The invention is a bottle (1; 20; 60) comprising a shaped body (2; 67) and a removable bottom (3; 21; 61) provided with one or more shaped elements, wherein one of the shaped elements is pressure-fitted to the shaped body (2; 67) of the bottle (1; 20; 60), wherein said shaped elements of said removable bottom (3; 21; 61) comprise a lid (4; 62) and a counter-lid (5; 63) coupled with each other.

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BOTTLE HAVING A REMOVABLE BOTTOM

DESCRIPTION

The present invention concerns a bottle particularly but not exclusively suited to contain beverages.

Bottles of different types and sizes for containing beverages are known. Once the bottle has been opened, its contents are poured into a glass or the user can drink directly from the bottle in the case of small capacity bottles or single-portion bottles, or when there is no glass available. For hygienic reasons it is always necessary to wash the glass once it has been used and this requires time.

In order to solve this problem, the present applicant filed patent EP 1 984 273 that protects a bottle provided with a removable bottom that can be screwed onto the body of the bottle itself. Said bottom is provided with a plurality of elastic projections spaced from one another and distributed along a circumference.

Once the bottom has been unscrewed from the body of the bottle, these elastic projections make it possible to constrain the bottom to the lid of the bottle once the latter has been overturned.

In this way, the bottom of the bottle becomes the bottom of a glass, which allows the user to drink the contents of the bottle with no need to use external glasses. In practice, the bottle is changed into a glass. However, this solution poses some drawbacks.

A first drawback lies in that the bottom is screwed onto the shaped body of the bottle and this does not always guarantee optimal tightness of the bottle itself.

A further drawback is due to the fact that unscrewing the bottom from the shaped body of the bottle is not a simple operation. Another not less important drawback is due to the fact that it is not very hygienic to drink from this type of bottle-glass, as also the part of the bottle's body that once having been changed into a glass comes into contact with the user's lips is threaded, too.

The present invention aims to overcome the drawbacks listed above. In particular, the main object of the present invention is to propose a bottle particularly suited to contain beverages, provided with a removable bottom that allows it to be changed into a glass and ensures better tightness compared to the bottles of known type.
It is a further object of the present invention to propose a bottle of the type described above that allows a more comfortable removal of the bottom from the shaped body, while at the same time ensuring greater compliance with hygiene rules.

The objects described above are achieved by the present invention concerning a bottle whose main characteristics are in accordance with the contents of the independent claim. Further characteristics of the invention are the subject of the dependent claims.

Advantageously, the bottle according to the invention ensures greater tightness thanks to the presence of a removable bottom comprising one or more shaped elements pressure-fitted to the shaped body of the same bottle. Likewise advantageously, according to a variant embodiment, the removable bottom of the bottle according to the invention comprises a tightening collar that increases the tightness of the removable bottom. Said variant embodiment is particularly useful, as the tightening collar is a safety element that indicates if the bottle has already been opened.

Likewise advantageously, in the first and second embodiment illustrated herein the removable bottom of the bottle according to the invention is removed by the user just one second before drinking. In this way, the lid prevents the accidental introduction of foreign bodies that would come into contact with the beverage contained in the bottle.

Likewise advantageously, according to a further variant embodiment, the removable bottom of the bottle according to the invention comprises a metal counter-lid containing a polyethylene disc and contained at least partially in a truncated cone-shaped lid. The metal counter-lid is provided with a central swelling that, when pressed, opens its annular indentation towards the outside.

The objects and advantages described above will be highlighted in greater detail in the following description supplied as an indicative, non-limiting example with reference to the enclosed drawings, wherein:

- Figure 1 shows an axonometric view of the bottle according to the invention;
- Figure 2 shows an exploded axonometric view of the bottle shown in Figure 1 in overturned position;
- Figure 3 shows a sectional view of the bottle shown in Figure 2;
- Figure 3a shows a sectional view of a detail of Figure 3;
- Figure 4 shows an axonometric view of the bottle shown in Figure 1 in overturned position;
- Figure 5 shows an axonometric view of a variant embodiment of the bottle shown in Figure 1;
- Figure 6 shows an exploded axonometric view of the bottle shown in Figure 5;
- Figure 7 shows a sectional view of the bottle shown in Figure 5 in overturned position;
- Figure 7a shows a sectional view of a detail of Figure 7;
- Figure 8 shows an axonometric view of the bottle shown in Figure 6 in assembled configuration;
- Figure 9 shows a front view of a further variant embodiment of the bottle shown in Figure 1;
- Figure 10 shows an exploded axonometric view of the bottle shown in Figure 9;
- Figure 11 shows a sectional view of the bottle shown in Figure 9;
- Figure 11a shows a sectional view of a detail of Figure 11;
- Figure 12 is an axonometric view of a detail of Figure 10;
- Figure 13 shows a front view of the bottle shown in Figure 10 in assembled configuration.

With reference to Figure 1, the bottle according to the invention, indicated as a whole by 1, comprises a shaped body 2 and a removable bottom 3 provided with two shaped elements.

According to the present invention and with reference to Figure 2, the shaped elements comprise a lid 4 that is pressure-fitted to the shaped body 2 of the bottle 1. The shaped elements of Figure 2 also comprise a counter-lid 5 that is coupled to the lid 4.

The lid 4 is provided with an elastic edge 6 comprising a plurality of projections 7 spaced from one another by a plurality of slits 8.

With reference to Figure 3 and above all to the detail of Figure 3a, the coupling of the lid 4 to the shaped body 2 takes place by means of two pairs of elastic projecting elements belonging to it, respectively 9, 10, 11, 12. The pair of elastic projecting elements 9, 10 is symmetrical to the projecting elements 11, 12 with respect to the longitudinal axis of the bottle 1 and both of the pairs 9 and 10, 11 and 12 define annular cavities, respectively 17 and 18,
that accommodate the perimeter edge 19 of the shaped body 2.
Always with reference to Figure 3a, the lid 4 has a delimiting surface 13 and
two shaped protrusions 14 that are fixed into the counter-lid 5.
The counter-lid 5, in turn, comprises a central horizontal portion 51 connected
to two lateral shaped portions 52.
The lateral portions 52 extend towards the lid 4 and are provided with two pairs
of shaped counter-protrusions 53 and 54, wherein each pair is constrained to
the shaped protrusions 14 of the lid 4 and is symmetrical to the other with
respect to the longitudinal axis of the bottle 1.
Starting from the central portion 51 of the counter-lid 5 a plurality of shaped
protruding elements 55 arranged along a circumference extend towards the
inside of the bottle 1, each one of said shaped projections being provided with
a tooth 56 for locking the cap 15 of the bottle 1 when this is overturned, as will
be explained in greater detail below.
Figure 5 shows a variant embodiment of the bottle 1, indicated now by 20,
which differs from the first embodiment in that the removable bottom 21 is also
provided with a tightening collar 22.
The tightening collar 22 is housed in the annular recess 23 provided in the lid 4
so as to ensure tightness.
It should be noted that the presence of the tightening collar 22 is a valuable
safety element, in fact if tampering is noticed this means that the bottle has
already been used.
Figure 9 shows a further variant embodiment, now indicated by 60, which
differs from the previous embodiments in that the removable bottom 61
comprises a truncated cone-shaped lid 62 which partially houses in its inner
part a metal counter-lid 63 provided with a central swelling 64 and an annular
indentation 65.
The metal counter-lid 63 contains a thin sealing disc 66, preferably made
of polyethylene or a plastic material and glued inside the counter-lid 63 by
means, for example, of food silicone or other glues in general.
As shown in Figure 11 and in the detail of Figure 11a, the annular indentation
65 of the counter-lid 63 slightly projects from the truncated cone-shaped lid 62
so that it can adapt to the shaped body 67 of the bottle 60.
As in the previous embodiments, the inside of the truncated cone-shaped
lid 62 is provided with a plurality of elastic protruding elements 68 that with
their teeth 69 constrain the cap 15 of the bottle 60 when this is overturned, as will be better explained below.

From an operational point of view, concerning the embodiment illustrated in Figures 1-4, when the user wants to use the bottle 1 as a glass, he/she presses the counter-protrusions 53 manually, in order to release the counter-lid 5 from the bottom 3 and overturns the bottle 1 without removing the cap 15. After overturning the bottle 1, the user exerts pressure on the cap 15 that has remained attached to the bottle 1 so that it gets caught in the teeth 56 within the circumferential area delimited by the elastic protruding elements 55.

The counter-lid 5 separated from the bottom 3 thus becomes the bottom of the glass, as shown in Figure 4.

Lastly the user, pressing the elastic projecting elements 9 manually, separates the lid 4 from the shaped body 2 and can comfortably drink the beverage contained in the bottle 1.

From an operational point of view, concerning the second embodiment of the invention illustrated in Figures 5-8, the user first presses the counter-protrusions 53 manually, so as to release the counter-lid 5 from the removable bottom 21 and then overturns the bottle 20 and locks the cap 15 by means of the elastic protruding elements 55, as can be seen in Figure 8.

Successively the user releases the tightening collar 22 by rotating the eyelet 24 manually and then removes the lid 4 by manually pressing the elastic projecting elements 9, 12 visible in Figure 7.

From an operational point of view, concerning the third embodiment illustrated in Figures 9-13, the user presses manually the walls 69 of the truncated-cone shaped lid 62 and locks the cap 15 through the elastic protruding elements 68, as in the previous embodiments.

Successively, pressing manually the central swelling 64 of the counter-lid 63 opens the annular indentation 65 towards the outside, thus releasing the counter-lid 63 from its connection to the shaped body 67. In this way the user can drink the beverage contained in the bottle 60.

The above clearly shows that the bottle that is the subject of the invention achieves all the set objects.

In particular, the embodiment according to which the removable bottom of the bottle comprises a tightening collar constitutes an anti-tampering system that guarantees that nobody opened the bottle before the user.
Furthermore, in the first two embodiments described the lid of the removable bottom is removed by the user only when he/she is going to drink. The lid thus has the function of protecting the beverage from the accidental introduction of foreign bodies.

The bottle according to the invention is preferably made of plastic but also other materials can be used, for example glass or aluminium or ceramic or porcelain.

The bottle according to the invention can be subjected to modifications that must all be considered protected by the present patent, provided that they fall within the scope of the following claims.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the protection of each element identified by way of example by such reference signs.
CLAIMS

1) Bottle (1; 20; 60) comprising a shaped body (2; 67) and a removable bottom (3; 21; 61) provided with one or more shaped elements, at least one of which is pressure-fitted to said shaped body (2; 67) of said bottle (1; 20; 60), characterized in that said shaped elements of said removable bottom (3; 21; 61) comprise a lid (4; 62) and a counter-lid (5; 63) coupled with each other.

2) Bottle (1; 20) according to claim 1, characterized in that said lid (4) is provided with an elastic edge (6) in which it is possible to identify a plurality of projections (7) spaced from each other by a plurality of slits (8).

3) Bottle (1; 20) according to claim 1 or 2, characterized in that said lid (4) is provided with means for coupling to said shaped body (2) of said bottle (1; 20).

4) Bottle (1; 20) according to claim 3, characterized in that said coupling means of said lid (4) comprise two pairs of elastic projecting elements (9, 10, 11, 12) that are symmetrical with respect to the longitudinal axis of said bottle (1; 20), each one of said pairs defining an annular cavity (17, 18) that houses the perimeter edge (19) of said shaped body (2).

5) Bottle (1; 20) according to any of the preceding claims, characterized in that said lid (4) is also provided with one pair of shaped protrusions (14) that are symmetrical to the other with respect to the longitudinal axis of said bottle (1; 20).

6) Bottle (1; 20) according to any of the preceding claims, characterized in that said counter-lid (5) is provided with a plurality of elastic protruding elements (55) spaced from each other and distributed along a circumference.

7) Bottle (1; 20) according to any of the preceding claims, characterized in that said counter-lid (5) is provided with two pairs of shaped counter-protrusions (53, 54) that are constrained to said lid (4), one pair being symmetrical to the other with respect to the longitudinal axis of said bottle (1; 20).

8) Bottle (20) according to any of the preceding claims, characterized in that said shaped elements of said removable bottom (21) also comprise a tightening collar (22) housed in an annular recess (23) obtained in the elastic edge of said lid (4).

9) Bottle (60) according to claim 1, characterized in that said shaped elements of said removable bottom (61) comprise a lid (62) in the shape of a
truncated cone and a metal counter-lid (63) partially housed in said truncated cone-shaped lid (62).

10) Bottle (60) according to claim 9), characterized in that said truncated cone-shaped lid (62) is provided with a plurality of elastic protruding elements (68) spaced from each other and distributed along a circumference.

11) Bottle (60) according to claim 9) or 10), characterized in that said metal counter-lid (63) is provided with a central swelling (64) and an annular indentation (65).

12) Bottle (60) according to any of the claims from 9) to 11), characterized in that said shaped elements also comprise a thin sealing disc (66) inserted in said metal counter-lid (63) through glueing means.
A CLASSIFICATION OF SUBJECT MATTER
INV. B65D1/06  B65D23/00  B65D51/24  B65D81/36  A47G19/22
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65D  A47G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Further documents are listed in the continuation of Box C. See patent family annex.

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