

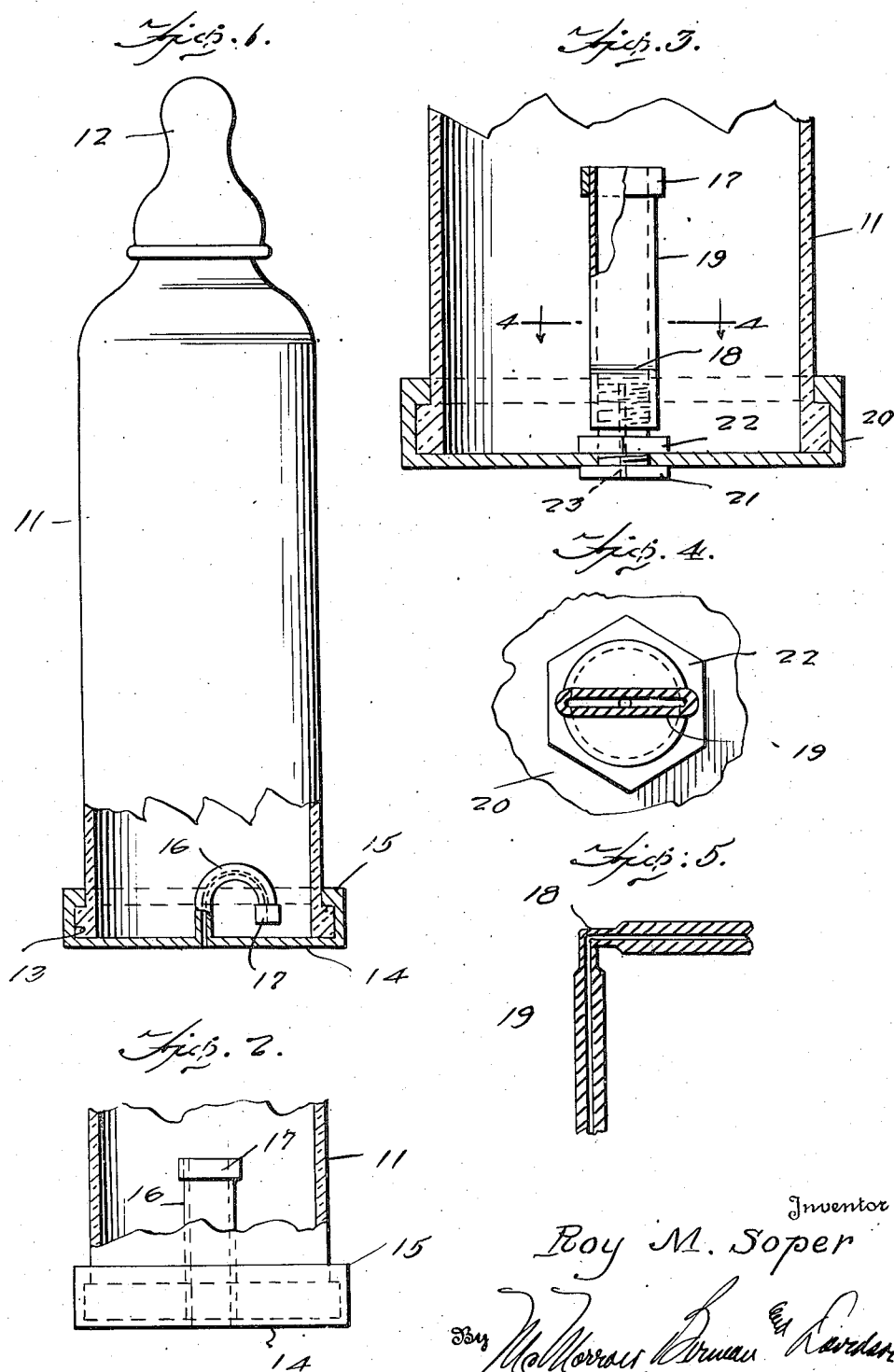
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SANITARY NURSING BOTTLE

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SANITARY NURSING BOTTLE

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3 Claims. (Cl. 215—11)

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This invention relates to nursing bottles, and more particularly to nursing bottles having air pressure equalizing means to permit the passage of air into the bottle while preventing the escape of liquid therefrom.

A main object of the invention is to provide a novel and improved nursing bottle of very simple construction having a normally closed valve device adapted to open responsive to the formation of a vacuum in the bottle and to admit atmospheric air into the bottle to equalize the pressure therein.

A further object of the invention is to provide an improved nursing bottle structure which is inexpensive to manufacture and which is provided with a simple and efficient air relief valve for admitting atmospheric air into the bottle when a vacuum is formed during the use thereof by an infant, said valve being automatically closed when the air pressure is equalized.

Further objects and advantages of the invention will become apparent from the following description and claims and from the accompanying drawings, wherein:

Figure 1 is an elevational view partly in cross-section, of a nursing bottle constructed in accordance with the present invention.

Figure 2 is a detail elevational view partly in section, the base portion of the bottle structure of Figure 1 with the valve element thereof in raised position.

Figure 3 is a detail cross sectional view of the base portion of a nursing bottle provided with a modified valve element according to the present invention.

Figure 4 is a cross-sectional detail view taken on line 4—4 of Figure 3.

Figure 5 is a cross-sectional detail view of the lower portion of the tube element employed in the nursing bottle of Figure 3, shown in normal closed position.

Referring to the drawings, 11 designates the body portion of a container, said body portion being glass or the like, the body portion 11 being formed at its upper end with a neck adapted to receive a conventional nursing nipple 12. The lower end of body portion 11 is formed with an annular flange or rib 13. Engaged with flange 13 in liquid sealing relation therewith is a bottom cap member 14 of resilient material, such as rubber, having an annular rim or head 15 adapted to be forced into overlying relationship with flange 13 to thereby maintain cap member 14 in position. Formed centrally of cap member 14 and projecting upwardly therefrom is a col-

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lapsible flat tube element 16 carrying at its upper end a reinforcing collar 17, which may be of any suitable material, said collar being of substantial weight and serving to normally bias the tube element to a laterally drooping bent position overhanging the bottom wall of cap member 14, the tube element being deformable whereby the passage through the tube element will be squeezed closed when said tube element is in its laterally overhanging position.

In use, the overhanging tube element 16 normally seals the bottom of the container and prevents liquid from escaping therefrom. However when a vacuum develops in the container due to suction on nipple 12 during the feeding process, atmospheric air pressure forces tube element 16 to an upright position, thereby opening the passage through said tube element and allowing air to enter the container until the pressure therein is substantially atmospheric. When the pressure in the container has become equalized tube element 16 drops back to its normal overhanging position, closing the passage through the tube.

In the embodiment shown in Figure 3, the tube element designated as 19, is not formed integral with the bottom cover 20 of the container but is secured to a bushing member 21 carried by the bottom cover 20 and secured thereto by a nut 22. Bushing member 21 is formed with a passage 23 through which atmospheric air may enter tube element 19 when said tube element is in upright position. Said tube element is locally reduced in thickness adjacent its connection with the bushing 21, as shown at 18, whereby the passage through the tube element will be sealed when said tube element is in its laterally bent position. The operation of the valve structure of Figure 3 is similar to that of the valve structure of Figure 1.

While certain specific embodiments of air pressure-equalizing nursing bottles have been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore it is intended that no limitations be placed on the invention other than as defined by the scope of the appended claims.

What is claimed is:

1. In a nursing bottle, a bottom wall and an upstanding flexible tube carried by said bottom wall, said tube having a passage therethrough communicating with the atmosphere when the tube is in upright position, and a weight on the upper end of said tube and normally inherently

biasing the tube to a laterally bent drooping position to close said passage.

2. A nursing bottle, comprising a body, a bottom cap secured to said body, an upstanding collapsible tube of flexible material carried by said cap, said tube having a passage therethrough communicating with the atmosphere when the tube is in upright position, and a collar carried by the upper end of said tube and normally inherently biasing the tube to a laterally bent drooping position to close said passage.

3. In a nursing bottle, a flexible bottom wall, an upstanding flexible tube carried by said bottom wall, said tube having a passage therethrough communicating with the atmosphere when the tube is in upright position, and means biasing said tube to a laterally bent drooping position, said tube being locally reduced in wall thickness intermediate its length and being in-

herently deformable to close said passage when the tube is in said drooping position.

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