THE PRESENT INVENTION RELATES TO NEW AND USEFUL IMPROVEMENTS IN BABY BOTTLES AND HAS FOR ITS PRIMARY OBJECT TO PROVIDE, IN A MANNER HEREAFTER SET FORTH, A DEVICE OF THIS CHARACTER WHICH MAY BE USED FOR FEEDING EITHER LIQUID OR SEMI-SOLID FOODS, THEREBY ENABLING THE CONTINUED USE OF THE BOTTLE AS THE INFANT GROWS INTO CHILDHOOD.

ANOTHER IMPORTANT OBJECT OF THE INVENTION IS TO PROVIDE A COMBINATION BABY BOTTLE OF THE AFOREMENTIONED CHARACTER COMPRISING NOVEL MEANS FOR PREVENTING THE INTAKE OF AIR WITH THE FLUID, THEREBY AVOIDING COLO.

THE PRESENT INVENTION IS ALSO DIRECTED TO PROVIDE A BABY NURSING AND FEEDING BOTTLE WHICH WILL BE COMPATIBLY SIMPLE IN CONSTRUCTION, STRONG, DURABLE, COMPACT, OF LIGHT WEIGHT, WHICH MAY BE EASILY CLEANED AND MAINTAINED, AND WHICH MAY BE MANUFACTURED AT LOW COST.

THESE TOGETHER WITH OTHER OBJECTS AND ADVANTAGES WHICH WILL BE SUBSEQUENTLY APPARENT IN THE DESCRIPTION AND DRAWINGS, FORM A PART HEREOF, WHEREIN LIKE NUMERALS REFER TO LIKE PARTS THROUGHOUT.

Figure 1 is a view in vertical section through a baby bottle constructed in accordance with the present invention; Figure 2 is a view in horizontal section, taken substantially upon the line 2—2 of Figure 1; Figure 3 is a horizontal sectional view, taken substantially on the line 3—3 of Figure 1; and Figure 4 is a perspective view of the feeding nipple.

Referring now to the drawing in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a substantially cylindrical container 5 of suitable rigid material. The container 5, which may also be of any desired dimensions, is open at both ends. The container 5 comprises, on its upper end, a reduced, externally threaded neck 6 which terminates in an internal flange 7.

Figure 4 shows a cross-sectional view of a portion of the container 5, including the neck 6 and the flange 7. The valve 17 includes a flexible disk 18 having therein a centrally located opening 19. Mounted on the disk 18 is a relatively thin flexible disk 20 having in its outer portion a plurality of perforations 21 which, as will be noted, are out of alignment with the opening 19.

Mounted beneath the valve 17 is a removable air pump 22 of the collapsible bulb type. The pump 22 comprises a check valve 23, which in turn is engaged beneath the disk 18 of the valve 17. The assembly is secured through the medium of a retaining cap or ring 24 which is screwed on the externally threaded lower portion of the valve 17. The bag 5 is filled therewith, as indicated at 9, and the nipple 13 is secured in position. As the fluid is consumed, the bag 8 contracts or collapses from the bottom up, and air from the atmosphere is drawn into the upper portion of the container 5 by means of the air pump 22.

Figure 4 shows a cross-sectional view of a portion of the container 5, including the neck 6 and the flange 7. The valve 17 includes a flexible disk 18 having therein a centrally located opening 19. Mounted on the disk 18 is a relatively thin flexible disk 20 having in its outer portion a plurality of perforations 21 which, as will be noted, are out of alignment with the opening 19.

Mounted beneath the valve 17 is a removable air pump 22 of the collapsible bulb type. The pump 22 comprises a check valve 23, which in turn is engaged beneath the disk 18 of the valve 17. The assembly is secured through the medium of a retaining cap or ring 24 which is screwed on the externally threaded lower portion of the container 5, said cap or ring comprising an internal flange 26 which is engaged beneath the flange 23 of the pump 22. The pump 22 further includes an air intake 27.

In Figure 4 of the drawing, reference character 28 designates a feeding nipple which may be mounted on the bottle in lieu of the nipple 13. The feeding nipple 28 comprises in its tip a single, relatively large discharge opening 29. In other respects the nipple 28 is substantially similar to the nursing nipple 13.

It is thought that the use of the device will be readily apparent from a consideration of the foregoing. Briefly, when milk, for instance, is to be fed to the infant, the bag 8 is filled therewith, as indicated at 9, and the nipple 13 is secured in position. As the fluid is consumed, the bag 8 contracts or collapses from the bottom up, and air from the atmosphere is drawn into the upper portion of the container 5 by means of the air pump 22. The pump 22 further includes an air intake 27.

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3 and trapping said air therein, the walls of said bag progressively decreasing in thickness from the top to the bottom thereof for causing said bag to collapse from the bottom up as the food is removed therefrom.

2. A baby bottle comprising: a substantially cylindrical container having open upper and lower ends, a collapsible bag suspended in the container from the upper end thereof, a nipple on the container communicating with the bag, said bag for the reception of food, and a check valve on the lower end of the container for admitting air thereto beneath the bag and for trapping the air in said container, said check valve including a lower disk having a central opening therein and an upper disk having a multiplicity of perforations therein outwardly of the opening, and a ring threaded on the lower end portion of the container for securing the check valve thereon, said ring including an intumescence engaged beneath the lower disk.

3. A baby bottle of the character described comprising: a substantially cylindrical container open at both ends, a collapsible bag for the reception of food, suspended in the container from one end thereof, a nipple on one end of said container communicating with the bag for receiving the food therefrom, a pump on the other end of the container for injecting air under pressure thereinto, and a check valve interposed between the pump and the container for trapping the air in said container.

4. A baby bottle of the character described comprising: a substantially cylindrical container open at both ends, a collapsible bag, for the reception of food, suspended in the container from one end thereof, a nipple mounted on said one end of the container and communicating with the bag for receiving the food therefrom, a check valve on the other end of the container for admitting air thereto and for trapping said air therein, said check valve including a flexible upper disk having a plurality of perforations in its outer portion for the passage of the air, said check valve further including a lower disk having a central opening therein out of alignment with the perforations, a pump mounted beneath the check valve for forcing air therethrough into the container, said pump including a collapsible bulb and an outturned flange thereon engaged beneath the lower disk, and a removable ring threaded on the container for securing the pump and the check valve thereon, said ring including an intumescence engaged beneath the first named flange.

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