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(54) DISPENSING HEAD FOR DISPENSERS OF FLUID PRODUCTS

ABGABEKOPF ZUR ABGABE VON FLUIDPRODUKTEN

TÊTE DE DISTRIBUTION POUR DISTRIBUTEURS DE PRODUITS FLUIDES

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(73) Proprietor: **Emsar S.p.A.**
66020 San Giovanni Teatino (CH) (IT)

(72) Inventors:
- **CAMPLONE, Fabrizio**
  I-65128 Pescara (IT)
- **SANTONI, Giorgio**
  I-65010 Spoltore (PE) (IT)
- **BRUNETTI, Ludovico**
  I-66011 Bucchianico (CH) (IT)
- **ZAVARELLA, Marco**
  I-67039 Sulmona (AQ) (IT)

(74) Representative: **Lanzoni, Luciano**
Bugnion SpA
Via Vittorio Emanuele Orlando 83
00185 Roma (IT)

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Description

Technical Field

[0001] The present invention relates to a dispensing head for dispensers of fluid products. In particular, the present invention relates to a dispensing head advantageously applied to manually operated reciprocating dispensers, coupled to bottles for the containment of fluid products.

Background Art

[0002] As it is well known, dispensing heads comprise a cylindrical body, presenting a lower portion appropriately coupled to the activating members of a respective dispenser. The dispensing head is generally switchable between a condition of use, in which it is free to slide vertically towards/away from the dispenser, and a condition of non use in which it is locked on appropriate reference abutments. The use/non use mode of the dispensing head is determined by manually rotating the cylindrical body relative to the dispenser. On the top of the cylindrical body develops a support to exercise the delivery action, generally constituted by a flat surface which the user can operate with a finger to push the entire head, in the respective condition of use, towards the dispenser.

[0003] In this way, the vertical actuation of the cylindrical body determines the operation of the dispenser which conveys the liquid product into a flow channel obtained in the cylindrical body itself.

[0004] On the top of the cylindrical body also develops an internally hollow spout from which the product passing through the flow channel is distributed to the exterior. The spout for the distribution of the product extends radially relative to the longitudinal development of the cylindrical body. Consequently, the presence of the spout determines immediately and clearly for the final user the point whence the liquid is dispensed. However, the structure of the entire dispensing head determines an asymmetrical extension which, during the steps of assembly on the bottle and transport, generates process challenges and needs particular care.

[0005] The spout of the head can accidentally become ensnared during transport and cause the fall of the bottles or the accidental removal of the dispenser. Moreover, the spout markedly complicates the steps of packaging the finished product both with cardboard but above all with heat-shrinking films which, if they are wound on the dispensing spout introduce a flexion stress of the entire system with possible malfunctions and disassembly.

[0006] In this context, the technical task of the present invention is to propose a head for dispensing fluid products that is free of the aforesaid drawbacks. Examples can be found in US5085347, GB1210875, WO2008/056077

Disclosure of Intention

[0007] In particular, an object of the present invention is to propose a dispensing head for dispensers of fluid products, provided with a symmetric structure, lacking element projecting from the transverse dimension of the dispensing head.

[0008] More in particular, an object of the present invention is to propose a dispensing head that is produced assembled and shipped with the spout retracted and subsequently extracted by the final user upon opening the system before dispensing the product the first time.

[0009] In accordance with the present invention, the technical task and the described objects are achieved by a dispensing head for dispensers of fluid products comprising the technical characteristics set out in one or more of the appended claims.

Description of the Drawings

[0010] Further characteristics and advantages of the present invention shall become more readily apparent from the indicative, and therefore non limiting, description of a preferred but not exclusive embodiment of a dispensing head for dispensers of fluid products, as illustrated in the accompanying drawings in which:

- figure 1a illustrates a perspective view of a dispensing head in accordance with a first embodiment of the invention in a respective condition of non operation;
- figure 1b illustrates a perspective view of the dispensing head of figure 1a, in a respective condition of operation;
- figure 2 illustrates a perspective exploded view of the dispensing head and of a respective dispenser;
- figures 3a and 3b illustrate perspective top views of the dispensing head according to the invention, with some parts removed the better to illustrated others in respective conditions of operation and of non operation;
- figure 4 shows a perspective bottom view of a construction detail of the dispensing head according to the invention;
- figures 5a and 5b illustrate top plan views of an additional construction detail of the dispensing head with some parts removed, the better to illustrate others;
- figures 6a and 6b illustrate bottom plan views of a construction detail of the dispensing head;
- figure 7a illustrates a perspective view of a dispensing head in accordance with a second example in a respective condition of non operation;
- figure 7b shows a perspective view of the dispensing head of figure 7a, in a respective condition of operation;
- figure 8 shows a perspective exploded view of the dispensing head of figure 7a and 7b and of a respec-

tive dispenser;

- figures 9 and 10 illustrate perspective views, respectively from the bottom and from the top, of a construction detail of the dispensing head of figure 7a and 7b;
- figure 11 shows a longitudinal section view of the dispensing head of figure 7a and 7b;
- figures 12 and 13 illustrate perspective views respectively from the bottom and from the top of an additional construction detail of the dispensing head of figure 7a and 7b; and
- figure 14 shows a perspective bottom view of an additional construction detail of the dispensing head of figure 7a and 7b.

Description of the Illustrative Embodiment

[0011] With reference to the accompanying figures, a dispensing head according to the present invention for dispensers, i.e. dispensers 2 of fluid products, is indicated in its entirety with the number 1.

[0012] With particular reference to figures 1a to 6, a first embodiment is illustrated of a dispensing head 1 provided, as shall be more readily apparent hereafter in the present description, of a retractile dispensing nozzle 5 whose extraction and closure takes place simultaneously with the opening and closing of the dispenser 2.

[0013] In particular, as shown in the exploded view of figure 2, the head 1 is constituted by a connecting body 3, by a closing lid 4 and by a dispensing nozzle 5.

[0014] The connecting body 3 presents substantially tubular conformation and it is provided with an inner wall 6 and with an outer wall 7, both with annular development.

[0015] The body 3 presents a lower portion 8 coupled to a dispensing pump of the dispenser 2, not illustrated in detail because it is not a part of the present invention, and an upper portion 9 constituted by an annular wall 10. In the lower portion 8 of the body 3 are present two orienting teeth 11 (figure 4) positioned diametrically opposite in radial direction towards the centre of the body 3, able to be inserted in appropriate slots present on the pump of the dispenser 2.

[0016] In the annular wall 10 is present a groove 12 with defined geometry, for example but not exclusively rectangular, able to allow the passage of fluid from the dispenser to the nozzle 5 as.shall be specified better hereafter.

[0017] The annular wall 10, which remains fastened to the dispenser 2, is also coupled to the closing lid 4 which constituted the embodiment means of the entire dispensing head 1.

[0018] In greater detail, the closing lid 4 presents an upper thrust surface 13 for the escape of the liquid product, having substantially planar conformation to be actuated by the user's finger. Moreover, the upper surface 13 is delimited by its outer perimeter which may have different embodiments, e.g. square with rounded corners as in the accompanying figures, or circular, or any other possible geometry for aesthetic or functional requirements.

[0019] From the perimeter edge of the upper surface 13 develops a peripheral surface 14 which extends towards the connecting body 3. As shown in figure 5, note that the peripheral surface 14, in collaboration with an inner surface 15 of the lid 4 opposite to the aforementioned upper surface 13, defines a housing compartment 15a, for containing the dispensing nozzle 5.

[0020] Additionally, the peripheral surface 14 presents at its angular portion an opening 16 for the passage of the dispensing nozzle 5.

[0021] Advantageously, the depth of the peripheral surface 14 is such as to completely contain the geometry of the nozzle 5.

[0022] The opening 16 is constituted by a window which is to allow the exit of the nozzle 5 once the head 1 is operated. Consequently, said opening 16, having for example rectangular conformation, presents a geometry that can be coupled with the nozzle 5. On the inner surface 15 are present two lateral walls 17a, 17b positioned parallel to the side of the peripheral surface 14 that is to be coupled with the nozzle 5.

[0023] The first wall 17a starts at the opening 16, whilst the second wall 17b, positioned in line with the first wall 17a, extends until it is integral to the peripheral surface 14 as shown in figure 5.

[0024] The walls 17a and 17b therefore define a flow channel of the nozzle 5 and they can present undercuts to maintain the nozzle 5 fastened to the lid 4.

[0025] The second part 17b also presents an arresting element 18 with appropriate geometry, which engages the nozzle 5 when it is in closed position.

[0026] From the inner surface 15 of the lid 4 extends also a cylindrical element 19 which develops within the aforementioned tubular connecting body 3.

[0027] In particular, the cylindrical element 19 is constituted by an outer conduit 20 and an inner conduit 21 positioned concentrically. The axis of the cylindrical element 19 corresponds to the central axis of the dispenser 2, the inner conduit 21 coupling with the stem of the dispenser 2 by means of appropriate undercuts, which are known and therefore not further described and illustrated.

[0028] In the upper part of the cylindrical element 19 is present a cavity 22 for the passage of the liquid product, obtained on the lateral surface of the element 19 itself and positioned in radial direction from the inner conduit 21 towards the outer conduit 20.

[0029] In the space between the inner conduit 21 and the outer conduit 20 are obtained two lateral projections 23 positioned diametrically opposite and perpendicular to the direction of the channel 22 for the passage of the product, so that respective lateral surfaces of the projections 23 interface with the slots present in the pump of the dispenser 2, according to a known methodology for opening/closing the head 1.

[0030] As mentioned above, the lid 4 is rotatably associated to the body 3 to be able to rotate between an

operating condition in which the projections 23 are slidable in the aforesaid slots to allow the vertical actuation of the lid 4, and a non operating condition in which the projections 23 abut on an abutment plane of the pump of the dispenser 2 to block the vertical actuation of the lid 4.

[0031] Moreover, within the inner conduit 21 is present a certain number of stops 24 able to interface with the stem of the dispenser 2 to prevent an excessively low fitting during assembly.

[0032] The outer conduit 20 has a lower height than the inner conduit 21; the height of the outer conduit is such as to enable the rotatable coupling with the connecting body 3.

[0033] The dispensing nozzle 5 presents substantially elongated conformation and comprises a first end 25 provided with an inflow opening 25a of the liquid product, and a second end 26, opposite the first 25, provided with an outflow opening 26a of the liquid product.

[0034] The inflow opening 25a and outflow opening 26a are mutually connected by means of a passage conduit 27 internal to the nozzle 5, able to put the openings in fluid communication with each other. The nozzle 5 is housed in the aforesaid compartment 15a and it is associated to respective actuating means 28, better described hereafter, to move the nozzle 5 between a position of use (figures 1b, 3b, 5b, 6b) in which it projects from the overall dimension of the closing lid 4, and a position of non-use (figures 1a, 3a, 5a, 6a) in which it is retracted within the overall dimension of the lid 4.

[0035] Note that the second end 26 of the nozzle 5 has such a profile that, when the nozzle 5 is in closed position, no part of the nozzle 5 itself projects from the peripheral surface 14 of the lid 4, in accordance with the recognised benefits of the invention, for aesthetic purposes the profile of the second end can faithfully reproduce the trajectory of the peripheral surface 14.

[0036] The inflow opening 25a is preferably obtained in a lateral area of the nozzle 5 and it presents, without limitation and not exclusively, rectangular section.

[0037] Correspondingly to the inflow opening 25a is present a coupling surface 29 with concave circular profile. The diameter of the profile is slightly smaller than the interface diameter with the channel 22 for the passage of the liquid product, in such a way as to assure a coupling that is free of play when the head 1 is in the condition of use (figure 6b).

[0038] With particular reference to figures 3a, 3b and 5a, 5b, note that the actuating means 28 of the nozzle 5 comprise a guiding rod 30 projecting from the upper portion 9 of the connecting body 3. The rod 30 is inserted between a front part 31 and a rear part 32, both projecting from an upper surface of the nozzle 5 facing the aforesaid inner surface 15 of the lid 4.

[0039] The front wall 31 and the rear wall 32 define a seat 33 which preferably has trapezoidal profile. The position and the geometry of the seat 33 is such that, when the rod 30 engages the front wall 31, as a result of a relative rotation of the lid 4 with respect to the body 3 (operating condition of the lid 4), the entire nozzle 5 is thrust forward to the position of use in which the inflow opening 25a is at the channel 22 for the passage of the product of the lid 4.

[0040] Vice versa, when the rod 30 engages the rear part 32 the relative rotation between the lid 4 and the body 3 (non operating condition of the lid 4) determines the rearward translation of the nozzle 5, to the position of non-use.

[0041] It should also be noted that, in the position of non use of the nozzle 5, the lid 4 rotates bringing the aforesaid passage channel 22 to abut on the inner wall 6 of the annular wall 10. In this situation, the channel 22 is occluded and isolated, preserving the fluid product from contact with the outside environment.

[0042] Consequently, the rotation of the lid 4 to the respective operating condition determines, simultaneously, the extraction of the nozzle 5 (position of use) and the positioning of the passage cavity 22 at the groove 12, whilst the rotation of the lid 4 to the respective non operating condition simultaneously determines the insertion of the nozzle 5 into the respective compartment 15a (position of non-use) and the positioning of the cavity 22 at the annular wall 10.

[0043] Additionally, the actuation of the lid 4 to the operating/non-operating condition also determines the positioning of the lateral projections 23 from a situation in which it cooperates with the pump of the dispenser 2 and a situation in which they are blocked by abutment surfaces of the pump.

[0044] With particular reference to figures 7a through 14, a second example not part of the present invention is illustrated of a dispensing head 1 provided, as shall be more readily apparent hereafter in the present description, with a retractile dispensing nozzle 5 whose extraction and closure occur at a time that is previous or subsequent to the opening of the dispensing head 1.

[0045] In particular, as shown in the exploded view of figure 8, in this example too the head 1 is constituted by a connecting body 3, by a closing lid 4 and by a dispensing nozzle 5.

[0046] In this example, the connecting body 3 presents substantially tubular shape, in which the upper portion 9 is defined by a disk 34 having a flat surface 35 facing the inner surface 15 of the lid 4, and a peripheral edge 36 that can be coupled to the peripheral surface 14 of the lid 4.

[0047] The disk 34 presents circular geometry, and it centrally presents a hole 37 for the passage of the liquid product (figures 9 and 11).

[0048] On the flat surface 35 of the disk 34 are present two blind holes 38 positioned diametrically opposite to the hole 37.

[0049] In the assembled configuration one of said blind holes 38 engages the actuating means 28 of the nozzle 5, whilst the other one remains unused. In this way, in accordance with the recognised benefits of the invention

and in particular the simplicity of assembly it is possible to have positions at 180° of orientation during assembly.

[0050] In this case, too, the connecting body 3 comprises an inner hollow conduit 39 and an outer hollow conduit 40 arranged concentrically, having the same height. The entire connecting body 3 is positioned along the axis of symmetry of the dispenser 2. Between the outer conduit 40 and the inner conduit 39 are positioned two inner projections 41, diametrically opposite and meant to engage the corresponding slots present in the pump of the dispenser 2, according to known methodologies. Advantageously, the connecting body 3 can be switched between an operating condition in which the inner projections 41 are slidable in the cavities of the pump, to deliver the liquid product along a channel 42 extending within the inner conduit 39 and ending in the aforesaid hole 37 (open position of the head 1); and a non-operating condition in which the inner projections 41 abut on the abutment plane of the dispensing pump of the dispenser 2, not to dispense the liquid product (closed position of the head 1).

[0051] The inner conduit 39 presents arresting rabbets 43 to prevent an excessively low fitting during assembly. In the proposed example, four arresting rabbets 43 arranged circumferentially are provided.

[0052] With particular reference to figures 12 and 13, the nozzle 15 presents substantially elongated conformation and comprises a first end 44 provided with an inflow opening 44a of the liquid product, and a second end 45, opposite the first 44, provided with an outflow opening 45 of the liquid product. The inflow opening 44a and outflow opening 45a are mutually connected by means of a passage conduit 46 internal to the nozzle 5, able to put the openings in fluid communication with each other.

[0053] The first end 44 is defined by a hollow cylindrical element, whose inner diameter defines the inner opening 44a and is greater than the diameter of the hole 37, so that in operating position the product cannot flow through the port that would be present if the diameter of the inflow opening were smaller than the diameter of the hole 37.

[0054] The total length of the nozzle 5 is such that, in the position of non-use, the front end, i.e. the second end 45, is placed in an annular edge 46a defining the passage opening 16 of the lid 4.

[0055] Note that in the present example, the lid 4 presents the upper surface 13 having substantially circular peripheral development. The peripheral surface 14 presents an edge appropriately connected to the peripheral edge 36 of the disk 34 to enable the rotation of the entire lid 4 relative to the body 3.

[0056] On the peripheral surface 14 is obtained the opening 16 defined by the aforesaid annular edge 46a, to enable the exit of the nozzle 5. The opening 16 has such a geometry as to determine a loose coupling with the cross section of the nozzle 5.

[0057] In accordance with the present example, the actuating means 28 of the nozzle 5 comprise a pivot 50 extending from the nozzle 5 and rotatably inserted in a respective blind hole 38.

[0058] In this way, as illustrated in the section view of figure 11, the nozzle 5 is housed in a respective compartment 15a and lies on the flat surface 35 of the disk 34, to be set in rotation around the pivot 50 as a result of the rotation of the lid 4 on the connecting body 3.

[0059] During the opening by the user, the lid 4 is set in rotation relative to the body 3; in this way, the annular edge 46 of the window 16 comes in contact with the second end 45 of the nozzle 5 setting it in rotation around the axis of the pivot 50, eccentric relative to the longitudinal axis of the dispenser. As a result of a 180° rotation, the nozzle 5 is placed in position of use, with the inflow opening 44a coaxial relative to the hole 37. In this position, the nozzle 5 partially projects from the respective containment compartment 15a.

[0060] During the closing actuation, the annular edge 46 comes in contact with the second end 45, thrusting the nozzle 5 in rotation until returning to the totally retracted position. Moreover, on the inner surface 15 of the lid 4 are present a safety stop 47 and a guide element 48 of the nozzle 5 (figure 14). The safety stop 47 preferably has a "C" profile. The outer diameter of said safety stop 47 is such as to match the first end 44 of the nozzle 5. The function of the safety stop 47 consists of engaging with very little interference with the upper portion of the first end 44 of the nozzle 5, when the head 1 is in the respective open position. In this way, a downward thrust is determined on the nozzle 5, located in the area of the inflow opening 44a, in order to avoid possible escapes of liquid product between the hole 37 and the inflow opening 44a during the normal use of the dispenser 2.

[0061] The guide element 48 is obtained with a "V" profile positioned along the diameter passing through the centre of the opening 16, with the concavity oriented towards the centre of the lid 4. The guide element 48 engages an upper pivot 49, extending from the nozzle 5 from opposite to the pivot 50, when because of the rotation of the nozzle 5, the nozzle is in the respective position of use. For this reason, the vertex of the "V" profile that constitutes the guide element 48 must match the position assumed by the upper pivot 49 when the nozzle 5 is completely extracted. In this way, the play present between the opening 16 and the opening 45a for the outflow of the fluid product, thereby positioning the nozzle 5 centred relative to the opening 16.

[0062] The invention achieves the proposed objects and provides important advantages.

[0063] Note that the dispensing nozzle 5 is extracted only at the user's discretion to dispense the liquid product. In this way, when packaging and stocking the finished product, the nozzle 5 can be kept within the size of the lid 4. Advantageously, the packaging and transport operations are simplified, preventing the nozzle 5 from damaging the heat-shrinking films and preventing any accidental engagement between the nozzles 5 of the dispensing heads 1 stored next to each other.

[0064] Moreover, stresses on the nozzle are avoided, which would mostly be due to the action of the heat-shrinking material that wraps the finished product, preserving the dispensing head 1 from malfunctions and disassembly.

[0065] An additional advantage is that the fluid product remains isolated from contact with the outside environment, preserving its integrity.

[0066] Note that the areas of interruption of the dispensing of the liquid product are located in proximity to the nozzle. Consequently, after the first dispensing operations, all the product contained in the stem and in the outflow channels of the head is isolated from the exterior.

Claims

1. Dispensing head for dispensers of fluid products comprising:

   a connecting body (3) presenting a lower portion (8) operatively engaged to a dispensing pump of a respective dispenser (2) of the fluid product;
   a closing lid (4), associated to an upper portion (9) of the connecting body (3) opposite to said lower portion (8), comprising a cylindrical element (19) extending from an inner surface (15) of the lid (4) and developing within the connecting body (3) and presenting a cavity (22), obtained on a lateral surface, for the passage of the liquid product;
   a nozzle (5) for dispensing the liquid product, associated to said closing lid (4), and comprising a first end (25) presenting an opening (25a) for the inflow of the liquid product, a second end (26), opposite the first (25), presenting an opening (26a) for the outflow of the liquid product and a passage conduit (27) developing within said nozzle (5) to put the openings in fluid communication with each other; means (28) for actuating the dispensing nozzle (5) between a position of use in which it projects from the overall size of the closing lid (4), and a position of non use in which it is retracted inside the overall size of the closing lid (4);

   characterized in that said connecting body (3) presents substantially tubular conformation, said upper portion (9) comprising an annular wall (10) coaxial and external to said cylindrical element (19) of the lid (4) and presenting a groove (12) to put in fluid communication the passage cavity (22) obtained on the cylindrical element (19) with the inflow opening (25a) of the nozzle (5) when it is in the respective position of use.

2. Head as claimed in claim 1, **characterised in that** said closing lid (4) is rotatably associated to the upper portion (9) of the connecting body (3) to rotate around a respective axis relative to said connecting body (3); said actuating means (28) of the nozzle (5) co-operating with the closing lid (4) to actuate the nozzle (5) as a function of the rotation of the lid (4).

3. Head as claimed in claim 2, **characterised in that** said lid (4) comprises an upper thrust surface (13) for the escape of the liquid product and a peripheral surface (14) developing from the upper surface (13) towards the connecting body (3); said peripheral surface (14) presenting an opening (16) for the passage of the dispensing nozzle (5).

4. Head as claimed in the previous claim, **characterised in that** said lid (4) comprises a compartment (15a) for housing said dispensing nozzle (5) defined at an inner surface (15) of the lid (4) opposite to said upper surface (13).

5. Head as claimed in claim 1, **characterized in that** said lid (4) is rotatable between an operating condition in which the nozzle (5) is in the position of use and the passage cavity (22) obtained on the cylindrical element (19) is positioned at the groove (12) to enable the passage of fluid within the nozzle (5), and a non operating condition in which the nozzle (5) is in the position of non use and the passage cavity (22) is positioned at the annular wall (10) to occlude the cavity (22) itself and prevent the passage of fluid towards the nozzle (5).

6. Head as claimed in the previous claim, **characterised in that** said cylindrical element (19) also comprises at least one lateral projection (23), extending from said lateral surface of the cylindrical element (19); said projection (23), in the operating condition of the lid (4), being slidable in a cavity of the dispensing pump and, in the non operating condition of the lid (4), abutting on an abutment plane of the dispensing pump.

7. Head as claimed in any of the previous claims, **characterised in that** said actuating means (28) of the nozzle (5) comprise a guide rod (30), projecting from the upper portion (9) of the connecting body (3) and inserted between a front wall (31) and a rear wall (32) both projecting from said dispensing nozzle (5).

8. Head as claimed in claims 6, 7 and 7, **characterised in that** said rod (30), in the operating condition of the lid (4), abuts on the front wall (31) to bring the nozzle (5) outside the passage opening (16) and, in the non-operating condition of the lid (4), abuts on said rear wall (32) to bring the nozzle (5) within said housing compartment (15a).

Patentansprüche

1. Abgabekopf zur Abgabe von Fluidprodukten, umfassend:

einen Verbindungskörper (3), aufweisend einen unteren Abschnitt (8), der betriebsbereit in eine Abgabepumpe einer entsprechenden Abgabe (2) des Fluidprodukts eingreift,
einen Verschlussdeckel (4), der an einen oberen Abschnitt (9) des Verbindungskörpers (3) gegenüber dem unteren Abschnitt (8) anschließt, umfassend ein zylindrisches Element (19), das sich von einer Innenfläche (15) des Deckels (4) ausdehnt und innerhalb des Verbindungskörpers (3) erstreckt und einen Hohlraum (22) für den Durchfluss des flüssigen Produkts aufweist, der auf einer Seitenfläche erhalten ist, eine Düse (5) zur Abgabe des flüssigen Produkts, die an den Verschlussdeckel (4) anschließt und ein erstes Ende (25), das eine Öffnung (25a) für das Einströmen des flüssigen Produkts aufweist, ein zweites Ende (26) gegenüber dem ersten (25), das eine Öffnung (26a) für das Ausströmen des flüssigen Produkts aufweist sowie eine Durchflussleitung (27) umfasst, die sich innerhalb der Düse (5) erstreckt, um die Öffnungen miteinander in Fluidverbindung zu setzen,
Mittel (28) zur Betätigung der Abgabedüse (5) zwischen einer Gebrauchsposition, in der sie aus der Gesamtabmessung des Verschlussdeckels (4) auskragt und
einer Nichtgebrauchsposition, in der sie in der Gesamtabmessung des Verschlussdeckels (4) zurückgezogen ist,
dadurch gekennzeichnet, dass der Verbindungskörper (3) eine im Wesentlichen rohrförmige Gestalt aufweist, wobei der obere Abschnitt (9) eine ringförmige Wand (10) umfasst, die koaxial zum und außerhalb vom zylindrischen Element (19) des Deckels (4) ist und eine Nut (12) aufweist, um den im zylindrischen Element (19) erhaltenen Durchflusshohlraum (22) mit der Einströmöffnung (25a) der Düse (5), wenn sie in der entsprechenden Gebrauchsposition ist, in Fluidverbindung zu setzen.

2. Kopf nach Anspruch 1, **dadurch gekennzeichnet, dass** der Verschlussdeckel (4) drehbar an den oberen Abschnitt (9) des Verbindungskörpers (3) anschließt, um relativ zum Verbindungskörper (3) um eine entsprechende Achse zu drehen, wobei die Betätigungsmittel (28) der Düse (5) mit dem Verschlussdeckel (4) zusammenwirken, um die Düse (5) in Abhängigkeit von der Drehung des Deckels (4) zu betätigen.

3. Kopf nach Anspruch 2, **dadurch gekennzeichnet, dass** der Deckel (4) eine obere Schubfläche (13) für das Austreten des flüssigen Produkts und eine Umfläche (14), die sich von der Oberfläche (13) zum Verbindungskörper (3) erstreckt, umfasst, wobei die Umfläche (14) eine Öffnung (16) für den Durchfluss der Abgabedüse (5) aufweist.

4. Kopf nach dem vorangehenden Anspruch, **dadurch gekennzeichnet, dass** der Deckel (4) ein Fach (15a) für die Aufnahme der Abgabedüse (5) umfasst, die an einer Innenfläche (15) des Deckels (4) gegenüber der Oberfläche (13) definiert ist.

5. Kopf nach Anspruch 1, **dadurch gekennzeichnet, dass** der Deckel (4) zwischen einem Betriebszustand, in dem die Düse (5) in der Gebrauchsposition ist und der im zylindrischen Element (19) erhaltene Durchflusshohlraum (22) an der Nut (12) positioniert ist, um den Durchfluss von Fluid innerhalb der Düse (5) zu ermöglichen sowie einem Nichtbetriebszustand, in dem die Düse (5) in der Nichtgebrauchsposition ist und der Durchflusshohlraum (22) an der ringförmigen Wand (10) positioniert ist, um den Hohlraum (22) einzuschließen und den Durchfluss von Fluid zur Düse (5) zu verhindern, drehbar ist.

6. Kopf nach dem vorangehenden Anspruch, **dadurch gekennzeichnet, dass** das zylindrische Element (19) ferner mindestens eine seitliche Auskragung (23) umfasst, die sich aus der Seitenfläche des zylindrischen Elements (19) ausdehnt, wobei die Auskragung (23) im Betriebszustand des Deckels (4) in einem Hohlraum der Abgabepumpe verschiebbar ist und im Nichtbetriebszustand des Deckels (4) an einer Anschlagebene der Abgabepumpe anschlägt.

7. Kopf nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** die Betätigungsmittel (28) der Düse (5) einen Führungsstab (30) umfassen, der vom oberen Abschnitt (9) des Verbindungskörpers (3) auskragt und zwischen einer vorderen Wand (31) und einer hinteren Wand (32) eingefügt ist, die beide aus der Ausgabedüse (5) auskragen.

8. Kopf nach den Ansprüchen 6, 7 und 7, **dadurch gekennzeichnet, dass** der Stab (30) im Betriebszustand des Deckels (4) an der vorderen Wand (31) anschlägt, um die Düse (5) aus der Durchflussöffnung (16) herauszubringen und im Nichtbetriebszustand des Deckels (4) an der hinteren Wand (32) anschlägt, um die Düse (5) in das Aufnahmefach (15a) zu bringen.

Revendications

1. Tête de distribution pour distributeurs de produits fluides comprenant :

   un corps de liaison (3) avec une partie inférieure (8) opérationnellement en prise avec une pompe de distribution d'un distributeur respectif (2) du produit fluide ;
   un couvercle de fermeture (4), associé à une partie supérieure (9) du corps de liaison (3), en face de ladite partie inférieure (8), comprenant un élément cylindrique (19) évoluant à partir d'une surface interne (15) du couvercle (4) et se développant à l'intérieur du corps de liaison (3) et présentant une cavité (22), située sur une surface latérale, pour faire passer le produit liquide ;
   une buse (5) pour distribuer le produit liquide, associée audit couvercle de fermeture (4) et comprenant une première extrémité (25) présentant une ouverture (25a) pour l'entrée du produit liquide, une seconde extrémité (26), en face de la première (25), présentant une ouverture (26a) pour la sortie du produit liquide, et un conduit de passage (27) se développant à l'intérieur de ladite buse (5) pour mettre les ouvertures en communication fluidique entre eux;
   des moyens (28) pour faire passer la buse de distribution (5) d'une position d'utilisation, dans laquelle elle fait saillie du volume total du couvercle de fermeture (4), à une position de non-utilisation, dans laquelle elle rentre à l'intérieur du volume total du couvercle de fermeture (4) ;
   caractérisée en ce que ledit corps de liaison (3) présente essentiellement une forme tubulaire, ladite partie supérieure (9) comprenant une paroi annulaire (10) coaxiale et extérieure audit élément cylindrique (19) du couvercle (4) et présentant une rainure (12) pour mettre en communication fluidique la cavité de passage (22), obtenue sur l'élément cylindrique (19), avec l'ouverture d'entrée (25a) de la buse (5), quand elle se trouve dans la position d'utilisation respective.

2. Tête selon la revendication 1, **caractérisée en ce que** ledit couvercle de fermeture (4) est associé de façon rotative à la partie supérieure (9) du corps de liaison (3) pour tourner autour d'un axe respectif par rapport audit corps de liaison (3) ; lesdits moyens d'actionnement (28) de la buse (5) coopérant avec le couvercle de fermeture (4) pour actionner la buse (5) en fonction de la rotation du couvercle (4).

3. Tête selon la revendication 2, **caractérisée en ce que** ledit couvercle (4) comprend une surface de poussée supérieure (13) pour faire sortir le produit liquide, et une surface périphérique (14) se développant à partir de la surface supérieure (13) en direction du corps de liaison (3) ; ladite surface périphérique (14) présentant une ouverture (16) pour faire passer la buse de distribution (5).

4. Tête selon la revendication précédente, **caractérisée en ce que** ledit couvercle (4) comprend un compartiment (15a) pour loger ladite buse de distribution (5), située sur une surface interne (15) du couvercle (4), en face de ladite surface supérieure (13).

5. Tête selon la revendication 1, **caractérisée en ce que** ledit couvercle (4) peut tourner entre une condition opérationnelle, dans laquelle la buse (5) se trouve dans la position d'utilisation et la cavité de passage (22), obtenue sur l'élément cylindrique (19) se positionne au niveau de la rainure (12) pour permettre le passage de fluide à l'intérieur de la buse (5), et une condition non opérationnelle, dans laquelle la buse (5) se trouve dans la position de non-utilisation et la cavité de passage (22) se positionne au niveau de la paroi annulaire (10) pour fermer la cavité (22) même et empêcher le passage de fluide en direction de la buse (5).

6. Tête selon la revendication précédente, **caractérisée en ce que** ledit élément cylindrique (19) comprend aussi au moins une saillie latérale (23), évoluant à partir de ladite surface latérale de l'élément cylindrique (19) ; ladite saillie (23), dans la condition opérationnelle du couvercle (4), pouvant coulisser dans une cavité de la pompe de distribution et, dans la condition non opérationnelle du couvercle (4), se mettre en butée contre un plan de butée de la pompe de distribution.

7. Tête selon l'une quelconque des revendications précédentes, **caractérisée en ce que** lesdits moyens d'actionnement (28) de la buse (5) comprennent une tige de guidage (30), qui fait saillie de la partie supérieure (9) du corps de liaison (3) et est insérée entre une paroi antérieure (31) et une paroi postérieure (32), qui font saillie toutes les deux de ladite buse de distribution (5).

8. Tête selon les revendications 6, 7 et 7, **caractérisée en ce que** ladite tige (30), dans la condition opérationnelle du couvercle (4), se met en butée contre la paroi antérieure (31) pour amener la buse (5) à l'extérieur de l'ouverture de passage (16) et, dans la condition non opérationnelle du couvercle (4), se met en butée contre ladite paroi postérieure (32) pour amener la buse (5) à l'intérieur dudit compartiment de logement (15a).

FIG 1b

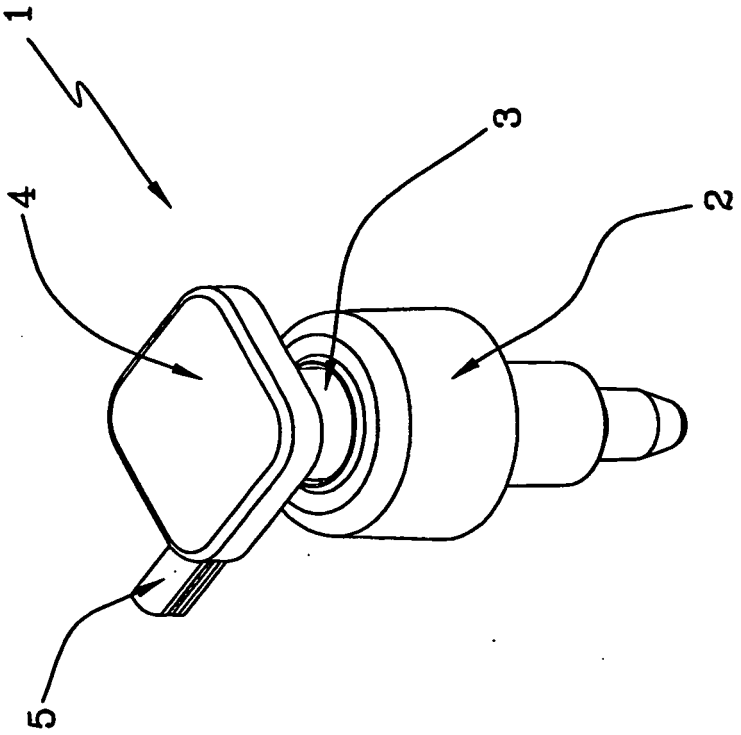


FIG 1a

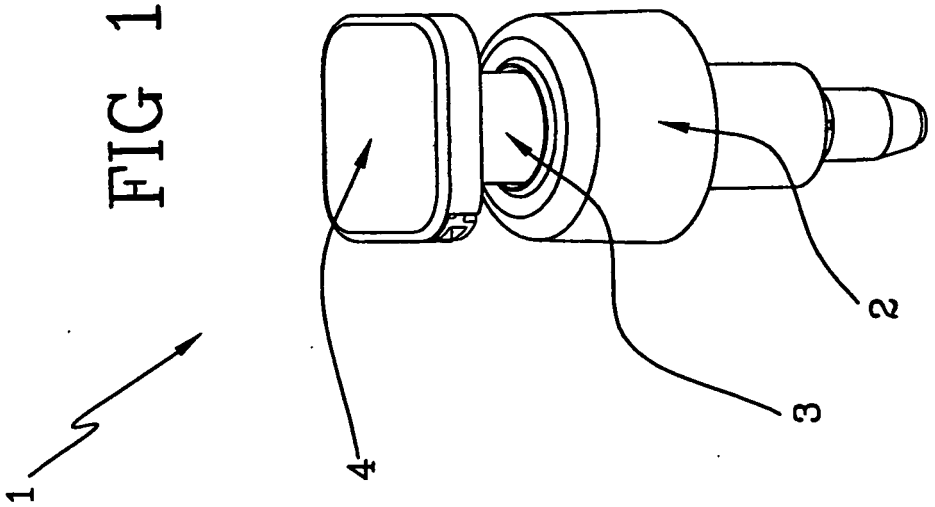


FIG 2

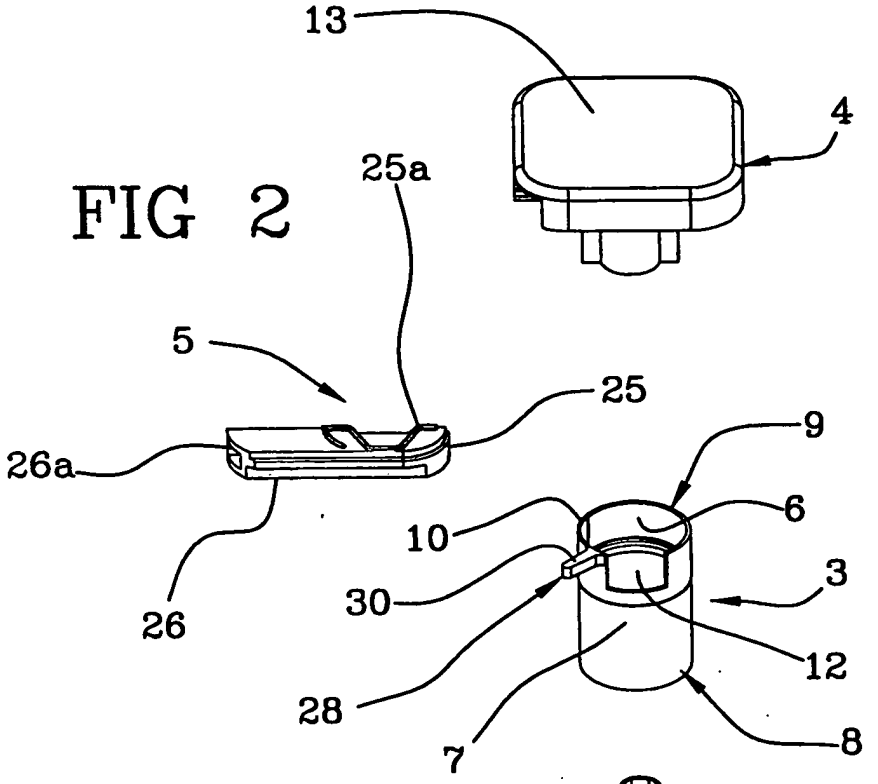


FIG 4

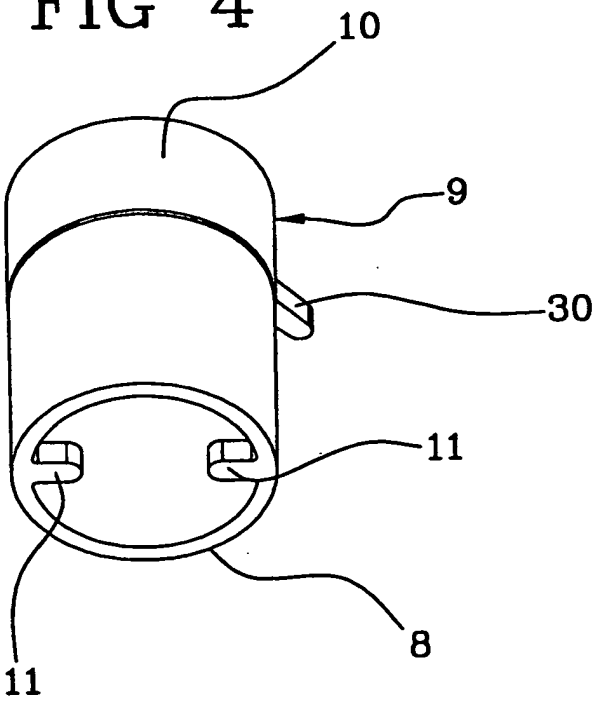


FIG 3b

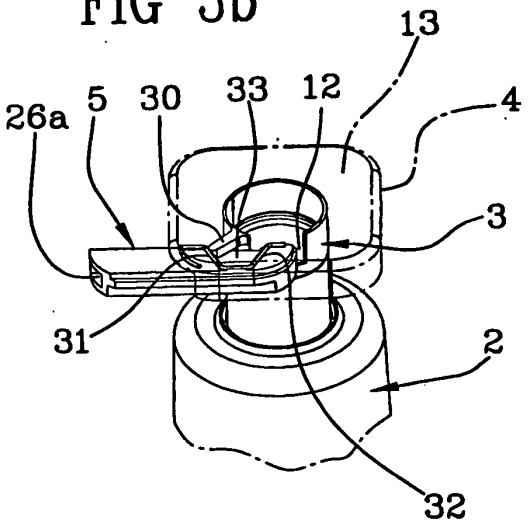


FIG 3a

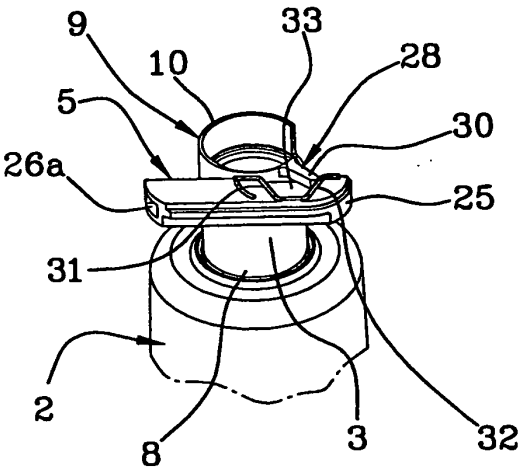


FIG 5b

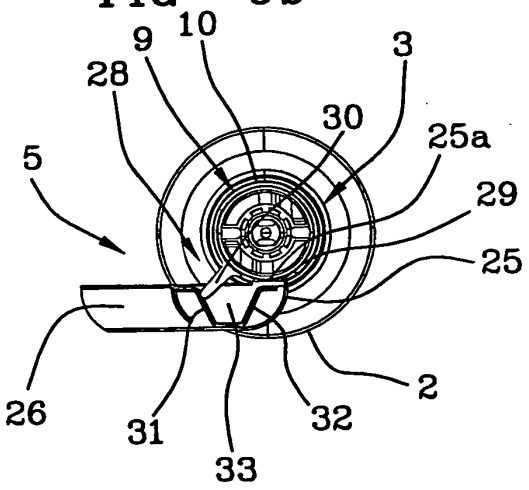


FIG 5a

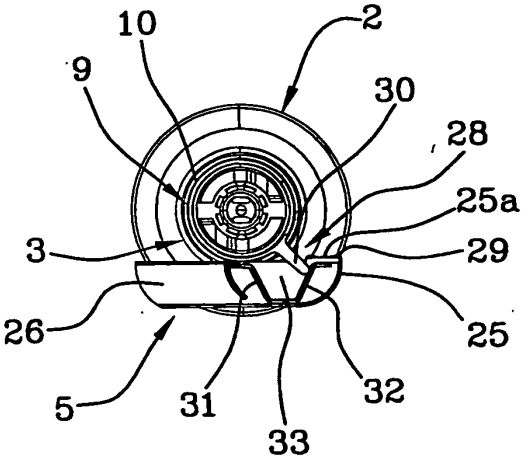


FIG 6a

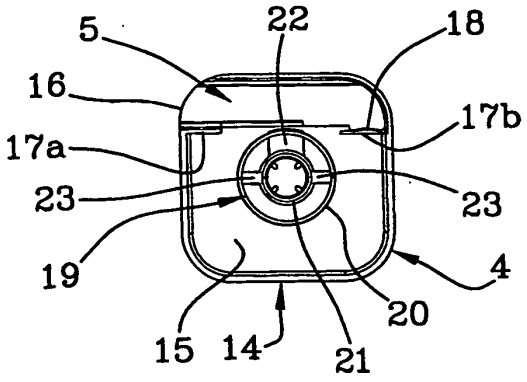


FIG 6b

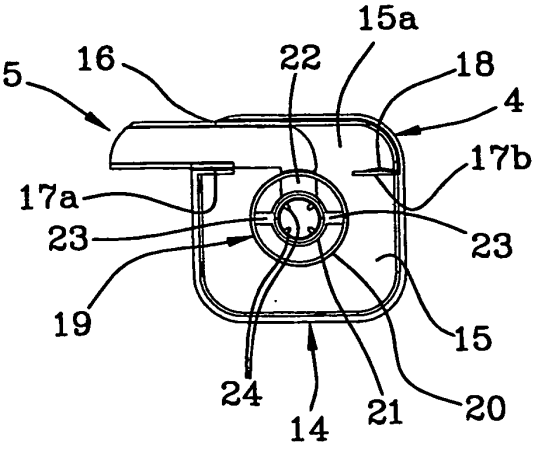


FIG 7b

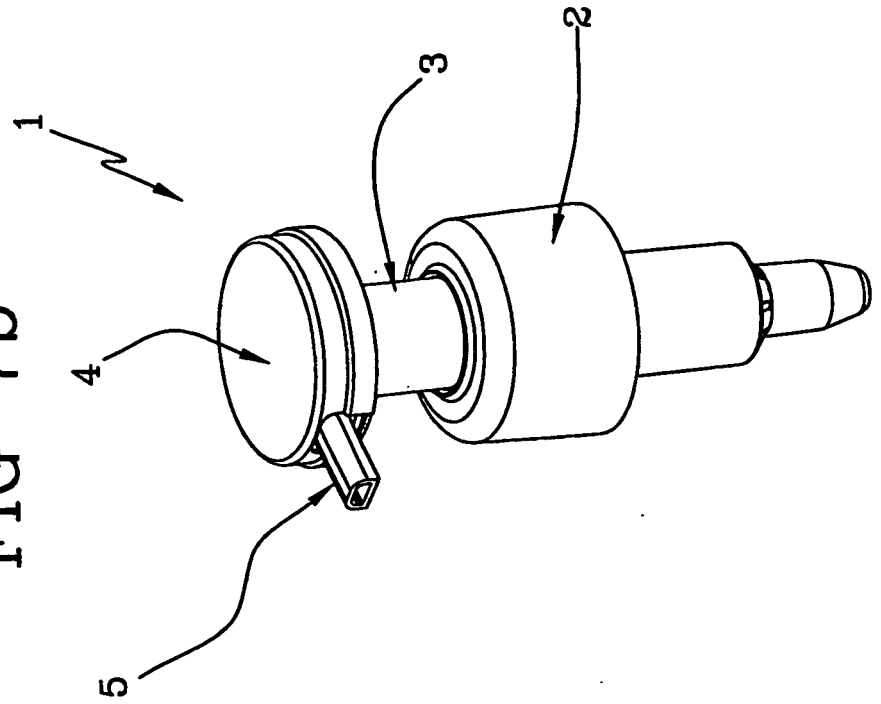


FIG 7a

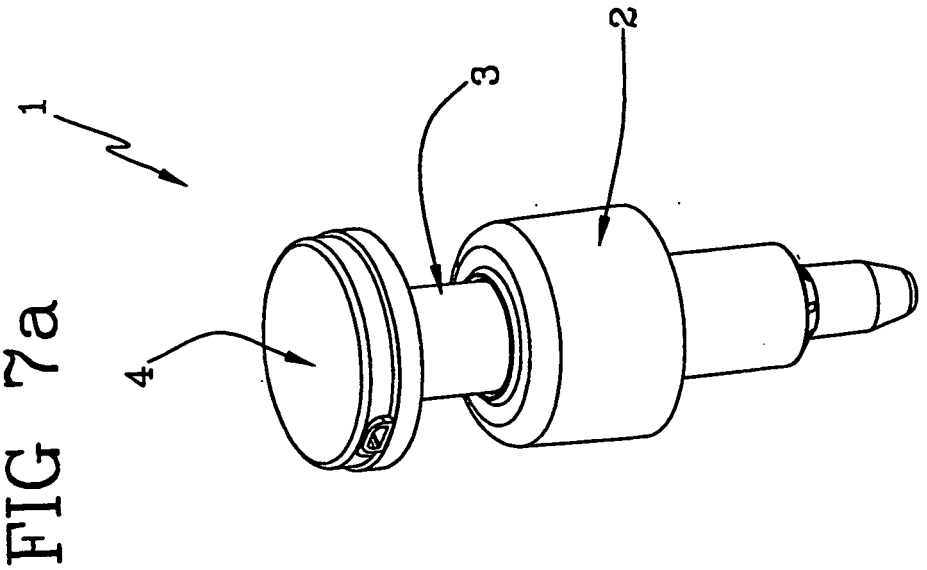


FIG 8

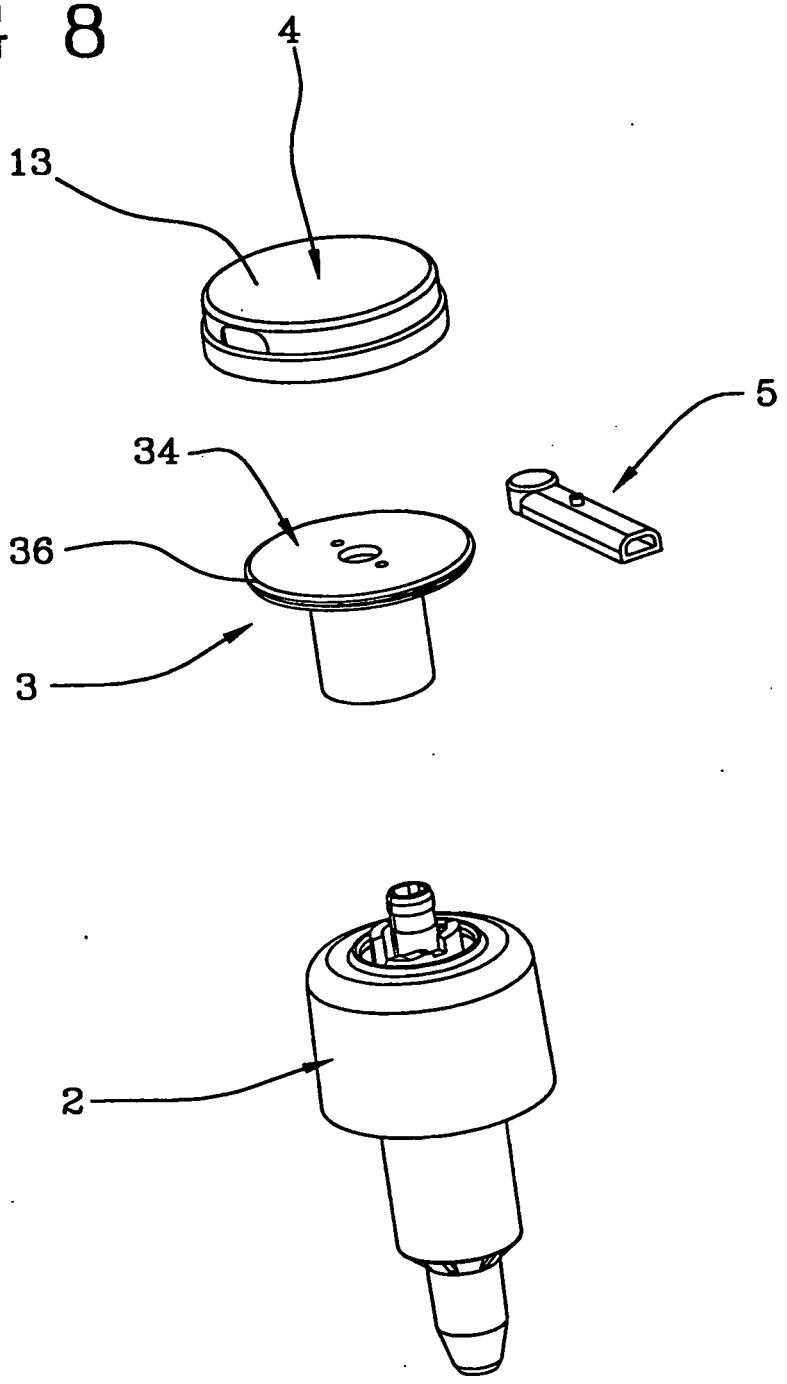


FIG 9

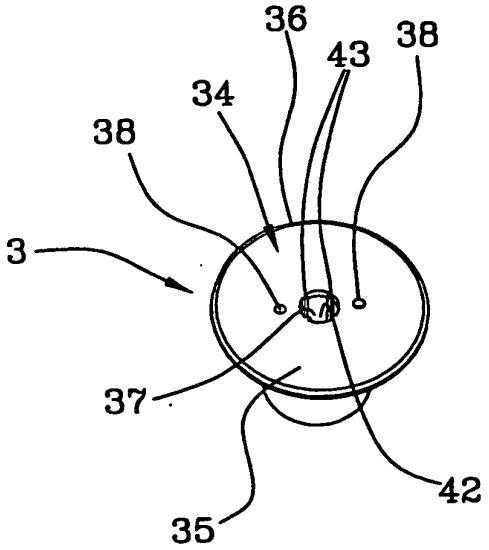


FIG 10

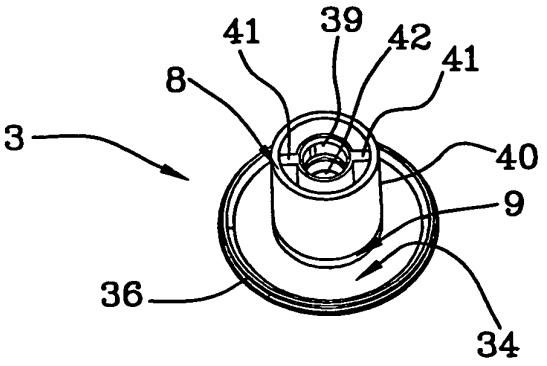
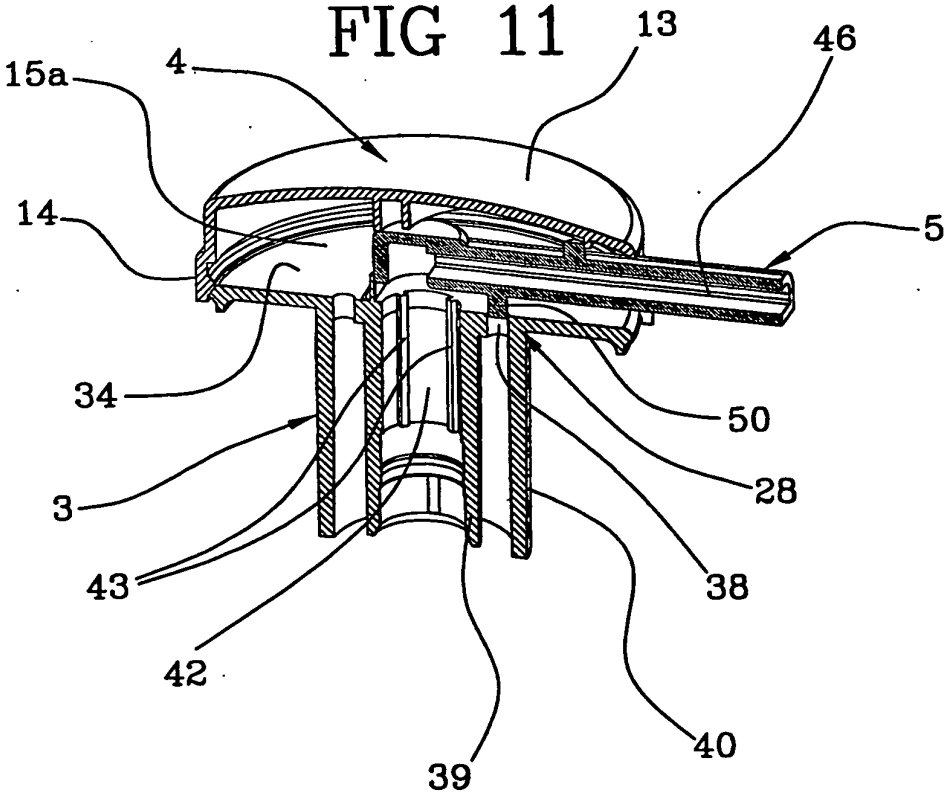


FIG 11



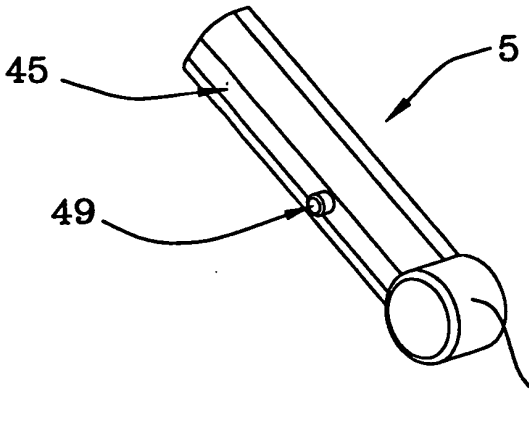
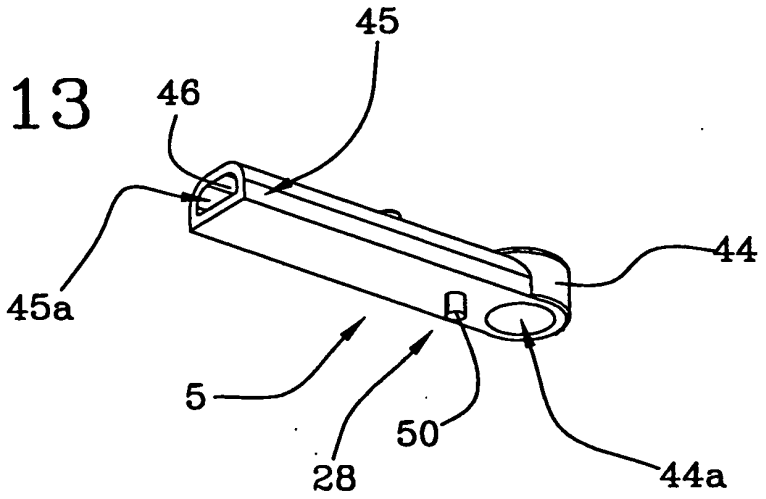


FIG 12

FIG 13



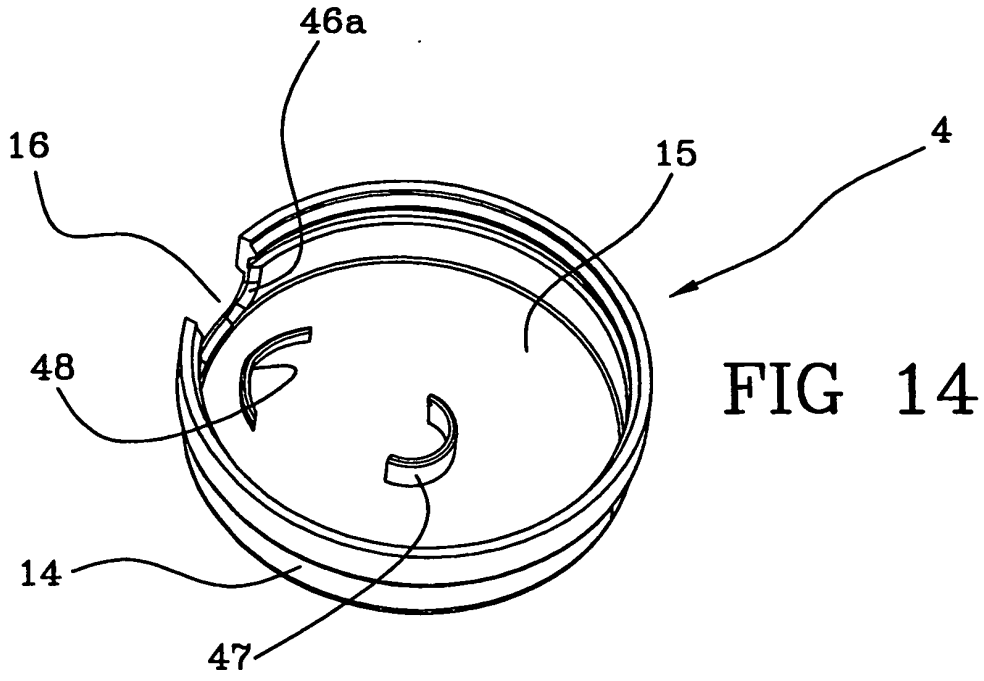


FIG 14

REFERENCES CITED IN THE DESCRIPTION

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- US 5085347 A **[0006]**
- GB 1210875 A **[0006]**
- WO 2008056077 A **[0006]**