Oct. 13, 1953 A. WOLF 2,655,279

NURSING APPLIANCE

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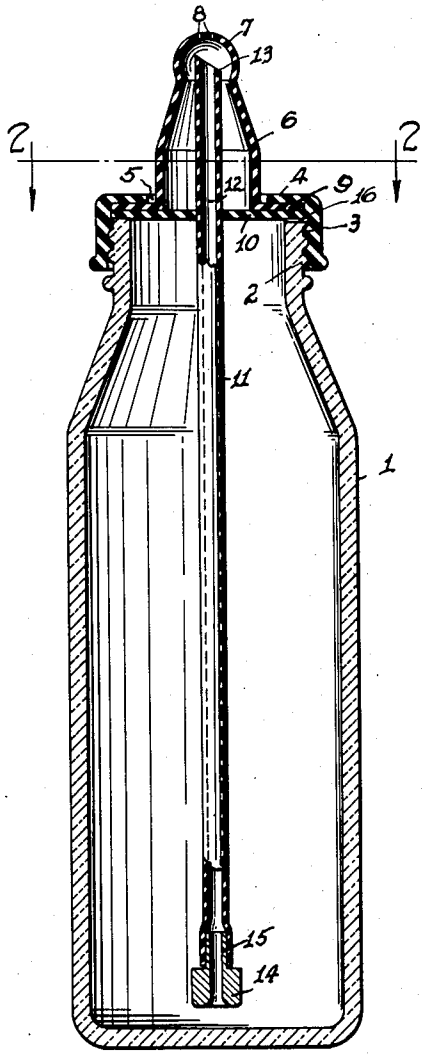


FIG. 1

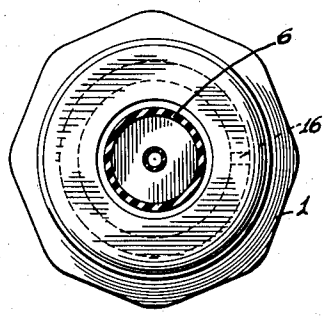


FIG. 2

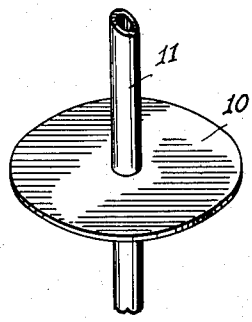


FIG. 3

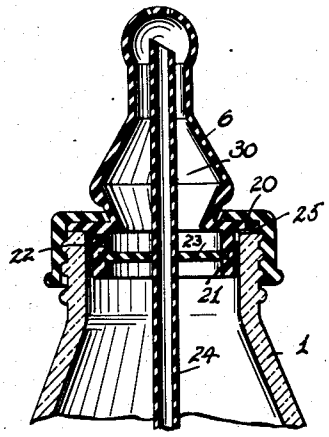


FIG. 4

INVENTOR.

Andrew Wolf

BY Haugrud & Van Horn

his ATTORNEYS

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NURSING APPLIANCE

Andrew Wolf, Cleveland, Ohio, assignor to
Mary Isabell Wolf, Cleveland, Ohio

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1 Claim. (Cl. 215—11)

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My invention relates to nursing devices or appliances and more specifically to a combined nipple and feeding tube device which is adapted to be applied to a nursing bottle in use.

One of the important objects of the present invention is to eliminate the presence of air in the nipple of a nursing bottle and thereby substantially to eliminate an infant's taking in of air with the liquid formulae when nursing with this device and consequently to eliminate distress caused by taking in of air.

A further important object of this invention is the provision of a device of this type in which there is provided a chamber within the nipple which can be filled with formula from the bottle to which the nipple is attached but which is otherwise sealed with respect to the interior of the bottle thereby effectively rendering the nipple, when containing formula, non-collapsible.

Another object of my invention is to enable a device of this kind to be used with its attendant advantages upon the conventional types of nursing bottles and caps therefor.

Another object of the invention is the provision of a device of this kind in which all of the parts can readily be disassembled and sterilized for use.

A further object of the invention is the provision of a feeding tube within the bottle and extending from a point close to the bottom longitudinally upwardly through the neck of the bottle and into the nipple area to a point adjacent the outlet orifices in the tip of the nipple and in which the material of the feeding tube is flexible enough that when the bottle is tilted out of a vertical position, the tube will flex so that its lower end will lie close to the bottom and side walls of the bottle and thereby remain submerged in the contents of the bottle until the contents are substantially removed therefrom, thus assuring virtually a complete transfer of the contents to the nipple area.

A still further object of this invention is the provision of means for transferring formula from the bottle to the nipple area while preventing liquid deposited in the area from flowing back into the bottle, regardless of the position of the bottle.

Other objects and advantages of my invention will become more apparent as the following descriptions of two embodiments thereof progress, reference being made to the accompanying drawing in which like reference characters are employed to designate like parts throughout the same.

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In the drawing:

Figure 1 is a vertical section taken through the conventional nursing bottle and illustrates one form of my invention as applied in use.

Figure 2 is a transverse section taken on line 2—2 of Figure 1 through the nipple area and feeding tube.

Figure 3 is a detailed view of the upper end of the feeding tube and the sealing member applied thereto, and,

Figure 4 is a fragmentary section taken longitudinally through a modified form of my invention.

Referring first to Figures 1 to 3 inclusive, I have illustrated therein the preferred form of the present invention and have shown the same applied to a conventional nursing bottle which is indicated generally at 1, the bottle having a threaded neck portion 2 for receiving a similarly threaded cap 3. The cap 3 has an internally directed peripheral flange 4 forming a central opening 5 for receiving the nipple as illustrated.

The nipple 6 may be of the conventional type and comprises a cylindrical body portion 6 providing a chamber therein and terminating at its upper end in a partially spherical tip portion 7 having feeding orifices 8 formed therein as indicated. The base of the nipple 6 constitutes an outwardly extending annular flange 9 which overlies the upper end of the neck portion of the bottle and which is separated therefrom by a sealing member such as a disc 10 which extends across the top of the bottle neck as indicated in Figure 1 and supports the nipple base 9 thereon.

I also provide a tube 11 having a bore 12 extending at its upper end up into the partially spherical tip portion of the nipple as at 13 in rather close proximity to the orifices 8, the tube passing through the disc 10 and downwardly into the nursing bottle to a point very close to the bottom wall thereof.

A weighted member, preferably of a non-corrosive metal, having a central bore, is shown at 14 and is provided with a portion which is telescoped within the lower end of the feeding tube, as at 15. The tube 11 is preferably made of a sanitary flexible material which can be subjected to sterilization and yet retain its flexibility. Certain plastics can be used for this purpose. Since the tube is flexible, it will be observed that when the bottle is tilted to an angular position with respect to the vertical, the weighted end of the tube will approach the side wall of the bottle adjacent the bottom wall and will remain submerged in the liquid therein until nearly all of

the liquid has been transferred to the nipple chamber.

In order that the liquid in the bottle may be displaced by air as the liquid passes up the feeding tube 11 and into the nipple chamber, there is provided a groove or slot 16 transversely of the upper edge of the neck. This slot will admit sufficient air entering between the threads of the bottle and the cap to displace the fluid which is taken slowly from the bottle.

The tube 11 and the disc 10 are securely fixed together in any suitable manner as by cementing them or the same may be formed as an integral unit.

Referring now to Figure 4, I have illustrated a modification of the invention shown in the other figures and described above, in which the nipple 6 terminates in a base portion having an outwardly extending annular flange 20 which is adapted to rest upon the upper wall of the bottle neck as shown, the nipple base also having a downwardly extending annular flange 21 which extends down into the neck of the bottle and which is provided with an inwardly opening annular groove 22 to receive the sealing disc 23 carried on the feeding tube 24.

In this form of the invention, there is also provided a vent opening 25 for admitting air between the cap and neck into the bottle to displace the fluid passing out through the feeding tube 24 and into the nipple chamber.

From the above it will be noted that I have provided a nursing device or appliance which is extremely simple in construction and which will allow the liquid removed from the bottle to be displaced by air but which will prevent such air from entering the nipple chamber. Thus the infant is prevented from taking air with the formula when using the device. As a matter of fact the nipple chamber, which is indicated at 30, when once filled with the liquid feeding from the tube 11, will remain filled and thus will exclude air until the contents of the bottle are practically consumed. As liquid is removed from the nipple chamber by the nursing infant, it will be replaced by additional liquid feeding up the tube 11 from the bottle and this will continue until the level of the liquid in the bottle reaches a point low enough that the opening in the weighted end 14 of the tube is not submerged. With my invention also, the position of the bottle in feeding is not of importance since, with the sealed nipple chamber, the infant may even feed sitting up with the bottle in the position shown in Figure 1.

What I claim as my invention and desire to secure by Letters Patent is:

I claim:

A device of the class described including in combination a nursing bottle, a nipple secured to the open end of said bottle, means for securing the nipple to the bottle, said nipple having an outwardly extending annular flange overlying the neck of the bottle and engageable by said securing means, said nipple also having an annular depending flange extending into and spaced from the neck of said bottle, said depending flange having an inwardly opening groove, a disk disposed transversely within and supported by said annular depending flange thereby to provide a fluid reserve chamber in said nipple and to separate said chamber from the interior of the bottle, said annular depending flange having the inwardly opening groove for receiving and retaining the periphery of said disk and thereby support said disk within said flange, said disk having an opening therethrough, and a tube extending through said disk opening and communicating said nipple chamber with said bottle chamber whereby suction on said nipple will cause fluid in said bottle chamber to pass into said nipple chamber.

ANDREW WOLF.

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