Claims

1.

A product 10, 110, 210 that includes:

a glass container 12, 112 including a neck 24, 124 having an interior passage 32, 132 including a through bore 34, 134, a counterbore 36, 136, and an internal step 38, 138 between the throughbore and counterbore; and

a fitment 14, 114, 214 coupled to the neck of the container in the counterbore thereof via an interference fit between the container neck and a metal outer wall of the fitment, wherein the interference fit non-removably secures the fitment to the container to render the product tamper-evident, and wherein an interior axial end of the fitment is axially located against the internal step in the container and an outer axial end of the fitment extends axially out the container axially beyond a lip of the container to form an anti-drip feature.

2.

The product set forth in claim 1, wherein the product is an anti-refill product, the fitment is an anti-refill dispensing fitment.

3.

The product set forth in claim 1, wherein the fitment extends axially out of the container to provide an anti-drip feature.

4.

The product set forth in claim 1, wherein the fitment includes a base wall 42, an outlet wall 44 axially spaced from the base wall, and a check valve carried within the outer wall of the fitment.

5.

The product set forth in claim 4, wherein the check valve includes the outlet wall having outlet apertures 46, a cage 48 held between the base and outlet walls and spaced from the outlet wall by a spacer 50 and having apertures 49, a valve plate 52 axially movably retained by the cage and covering an opening 54 in the base wall, and a valve ball 56 retained between the cage and the valve plate.

6.

The product set forth in claim 1, wherein the outer wall of the fitment includes indicia 58, 60.

7.

The product set forth in claim 6, wherein the outer wall of the fitment includes a radially recessed portion including the indicia, which includes at least one of a brand name or a package serial number.

8.

The product set forth in claim 1, wherein the fitment includes an outer wall 40, 140, 240 of the fitment having an exterior circumferential surface, an interior circumferential surface, and a tapered surface 141 between the circumferential surfaces at an interior end of the fitment.

9.

The product set forth in claim 1, wherein the fitment includes an outer wall 40, 140, 240 carrying thread segments 215.

10.

A method of producing a product 10, 110, 210 that includes:

(a) flowing liquid into a glass container 12, 112 having a neck 24, 124 with an interior surface; and

(b) coupling a fitment 14, 114, 214 into the neck of the container via an interference fit between an exterior surface of a metal outer wall 40, 140, 240 of the fitment and the interior surface of the container, that non-removably secures the fitment to the container to render the product tamper-evident and wherein the fitment is an anti-refill fitment including an anti-refill valve carried within the metal outer wall of the fitment,

wherein the coupling step (b) includes providing the container neck at a first temperature, providing the metal outer wall at a second temperature less than the first temperature, and then inserting the metal outer wall into the container neck.

11.

The method of claim 10, wherein the coupling step (b) includes:

(b1) warming the neck of the container, and cooling the wall of the fitment to a temperature less than that of the neck of the container, and

(b2) inserting the fitment into the neck of the container, whereafter temperature equalization of the fitment wall and container neck establishes the interference fit.

12.

A method of inserting a fitment 14, 114, 214 into a neck 24, 124 of a container 12, 112, which includes the steps of:

(a) providing a glass container 12, 112 having a neck 24, 124 at a first temperature,

(b) providing a metal ring 14, 114, 214 at a second temperature less than said first temperature,

(c) inserting said ring into the neck of the container, and

(d) allowing temperatures of the container neck and the ring to equalize to non-removably secure said ring within said neck.

13.

A product comprising a container 12, 112 with an inside, a fitment 14, 114, 214 interference fit inside the container 12, 112, wherein the fitment includes an outer wall 40, 140, 240 and indicia 58, 60 carried by the outer wall so that the indicia are positioned on the inside of the container but are visible therethrough.

The invention claimed is:

1. A method of producing a product that includes:

(a) flowing liquid into a glass container having a neck with a cylindrical interior surface; and then

(b) coupling a fitment into the neck of the container via an interference fit between a circumferentially continuous cylindrical exterior surface of a metal outer wall of the fitment and the corresponding cylindrical interior surface of the container, that non-removably secures the fitment to the container to render the product tamper-evident and wherein the fitment is an anti-refill fitment including an anti-refill valve carried within the metal outer wall of the fitment and is at least partially composed of plastic,

wherein the coupling step (b) includes providing the container neck at a first temperature, providing the metal outer wall at a second temperature less than the first temperature, and then inserting the metal outer wall into the container neck and the coupling step (b) also includes inserting the fitment into the neck of the container until the fitment abuts an internal shoulder within the container so that an end of the fitment extends from the neck of the container to form an anti-drip edge.

2. The method of claim 1, wherein the coupling step (b) includes:

(b1) warming the neck of the container, and cooling the wall of the fitment to a temperature less than that of the neck of the container, and

(b2) inserting the fitment into the neck of the container, whereafter temperature equalization of the fitment wall and container neck establishes the interference fit.

3. A product produced by the method of claim 1, wherein attempts to melt the plastic portion of the fitment by applying heat thereto result in expansion of the metal outer wall and, thus, breakage of the container neck, thereby facilitating evidence of tampering with the container.

4. A method of inserting a fitment into the neck of a container, which includes the steps of:

(a) providing a glass container having a neck at a first temperature and a cylindrical interior surface,

(b) providing a metal ring having a circumferentially continuous cylindrical exterior surface corresponding to the cylindrical interior surface of the container neck, wherein the metal ring is at a second temperature less than said first temperature, wherein said ring has an axial length such that an end of said ring extends from the neck of the container to form an anti-drip edge, wherein

an anti-refill valve is carried within said ring and includes a check valve at least partially composed of plastic,

(c) inserting said ring into the neck of the container until said ring abuts an internal shoulder within said container, and

(e) allowing temperatures of the container neck and the ring to equalize to secure said ring within said neck.

5. A product produced by the method set forth in claim 4, wherein attempts to melt the plastic portion of the check valve by applying heat thereto result in expansion of the metal ring and, thus, breakage of the container neck, thereby facilitating evidence of tampering with the container.

6. The method set forth in claim 4, wherein the outer wall of the fitment includes a radially recessed portion including indicia, which includes at least one of a brand name or a package serial number.