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(54) DISTRIBUTION DEVICE FOR A COSMETIC PRODUCT AS A SPRAY

VERTEILUNGSVORRICHTUNG FÜR EIN KOSMETISCHES PRODUKT ALS SPRAY

DISPOSITIF DE DISTRIBUTION D'UN PRODUIT COSMÉTIQUE SOUS FORME D'AÉROSOL

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Description

[0001] This invention relates to a device to distribute a product as a spray, of the type comprising a distributing valve comprising:

- a valve body, defining an inner chamber of the valve body that opens onto the outside of the valve body by an opening for the entry of the product,
- an actuating rod, inserted into an exit opening of the valve body, the rod defining an interior distribution duct, said distribution duct opening onto the outside of the rod via an orifice for the entry of the product and via an exit orifice of the product, the actuating rod being mounted mobile in the chamber of the valve body between a distribution position of the cosmetic product, wherein the orifice for the entry is in fluidic communication with the chamber and the exit orifice is arranged outside of the chamber, and a blocking position of the cosmetic product, wherein the orifice for the entry is not in fluidic communication with the chamber, and
- a return element of the actuating rod to its blocking position.

[0002] The invention also relates to a packaging assembly of a product comprising such a distribution device, and a method of manufacturing this assembly for packaging.

[0003] US 2004/0144803 describes a non-refillable valve device including a housing with an internal cavity including a chamber extending to an end of the housing. An elastic sealing member is disposed within the chamber and displaceable between a first position permitting fluid flow into the container and a second position preventing fluid flow into the container.

[0004] FR 2 808 783 describes a distributor comprising a pump with an aspiration system.

[0005] Packaging assemblies comprising devices for distributing of the aforementioned type are known, in particular in FR-A-2 925 032, and are most often used for the packaging of cosmetic products. These cosmetic products are for example perfumes, toilet waters, deodorants or hair styling products. More generally, these cosmetic products are products such as defined in EC Regulation N° 1223/2009 of the European Parliament and the Council of November 30, 2009, relating to cosmetic products.

[0006] The cosmetic product is contained under pressure, generally in liquid form, in a reservoir of the packaging assembly closed by the distribution device. The cosmetic product is normally retained in the reservoir by the distribution device. However, when the actuating rod is displaced to the distribution position, the cosmetic product exits spontaneously from the reservoir by the distribution duct under the effect of the pressure present inside the reservoir. Most often, a diffuser coupled to the exit orifice divides the cosmetic product exiting the res-

ervoir into small droplets which, projected into the air, form a spray.

[0007] Once empty, these packaging assemblies can again be filled by injecting a new product into the reservoir by the intermediary of the distribution device. To this effect, it is sufficient to displace the actuating rod to the distribution position, then to inject the new product under pressure into the exit orifice.

[0008] However, unscrupulous people take advantage of this possibility of reusing empty packaging assemblies to fill the used brand packaging assemblies with products of lesser quality, then to sell these articles by presenting them as originals. This fraud, other than the lack of revenue that it creates for the brands concerned and the damage that it brings to the image of these brands, induces a high sanitary risk for the purchasers of fraudulent products.

[0009] An object of the invention is to prevent this fraud by limiting the re-use of empty packaging assemblies.

[0010] To this effect, the invention has for object a distribution device according to claim 1.

[0011] According to particular embodiments of the invention, the distribution device also has one or several of the characteristics of claims 2 to 10 taken in isolation or in any technically possible combination.

[0012] The invention further has for object a packaging assembly according to claim 11.

[0013] The invention also has for object a method for producing a packaging assembly according to claim 12.

[0014] According to one particular embodiment of the invention, the method for manufacturing also has the feature of claim 13.

[0015] Further features and advantages of the invention will emerge after reading the following description given solely as an example with reference to the appended drawings in which:

- Figure 1 is a cross-section view of a portion of a packaging assembly according to a first embodiment of the invention,
- Figure 2 is a cross-section view along plane II-II of the packaging assembly on Figure 1,
- Figure 3 is a cross-section view of an actuating rod of a packaging assembly according to a second embodiment of the invention,
- Figure 4 is a partial cross-section view of an actuating rod of a packaging assembly according to a third embodiment of the invention,
- Figure 5 is a cross-section view of an actuating rod of a packaging assembly according to a fourth embodiment of the invention,
- Figure 6 is a cross-section view of an actuating rod of a packaging assembly according to a fifth embodiment of the invention, and
- Figure 7 is a cross-section view of an actuating rod of a packaging assembly according to a sixth embodiment of the invention.

[0016] The packaging assembly 10 of Figure 1 comprises a reservoir 12 and a distribution device 14 closing the reservoir 12.

[0017] The reservoir 12 comprises, in a known manner, a wall 20 defining an inner cavity 22 for receiving a cosmetic product. Said inner cavity 22 opens outside of the reservoir 12 by a neck 24 arranged in the wall 20.

[0018] This inner cavity 22 contains a cosmetic product (not shown) such as defined in EC Regulation N° 1223/2009 of the European Parliament and the Council of November 30, 2009, for example a toilet water, a perfume, a deodorant, or a hair styling product.

[0019] The distribution device 14 is arranged through the neck 24 in such a way as to fully seal the neck 24. It is fixed, at its periphery, to the edge 26 of the neck 24.

[0020] The distribution device 14 comprises a distribution valve 30 and a plate 32.

[0021] The plate 32 defines a passage 34 for the cosmetic product. The valve 30 is engaged in this passage 34 and is linked to the plate 32 in such a way as to prevent the passage of a fluid through the passage 34 between the valve 30 and the plate 32 when the pressure of this fluid is less than or equal to the pressure in the cavity 22.

[0022] The plate 32 provides the connection of the valve 30 to the receptacle 12. To this effect, the plate 32 is crimped, at its periphery, to the edge 26.

[0023] The valve 30 comprises a valve body 40, an actuating rod 42, and a return element 44.

[0024] The valve body 40 is arranged entirely on the same side of the plate 32. In particular, the valve body 40 is arranged entirely on the side of the plate 32 oriented towards the cavity 22.

[0025] The valve body 40 is rigidly inked to the plate 32. To this effect, the plate 32 is for example crimped onto the valve body 40.

[0026] The valve body 40 comprises a cylindrical portion 50 that defines an inner chamber 52 that opens outside of the valve body 40 by an opening 54 for the entry of the cosmetic product and an opening 56 for the passage of the rod 42. The openings 54, 56 are formed at the axial opposite ends of the cylindrical portion 50. Note that the term "cylindrical" is used here and in the rest of the application in its widest degree of acceptance, and encompasses cylinders of revolution as well as cylinders with a polygonal section.

[0027] The valve body 40 also comprises an appendix 58 for connecting a dip tube (not shown). This appendix 58 protrudes from an axial end of the cylindrical portion 50 and surrounds the opening for the entry 54.

[0028] The valve body 40 further comprises a seal 60 surrounding the exit opening 56. Said seal 60 is arranged bearing against the plate 32 and provides the seal between the valve body 40 and the plate 32.

[0029] The actuating rod 42 is substantially coaxial to the cylindrical portion 50. It extends through the passage 34 and the opening 56. It as such extends in part into the chamber 52 and in part outside of the chamber 52. The seal 60 is in contact with a lateral face 61 of said rod 42

in such a way as to carry out a seal between the rod 42 and the valve body 40.

[0030] The actuating rod 42 defines an axial duct 62, inside the rod 52, for the distribution of the cosmetic product. This duct 62 opens outside the rod 52 via an orifice 64 for the entry of cosmetic product and by an exit orifice 66 of the cosmetic product. The orifice for the entry 64 is arranged in the lateral face 61. The exit orifice 66 is arranged in an axial end of the rod 42 located outside the chamber 52.

[0031] The actuating rod 42 is mounted mobile in the chamber 52 along its axis A-A' between a blocking position of the cosmetic product, shown in Figure 1, wherein the orifice for the entry 64 is not in fluidic communication with the chamber 52, and a distribution position of the cosmetic product (not shown), wherein the orifice for the entry 64 is in fluidic communication with the chamber 52. In particular, in blocking position, the orifice for the entry 64 is positioned facing the seal 60 and, in distribution position, the orifice for entry 64 is positioned in the chamber 52.

[0032] The actuating rod 42 carries an abutment 68 in order to stop the actuating rod 42 when it arrives in blocking position. This abutment 68 is also adapted to prevent the actuating rod 42 from entirely exiting the chamber 52. To this effect, said abutment 68 is, in the example shown, adapted to be in contact with the seal 60 when the rod 42 is in blocking position. The abutment 68 is as such, in the example shown, constituted by a shoulder, oriented towards the seal 60, of the rod 42.

[0033] The return element 44 is adapted to urge the rod 42 towards its blocking position. Said blocking position as such constitutes a rest position of the rod 42.

[0034] The return element 44 is in particular arranged in the chamber 52. In the example shown, this return element 44 is a compression spring interposed between the axial end of the rod 42 positioned in the chamber 52 and the axial end of the cylindrical portion 50 wherein is arranged the opening for the entry 54.

[0035] According to the invention, the distribution device 14 also comprises a non-return valve 70 arranged inside the actuating rod 42 in order to prevent the circulation of a fluid in the duct 62 from the exit orifice 66 towards the orifice for the entry 64.

[0036] This non-return valve 70 comprises a member 72 mounted mobile in the duct 62 between a seat 74 for receiving the mobile member 72 and an element 76 for retaining the mobile member 72. This member 72 is in particular mounted mobile in translation along the axis A-A' between a closed position, wherein it is received in the seat 74, and an open position, wherein it is bearing against the retaining element 76.

[0037] The mobile member 72 is inserted between the seat 74 and the retaining element 76. It has a mass less than one-tenth of the product of the pressure inside the cavity 22 by the radial section of the mobile member 72. It is, in the example shown, constituted by a ball.

[0038] The seat 74 and the retaining element 76 are

successively arranged in the duct 62, the retaining element 76 being inserted, along the duct 62, between the seat 74 and the exit orifice 66. They are adapted to contain the mobile member 72 in the portion of the duct 62 between the seat 74 and the retaining element 76.

[0039] The seat 74 is adapted to receive the mobile member 72 in the closed position and so that, in this position, the duct 62 is entirely sealed.

[0040] The retaining element 76 is adapted so that the mobile member 72 comes to bear against it when it is in its open position and so that, in this position, the duct 62 is partially free.

[0041] In the first embodiment, the seat 74 is formed by a narrowing of the duct 62. This narrowing comprises a tapered portion of the duct 62, substantially coaxial to the rod 42, with the tip of the cone being oriented opposite the exit orifice 66, the orifice for entry 64 opening into said tapered portion, between the tip of the cone and a plane wherein the diameter of the cone is substantially equal to the diameter of the mobile member 72.

[0042] Still in the first embodiment, the retaining element 76 comprises, in reference to Figure 2, a plurality of appendices 78 each protruding from the wall 80 of the duct 62, from a base (not referenced) to a free end 82. Each free end 82 is at a distance from the central axis of the duct 62 less than the radius of the mobile member 72. The free ends 82 of the appendices 78 are at a distance from one another, in such a way that axial channels 84 are arranged between the appendices 78. These axial channels 84 allow for the circulation of a fluid from one end to the other of the duct 62 even when the mobile member 72 is in its open position bearing against the retaining element 76.

[0043] The appendices 78 are preferably of a single piece with the wall 80.

[0044] In reference to Figure 3, the packaging assembly according to the second embodiment is distinguished from the first embodiment only by the shape of the retaining element 76. In this embodiment, the retaining element 76 is formed by a clasp extending through the duct 62, substantially perpendicularly to the axis of the duct 62.

[0045] In reference to Figure 4, the packaging assembly according to the third embodiment is distinguished from the first embodiment only by the shape of the retaining element 76. In this embodiment, the retaining element 76 is formed by an added insert force fitted into the duct 62 and maintained in the duct 62 by the forces of friction between this insert and the wall 80 of the duct 62.

[0046] This insert comprises four panels 86 (only three of them can be seen in Figure 4) oriented at ninety degrees from one another and all joining together along a line substantially coaxial to the duct 62, in such a way that the insert has a radial section in the shape of a cross. Each panel 86 comprises a junction edge 90 with the other panels 86, an edge 92 bearing against the wall 80 of the duct 62, opposite the junction edge 90, a free edge 94, contained in a radial plane and oriented towards the

exit orifice 66, and an edge 96 for receiving the mobile member 72, contained in a radial plane and oriented towards the seat 74. Each panel 86 also comprises a cut-away 98 connecting the edge for receiving 96 to the bearing edge 92.

[0047] In reference to Figure 5, the packaging assembly according to the fourth embodiment is distinguished from the first embodiment only by the shape of the seat 74. In this embodiment, the seat 74 is also formed by a narrowing of the duct 62. This narrowing comprises a tapered portion of the duct 62, substantially coaxial to the rod 42, flaring in the direction of the exit orifice 66. This narrowing is interposed between two substantially cylindrical portions 100, 102 of the duct 62, a first portion 100 wherein opens the orifice for entry 64 and a second portion 102 wherein is positioned the retaining element 76.

[0048] The narrowing is here formed by a local tightening of the actuating rod 42. In other terms, the wall 80 of the duct 62 has a substantially constant thickness all along the duct 62, and to the narrowing of the duct 62 corresponds an annular recess 104 of a complementary shape formed in the lateral face 61 of the rod 42.

[0049] In reference to Figure 6, the packaging assembly according to the fifth embodiment is distinguished from the first embodiment by the shape of the seat 74 and of the retaining element 76.

[0050] In this embodiment, the seat 74 is also formed by a narrowing of the duct 62. However, unlike the first embodiment, this narrowing is not formed by a tapered portion of the duct 62, but by an abrupt variation in the diameter of the duct 62. The duct 62 as such comprises a portion of large diameter 106, wherein is arranged the retaining element 76, and a portion of small diameter 108, into which opens the orifice for entry 64.

[0051] The portion of large diameter 106 has a diameter greater than the diameter of the mobile member 72. The portion of small diameter 108 has a diameter less than the diameter of the mobile member 72.

[0052] Each portion 106, 108 is, in the example shown, substantially cylindrical.

[0053] At the interface between said portions 106, 108, the wall 80 of the duct 62 defines a shoulder 110 oriented towards the exit orifice 66. This shoulder 110 is in particular contained in a radial plane.

[0054] Axial ribs 112 extend along the wall 80 of the duct 62 in the portion of large diameter 106. Each rib 112 protrudes from said wall 80 towards the central axis of the duct 62, and extends from one axial end of the duct 62 to the opposite axial end. Said ribs 112 are spaced from one another and are preferably distributed regularly at the periphery of the duct 62.

[0055] The free end of each rib 112 is at a distance from the central axis of the duct 62 greater than the radius of the mobile member 72 and preferably substantially equal to said radius of the mobile member 72. As such the guiding of the mobile member 72 in the duct 62 is improved.

[0056] The retaining element 76 is formed by a plurality of appendices 114 each protruding from the wall 80 of the duct 62 towards the central axis of the duct 62.

[0057] Said appendices 114 are spaced from one another and are preferably distributed regularly at the periphery of the duct 62. Each appendix 114 is in particular, as shown, aligned axially with a rib 112.

[0058] Each appendix 114 comprises a base (not referenced), wherein it is connected to the wall 80, and a free end 115 opposite said base. Each free end 115 is at a distance from the central axis of the duct 62 less than the radius of the mobile member 72.

[0059] Each appendix 114 has, in the example shown, a shape of a half-disc. The base of the appendix 114 is then formed by the diameter of said half-disc.

[0060] Each appendix 114 is preferably overmolded on the wall 80 of the duct 62 inside the duct 62. Alternatively, each appendix 114 is integral with the wall 80.

[0061] In reference to Figure 7, the packaging assembly according to the sixth embodiment is distinguished from the first embodiment by the shape of the seat 74 and of the retaining element 76.

[0062] In this embodiment, the seat 74 is also formed by a narrowing of the duct 62. However, unlike the first embodiment, this narrowing is not formed by a tapered portion of the duct 62, but by an abrupt variation in the diameter of the duct 62. The duct 62 as such comprises a portion of large diameter 116, wherein is arranged the retaining element 76, and a portion of small diameter 118, into which opens the orifice for entry 64.

[0063] The portion of large diameter 116 has a diameter greater than the diameter of the mobile member 72. The portion of small diameter 118 has a diameter less than the diameter of the mobile member 72.

[0064] Each portion 116, 118 is, in the example shown, a general cylindrical shape.

[0065] At the interface between said portions 116, 118, the wall 80 of the duct 62 defines a shoulder 120 oriented towards the exit orifice 66. This shoulder 120 is in particular contained in a radial plane.

[0066] The retaining element 76 is also formed by a narrowing of the duct 62, in particular by a narrowing of the portion of large diameter 116.

[0067] In this sixth embodiment, this narrowing is formed by a local tightening of the actuating rod 42. In other terms, to the narrowing of the duct 62 forming the retaining element 76 corresponds at least one recess 122 formed in the lateral face 61 of the rod 42.

[0068] The or each recess 122 opens, via a first end, into the lateral face 61 of the rod 42 by an opening 124, and is closed at its opposite end by a bottom 126. The or each recess 122 is isolated from the duct 62 by its bottom 126.

[0069] The or each recess 122 is advantageously, as shown, at a distance from the central axis of the duct 62 less than the average radius of the duct 62. In other terms, the bottom 126 of the or of each recess 122 is advantageously at a distance from the central axis of the duct 62

less than the average radius of the duct 62. As such, any attempt to remove the retaining element 76, for example by cutting, would result in generating the piercing of the rod 42.

[0070] In the example shown, there are two recesses 122, with each one having substantially a shape of a cylinder with axis orthogonal to the axis of the duct 62.

[0071] In reference to Figure 1, a method for manufacturing a packaging assembly 10 according to the first embodiment shall now be described.

[0072] Firstly, the reservoir 12 and the distribution device 14 are supplied. At this stage, the distribution device 14 is complete, except for the mobile member 72, which is not yet installed in the duct 62.

[0073] The reservoir 12 and the distribution device 14 are then assembled to one another, in such a way that the distribution device 14 closes the reservoir 12. To this effect, the plate 32 is crimped to the edge 26 surrounding the mouth 24 through which the cavity 22 opens to the outside of the reservoir 20.

[0074] The reservoir 12 is then filled with the cosmetic product. To this effect, the actuating rod 42 is displaced in a distribution position, then the cosmetic product is injected, under pressure, into the orifice for exiting 66. In the absence of the mobile member 72, the cosmetic product flows without hindrance into the duct 62 to the orifice for entry 64; the orifice for entry 64 being in the chamber 52, the cosmetic product is as such released in the chamber 52; it then follows the opening for entry 54 and, from there, is in the cavity 22.

[0075] Once the reservoir 12 is filled, the actuating rod 42 is brought back to the locking position. Then the mobile member 72 is inserted by force into the duct 62, in such a way as to pass the retaining element 76.

[0076] The method for manufacturing the packaging assembly according to the fourth embodiment is identical to the method for manufacturing described hereinabove.

[0077] The methods for manufacturing the packaging assemblies according to the second, third, fifth and sixth embodiments are distinguished from the method for manufacturing described hereinabove only in that, when the distribution device 14 is assembled to the reservoir 12, the distribution device 14 does not yet comprise the retaining element 76. In these methods for manufacturing, the retaining element 76 is formed only after the insertion of the mobile member 72 into the duct 62. The inserting of the mobile member 72 into the duct 62 then does not have to be carried out by force.

[0078] Alternatively, the distribution device 14 comprises the mobile member 72 and the retaining element 76 when it is assembled to the reservoir 12. The filling of the reservoir 12 is then no longer carried out by injecting the cosmetic product into the orifice for exiting 66, but by injecting the cosmetic product into the passage 34, between the actuating rod 42 and the edge of the passage 34. Note that, in this case, the pressure must be sufficiently high as to allow the cosmetic product to flow between the seal 60 and the plate 62. This alternative ap-

plies to all of the embodiments described hereinabove.

[0079] The use of an assembly for packaging according to any of the preceding embodiments shall now be described, in reference to Figure 1.

[0080] With normal use, a user actuates the packaging assembly 10 in such a way as to provoke the displacement of the rod 42 to its distribution position. When the rod 42 is in distribution position, the cosmetic product, under the effect of the pressure in the reservoir 12, penetrates into the duct 62 by the orifice for entry 64. This product, which is at the pressure of the reservoir 12, exerts a force on the mobile member 72 that is greater than its weight, and as such provokes the displacement of the latter into open position. The cosmetic product can then flow into the duct 62 to the exit orifice 66 by going around the mobile member 72. The cosmetic product can as such be distributed normally.

[0081] In the case of a fraudulent attempt to fill the reservoir 12, a user injects a product under pressure into the duct 62 via the exit orifice 66. This product bears against the mobile member 72 and thrusts it in closed position against the seat 74. In this position, the mobile member 72 fully seals the duct 62, in such a way that the product injected cannot penetrate into the reservoir 12: the filling of the reservoir 12 is as such prevented

[0082] Thanks to the invention described hereinabove, the re-use of empty assemblies for packaging is limited, as the filling of the reservoir 12 via the rod 42 is rendered impossible.

[0083] Furthermore, the non-return valve 70 used is very discreet, in such a way that the objective hereinabove is achieved without increasing the encumbrance of the packaging assembly.

[0084] Note that, although the characteristics of the invention have been described in separate embodiments, characteristics presented in different embodiments can be combined with one another without leaving the scope of the invention. In particular, the invention extends to the distribution devices that comprise a retaining element 76 of any one of the embodiments described hereinabove and a seat 74 of another of these embodiments.

Claims

1. Device for distributing (14) a product as a spray, comprising a distributing valve (30) comprising:

- a valve body (40), defining an inner chamber (52) of the valve body (40) that opens onto the outside of the valve body (40) by an opening for the entry (54) of the product,
- an actuating rod (42), inserted into an exit opening (56) of the valve body (40), the rod defining an interior distribution duct (62), said distribution duct (62) opening onto the outside of the rod (42) via an orifice (64) for the entry of the product and via an exit orifice (66) of the product, the

actuating rod (42) being mounted mobile in the chamber (52) of the valve body (40) between a distribution position of the cosmetic product, wherein the orifice for the entry (64) is in fluidic communication with the chamber (52) and the exit orifice (66) is arranged outside of the chamber (52), and a blocking position of the cosmetic product, wherein the orifice for the entry (64) is not in fluidic communication with the chamber (52), and
- a return element (44) of the actuating rod (42) to its blocking position, the distribution device (14) comprising a non-return valve (70),

characterised by the non-return valve (70) being arranged inside the actuating rod (42) in order to prevent the circulation of a fluid in the distribution duct (62) from the exit orifice (66) towards the orifice for the entry (64), said non-return valve (70) comprising a member (72) mounted mobile in the distribution duct (62).

2. Device for distributing (14) according to claim 1, wherein the non-return valve (70) further comprises a seat (74) for receiving the mobile member (72) and an element (76) for retaining the mobile member (72) arranged successively in the distribution duct (62), the retaining member (76) being interposed, along the distribution duct (62), between the seat (74) and the exit orifice (66), the mobile member (72) being mounted mobile in the distribution duct (62) between said seat (74) and said retaining element (76), between a closed position wherein the mobile member (72) is received in the seat (74), the distribution duct (62) being fully sealed, and an open position wherein the mobile member (72) is bearing against the retaining element (76), the distribution duct (62) being partially free.
3. Device for distributing (14) according to claim 2, wherein the retaining element (76) is an element added onto the actuating rod (42).
4. Device for distributing (14) according to claim 2, wherein the retaining element (76) is molded inside the distribution duct (62).
5. Device for distributing (14) according to claim 2, wherein the retaining element (76) is formed by a narrowing of the distribution duct (62).
6. Device for distributing (14) according to any of claims 2 to 5, wherein the seat (74) is formed by a narrowing of the distribution duct (62).
7. Device for distributing (14) according to claim 5 or 6, wherein the narrowing of the distribution duct (62) is formed by a local tightening of the actuating rod

- (42).
8. Device for distributing (14) according to claims 5 and 7 taken together, wherein the rod (42) has, in line with the retaining element (76), at least one recess (122) formed in its lateral face (61), the recess (122) being at a distance from the central axis of the distribution duct (62) less than an average radius of the distribution duct (62). 5
 9. Device for distributing (14) according to any of claims 2 to 8, wherein the retaining element (76) defines at least one axial channel (84) for the circulation of the product when the mobile member (72) is in open position. 10
 10. Device for distributing (14) according to any of the preceding claims wherein the mobile member (72) is a ball. 15
 11. Packaging assembly (10) of a cosmetic product, comprising a reservoir (12) containing a cosmetic product and a distribution device (14) closing said reservoir (12), wherein the distribution device (14) is a distribution device such according to any of the preceding claims. 20
 12. Method for manufacturing a packaging assembly according to claim 11, comprising the following successive steps: 25
 - supplying of the reservoir (12) and of the distribution valve (30),
 - closing of the reservoir (12) with the distribution valve (30), 35
 - filling of the reservoir (12) by displacement of the actuating rod (42) in distribution position and injection of the cosmetic product under pressure in the exit orifice (66), and
 - inserting of the mobile member (72) into the distribution duct (62). 40
 13. Method of manufacture according to claim 12, comprising a step of forming a retaining element (76), said step following the step of inserting. 45

Patentansprüche

1. Vorrichtung zum Ausgeben (14) eines Produktes als ein Spray, aufweisend ein Ausgabeventil (30), das aufweist: 50
- einen Ventilkörper (40), der eine innere Kammer (52) des Ventilkörpers (40) definiert, die sich durch eine Öffnung für das Eintreten (54) des Produktes zu dem Äußeren des Ventilkörpers (40) öffnet, 55

- einen Betätigungsstab (42), der in eine Ausgangsöffnung (56) des Ventilkörpers (40) eingesetzt ist, wobei der Stab eine innere Ausgabelleitung (62) definiert, wobei sich die Ausgabelleitung (62) über eine Öffnung (64) für das Eintreten des Produktes und über eine Ausgangsöffnung (66) für das Produkt zum Äußeren des Stabes (42) öffnet, wobei der Betätigungsstab (42) in der Kammer (52) des Ventilkörpers (40) bewegbar montiert ist zwischen einer Ausgabeposition des kosmetischen Produktes, in der die Öffnung für das Eintreten (64) mit der Kammer (52) in Fluidverbindung ist und die Ausgangsöffnung (66) außerhalb der Kammer (52) angeordnet ist, und einer Blockierposition des kosmetischen Produktes, in der die Öffnung für das Eintreten (64) nicht in Fluidverbindung mit der Kammer (52) ist, und

- ein Rückkehrelement (44) des Betätigungsstabes (42) in seine Blockierposition, wobei die Ausgabevorrichtung (14) ein Rückschlagventil (70) aufweist, **dadurch gekennzeichnet, dass** das Rückschlagventil (70) innerhalb des Betätigungsstabes (42) angeordnet ist, um das Zirkulieren eines Fluids in der Ausgabelleitung (62) von der Ausgangsöffnung (66) in Richtung zu der Öffnung für das Eintreten (64) zu verhindern, wobei das Rückschlagventil (70) ein Element (72) aufweist, das bewegbar in der Ausgabelleitung (62) montiert ist.

2. Vorrichtung zum Ausgeben (14) gemäß Anspruch 1, wobei das Rückschlagventil (70) ferner einen Sitz (74) zum Aufnehmen des bewegbaren Elements (72) und ein Element (76) zum Halten des bewegbaren Elements (72) aufweist, die aufeinanderfolgend in der Ausgabelleitung (62) angeordnet sind, wobei das Halteelement (76) entlang der Ausgabelleitung (62) zwischen dem Sitz (74) und der Ausgangsöffnung (66) angeordnet ist, wobei das bewegbare Element (72) bewegbar in der Ausgabelleitung (62) zwischen dem Sitz (74) und dem Halteelement (76) angeordnet ist, zwischen einer Schließposition, in der das bewegbare Element (72) im Sitz (74) aufgenommen ist, wobei die Ausgabelleitung (62) vollständig abgedichtet ist, und einer Öffnungsposition, in der das bewegbare Element (72) gegen das Halteelement (76) drückt, wobei die Ausgabelleitung (62) teilweise frei ist.

3. Vorrichtung zum Ausgeben (14) gemäß Anspruch 2, wobei das Halteelement (76) ein Element ist, welches dem Betätigungsstab (42) hinzugefügt ist.

4. Vorrichtung zum Ausgeben (14) gemäß Anspruch 2, wobei das Halteelement (76) innerhalb der Ausgabelleitung (62) geformt ist.

5. Vorrichtung zum Ausgeben (14) gemäß Anspruch 2, wobei das Halteelement (76) durch eine Verengung der Ausgabeleitung (62) ausgebildet ist.
6. Vorrichtung zum Ausgeben (14) gemäß irgendeinem der Ansprüche 2 bis 5, wobei der Sitz (74) durch eine Verengung der Ausgabeleitung (62) ausgebildet ist.
7. Vorrichtung zum Ausgeben (14) gemäß Anspruch 5 oder 6, wobei die Verengung der Ausgabeleitung (62) durch eine lokale Einschnürung des Betätigungsstabs (42) ausgebildet ist.
8. Vorrichtung zum Ausgeben (14) gemäß den Ansprüchen 5 und 7 zusammen, wobei der Stab (42) ausgerichtet zu dem Halteelement (76) mindestens eine Aussparung (122) aufweist, die in seiner seitlichen Seite (61) ausgebildet ist, wobei die Aussparung (122) in einem Abstand von der zentralen Achse der Ausgabeleitung (62) ist, der kleiner als ein durchschnittlicher Radius der Ausgabeleitung (62) ist.
9. Vorrichtung zum Ausgeben (14) gemäß irgendeinem der Ansprüche 2 bis 8, wobei das Halteelement (76) mindestens einen axialen Kanal (84) für das Zirkulieren des Produktes definiert, wenn das bewegbare Element (72) in der Öffnungsposition ist.
10. Vorrichtung zum Ausgeben (14) gemäß irgendeinem der vorhergehenden Ansprüche, wobei das bewegbare Element (72) eine Kugel ist.
11. Verpackungsanordnung (10) eines kosmetischen Produktes, aufweisend einen Behälter (12), der ein kosmetisches Produkt enthält, und eine Ausgabevorrichtung (14), die den Behälter (12) verschließt, wobei die Ausgabevorrichtung (14) eine Ausgabevorrichtung wie diejenige gemäß irgendeinem der vorherigen Ansprüche ist.
12. Verfahren zum Herstellen einer Verpackungsanordnung gemäß Anspruch 11, aufweisend die folgenden aufeinanderfolgenden Schritte:
- Bereitstellen des Behälters (12) und des Ausgabeventils (30),
 - Schließen des Behälters (12) mit dem Ausgabeventil (30),
 - Befüllen des Behälters (12) durch Bewegen des Betätigungsstabes (42) in die Ausgabeposition und Einspritzen des kosmetischen Produktes unter Druck in die Ausgangsöffnung (66), und
 - Einsetzen des bewegbaren Elements (72) in die Ausgabeleitung (62).
13. Verfahren zum Herstellen gemäß Anspruch 12, auf-

weisend einen Schritt des Formens eines Halteelements (76), wobei der Schritt auf den Schritt des Einsetzens folgt.

Revendications

1. Dispositif (14) de distribution d'un produit sous forme aérosol, comprenant une valve de distribution (30) comportant :

- un corps de valve (40), définissant une chambre (52) intérieure au corps de valve (40) qui débouche à l'extérieur du corps de valve (40) par une ouverture d'entrée (54) du produit,
- une tige d'actionnement (42), insérée dans une ouverture de sortie (56) du corps de valve (40), la tige définissant un conduit intérieur de distribution (62), ledit conduit de distribution (62) débouchant à l'extérieur de la tige (42) par un orifice (64) d'entrée du produit et par un orifice (66) de sortie du produit, la tige d'actionnement (42) étant montée mobile dans la chambre (52) du corps de valve (40) entre une position de distribution du produit cosmétique, dans laquelle l'orifice d'entrée (64) est en communication fluide avec la chambre (52) et l'orifice de sortie (66) est disposé hors de la chambre (52), et une position de blocage du produit cosmétique, dans laquelle l'orifice d'entrée (64) n'est pas en communication fluide avec la chambre (52), et
- un organe (44) de rappel de la tige d'actionnement (42) vers sa position de blocage,

le dispositif de distribution (14) comprenant un clapet anti-retour (70),

caractérisé en ce que le clapet anti-retour (70) est disposé à l'intérieur de la tige d'actionnement (42), pour empêcher la circulation d'un fluide dans le conduit de distribution (62) depuis l'orifice de sortie (66) vers l'orifice d'entrée (64), ledit clapet anti-retour (70) comprenant un organe (72) monté mobile dans le conduit de distribution (62).

2. Dispositif de distribution (14) selon la revendication 1, dans lequel le clapet anti-retour (70) comprend en outre un siège (74) de réception de l'organe mobile (72) et un élément (76) de retenue de l'organe mobile (72) disposés successivement dans le conduit de distribution (62), l'élément de retenue (76) étant interposé, le long du conduit de distribution (62), entre le siège (74) et l'orifice de sortie (66), l'organe mobile (72) étant monté mobile dans le conduit de distribution (62) entre ledit siège (74) et ledit élément de retenue (76), entre une position fermée dans laquelle l'organe mobile (72) est reçu dans le siège (74), le conduit de distribution (62) étant intégralement obturé, et une position ouverte dans laquelle l'organe

- mobile (72) est en appui contre l'élément de retenue (76), le conduit de distribution (62) étant partiellement libre.
3. Dispositif de distribution (14) selon la revendication 2, dans lequel l'élément de retenue (76) est un élément rapporté sur la tige d'actionnement (42). 5
 4. Dispositif de distribution (14) selon la revendication 2, dans lequel l'élément de retenue (76) est surmoulé à l'intérieur du conduit de distribution (62). 10
 5. Dispositif de distribution (14) selon la revendication 2, dans lequel l'élément de retenue (76) est formé par un rétrécissement du conduit de distribution (62). 15
 6. Dispositif de distribution (14) selon l'une quelconque des revendications 2 à 5, dans lequel le siège (74) est formé par un rétrécissement du conduit de distribution (62). 20
 7. Dispositif de distribution (14) selon la revendication 5 ou 6, dans lequel le rétrécissement du conduit de distribution (62) est formé par un resserrement local de la tige d'actionnement (42). 25
 8. Dispositif de distribution (14) selon les revendications 5 et 7 prises ensemble, dans lequel la tige (42) présente, au droit de l'élément de retenue (76), au moins un évidement (122) formé dans sa face latérale (61), l'évidement (122) étant à une distance de l'axe central du conduit de distribution (62) inférieure à un rayon moyen du conduit de distribution (62). 30
 9. Dispositif de distribution (14) selon l'une quelconque des revendications 2 à 8, dans lequel l'élément de retenue (76) définit au moins un canal axial (84) de circulation du produit lorsque l'organe mobile (72) est en position ouverte. 35
 10. Dispositif de distribution (14) selon l'une quelconque des revendications précédentes, dans lequel l'organe mobile (72) est une bille. 40
 11. Ensemble (10) de conditionnement d'un produit cosmétique, comprenant un réservoir (12) contenant un produit cosmétique et un dispositif (14) de distribution fermant ledit réservoir (12), dans lequel le dispositif de distribution (14) est un dispositif de distribution selon l'une quelconque des revendications précédentes. 45
 12. Procédé de fabrication d'un ensemble de conditionnement selon la revendication 11, comprenant les étapes successives suivantes : 50
 - fourniture du réservoir (12) et de la valve de distribution (30),

- fermeture du réservoir (12) avec la valve de distribution (30),
- remplissage du réservoir (12) par déplacement de la tige d'actionnement (42) en position de distribution et injection du produit cosmétique sous pression dans l'orifice de sortie (66), et
- insertion de l'organe mobile (72) dans le conduit de distribution (62).

13. Procédé de fabrication selon la revendication 12, comprenant une étape de formation d'un élément de retenue (76), ladite étape faisant suite à l'étape d'insertion.

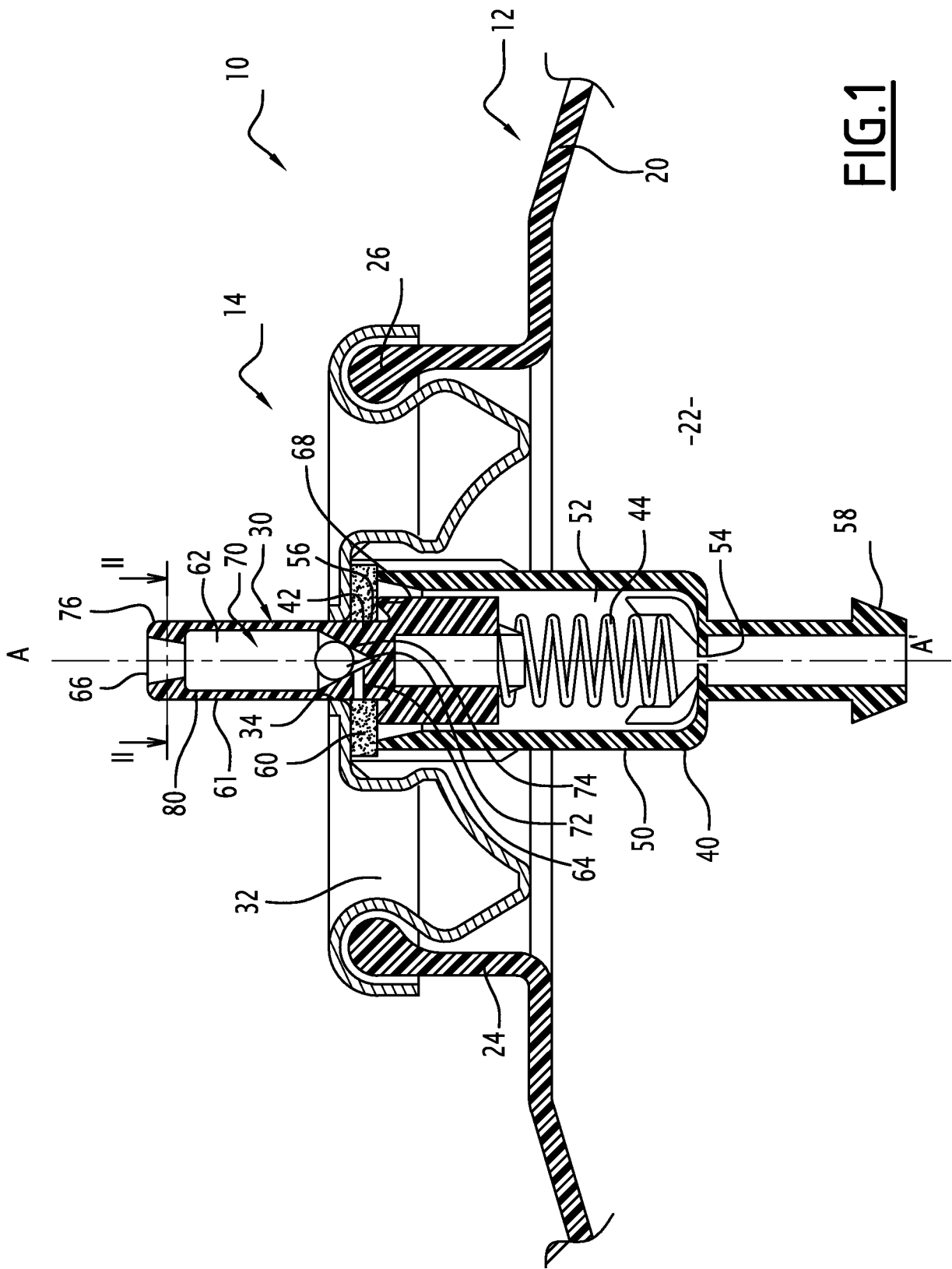
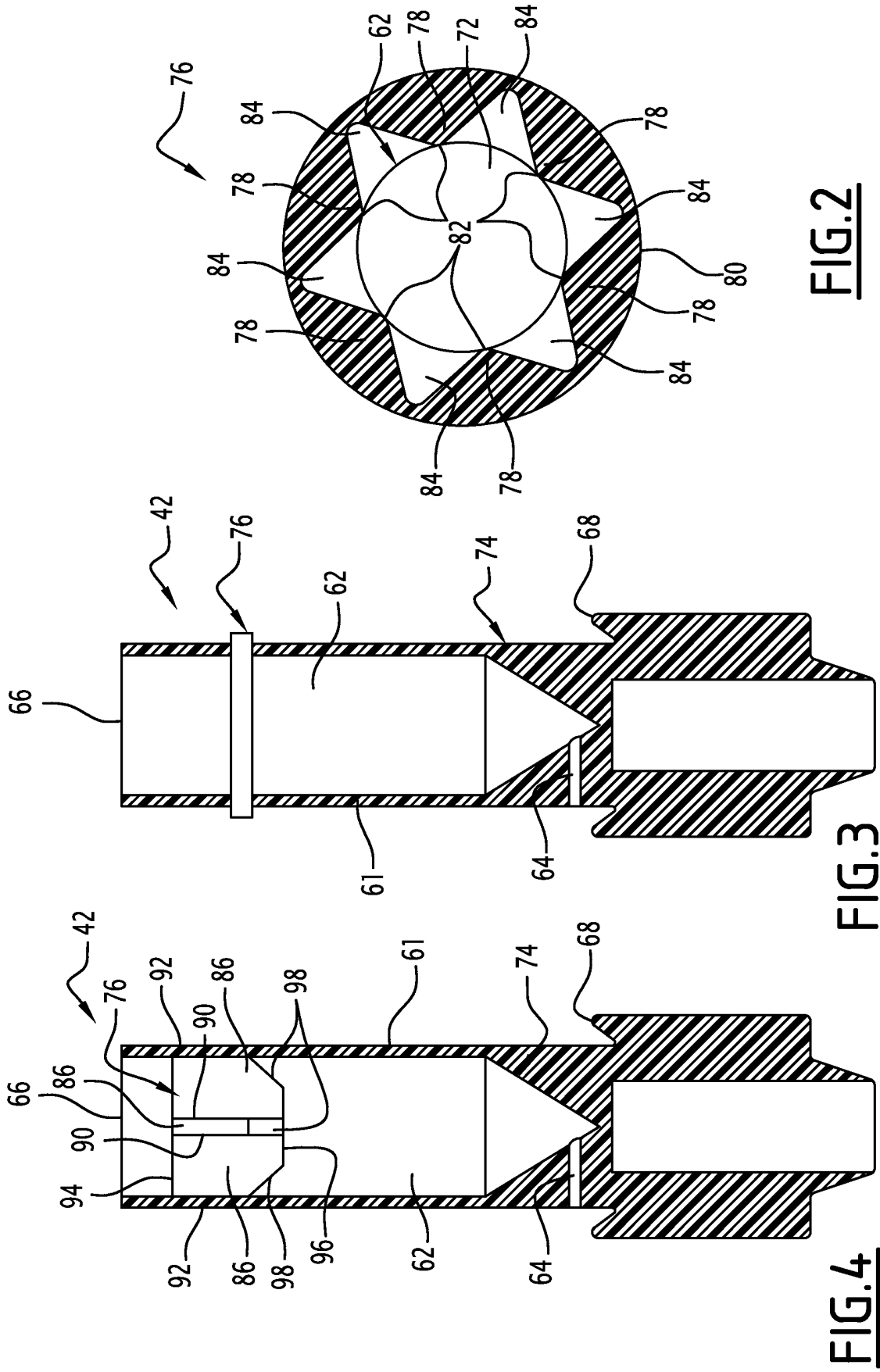


FIG. 1



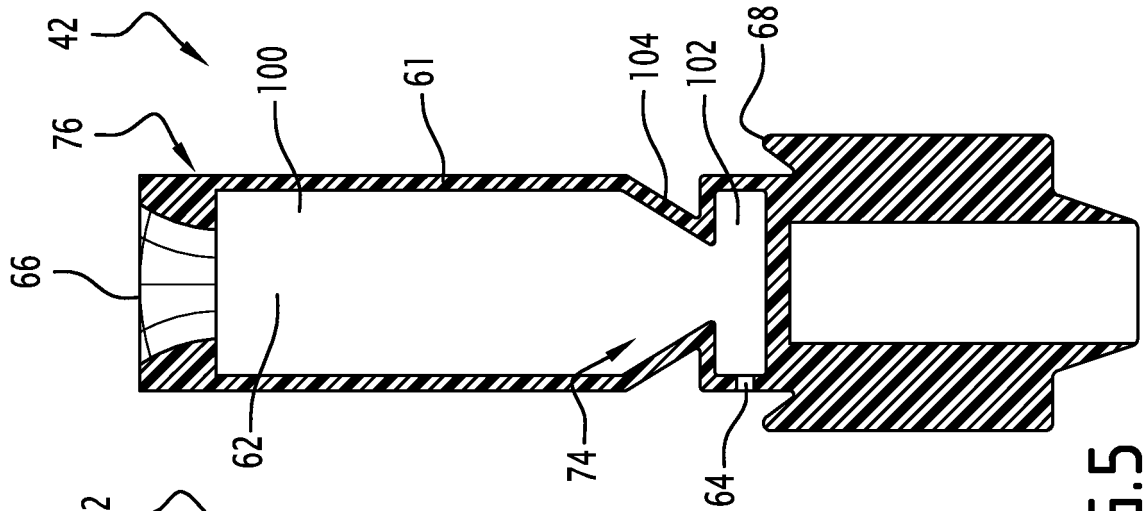


FIG. 5

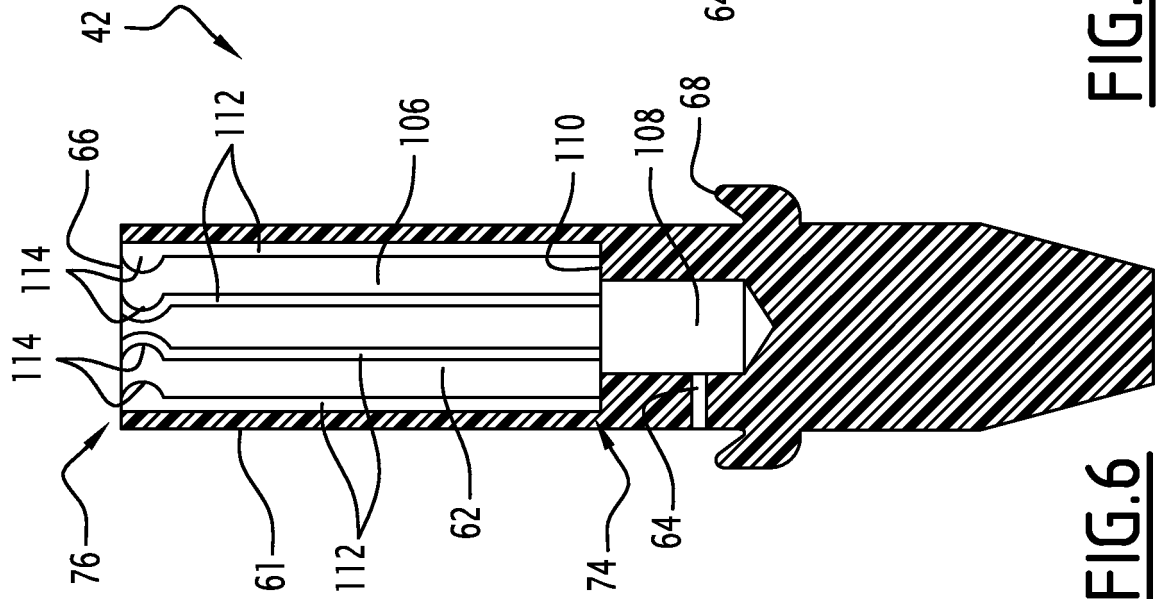


FIG. 6

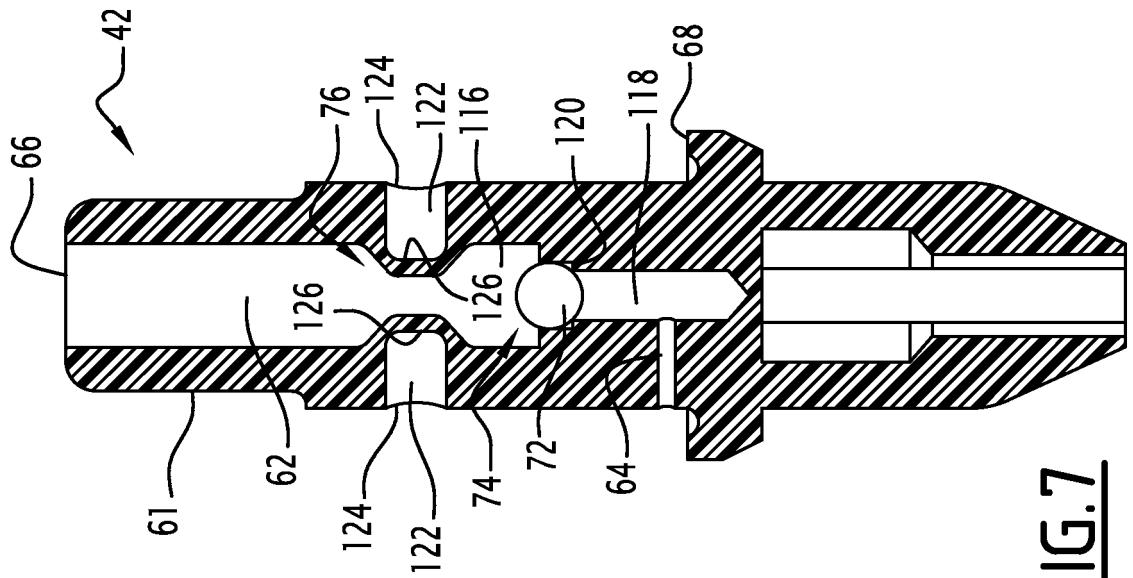


FIG. 7

REFERENCES CITED IN THE DESCRIPTION

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