

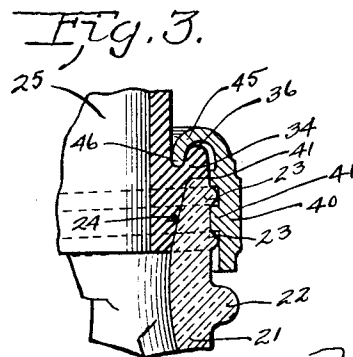
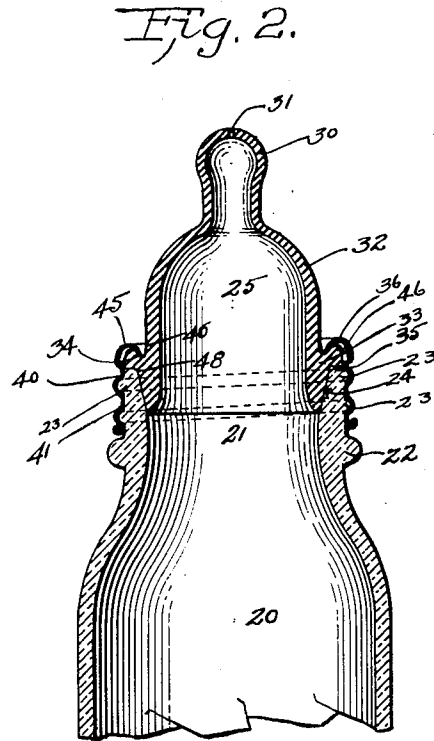
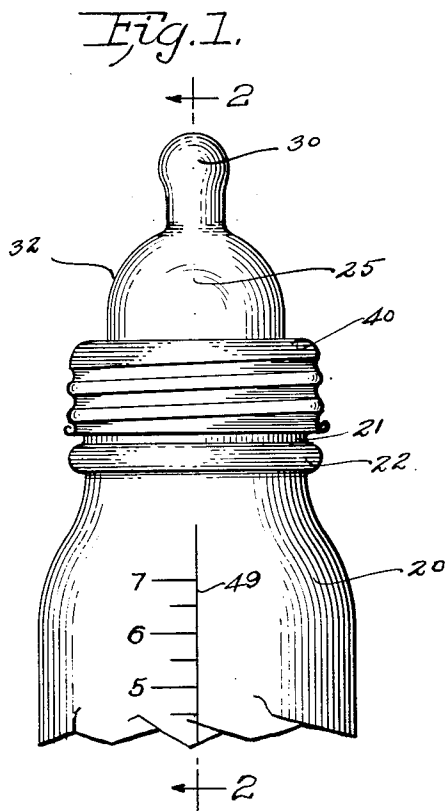
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NURSING BOTTLE AND NIPPLE

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UNITED STATES PATENT OFFICE

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NURSING BOTTLE AND NIPPLE

Application filed April 12, 1927. Serial No. 183,091.

My invention relates to nursing bottles and more particularly it relates to an improved nipple retainer for the same.

An object of my invention is to provide a nursing bottle wherein the nipple may be retained on the bottle neck in a manner to reduce the loss of the liquid contents of the bottle by leakage to a minimum.

Another object of my invention resides in the provision of a nipple retaining device wherein a minimum manual turning effort is necessary to screw and unscrew the nipple onto and from the bottle to effect an efficient seal between the bottle neck and nipple or to remove the nipple from the bottle.

Another object of my invention is to provide a device of this character which will effectively prevent unintentional disengagement of the nipple from the bottle and wherein the nipple is retained on the bottle neck without unnecessarily stretching the nipple, thereby eliminating any possibility of the nipple being broken, and increasing its duration.

Another object of my invention is to provide a nipple retainer for nursing bottles which is durable in construction and which is economical to manufacture.

These and other objects of my invention and the invention itself will become apparent by reference to a description of an embodiment of my invention, in which description, reference will be had to the accompanying drawings.

Referring to the drawings:

Fig. 1 shows a side elevational view of an embodiment of my invention applied to a nursing bottle, only a fragment of the nursing bottle being shown;

Fig. 2 shows a vertical medial sectional view of the foregoing taken on the line 2—2 of Fig. 1; and

Fig. 3 shows a modification of ring threads of the foregoing embodiment, and the retaining ring.

Referring to all of the figures of the drawings in all of which like parts are designated by like reference characters, at 20 I show a fragment of a body portion of a nursing bottle cast from a material, preferably glass,

which body may be formed into a cylindrical or polygonal contour. The upper end of the bottle is reduced to provide a neck 21, the wall thickness of the said neck being thicker in transverse dimensions than the walls of the body portion of the bottle. A peripheral bead 22 is provided on the exterior surface of the bottle neck and screw threads 23 are formed on the neck above the said bead and adjacent thereto. Said screw threads comprise preferably two inclined spaced beads having curved outer surfaces. The inner wall 24 of the neck adjacent its mouth is frustro-conical.

The nipple employed in connection with my improved retaining means preferably comprises a body 25 of resilient or pliable material such as rubber having a reduced tip portion 30, provided with an aperture 31 therein, the walls of which being relatively thin. A relatively enlarged portion 32 is also provided, the walls of which being thicker than the walls of the tip portion. The lower portion of the said nipple is provided with an outwardly projecting annular flange 33 having a circumferential groove 34 formed in its top wall and a flat bottom face 35, adapted to engage the top wall of the bottle neck, said groove being defined by an upstanding peripheral bead 36 and by the outer surface of the nipple portion 32.

The base of the said nipple is provided with a frustro-conical collar depending downwardly from the annular flange 33 of a contour conforming to that of the frustro-conical walls of the bottle mouth, and adapted when inserted therein to snugly fit the same and retain the nipple in the bottle mouth by virtue of the inherent resiliency of the material from which the nipple is made. In applied position the flange 33 engages the top wall portion of the bottle mouth. The groove 34 in the nipple head is preferably disposed relative to the bottle mouth so that it is located within the confines of the axial walls of the bottle neck.

An annular locking ring or collar 40 preferably formed of a sheet metal is provided having threaded annular side walls. Threads 41 thereof conform to the threads of the

bottle neck. The ring threads, when screwed onto the bottle neck threads fasten the nipple securely against accidental disengagement therewith and at the same time permit ready removal of the said ring from the bottle neck with a minimum effort on the part of the user.

Referring to Fig. 3 of the drawings I show an annular locking ring or collar 40 preferably formed of an aluminum casting is provided having an internally threaded wall. The threads 41 thereof are cut to provide abrupt threads having rectangular wall portions and are spaced from each other a distance sufficient to permit the entry therebetween of the beads of the threads of the bottle neck. The ring threads, when screwed onto the bottle neck threads, perform an efficient camming action thereon and at the same time permit ready removal of the said ring from the bottle neck with a minimum effort on the part of the user. This is accomplished by virtue of the fact that the threads engage each other at two points, thereby reducing friction therebetween to a minimum.

The annular collar or ring 40 is also provided with an inwardly projecting reversely curved flange 45 having a rounded peripheral edge 46 adapted to project into the groove 34. In the initial position assumed by the ring and nipple when applied to the bottle neck to retain the nipple thereon, a space 47 is formed between the periphery of the nipple bead and the inner walls of the said collar, as best shown in Fig. 1, the said space adapted to allow for expansion of the nipple flange 33 when the ring has been turned down tightly on the bottle neck as best shown in Fig. 3. When the ring has been so turned the flange 33 of the nipple is securely clamped at 48 to the bottle mouth and the bead 36 is compressed within the ring flange 45. A large sealing surface is thus provided between the bottle mouth and the nipple.

Suitable calibrations may be formed such as 49 on the bottle outer surface for the purpose of indicating the liquid contents of the bottle.

I may provide an outer wall surface of the annular ring with a knurled portion to facilitate gripping of the ring for either screwing or unscrewing the said annular ring either onto or off of the bottle.

The parts are so assembled that they may be readily disassembled by unscrewing the collar from the bottle neck and then withdrawing the nipple from the mouth of the bottle. This may be done for the purpose of sterilizing or cleansing the bottle and nipple or for refilling the bottle.

The annular ring will so engage the nipple flange that it will not cut the same and accordingly the life of the nipple is increased. Likewise the construction and arrangement of the parts is such that the ring will main-

tain the nipple onto the mouth of the bottle without distorting the nipple and at the same time prevent unintentional removal of the nipple by the infant.

Having thus described my invention in a particular embodiment I am aware that numerous and extensive departures may be made from the embodiment herein illustrated and described but without departing from the spirit of my invention.

I claim:

1. In combination, a nursing bottle comprising a rubber nipple, the walls of the bottle terminating at one end in an exteriorly threaded neck having outwardly flaring interior wall surfaces adjacent the bottle mouth, said nipple comprising an annular exteriorly tapered base adapted to be projected within the bottle mouth and to make wedging sealing engagement with the said interior flaring surfaces and an annular outwardly extending flange disposed above the tapered base and adapted to be pressed upon the upper edge of the bottle mouth, and an interiorly threaded collar comprising an inwardly and downwardly projecting annular flange adapted to be screw threaded over the neck with the downwardly projecting portion of the flange in clamping engagement with portions of the annular tapered base of the nipple interiorly of the upper edge of the bottle mouth and of said outwardly extending flange of the nipple and the inwardly projecting portion of the flange being normally out of clamping engagement with said flange of the nipple, the collar being thus adapted upon continued screwing of the collar on the neck to first press the tapered base wedgingly into the neck of the bottle to seal the same and subsequently press the flange upon the edge of the bottle neck.

2. In combination, a nursing bottle comprising a rubber nipple, the walls of the bottle terminating at one end in an exteriorly threaded neck having outwardly flaring interior walls adjacent the bottle mouth, said nipple comprising an annular exteriorly tapered base adapted to be projected within the bottle mouth and to make wedging sealing engagement with the said interior flaring surfaces, and an annular outwardly extending flange disposed above the tapered base and adapted to be pressed upon the upper edge of the bottle mouth and an interiorly threaded collar terminating at one end in an inwardly projecting flange adapted to be screw threaded over the neck with its flange brought down into tight clamping engagement with the upper surfaces of the nipple flange to compress it against the upper edge of the bottle mouth and to increase the pressure of the wedging engagement between the nipple base and the interior flaring surfaces of the bottle neck, the collar flange having a downturned inner portion engage-

able with the nipple on portions directly overlying wedging portions of the base, and interiorly of the upper edge of the bottle mouth.

5 3. In combination, a nursing bottle comprising an exteriorly threaded mouth portion having an interior outwardly flared surface adjacent the edge of the mouth opening and a rubber nipple for the bottle having an
10 exteriorly tapered tubular base adapted to be projected within the mouth with its outer tapered surface in wedging engagement with the inner flaring surface of the mouth, said nipple comprising also a radially extending
15 flange at the junction of nipple and base portions extending outwardly over the upper edge of the mouth, and a clamping ring comprising an inwardly extending flange and having interiorly threaded surfaces adapted
20 ed to be screw threaded on to the threads of the mouth, said flange engaging the upper surface of the base to force the base downwardly into the bottle neck and to press the nipple flange against the upper edge surfaces
25 of the mouth, the flange of the clamping ring engaging the base on portions interiorly of the upper edge of the bottle mouth.

4. In combination, a nursing bottle comprising an exteriorly threaded mouth portion having an interior outwardly flared surface adjacent the edge of the mouth opening and a rubber nipple for the bottle having an
30 exteriorly tapered tubular base adapted to be inserted into the bottle mouth with its outer tapered surface in wedging engagement with the interior flaring surface of the mouth, said nipple comprising also a radially extending
35 flange projecting outwardly over the upper edge of the mouth, and a clamping ring comprising an inwardly extending flange and having interiorly threaded surfaces adapted
40 to be screw threaded onto the threads of the mouth, said flange extending inwardly over the nipple flange and above it with clearance and into engagement with portions of the
45 nipple axially above the tapered tubular base thereof and interiorly of the edge of the bottle mouth, whereby upon screwing the clamping ring on the neck, the flange of the
50 clamping ring may move the tapered base of the nipple axially into the flared mouth of the bottle to seal the same independently of engagement of the nipple flange with the upper edge of the bottle mouth.

55 5. In combination, a nursing bottle, comprising an open mouth portion and a rubber nipple for the bottle having a tubular base adapted to be inserted into the bottle mouth and comprising also a radially extending
60 flange projecting outwardly over the upper edge of the mouth, the exterior surface of the tubular base and the interior surface of the bottle mouth being relatively shaped so that upon movement of the tubular base inwardly into the mouth a wedging sealing is

produced between the base and the bottle, and a clamping means connected with the bottle and operable to react on the bottle and exert a force on the base of the nipple to move it axially into the mouth of the bottle to seal it, and adapted to apply said force on portions of the base interiorly with respect to the open end of the bottle and adapted to effect said seal independently of engagement of the said nipple flange with the open end of the bottle.

In testimony whereof I hereunto affix my signature this 23rd day of February, 1927.

MARY McCREA.

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