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(54) Combination of a closure cap and a bottle

Kombination aus Verschlusskappe und Flasche

Combinaison d'un bouchon et d'une bouteille

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FR-A- 2 604 151

US-A- 3 927 803

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EP 0 620 795 B1

Description

The invention relates to the combination of a closure cap and a bottle according to the preamble of claim 1.

Such a cap is known from FR-A-2604151. This known cap has a rod-shaped centering element which is encircled by a spaced ring-shaped holding means which is adapted to engage the outer circumference of the neck of the bottle. The rod-type centering element is adapted for insertion into the neck of the bottle. The holding means according to this known design projects beyond the centering element.

In US-A-3927803 a piercing spout is described having a pointed end portion. This prior art document is not concerned with the automatic assembly of the bottle-cap system.

The object of the invention is to allow an easy and reliable automatic assembly of the bottle/cap system even in extreme out-of centre positionings of the bottle neck. The technical solution with respect to the object of the invention is characterized by the features indicated in the second part of claim 1.

The centering element can for instance be shaped as a pointed cylindrical body. However, a tiny, needle shaped centering element, consequently with a substantially constant cross-section, could be applied as well.

The centering element according to a preferred embodiment comprises one or more intersecting plate-shaped lips, having a reduced width towards the free end. Such a shape of the centering element can easily be achieved by injection-moulding.

If the centering element divides the space enclosed by the bottle neck into different compartments, it is preferable that there should be one or more throughflow channels at the base of the centering element, for producing a liquid communication between one or more of said compartments. It is preferable here that if the cap-shaped element is provided with, for example, a delivery channel which can be shut off, said delivery channel should open out laterally into such a throughflow channel. This makes it impossible for the contents of the bottle to remain in one or more of the compartments during emptying of the bottle.

The cap design according to the present invention is excellently suited for production by injection-moulding, with the cap-shaped element, holding means and centering elements being made as a single moulded piece.

The invention will be explained in greater detail below with reference to a preferred embodiment shown in the figures, in which:

Fig. 1 shows in perspective view a cap according to the present invention and a partially shown bottle, in the fitted position at a distance from each other, the cap being partially cut away for the sake of clarity; Fig. 2 shows a view in cross-section along the line II-II of Fig. 1, with the parts assembled.

With reference to the figures, a bottle 1 with a narrowed neck 2 is shown. This bottle is shown schematically by means of dashed and dotted lines in Fig. 2. A cap 3 according to the present invention is fitted on said bottle 1. The skirt (4) of the cap fits loosely on the narrowed shoulder 2 of the bottle 1 and with its free bottom edge connects to the wider part of the bottle 1. Inside the cap, at its bottom side, are two concentrically situated, annular holding rings 5, 6. Holding ring 5 grips with hook elements 7 behind an edge 8 of the neck 2, with the result that the cap 3 is locked on to the bottle neck. Holding ring 6 projects into the neck 2 and interacts therewith in a sealing manner. A delivery channel 9 is provided in the cap. In the position shown in Fig. 2 this delivery channel 9 is shut off by the cover 10, which is hingedly connected at 11, for opening the delivery channel 9.

A centering element 12 projects into the neck 2. It is enclosed by the two holding rings 5, 6 and projects beyond them. The centering element 12 comprises two plate-shaped parts placed at right angles to each other, and having a pointed free end. Throughflow channels 15 are fitted at the base of these plate-shaped parts 13, 14. These throughflow channels 15 place the four compartments bounded by the centering element 12 in liquid communication with each other. The delivery channel 9 opens out laterally into these throughflow channels 15. The cap is manufactured by injection-moulding. The presence of the relatively long centering element 12 prevents caps stacked on top of each other from nesting accidentally.

Of course, the invention is not limited to the embodiments discussed. For example, the centering element 12 can comprise fewer or more plate-shaped parts 13, 14. Another shape of the centering element is also conceivable, such as a hollow cone, the base of which is, for example, integral with the holding ring 6. In addition, the cap 3 can, of course, also be designed without delivery channel 9. The number of holding edges can also differ from the two shown, and other conventional holding means can be used. For the purpose of fixing the cap on the bottle, the centering element could be provided with an outer thread at its root-section, for instance like the thread 6 as shown in fig. 1 of US-A-3 927 803. Such tread could be engageable with an inner thread at the neck of the bottle.

Claims

1. The combination of a closure cap (3) and a bottle (1), the bottle having a pouring spout defining the neck (2) of the bottle, the cap being provided to be put over the neck of the bottle, said cap having holding means (5, 6) extending from the bottom of said cap and lockingly engaging the neck of the bottle, and a centering element (12) projecting from the bottom of the cap into said pouring spout, said centering element being surrounded by said holding means, characterised in that the bottle (1) has an upper part tapering towards the open end and forming a shoulder.

der portion of said bottle, the cap is a single piece body including a skirt portion (4) covering said tapered shoulder portion of said bottle, and in that the centering element projects beyond said holding means (5, 6) and has a pointed distal end with a symmetrical shape with respect to the longitudinal axis of the cap.

2. Cap according to claim 1, characterised in that the centering element (12) divides the space enclosed by the holding means (5, 6) into several compartments defining one or more throughflow channels (15) extending through the base of the centering element, and enabling a liquid communication between said one or more of said throughflow channels.
3. Cap according to claim 2, characterised in that the cap is provided with a preferably closable delivery channel (9), said delivery channel opening laterally into said at least one throughflow channel (15).

Patentansprüche

1. Kombination aus Verschlusskappe (3) und Flasche (1), wobei die Flasche einen den Hals (2) der Flasche definierenden Ausguß aufweist, wobei die Kappe über dem Hals der Flasche zu positionieren ist, wobei die Kappe eine Halteeinrichtung (5, 6) aufweist, die sich vom Boden der Kappe erstreckt und den Hals der Flasche versperrend ergreift, und wobei ein Zentrierelement (12) von dem Boden der Kappe in den Ausguß ragt und von der Halteeinrichtung umgeben ist, **dadurch gekennzeichnet**, daß die Flasche (1) ein oberes Teil aufweist, welches sich zu dem offenen Ende hin verjüngt, und einen Schulterabschnitt der Flasche bildet, daß die Kappe ein einstückiger Körper mit einem Randabschnitt (4) ist, welcher den verjüngten Schulterabschnitt der Flasche abdeckt, und daß sich das Zentrierelement über die Halteeinrichtung (5, 6) hinaus erstreckt und ein spitzes distales Ende mit einer bezüglich der Längsachse der Kappe symmetrischen Form aufweist.
2. Kappe nach Anspruch 1, dadurch gekennzeichnet, daß das Zentrierelement (12) den von der Halteeinrichtung (5, 6) umgebenen Raum in verschiedene Abteile teilt, die einen oder mehrere Durchflußkanäle (15) definieren, welche sich durch den Boden des Zentrierelementes erstrecken und eine Fluidverbindung zwischen dem oder mehreren der Durchflußkanäle gestatten.
3. Kappe nach Anspruch 2, dadurch gekennzeichnet, daß die Kappe mit einem vorzugsweise verschließbaren Abgabekanal (9) versehen ist, welcher sich seitlich in wenigstens einen Durchflußkanal (15) öffnet.

Revendications

1. Combinaison d'un bouchon coiffant (3) et d'une bouteille (1), la bouteille comportant une ouverture verseuse, qui définit le goulot (2) de la bouteille, le bouchon étant prévu pour être placé sur le goulot de la bouteille, ledit bouchon présentant des moyens de fixation (5, 6) qui s'étendent à partir du fond dudit bouchon et qui viennent en prise, pour verrouillage, avec le goulot de la bouteille, et un élément de centrage (12) qui fait saillie à partir du fond du bouchon pour s'engager dans ladite ouverture verseuse, ledit élément de centrage étant entouré par lesdits éléments de fixation, caractérisée en ce que la bouteille (1) présente une partie supérieure qui se rétrécit en direction de l'extrémité ouverte et qui forme un épaulement de ladite bouteille, en ce que le bouchon est une pièce d'un seul tenant qui comprend une partie formant jupe (4) couvrant ledit épaulement qui se rétrécit de ladite bouteille, et en ce que l'élément de centrage fait saillie au-delà desdits moyens de fixation (5, 6) et présente une extrémité distale en forme de pointe ayant un profil symétrique par rapport à l'axe longitudinal du bouchon.
2. Bouchon selon la revendication 1, caractérisé en ce que l'élément de centrage (12) divise l'espace entouré par les éléments de fixation (5, 6) en plusieurs compartiments qui définissent un ou plusieurs canaux de passage (15) qui traversent la base de l'élément de centrage et permettent une communication fluide entre lesdits un ou plusieurs canaux de passage.
3. Bouchon selon la revendication 2, caractérisé en ce que le bouchon est pourvu d'un canal verseur (9) pouvant de préférence être fermé, ledit canal verseur s'ouvrant latéralement dans le ou les canaux de passage.

fig -1

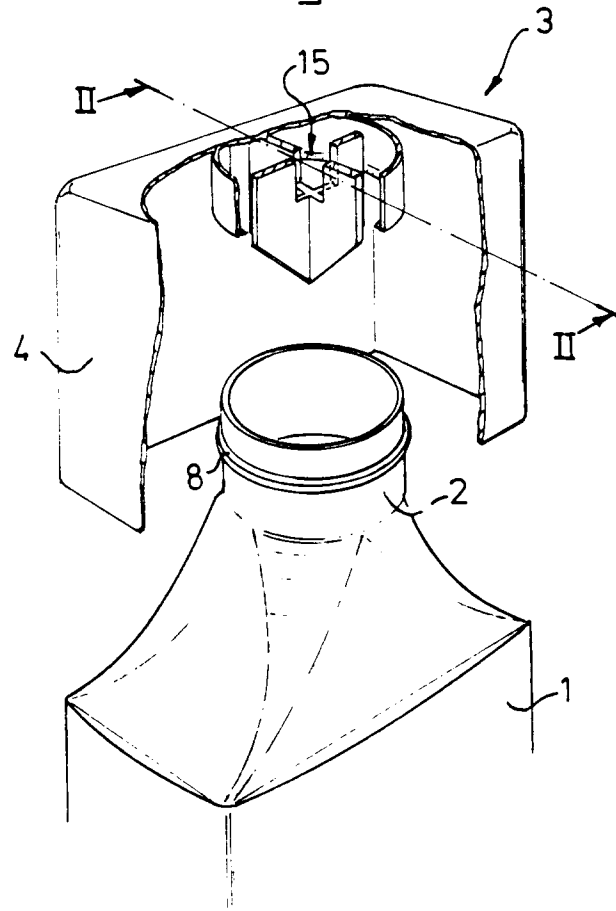


fig -2

