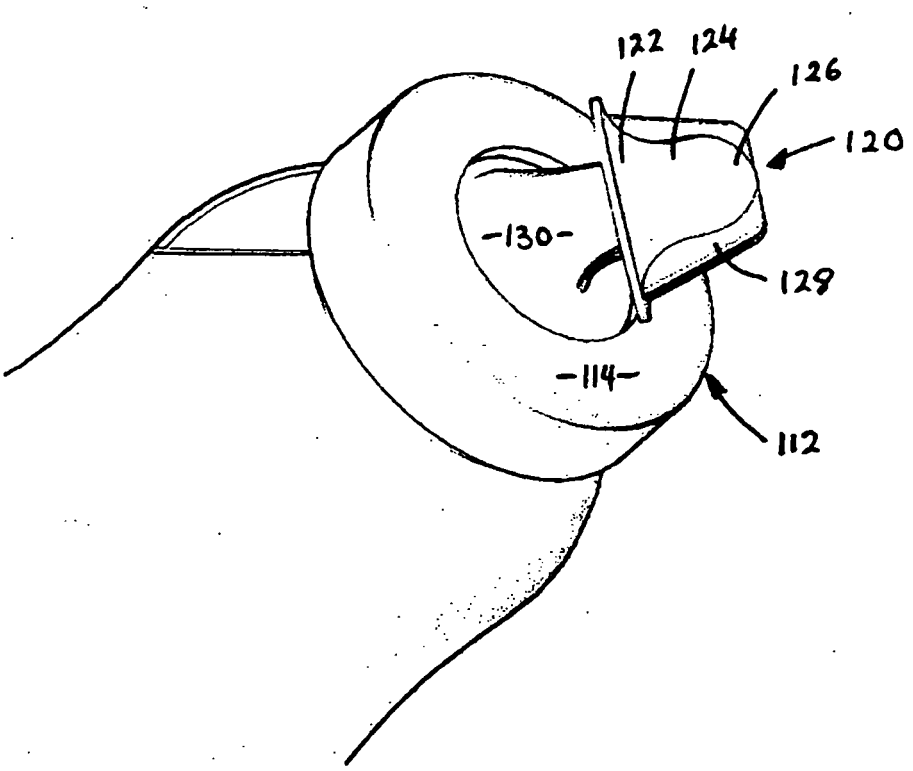


Figure 2

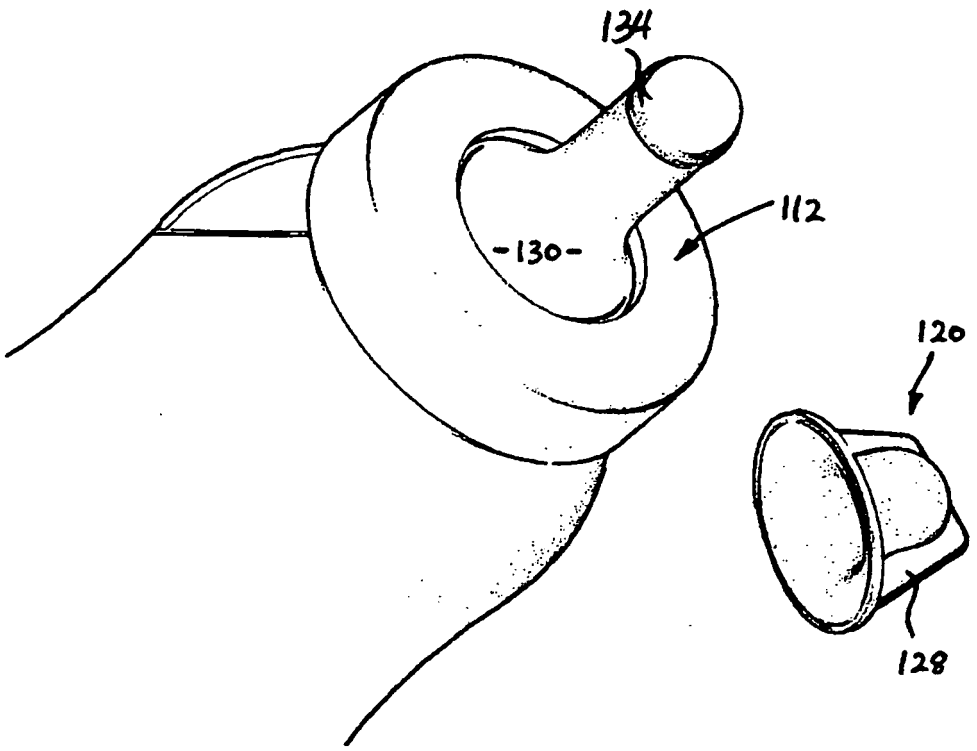


Figure 3

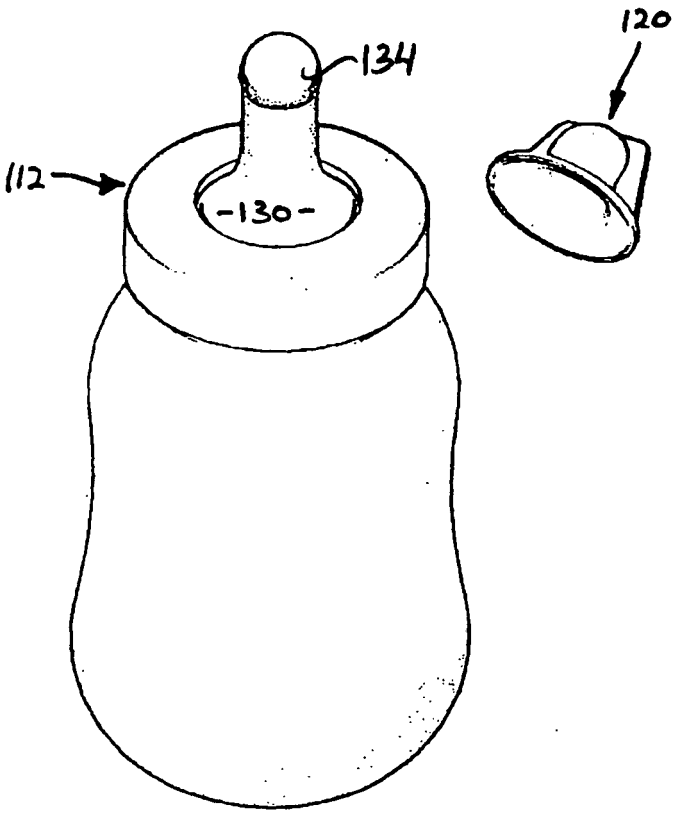


Figure 4

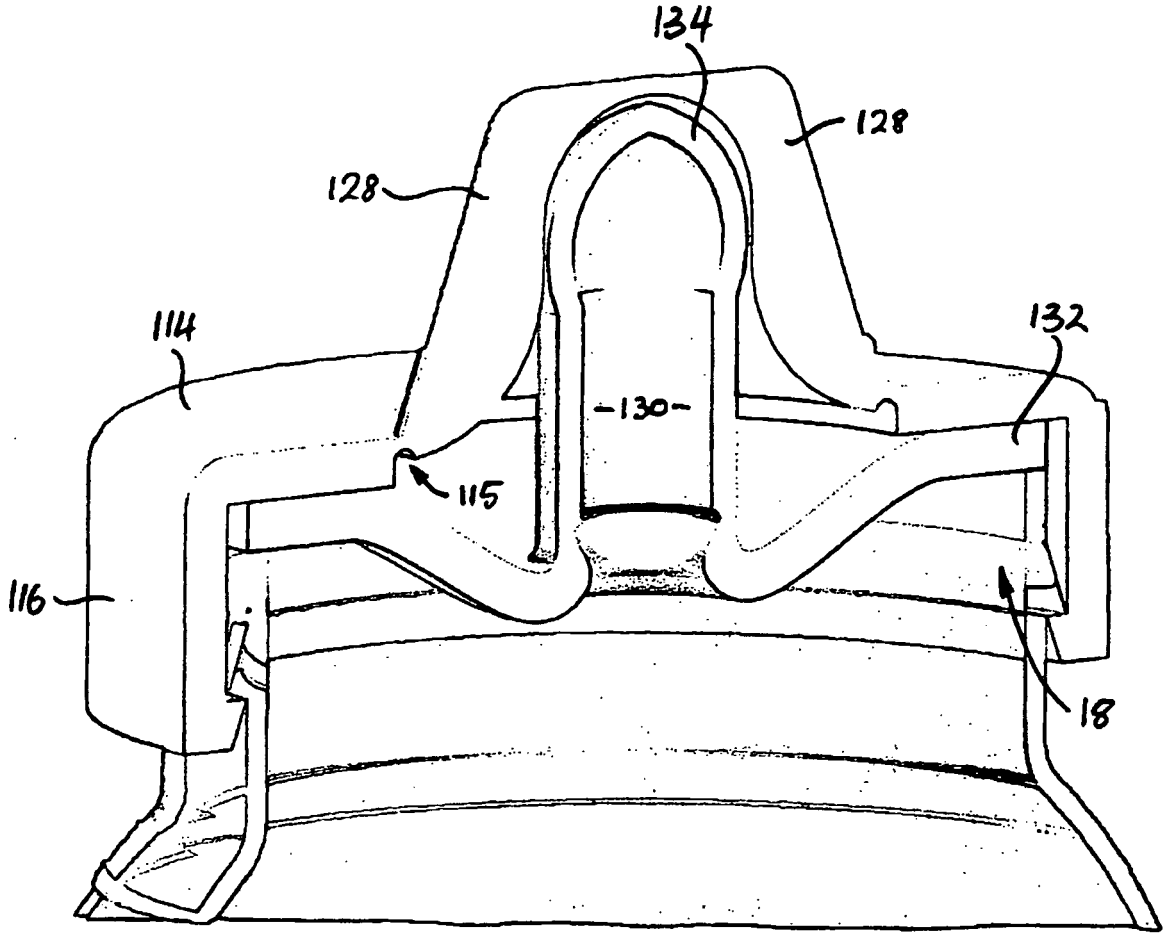


Figure 5

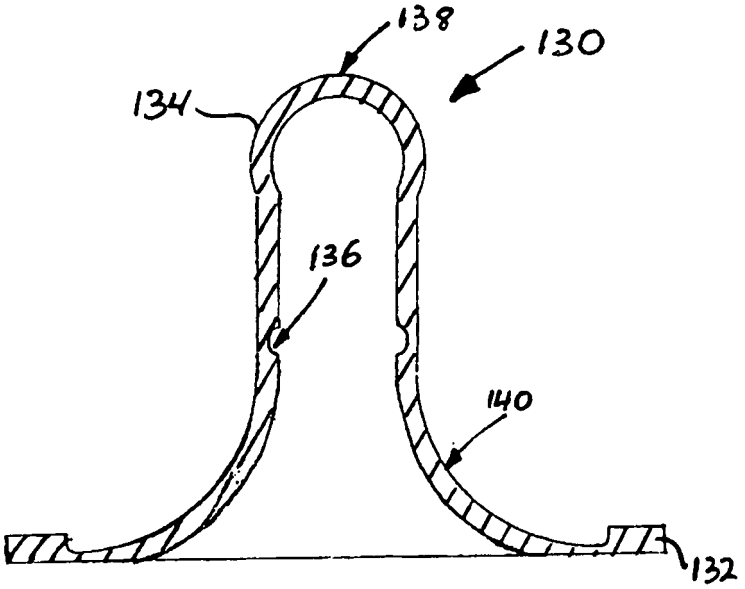


Figure 6

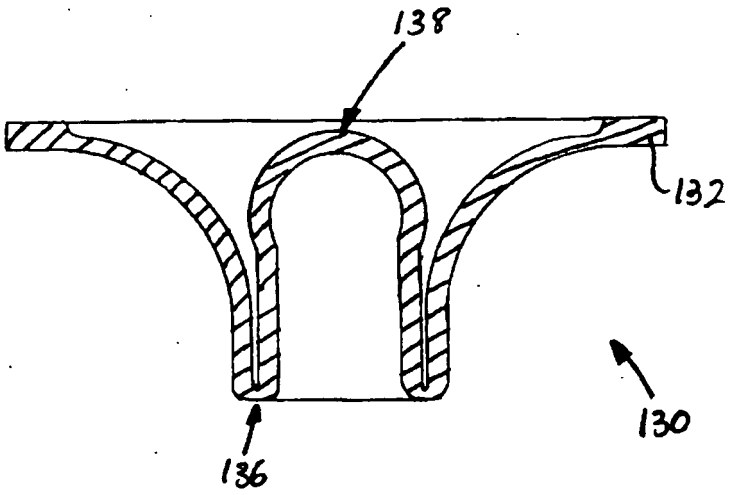


Figure 7

REFERENCES CITED IN THE DESCRIPTION

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