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Y. H. KURKJIAN

2,093,730

NURSING UNIT

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Fig. 1.

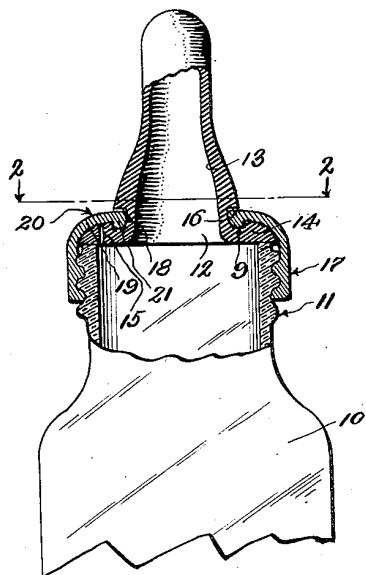


Fig. 4.

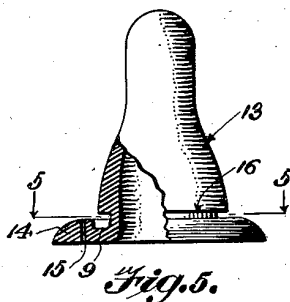


Fig. 5.

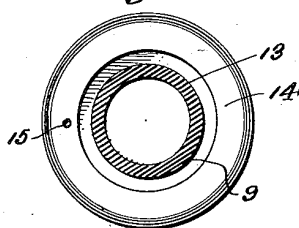


Fig. 7.

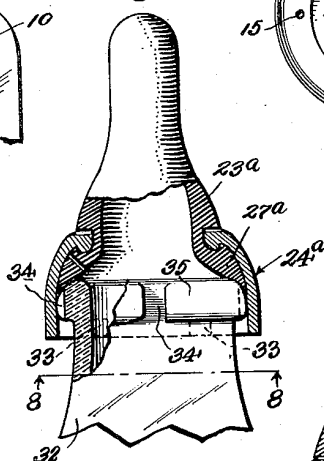


Fig. 6.

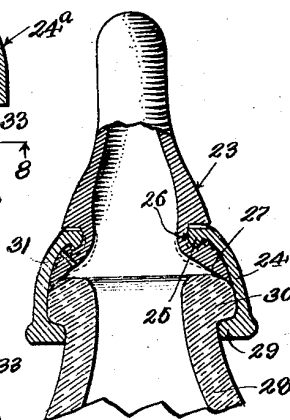


Fig. 2.

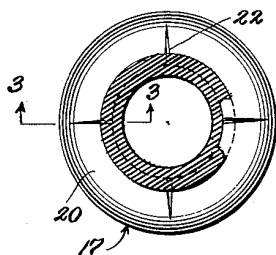


Fig. 3.

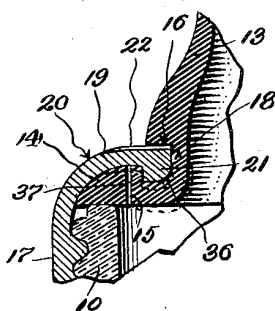
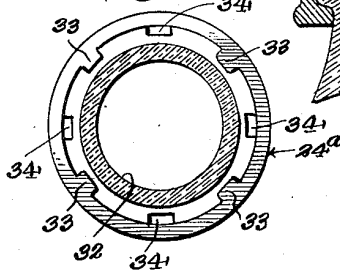


Fig. 8.



Inventor

YERVANT H. KURKJIAN

By

Irving A. McCathran
Attorney

UNITED STATES PATENT OFFICE

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NURSING UNIT

Yervant H. Kurkjian, Clifton, N. J.

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4 Claims. (Cl. 128—252)

This invention relates to nursing units, and has for one of its principal objects the production of a resilient flanged nipple which is so constructed as to permit the nipple to be secured to the mouth of a bottle by means of a retaining cap, and permit the entrance of air into the interior of the bottle, and also prevent the nipple from collapsing inwardly of the retaining cap.

A further object of this invention is the production of a nursing unit wherein a flexible nipple having a vented flexible flange is removably retained upon the neck of a bottle by means of a retaining cap which is so constructed as to resist the spreading of the vented portion of the flange in the event of excessive pull thereon.

Another object of this invention is the production of a nursing unit wherein a nipple retaining cap is constructed in a manner as to present a streamline type of connection between the bottle and the nipple.

Other objects and advantages of the present invention will appear throughout the following specification and claims.

In the drawing:

Figure 1 is a side elevation of the nursing unit, certain parts being shown in vertical section;

Figure 2 is a transverse section taken on line 2—2 of Figure 1;

Figure 3 is an enlarged section taken on line 3—3 of Figure 2;

Figure 4 is a side elevation of the nipple, partly shown in section;

Figure 5 is a transverse section taken on line 5—5 of Figure 4;

Figure 6 is a vertical section showing a modified form of the nursing unit;

Figure 7 is a vertical section showing a still further modified form of the nursing unit;

Figure 8 is a section taken on line 8—8 of Figure 7.

By referring to the drawing, it will be seen that 10 designates the nursing bottle which is preferably of the wide-mouth type, having threads 11 formed near its open or outer end.

A flexible nipple 12 is adapted to fit over the open outer end of the bottle 10, and is provided with a body portion constituting a neck 13 and a laterally extending and preferably annular flange 14. This flange 14 is preferably provided with a single venting aperture 15 and it should be understood that the flange 14 is integral with the body portion 13 of the nipple, the body portion and flange being formed of flexible material such as rubber. Should it be desired, any number of venting apertures may be inserted in the

flange by merely piercing the flange with the pointed end of a needle or other instrument, thereby enabling the user to increase the flow of milk through the nipple when desired. The body portion 13 of the nipple is provided with an overhanging shoulder 16 adjacent the point of junction between the body portion 13 and the flange 14, and this shoulder 16 is spaced vertically with respect to the upper face of the flange 14. Note particularly Figure 4.

An annular channel 9 is formed in the flange 14 at the junction of the flange 14 and the body portion 13 and directly under the shoulder 16.

A retaining cap 17 is removably fitted over the outer or open end of the bottle 10, as shown in Figure 1, and is provided with screw-threads for interfitting with the threads 11. This cap 17 is provided with a centrally located aperture 18 through which the neck or body portion 13 of the nipple extends. The cap 17 is provided with an inwardly extending annular flange 19, which flange 19 is preferably curved upon its outer face 20 from the body portion 13 of the nipple toward the outer periphery of the cap 17 to provide a convex outer face upon the outer end of the cap 17 and provide a receding outer face upon the cap away from the nose of the baby while sucking. The flange 19 is provided adjacent the aperture 18 and upon its inner face with an inwardly extending bead 21, which bead 21 is adapted to fit within the channel 9 of the flange 14 directly under the shoulder 16 of the body portion 13 of the nipple and at the point of junction of the flange 14 with the body portion 13. This bead 21 will constitute an efficient means for engaging the flange adjacent the body portion 13 and inwardly of the vent opening 15 so as to prevent the spreading of the vent 15 when an excessive pull is exerted upon the body portion 13 of the nipple. The outer edge of the flange 14 is adapted to be firmly clamped between the flange 20 of the cap 17 and the extreme outer edge of the neck of the bottle 10, and this inwardly extending bead 21 will tend to hold that portion of the flange through which the vent opening 15 is formed against lateral distortion or strain, at the same time permitting the flange to properly flex in time when a vacuum is built up in the bottle. The bead 21 is provided with a curved under and inner face 36 and an inner straight shoulder 37, the channel 9 being sloped to conform to the transverse contour of the bead 21, as shown clearly in Figure 3.

It should be understood that as a vacuum is built up in the bottle through the baby sucking

upon the nipple or body portion 13 thereof, the flange 14 may flex away from the inner face of the flange 20 of the cap 17 and draw the upper face of the flange adjacent the vent 15 away from the inner face of the flange 20 of the cap 17 and allow air to pass under the shoulder 16 and between the body portion 13 of the nipple and the edge of the aperture 18, under the under face of the flange 20 of the cap 17, and through the vent opening 15 into the bottle. Under ordinary conditions it would be impossible to obtain an airtight fit within the aperture 18 and under the shoulder 16, but to insure a proper entrance of air under the shoulder, I provide scored air channels 22 which may be in any number or design leading at a tangent across the outer face of the flange 20 to the central aperture 18.

From the foregoing description, it will be seen that a very simple and efficient means has been provided in the nature of the shoulder 16 for preventing the body portion of the nipple from collapsing inwardly of the neck of the bottle when a vacuum is built up therein, and that the bead 20 will also greatly strengthen the nipple at the junction of the body portion and flange and tend to resist the pulling or tearing of the flange adjacent the vent opening 15 when excessive pull is exerted upon the body portion 13.

In Figure 6, there is shown a modified form of the invention carrying out the same principle previously described, the same type of nipple being employed and being designated in this form by the numeral 23. However, a different type of securing cap is provided as indicated by the numeral 24, which cap 24 may be formed of soft rubber and consists of a conical body of a thimble-like structure. The cap 24 is provided with a bead 25 adjacent the central aperture 26 through which the nipple 23 extends, the bead portion gripping the flange 27 of the nipple 23 in a manner similar to that described with respect to Figure 1. The outer face of the cap 24 preferably conforms to the contour of the nipple 23 and constitutes a continuation thereof to provide a streamline type connection between the nipple 23 and the bottle 28. The cap 24 may be provided with an inwardly extending annular flange 29 for snapping under the bead 30 of the bottle 28. The flange 27 is provided with a vent opening 31 similar to the vent opening 15 previously described.

Figures 7 and 8 illustrate a further modified form of the invention wherein a nipple 23a is illustrated similar to that shown in Figure 6, and the cap 24a is preferably formed of hard or vulcanized rubber, "bakelite", or other similar material. This cap 24a may be secured in any suitable or desired manner to the neck, or to the bottle 32, but one type of connection is illustrated embodying lugs 33 formed on the inner face of the cap 24 for interfitting through the notches 34 of the flange 35, these lugs 33 being adapted to clamp under the flange 35. In this way, the flange 27a of the nipple 23a will be clamped between the upper edge of the cap 24 and the upper edge of the bottle neck 32. This cap 24a is of substantially the same contour as the cap 24, or in other words of the streamline type wherein the outer face of the cap 24 will merge into the contour of the outer face of the nipple 23.

It should be understood that certain detail

changes in the mechanical construction, combination and arrangement of parts may be employed without departing from the spirit of the invention, so long as such changes fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. In combination with a bottle having an open outer end, a cap removably fitting upon the open end of said bottle, said cap having a central aperture, a nipple having its body portion projecting through said aperture and also having a shoulder portion overhanging the cap adjacent the aperture to prevent the inward collapsing of the nipple with respect to said bottle, said nipple having a laterally extending flange adapted to be clamped between the end of said bottle and said cap, the flange having a vent opening formed therein normally covered at its outer end by said cap, and said cap having air channels extending under said shoulder portion to permit the passage of air under said shoulder portion and through said air vent as said flange is flexed away from said cap, the body portion of the nipple being slightly spaced from the cap to provide an exterior vent communicating with said air channels.

2. In a nursing unit, a bottle having an open outer end, an apertured cap removably secured to said bottle, a nipple having a body portion extending through the apertured cap and a flange clamped between said bottle and cap, said flange having a vent located under said cap, the body portion of said nipple extending through said cap and positioned to permit air to pass between the nipple and the cap into the bottle, said flange having a sunken channel located between the vent and the body portion of the nipple, and a depending bead carried by said cap and fitting in said channel for resisting lateral stretching of said flange adjacent said vent when excessive pull is exerted upon the body portion of the nipple.

3. In a nursing unit, a bottle having an open outer end, a cap removably secured to said bottle, said cap having a central aperture, a nipple extending through said aperture of said cap, said nipple having a lateral flange fitting under said cap and between the cap and end of the bottle, said flange having an aperture constituting a vent located under said cap and normally covered by the cap, said cap having a bead upon its inner face adjacent the aperture in the cap, and said flange having means located inwardly of the vent with respect to the center of the nipple and engaging said bead for resisting lateral stretching of said flange adjacent said vent when excessive pull is exerted upon the body portion of the nipple.

4. In combination with a bottle having an open outer end, a retaining cap removably connected with the open end of the bottle, an elastic nipple having a laterally extending flange adapted to be clamped between the cap and the bottle, the flange having vent openings formed therein normally covered at their outer ends by the cap, the body portion of the nipple extending outwardly through said retaining cap, and the nipple and cap having inter-engaging means intermediate the body portion of the nipple and said vents for resisting lateral stretching of said flange adjacent said vents and the distortion of the vents when excessive pull is exerted upon the body portion of the nipple.

YERVANT H. KURKJIAN.