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C. J. SCHMID

2,238,827

VENTING MEANS FOR NURSING NIPPLES

Filed April 13, 1938

Fig. 1.

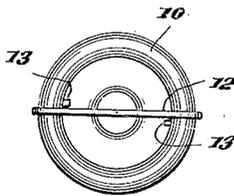


Fig. 5.

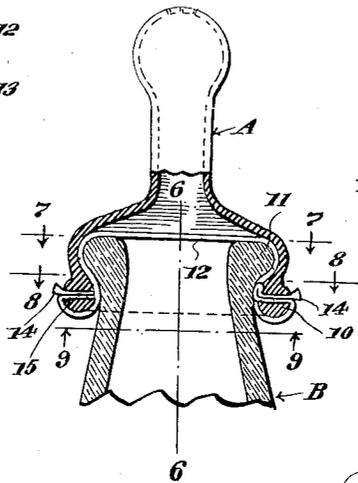


Fig. 7.

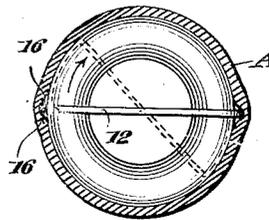


Fig. 2.

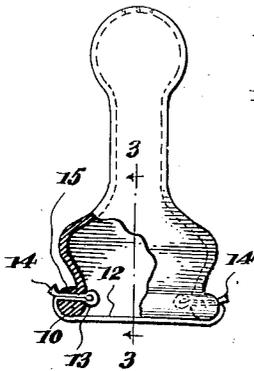


Fig. 8.

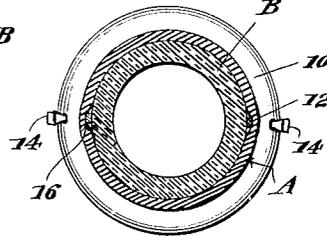


Fig. 6.

Fig. 3.

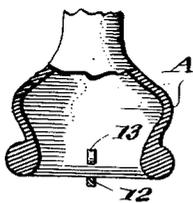


Fig. 9.

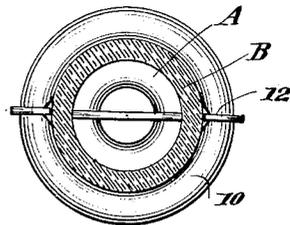


Fig. 4.

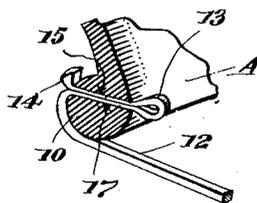


Fig. 10.

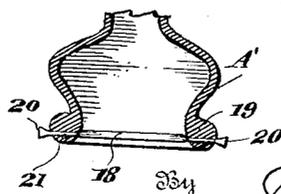
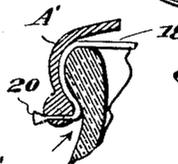


Fig. 11.



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VENTING MEANS FOR NURSING NIPPLES

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2 Claims. (Cl. 128—252)

This invention relates to nipples, and has for one of its objects the production of a simple and efficient venting means for a nursing bottle nipple and the like, wherein a relatively narrow elastic strip or band is extended across the open end of the nipple in a manner whereby the tension of the band may be regulated to control the entrance of air into a bottle upon which the nipple is placed by increasing the length of the air vent passage and decreasing the diameter of the passage.

Another object of this invention is the production of a simple and efficient means for securing the ends of an elastic strip or band to the body of a nipple.

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

In the drawing:

Figure 1 is a bottom plan view of my improved nipple;

Figure 2 is a side elevational view of the nipple, partly in section;

Figure 3 is a vertical sectional view taken on line 3—3 of Figure 2, a portion being shown in elevation;

Figure 4 is a fragmentary sectional view of a portion of the bead of a nipple, showing one manner of securing the end of the elastic band;

Figure 5 is an enlarged vertical sectional view through a portion of a neck of a bottle showing a nipple in position, a portion of the nipple being shown in elevation;

Figure 6 is an inverted sectional view taken on line 6—6 of Figure 5;

Figure 7 is a sectional view taken on line 7—7 of Figure 5;

Figure 8 is a sectional view taken on line 8—8 of Figure 5;

Figure 9 is a sectional view taken on line 9—9 of Figure 5;

Figure 10 is a transverse sectional view through a modified form of the device illustrating one type of band securing means;

Figure 11 is a fragmentary sectional view showing the manner in which the form of nipple shown in Figure 10 is applied to a bottle;

By referring to the drawing, it will be noted that A designates a conventional elastic or rubber nipple which is adapted to fit upon a bottle neck B of the conventional type. The nipple A is provided with an enlarged bead 10 along its lower edge which is adapted to fit under the bead portion 11 of the bottle neck B in the conventional manner.

It is a well known fact that the ordinary nursing nipples of the type illustrated possess the undesirable feature of collapsing while in use, due to the partial vacuum which is created by sucking upon the nipple. I, therefore, provide an extremely simple and efficient venting means in the nature of a thin elastic strip or band which is carried by the nipple and which fits between the nipple and the neck of the bottle to allow air to pass up into the neck of the bottle through vent passages upon either side of the band without permitting leakage of milk or other liquid through the vent passages.

In the drawing it will be noted that I employ a single strand such for instance as a relatively thin or narrow strip or strand of elastic material 12 similar to that used in rubber bands, the opposite ends of which are threaded through the bead portion 10 of the nipple A, having a loop 13 upon the inner face of the bead, the terminals 14 of the band extending outwardly of the bead and the band 12 being extended around under the bead 10, and transversely across the open end of the nipple A, as shown clearly in the drawing. It will be noted that as the band is extended through the bead portion 10 of the nipple, the band because of its flexible nature will be stretched, thereby reducing its diameter, and the bead portion because of its flexible nature will firmly grip around the stretched shank portion 15 of the band, providing a tight grip and avoiding the use of auxiliary fastening means. The loop portions 13 and the terminal portions 14 which extend upon opposite sides of the bead 10 will assume their normal diameters after the ends of the band have been threaded through the bead 10, and will therefore resist any tendency for the ends of the band 12 to pull through the bead 10 because of the enlargement of the band through the medium of the normal diameters of the end portions 14 and the loops 13.

The band or strip 12 normally extends transversely across the center of the open end of the nipple A, as shown in Figures 1 and 2, and when the nipple A is placed over the neck B of the bottle, the band or strip will stretch and conform to the contour of the neck of the bottle extending across the neck of the bottle and lying snugly between the inner face of the nipple A and the outer face of the neck B of the bottle, thereby providing elongated vent passages upon opposite sides of the strip 12, as shown in Figure 5, and providing air vent channels 16 upon opposite sides of the band or strip 12 to allow air to

pass up through these channels and into the bottle. The diameters of the portions of the band, strand or strip 12 which are gripped between the nipple A and the neck B of the bottle may be decreased by rotating the nipple A slightly in the direction of the arrow upon the neck B of the bottle to move the band or strip 12 from the full line position shown in Figure 7 to the dotted line position, and due to the friction contact of the strip 12 between the neck B and the nipple A, the band or strip 12 will be stretched in the direction of the arrow, and because of this stretching will decrease the diameter of the band as well as increase the length of the vent opening between the lower end of the bead 10 and the exit portion of the vent opening at the upper end or outer end of the bottle neck, as will be obvious by considering Figures 6 and 7 which will indicate the positions of the band or strip 12 when the nipple is rotated. Through the medium of this structure, it will be noted that the size of the vent openings or passages may be regulated to control the amount of flow of liquid from the bottle through the nipple by rotating the nipple slightly upon the bottle, the sizes of the vent openings being normally controlled by the diameter of the band or strip 12, and the differences in the sizes of the vent passages being normally determined by the slackness or the tension of the band 12. It is obvious that as the nipple is rotated, the band will be not only lengthened, but its diameter will be reduced, thereby increasing the length of the air passages 16, as well as reducing the normal diameter of the passages.

There are of course a number of ways in which the elastic strip or band may be secured to the nipple A, but one important form is shown in the drawing, Figure 4 showing in enlarged detail the manner in which the shank portion 15 of the band is compressed, while extending through the bead 10, and also showing the manner in which the loop portion or portions 13 and terminal portion or portions 14 when they assume their normal diameters, provide retarding means to resist the pull of the band 12 through the aperture or apertures 17 formed transversely through the bead 10.

In Figures 10 and 11, I have shown a further modified form of the invention, wherein the nipple A' carries a transversely extending elastic band or strip 18, the ends of which extend transversely through the bead 19, the band having enlarged end portions 20 upon the outer faces of the bead 19 to resist the pull of the ends of the band 18 through the bead. The band 18 is provided with a reduced shank portion 21 extending through the flexible bead 19, the shank portion 21 being provided by stretching the band 18 while it is being threaded through the bead 19, and being compressed by the flexible or rubber bead 19.

It should be understood that when a baby sucks upon the nipple, a vacuum is built up inside of the bottle and the air rushing in through the air vents will cause the elastic nipple to expand,

thereby enlarging the air vents. As soon as the baby discontinues sucking and the vacuum within the bottle decreases, the elastic nature of the nipple will cause the nipple to compress tightly around the neck of the bottle, thereby reducing the diameter of the air passages to a minimum and acting as a check for preventing the leaking of the liquid or milk out through the air vent passages.

Certain detail changes in the structure may be made 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 a flexible nipple having an open end adapted to fit over the neck of a bottle, an elastic strip spanning the open end of the nipple and having its ends folded back upon themselves and threaded through the nipple near its lower end from the outside towards the inside wall of the nipple, the portion of the elastic strip passing through the wall of the nipple being stretched and compressed to provide a tight grip between the nipple and the elastic strip, a portion of the elastic strip projecting inwardly of the wall of the nipple to provide a loop having a normal diameter, the elastic strip extending over the outer face of the lower edge of the nipple and being adapted to extend between the inner face of the nipple and the outer face of the neck of a bottle to provide air vents upon opposite sides of the elastic strip, the nipple being adapted to be rotated after being placed upon the neck of a bottle to cause the elastic strip to be stretched lengthwise and consequently reduce the diameter of that portion of the elastic strip between the nipple and the neck of the bottle for regulating the size of the air vents upon opposite sides of the elastic strip.

2. In a flexible nipple having an open end adapted to fit over the neck of a bottle, an elastic strand spanning the open end of the nipple and having its ends secured to the opposite sides of the nipple, a portion of the elastic strand at each end being stretched and compressed and passed through the wall of the nipple to provide a tight grip between the wall of the nipple and the elastic strand, a portion of the elastic strand at each end extending beyond the wall of the nipple and being of normal diameter to resist pulling action through the wall of the nipple, the portion of elastic strand spanning the open end of the nipple being adapted to extend between the inner face of the nipple and the outer face of the neck of a bottle to provide air vents upon opposite sides of the elastic strand, the nipple being adapted to be rotated after being placed upon the neck of a bottle to cause the elastic strand to stretch lengthwise and consequently reduce the diameter of that portion of the elastic strand between the nipple and the neck of the bottle for regulating the size of the air vents upon opposite sides of the elastic strand.

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