Jan. 2, 1923.

1,440,966

C. CAMPUS.
NURSING BOTTLE.
FILED MAY 22, 1920.

Fig. 2

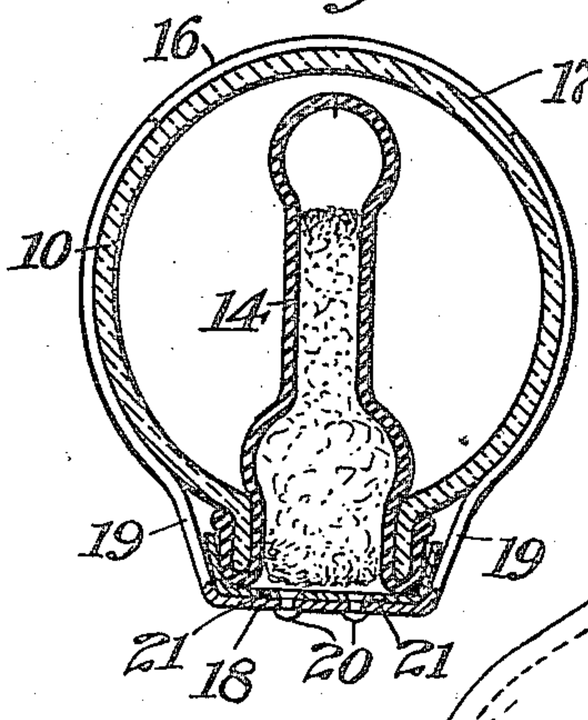
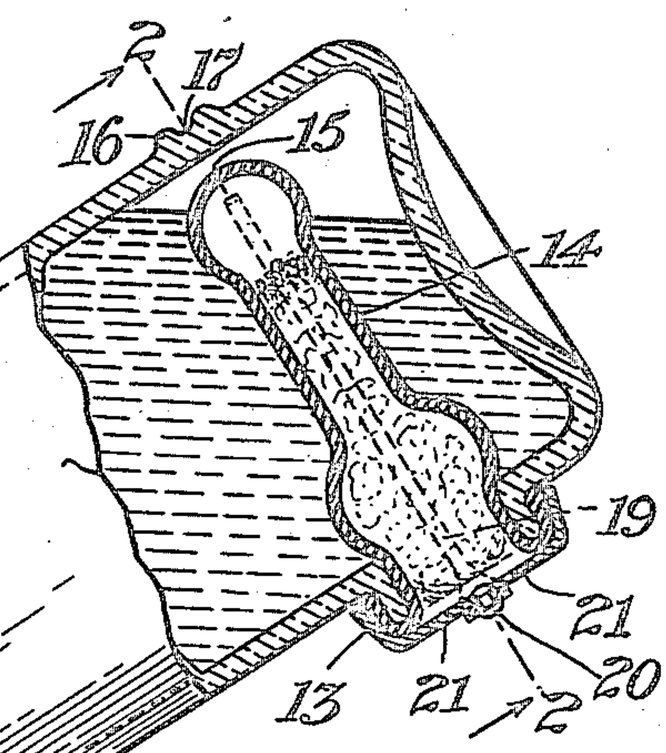


Fig. 1



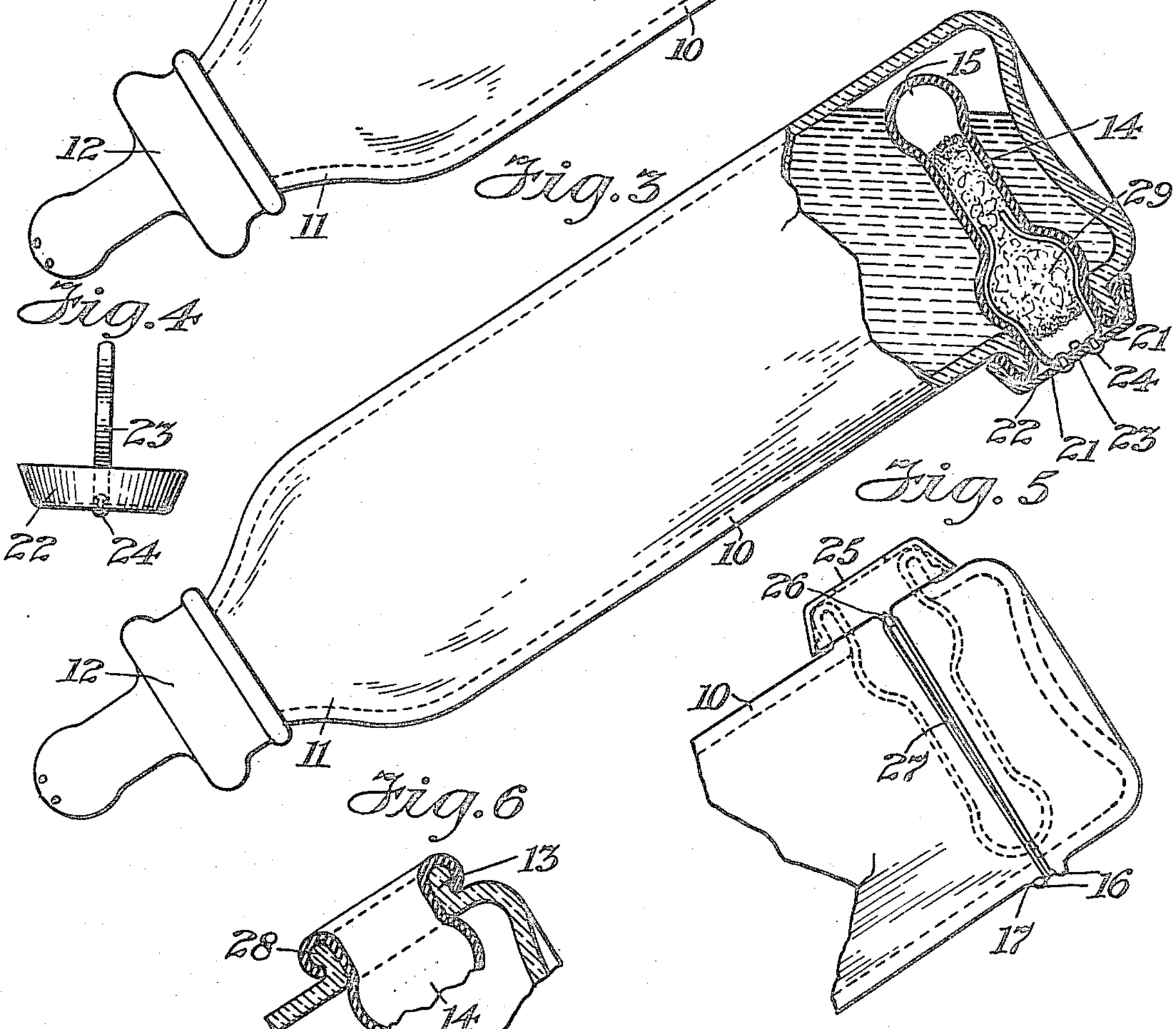
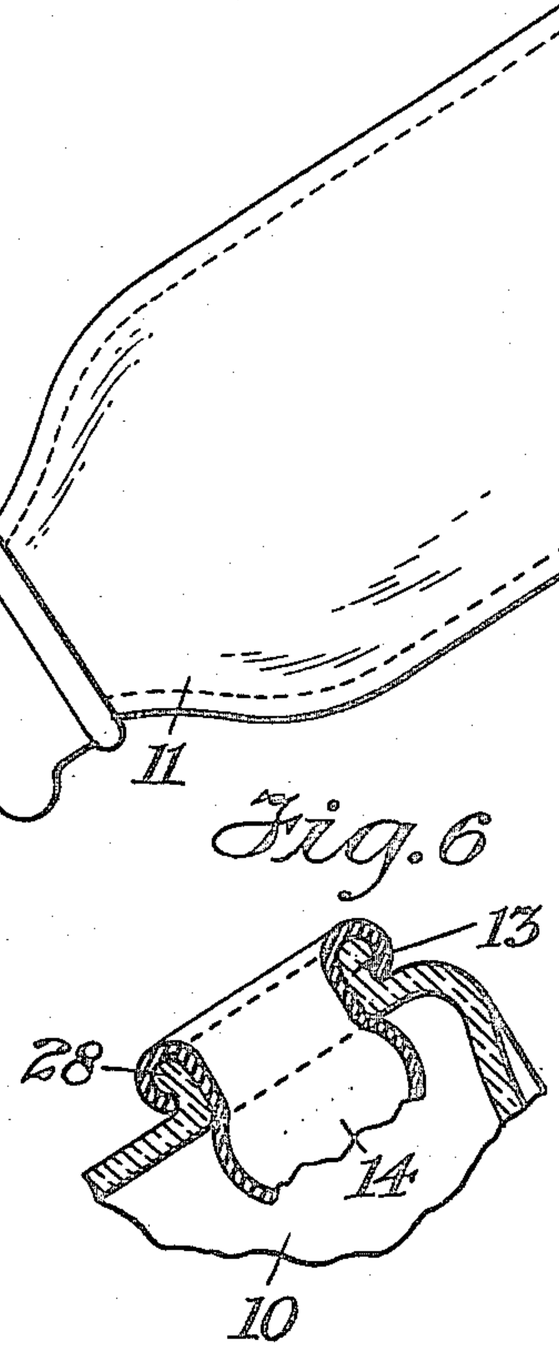


Fig. 3

Fig. 4

Fig. 5

Fig. 6



INVENTOR
Cesare Campus
BY
Lorello & Co
HIS ATTORNEYS

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UNITED STATES PATENT OFFICE.

CESARE CAMPUS, OF BROOKLYN, NEW YORK.

NURSING BOTTLE.

Application filed May 22, 1920. Serial No. 383,431.

To all whom it may concern:

Be it known that I, CESARE CAMPUS, a subject of the King of Italy, residing in the borough of Brooklyn, in the county of Kings, city and State of New York, have invented an Improvement in Nursing Bottles (for which I filed an application in Italy June 13, 1914, Patent No. 117 Vol. 435; 143,990, date of patent July 24, 1914), of which the following is a specification.

In the customary use of nursing bottles as ordinarily constructed the liquid food as withdrawn from the bottle is replaced by air which necessarily passes through the mouth of the child, the nipple through which the food is withdrawn and the remaining food in the bottle. Obviously, this has several serious disadvantages, some of which are that the air in thus passing through the food has a refrigerating effect, thereby cooling the food and reducing its temperature to such a low point before the food is consumed that the food is too cool to then be taken into the stomach of the child; the air thus admitted also may be impure from one source or another and consequently may contaminate the food through which it passes; in ordinary nursing bottles there is much difficulty in cleaning the same, inasmuch as the greater deposit appears to accumulate at points most distant from the mouth of the bottle; also in instances not infrequent in the use of ordinary nursing bottles the air which is permitted to pass through the nipple and through the food to take the place of the food as withdrawn from the bottle is not sufficient to fill the space formerly occupied by the food, and as will be apparent this inadequate admission of the air in the bottle causes a partial vacuum therein which results in a collapse of the nursing nipple making it impossible for the child to take further food from the bottle until this partial vacuum has been broken.

The object of my invention is to overcome these difficulties and in so doing I employ a bottle which, as is customary at one end, is provided with a mouth adapted to be fitted with an ordinary nipple which may be called the feeding nipple and adjacent the opposite end of the bottle the same is provided with a flanged opening also fitted with an ordinary nursing nipple which may be called an air inlet nipple and is provided with a port through which the air enters the bottle as the food is withdrawn therefrom. The invention also relates to devices for maintaining the air nipple in position against accidental displacement as well as against removal by the child during the use of the bottle. I am aware that heretofore various devices have been proposed for admitting air to a nursing bottle as the food is withdrawn therefrom but in all such instances which have come to my attention the structure is more or less complicated and costly; in no instance provides for the use of two ordinary nipples and in no instance is the structure such that none of the air admitted to the bottle is permitted to pass through any portion of the food contained therein. Furthermore, in carrying out my invention, I may provide the air inlet nipple with a suitable material for simultaneously filtering the air as the same passes into the bottle and controlling the admission of the air so as to also control the rate at which the liquid food may be drawn through the feeding nipple. To accomplish these purposes as will be hereinafter more particularly described the flanged opening is preferably placed in the side of the bottle adjacent the end thereof and the air nipple placed in position in the flanged opening so as to extend into the bottle and terminate at its inner end at a point adjacent the opposite side of the bottle so that when the bottle is in the proper position for use no air admitted through the air nipple can possibly pass through any of the food in the bottle and will prevent the food from flowing into the air nipple and consequently from the bottle, inasmuch as the port in the air nipple opens outwardly. Further attention to these and other features of the invention will be hereinafter more particularly described.

In the drawing:

Fig. 1 is an elevation and partial cross section illustrating my improved nursing bottle with the same in the approximate position for use.

Fig. 2 is a cross section on line 2—2, Fig. 1.

Fig. 3 is a view similar to Fig. 1 showing another form of the invention.

Fig. 4 is an elevation of the clip member used in the form of the invention shown in Fig. 3.

Fig. 5 is a partial elevation showing still another form of the invention, and

Fig. 6 is a partial cross section showing one form of the flanged opening which may be employed.

Referring to the drawing and more particularly to Figs. 1 and 2, it will be seen that in carrying out this invention I employ a bottle 10 which may be made in the same manner as an ordinary nursing bottle and provided with a tapering neck 11 terminating in a mouth to which a nipple 12 may be attached in the usual manner. At the opposite end of the bottle, preferably in the side thereof adjacent the bottom, I employ a flanged opening 13, the flange in this instance being a plain extension from the side walls of the bottle and the opening adapted to have placed therein a nipple 14. The nipple 12 is employed as the feeding nipple and the nipple 14 as the air inlet nipple. Both nipples may be of the ordinary construction but the nipple 14 is of sufficient extent to be folded over the flange 13 at the open end of the nipple and to extend into and through the bottle to a point adjacent the opposite wall thereof, the opening 15 in the end of the nipple acting as a valve or port through which the air is admitted to the bottle as the liquid food is withdrawn therefrom. This port 15, as will be understood, may be a slit or other opening, opening outwardly so as to admit the air and to prevent the passage of the liquid food through the nipple in the opposite direction. In this form of the invention in order to maintain the air nipple in position preventing it from becoming accidentally or otherwise displaced, I prefer to provide the outer surface of the bottle centrally of the flanged opening with ribs 16 having an intermediate recess 17 and to employ a cap 18 having secured thereto spring clamp members 19 by means of rivets 20 or otherwise adapted to fit into the recess 17 when the cap member 18 is in place over the outer end of the nipple 14 after this end of the nipple has been folded down over the flange 13. The cap 18, as will be understood, may be provided with suitable openings in order not to interfere with the free passage of the air into the interior of the nipple, the openings in the cap 18 being indicated at 21. In the use of this form of the invention, as will be understood, the bottle assumes substantially the position shown in Fig. 1 and in order to place the air nipple in position or remove the same the cap 18 is shifted from the position shown in Figs. 1 and 2 to the diametrically opposite position, or entirely removed from the bottle so that free access may be obtained to the flanged opening in order to place the air nipple in position or remove the same for the purposes of cleaning the bottle or otherwise. Furthermore, in the use of this bottle, as will now be appreciated, inasmuch as the valve in the air nipple is placed at the bottom of the bottle adjacent the side wall, it will be impossible for any air entering the bottle through the nipple to pass through any portion of the food contained in the bottle and hence will have approximately no cooling effect on the food and cannot by being impure contaminate the food to any appreciable extent. Also that in cleaning the bottle the air nipple is removed and water may be caused to flow continuously through the bottle, entering at the mouth of the bottle and leaving through the flanged opening, and also the finger or a suitable cleaning tool, if necessary, may be inserted through the flanged opening to cleanse the lower portion of the interior of the bottle at which the greater proportion of any deposit which may accumulate in the bottle is usually found.

Referring to Figs. 3 and 4, the flanged opening in the walls of the bottle and the air nipple are in all respects equivalent to those hereinbefore described. In this structure, however, instead of employing the spring clamps I may employ spring clips placed interiorly of the nipple to secure the same and the cap in place. In this structure, the cap employed is indicated at 22 and similar to the cap 18 hereinbefore described. Suitably connected to the cap 22 is the spring clip member 23. These parts may be secured by the rivets 24 or otherwise. The nipple in this instance is placed in position in the bottle with the outer end thereof turned back over the flange 13 and the cap 22 fitted over this end of the nipple with the spring clip members extending into the nipple and engaging the same so as to compress portions of the nipple against the wall defining the flanged opening and also to shape the interior of the nipple, if so desired. In this form of the invention also, as illustrated in the drawing, the air nipple may be provided with cotton indicated at 29 or other similar material which is placed within the nipple and packed to a sufficient degree of tightness to not only filter the air as the same passes through the nipple but also to regulate the passing of the air which flows through the nipple and as admitted to the bottle and consequently the rate of the flow at which the food may be withdrawn from the bottle.

As shown in Fig. 5, the cap member 25 is adapted to fit over the end of the nipple after the same has been turned back over the flange 13 and is fitted in oppositely disposed positions with hooks 26 to which may be connected a rubber band, or string 27 or other similar device from one hook to the other and lying within the recess 17 between the ribs 16 to maintain the cap member in place. These, however, as well as other ob-

vious devices may be employed to maintain the nipple in position against accidental or other unintentional displacement.

In Fig. 6, I have shown the flange 13 as fitted with a bead or circular rib 28 over which the open end of the air nipple may be folded, and in ordinary use this is sufficient to normally maintain the air nipple in position. Consequently this structure answers all the necessary requirements for use in feeding infants so long as the nursing bottle has to be managed by an attendant, the other features being more especially adapted for use with children after they have become old enough to handle the bottle themselves. These various devices, however, for maintaining the air nipple in position are more or less incidental to the main features of the invention which, as hereinbefore stated, reside in providing a nursing bottle with an air inlet nipple or valve so placed that no part of the air admitted to the bottle as the food is withdrawn therefrom will pass through any of the food in the bottle for producing the beneficial effects and overcoming the disadvantages to which attention has hereinbefore been directed.

I claim as my invention:

1. A nursing bottle comprising a body member having a mouth at one end thereof and an opening adjacent the other end thereof, and an air inlet device fitted in the said opening extending into the bottle so that the inner end thereof terminates adjacent the wall of the bottle opposite that in which the opening is placed, the said air inlet device being provided with a port through which air is admitted to the bottle as the contents of the bottle is withdrawn therefrom so that when the bottle is in position for use none of the air so admitted to the bottle will pass through the contents thereof.

2. A nursing bottle comprising a cylindrical body member having a mouth at one end thereof and an opening in the side adjacent the other end thereof, and a nipple fitted in the said opening extending into the bottle so that the inner end thereof terminates adjacent the inner surface of the wall of the bottle opposite that in which the said opening is placed, the said nipple being provided with a port through which air is admitted to the bottle as the contents of the bottle is withdrawn therefrom so that when the bottle is in position for use none of the air so admitted to the bottle will pass through the contents thereof.

3. A nursing bottle comprising a body member having a mouth at one end thereof and an opening adjacent the other end thereof, an air inlet device fitted in the said opening extending into the bottle so that the inner end thereof terminates adjacent the wall of the bottle opposite that in which the opening is placed, the said air inlet device being provided with a port through which air is admitted to the bottle as the contents of the bottle is withdrawn therefrom so that when the bottle is in position for use none of the air so admitted to the bottle will pass through the contents thereof, and means for maintaining the said air inlet device in position in the said opening in the bottle.

4. A nursing bottle comprising a cylindrical body member having a mouth at one end thereof and an opening in the side adjacent the other end thereof, a nipple fitted in the said opening extending into the bottle so that the inner end thereof terminates adjacent the inner surface of the wall of the bottle opposite that in which the said opening is placed, the said nipple being provided with a port through which air is admitted to the bottle as the contents of the bottle is withdrawn therefrom so that when the bottle is in position for use none of the air so admitted to the bottle will pass through the contents thereof, and means for maintaining the said nipple in position in the said opening.

5. A nursing bottle comprising a cylindrical body member having a mouth at one end thereof and a flanged opening in the wall of the bottle adjacent the opposite end thereof, a nipple adapted at its open end to be turned over the said flange and to extend through the said opening to the bottle and to terminate at a point adjacent the inner surface of the opposite wall of the bottle where the said nipple is fitted with a port through which air is admitted to the bottle as the contents of the same is withdrawn therefrom, a cap adapted to fit over that portion of the nipple which is turned over the said flange, and means for securing the said cap in position to maintain the nipple in place.

6. A nursing bottle comprising a cylindrical body member having a mouth at one end thereof and a flanged opening in the wall of the bottle adjacent the opposite end thereof, a nipple adapted at its open end to be turned over the said flange and to extend through the said opening into the bottle and to terminate at a point adjacent the inner surface of the opposite wall of the bottle where the said nipple is fitted with a port through which air is admitted to the bottle as the contents of the same is withdrawn therefrom, a cap adapted to fit over that portion of the nipple which is turned over the said flange, and a spring engaging device associated with the said cap for maintaining the same in position to prevent the accidental displacement of the said nipple.

7. A nursing bottle comprising a cylindrical body member having a mouth at one

end thereof and an opening in the side adjacent the other end thereof, a nipple fitted in the said opening extending into the bottle so that the inner end thereof terminates adjacent the inner surface of the wall of the bottle opposite that in which the said opening is placed, the said nipple being provided with a port through which air is admitted to the bottle as the contents of the bottle is withdrawn therefrom so that when the bottle is in position for use none of the air so admitted to the bottle will pass through the contents thereof, and a material placed in the said nipple to simultaneously filter the air which passes through the same into the bottle and to regulate the rate of the flow of said air whereby the rate at which the food may be withdrawn from the bottle is correspondingly regulated.

Signed by me this 14th day of May, 1920.

CESARE CAMPUS