Feb. 7, 1961 C. BLANCHETT 2,970,595

BABY NIPPLES

Filed Feb. 12, 1959

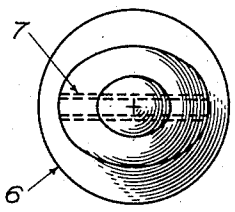


FIG. 1.

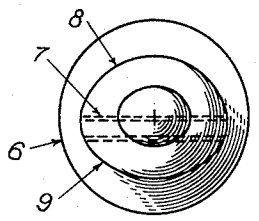


FIG. 4.

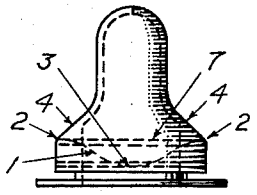


FIG. 2.

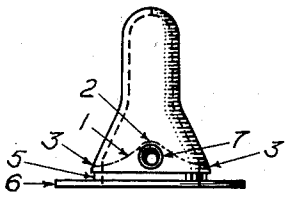


FIG. 3.

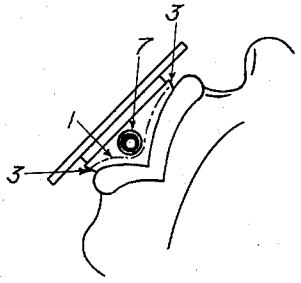


FIG. 5.

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BABY NIPPLES

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3 Claims. (Cl. 128—252)

This invention relates to baby nipples and has for its principal object the creation of a more efficient nipple in that it is constructed to fit the infant's mouth. Another object of this invention is to improve the placement of air valve intakes for the nipple so that they are located at opposite ends of a long transverse axis below the apices of a sinusoidal rim. A further object of this invention is to improve the function of the air valve by having the air inlets held in an unobstructed position in the corners of the baby's mouth when sucking.

Other objects and advantages of the present invention will appear throughout the following specification and claims.

In the drawing:

Figure 1 is a top view of the improved nipple.

Figure 2 is a front view of the nipple.

Figure 3 is a side view of the nipple.

Figure 4 is a top view of a modification of the nipple showing a refinement in the basic design.

Figure 5 is a side view of the refined nipple showing how it fits the mouth when in use.

This invention is based on the following principles and anatomical facts:

(1) "The cavity of the mouth . . . is a nearly oval-shaped cavity . . ." Gray's Anatomy, Twenty-Fifth Edition, page 1151.

(2) In regard to the human breast ". . . its cephalocaudal diameter . . . is somewhat less than its transverse diameter." Gray's Anatomy, Twenty-Fifth Edition, page 1319.

(3) In the sucking position, the infant's lips assume a roughly sinusoidal curve with the corners of the lips at the apices.

(4) The upper lip is long than the lower lip; the angles of the mouth are low and posteriorly placed.

The first three facts may be utilized in the construction of a baby nipple by making the body elliptical and by making a three dimensional sinusoidal rim for the lips at the widest portion of the body of the nipple. In addition, the fourth fact may be utilized, provided that the body is made ovoid, but asymmetrical about a displaced long axis as will be described.

By referring to the drawing, Figure 1 shows how the body is made oval-shaped. Figures 2, 3 and 5 illustrate the sinusoidal rim designated by **1**. The crest of this rim is rounded or filleted and would not ordinarily show as a line in the drawing; but because of the importance of illustrating and describing the concept of this invention a departure from mechanical drawing convention has been employed and the crest of the rim shown by a dash-dot line. The apices of the rim are indicated by **2** and the nadirs by **3**. The apices of this rim are intended to fit in the angles of the mouth and provide a propitious site for the placement of the air valve **7** immediately below. The combination of this sinusoidal rim with the oval-shape elevates the leading edge **4** in Figure 2 of the nipple so that the corners of the mouth are comfortably accommodated and, at the same time,

accentuates the transverse diameter as compared to the cephalocaudal diameter as may be realized by comparing the contours in Figures 2 and 3.

This invention is a continuation-in-part of my co-pending application, Serial Number 784,597, filed January 2, 1959.

The best method for venting the nipple is by means of the valve **7** which consists of an elastic tube with a longitudinal slit in its mid-portion. It is installed so as to span the nipple with the ends or air intakes located below the apices of the sinusoidal rim; and thereby, held in unobstructed positions in the corners of the baby's mouth when in use. The valve is responsive to changes in pressure and the slit opens to admit air to the bottle during sucking and closes preventing leakage when suction is released. Normally, at rest, the resilient valve is closed. However, it is influenced by changing mechanical forces in that compressional forces transmitted from the nipple tend to buckle the valve open and tensional forces tending to stretch the valve will bring the slit into the closed position. These mechanical features are important in that when suction tends to collapse the nipple the collapsing effect buckles the valve wider admitting more air and thereby defeating the collapsing effect. This makes it a true pressure regulating valve. The closing effect by tension is advantageous when pressure from chewing is transmitted to the valve. The valve also provides a mechanical tensional guy against collapse sagittally and also a compressional strut against collapse transversely.

To further elaborate on the use of this niple the flange **6** and the neck **5** are circular and therefore designed to be used with conventional types of circular retaining caps and bottles, the oval body of the nipple being pushed through the round hole in the retaining cap and the ensemble screwed on to a nursing bottle thereby gripping the flange in the usual manner. The nipple may also be inverted into the nursing bottle for sterilization and transported by employing the usual sealing disc.

A significant difference in the use of this nipple is that its is intended to be held in the infant's mouth in a particular manner; namely, so that the long axis of the body extends from one angle of the mouth to the other thereby placing the apices of the sinusoidal rim and the air intakes or ends of the valve in unobstructed positions at the corners of the mouth. Since this nipple is symmetrical about both axes it may be rotated in the baby's mouth 180° with no change in fit or function.

Figure 4 and 5 illustrate a refinement in the basic nipple just described which incorporates the anatomical facts that the upper lip is longer than the lower lip and the angles of the mouth are depressed and posteriorly placed. The lips in Figure 5 illustrate these anatomical points.

Figure 4 shows a top view of the refined nipple wherein the body is ovoid and asymmetrical about a transverse axis displaced toward the lower lip so that the part **8** above the valve in contact with the upper lip is greater than part **9** below the valve in contact with the lower lip. The air valve is placed in this greatest transverse axis below the apices of the sinusoidal rim which are correspondingly offset so as to be more accurately aligned with the angles of the baby's mouth. The offset of the valve and the concurrent displacement of the greatest transverse axis can be readily visualized by comparing the position of the valve and the shape of the body in Figures 1 and 4. Notice that the central oval representing the terminal part of the nipple remains in the same place. The alignment of the air intakes and the apices of the sinusoidal rim with the angles of the mouth as a result of this offset is shown in Figure 5 where the adaptation between the mouth and nipple is emphasized.

In contrast to the basic nipple first described, this latter refinement has a left and a right for the corresponding corners of the mouth; a surface for the upper lip and a surface for the lower lip; and is intended to be held in the baby's mouth accordingly in only this one position.

The advantages of this nipple and its refinement are physiological. In particular, consider the problem of the newborn who in order to be taught how to suck a circular nipple has to have his cheeks pressed inwardly against the nipple. The difficulty here is trying to accommodate the baby's oval mouth to a circular nipple. The present invention permits the bady to hold his mouth in a more comfortable anatomical position than is possible with conventional circular nipples and therefore facilitates his sucking. Also, as a result of a better accommodation in the corners of the mouth the child does not "lose suction" through the corners of his mouth as happens with the old style nipples and sucks more continuously and swallows much less air. Another advantage of the present invention is that the air intakes are held in the corners of the mouth where it is practically impossible for the baby's lips to obstruct them.

The reason that a basic design and a refinement are presented is because the basic nipple is symmetrical and, therefore, may lend itself more economically to mass production. On the other hand, the refined nipple may be made available as a more deluxe product.

It should be understood that certain detail changes may be employed without departing from the spirit of the invention, so long as such changes fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. In combination, a baby nipple having an oval-shaped body in conjunction with a three dimensional sinusoidal rim creating a nipple which fits the baby's mouth when the long axis of the oval is placed transversely in the mouth and concurrently the apices of the sinusoidal rim placed in the corners of the mouth with an integral tubular air valve placed in the long axis below the apices of the sinusoidal rim so that the ends or air intakes are held unobstructed in the corners of the baby's mouth when sucking.

2. In combination, a baby nipple having an ovoid-shaped body that is asymmetric about a displaced long axis in conjunction with a three dimensional sinusoidal rim so made that the apices are offset to align accurately with the corners of the mouth thereby creating a nipple with a larger upper surface for the upper lip and a smaller lower surface for the lower lip; the nipple fitting the mouth perfectly when the long axis is placed transversely in the mouth and the apices of the sinusoidal rim placed in the corners of the mouth with an integral tubular air valve placed in the long axis so that the ends or air intakes fall in the offset position immediately below the apices of the sinusoidal rim and are held unobstructed in the corners of the baby's mouth when sucking.

3. The combination of a baby nipple comprising a hollow base portion for attachment to a bottle, an intermediate areola portion being wider transversely than sagittally, and a terminally rounded feeding tip portion; and an integral transversely mounted air valve comprising a resilient tube with a slit, said nipple functioning to close said valve by exerting axial tension on the elastic tube thereby approximating the edges of the slit preventing leakage during compression sagittally as from biting and also to actuate said valve to open by flexion due to suction during nursing.

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