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(54) **STACKABLE BOTTLE WITH TWO HANDLES**

(57) Set comprising at least one first and one second stackable bottle (13, 14) in which each bottle (1, 13, 14) has a first or a second handle (12, 25), each bottle (1, 13, 14) being compatible with both the first and the second handle (12, 25) and each bottle (1, 13, 14) has a base part with a central base part and a peripheral base part, wherein said central base part comprises a recess (11) that is dimensioned such that the recess (11) of the first bottle (1, 13, 14) surrounds a bottle cap (3) and a bottle neck (4) of the second bottle (1, 13, 14) in a stacked position in which a shoulder (5) part of the second bottle (1, 13, 14) rests against the peripheral base part of the first bottle (1, 13, 14), wherein said handle (12, 25) is attached to the bottle neck (4) and comprises a gripper part and wherein the recess (11) is dimensioned such that the recess (11) of the first bottle (1, 13, 14) also surrounds the handle (12, 25) attached to the second bottle (1, 13, 14) in said stacked position.

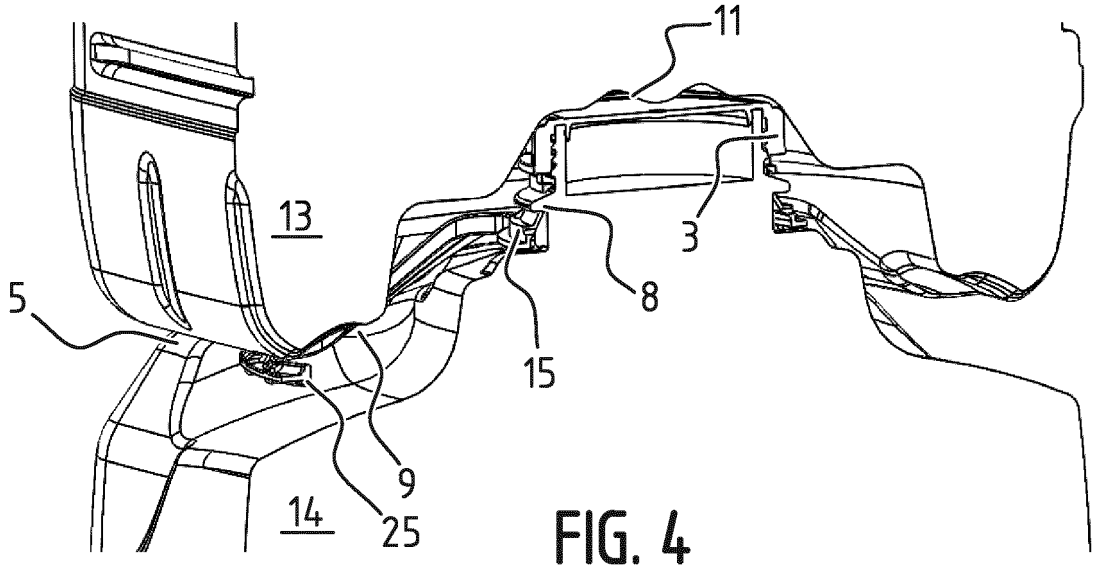

FIG. 4

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Description

[0001] The invention relates to a set comprising at least one first and one second stackable bottle, wherein each bottle is made of polyethylene terephthalate and has a handle, each bottle has a base part comprising a central base part and a peripheral base part, wherein said central base part comprises a recess that is dimensioned such that the recess of the first bottle surrounds a bottle cap and a bottle neck of the second bottle in a stacked position in which a shoulder part of the second bottle lies against the peripheral base part of the first bottle, wherein said handle is adapted to be attached to the bottle neck and comprises a gripper part,. The invention furthermore relates to a stackable bottle from this set.

[0002] Such bottles are known from EP2292519, the latter being regarded as the closest prior art. Because these known bottles have a handle, they can easily be carried. This is an advantage in particular with bottles with a capacity of greater than two litres. The fact that the bottles are stackable increases the transport possibilities. In a stacked position, a shoulder part of the bottle underneath rests against a peripheral base part of the bottle on top which results in a stable stack position.

[0003] One disadvantage of the known bottles is that the prior art handle proves not always to be the most optimal handle for carrying the bottle. For example, when the bottle is filled with an agricultural product, often farmers with thick gloves need to carry and handle the bottle. In such situation, the handle does not provide enough space. Enlarging the existing handle would on the other hand increase costs and therefore be not preferable.

[0004] One object of the invention is to obtain a bottle which is formed to be handled in multiple situations and wherein the bottle is producible at minimal costs.

[0005] For this a bottle according to the invention is characterised in that each bottle in the set is adapted to be compatible with a first and a second handle, and wherein said handle is chosen from said first handle and said second handle, wherein the recess is dimensioned such that the recess of the first bottle surrounds the first handle when attached to the second bottle in said stacked position, and wherein the peripheral base part and shoulder part comprise grooves so that in a stacked position a channel is created from said recess extending towards an outer part of the bottle, the channel being formed such that at least a part of the gripper part of the second handle can extend through the channel when attached to the second bottle in said stacked position.

[0006] Since the bottle of the invention is compatible with two handles, an optimal handle can be chosen in each situation. The first handle is a compact or small handle. The second handle is a large handle, or at least a handle which is significantly larger than the first handle. A small handle, according to the claim language the first handle, is cheap to produce and is sufficient in many situations for a user to carry the bottle. Therefore in these cases, the manufacturer of a bottle can choose to provide the bottle with the first handle. However, in some cases, for example in agricultural environments, such small handle is not convenient for a user, and a large handle should be provided. The large handle is, in the language of the claims the second handle. For bottles to be used in an agricultural environment, the manufacturer of a bottle can choose to provide the bottle with the second handle. This second handle might be more expensive than the first handle, but will be necessary for the user to be able to lift the bottle.

[0007] Since the bottle is designed to be stackable with both the first handle and the second handle, the manufacturer can efficiently use manufacturing tools and stock while being flexible to provide the bottles in stock or the bottles to be produced with the first or the second handle depending on the customers preferences. Tests have shown that the handle can be firmly connected to the bottle to allow a user to lift the bottle. Furthermore, the bottle is shaped so that one bottle can be stacked onto another bottle thereby increasing the usability, storability and transportability of the bottles. To this end, the bottom part of each bottle has a central part comprising a recess dimensioned to cover a bottle cap and a bottle neck and, when the first handle is attached to the bottle neck, the first handle of an underlying bottle. The peripheral base part lies against the shoulder part of an underlying bottle in a stacked position. When the second handle is connected to the bottle, bottles can still be stacked while at least a gripper part of the second handle extends to an outer part of the bottle. To this end, the peripheral base part and shoulder part of the bottles are formed so that in the stacked position a channel is created from the recess to an outer part of the bottle when bottles are stacked. A second handle is shaped so that at least part of the handle extends through the channel.

[0008] Preferably the recess is dimensioned to surround the first handle in any rotation position thereof in the stacked position. This facilitates the use of the bottle with the first handle and relieves a user from correctly positioning the first handle before bottles can be stacked. Bottles can be stacked in any position of the first handle since the recess can surround the first handle in any rotational position thereof.

[0009] Preferably the grooves form, in the stacked position, at least two channels located at a predetermined distance from each other such that two arms of the gripper part of the second handle can extend through the two channels. By providing two channels, the second handle can be formed with two arms which allows to form a stable and firm handle. These two arms can extend through separate channels or can extend through a single larger channel. By providing separate channels, the contact surface between the shoulder part of a lower bottle and the peripheral base part of an upper bottle can be maximized so that the stacking stability is optimized.

[0010] Preferably the peripheral base part and the shoulder part are largely rectangular. Rectangular bottles can be more optimally stacked to form a tile, for example

on a pallet. Further preferably said first and second bottle comprise at least two relative stacking positions, and preferably said first and second bottle comprise a maximum for relative stacking positions. The stacking positions can be obtained by providing the shoulder part and peripheral base part with complementary shapes such that only in predetermined relative positions, the shapes fit. Particularly when the bottles are largely rectangular, such predetermined relative stacking positions ensure that an optimal and compact stack of bottles can be formed. Preferably the relative stacking positions are such that sides of the bottles are substantially aligned.

[0011] Preferably such shoulder part and said peripheral base part comprise corresponding shapes to lock relative rotation of the first and second bottle in each of the relative stacking positions. Locking relative rotation increases the stability of the stack.

[0012] Preferably each bottle comprises a further indentation in a side wall, adjacent to the shoulder part, for receiving at least a part of the gripper part of the second handle in the stacked position. The indentation and second handle are preferably provided with matched dimensions. This allows to optimize the shape of the second handle while maximizing the capacity of the bottle. It will be clear that the indentation will reduce the capacity of the bottle. Matching this reduction with the shape of the second handle minimizes the loss of capacity while optimizing the usability of the second handle.

[0013] Preferably each bottle has a first state and a second state, the first state corresponding to the state wherein the first handle is connected to the bottle, and the second state corresponding to the second state wherein the second handle is connected to the bottle. Thereby, the basic shape of the bottle in the first state is identical to the basic shape of the bottle in the second state. The manufacturer can decide whether to deliver the bottles in the first state or in the second state.

[0014] Preferably each bottle has a capacity greater than 5 litres, preferably greater than 10 litres, more preferably greater than 15 litres, and a capacity of less than 95 litres, preferably less than 30 litres, more preferably less than 25 litres. Small bottles, being bottles with a capacity of less than 5 litres, do not need a special handle for allowing a user to use the bottle. Bottles with a capacity larger than 35 litres are typically not carried by a user so that these bottles are not provided with handles. Bottles with such capacity have external dimensions which make handling without handle difficult.

[0015] Preferably the handle is attached to the bottle neck by fitting means which are annular and on the inside of the ring fall are fitted with counter-hook means such that the fitting means are intended to be pushed from the bottle over the bottle neck of the bottle and offer resistance to the opposite movement. Further preferably the gripper part is connected with said fixing means such that between the gripper part and the fixing means is provided an opening in which fingers can engage. Further preferably the gripper part of the first handle is largely circular. Such a fixing of the handle to the bottle is very simple and hence cheap. Furthermore pushing a ring with counter-hook means over a bottle neck is simple to automate, which is an advantage in the production process of such bottles with handle.

[0016] Preferably the first handle and the second handle are produced with substantially identical fixing means and with different gripper parts. The gripper part includes the arms interconnecting the gripper parts with the fixing means. In particular the gripper part of the second handle can be wider than the gripper part of the first handle. Furthermore, the arms interconnecting the gripper part with the fixing means are substantially larger in the second handle than in the first handle.

[0017] The invention will now be described in more detail with reference to the embodiment examples shown in the drawings.

[0018] The drawings show:

Figure 1: a side view of a stackable bottle with a first handle according to the invention;
Figure 2: a cross section of a part of a set of a first and a second stackable bottle with first handle according to the invention;
Figure 3: a side view of a part of a stackable bottle with a second handle according to the invention;
Figure 4: a cross section of a part of a set of a first and a second stackable bottle with second handle according to the invention;
Figure 5: an effect of different embodiments and states of a stackable bottle with handle according to the invention, and
Figure 6 : a cross section of a fixing means of a handle on a stackable bottle according to the invention;
Figure 7: an embodiment of a first handle of a stackable bottle with handle according to the invention; and
Figure 8: an embodiment of a second handle of a stackable bottle with handle according to the invention.

[0019] In the drawings the same or similar elements have the same reference numerals.

[0020] Figure 1 shows a bottle 1 which is produced linear symmetrical about a longitudinal axis 2. The bottle 1 from top to bottom along longitudinal axis 2 comprises an optional bottle top 3, a bottle neck 4, a shoulder part 5, a body part 6 and a base part 7. Preferably the bottle 1 is produced by means of blow moulding a preform, from a material which can be blow moulded, preferably polyethylene terephthalate (PET). An alternative material which allows the bottle 1 to be produced by means of blow moulding is polylactic acid (PLA) or polyethylene furanoate (PEF). The bottle 1 according to the invention furthermore comprises a handle attached to the bottle neck 4. In figure 1, the bottle comprises the first handle 12.

[0021] The bottle cap 3 is preferably attached to the bottle neck 4 by means of a screw connection, wherein

the bottle cap 3 and bottle neck 4 have corresponding screw threads. However other systems such as click systems can also be used to attach the bottle cap 3 to the neck. The bottle neck 4 furthermore preferably comprises a collar 8 which makes it possible to grip the bottle 1 in a simple manner, in particular during blow moulding of the bottle 1.

[0022] The shoulder part 5 of the bottle 1 joins the bottle neck 4 to the body part 6 of the bottle 1. For this the shoulder part 5 extends mainly in a radial direction and downward out from the bottle neck 4 which has a first diameter, to transform into the body part 6 of the bottle 1 which has a larger diameter than said first diameter. This gives a slightly curved, mainly flat top surface at said shoulder part 5, on which a further bottle 1 can be stacked.

[0023] The base part 7 of the bottle 1 closes the body part 6 at the lower edge so that the bottle 1 is suitable for containing a fluid. The base part 7 of the stackable bottle 1 according to the invention comprises two parts, namely a peripheral base part 9 and a central base part 10. The peripheral base part 9 extends mainly radially out in relation to the longitudinal axis 2 so as to form a largely flat lower surface which can stand stable on a flat floor.

[0024] Figure 2 shows a part of a set of a first bottle 13 and a second bottle 14 in a stacked position, in cross section, wherein the first bottle 13 is provided with the first handle 12. The central base part 10 contains a recess 11 which is dimensioned such that the bottle 1 can be stacked. In a stacked position a shoulder part 5 of the bottom bottle lies against a peripheral base part 9 of a top bottle. Figure 1 shows how the bottle neck 4 and bottle cap 3 extend centrally and higher than the shoulder part 5 of the bottle 1. The first handle 12 is also higher than the shoulder part 5. To make it possible, in a stacked position with a bottom bottle and a top bottle, for a peripheral base part 9 of the top bottle to lie against a shoulder part 5 of the bottom bottle, in the base of the top bottle is provided a cavity which is large enough to hold the bottle neck 4 and bottle cap 3 and first handle 12 of the bottom bottle. For this in a central base part 10 a recess 11 is provided which functions as a cavity as described above. The dimensions of the recess 11 must be set such that they can surround the bottle neck 4 and bottle cap 3 and first handle 12 of the bottom bottle in the stacked position.

[0025] Figure 3 shows part of a bottle 1 which might be exactly the same bottle 1 as the bottle shown in figure 1. In figure 3, the second handle 25 is attached to the bottle neck 4. Figure 3 further shows the shoulder part 5 and the bottle top 3. In the embodiment of Figure 4, the second handle 25 is shown in a rest position wherein the second handle 25 lies with its arms and gripper part substantially against the upper part of the bottle 1. To this end, the arms and gripper part of the second handle 25 are formed with a shape that corresponds to the shape of the neck 4 and shoulder 5 part of the bottle 1. This improves the stacking of bottles with the second handle 25. Particularly the arms of the second handle 25 are flexible such that when a lifting force is exerted at the gripper part, the arms bend upward as is further explained with reference to figure 5.

[0026] Figure 4 shows a cross section corresponding to the cross section of figure 2, but wherein the bottle is provided with the second handle 25. The second handle extends from the bottle neck 4 towards the periphery of the bottle 1. The gripper part of the second handle 25 is located in an indentation 26 provided in the outer sidewall of the bottle 1 adjacent to the shoulder part 5. The indentation 26 is preferably formed with a shape that matches the shape of the gripper part of the second handle 25 so that in a stacked position, the gripper part is at least partially closely surrounded by the indentation 26. The second handle has arms 27 that extend through channels from the recess 11 to the periphery of the bottle. The channels are formed between the peripheral base part 9 of one bottle and the shoulder part 5 of another bottle when these bottles are stacked. The channels can be formed in many ways. In one embodiment, the peripheral base part and the shoulder part are formed such that they touch only at the corners of the rectangular shaped bottles. This would create four channels through which the second handle 25 can extend. In another embodiment, the peripheral base part and shoulder part are provided to touch over substantially the complete surface with the exception of two grooves which form two channels in the stacked position. These two channels can be formed to have a distance that corresponds to the distance between the arms 27 of the second handle. The skilled person will understand that the peripheral base part and the shoulder part of the bottle can be formed to provide a stable stacking and to allow the second handle to extend from the recess 11 to the indentation 26.

[0027] Figure 5a and 5b show a first handle 12 of the bottle 1 with first handle 12 according to the invention. According to the invention the first handle 12 is attached to the bottle neck 4. For this the first handle 12 preferably has annular fixing means 15 which on an inside are fitted with counter-hook means 16. The annular fixing means 15 with counter-hook means 16 allow the first handle 12 to be pushed over the bottle neck 4 in the direction of the shoulder part 5 while preventing the first handle 12 from being able to move over the bottle neck 4 in a direction away from the shoulder part 5. Preferably the annular fixing means 15 with counter-hook means 16 and the collar 8 on the bottle neck 4 are complementary in the sense that the counter-hook means 16 can be pushed over the collar 8 in the direction of the shoulder part 5 and prevent an opposite movement back over the collar 8. For this the counter-hook means 16 can comprise hinged lips 16 which, as shown in figure 6, in the mounted position of the first handle 12 form an acute angle α with the longitudinal axis 2 towards the base part 7 of the bottle 1. Figure 7 shows a top view of such first handle 12.

[0028] The first handle 12 furthermore has a gripper

part 17 which is preferably mainly U- shaped and where the two legs 18 and 19 of the U shape have a mutual distance largely equal to the outer diameter of the annular fixing means 15. The U-shaped legs 18 and 19 are both joined to the annular fixing means 15. If the legs 18 and 19 of the U shape are short, little space 20 is left between the gripper part 17 and the annular fixing means 15 to insert the fingers in space 20 and grip the gripper part 17, whereby the first handle 12 is difficult to handle. However with such short legs 18 and 19, less room must be provided in the recess 11 to surround the first handle 12. If the legs 18 and 19 of the U shape are long, a lot of space 20 must be left between the gripper part 17 and the annular fixing means 15 and it will be easy to grip the gripper part 17 with the fingers. However with such long legs 18 and 19 much extra space must be provided in the recess 11 to surround the first handle 12, which is disadvantageous for the stability of stacking of the bottles 1, whereby the recess 11 is best made as small as possible. For the above reasons the length of the U-shaped legs 18 and 19 of the gripper part 17 of the first handle 12 is optimally selected in the sense that they are as small as possible yet sufficiently large for fingers to easily be inserted in the space 20 between the gripper part 17 and the annular fixing means 15. Preferably the distance with reference numeral 20 between the gripper part 17 and the annular fixing means 15 is at least 2.5 cm, more preferably at least 3 cm. Preferably the distance with reference numeral 20 between the gripper part 17 and the annular fixing means 15 is maximum 4 cm, more preferably maximum 3.5 cm.

[0029] It will be clear that the gripper part 17 of the first handle 12 can deviate in form from a pure U shape as is the case in figure 5. In a further embodiment the gripper part 17 of the handle 12 is formed as an arc of a circle.

[0030] A further problem arises in lifting a full bottle 1 according to the invention with a first handle 12 in which the length of the U-shaped legs 18 and 19 of the gripper part 17 is selected optimally. This problem is illustrated in figure 5a. By applying an upward force F to the gripper part 17 which stands eccentric in relation to the longitudinal axis 2 of a bottle 1, the U-shaped legs 18 and 19 of the gripper part 17 will bend up in the direction of the longitudinal axis 2 as illustrated by dotted line 21. As a result the gripper part 17, or in particular the part of the gripper part 17 in which the fingers are placed for lifting, will be closer to the bottle neck 4 and the bottle cap 3. This shift of the gripper part 17 can lead to the fingers becoming trapped between the gripper part 17 and the bottle neck 4 or bottle cap 3 in this new position, as illustrated in figure 5a by distance 24. This problem can be solved by making the U-shaped legs 18 and 19 longer, whereby the gripper part 17 lies further from the annular fixing means 15 and hence also further from the bottle neck 4 and bottle cap 3, which is disadvantageous as described above. However this problem can also be solved by allowing the U-shaped legs 18 and 19 at their ends to extend into a ring part 22, see figure 7 which corresponds to figure 5b, which brings the legs 18 and 19 towards each other and has a diameter largely equal to the outer diameter of the annular fixing means 15, and by both legs 18 and 19 being attached at one end of the ring part 22 to the annular fixing means 15. As a result the distance 23 is enlarged between firstly the fixing points of the U-shaped legs 18 and 19 and the annular fixing means 15, and secondly the part of the gripper part 17 where the fingers are hooked, whereby the radius over which the legs 18 and 19 can bend under load is increased. Due to this increase in distance 23, on lifting the bottle 1 the gripper part 17 will remain further away from the bottle neck 4 and the bottle cap 3, preferably can bend over the bottle cap 3 as shown in figure 5b.

[0031] A first handle 12 with circular gripper part 17 in the above solution will have the further positive effect because the legs 18 and 19 of the gripper part 17 will have a springing effect on application of force F. The circular gripper part 17 will deform under the force F into an ellipse form whereby the distance 23 between the fixing point of the gripper part 17 and the place where the force F is applied is further enlarged and hence more space is released for the fingers.

[0032] Preferably the first handle 12 in the attached position can rotate around the bottle neck 4 and the recess 11 is intended to surround the first handle 12 in any rotation position. When stacking the bottles 1 on each other, no further account need be taken of the relative angular rotation of the first handle 12 with the bottle 1 stacked on top. As a result the stacking of the bottles 1 is simplified. Also no means need be provided on the first handle 12 and/or the bottle 1 to fix the angular position between the first handle 12 and the bottle 1. This means that such a bottle 1 according to the invention can easily be moulded.

[0033] Figure 5C illustrates the bottle 1 with the second handle 25. From this figure, it is clear that the opening 24 between the top of the bottle 1 and the gripper part of the second handle 25 is significantly larger than in any embodiment of the first handle 12, as illustrated in figures 5A and 5B. As explained above, in some situations such as in bottles which are used in an agricultural environment, it is preferable to have a larger space 24. These bottles are for example often lifted by a person wearing gloves. The embodiment of figure 5c corresponds to the embodiment of figure 8, showing a top view of the second handle 25. The arms 27 of the second handle 25 are significantly longer then the arms 18, 19 of the first handle 12. The arms 27 of the second handle 25 are adapted to extend through the channels from the recess 11 to the indentation 26.

[0034] Preferably the top surface of the shoulder part 5 and the bottom surface of the peripheral base part 9 have a complementary relief with rises and dips which fit in each other and which preferably extend radially, so that after stacking, rotation of one bottle 1 in relation to the other is hindered. Preferably the rise and dip are made in the bottle 1 without varying the material thick-

ness. As a result the bottle 1 can be produced with a rise and dip worked into the base and shoulder part 5 simply by blow moulding.

[0035] Preferably a bottle 1 according to the invention has a capacity of more than 5 litres, more preferably more than 10 litres, most preferably more than 15 litres. Preferably a bottle 1 according to the invention has a capacity of less than 35 litres, more preferably less than 30 litres, most preferably less than 25 litres.

Claims

1. Set comprising at least one first and one second stackable bottle (13, 14), wherein each bottle (1) is made of polyethylene terephthalate, polylactic acid or polyethylene furanoate and has a handle (12), each bottle (1) has a base part (7) comprising a central base part (10) and a peripheral base part (9), wherein said central base part (10) comprises a recess (11) that is dimensioned such that the recess (11) of the first bottle (13) surrounds a bottle cap (3) and a bottle neck (4) of the second bottle (14) in a stacked position in which a shoulder part (5) of the second bottle (14) lies against the peripheral base part (9) of the first bottle (13), wherein said handle (12) is adapted to be attached to the bottle neck (4) and comprises a gripper part (17), **characterized in that** each bottle (13, 14) in the set is adapted to be compatible with a first and a second handle, and wherein said handle (12) is chosen from said first handle (12) and said second handle, wherein the recess (11) is dimensioned such that the recess (11) of the first bottle (13) surrounds the first handle (12) when attached to the second bottle (14) in said stacked position, and wherein the peripheral base part (9) and shoulder part (5) comprise grooves so that in a stacked position a channel is created from said recess (11) extending towards an outer part of the bottle, the channel being formed such that at least a part of the gripper part of the second handle can extend through the channel when attached to the second bottle (14) in said stacked position.

2. Set comprising at least one first and one second stackable bottle (13, 14) according to claim 1, wherein said recess (11) is dimensioned to surround the first handle (12) in any rotation position thereof in said stacked position.

3. Set comprising at least one first and one second stackable bottle (13, 14) according to claim 1 or 2, wherein said grooves form, in the stacked position, at least two channels located at a predetermined distance from each other such that two arms of said gripper part of the second handle can extend through the two channels.

4. Set comprising at least one first and one second stackable bottle (13, 14) according to any of the preceding claims, in which said peripheral base part (9) and said shoulder part (5) are largely rectangular.

5. Set comprising at least one first and one second stackable bottle (13, 14) according to claim 4, wherein said first and second bottle comprise at least two relative stacking positions, and wherein said first and second bottle comprise maximum four relative stacking positions.

6. Set comprising at least one first and one second stackable bottle (13, 14) according to claim 4, wherein said shoulder part and said peripheral base part comprise corresponding shapes to lock relative rotation of the first and second bottle in each of the relative stacking positions.

7. Set comprising at least one first and one second stackable bottle (13, 14) according to any of the preceding claims, in which each bottle comprises a further indentation in a sidewall, adjacent to the shoulder part, for receiving at least a part of the gripper part of the second handle in the stacked position.

8. Set comprising at least one first and one second stackable bottle (13, 14) according to any of the preceding claims, in which each bottle has a first state and a second state, the first state corresponding to the state wherein the first handle is connected to the bottle and the second state corresponding to the state wherein the second handle is connected to the bottle.

9. Set comprising at least one first and one second stackable bottle (13, 14) according to any of the preceding claims, in which each bottle has a capacity greater than 5 litres, preferably greater than 10 litres, more preferably greater than 15 litres, and a capacity of less than 35 litres, preferably less than 30 litres, more preferably less than 25 litres.

10. Set comprising at least one first and one second stackable bottle (13, 14) according to any of the preceding claims, in which said handle (12) is attached to the bottle neck (4) by means of fixing means (15) which are annular and on the inside of the ring form are fitted with counter-hook means (16) such that the fixing means (15) are intended to be pushed from the bottle opening over the bottle neck (4) of the bottle (1) and offer resistance to the opposite movement.

11. Set comprising at least one first and one second stackable bottle according to claim 6, wherein said gripper part (17) is connected with said fixing means (15) such that between the gripper part (17) and the

fixing means (15) is provided an opening (20) in which fingers can engage.

12. Set comprising at least one first and one second stackable bottle according to any of the preceding claims, in which said gripper part (17) of said first handle is largely circular.

13. Stackable bottle (1) with handle (12) from a set according to any of the preceding claims.

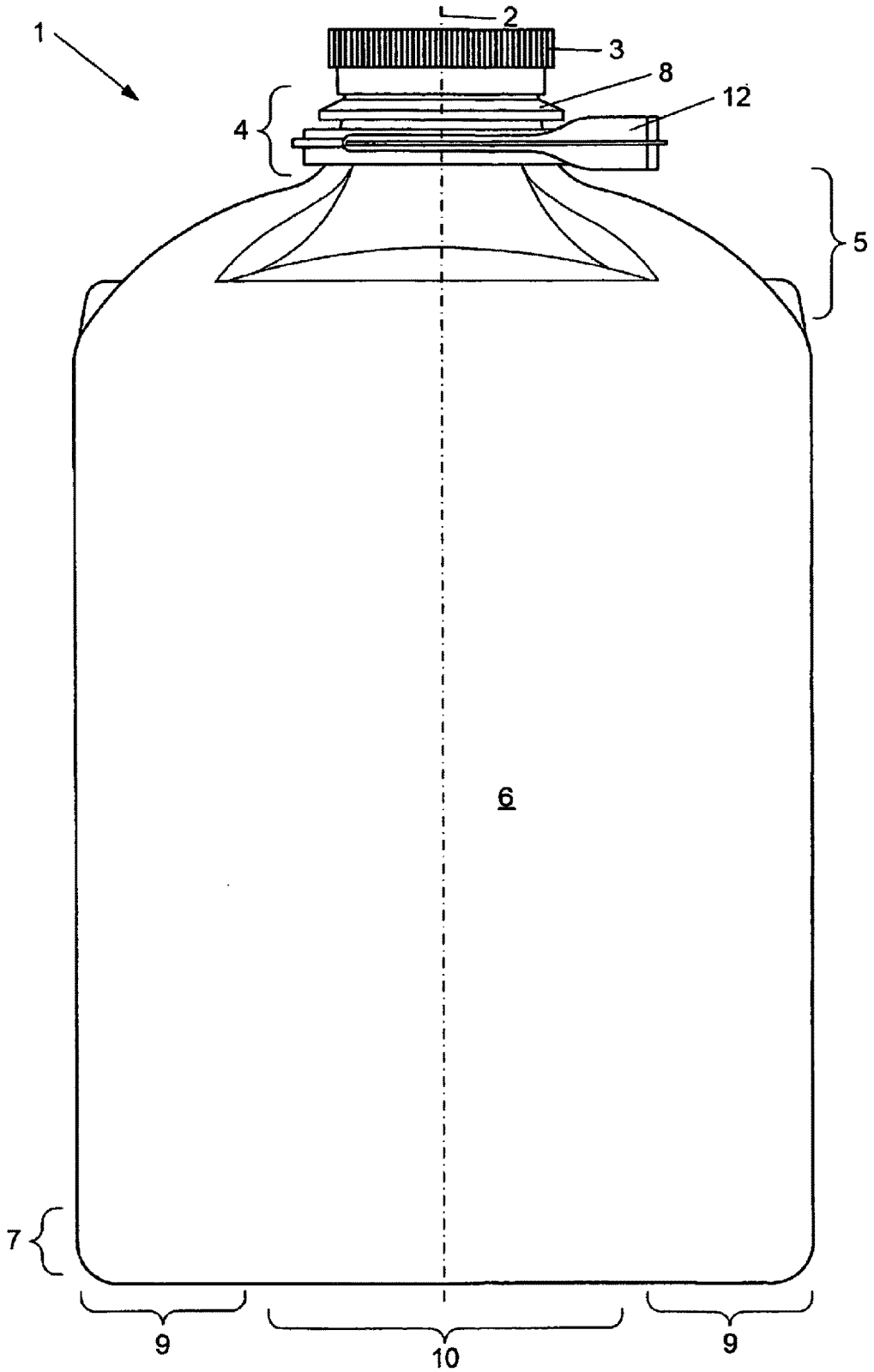


FIG. 1

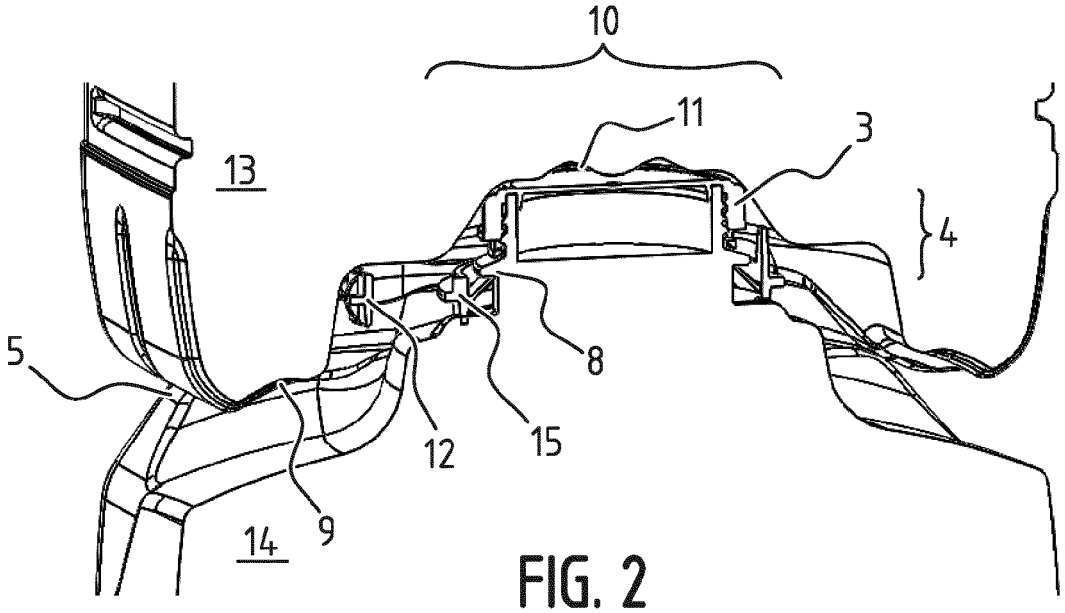


FIG. 2

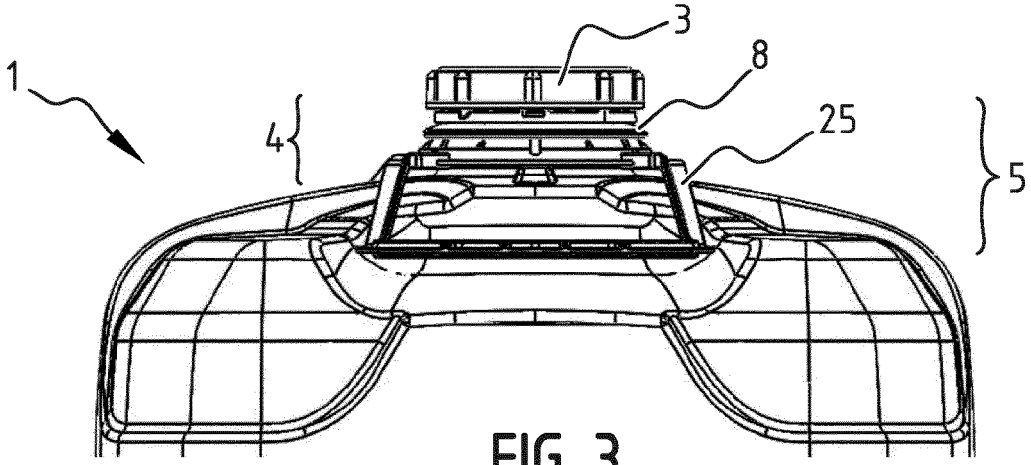


FIG. 3

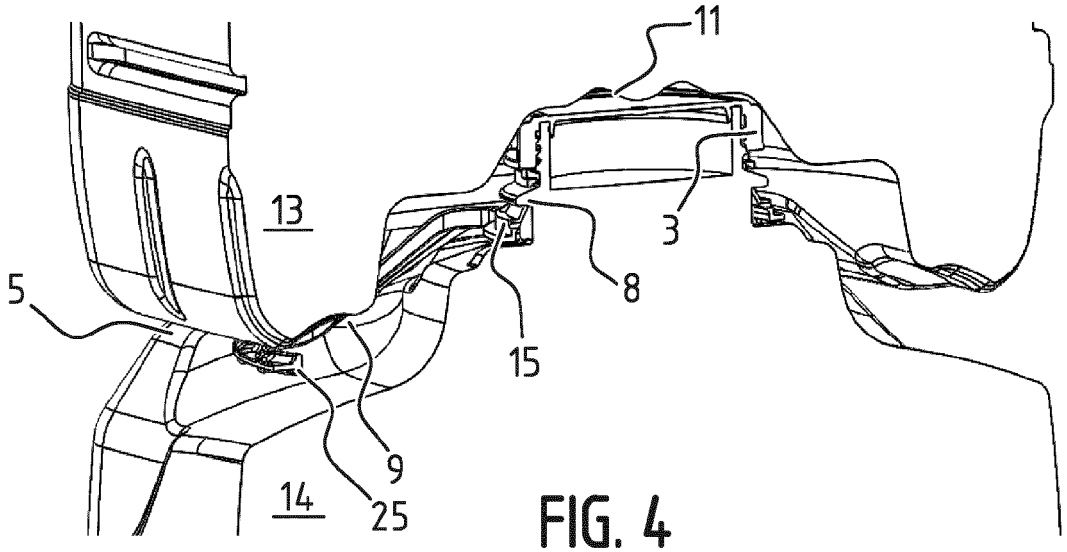


FIG. 4

FIG. 5A

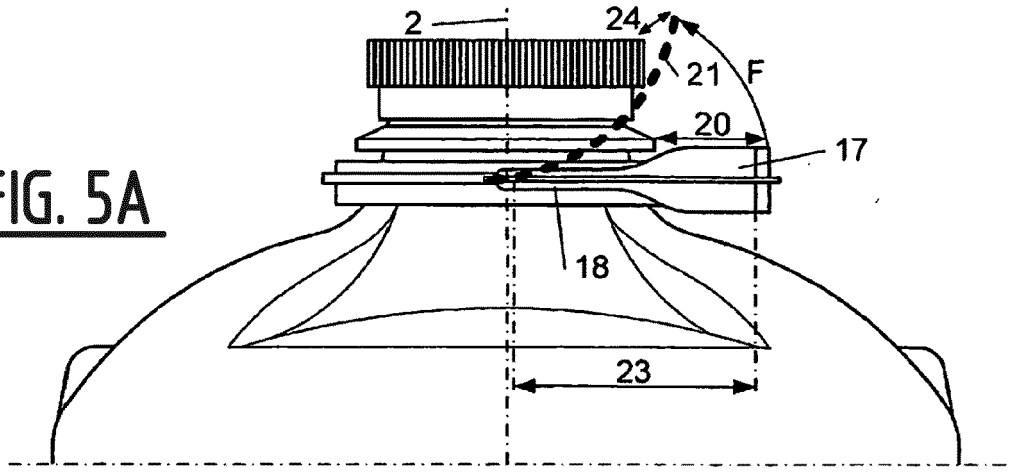


FIG. 5B

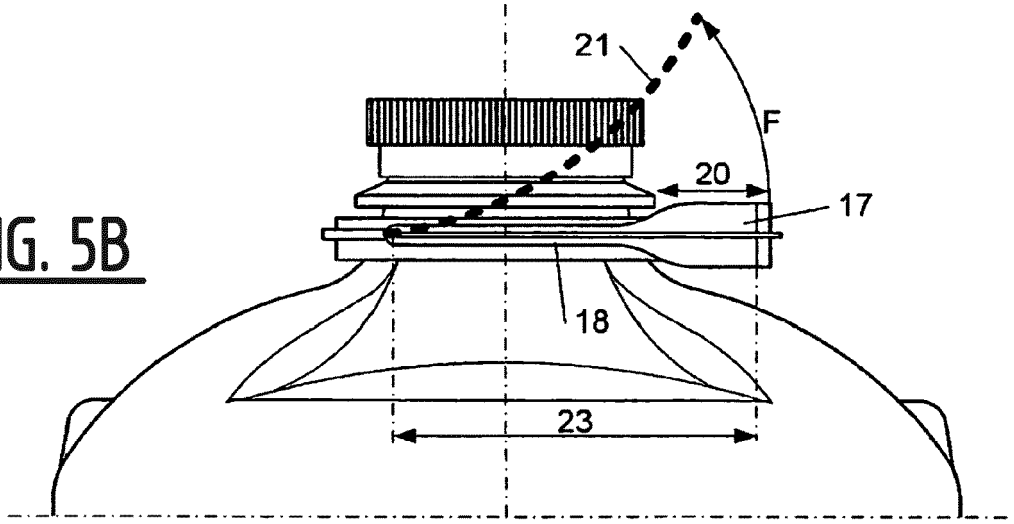
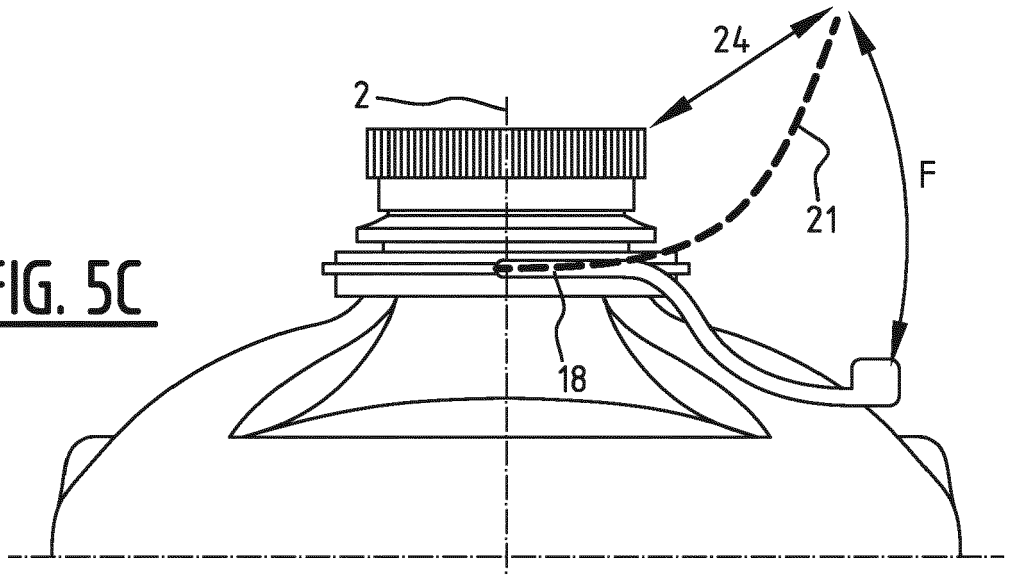


FIG. 5C



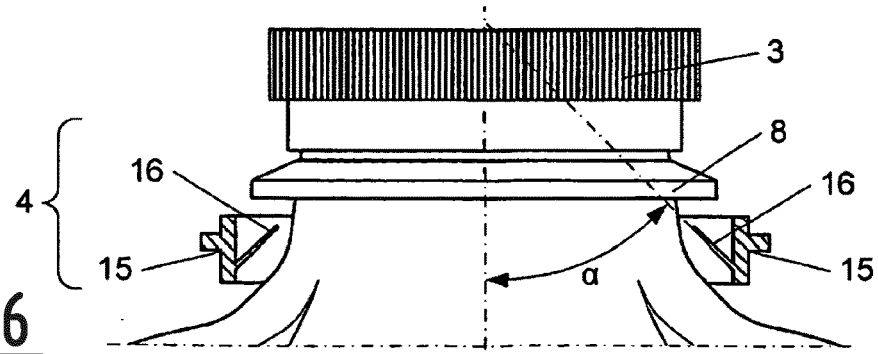


FIG. 6

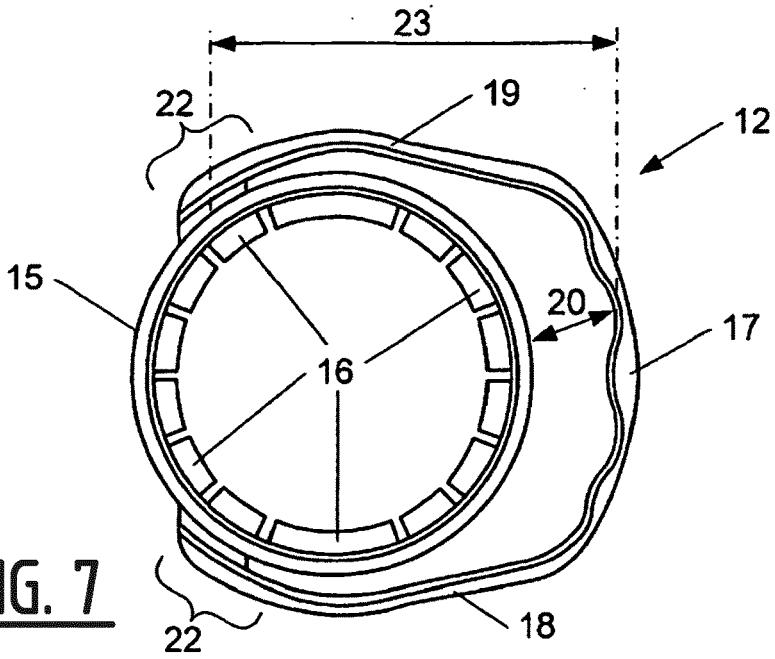


FIG. 7

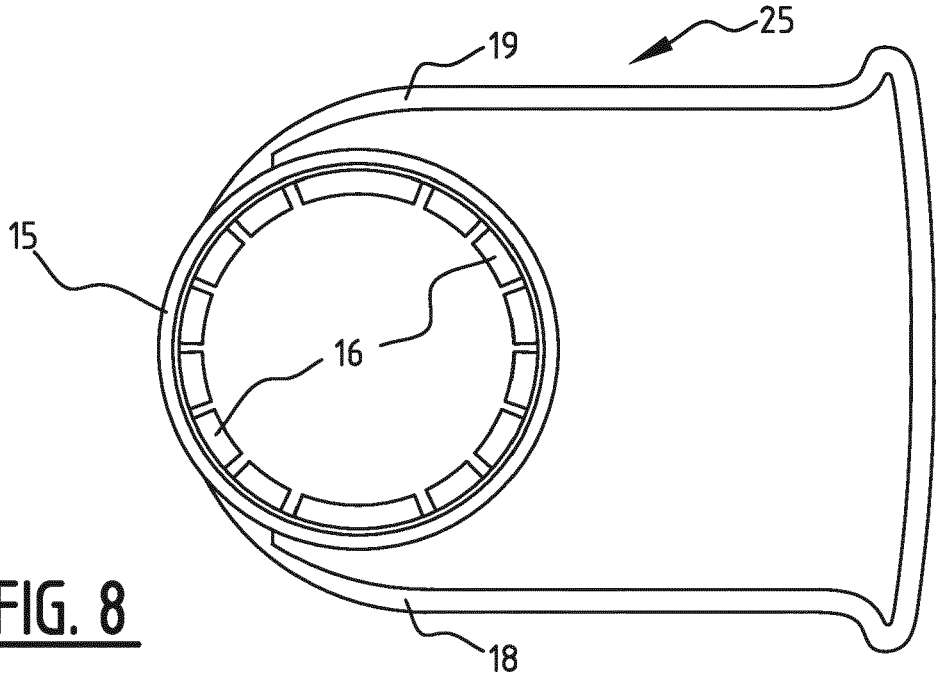


FIG. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 17 18 1897

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	NL 2 001 397 C2 (PVG INTERNAT B V [NL]) 22 September 2009 (2009-09-22) * page 9, line 10 * * page 9, line 18 * * page 9, line 29 * * page 10, line 23 - line 29; figures 2A-3 * -----	1-13	INV. B65D21/02 B65D23/10 B65D1/02 B65D1/40
A,D	EP 2 292 519 A1 (GYSEN AUGUST [BE]) 9 March 2011 (2011-03-09) * figures 2-5a * -----	1-13	

TECHNICAL FIELDS SEARCHED (IPC)

B65D
A45F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	18 December 2017	Sundell, Olli

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18-12-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
NL 2001397 C2	22-09-2009	NONE	
EP 2292519 A1	09-03-2011	BE 1018879 A3	04-10-2011
		EP 2292519 A1	09-03-2011
		ES 2390827 T3	16-11-2012
		PT 2292519 E	11-10-2012

EPO FORM P0459

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Patent documents cited in the description

- EP 2292519 A **[0002]**