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H. J. WHITE

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NURSING BOTTLE ASSEMBLY

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Fig. 1

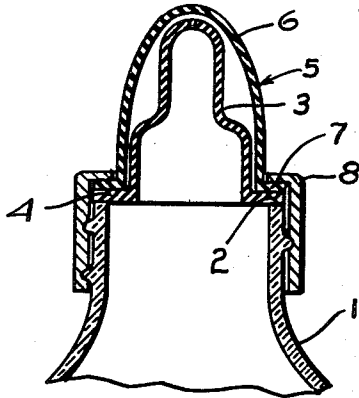


Fig. 2

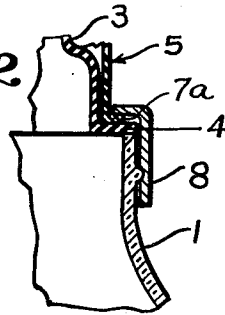


Fig. 3

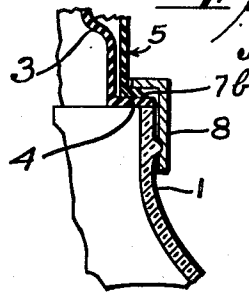


Fig. 4

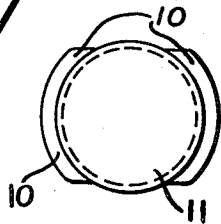


Fig. 5

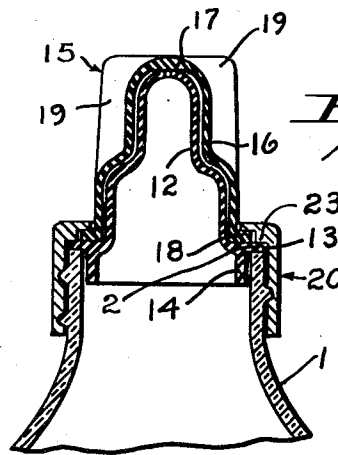
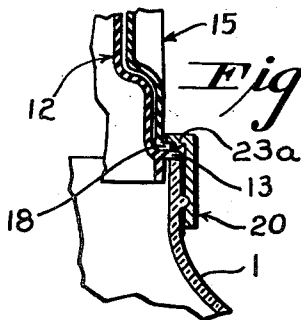


Fig. 6



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1

2,694,500

NURSING BOTTLE ASSEMBLY

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2 Claims. (Cl. 215—11)

This invention relates to nursing bottle assemblies and is particularly concerned with the provision of such an assembly including a protective nipple cover.

It is common practice to prepare a number of units, say a day's supply, of milk or other liquid infant food at one time and then to store this food in nursing bottles until it is to be used. For convenience, the nipple is usually associated with the bottle at the time of filling, thus rendering the assembly ready for use. In such case, however, it is desirable to provide a cover or other protection for the nipple to prevent its becoming contaminated from handling or from contact with the air. Such cover should, of course, be easily attachable to or removable from the assembly. In addition, the cover should be of such a nature that it renders the nursing bottle assembly essentially leakproof so that it may be conveniently carried during travel.

Covers of various types have been proposed heretofore for this purpose. A common expedient is a cover that merely fits over the nipple in the manner of an inverted cup. Such a cover, however, provides inadequate protection from the atmosphere and is of little use in preventing leakage. A clamped assembly wherein the nipple is held inverted within the bottle prior to use is frequently employed. Such a unit must be completely taken apart and reassembled prior to use, however, and requires undesirable and inconvenient handling of the nipple. An assembly wherein a rigid glass or plastic cap is clamped over the nipple has also been suggested. However, such an assembly must still be completely taken apart in order to remove the cap. Caps of this type also do not seal off the nipple perforations sufficiently to prevent all leakage should the bottle be tipped or inverted.

Applicant has now devised a nursing bottle assembly which includes a protective nipple cover possessing the requisite features indicated above and at the same time being free of the various deficiencies and disadvantages of prior proposals. Briefly described, applicant's invention comprises a protective nipple cover composed of a resilient material such as rubber and structurally including a body portion adapted to encompass the nipple and having an outwardly extending lateral member, such cover being specifically designed for use with a nipple having an outwardly extending annular flange adapted to be clamped against the mouth of a bottle by a removable annular retaining ring. Upon assembly, the lateral member of the nipple cover is clamped between the retaining ring and the nipple flange. Such nipple cover, being resilient, is easily removable from the clamped assembly independently of the other members and particularly the retaining ring. Thus the bottle may be readied for use by removing the cover in one simple operation which does not involve touching or handling of the nipple.

Various features and modifications of the invention are set forth in detail in the ensuing description, to be read in conjunction with the appended drawing in which:

Fig. 1 is a sectional elevation of a nursing bottle assembly embodying one form of the protective cover of the invention.

Figs. 2 and 3 are partial sectional views illustrating modified forms of the protective cover shown in Fig. 1.

Fig. 4 is a top plan view of a further modification of the protective cover of the invention.

Fig. 5 is a sectional elevation of a nursing bottle as-

2

sembly showing a particularly preferred form of embodiment of the invention.

Fig. 6 is a partial sectional view showing a modification of the form of embodiment in Fig. 5.

Referring to the drawing in detail and Fig. 1 in particular, there is shown a nursing bottle assembly wherein an annularly flanged nipple 3 is clamped to a wide or semi-wide mouth bottle 1 by a retaining ring 8 in conventional manner. As shown, annular flange 4 extends outwardly from the periphery of the nipple body for seating in the usual manner on rim 2 of the bottle mouth. Retaining ring 8 comprises an annular right-angled member composed of relatively rigid material and internally threaded for engagement with external threads on the bottle 1 as illustrated.

To prevent contamination of the nipple and to avoid undesirable handling thereof prior to use, there is provided a protective nipple cover 5 consisting structurally of a body portion 6 which completely encompasses nipple 3 and an annular flange 7 which extends outwardly from the periphery of the body portion and is integral therewith. As indicated, cover flange 7 may be of substantially the same width as nipple flange 4 and is adapted to be clamped between the retaining ring 8 and the nipple flange.

In accordance with applicant's invention, protective nipple cover 5 is composed of a resilient material such as soft rubber. By reason of such resiliency, as will be at once apparent, protective cover 5 is made independently removable from the clamped assembly without disengagement of any of the other parts. In particular, cover 5 can be removed without detaching the retaining ring 8 from the assembly. The readying of the covered assembly for use is thereby facilitated while full protection against contamination and leakage is provided in the interim, and necessary handling of the assembly is reduced to a minimum. The surface of the cover is desirably made smooth and low in friction to insure easy removal of the cover from the clamped assembly.

To ready the covered assembly for feeding, protective cover 5 need only be simply gripped and pulled out of its clamped engagement, and the retaining ring 8 thereafter screwed further down to tightly clamp the nipple in place. Depending on the degree to which retaining ring 8 has been initially tightened, it may, of course, be loosened slightly prior to removing the cover 5 to facilitate such removal.

An incidental advantage of applicant's protective nipple cover is that, by reason of the resilient nature thereof, it can be used to pick up the nipple for placement on the bottle, particularly where the cover and the nipple have a relatively close fit over at least part of their common surfaces. In such manner separate handling of the nipple to place it on the bottle can be eliminated.

Fig. 2 illustrates a slightly different form of cover in which the flange 7a is somewhat narrower than the flange 4 of nipple 3. Another modification of the protective cover wherein the flange 7b has a downwardly and outwardly beveled periphery is shown in Fig. 3. In either case removal of the cover is facilitated while the air-tight protection feature prior to its removal is retained.

In place of the annular flange, the protective cover may be provided with one or more lateral members or tabs 10 extending peripherally from the body portion 11 as shown in Fig. 4. Preferably the cover is provided with two such tabs diametrically opposed to each other.

In the particularly preferred form of embodiment of the invention illustrated in Fig. 5, nipple 12 is provided with the outwardly extending annular flange 13 adapted to rest on the rim 2 of the mouth of the bottle 1. Nipple 12 may be conveniently provided with an annular portion 14 depending downwardly from flange 13 and fitting within the bottle mouth to facilitate centering of the nipple therein during assembly. The protective nipple cover 15 is desirably so designed that its body portion 16 has an inner contour corresponding in general to the shape of the nipple and closely encompasses it. The upper portion of the cover may be flattened as

3

shown at 17 to provide means for effectively sealing off the conventional nipple perforations. Means such as ears 19 extending from the body portion of the cover are desirably provided to facilitate gripping and removing of the cover from the assembly.

Retaining ring 20 is provided with an annular internal shoulder 23 designed to bear solely against the nipple flange 13. The outwardly extending annular cover flange 18 is accordingly made correspondingly narrower than the nipple flange to cooperate with such internal shoulder. Retention of the nipple by the retaining ring is thereby assured upon removal of the cover from the assembly. Moreover, not only is removal of the protective cover independently of the other members of the assembly effected but such removal is accomplished without requiring adjustment of the retaining ring either prior to or after removal of the cover.

Advantageously retaining ring shoulder 23 may be made slightly thicker than the cover flange 18 thereby permitting greater pressure to be exerted on the nipple flange than that transmitted to the cover flange and facilitating release of the cover. Obviously, the inner diameter of shoulder 23 should be at least as great as the outer diameter of the flange. Shoulder 23 may be a separate member if desired.

If desired, shoulder 23 may be made V-shaped to provide an edge for line engagement with the nipple flange. One such form of embodiment is shown in Fig. 6 wherein shoulder 23a has its lower contacting surface beveled to provide an increased inner thickness. Such construction enables the shoulder to exert a pinching action midway of the nipple flange.

It is readily apparent that the present nursing bottle assembly incorporates the desirable features of simplicity of production, assembly and use, complete protection of the nipple from contamination, and freedom from leakage. While several forms of embodiment have been shown and described, it is obvious that further changes may be made without affecting the essential characteristics of the invention as defined in the appended claims.

I claim:

1. A nursing bottle assembly comprising a bottle, a nipple having a body portion and an outwardly extending annular flange contacting the rim of the bottle mouth, a protective nipple cover composed of resilient material and comprising a body portion encompassing the nipple body and having an outwardly extending lateral flange of less diameter than the nipple flange and seating thereon to expose the outer portion of the upper surface of the nipple flange, and an annular retaining ring including a bottle-engaging portion and an inwardly extending flange portion having an undersurface including two vertically spaced horizontal annular concentric inner and outer bearing surfaces, the outer annular bearing surface bearing directly against the exposed portion of the nipple flange only and clamping it against the

4

rim of the bottle mouth, the inner bearing surface bearing against the cover flange only, the vertical spacing between such bearing surfaces providing for exertion of a greater bearing force on the nipple flange than on the cover flange, whereby such protective cover is capable of removal from clamped assembly independently of the nipple and without release of the clamping force exerted by the outer bearing surface of the retaining ring on the nipple flange.

2. A nursing bottle assembly comprising a bottle, a nipple having a body portion and an outwardly extending annular flange contacting the rim of the bottle mouth, a protective nipple cover composed of resilient material and comprising a body portion encompassing the nipple body and having an outwardly extending lateral flange of less diameter than the nipple flange and seating thereon to expose the outer portion of the upper surface of the nipple flange, and an annular retaining ring including a bottle-engaging portion and an inwardly extending flange portion having an undersurface including an inner annular horizontal bearing surface and an outer annular concentric bearing surface wedge-shaped in cross-section, the outer wedge-shaped bearing surface bearing directly against the exposed portion of the nipple flange only and clamping it against the rim of the bottle mouth, the inner bearing surface bearing against the cover flange only, said outer wedge-shaped bearing surface providing an annular line of contact with the nipple flange vertically spaced from said inner horizontal bearing surface, said vertical spacing providing for exertion of greater bearing force on the nipple flange than on the cover flange, whereby such protective cover is capable of removal from clamped assembly independently of the nipple and without release of the clamping force exerted by the outer wedge-shaped bearing surface of the retaining ring on the nipple flange.

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