

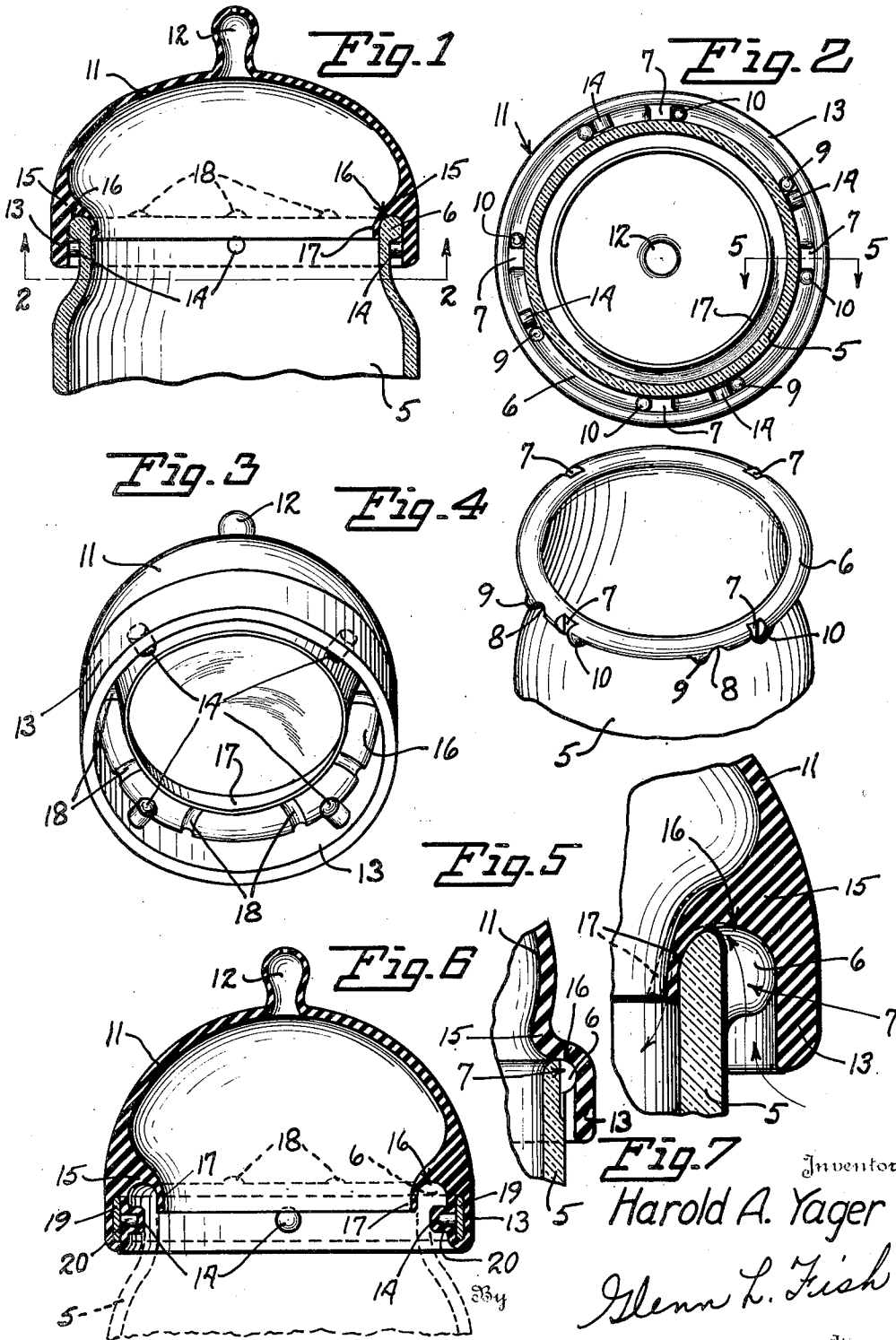
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H. A. YAGER

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COMBINATION NURSING BOTTLE AND NIPPLE

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COMBINATION NURSING BOTTLE
AND NIPPLE

Harold A. Yager, Spokane, Wash., assignor, by
mesne assignments, to The Triangle Service
Corporation, Spokane, Wash., a corporation of
Washington

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My invention relates to combination nursing bottles and nipples, and certain objects of the invention are to provide a bottle having an outer bead around its mouth with a plurality of recesses and notches therein which are adapted to receive a plurality of projections provided on the nipple and whereby the nipple is retained in place on the bottle. Further objects are to provide a nipple having an outer flange and a thin inner flange with an annular groove therebetween adapted to receive the notched mouth of the bottle and whereby a partial vacuum created within the bottle upon removal of some of its contents will cause outside air to enter through the notches, force the thin inner flange inwardly, and pass into the bottle. Still further objects are to provide a nipple having an inner flange that is adapted to normally seal a bottle against leakage, and having transverse grooves across the main annular groove formed by the inner and outer flanges whereby the entry of outside air is facilitated.

With the above and other objects in view which will appear as the description proceeds, the invention consists of the novel construction, adaptation, combination and arrangement of parts hereinafter described and claimed. These objects are accomplished by devices illustrated in the accompanying drawing; wherein:

Figure 1 is a view in central vertical section showing the nipple installed on a bottle; Fig. 2 is a view in horizontal section taken substantially on a broken line 2—2 of Fig. 1; Fig. 3 is a view in bottom perspective of the nipple; Fig. 4 is a view in top perspective of the bottle; Fig. 5 is an enlarged view in vertical section showing the air entry valve action of the nipple; Fig. 6 is a view in central vertical section showing a modified form of the device; and Fig. 7 is a sectional view of a further modified form.

Referring in detail to the drawing, throughout which like reference numerals indicate like parts, the numeral 5 designates a nursing bottle having a bead or flange 6 around the top of its neck on the outside. The outer edge of said bead is provided with a plurality of equally spaced apart notches or slots 7, and its bottom is provided with an equal number of spaced apart notches or depressions 8 disposed in a clockwise direction a short distance from said notches or slots 7. On the right or clockwise edge of each depression 8 is a depending shoulder 9, and on the left or counter clockwise edge of each notch 7 is a downwardly projecting boss 10. Said projections are arranged to prevent the nipple from being turned

too far or in the wrong direction and are also for the purpose of retaining the nipple on the bottle as will hereinafter be apparent.

The nipple, designated as a whole by the numeral 11, is made of rubber and is provided with the usual orifice 12. The outer flange 13 of said nipple may be made of hard rubber and is provided with a plurality of integral knobs 14 projecting from its inside and spaced apart equally with the notches 7 and depressions 8. The bottom portion of the nipple is comparatively thick, as at 15, and is recessed to form an annular groove 16 and a thin inner depending flange 17. The diameter of said inner flange is slightly less than the diameter of the opening in the bottle mouth, and the diameter of the outer flange 13, on its inside, is slightly less than the outer diameter of the bead 6 around the mouth of the bottle. It is therefore apparent that the outer flange must be slightly stretched when installing the nipple 11 on the bottle, and this stretching draws the thin inner flange 17 against the inside of the bottle mouth thus sealing same and preventing leakage.

The nipple 11 is installed by pressing same down upon the mouth of the bottle until its knobs 14 pass entirely through the notches 7 and then turning it to the right until said knobs seat into the depressions 8 in the bead 6 of the bottle. The nipple will thus be securely retained on the bottle, and the thin inner flange 17 will yieldingly seal the bottle against leakage. When any of the contents is removed from the bottle a partial vacuum is created therein whereby the outside air will be caused to enter. The outside air will enter at the points of least resistance, namely through the notches 7, and will force the thin inner flange 17 inwardly thus creating a passage as shown by direction arrows and dotted lines in Fig. 5. In order to facilitate the entry of air, and as shown in Fig. 3, a plurality of transverse grooves 18 may be provided across the annular groove 16 and arranged to register with the notches 7.

The modified form, shown in Fig. 6, is the same as the device hereinbefore described with the exception that a metal band 19 is vulcanized into the flange 13 for the purpose of stiffening same and is provided with pins 20 which are covered by the rubber knobs 14.

In the modified form shown in Fig. 7, the thin inner depending flange 17 is dispersed with. The device is sealed by the shoulder portion 16 being drawn tightly against the bead or flange 6 when the nipple is stretched by the bottle. When a partial vacuum is created within the bottle, out-

side air will enter through the notches 7, lifting the shoulder 16 and thereby forming a passage-way.

Having thus described my invention, it being understood that minor changes may be resorted to in its construction, size, dimensions and arrangement without departing from the scope and spirit of the invention, what I claim and desire to secure by Letters Patent of the United States of America is:—

1. The combination with a nursing bottle having a bead around the top of its mouth with notches in its outer edge and recesses in its bottom, of a nipple having an outer and an inner flange adapted to receive the mouth of the bottle therebetween, knobs projecting from the inside of the outer flange, and said knobs adapted to pass through the notches and to be received by the recesses when the nipple is pressed down and turned into place on the mouth of the bottle.

2. The combination with a nursing bottle having a bead around the top of its mouth with notches in its outer edge and recesses in its bottom, and a projection extending downwardly from an edge of each notch and recess, of a nipple having a thick flange with an annular groove therein forming an outer and an inner flange, said annular groove adapted to receive the beaded top

of the bottle, and a plurality of knobs projecting from the inside of the outer flange and arranged to pass through the notches and to be received by the recesses when the nipple is installed on the mouth of the bottle and turned into place, and said downwardly extending projections arranged to prevent the nipple from being turned in the wrong direction and too far.

3. The combination with a nursing bottle having a bead around the top of its mouth with notches therein, of a nipple having an annular groove in its flange portion forming a relatively thick outer flange and a thin inner flange, said groove adapted to receive and retain the mouth of the bottle and with its thin inner flange yieldingly engaging the inside of the bottle mouth, and a plurality of transverse grooves disposed across the annular groove and registering with the notches in the bead around the mouth of the bottle.

4. The combination with a nursing bottle having a bead around the top of its mouth with notches therein, of a nipple having an outer flange with an inner shoulder portion, said shoulder portion adapted to yieldingly engage the inside of the bottle mouth forming a seal therebetween, and said notches forming air passages whereby outside air has access to the shoulder portion.

HAROLD A. YAGER.