

C. W. FOX.
NURSING BOTTLE.
APPLICATION FILED JAN. 5, 1907.

898,975.

Patented Sept. 15, 1908.

Fig. 1.

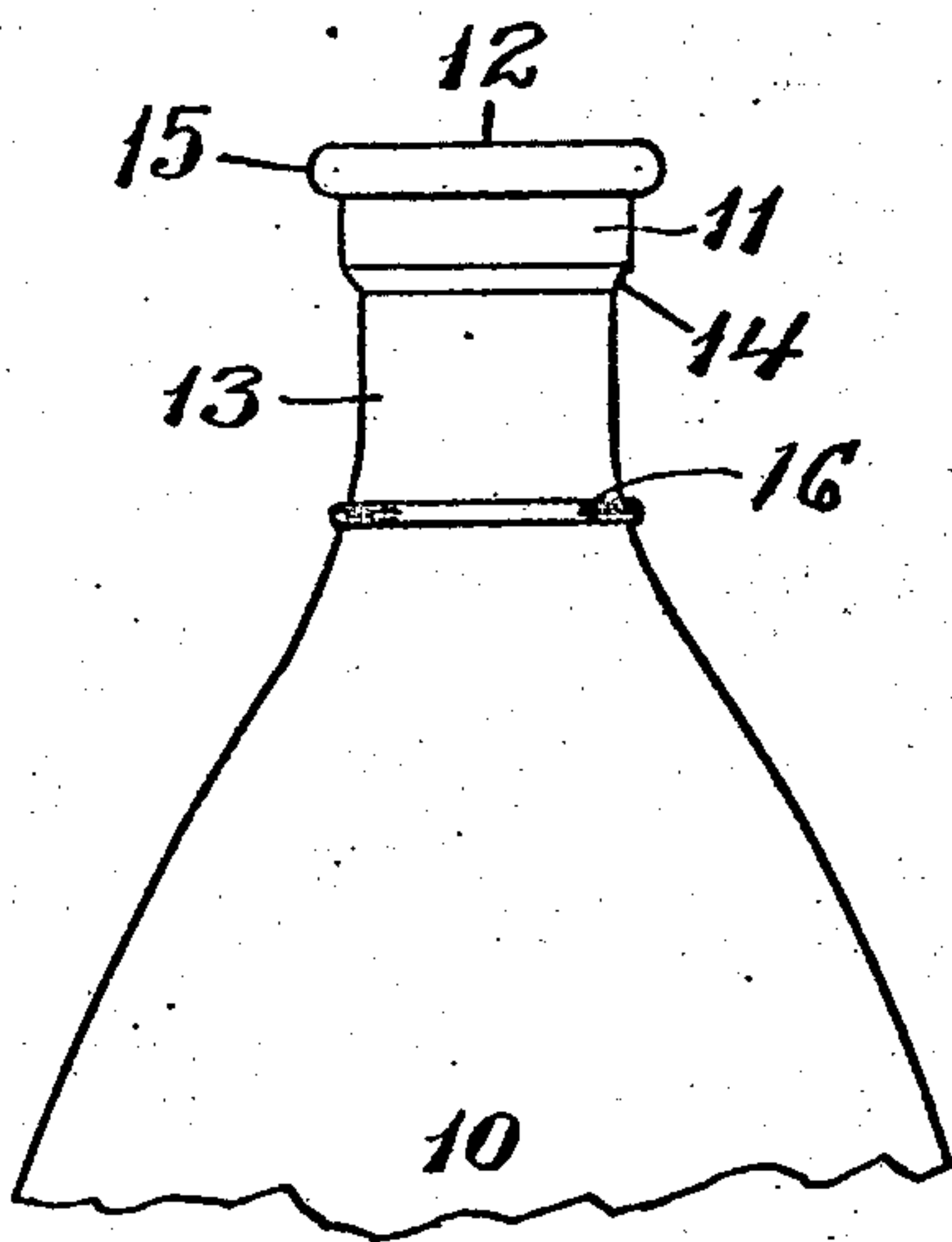


Fig. 2.

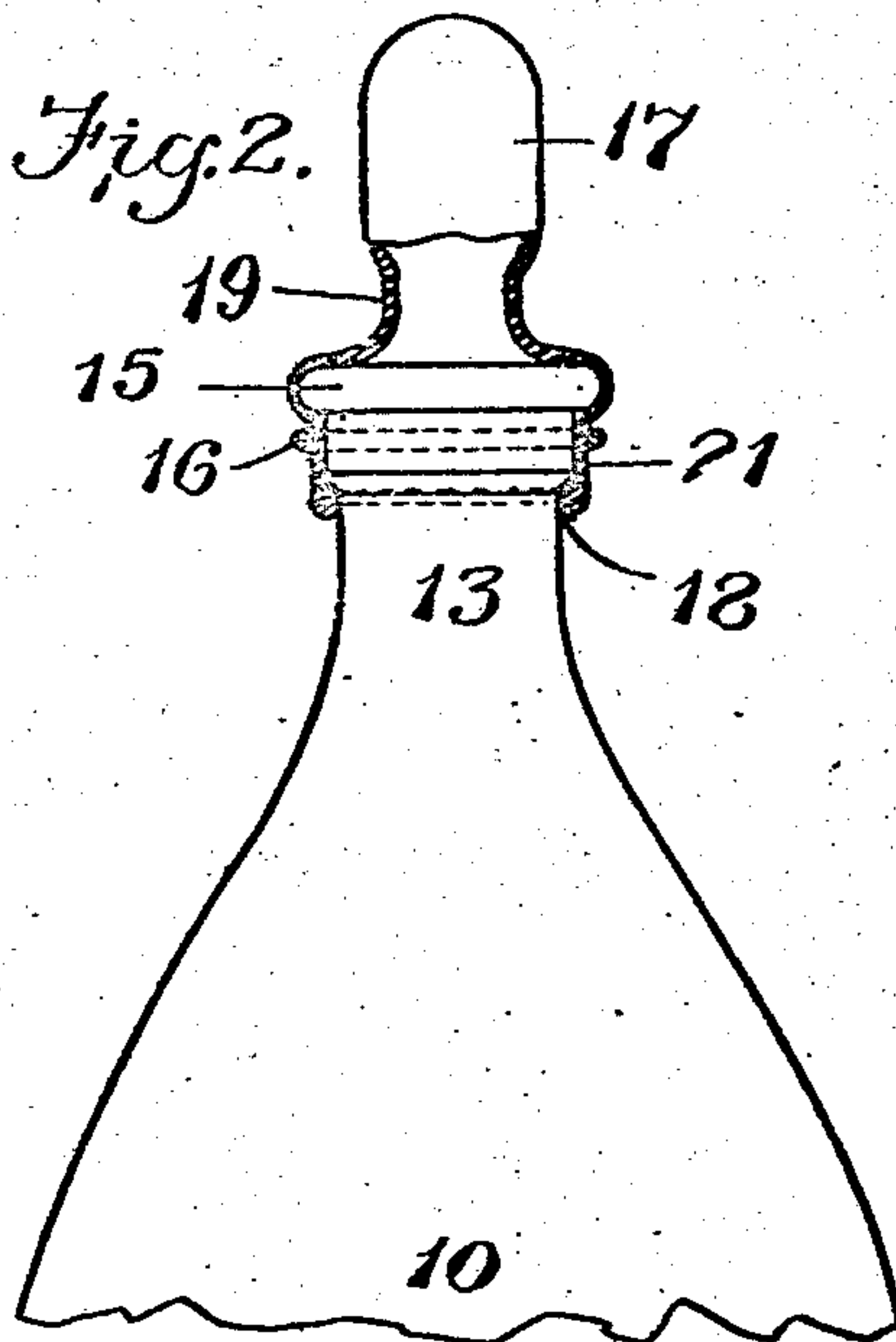


Fig. 4.

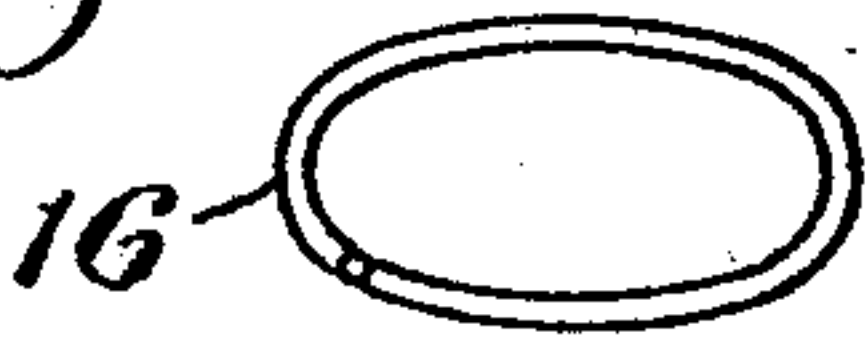


Fig. 3.

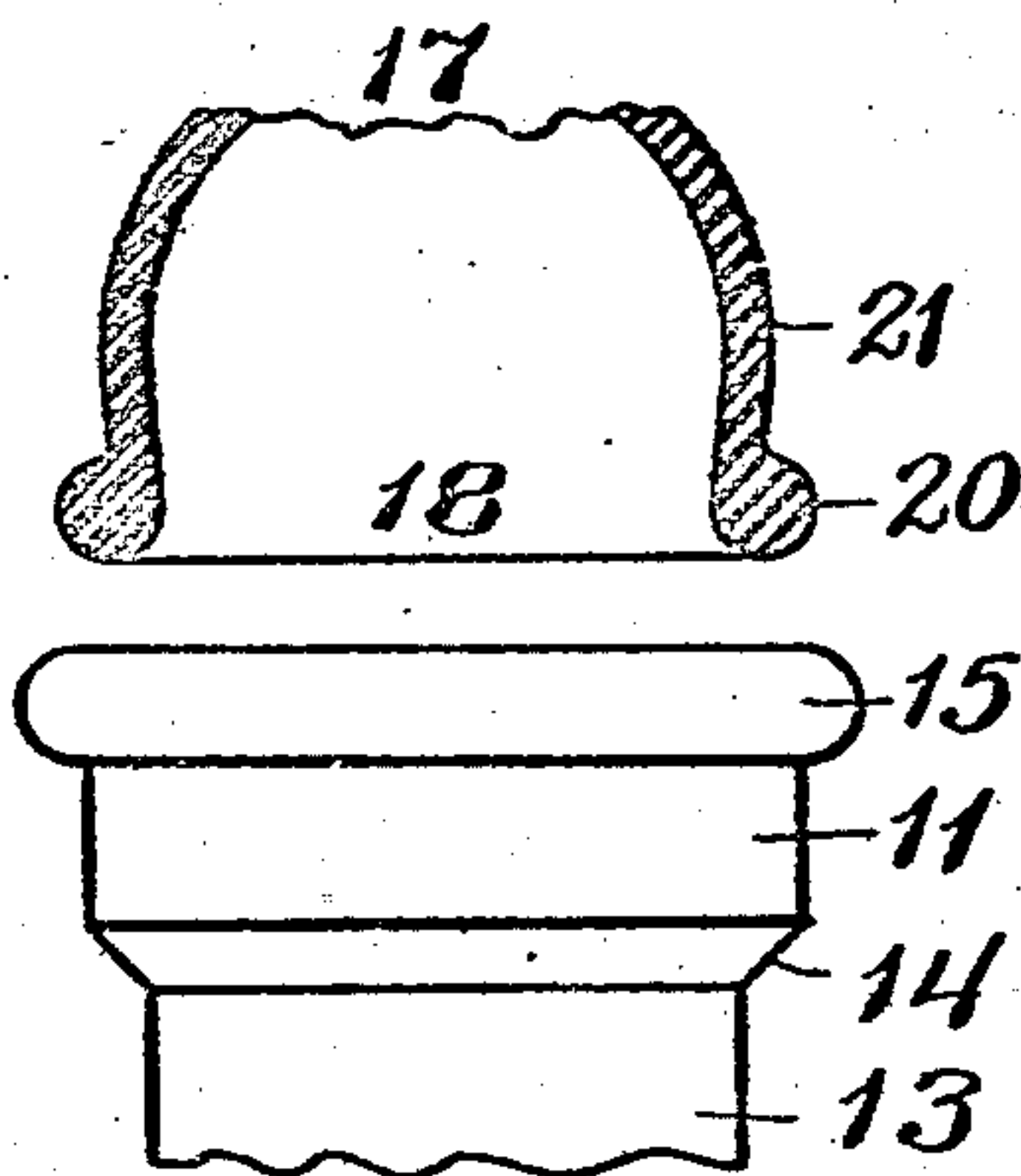
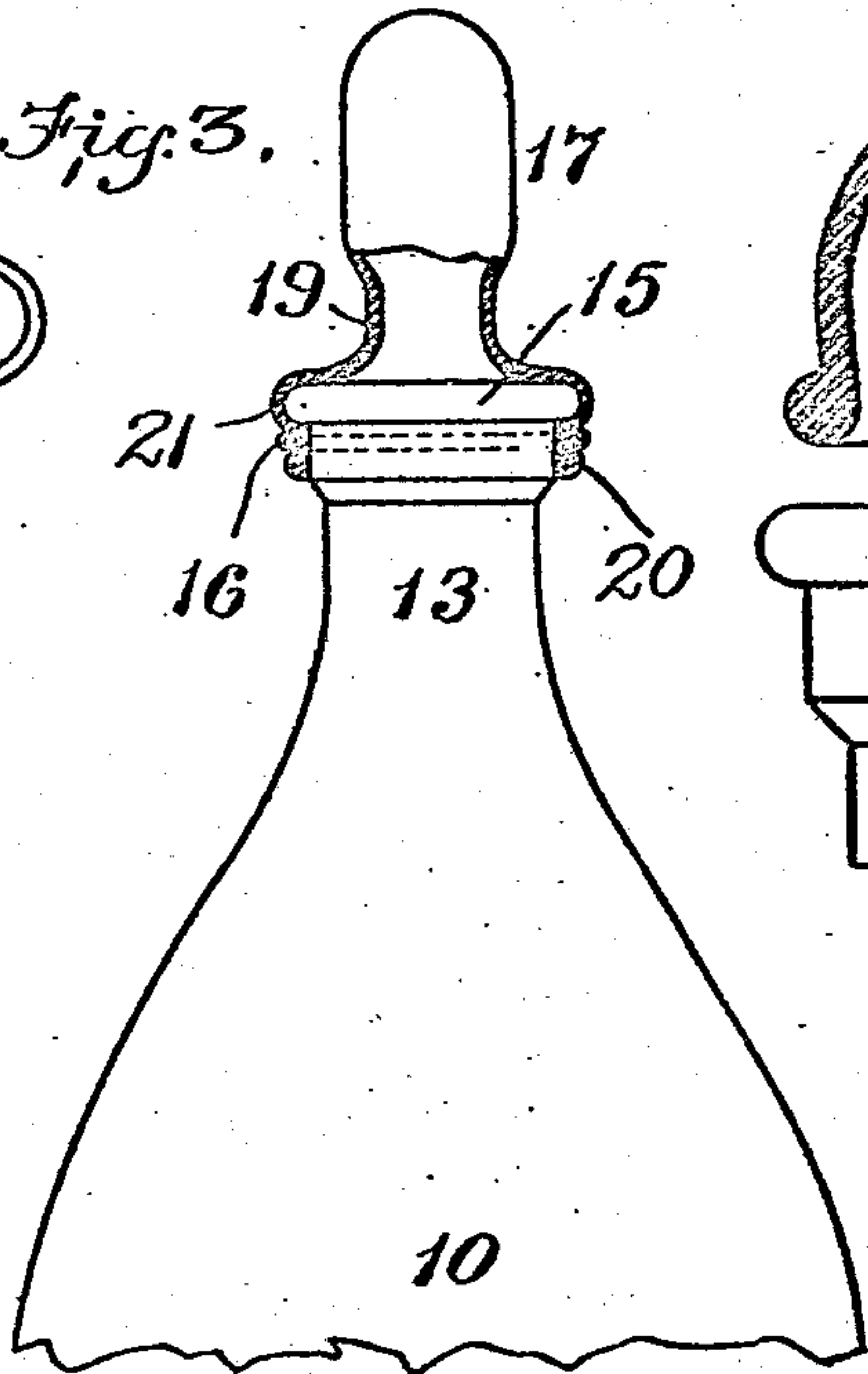


Fig. 5.

Witnesses.
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UNITED STATES PATENT OFFICE.

CLARENCE W. FOX, OF SAUGUS, MASSACHUSETTS.

NURSING-BOTTLE.

No. 898,975.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed January 5, 1907. Serial No. 350,985.

To all whom it may concern:

Be it known that I, CLARENCE W. FOX, of Saugus, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Nursing-Bottles, of which the following is a specification.

This invention has relation to elastic caps for receptacles and especially to nipples for nursing bottles.

10 The object of this invention is to provide improved means for fastening an elastic cap or nipple to the mouth of the receptacle which upon the accompanying drawings is in the form of a nursing bottle. The means
15 herein employed to fasten the cap to the receptacle comprise a rim formed on and surrounding the mouth of the cap, a lip formed on and surrounding the mouth of the receptacle, and a metallic ring adapted to be
20 slipped over the rim of the cap and to surround the cap between its rim and the lip of the receptacle. The ring is preferably left upon and encircling the neck of the receptacle at all times, and when slipped over the
25 cap when the latter is placed upon the receptacle, its function is to cooperate with the lip formed on the receptacle to bind upon the intervening portion of the cap, and so to prevent accidental removal of the same from the
30 receptacle.

In order to slip the ring upon that portion of the cap which encircles the neck of the receptacle, it is necessary to stretch or expand the ring, or to compress the rim on the cap.
35 This operation is more or less difficult, and in order to obviate the difficulty, I form the neck of the receptacle in the present invention with a relatively greater portion near the mouth, a relatively smaller portion between it and the body of the receptacle, a
40 shoulder between these relatively greater and smaller portions, and the customary outwardly bulging lip surrounding the mouth of the neck. The distance to which the
45 said greater portion of the neck extends back from the mouth is only sufficient to afford a convenient bearing for that portion of the cap which is to receive the metallic ring. By reason of this formation the neck of the
50 receptacle, a metallic ring which is slightly larger than the large portion of the neck, and yet smaller than the lip surrounding the mouth of the receptacle, may be very easily slipped over the rim surrounding the mouth
55 of the cap when the latter is drawn upon the

neck of the receptacle so far as to encircle the small part of the neck.

After having drawn the cap on to the neck of the receptacle as far as hereinbefore specified, and having slipped the ring over the rim
60 surrounding the mouth of the cap, the cap may then be withdrawn so far as to cause the said rim of the cap to ride up on the shoulder of the receptacle and to surround the large
65 portion of the neck. In this position the external diameter of the rim surrounding the mouth of the cap is distended beyond the diameter of the metallic ring, and in as much as the lip surrounding the mouth of the
70 receptacle is of greater diameter than the ring, it is obvious that the ring is firmly confined between the lip and the rim, so as to lock the cap in place.

Referring now to the accompanying drawings forming a part of this specification,—
75 Figure 1 is an elevation of the upper portion of a receptacle having a neck formed in accordance with this invention. Fig. 2 is a similar view with an addition of an elastic cap or nipple installed thereon in its primary
80 position and surrounded by a metallic ring. Fig. 3 is a view similar to Fig. 2 excepting that the cap is moved to its final position. Fig. 4 is a perspective view of the metallic
85 ring.

The same reference characters indicate the same parts wherever they occur.

On the drawings 10 represents a receptacle which in this case has the form of a nursing bottle. The receptacle is provided with a
90 neck comprising a relatively greater portion 11 near and surrounding the mouth 12, and a relatively smaller portion 13 between the portion 11 and the body of the receptacle.

14 is a shoulder intervening between the
95 greater and smaller portions of the neck, and is preferably formed so as to taper away from the mouth of the receptacle for a purpose hereinafter explained.

15 is an outwardly bulging or lateral lip
100 surrounding the portion 11 at the mouth of the receptacle. It will be seen therefore, that the neck comprises portions of three different diameters, namely, the smaller portion 13, the enlargement 11 and the lip 15.
105

16 is a metallic ring which is adapted to loosely encircle the neck of the receptacle, and which is preferably left remaining thereon at all times, so as to obviate the liability of
its becoming mislaid. The said ring as 110

shown by Fig. 4, is split, that is, it is a strip bent in the form of a circle and having disconnected ends. The reason for so forming this ring is to facilitate its initial installation upon the neck of the receptacle, and although by reason of the disconnected ends, the ring may be somewhat expansible, it is not necessary to this invention that the ring should be expansible. It, however, is cheaper and easier to form the ring in this manner and to place it upon the completed receptacle than to braze or otherwise connect the ends of the ring, or to form the lip 15 on the bottle after the ring has been placed upon the neck. The internal diameter of the ring 16 is less than the external diameter of the lip 15 but slightly greater than the external diameter of the enlargement 11 of the receptacle.

17 is a nipple or cap composed of elastic material such as soft rubber. The said cap has a mouth 18 at one end, and a reduced portion 19 approximately midway between its ends. 20 is an outwardly bulging rim formed upon and surrounding the mouth 18 of the cap. The internal diameter of the mouth 18 is normally slightly less than the external diameter of the portion 13 of the receptacle.

When the cap 17 is to be placed upon the neck of the receptacle, the mouth 18 is distended and drawn over the neck as far as to cause the rim 20 of the cap to pass beyond the shoulder 14 and surround the smaller portion 13. It is to be assumed that the ring 16 is meanwhile surrounding the portion 13 so far below the shoulder 14 as not to interfere with the application of the cap. The formation of the rim 20 is preferably such that when the rim closely surrounds the portion 13, its external diameter is not appreciably greater than the internal diameter of the ring 16. It is obvious, therefore, that when the cap and rim 20 occupy the positions just described, the ring 16 may be very easily slipped over the rim 20 so as to encircle the portion 21 intervening between said lip and the reduced portion 19, and surrounding the enlargement 11 of the receptacle (see Fig. 2). After having placed the ring as just described, it may be securely confined in that position by withdrawing the cap 17 from the neck of the receptacle as far as to cause the rim 20 to ride up over the shoulder 14 and surround the portion 11. When so positioned, the parts are related as shown by Fig. 3. By reference to the drawing it may be seen that although the ring 16 may not bind tightly upon the portion 21 of the cap when the parts are in their final position, still the said ring is positively confined by and between the rim 20 and that portion of the cap which surrounds the lip 15 of the receptacle.

By virtue of the herein described formation of the receptacle and the cap, the latter

may be fastened in its place on the former with the greatest facility, and yet although the ring 16 does not necessarily bind the cap tightly about the neck of the receptacle, it holds the same in a position from which it is absolutely impossible to remove the cap without tearing it. Another important feature resulting from this construction, is that although the cap may be securely confined as described, the ring 16 under normal conditions does not abrade or in any way unduly wear away or cut the surface of the cap where it makes contact therewith.

As hereinbefore mentioned, the ring 16 may be continuous, and it and the exterior of the neck are not limited to any precise shape, although for ordinary use they would preferably be circular. It is conceivable that, for example, they might be elliptical or any other irregular shape.

As will be readily understood, the ring 16, if continuous as above mentioned, would be absolutely non-elastic. Although it is illustrated as having disconnected ends, such construction is provided solely for the purpose of convenience in assembling the ring and bottle. When the parts have been assembled, any elasticity that might be possessed by the ring possesses no utility. Therefore it is to be understood that the term "non-elastic" employed in the claims is to be construed as meaning that the ring is not elastic for the purpose of holding the nipple in place because, after assembling the parts no elasticity of the ring is needed or desired.

Having thus explained the nature of the invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the modes of its use, I declare that what I claim is:—

The combination with a bottle, of a non-elastic ring permanently located on the neck of the bottle and adapted to clamp the mouth of an elastic cap surrounding said neck, the neck of the bottle having three portions of distinctly different sizes so graduated that the largest of these portions, namely a lip, is nearest the mouth, the intermediate portion next to the lip, and the smallest portion farthest from the lip, and a shoulder intervening between the intermediate and smallest portions whereby the ring may be slipped over the edge of the cap while said edge and the ring surround the smaller portion of the neck, and the cap and ring may be then raised to cause the ring to clamp the cap on the intermediate portion of the bottle neck.

In testimony whereof I have affixed my signature, in presence of two witnesses.

CLARENCE W. FOX.

Witnesses:

A. L. FOLSOM,
M. B. MAY.