

Sept. 7, 1954

M. D. LERMAN
NURSING NIPPLE

2,688,326

Filed March 28, 1952

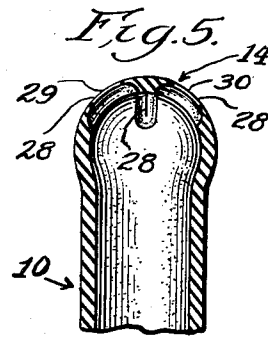
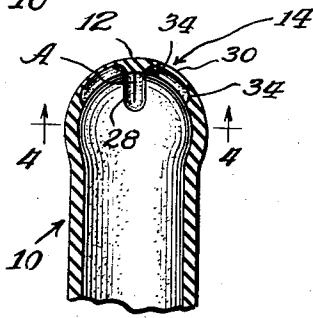
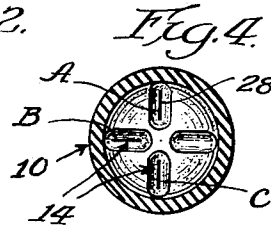
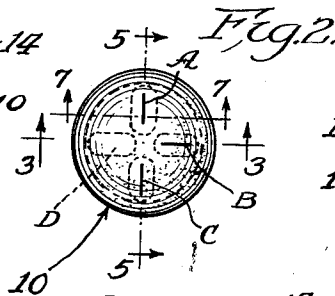
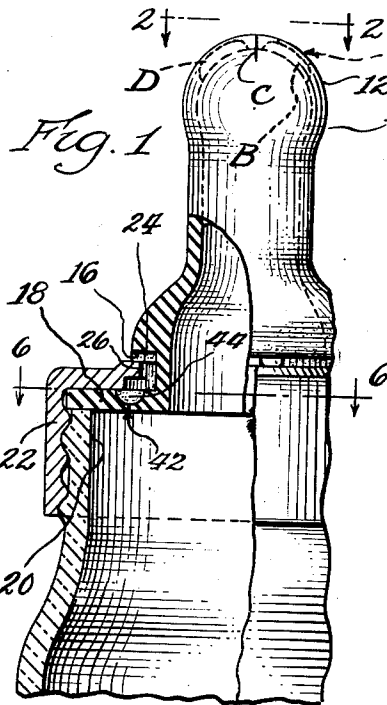
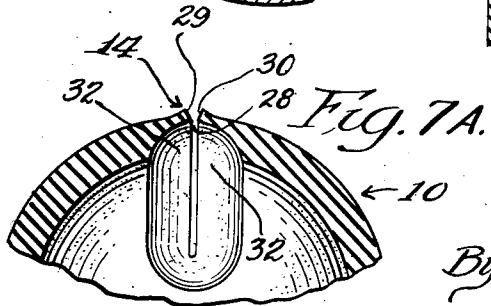
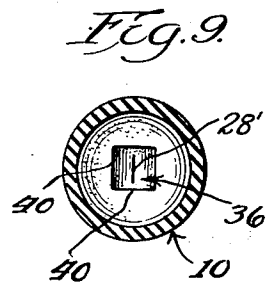
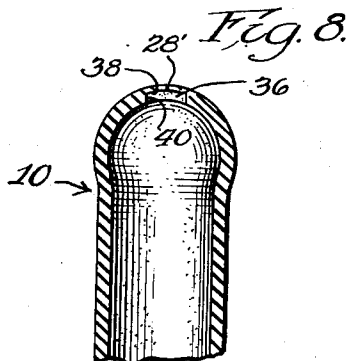
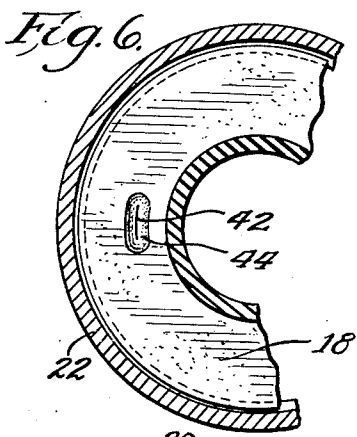


Fig. 3.



Inventor
Martin D. Lerman
By Mark R. Kraus

Atty.

UNITED STATES PATENT OFFICE

2,688,326

NURSING NIPPLE

Martin D. Lerman, Chicago, Ill.

Application March 28, 1952, Serial No. 279,007

6 Claims. (Cl. 128-252)

1

This invention relates to improvements in nursing nipples.

One of the objects of this invention is to provide a nursing nipple with valve means which normally remains closed but which is highly sensitive to suction produced by the infant while nursing to open said valve to allow the required amount of liquid to pass therethrough without tiring the infant during the feeding or nursing process.

Another object of this invention is to provide an improved nursing nipple with valve means highly responsive to slight changes in the degree and strength of suction produced by the infant during the nursing process to thereby allow the required amount of fluid to pass into the infant's mouth without gagging and without tiring the infant.

The nipples of the prior art are formed with either holes or slots, but said nipples are not freely responsive to changes in the suction, and as a result, they either permit the liquid to flow too freely, which causes a gagging, or else they require a strong suction by the infant which is extremely tiring and has a tendency to cause the infant to stop nursing before the infant has finished consuming the required allotted amount. The present invention provides a nipple which eliminates all of the foregoing objections produced by nipples of the prior art and provides a nipple formed with one or more slits, with a cutout adjacent the inside of said slit so constructed and arranged that the lips bounding the slit are highly responsive to the suction of the infant and react to slight changes in the degree and strength of suction, to thereby permit the required amount of food or liquid to pass therethrough and which valve means immediately closes upon release of any suction, to thereby permit the nipple to be retained in the mouth while at the same time preventing the flow of any additional liquid therethrough unless suction is applied to said nipple.

Other objects will become apparent as this description progresses.

In the drawings:

Fig. 1 is a view partly in cross-section of my improved nipple shown attached to the top portion of a nursing bottle.

Fig. 2 is a top plan view taken on line 2-2 of Fig. 1.

Fig. 3 is a cross-sectional view taken on line 3-3 of Fig. 2.

Fig. 4 is a cross-sectional view looking up, taken on line 4-4 of Fig. 3.

2

Fig. 5 is a cross-sectional view taken on line 5-5 of Fig. 2.

Fig. 6 is a cross-sectional view taken on line 6-6 of Fig. 1.

Fig. 7 is a view taken on line 7-7 of Fig. 2.

Fig. 7-A is a similar view but showing the valve in open position.

Fig. 8 is a cross-sectional view of a slightly modified form of valve construction, and

Fig. 9 is a cross-sectional view taken on line 7-7 of Fig. 8 looking up.

The nipple, generally indicated by the numeral 10, is formed of a flexible rubber material or the like and is provided with a head 12 in which the valve means, generally indicated by the numeral 14, and presently to be described, are contained. The nipple has an annular shoulder 16 and an annular flange portion 18 which is positioned adjacent the top of the nursing bottle 20. A retaining cap 22 has a central opening 24 through which the nipple extends, with the inner annular edge 26 of the retaining cap fitting between the shoulder 16 and flange 18. The retaining cap is threadedly secured to the bottle and rests over the flange portion 18 of the nipple to secure the nipple to the bottle.

The head of the nipple is provided with one or more valve means, generally indicated at 14, which forms the subject matter of this invention and which will now be described. Since all of said valve means are similarly constructed, one will be described in detail. A slit 28 is formed or cut in the head of the nipple to provide two adjacent walled surfaces or abutting edges 29 and 30 which form the opposed lips of the valve means. The surface underneath and immediately adjacent said slit is cut out or recessed to form a concave channel 32 which is dome or cup shaped in transverse cross-section, as clearly shown in Fig. 7. Referring to said figure, it will be seen that the slit in effect bisects the dome shaped cutout and that the surfaces immediately adjacent the slit curve downwardly and outwardly away from one another in an arc, to provide a reduced wall surface adjacent the slit and lips. The undercut or cutout extends longer than the length of the slit and the same is best shown in Fig. 3. Beginning with the opposite ends of the slit, the cutout curves down in the form of an arc, as at 34, so that when the cutout is viewed along its longitudinal axis it also appears cup or dome shaped, but with a larger radius than the transverse cross-section of the channel 32. There is thus provided in this invention a valve formed of a slit with abutting edges

and a dome shaped cutout under said slit in transverse cross-section, and a larger dome shaped cutout along its longitudinal cross-section.

As shown in Figs. 2 and 4, I provide three valve means, A, B and C in the head, spaced radially 90° from each other, each formed as aforesaid. The letter D designates the cutout formed on the underside of the nipple, but no slit has been formed therein. The purpose of said cutout D is to enable the mother to provide the slit in said cutout if same is necessary. While the valves are arranged as shown, it will be understood that my invention is not limited to the specific arrangement or layout of the valves, but that one or more of said valves so constructed can be formed in the head of the nipple.

Figs. 8 and 9 show a modified form of cutout adjacent the underside of the slit. The cutout, generally indicated at 36, adjacent the slit 28' is formed with a slightly curved roof 38 and straight side walls 40. The plan view of said cutout is in the form of a square, best shown in Fig. 9.

Valve means constructed in accordance with this invention are highly sensitive and respond to slight changes in the degree or strength of suction produced by the infant. It will be seen that the wall surface on the underside of the cutout is thinnest adjacent the slit or the abutting edges forming the lips of the valve and that the wall surface increases in thickness away from the lips. This provides a surface area adjacent the abutting edges which reacts quickly to various degrees of suction, which enables the valve to open and permit passage of the fluid, as shown in Fig. 7-A, without tiring the infant. This construction avoids the weakening of the head of the nipple and thereby causing a collapsing of the nipple during the feeding process.

As shown, the slits 28 do not extend the full length of the cutout, and if desired, the mother can enlarge the slit and adjust the rate of flow to the infant's needs merely by lengthening the slit at either or both ends.

As shown in Fig. 1, the flanged portion 18 of the nipple which is positioned over the bottle has a slit 42 formed therein and has a cup or dome shaped cutout 44 in transverse cross-section which is similar in cross-section to the cutout 30, described with respect to the nipple head. The cutout along its length is shaped similar to that described with respect to cutout 30. The said slit serves as an air vent so that when suction is applied to the nipple air will pass through the slit 42 in the flange of the nipple. One or more of said slits so formed may be spaced circumferentially on said flange. The purpose of said valve on said flange is to permit air to enter the bottle through said valve when suction is applied to the nipple and thereby prevent the nipple from collapsing, as is well understood in the art.

While I have shown my invention embodied in a specific form of nipple, it will be understood that this invention may be used with other forms and styles of nipples.

It will be understood that various changes and modifications may be made without departing from the spirit and scope of the appended claims.

I claim:

1. In a nipple for use with a nursing bottle, said nipple having a dome shaped head provided with a plurality of spaced independent valves unconnected with each other, each of said valves having a short slit forming abutting edges, with each slit spaced from the dome of the head, an undercut formed underneath said abutting edges with the thinnest wall surface adjacent the abutting edges.

2. In a nipple for use with a nursing bottle, said nipple having a head provided with a plurality of spaced independent valves unconnected with each other, said valves each spaced from the top of said head and each having a short slit forming abutting edges, a channel formed underneath and adjacent the abutting edges, each said channel being substantially semi-spherical in transverse cross-section.

3. In a nipple for use with a nursing bottle, said nipple having a head provided with a plurality of spaced independent valves unconnected with each other, said valves each spaced from the top of said head and each having a short slit forming abutting edges, a channel formed underneath and adjacent the abutting edges, each said channel being substantially semi-spherical in transverse cross-section and longer than the length of said slit.

4. In a nipple for use with a nursing bottle, said nipple having a head with a plurality of independent non-intersecting valves positioned laterally of the center top of the head, each of said valves having a short slit forming abutting edges and an undercut formed underneath said slit.

5. In a nipple for use with a nursing bottle, said nipple having a head with a central closed portion, a plurality of spaced independent valve members positioned adjacent said closed portion and extending radially downwardly therefrom, each of said valve members having a short slit forming abutting edges and an undercut formed underneath said slit.

6. In a nipple for use with a nursing bottle, said nipple having a head with a central closed portion, a plurality of independent valve members positioned adjacent said closed portion and extending radially downwardly therefrom, each of said valve members having a short slit forming abutting edges, a channel underneath and immediately adjacent said slit, said channel being cup shaped in transverse cross-section and extending longer than the length of said slit.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,093,130	Kurkjian	Sept. 14, 1937

FOREIGN PATENTS

Number	Country	Date
21,579	Great Britain	Oct. 12, 1908