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(54)

DISPENSING KIT FOR DISHWASHER PRODUCTS

(57)

The dishwasher products dispenser kit comprises a container (2) of the products to be dispensed provided with a dispensing portion (6) and a closing member (9) of said dispensing portion (6) of the container (2). The closing member (9) is made of a water dispersible material for enabling the dispensing portion (6) to be opened during the washing step. The container (2) shapes at least one cavity (10) on the outer surface in longitudinal extension, adapted to couple with a corresponding prong of the dishwasher rack in order to allow the engagement of the same container (2) in the said rack. The kit includes a covering element (20, 200) applied at the cavity (10) to enable the stable engagement in the rack.

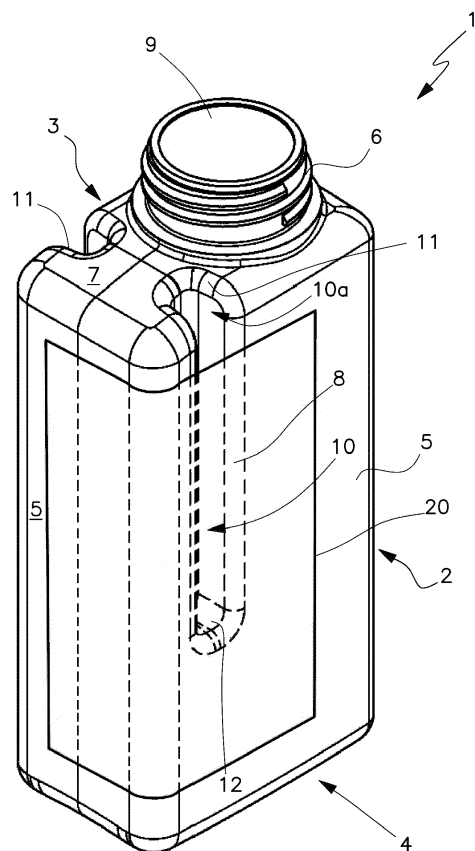


Fig.1

## Description

### Technical field

**[0001]** The present invention relates to a dispenser kit for dishwasher products and the like.

### Prior art

**[0002]** Dispensing devices predisposed to release active products inside the dishwashers are currently known. These dispensing devices consist essentially of a container which has a dispensing portion of the active product, provided with a closing element of material dispersible in water, for example paraffin wax; the container is usually made of plastic material. The dispensing portion generally consists of a cylindrical neck. In use, at a temperature above 60° C, the dispersion of the closing element is determined, thus enabling the leakage of the liquid present in the container. A dispensing device of this kind is illustrated for example in DE 10 2005 004487.

**[0003]** According to a known embodiment, the container has an elongated shape, for example a prismatic shape, so as to allow it to be housed inside the dishwasher cutlery basket, open at the top to enable insertion of the cutlery from above. This shape makes it difficult to position the dispensing device, in particular in the dishwashers models that do not have a top cutlery basket.

**[0004]** Patent application WO 2009/095638 illustrates a dispenser device for dishwasher products in which the container has the shape of a flattened parallelepiped, having a suitably reduced width. The dispensing neck is arranged at a narrow face of the container. This narrow shape enables the container to be placed between the prongs of the rack which usually houses the dishes inside the dishwasher. The narrow shape of the container is nevertheless an obstacle to an effective dispensing of the products, during the washing cycle.

**[0005]** Currently, therefore, the problem of a correct positioning of the dispensing device inside the dishwasher remains. It is in fact required that the container of the active products is arranged in a position suitable for an effective dispensing of the products, during the washing cycle, and at the same time in a stable and safe manner to avoid damage to the dishes or to the dishwasher itself.

**[0006]** The application EP 3082557 in the name of the Applicant illustrates a dispensing device comprising a container of the products to be dispensed, equipped with a dispensing portion, a closing member made of a water dispersible material to enable the dispensing portion to be opened. The same container also comprises a cavity on the outer surface, which can be coupled with a prong of a dishwasher rack, to enable it to be inserted and thus dispense the product during a washing cycle.

**[0007]** This solution does not meet the requirements of simplicity of use and stability, required by the specific field.

**[0008]** The patent application GB 2549531 illustrates

a further example of a dispensing device for a dishwasher use. The dispensing device has a flattened shape and comprises at least one deformable portion, the volume of which varies when a predetermined temperature is reached, thanks to the characteristics of the material of which it is made. The device is provided with attachment means comprising portions of a peripheral edge shaped so as to form hooks. The shaped portions enable to keep the device attached to the bottom of the dishwasher rack, during use.

**[0009]** The illustrated solution also does not fully satisfy the requirements of simplicity of use considering that it requires the operation of hooking the shaped portions to the bottom of the rack to ensure a stable contact. Moreover, the device shape according to the above solution does not satisfy the need to devise a device that is easy to implement.

### Disclosure

**[0010]** The aim of the present invention is to solve the above mentioned problems by devising a dispenser kit for dishwasher products, which can be stably and safely placed inside the dishwasher, in a position suitable for effectively dispensing the products.

**[0011]** Within this aim, it is a further object of the present invention to provide a dispenser kit for dishwasher products which enables an easy dispensing of the products themselves.

**[0012]** Another object of the invention is to provide a dispenser kit for dishwasher products of simple constructive and functional conception, which is certainly reliable, versatile in use, and of relatively low cost.

**[0013]** The aforementioned objects are achieved, according to the present invention, by the dispenser kit for dishwasher products according to claim 1.

**[0014]** According to a first aspect of the present invention, the dispenser kit comprises a container of the products to be dispensed, shaping on the outer surface at least one open cavity with a longitudinal extension, adapted to couple with a corresponding prong of the dishwasher rack in order to enable insertion of the same container in the said rack. The kit also includes an at least partial covering element of the open cavity, so as to make the stable insertion of the cavity itself on the aforementioned prong.

**[0015]** This solution enables the container to be placed in a stable and secure manner inside the dishwasher, inserting it axially in the conventional rack that houses the dishes inside the dishwasher itself, the container being held firmly in a corresponding prong of the rack thanks to the coupling made by the longitudinal cavity associated with the respective covering element. Moreover, the solution according to the present invention is easy to produce, therefore it has very low production costs.

**[0016]** According to another aspect of the invention, the container is provided with a dispensing portion carrying a closing member made of a water dispersible ma-

terial in order to enable the opening of the same dispensing portion during the washing phase.

**[0017]** Thanks to this, a synergy is created with the stable and secure positioning of the container that guarantees an effective product supply.

**[0018]** Advantageously, the dispensing portion extends from a first surface of the container, which is opposite to a second base surface. The lateral surface of the container extends between the first surface and the second base surface.

**[0019]** Preferably, the covering element is applied, at least partially, adherently on the lateral surface of the container, enabling the container to be easily placed in the rack inside the dishwasher. In practice, the application of the covering element on the lateral surface of the container permits to make, together with the prepared cavity, a safe channel for insertion into the prong of the rack, without interfering with the delivery of the products, which takes place through the dispensing portion, placed on the first surface.

**[0020]** Preferably the dispensing portion is made in a decentralized position on said first surface, so as to leave a free portion.

**[0021]** The covering element can be made by means of a strip of adhesive material, applied to the lateral surface of the container, so as to cover at least partially the aforementioned open cavity of the container.

**[0022]** Alternatively, the covering element can be made by means of a ring-shaped strip or sleeve, preferably applied adherently to the container, so as to securely close the aforementioned cavity and enable the stable engagement on a prong of the rack.

**[0023]** Preferably the container shapes a pair of longitudinal cavities on the outer surface, adapted to couple with a corresponding pair of adjacent prongs of the said dishwasher rack.

**[0024]** This feature allows a more stable placement of the dispensing device on the dishwasher rack.

**[0025]** Preferably, said longitudinal cavities are made on opposite side surfaces of the container so as to lie on the same longitudinal plane with the same container.

**[0026]** Preferably, said longitudinal cavities have the axes spaced apart from one another by a portion equal to the distance between adjacent prongs of said rack.

**[0027]** Preferably said longitudinal cavity or said longitudinal cavities shape respective open channels at one end for the insertion on a corresponding prong of the rack.

**[0028]** Preferably, said open ends of said longitudinal cavities end on said first surface of the container from which said dispensing portion extends.

**[0029]** Preferably at the opposite end with respect to said open end, said longitudinal cavities are closed by a back wall adapted to act as an abutment, in use, to the tip of the respective prong of the rack coupled to each cavity.

**[0030]** Thanks to this, the container is suitably raised, in use, with respect to the bottom of the rack, so as to facilitate the dispensing of the product.

**[0031]** Preferably, said longitudinal cavity or said longitudinal cavities have a longitudinal development substantially parallel to the axis of said dispensing portion of the container.

**[0032]** In this way, in the use of the dispensing device with the container inserted in the rack of the dishwasher, the dispensing portion is turned downwards and consequently the dispensing of the products is facilitated.

**[0033]** The present invention also relates to the use of a dispenser kit for dishwasher products in which the container of the products to be dispensed is inserted into the rack of a dishwashing machine with the dispensing portion facing downwards and with at least one longitudinal cavity, shaped on its external surface, coupled with a corresponding prong of the same rack.

**[0034]** The method for dispensing products for dishwashers, object of the present invention, comprises the step of providing a dispenser kit and inserting the dispenser kit into a rack of a dishwashing machine with said dispensing portion facing downwards.

**[0035]** The method then provides to insert said at least one longitudinal cavity laterally closed, at least in part, by said covering element, in a corresponding prong of said rack.

**[0036]** Finally, the method comprises the step of actuating said dishwashing machine enabling the dissolution of said closing member in contact with water and the consequent release of said products contained in said container.

#### Description of drawings

**[0037]** The details of the invention will become more evident from the detailed description of a preferred embodiment of the dispenser kit for dishwasher products according to the invention, illustrated by way of example in the accompanying drawings, in which:

figure 1 shows a perspective view of the dispenser kit for dishwasher products;

Figures 2 and 3 respectively show a side view and a plan view of the dispenser kit;

Figure 4 shows a perspective view of the dispenser kit according to a different embodiment.

#### Embodiments of the invention

**[0038]** With particular reference to these figures, the reference numeral 1 generally designates the dispenser kit for dishwasher products according to the present invention. The kit 1 essentially comprises a container 2 of the product to be dispensed provided with a portion 6 for dispensing the product itself, as well as a covering band 20, intended to be applied to the container 2.

**[0039]** In particular, the dispensing portion 6 of the container 2 is provided with a closing member 9 made of water dispersible material in order to enable the same dispensing portion 6 to be opened during the washing

step. This dispersible material is made up of for example by paraffin wax. Alternatively, it is possible to provide for making the closing member by means of a material adapted to melt in contact with the washing water inside the dishwasher, due to the heat corresponding to the washing temperature.

**[0040]** In the illustrated case, the container 2 is provided with a first upper surface 3 and a second base surface 4 opposite to the first surface 3. A lateral surface 5 extends between the first upper surface 3 and the second base surface 4. The container 2 preferably has a parallelepiped shape with a substantially vertical development, in which therefore the lateral surface 5 is made up of a plurality of lateral faces, each being suitably connected to the adjacent ones.

**[0041]** The dispensing portion 6 of the container 2 is made up of a cylindrical neck which extends perpendicularly from the first surface 3. As specified in the following, the neck 6 is preferably made in a decentralized position on this first surface 3, so as to leave a free portion 7 on the same surface 3. Conveniently, the free portion 7 may be slightly inclined with respect to the area of the lateral surface 3 affected by the neck 6 (see in particular the fig. 2). The neck 6 is preferably externally threaded, so as to enable the screwing of a suitable closing cap, not shown.

**[0042]** The container 2 shapes on the outer surface at least one cavity 10 of longitudinal extension, adapted to couple with a corresponding prong of the dishwasher rack in order to enable the engagement of the same container 2 in the said rack.

**[0043]** More precisely, the longitudinal cavity 10 defines a respective open channel at an end 10a which opens onto the free portion 7 of the first surface 3 of the container, for the engagement on the rack.

**[0044]** The aforesaid channel, defined by the longitudinal cavity 10, has a section open on the outer lateral surface 5 of the container 2. In practice, the aforesaid channel has internal longitudinal walls 8, preferably connected by an outer edge rounded to the adjacent outer surfaces of the container 2.

**[0045]** More specifically, this rounded edge defines, at the open end 10a, an inlet portion 11 adapted to facilitate the engagement on the prongs of the rack. At the opposite end, the aforesaid channel defined by the cavity 10 is closed by a back wall 12. As specified in the following, this back wall 12 of the cavity 10 is adapted to act as an abutment, in use, to the tip of the prong of the rack coupled to the same cavity 10.

**[0046]** Preferably, as illustrated, the container 2 has a pair of longitudinal cavities 10, made on opposite faces of the lateral surface 5, so as to lie on the same vertical plane. The axes of these longitudinal cavities 10 are spaced apart from one another by a portion equal to the distance normally occurring between the adjacent prongs of the rack, so as to optimize the stability of the container 2 in the coupling condition.

**[0047]** The container 2 is associated, at at least a portion of the lateral surface 5, to a covering element 20,

adapted to close the open profile of the channel defined by the longitudinal cavity 10, so as to enable secure engagement on a prong of the rack of any dishwasher.

**[0048]** Preferably, the covering element 20 is made up by means of a portion of band applied to the lateral surface 5 of the container 2 to cover the open profile of the longitudinal cavity 10.

**[0049]** The aforesaid band can be applied on a part of the lateral surface 5 of the container 2 or wrap it completely.

**[0050]** Advantageously, the covering element 20 is an adhesive tag, which can be easily and firmly applied to the surface of the container 2.

**[0051]** According to a further embodiment, the covering element 200 can be made by means of an annular band or sleeve, applied around the lateral surface 5 of the container 2, in order to effectively close, at least partially, the profile of the section of the longitudinal cavity 10.

**[0052]** Advantageously, the band which forms the covering element 200 is applied adherently to the lateral surface 5 of the container 2, so as to make the kit stable inside the dishwasher in the condition of engagement.

**[0053]** In the case of a plurality of longitudinal cavities 10 formed on the outer surface of the container 2, it is possible to associate a covering element 20 with lateral closure of each cavity 10 or a single covering element 200, for example an adherent sleeve.

**[0054]** The operation of the dispenser kit for dishwasher products is easily understood from the above description.

**[0055]** The container 2 of the products to be dispensed is inserted in a suitable position in the rack of the dishwashing machine, with the neck 6 facing downwards, inserting each cavity 10 present in a corresponding prong of the rack, in a pair of prongs in the case of a pair of longitudinal cavities. Once inserted, the tip of the prongs of the rack is in contact with the back wall 12 of the longitudinal cavity 10. In particular, even in the presence of a single longitudinal cavity 10, in the engagement condition the container 2 is firmly held around the prong of the rack, since the channel defined by the cavity 10 is effectively closed laterally by the covering element 20, 200.

**[0056]** The container 2 of the products to be dispensed is therefore arranged in substantial alignment with the prongs of the rack, held firmly by at least one prong which engages a respective longitudinal cavity 10 shaped on the lateral surface of the container 2, associated with the covering element 20, 200.

**[0057]** The neck 6 of the container 2, facing downwards, is in turn arranged in substantial alignment with the prongs of the rack.

**[0058]** When operating the dishwasher, the washing water enters the washing chamber, also investing the dispenser kit inserted in the rack. Consequently, the closing member 9 made up of water dispersible material dissolves in contact with water, causing the discharge of product from the dispensing portion 6.

**[0059]** The dispenser kit for dishwasher products according to the invention achieves the purpose of enabling its stable and secure arrangement inside the dishwasher, in a position suitable for an effective dispensing of the contained products.

**[0060]** This result is obtained thanks to the inventive idea of associating a container of the products to be dispensed shaping on the outer surface at least one cavity with a longitudinal extension, adapted to couple with a corresponding prong of the dishwasher rack in order to enable the engagement of the same container in said rack, to a covering element of the cavity itself, applied on the same lateral surface, to close the open profile of the same longitudinal cavity.

**[0061]** A prerogative of the invention is constituted by the fact that, in use, the dispenser kit of the products to be dispensed is firmly maintained in a position such as to have the dispensing portion facing downwards, so as to ensure the rapid delivery of the whole dose of product contained in the same container.

**[0062]** Another advantage offered by the invention is the fact that the shape of the container does not have narrowed sections such as to hinder the product dispensing.

**[0063]** The kit according to the invention is very simple to manufacture and therefore has very low production costs.

**[0064]** The dispenser kit for dishwasher products according to the present invention is subject to numerous modifications and variations according to different needs. In particular, the shape of the container of the products to be dispensed can be different from that illustrated by way of example, such as cylindrical or convex. Furthermore, it is possible to provide that each provided longitudinal cavity extends over the entire length of the container.

**[0065]** In the practical implementation of the invention, the materials used, as well as the shape and size, may vary depending on needs.

**[0066]** Should the technical features mentioned in any claim be followed by reference signs, such reference signs were included strictly with the aim of enhancing the understanding of the claims and hence they shall not be deemed restrictive in any manner whatsoever on the scope of each element identified for exemplifying purposes by such reference signs.

## Claims

1. Dishwater product dispenser kit, comprising a container (2) of the products to be dispensed equipped with a dispensing portion (6), a closing member (9) of said dispensing portion (6) of the container (2), made of water dispersible material in order to enable the same dispensing portion (6) to be opened during the washing step, said container (2) shaping on the outer surface at least one cavity (10) having a lon-

gitudinal extension to said container (2), adapted to couple with a corresponding prong of a rack of a dishwasher to enable the engagement of the same container (2) in said rack in a position adapted to dispense said product during a washing cycle, said longitudinal cavity (10) defining an open channel at an end section (10a) for the engagement on a corresponding prong of the rack and open laterally, at least partially, on an outer lateral surface (5) of said container (2), **characterized in that** it comprises a covering element (20, 200) applied on a portion of the outer surface of said container (2) so as to close laterally, at least partially, said channel and enable secure engagement on said prong of said rack.

2. Kit according to claim 1, **characterized in that** said covering element (20, 200) is applied, at least partially, on said lateral surface (5) of said container (2).

3. Kit according to claim 2, **characterized in that** said covering element (20) is made up of a portion of band applied on said outer surface of said container (2).

4. Kit according to claim 2, **characterized in that** said covering element (200) is made up of an annular band or sleeve, applied around said lateral surface (5) of said container (2).

5. Kit according to claim 3 or 4, **characterized in that** said covering element (20, 200) is made by means of an adhesive tag applied on said outer lateral surface (5) of said container (2).

6. Kit according to one of the preceding claims, **characterized in that** said container (2) shapes a pair of said longitudinal cavities (10) on the outer surface, adapted to couple with a corresponding pair of adjacent prongs of said dishwasher rack, each cavity being closed laterally, at least partially, by a respective said covering element (20) or by a single said covering element (20, 200).

7. Kit according to claim 6, **characterized in that** said longitudinal cavities (10) are made on opposite portions of said lateral surface (5) of said container (2), with respect to a longitudinal median plane to the same container (2).

8. Kit according to claim 6 or 7, **characterized in that** said longitudinal cavities (10) have the axes spaced apart from one another by a distance equal to the distance between adjacent prongs of said rack.

9. Kit according to one of the preceding claims, **characterized in that** said open end (10a) of said longitudinal cavity (10) opens onto a surface (3) of said container (2) from which said dispensing portion (6) extends.

10. Kit according to one of the preceding claims, **characterized in that** said at least one cavity (10) has a longitudinal development substantially parallel to the axis of said dispensing portion (6). 5
11. Use of a dispenser kit for dishwasher products according to one of the preceding claims, **characterized in that** said container (2) associated with said covering element (20, 200) is inserted in a rack of a dishwashing machine with said dispensing portion (6) facing downwards and with said at least one longitudinal cavity (10) closed laterally, at least in part, by said covering element (20, 200), in coupling with a corresponding prong of the rack. 10 15
12. Method for dispensing products for dishwashers **characterized in that** it comprises the steps of:
- a. arranging a dispenser kit according to one of the claims 1 - 10; 20
  - b. inserting said dispenser kit into a rack of a dishwashing machine with said dispensing portion (6) facing downwards;
  - c. inserting said at least one longitudinal cavity (10) closed laterally, at least in part, by said covering element (20, 200), in a corresponding prong of said rack; 25
  - d. operating said dishwashing machine enabling the dissolution of said closing member (9) in contact with water and the consequent release of said products contained in said container (2). 30

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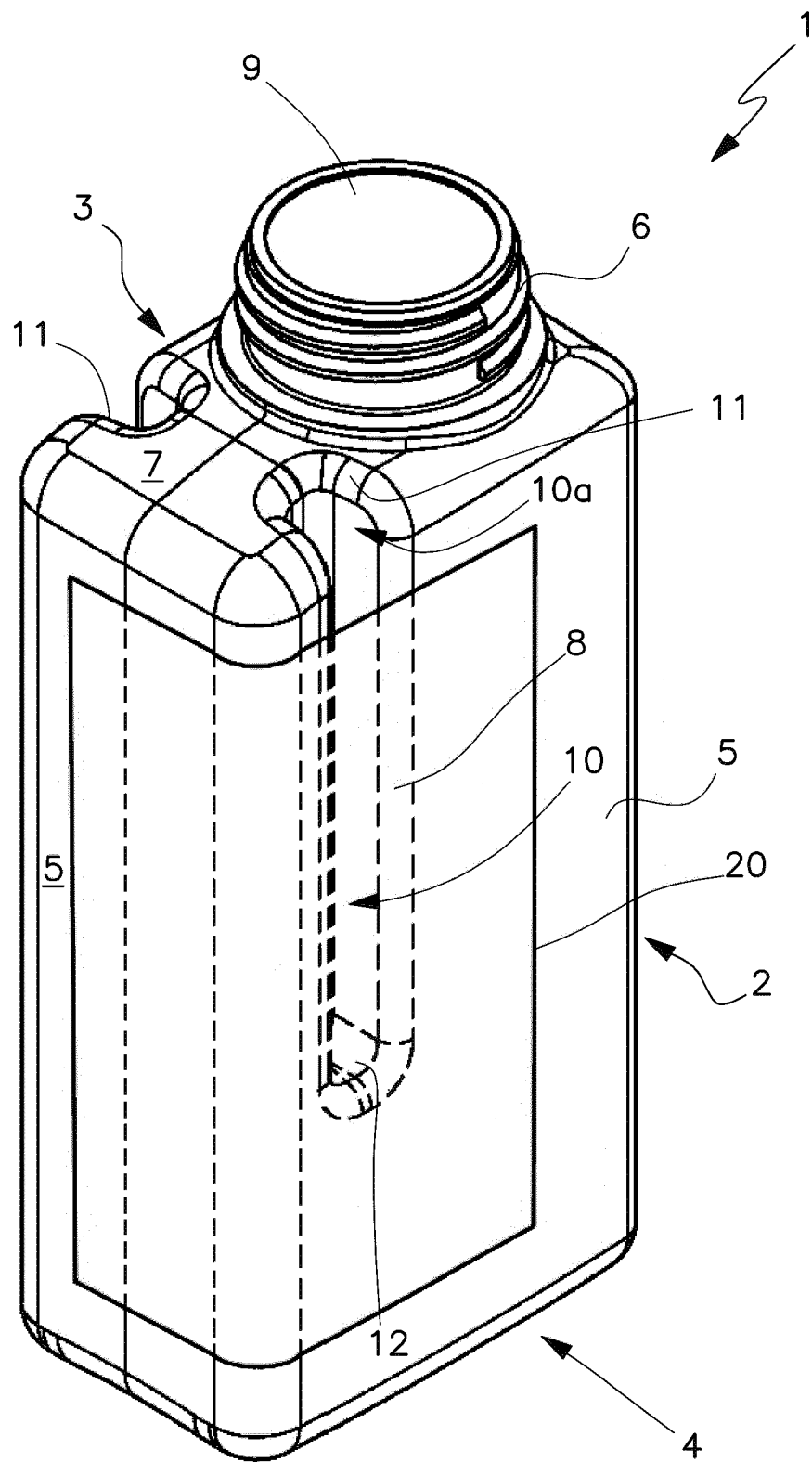
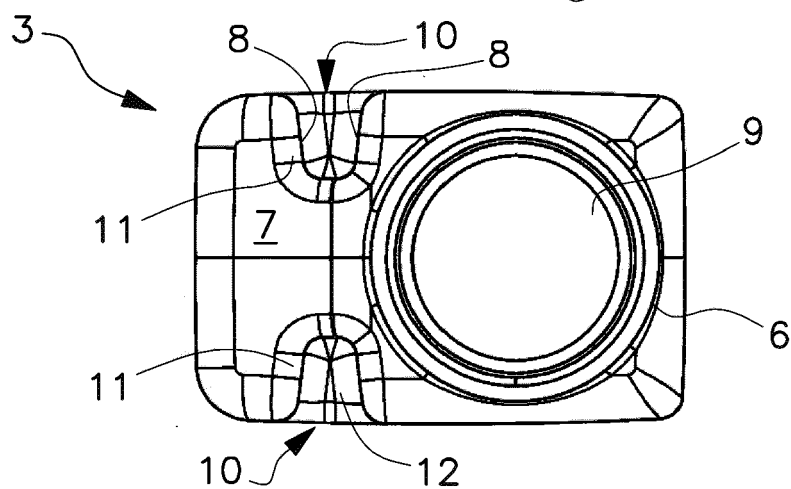
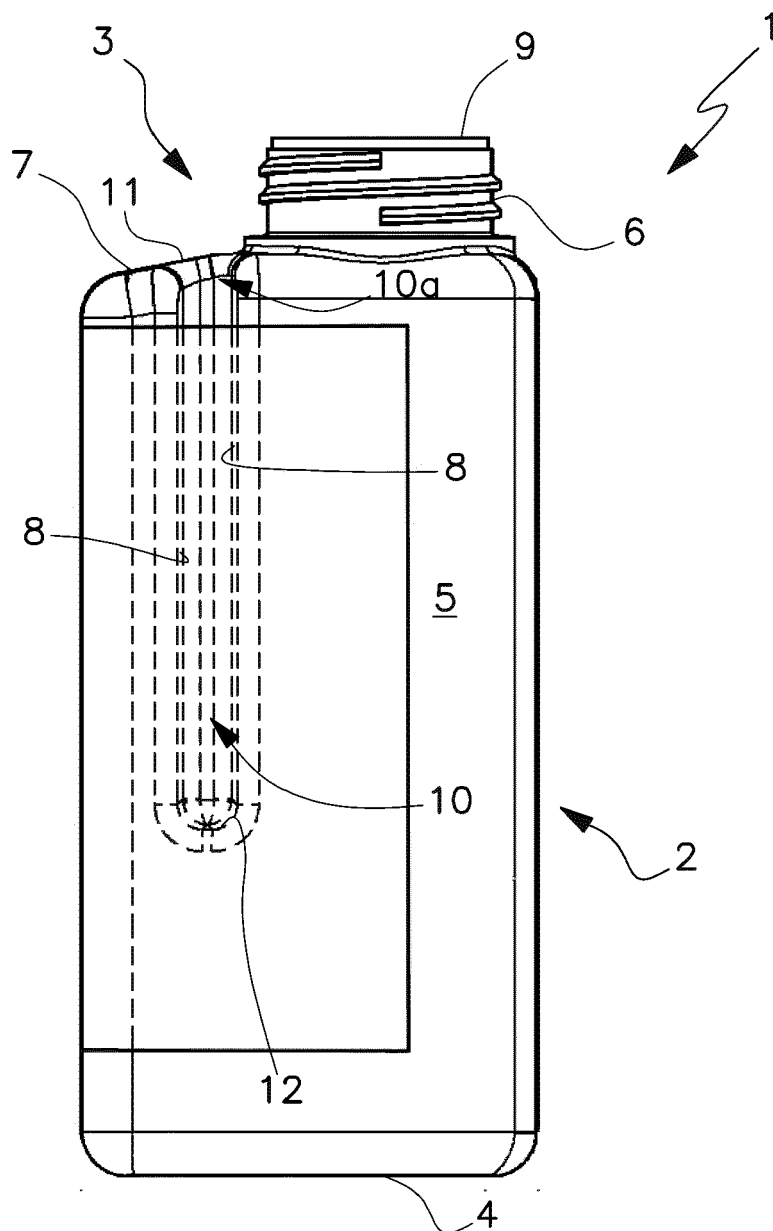


Fig.1





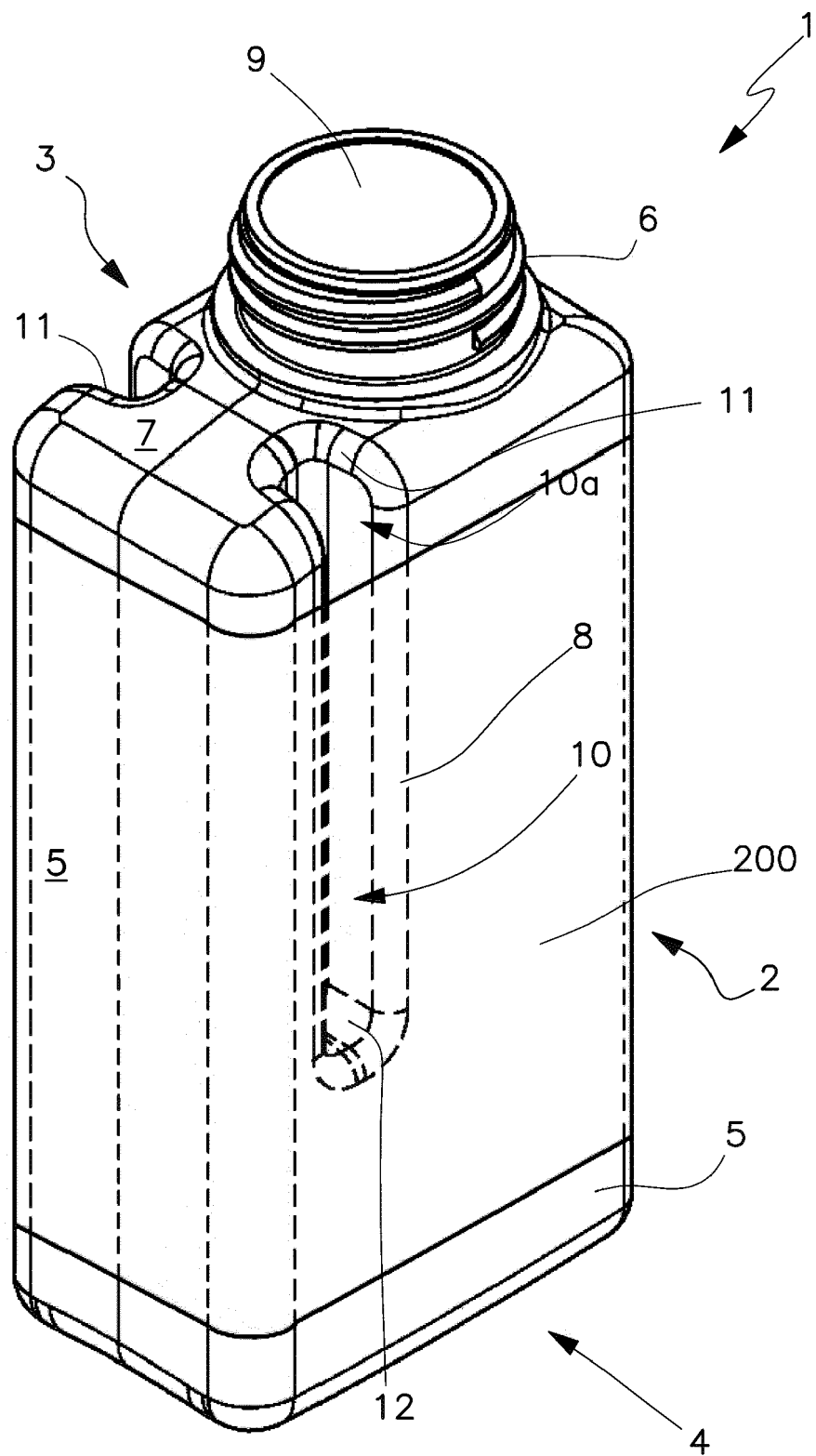


Fig.4



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Application Number  
EP 19 16 1684

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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search <b>Munich</b>		Date of completion of the search <b>17 May 2019</b>	Examiner <b>Weinberg, Ekkehard</b>
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 19 16 1684

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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