July 16, 1940. F. M. DUERME 2,208,360

NURSING BOTTLE

Filed April 19, 1939

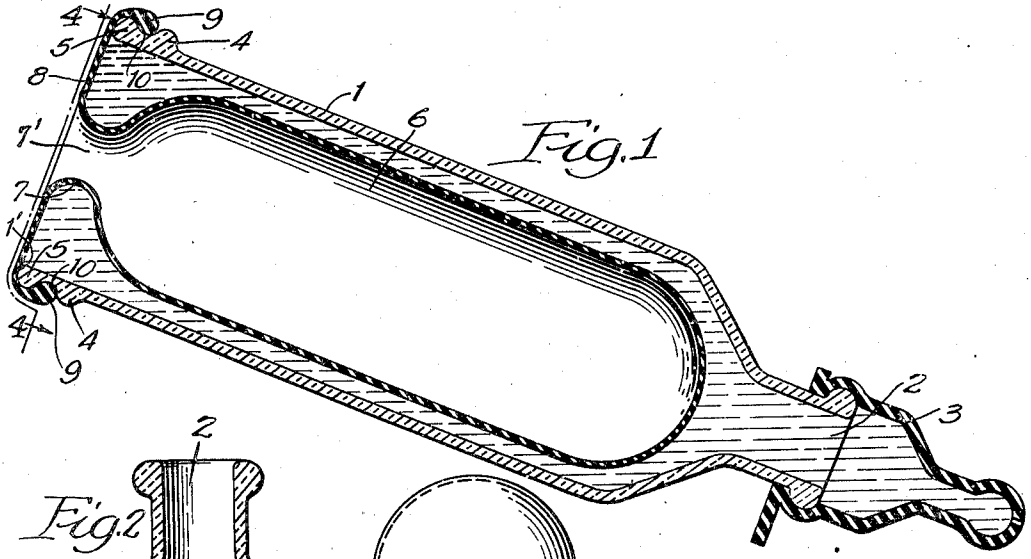


Fig. 1

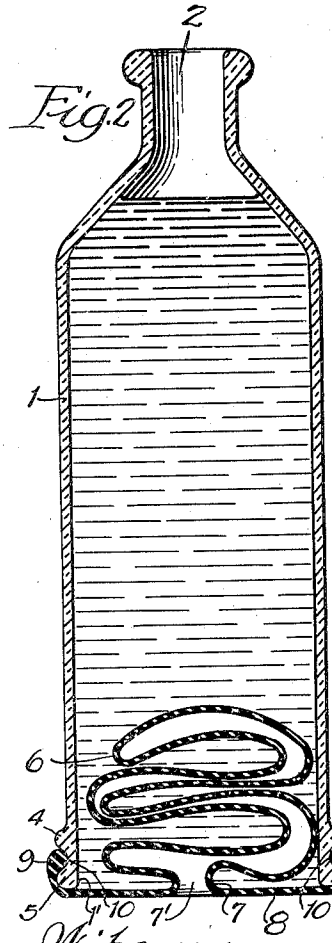


Fig. 2

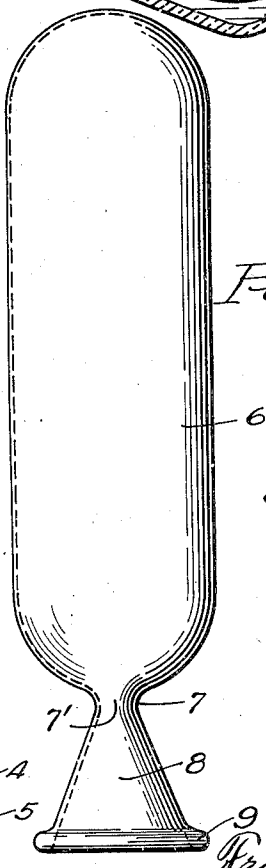
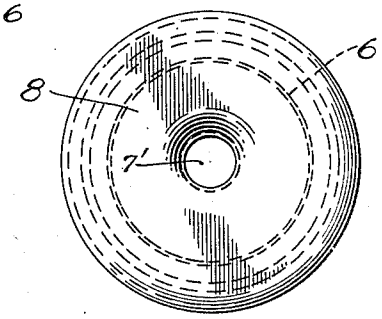


Fig. 3

Fig. 4



Inventor:
Francisco M. Duerme,

Witnesses:
N. I. Peterson
C. A. Snow

By Rummler Rummler & Woodworth
Attorneys.

Patented July 16, 1940 2,208,360

UNITED STATES PATENT OFFICE

2,208,360

NURSING BOTTLE

Francisco M. Duerme, Chicago, Ill.

Application April 19, 1939, Serial No. 268,669

2 Claims. (Cl. 215—11)

This invention relates to improvements in nursing bottles and appurtenances.

Heretofore nipples of various sizes, shapes and forms have been used on nursing bottles in an attempt to obtain an even flow of the liquid therefrom during infant feeding periods, but experience has proved that bottle fed babies do not obtain a uniform or constant flow of the liquid from nursing bottles due to the partial vacuum formed in the bottles when the liquid is being withdrawn. The liquid has been found to be released in squirts from the nipples when the infant compresses the nipple, the liquid therefor being forced into the passageways of the throat to cause choking and coughing many times during the feeding periods. Also, because of the vacuum formed in the bottle the liquid is found to be emitted spasmodically causing the baby to open its mouth and suck in air, which results in the swallowing of a mixture of air and liquid. Such conditions naturally tend to lengthen the time required to empty the bottle of its contents. Hence, the feeding periods are also lengthened accordingly, causing the next regular feeding period to be shifted further forward and thereby creating irregular feeding periods. In many instances it has been found that hiccoughs, belching and vomiting have followed the bottle feeding period. This is believed to have been caused by the excessive air that is introduced into the stomach, having been swallowed by the baby in its troublesome efforts to suck the liquid through the nipple. Whenever this air happens to pass down into the intestines of the baby, which is very often the case, the baby naturally suffers from flatulence, and has pains in its abdomen. This is commonly known as colic, and if severe it often leads to grave abdominal disturbances.

These conditions frequently occur, and all of these objectionable disturbances tend to endanger the lives of bottle-fed babies. It is believed that these and other objectionable features have been overcome by the device of the present invention.

It is the primary object of this invention to cure these inherent defects by producing a nursing bottle wherein the flow of liquid therefrom will be even and constant.

Other objects of this invention are to provide a device of this character wherein yielding means are utilized to equalize the pressure in the bottle with the atmosphere; to provide a nursing bottle wherein both ends are open; to equip a bottle interiorly with a collapsible wall part to compensate for vacuum tendencies; and to provide a nursing bottle which is simple in construction, positive in operation and inexpensive to manufacture.

An illustrative embodiment of this invention is shown in the accompanying drawing in which:

Figure 1 is a cross-sectional view taken axially of my improved device, illustrating the position of the rubber pouch when the bottle is substantially emptied of its contents.

Fig. 2 is a cross-sectional view of my improved device taken similarly, illustrating the position of the rubber pouch when the bottle has been filled with liquid.

Fig. 3 is a view of the rubber pouch before insertion in and attachment to the nursing bottle.

Fig. 4 is a view taken on the line 4—4 of Fig. 1.

Referring in detail to the drawing, the rigid shell 1, preferably constructed of glass or the like, is provided with the usual restricted neck opening 2 which is adapted to receive the usual form of rubber nipple 3. The lower end or bottom of shell 1 is entirely open and is provided with a pair of annular circumferential beads 4 and 5 on the outside wall.

An elongated rubber pouch 6, having a restricted neck 7 is adapted to be inserted into the interior of the shell 1 through the opening 1' in the lower end of shell 1 and attached thereto by stretching the pouch mouth 8 and edge bead 9, across the open bottom of the shell and placing the bead in groove seat 10 formed between the beads 4 and 5. (See Fig. 2.)

In operation the rubber pouch is inserted in the shell 1 through the opening 1' and attached to the shell in the manner stated. The bottle is then filled with liquid in the usual manner through the mouth opening 2 in the shell 1. The usual nipple 3 is then placed over the opening 2 where it is secured in the usual manner, whereupon it is ready to be used.

In feeding, the bottle is partially inverted and the contents withdrawn in the usual manner through the nipple 3. It will now be apparent that as the contents of the bottle are withdrawn, the pouch 6 is automatically filled with air which enters the pouch through the opening 7'. The air enters the pouch in direct proportion to the amount of liquid withdrawn, thereby equalizing the pressure within the bottle with that of the atmosphere and thus permitting a constant and uniform withdrawal of the contents of the bottle.

In actual use, it has been found that the liquid in the bottle of my invention will flow uniformly

and constantly at a rate of from 40 to 50 drops per minute at body temperature until the bottle is emptied of its contents. Physicians recommend that infants consume one or more ounces of milk within three to five minutes during each feeding period. This result is readily obtainable by employing the device of my present invention.

Furthermore, this device is more readily cleaned and sterilized than those on the market today because the shell has no bottom when the rubber pouch is removed and this eliminates the usual difficulties of thoroughly cleaning of the bottom of the bottle, as is apparent. Furthermore, the rubber pouch and the nipples may be sterilized at the same time and in the same container.

It is to be understood that some of the details set forth may be altered or omitted without departing from the spirit of the invention as defined by the following claims.

I claim:

1. A nursing bottle comprising a unitary one-piece shell open at both ends, in combination with a collapsible pouch having a restricted neck portion and arranged to be inserted in the interior of said shell, and having its open end arranged to be stretched over one end of said shell to close the same and retain the body of said pouch within said shell, and a nursing nipple adapted to be stretched over the other end of said shell, all constructed and arranged to cause an even discharge flow of liquid in drops from the shell when the nipple is compressed and the shell inverted.

2. A nursing bottle comprising a cylindrical unitary one-piece shell open at both ends and provided with circumferential flanges adjacent each end, in combination with a collapsible rubber pouch having a restricted neck portion and a circumferential bead adjacent its mouth, said pouch being adapted to be inserted into the interior of said shell through one of the open ends thereof and have its mouth stretched over said open end and over the flange adjacent said end to close the end thereof and provide a vent opening for said pouch and retain the body of said pouch within said shell, and a nursing nipple adapted to be stretched over the other end of said shell and over said other flange, all constructed and arranged to cause an even discharge flow of liquid in drops from the shell when the nipple is compressed and the shell inverted.

FRANCISCO M. DUERME.