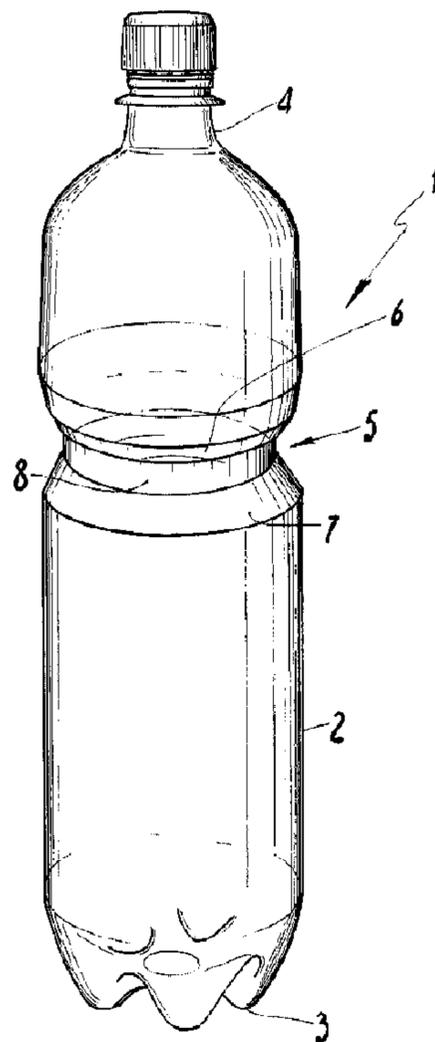




(22) Date de dépôt/Filing Date: 1991/03/18
 (41) Mise à la disp. pub./Open to Public Insp.: 1991/09/23
 (45) Date de délivrance/Issue Date: 2002/12/31
 (30) Priorité/Priority: 1990/03/22 (41566 A/90) IT

(51) Cl.Int.⁵/Int.Cl.⁵ B65D 1/02
 (72) Inventeur/Inventor:
 PASQUALE, LINO, IT
 (73) Propriétaire/Owner:
 SO.GE.A.M. S.P.A. SOCIETA' GESTIONE ACQUE
 MINERALI, IT
 (74) Agent: MARKS & CLERK

(54) Titre : BOUTEILLE DE PLASTIQUE POUR BOISSONS
 (54) Title: PLASTIC BOTTLE



(57) **Abrégé/Abstract:**

Disclosed is a plastic bottle comprising: a cylindrical body; and means for gripping the cylindrical body by a user's hand. The means for gripping the cylindrical body by a user's hand comprises a deep annular groove provided circumferentially in the cylindrical body; the groove having a quadrangular cross-section comprising two conically-shaped annular bands and an inner cylindrical band which is mutually interconnected between the annular bands. The inner cylindrical band has a diameter which is smaller than the diameter of the cylindrical body at its other parts which do not include the annular groove, and the cylindrical band has a thickness which is greater than the thickness of the cylindrical body at its other parts which do not include the annular groove.

ABSTRACT

Disclosed is a plastic bottle comprising:
a cylindrical body; and means for gripping the cylindrical body by a user's hand. The means for gripping the cylindrical body by a user's hand comprises a deep annular groove provided circumferentially in the cylindrical body; the groove having a quadrangular cross-section comprising two conically-shaped annular bands and an inner cylindrical band which is mutually interconnected between the annular bands. The inner cylindrical band has a diameter which is smaller than the diameter of the cylindrical body at its other parts which do not include the annular groove, and the cylindrical band has a thickness which is greater than the thickness of the cylindrical body at its other parts which do not include the annular groove.

PLASTIC BOTTLE

The present invention relates to a plastic bottle particularly for containing beverages.

The bottle is particularly suitable for the containment of carbonated beverages such as mineral waters, orangeades
5 or other beverages to which carbon dioxide is added.

It is known that plastic bottles suitable for the containment of carbonated beverages, of the kind currently used in the 1.5- or 2-liter size, must have a body which is more resistant than the others.

10 The greater resistance of these bottles, which are manufactured with the method of blow molding, is usually obtained by increasing the thickness of their body.

This naturally increases the amount of raw material used and consequently the cost of the bottles.

15 In order to solve this disadvantage, bottles which are circumferentially provided with slight annular reinforcement grooves with a triangular cross section have been made commercially available, but the practical results have not been up to the expectations, since due to the filling and to
20 the consequent tensions to which the bottle is subjected its outer surface tends to stretch longitudinally, consequently stretching the annular grooves, which achieve no effect.

The surface of bottles for beverages is furthermore generally completely smooth and also has a considerable
25 diameter (approximately 85 mm), so that gripping with a user's hands is often troublesome.

The aim of the present invention is to provide a plastic bottle of the type commonly used for the containment

of carbonated beverages in the 1.5- or 2-liter size which solves the disadvantages described above in the known art.

A consequent primary object is to provide a bottle which, despite being suitable for the containment of
5 carbonated beverages, is equal in cost to those suitable for non-carbonated beverages.

Not least object is to provide a bottle which is not more difficult to manufacture than currently commercially available bottles.

10 This aim, these objects and others which will become apparent hereinafter are achieved by a plastic bottle of the type with a substantially cylindrical shape, characterized in that it circumferentially comprises at least one deep annular groove with a quadrangular cross
15 section.

More specifically, the present invention provides a plastic bottle comprising a cylindrical body, and means for gripping the cylindrical body by a user's hand. The means for gripping the cylindrical body comprises a deep annular
20 groove provided circumferentially in the cylindrical body; the groove having a quadrangular cross-section comprising two conically-shaped annular bands and an inner cylindrical band which is mutually interconnected between the annular bands. The inner cylindrical band has a diameter which is
25 smaller than the diameter of the cylindrical body at its other parts which do not include the annular groove, and the cylindrical band has a thickness which is greater than the thickness of the cylindrical body at its other parts which do not include the annular groove.

3a

The invention also provides a method of holding a plastic bottle of the type comprising a cylindrical body, the method comprising the steps of providing a deep annular groove circumferentially in the cylindrical body, wherein
5 the groove has a quadrangular cross-section comprising two conically-shaped annular bands and an inner cylindrical band which is mutually interconnected between the annular bands, wherein the inner cylindrical band has a diameter which is smaller than the diameter of the cylindrical body
10 at its other parts which do not include the annular groove, and wherein the cylindrical band has a thickness which is greater than the thickness of the cylindrical body at its other parts which do not include the annular groove, and gripping the deep annular groove with a user's hand.

15 Further characteristics and advantages of the invention will become apparent from the detailed description of an embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

20 Figure 1 is a perspective view of the bottle according to the invention; and

Figure 2 is an enlarged perspective view of a detail of the bottle of Figure 1.

25 With reference to the above figures, the bottle is indicated by the reference numeral 1 and comprises a cylindrical body 2, a shaped bottom 3 and a neck 4 with a thread for a closure.

30 The bottle 1 is made of plastic material with conventional methods of blow molding, in particular with the

material commonly indicated by the acronym PET.

According to the invention, the bottle 1 is circumferentially provided, in an upper region of the body 2, with a deep annular groove 5 having a quadrangular cross section which is in particular a cross section in the shape of an equilateral trapezoid.

The groove 5 therefore comprises two annular bands 6 and 7 with a conical shape which are connected by an inner cylindrical band 8.

10 Since the bottle 1 is manufactured by blow molding, as mentioned previously, the amount of material which deposits on every part of the parison in its initial shape is the same, and since the band 8 of the finished bottle has a considerably smaller diameter than the body 2, after blowing
15 the thickness at the band 8 is greater than that of the other parts of the body, so that it is considerably resistant and the groove 5 is not subjected to stretchings.

The inner band 8 in practice has a function which is comparable to that of the reinforcement hoops of barrels.

20 It should also be pointed out, considering the fact that the bottle will be preferably manufactured in the currently commercially used 1.5- and 2-liter sizes, that the local diameter reduction caused by the presence of the groove 5 allows a better grip with a user's hands with
25 respect to current bottles.

Finally, the fact that in practice the amount of material used is equal or slightly greater than that used for bottles for non-carbonated beverages provides a further advantage of the present invention.

30 It has thus been observed in practice that the bottle

according to the invention has achieved the intended aim and objects.

The invention thus conceived is susceptible to numerous modifications and variations, all of which are within the
5 scope of the inventive concept.

All the details may furthermore be replaced with other technically equivalent elements.

In practice, the materials employed, so long as compatible with the contingent use, may be any according to
10 the requirements.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A plastic bottle comprising:
 - a cylindrical body; and
 - means for gripping the cylindrical body by a user's hand;
 - said means for gripping the cylindrical body by a user's hand comprising a deep annular groove provided circumferentially in the cylindrical body, said groove having a quadrangular cross-section comprising two conically-shaped annular bands and an inner cylindrical band which is mutually interconnected between said annular bands, said inner cylindrical band having a diameter which is smaller than the diameter of the cylindrical body at its other parts which do not include said annular groove, and cylindrical band having a thickness which is greater than the thickness of the cylindrical body at its said other parts which do not include said annular groove.
2. The bottle of claim 1, wherein said annular groove is provided at an upper region of said cylindrical body.
3. The bottle of claim 1 or 2, wherein said groove has a cross-section in the shape of an equilateral trapezoid.

4. The bottle of claims 1, 2 or 3, wherein said cylindrical body has a first end at which is provided a shaped bottom, and a second end at which is provided a neck provided with a thread for a closure element.

5. The bottle of any one of claims 1 to 4, which is produced by blow molding.

6. The bottle of any one of claims 1 to 5, wherein said bottle is substantially of the 1.5 liter size.

7. The bottle of any one of claims 1 to 5, wherein said bottle is substantially of the 2.0 liter size.

8. A method of holding a plastic bottle of the type comprising a cylindrical body, the method comprising the steps of:

providing a deep annular groove circumferentially in said cylindrical body, wherein said groove has a quadrangular cross-section comprising two conically-shaped annular bands and an inner cylindrical band which is mutually interconnected between said annular bands, wherein said inner cylindrical band has a diameter which is smaller than the diameter of said cylindrical body at its other parts which do not include said annular groove, and wherein said

cylindrical band has a thickness which is greater than the thickness of said cylindrical body at its said other parts which do not include said annular groove; and

gripping said deep annular groove with a user's hand.

9. The method of claim 8, wherein said annular groove is provided at an upper region of said cylindrical body.

10. The method of claim 8 or 9, wherein said groove has a cross-section in the shape of an equilateral trapezoid.

11. The method of claim 8, 9, or 10, wherein said bottle is substantially of the 1.5 liter size.

12. The method of claim 8, 9 or 10, wherein said bottle is substantially of the 2.0 liter size.

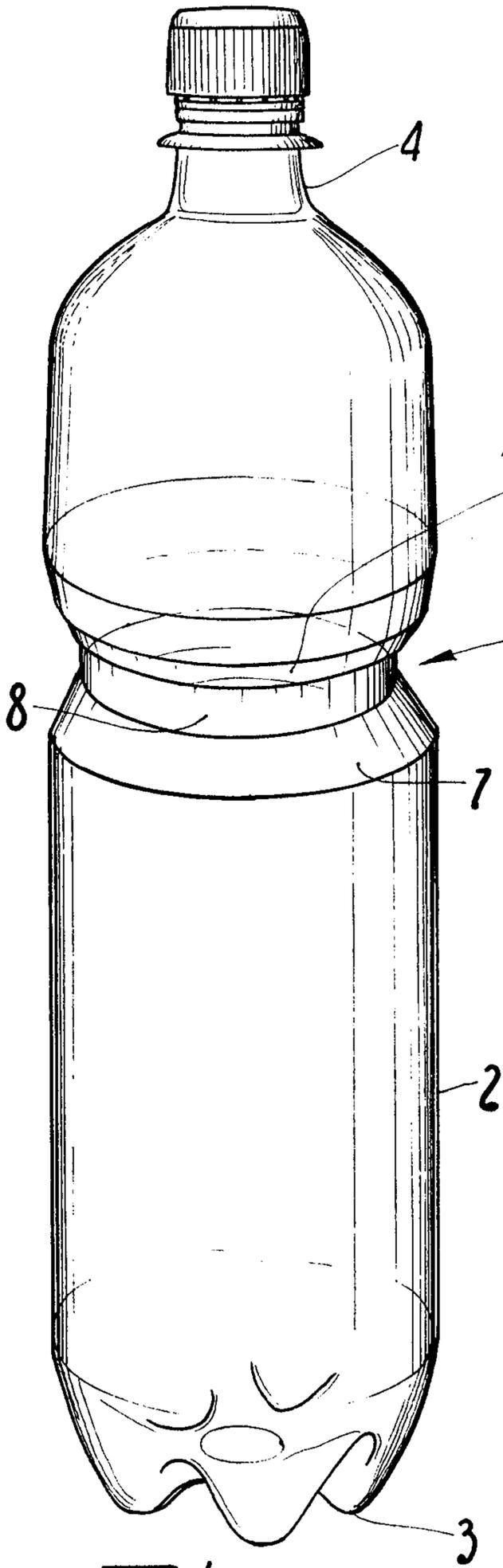


Fig. 1

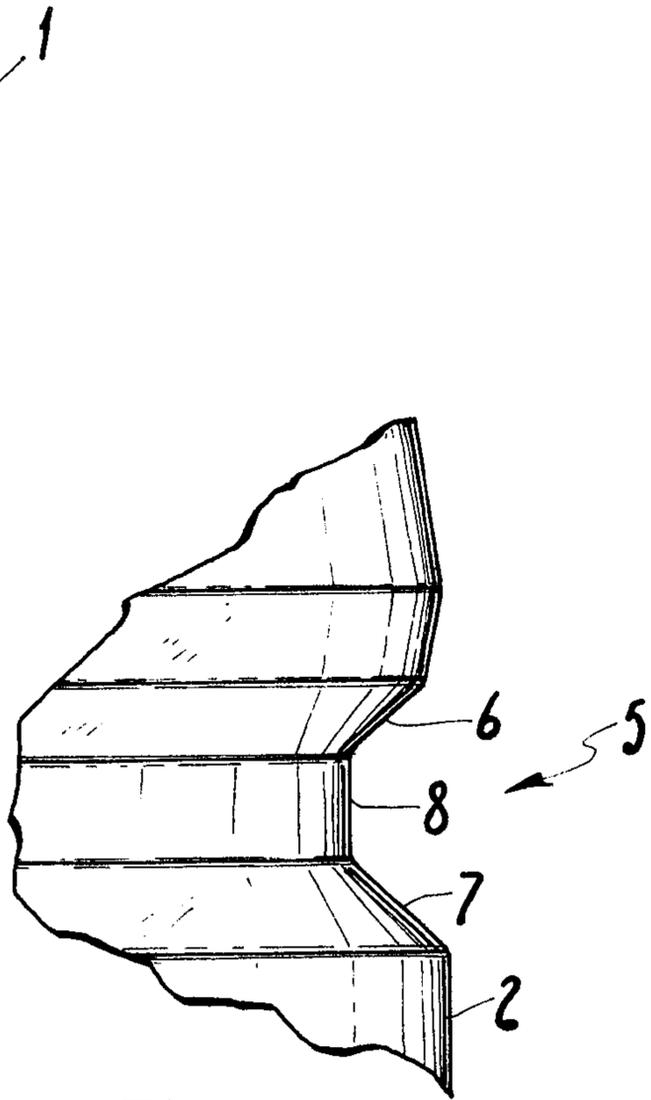


Fig. 2

Frank & Clark

