

GLASS WINE BOTTLES AND METHOD OF MOLDING THEM

The present disclosure relates to molding glass wine bottles, and more particularly to molding glass bottles for Stelvin-type threaded closures or cork-type plug closures having the same bottle body but differing neck finishes for receiving the respective closures.

Background and Summary of the Disclosure

Glass bottles, including glass wine bottles, conventionally are molded in a two-stage operation in which a parison is molded from a hot glass gob at a blank or parison stage, and the container body is then molded from the parison at a mold or blow stage. The container neck finish is formed to final configuration at the blank stage, and the container body and neck are reformed at the mold stage. The two-stage manufacturing operation typically is either a press-and-blow operation in which the parison is formed by pressing the gob in the blank mold using a pressing plunger, or a blow-and-blow-operation in which the glass gob is blown to the configuration of the blank mold. The parison with completed neck finish it is transferred to the blow mold for final blowing, in which the intermediate or temporary body of the parison is blown into the final neck and body of the bottle. US 4362544 includes a background discussion of the art of both press-and-blow and blow-and-blow glassware forming processes, and also discusses an electropneumatic forming machine adapted for use in either process. The disclosure of such patent is incorporated herein by reference.

Glass wine bottles typically are manufactured to receive either a cork-type plug closure or a Stelvin-type threaded closure. A Stelvin-type threaded closure typically has a metal shell with internal threads and a long skirt that can be tightly crimped to the container neck to

simulate the foil that covers a cork. Change-over of a conventional glassware manufacturing machine from manufacturing bottles having one type of neck finish to manufacturing bottles having the other type of neck finish conventionally is a laborious process requiring change of both the neck rings at the blank stage for molding the neck finishes and the molds at the blow stage for molding the container bodies and necks. A general object of the present disclosure is to provide a method of molding glass wine bottles, and glass wine bottles made by such method, that simplify the process of change-over between Stelvin-type and cork-type wine bottles.

The present disclosure embodies a number of aspects that can be implemented separately from or in combination with each other.

The concept of the present disclosure, simply stated, is to provide a blow mold at the mold stage suitable for forming bottles having a neck (and body) configuration adapted for either Stelvin-type threaded closures or cork-type plug closures. Different neck ring molds are employed at the blank stage for molding the desired Stelvin-type or cork-type neck finish configuration, but the mold for the body and neck of the bottle remains the same at the mold stage. This greatly facilitates change-over of a production line between Stelvin-type and cork-type bottles.

A method of molding a wine bottle adapted for use with one but not both of a cork-type plug closure and a Stelvin-type threaded closure, in accordance with one aspect of the present disclosure, includes forming a glass parison having a temporary body and a completed neck finish contoured for receiving either but not both of a cork-type plug closure and a Stelvin-type threaded closure. The glass parison is transferred to a mold stage, and the temporary body of the parison is blow molded at the mold stage to form a glass bottle having a neck coupled to the neck finish. With both neck finish geometries, the neck adjacent to the neck finish has both external (L and K)

dimensions adapted to receive a Stelvin-type threaded closure and a cylindrical interior adapted to receive a cork-type plug closure.

Brief Description of the Drawings

The disclosure, together with additional objects, features, advantages and aspects thereof, will best be understood from the following description, the appended claims and the accompanying drawings, in which:

FIG. 1 is an elevational view of a glass wine bottle adapted to receive a Stelvin-type threaded closure in accordance with an exemplary embodiment of the present disclosure;

FIG. 2 is a fragmentary sectional view taken substantially along the line 2-2 in FIG.

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FIG. 3 is an elevational view of a glass wine bottle adapted to receive a cork-type plug closure in accordance with another exemplary embodiment of the present disclosure; and

FIG. 4 is a fragmentary sectional view taken substantially along the line 4-4 in FIG.

3.

Detailed Description of Preferred Embodiments

FIGS. 1 and 2 illustrates a glass wine bottle 20 having a body 22, a neck finish 24 and a neck 26 extending between the neck finish and the body. Neck finish 24 is adapted for use in conjunction with a Stelvin-type threaded closure, and includes one or more external thread segments 28. Key dimensions for the neck and neck finish include the L dimension from the top surface of the neck finish to the wide spot in the neck, and the K diameter across the wide spot in the neck. (The designations “L” and “K” are standard designations in the glass container industry.) The K dimension is across the portion of the neck where the skirt of the Stelvin-type closure is crimped.

Bottle 20 also has an overall height 28 between the neck finish top surface and the base of the container. Neck finish 24 has a cylindrical internal diameter D.

FIGS. 3-4 illustrate a cork-type glass wine bottle 30 having the same body 22 and neck 26 as bottle 20 in FIGS. 1-2. The neck finish 32 of bottle 30 includes an external shoulder 34 for gripping by a cork press, and an internal diameter D for receiving a cork-type plug closure. The diameter D extends for at least a distance C into the neck finish and neck, this distance C sometimes being referred to as the “cork spec.” Bottle 30 including neck 26 and neck finish 32 have the same dimensions L, K and D as does the bottle 20 of FIGS. 1-2. The overall height 36 of bottle 30 typically would be slightly less than the height 28 of bottle 20 because of the lesser height of neck finish 32.

Thus, a glassware machine can be reconfigured from one bottle 20 or 30 to the other by simply changing the neck rings that mold the neck finish at the blank stage while leaving the blow molds at the mold stage unchanged.

There thus have been disclosed a method of making a glass wine bottle, and a resulting bottle, that fully satisfy all of the objects and aims previously set forth. The disclosure has been presented in connection with exemplary embodiments, and modifications and variations have been discussed. Other modifications and variations readily would suggest themselves to persons of ordinary skill in the art in view of the foregoing description.

Claims

1.

A method of molding a glass wine bottle (20 or 30) adapted for use with one but not both of a cork-type plug closure and a Stelvin-type threaded closure, said method including the steps of:

(a) forming a glass parison having a temporary body and completed neck finish (24 or 32) contoured for receiving either but not both of a cork-type plug closure and (26) a Stelvin-type threaded closure,

(b) transferring the glass parison formed in said step (a) to a mold stage, and then

(c) blow molding the temporary body of the parison at said mold stage to form a glass bottle having a neck coupled to said neck finish, said neck adjacent to said neck finish having both external (L and K) dimensions adapted to receive a Stelvin-type threaded closure and a cylindrical interior adapted to receive a cork-type plug closure.

2.

A method of making a glass wine bottle, which includes the steps of:

(a) providing a glass manufacturing machine having a blank stage for making a parison having a neck finish (24 or 32) for receiving one but not both of a cork-type plug closure and a Stelvin-type threaded closure, and a mold stage for blowing said parison into a wine bottle (20 or 30) having a body (22) coupled by a neck (26) to said neck finish,

(b) forming glass wine bottles using said machine provided in said step (a),

(c) modifying said machine to have a blank stage for making a parison having a neck finish (24 or 32) for receiving another of said cork-type plug closure and said Stelvin-type threaded closure, and a blow stage for blowing a said parison into a wine (20 or 30) bottle having said other neck finish and the same body (22) and neck (26), and

5 (d) forming glass wine bottles using said machine modified in said step (c).

3.

A glass wine bottle made in accordance with the method set forth in claim 1 or claim

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10 A glass wine bottle (20 or 30) that includes a body (22) with a neck (26) coupled to a neck finish (24 or 32), said neck finish having either exterior threads for receiving a Stelvin-type threaded closure or an exterior shoulder for coupling by a cork-type plug closure press, said neck having both external (L and K) dimensions adjacent to said neck finish for receiving a Stelvin-type threaded closure and a cylindrical interior passage for receiving a cork-type plug closure.