[0004] Some users may at times assemble such a bottle with the vent assembly omitted from the bottle, such as when traveling or when a child is older and a parent decides to no longer use the vent assembly. In such an instance, the collar assembly is threaded onto the neck of the bottle until the collar is tightened down as much as possible. However, the neck of the bottle and the height of the collar are such that the collar assembly, and in particular the nipple of the collar assembly, do not adequately seal down against the rim of the bottle. As such, leakage of liquid from the bottle can occur.

[0005] There is a need, therefore, for a bottle assembly, and in particular a vented bottle assembly, in which the vent assembly can be removed and the bottle assembly still used without the risk of leakage.

SUMMARY

[0006] In one aspect, a bottle assembly generally comprises a container comprising an open end, a closed end, a base portion, a neck, and a rim on the neck of the container and defining the open end of the container, with the container having a central axis. A vent assembly is positionable at least in part on the rim of the container to permit venting of the container during use. The vent assembly comprises at least one lateral vent extending other than parallel to the central axis of the container when the vent assembly is positioned on the rim of the container. A collar assembly generally defines a closure for the container and is releasably engageable with the neck of the container over the open end thereof. The collar assembly and vent assembly are configured relative to each other to permit selective configuration of the bottle assembly between two configurations. In a first configuration, upon releasable engagement of the collar assembly with the neck of the container when the vent assembly is on the rim of the container, the collar assembly urges the vent assembly into substantially sealing engagement with the rim of the container such that at least a majority of a cross-section of the lateral vent is disposed below the rim. In a second configuration, upon releasable engagement of the collar assembly with the neck of the container when the vent assembly is omitted from the bottle assembly, the collar assembly substantially sealingly engages the rim of the container.

[0007] In another aspect, a single-piece vent insert for a bottle assembly may be provided. The bottle assembly may include a container having a rim. The single-piece vent generally comprises an annular outer portion having a central axis and a bottom, the bottom of the annular outer portion being positionable on the rim of the container, and a lateral vent extending other than parallel to the central axis of the annular outer portion, the lateral vent being disposed at least in part below the bottom of the annular outer portion. ~~The vent insert is~~

~~configured to be positionable at least in part on a rim of a container to permit venting of the container during use. At least a majority of a cross-section of the lateral vent is disposed below the annular outer portion.~~

[0008] In yet another aspect, a bottle assembly generally comprises a container comprising an open end, a closed end, a neck, and a rim on the neck defining the open end of the container. A vent assembly is positionable at least in part on the rim of the container to permit venting of the container during use. A collar assembly generally defines a closure for the container and is releasably engageable with the neck of the container over the open end thereof. The collar assembly and the vent assembly are configured relative to each other to permit selective configuration of the bottle assembly between two configurations. In the first configuration, upon releasable engagement of the collar assembly with the neck of the container when the vent assembly is on the rim of the container, the collar assembly urges the vent assembly into substantially sealing engagement with the rim of the container. In the second configuration, upon releasable engagement of the collar assembly with the neck of the container when the vent assembly is omitted from the bottle assembly, the collar assembly substantially sealingly engages the rim of the container. The container of bottle assembly is configured to be vented via the vent assembly in the first configuration, and wherein the container is vented via the collar assembly in the second configuration ~~in both the first configuration and the second configuration~~.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Figure 1 is a perspective of one embodiment of a nursing bottle assembly.

[0010] Figure 2 is a perspective of a container of the nursing bottle assembly of Figure 1.

[0011] Figures 3A and 3B are perspectives of a nipple of the nursing bottle assembly of Figure 1.

[0012] Figure 4 is a perspective of a collar of the nursing bottle assembly of Figure 1.

[0013] Figures 5A and 5B are perspectives of a vent insert of the nursing bottle assembly of Figure 1.

WHAT IS CLAIMED IS:

1. A bottle assembly comprising:

a container comprising an open end, a closed end, a base portion, a neck, and a rim on the neck of the container and defining the open end of the container, the container having a central axis;

a vent assembly positionable at least in part on the rim of the container to permit venting of the container during use and comprising at least one lateral vent extending other than parallel to the central axis of the container when the vent assembly is positioned on the rim of the container; and

a collar assembly generally defining a closure for the container and being releasably engageable with the neck of the container over the open end thereof, the collar assembly and vent assembly being configured relative to each other to permit selective configuration of the bottle assembly between:

a first configuration in which upon releasable engagement of the collar assembly with the neck of the container when the vent assembly is on the rim of the container, the collar assembly urges the vent assembly into substantially sealing engagement with the rim of the container such that at least a majority of a cross-section of the lateral vent is disposed below the rim; and

a second configuration in which upon releasable engagement of the collar assembly with the neck of the container when the vent assembly is omitted from the bottle assembly, the collar assembly substantially sealingly engages the rim of the container.

2. The bottle assembly set forth in claim 1, wherein the vent assembly further comprises an outer portion, wherein, when the vent assembly is positioned on the rim of the container, a bottom of the outer portion rests on the rim of the container.

3. The bottle assembly set forth in claim 2, wherein the bottom of the outer portion comprises at least one groove in fluid communication with the lateral vent.

4. The bottle assembly set forth in claim 3, wherein the at least one groove spaces a portion of the vent assembly apart from the rim of the container when the vent assembly is positioned on the rim of the container in order to permit air to flow to the lateral vent during use.

5. The bottle assembly set forth in claim 2, wherein the vent assembly further comprises an annular rib disposed on a top of the outer portion.

6. The bottle assembly set forth in claim 5, wherein, when the bottle assembly is in the first configuration, the annular rib sealingly engages the collar assembly.

7. The bottle assembly set forth in claim 1, wherein the container further comprises a lip extending around a circumference of the neck.

8. The bottle assembly set forth in claim 7, wherein a bottom edge of the collar assembly is disposed above the lip when the bottle assembly is in both the first configuration and the second configuration.

9. A single-piece vent insert for a bottle assembly, the bottle assembly including a container having a rim, the ~~bottle assembly~~ vent insert comprising:

an annular outer portion having a central axis and a bottom, the bottom of the annular outer portion being positionable on the rim of the container; and

a lateral vent extending other than parallel to the central axis of the annular outer portion, the lateral vent being disposed at least in part below the bottom of the annular outer portion.

~~10. (Canceled).~~

10~~1~~. The vent insert set forth in claim 9, wherein the bottom of the annular outer portion comprises at least one groove formed separate from and in fluid communication with the lateral vent.

~~12. (Canceled).~~

113. The vent insert set forth in claim 9 further comprising an annular rib disposed on a top of the annular outer portion.

124. The vent insert set forth in claim 113, wherein the annular rib is configured to sealingly engage a collar assembly when the collar assembly is releasably engaged with a neck of the container with the bottom of the annular outer portion positioned on the rim of the container.

135. The vent insert set forth in claim 9 further comprising an intermediate portion configured to sealingly engage an inner surface of the container when the bottom of the annular outer portion is positioned on the rim of the container.

146. A bottle assembly comprising:

a container comprising an open end, a closed end, a neck, and a rim on the neck defining the open end of the container;

a vent assembly positionable at least in part on the rim of the container to permit venting of the container during use; and

a collar assembly generally defining a closure for the container and being releasably engageable with the neck of the container over the open end thereof, the collar assembly and vent assembly being configured relative to each other to permit selective configuration of the bottle assembly between:

a first configuration in which upon releasable engagement of the collar assembly with the neck of the container when the vent assembly is on the rim of the container, the collar assembly urges the vent assembly into substantially sealing engagement with the rim of the container; and

a second configuration in which upon releasable engagement of the collar assembly with the neck of the container when the vent assembly is omitted from the bottle assembly, the collar assembly substantially sealingly engages the rim of the container,

wherein the container is vented via the vent assembly in the first configuration, and wherein the container is vented via the collar assembly in the second configuration.

157. The bottle assembly set forth in claim 146, wherein the container is vented via the vent assembly in the first configuration, and wherein the container is vented via the collar assembly in the second configuration.

168. The bottle assembly set forth in claim 146, wherein the collar assembly comprises a nipple which substantially sealingly engages the rim of the container in the second configuration.

179. The bottle assembly set forth in claim 168, wherein the nipple comprises at least one groove disposed on a bottom face of the nipple, wherein, when the bottle assembly is in the second configuration, the at least one groove spaces a portion of the nipple apart from the rim to form a vent spacing through which the container is vented.

1820. The bottle assembly set forth in claim 179, wherein the vent assembly comprises an annular rib configured to seal the at least one groove when the bottle assembly is in the first configuration such that the one or more grooves is not in fluid communication with a liquid chamber of the container when the bottle assembly is in the first configuration.