

Dec. 30, 1952

J. A. CLEMENS
NIPPLE CONSTRUCTION

2,623,524

Filed Nov. 4, 1950

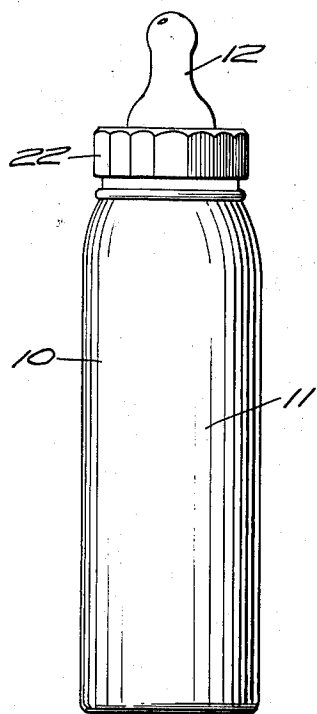


FIG. 1

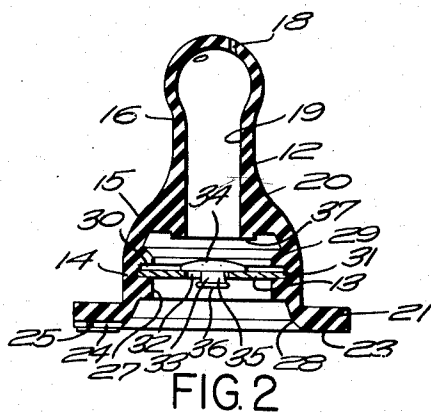


FIG. 2

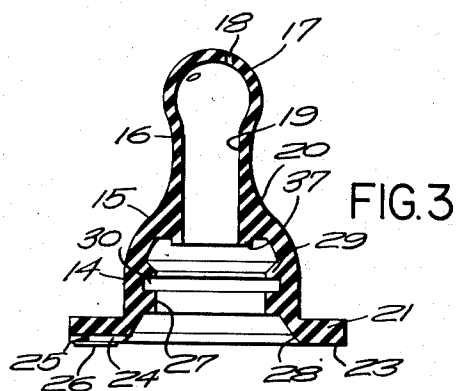


FIG. 3

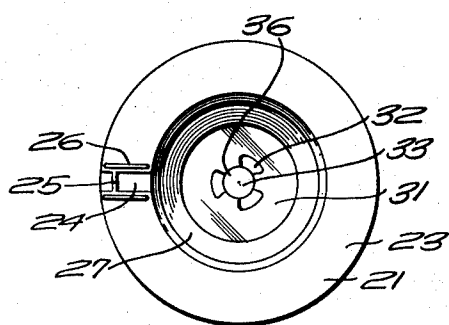


FIG. 4

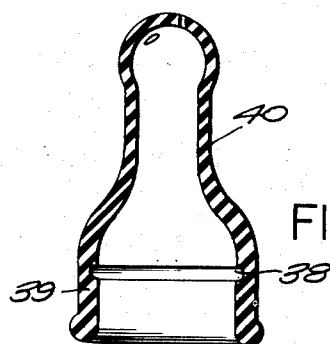


FIG. 5

INVENTOR.
BY *John A. Clemens*
Nathaniel Frucht
ATTORNEY

UNITED STATES PATENT OFFICE

2,623,524

NIPPLE CONSTRUCTION

John A. Clemens, Warwick, R. I., assignor to Davol Rubber Company, a corporation of Rhode Island

Application November 4, 1950, Serial No. 194,072

3 Claims. (Cl. 128—252)

1

The present invention relates to feeding nipples, and has particular reference to a novel construction for use with a check valve of disk type.

The principal object of the invention is to provide a nipple construction which includes parts for holding a removable disk type check valve in operative position.

Another object of the invention is to provide a nipple construction which has an integral seat for a disk type check valve.

With the above and other objects and advantageous features in view, the invention consists of a novel arrangement of parts more fully disclosed in the detailed description following, in conjunction with the accompanying drawings, and more specifically defined in the claims appended thereto.

In the drawings,

Fig. 1 is a plan view of a nurser comprising a feeding bottle and a feeding nipple;

Fig. 2 is an enlarged vertical section through the feeding nipple;

Fig. 3 is a view similar to Fig. 2, the disk valve being omitted;

Fig. 4 is a bottom plan view of Fig. 2; and

Fig. 5 is a sectional view of a modified nipple construction.

It has been found desirable to provide a separable disk valve for a feeding nipple, of the type which permits flow of nursing fluid into the nipple from the feeding bottle when suction is applied to the nipple, and prevents return flow to the bottle when the nipple is compressed for feeding, whereby the disk valve and nipple act as a feed pump for feeding fluid from the bottle to the nipple. To this end, I have devised a nipple construction which removably locks the disk valve in place so that it cannot become displaced under the suction and feeding pressures; I have therefore formed the nipple with lock elements which retain and hold the disk valve in operating position.

Referring to the drawings, the nurser 10 includes a feeding bottle 11 and a nipple 12, the nipple being of flexible resilient material such as rubber and having a disk valve 13 removably locked therein. The nipple includes a hollow generally cylindrical base 14 which extends upwardly and curves inwardly as indicated at 15 to an intermediate cylindrical neck 16 having an enlarged generally spherical feeding tip 17 which is provided with one or more feeding passages 18. The inner surface 19 of the neck 16 is preferably cylindrical, to provide a section 20 of generally triangular cross section at the

2

junction of the neck and the base. The base has an outwardly extending annular flange 21 for seating on the rim of a medium or wide mouth nursing bottle, the assembly being completed by a threaded cap 22 which is internally threaded to engage corresponding threads on the bottle neck and to press the flange against the bottle rim. The lower surface 23 of the annular flange is preferably provided with a recess or the like 24 which extends over the bottle rim and which may have a flexible dam 25 and cooperating side ribs 26 for the purpose of supplying a regulated air flow to the interior of the nursing bottle.

The base also has an internal annular bead 27 spaced from the section 20, the inner edge 28 of the base being bevelled as illustrated. The disk valve 13 is removably seated on the bead 27 and is locked in place thereon by a spaced abutment rib 29 which is in parallel relation to and cooperates with the bead 27 to provide a recess or seat 30 for the edge of the disk valve 13. Although the rib 29 is shown as a continuous annular rib, it may be segmental if desired.

The disk valve 13 includes a rigid disk 31 which has spaced central perforations 32 and a movable valve 33 seated centrally therein, the valve 33 having an upper head 34 of a size to seat over and close the perforations 32, and a shank 35 which is enlarged at its lower end 36 for retention in the disk.

When the infant produces suction in the feeding tip of the nipple the milk or other fluid in the bottle is drawn into the nipple, the valve lifting to permit the inflow; as the infant applies pressure to the feeding tip the valve seats and the liquid in the nipple is forced out through the feeding passages. The combination of nipple and disk valve thus functions as a feed pump.

As illustrated in Figs. 2 and 3 the space between the bead 26 and the section 20 is adapted to receive the rim of a narrow mouth feeding bottle, and the section 20 may be provided with a depending flange 37 to seal the inner edge of the narrow mouth bottle rim.

The preferred retaining means for the disk valve is obtained by the provision of an inner bead and a rib abutment spaced therefrom, as illustrated in Fig. 3; it may be desirable, however, to use a retaining means such as a groove 38, see Fig. 5, in the lower portion 39 of a narrow mouth feeding nipple 40, for releasably retaining the disk valve in place.

Although I have disclosed specific constructional embodiments of nipple constructions which

3

releaseably hold a disk valve in place in the nipple, it is obvious that changes in the size, shape, and arrangement of the parts may be made to correspond to different nipple designs, without departing from the spirit or the scope of the invention as defined in the appended claims.

I claim:

1. A feeding nipple of flexible material, comprising a hollow base of cylindrical form, a generally cylindrical neck extending upwardly from the base and terminating in a feeding tip having flow passages, the outer surface at the junction of said base and neck converging inwardly and the inner surface at said junction being vertical to provide a section at the junction of generally triangular cross-section, said base having an external annular flange at the lower end, an internal annular flange adjacent the lower end, and an internal annular rib in parallel relation to and spaced from said internal annular flange.

2. In combination, a feeding nipple of flexible material having a hollow base, a neck extending from the base, a feeding tip at the upper end of the neck having feeding passages, said base

4

having an annular retaining recess, and a disk seated in said recess, said disk including a valve openable by suction at the feeding tip.

3. In combination, a feeding nipple of flexible material having a hollow base, a neck extending from the base, a feeding tip at the upper end of the neck having feeding passages, said base having an annular abutment projection adjacent the upper portion thereof and an annular rib adjacent the lower portion thereof, said projection and rib forming an annular retaining recess, and a disk seated in said recess, said disk including a valve openable by suction at the feeding tip.

JOHN A. CLEMENS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,919,537	Stock, Jr.	July 25, 1933
1,937,278	Kleine	Nov. 28, 1933
2,178,426	Kilcup	Oct. 31, 1939