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(54) **Refill system**

Nachfüllsystem

Système de recharge

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Description

Technical Field

[0001] The invention relates to a refill system, in particular for liquids.

Background Art

[0002] A refill system according to the preamble of claim 1 is known from WO 97/26210 A2, US 2012/158193 A1, CN 103213767 A and CN 103204315 A.

Extended Description of the Invention

[0003] The problem solved by the present invention is to further develop a refill system, in particular for refilling liquids, which is improved with regard to its sealing ability in a confined space.

This problem is solved by a refill system comprising the features of claim 1. Preferable embodiments are set forth in the dependent claims.

[0004] The refill system according to the invention comprises a container structure, having a wall with a refill opening, and a sealing structure, wherein the sealing structure is held by the container structure movably along the wall with the refill opening and is movable between a first position, which closes the refill opening, and a second position, which opens the refill opening.

The advantage of this arrangement is that the sealing structure moves in a direction perpendicular to the flow path of a liquid through the refill opening. Thereby, it is less likely that the sealing structure will be accidently brought into its second position by means of liquid pressure from within the container structure.

[0005] Further, the sealing structure comprises a container seal with at least one clearance hole for refill, preferably two clearance holes, more preferably three clearance, wherein the container seal is biased against the wall with the refill opening from the container structure by means of at least one elastic element such that the container seal is in liquid-tight contact with the wall.

The clearance hole allows a minimal displacement of the container seal in order to open the refill opening. Also, the biasing force acting on the container seal ensures the necessary liquid tightness.

[0006] It is in particular advantageous that the sealing structure is held inside the container structure so that it does not protrude from the outer circumference of the container structure.

This ensures that the sealing structure is less likely to be accidently displaced into its second position, because it remains hidden.

[0007] Further advantageous is a refill system, wherein the sealing structure is held slidably movable between the inner wall with the refill opening and an outer wall of the container structure.

The outer wall is capable of keeping the sealing structure close to the wall with the refill opening or at least preventing the sealing structure from distancing itself from said wall and said refill opening, which would result in a increased likelihood for leakage.

[0008] In that regard, it is advantageous that the outer wall is part of a container enclosure, which is fixedly attached to the outside of a liquid container, wherein both the container enclosure and the liquid container form part of the container structure.

This allows compensating for tolerances in production and providing an adjustable tight fit of the sealing structure between the inner and outer wall. It also simplifies the assembly.

[0009] Particularly advantageous is that the container enclosure is fixedly attached to the outside of the liquid container at the side with the wall with the refill opening.

This way the extra space needed at that side of the liquid container for the sealing structure is also used for attaching the enclosure and the container, wherein the sides of the container structure can be kept thin.

[0010] Further advantageous is a refill system, wherein the container enclosure is cone-shaped and basically corresponds to the shape of the liquid container at its side with the wall with the refill opening, such that the container enclosure can be put onto the liquid container with its base portion forming the outer wall.

An increased stability of the liquid container is the result of the above, because the enclosure can cover a large part of the container. At the same time the sealing structure is aesthetically hidden in what appears to be a slightly bigger liquid container.

[0011] Further advantageous is a refill system, wherein the sealing structure is held in its first position by form fit of an locking element with the container structure so that a movement of the sealing structure along the wall with the refill opening is prevented.

This allows a secure positioning of the locking element compared to a purely friction based positioning.

[0012] It is in particular advantageous that the form fit of the locking element with the container structure is held by a locking elastic element which biases the locking element in a direction towards the container structure.

Hence, the locking element is constantly urged to return to its locked position and reliably held there in order to prevent unintentional or accidental displacement of the sealing structure.

[0013] It is further particularly advantageous that a pushing force on the locking element against the biasing locking elastic element releases the form fit and thus allows a movement of the sealing structure along the wall with the refill opening into its second position.

This results in a two-step safety, because first a pushing force is required to unlock the sealing structure and second a sliding movement along the wall with the refill opening is required to reach the second position of the sealing structure.

[0014] Advantageously, the sealing structure is biased from the inside of the container structure in a direction

along the wall with the refill opening by means of a releasing elastic element.

The elastic element reduces the manual operation need for moving the sealing structure out of its first position while also maintaining the second position while a refill operation is carried out in order to avoid an unintentional displacement of the sealing structure toward its first position during the refill.

[0015] Further advantageously, the sealing structure is held together in a direction along the wall with the refill opening by means of a sealing frame structure. Preferably, said frame structure allows the insertion or removal of further sealing structure components in a direction different from the direction along the wall with the refill opening; More preferably, in a direction perpendicular to the wall with the refill opening.

Hence, any other sealing structure components, such as a container seal or refill seal, can be inserted separately and securely in a direction which is different from the movement direction of the sealing structure, which further simplifies the assembly. Further, regardless of the number of sealing structure components, they can be held together by the sealing frame structure, which can be moved either manually or automatically by means of the releasing elastic element in a direction along the wall with the refill opening.

[0016] It is in particular advantageous that the sealing structure comprises a conduit element which is liquid-tightly connected to the refill opening and leads to a refill seal which serves for abutment of a stem of a donor liquid container.

The conduit element can serve as a contact area for the releasing elastic element and/or as an inner support for the biasing elastic element. It could also be an extension serving to arrange the abutment for a stem of a donor liquid container in a desired location.

[0017] Further advantageously, the sealing structure closes in its first position and opens in its second position a ventilation opening.

The provision of a ventilation opening ensures a faster refill, because, while liquid is filled through the refill opening, air can be discharged through the ventilation opening. Closing and opening both openings with one sealing structure simplifies the operation of the refill system.

[0018] It is in particular advantageous that the ventilation opening is provided on the wall with the refill opening. Having both openings close by allows the sealing structure to have smaller dimensions.

[0019] Advantageously, a perfume bottle has the above described refill system. The particular use in a perfume bottle (flacon) is desirable, because perfumes are often changed depending on the user's mood or specific occasions. By providing such an efficient refill system, small liquid containers can often be refilled with different fragrances.

Brief Description of the Drawings

[0020]

Fig. 1 shows the embodiment according to the invention, where the sealing structure is in a first position which closes a refill opening.

Fig. 2 shows the embodiment according to the invention, where the sealing structure is in a second position which opens the refill opening.

Fig. 3 shows an exploded view of the refill system according to the invention shown in Figures 1 and 2.

Fig. 4 shows a variation of the embodiment according to the invention shown in Figures 1 to 3.

Fig. 5 shows a perfume bottle (flacon) with the refill system according to the invention at its bottom (towards the right edge of the sheet) and a mechanism for triggering the spray of said perfume bottle at its top (towards the left edge of the sheet), wherein the mechanism is not according to the invention.

Description of the Embodiment

[0021] Figures 1 and 2 show the assembled state of a refill system of a perfume bottle according to the invention. Figure 3 shows an exploded view of the bottom of the perfume bottle with the refill system and all of its elements.

[0022] The refill system 1 shown in Fig. 3 comprises a perfume bottle, i.e. a container structure 3, which is formed by an inner liquid container 5 and an outer container enclosure 7.

The bottom of the liquid container 5 has a wall with 9 a refill opening 11 and a ventilation opening 13 as well as a collar portion 15 further extending perpendicularly outwards from the wall 9 and having a bore 17 with an inner thread in the direction of the extension.

The container enclosure 7 is cone-shaped and basically corresponds to the shape of the liquid container 5 at its bottom side, i.e. its side with the wall 9 with the refill opening 11, such that the container enclosure 7 can be put onto the liquid container 5 from the bottom with its base portion forming an outer wall 19 abutting against the collar portion 15 of the liquid container 5. Said outer wall 19 is parallel to the wall 9 with the refill opening 11 and has a chamfered clearance hole 21 on the side of the collar portion 15 of the liquid container 5 and a partial cut-out 23 on the opposite side.

[0023] The container enclosure 7 is fixedly attached to the outside of the liquid container 5 at the side with the wall 9 with the refill opening 11 by means of a screw which reaches through the chamfered clearance hole 19 and is screwed into the bore 17 of the collar portion 15 of the liquid container 5.

[0024] Inside the container structure 3 a sealing structure 25 is held slidably movable between the inner wall

9 with the refill opening 11 and the outer wall 19 of the container structure 3 along the wall 9 with the refill opening 11. Thereby, the sealing structure 25 is movable between a first position, which closes the refill opening 11 and is shown in Fig. 1, and a second position, which opens the refill opening 11 and is shown in Fig. 2. The sealing structure 25 does not protrude from the outer circumference of the container structure 3.

As shown in Fig. 3, the sealing structure 25 has a container seal 27, a conduit element 29, a sealing elastic element 31 (in form of a coil spring), a locking tube element 33, a locking elastic element 35 (in form of a coil spring), a locking pin 37 and a sealing frame structure 39, which are inserted from one side of the sealing frame structure 39, which is the side towards the wall 9 with the refill opening 11 of the liquid container 5. The sealing structure 25 further has an elastic refill seal 41, which is inserted from the other side of the sealing frame structure 39 and biased by snap connection with the conduit element 29 liquid tightly against a portion of the frame structure 39. Hence, the sealing structure 25 is held together in a direction along the wall 9 with the refill opening 11 by means of the sealing frame structure 39, which allows the insertion or removal of further sealing structure components in a direction different from the direction along the wall 9 with the refill opening 11, in particular in a direction perpendicular to the wall 9 with the refill opening 11.

[0025] The above described sealing structure 25 is biased by a releasing elastic element 43 (in form of a coil spring) in a direction along the wall 9 with the refill opening 11. In other words, the releasing elastic element 43 being interposed between a side wall of the frame structure 39 and an inner undercut of the liquid container 5, which undercut is between the collar portion 15 and the wall 9 with the refill opening 11, urges the sealing structure 25 in a direction towards its second position. In this position, the sealing structure 25 abuts the inside of a side wall of the container enclosure 7. Further, a locking element 45 (in form of a flat button plate) is placed on the end of the locking pin 37 that is opposite to the end towards the wall 9 with the refill opening 11. This locking element 45 has a two-step width, such that it engages in a form fit with the partial cut-out 23 of the container enclosure 7, thus practically closing the cut-out 23 and being flush with the outer bottom face of the container enclosure 7.

[0026] The function of the refill system 1 will be described in the following, based on Figures 1 and 2.

[0027] In Fig. 1 the sealing structure 25 is held in its first position by form fit of the locking element 45 with the container structure 3, in particular the container enclosure 7, so that a movement of the sealing structure 25 along the wall 9 with the refill opening 11 and towards the its second position is prevented. That form fit of the locking element 45 with the container structure 3 is held by the locking elastic element 35 which biases the locking element 45 in a direction towards/against the container structure 3. The container seal 27 is biased against the wall 9 with the refill opening 11 by means of the sealing elastic element 31 and the locking elastic element 35 such that the container seal 27 is in liquid-tight contact with the wall 9. The container seal has three clearance holes 27a-c (from left to right in Fig. 3, for example); one 27a for refilling, one 27b for ventilation and one 27c for accommodating one end of the locking tube element 33. Regardless of its position, the container seal 27 is biased against the wall 9 with the refill opening 11 from the container structure 3. Both, the refill opening 11 and the ventilation opening 13 are closed by the container seal 27, when the sealing structure 25 is in its first position.

[0028] In Fig. 2 the sealing structure 25 is in its second position. This position is reached when a pushing force is exercised on the locking element 45 against the biasing locking elastic element 35, so that the form fit is released and a movement of the sealing structure 25 along the wall 9 with the refill opening 11 into its second position becomes possible. Because the sealing structure 25 is biased from the inside of the container structure 3 in a direction along the wall 9 with the refill opening 11 by means of the releasing elastic element 43 towards the second position, the sealing structure 25 is automatically moved into its second position and stopped by abutment against the inside of the side wall of the container enclosure 7. In this second position the clearance hole for refill 27a and the clearance hole for ventilation 27b align with the respective refill opening 11 and ventilation opening 13 in the liquid container 5. Also, the elastic refill seal 41 becomes exposed to the outside such that a stem of a liquid donor tank can be brought into proper placement. At the same time, the locking element 45 is pushed sideways outside the container enclosure 3, so that it can be manually pushed back towards the inside in order to return the sealing structure 25 into its first position.

In the second position of the sealing structure 25, liquid can flow through a stem of a liquid donor tank, pass a central clearance hole in the refill seal 41, continue through the conduit element 29, pass the clearance hole for refill 27a in the container seal 27 and the refill opening 11 before entering the liquid container 5, which is shown by the two coaxial arrows pointing upwards. Hence, the conduit element 29 is liquid-tightly connected to the refill opening 11 and leads to a refill seal 41 which serves for abutment of a stem of a donor liquid container.

[0029] While liquid is being refilled into the liquid container 5, gas can escape to the outside through the ventilation opening 13, a clearance for ventilation 27b in the container seal 27 and a ventilation path, which is created between an intermediate wall of the frame structure 39 on one side and components 29 and 41 for the refill path on the other, which is shown by the downwards pointing arrow.

[0030] The following points describe further advantageous features of the invention, which can individually be combined with the above embodiment:

- The sealing structure 25 is sandwiched between

walls 9, 19 of the container structure 3, preferably between the liquid container 5 and the container enclosure 7. This ensures a tight hold of the sealing structure 25, such that it seals and remains movable at the same time.

- The liquid container 5 and the container enclosure 7 are preferably connected by means of a snap connection, preferably a detachable snap connection. Such a configuration does not require additional elements, such as screws. Also, the sealing structure 25 can be reached for maintenance/replacement easily and tool-free.

- The sealing structure 25 is nondestructively removable and replaceable from the container structure 3. This offers greater safety during maintenance and better failure/damage analysis.

- The sealing structure 25 comprises at least an elastic container seal 27 that is movable along the wall 9 with the refill opening 11, wherein one face of the container seal is biased by the container structure 3 against the wall 9 with the refill opening 11 and the opposite face is at least partially exposed to the outside and providing a surface structure that is suitable for moving the elastic container seal 25 manually along the wall with the refill opening.
  This further simplifies the configuration of the sealing structure 25 to only one element, namely the elastic container seal 27.

- The liquid container 5 has a bottom wall portion 47, as shown in Fig. 4, that is capable of holding the sealing structure 25 to the liquid container 5 and guiding the sealing structure 25 between its first and second position. Preferably, the bottom wall portion 47 extends perpendicular to the wall 9 with the refill opening 11 and is capable of enclosing the sealing structure 25 there between. More preferably, the bottom wall portion 47 is capable of guiding the sealing structure 25 by means of a path 49, which path 49 is preferably cut out through said bottom wall portion 47 to provide a track for an sidewise extension 51 of the sealing structure 25, preferably a pin shaped element.
  Thereby, when the liquid container 5 and the container enclosure 7 are disassembled from each other, the sealing structure is held with the liquid container 5, such that none of its components will separate and fall off, which makes an exchange of container enclosure, for example with one having a different color, easier.

- The sealing structure 25 comprises at least an elastic container seal 27 and a less elastic frame structure 39 that supports, preferably by basically surrounding it, and moves the container seal 27 along the wall 9 with the refill opening 11 upon manual displacement of the frame structure 39.
  This way friction can be reduced, due to the reduced elasticity of the frame structure 39 and the resulting reduced friction of the frame structure 39 with the container structure 3 compared to a sealing structure 25 that only consists of an elastic container seal 27.

Claims

1. Refill system (1) comprising a container structure (3), having a wall (9) with a refill opening (11), and a sealing structure (25), wherein
   the sealing structure (25) is held by the container structure (3) movably along the wall (9) with the refill opening (11) and is movable between a first position, which closes the refill opening (11), and a second position, which opens the refill opening (11),
   the sealing structure (25) comprising a container seal (27) with at least
   one clearance hole (27a), preferably two clearance holes (27a, 27b), more preferably three clearance holes (27a, 27b, 27c),
   characterized in that the container seal (27) is biased against the wall (9) with the refill opening (11) from the container structure (3) by means of at least one elastic element (31, 35) such that the container seal (27) is in liquid-tight contact with the wall (9).

2. Refill system (1) according to claim 1, wherein
   the sealing structure (25) is held inside the container structure (3) so that it does not protrude from the outer circumference of the container structure (3).

3. Refill system (1) according to claim 1 or 2, wherein
   the sealing structure (25) is held slidably movable between the inner wall (9) with the refill opening (11) and an outer wall (19) of the container structure (3).

4. Refill system (1) according to claim 3, wherein
   the outer wall (19) is part of a container enclosure (7), which is fixedly attached to the outside of a liquid container (5), wherein both, the container enclosure (7) and the liquid container (5), form part of the container structure (3).

5. Refill system (1) according to claim 4, wherein
   the container enclosure (7) is fixedly attached to the outside of the liquid container (5) at the side with the wall (9) with the refill opening (11).

6. Refill system (1) according to claim 4 or 5, wherein
   the container enclosure (7) is cone-shaped and basically corresponds to the shape of the liquid container (5) at its side with the wall (9) with the refill opening (11), such that the container enclosure (7) can be put onto the liquid container (5) with its base

portion forming the outer wall (19).

7. Refill system (1) according to claims 1 to 6, wherein the sealing structure (25) is held in its first position by form fit of an locking element (45) with the container structure (3) so that a movement of the sealing structure (25) along the wall (9) with the refill opening (11) is prevented.

8. Refill system (1) according to claim 7, wherein the form fit of the locking element (45) with the container structure (3) is held by a locking elastic element (35) which biases the locking element (45) in a direction towards the container structure (3).

9. Refill system (1) according to claim 8, wherein a pushing force on the locking element (45) against the biasing locking elastic element (35) releases the form fit and thus allows a movement of the sealing structure (25) along the wall (9) with the refill opening (11) into its second position.

10. Refill system (1) according to claims 1 to 9, wherein the sealing structure (25) is biased from the inside of the container structure (3) in a direction along the wall (9) with the refill opening (11) by means of a releasing elastic element (43).

11. Refill system (1) according to claim 10, wherein the sealing structure (25) comprises a conduit element (29) which is liquid-tightly connected to the refill opening (11) and leads to a refill seal (41) which serves for abutment of a stem of a donor liquid container.

12. Refill system (1) according to claims 1 to 11, wherein the sealing structure (25) closes in its first position and opens in its second position a ventilation opening (13).

13. Refill system (1) according to claim 12, wherein the ventilation opening (13) is provided on the wall (9) with the refill opening (11).

14. Perfume bottle with a refill system (1) according to one of the preceding claims.

Patentansprüche

1. Nachfüllsystem (1) mit einer Behälterstruktur (3), die eine Wand (9) mit einer Nachfüllöffnung (11) hat, sowie einer Dichtungsstruktur (25), wobei
die Dichtungsstruktur (25) durch die Behälterstruktur (3) entlang der Wand (9) mit der Nachfüllöffnung (11) bewegbar gehalten ist und zwischen einer ersten Position, die die Nachfüllöffnung (11) verschließt, und einer zweiten Position bewegbar ist, die die Nachfüllöffnung (11) öffnet,
wobei die Dichtungsstruktur (25)
eine Behälterdichtung (27) mit mindestens einem Durchgangsloch (27a), bevorzugt zwei Durchgangslöchern (27a, 27b), mehr bevorzugt drei Durchgangslöchern (27a, 27b, 27c) aufweist,
dadurch gekennzeichnet, dass die Behälterdichtung (27) gegen die Wand (9) mit der Nachfüllöffnung (11) aus der Behälterstruktur (3) so mittels mindestens eines elastischen Elements (31, 35) vorgespannt ist, dass die Behälterdichtung (27) in flüssigkeitsdichtem Kontakt mit der Wand (9) ist.

2. Nachfüllsystem (1) nach Anspruch 1, wobei die Dichtungsstruktur (25) so innerhalb der Behälterstruktur (3) gehalten ist, dass sie nicht aus dem äußeren Umfang der Behälterstruktur (3) vorsteht.

3. Nachfüllsystem (1) nach Anspruch 1 oder 2, wobei die Dichtungsstruktur (25) gleitend bewegbar zwischen der Innenwand (9) mit der Nachfüllöffnung (11) und einer Außenwand (19) der Behälterstruktur (3) gehalten ist.

4. Nachfüllsystem (1) nach Anspruch 3, wobei die Außenwand (19) Teil einer Behältereinlage (7) ist, die an der Außenseite eines Flüssigkeitsbehälters (5) fest angebracht ist, wobei sowohl die Behältereinlage (7) als auch der Flüssigkeitsbehälter (5) einen Teil der Behälterstruktur (3) ausbilden.

5. Nachfüllsystem (1) nach Anspruch 4, wobei die Behältereinlage (7) an der Außenseite des Flüssigkeitsbehälters (5) an der Seite mit der Wand (9) mit der Nachfüllöffnung (11) fest angebracht ist.

6. Nachfüllsystem (1) nach Anspruch 4 oder 5, wobei die Behältereinlage (7) kegelförmig ist und im Wesentlichen der Form des Flüssigkeitsbehälters (5) an dessen Seite mit der Wand (9) mit der Nachfüllöffnung (11) entspricht, so dass die Behältereinlage (7) auf dem Flüssigkeitsbehälter (5) angeordnet werden kann, wobei ihr Bodenabschnitt die Außenwand (19) ausbildet.

7. Nachfüllsystem (1) nach Ansprüchen 1 bis 6, wobei die Dichtungsstruktur (25) in ihrer ersten Position durch Formschluss eines Verriegelungselements (45) mit der Behälterstruktur (3) gehalten ist, so dass eine Bewegung der Dichtungsstruktur (25) entlang der Wand (9) mit der Nachfüllöffnung (11) verhindert ist.

8. Nachfüllsystem (1) nach Anspruch 7, wobei der Formschluss des Verriegelungselements (45) mit der Behälterstruktur (3) durch ein elastisches Verriegelungselement (35) gehalten ist, das das Verriegelungselement (45) in einer Richtung auf die

Behälterstruktur (3) zu vorspannt.

9. Nachfüllsystem (1) nach Anspruch 8, wobei eine Druckkraft auf das Verriegelungselement (45) gegen die Vorspannung des elastischen Verriegelungselements (35) den Formschluss löst und dadurch eine Bewegung der Dichtungsstruktur (25) entlang der Wand (9) mit der Nachfüllöffnung (11) in ihre zweite Position ermöglicht.

10. Nachfüllsystem (1) nach Ansprüchen 1 bis 9, wobei die Dichtungsstruktur (25) vom Inneren der Behälterstruktur (3) in einer Richtung entlang der Wand (9) mit der Nachfüllöffnung (11) mittels eines elastischen Freigabeelements (43) vorgespannt ist.

11. Nachfüllsystem (1) nach Anspruch 10, wobei die Dichtungsstruktur (25) ein Leitungselement (29) aufweist, das flüssigkeitsdicht mit der Nachfüllöffnung (11) verbunden ist und zu einer Nachfülldichtung (41) führt, die zum Anliegen eines Stiels eines Spenderflüssigkeitsbehälters dient.

12. Nachfüllsystem (1) nach den Ansprüchen 1 bis 11, wobei die Dichtungsstruktur (25) in ihrer ersten Position eine Lüftungsöffnung (13) schließt und in ihrer zweiten Position öffnet.

13. Nachfüllsystem (1) nach Anspruch 12, wobei die Lüftungsöffnung (13) an der Wand (9) mit der Nachfüllöffnung (11) vorgesehen ist.

14. Parfümflasche mit einem Nachfüllsystem (1) nach einem der vorstehenden Ansprüche.

Revendications

1. Système de recharge (1) comprenant une structure de récipient (3) ayant une paroi (9) avec une ouverture de recharge (11) et une structure d'étanchéité (25), dans lequel
la structure d'étanchéité (25) est maintenue par la structure de récipient (3) de manière mobile le long de la paroi (9) avec l'ouverture de recharge (11) et est mobile entre une première position qui ferme l'ouverture de recharge (11) et une seconde position qui ouvre l'ouverture de recharge (11),
la structure d'étanchéité (25) comprenant un joint d'étanchéité de récipient (27) avec au moins un trou de passage (27a), de préférence deux trous de passage (27a, 27b), encore de préférence trois trous de passage (27a, 27b, 27c), **caractérisé en ce que** le joint d'étanchéité de récipient (27) est sollicité contre la paroi (9) avec l'ouverture de recharge (11) à partir de la structure de récipient (3) au moyen d'au moins un élément élastique (31, 35) de sorte que le joint d'étanchéité de récipient (27) est en contact étanche au liquide avec la paroi (9).

2. Système de recharge (1) selon la revendication 1, dans lequel
la structure d'étanchéité (25) est maintenue à l'intérieur de la structure de récipient (3) de sorte qu'elle ne fait pas saillie de la circonférence externe de la structure de récipient (3).

3. Système de recharge (1) selon la revendication 1 ou 2, dans lequel
la structure d'étanchéité (25) est maintenue de manière mobile par coulissement entre la paroi interne (9) avec l'ouverture de recharge (11) et une paroi externe (19) de la structure de récipient (3).

4. Système de recharge (1) selon la revendication 3, dans lequel
la paroi externe (19) fait partie d'une enveloppe de récipient (7) qui est fixée de manière fixe sur l'extérieur d'un récipient de liquide (5), dans lequel à la fois l'enveloppe de récipient (7) et le récipient de liquide (5) font partie de la structure de récipient (3).

5. Système de recharge (1) selon la revendication 4, dans lequel
l'enveloppe de récipient (7) est fixée de manière fixe sur l'extérieur du récipient de liquide (5) du côté de la paroi (9) avec l'ouverture de recharge (11).

6. Système de recharge (1) selon la revendication 4 ou 5, dans lequel
l'enveloppe de récipient (7) est en forme de cône et correspond fondamentalement à la forme du récipient de liquide (5) de son côté de paroi (9) avec l'ouverture de recharge (11), de sorte que l'enveloppe de récipient (7) peut être placée sur le récipient de liquide (5) avec sa partie de base qui forme la paroi externe (19).

7. Système de recharge (1) selon les revendications 1 à 6, dans lequel
la structure d'étanchéité (25) est maintenue dans sa première position par un ajustement de forme d'un élément de blocage (45) avec la structure de récipient (3) de sorte qu'un mouvement de la structure d'étanchéité (25) le long de la paroi (9) avec l'ouverture de recharge (11) est empêché.

8. Système de recharge (1) selon la revendication 7, dans lequel
l'ajustement de forme de l'élément de blocage (45) avec la structure de récipient (3) est maintenu par un élément élastique de blocage (35) qui sollicite l'élément de blocage (45) dans une direction vers la structure de récipient (3).

9. Système de recharge (1) selon la revendication 8, dans lequel
une force de poussée sur l'élément de blocage (45) contre l'élément élastique de blocage de sollicitation (35) libère l'ajustement de forme et permet ainsi un mouvement de la structure d'étanchéité (25) le long de la paroi (9) avec l'ouverture de recharge (11) dans sa seconde position.

10. Système de recharge (1) selon les revendication 1 à 9, dans lequel
la structure d'étanchéité (25) est sollicitée à partir de l'intérieur de la structure de récipient (3) dans une direction le long de la paroi (9) avec l'ouverture de recharge (11) au moyen d'un élément élastique de libération (43).

11. Système de recharge (1) selon la revendication 10, dans lequel
la structure d'étanchéité (25) comprend un élément de conduit (29) qui est raccordé de manière étanche au liquide à l'ouverture de recharge (11) et mène à un joint d'étanchéité de recharge (41) qui sert de butée pour une tige d'un récipient de liquide donneur.

12. Système de recharge (1) selon les revendications 1 à 11, dans lequel
la structure d'étanchéité (25) ferme, dans sa première position et ouvre, dans sa seconde position, une ouverture de ventilation (13).

13. Système de recharge (1) selon la revendication 12, dans lequel
l'ouverture de ventilation (13) est prévue sur la paroi (9) avec l'ouverture de recharge (11).

14. Flacon de parfum avec un système de recharge (1) selon l'une des revendications précédentes.

FIG. 1

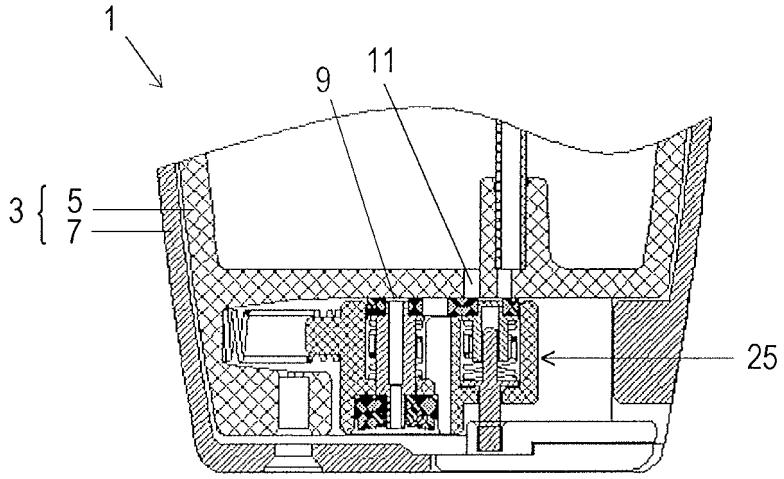


FIG. 2

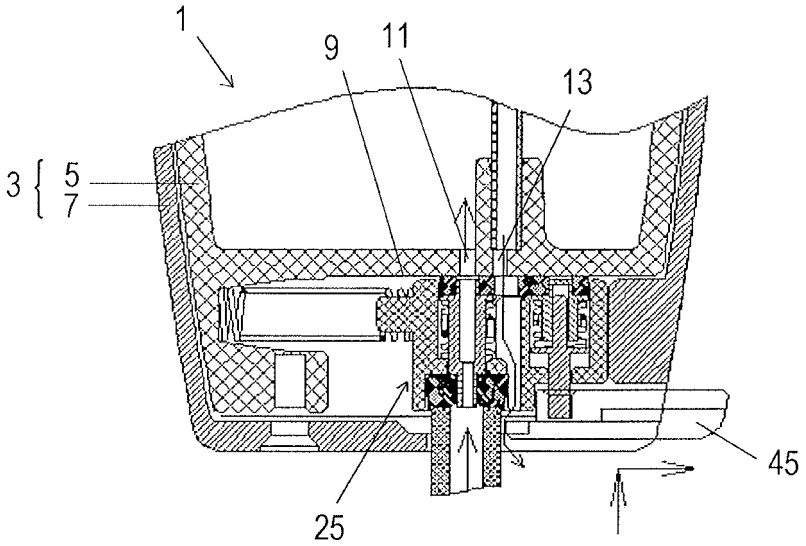


FIG. 3

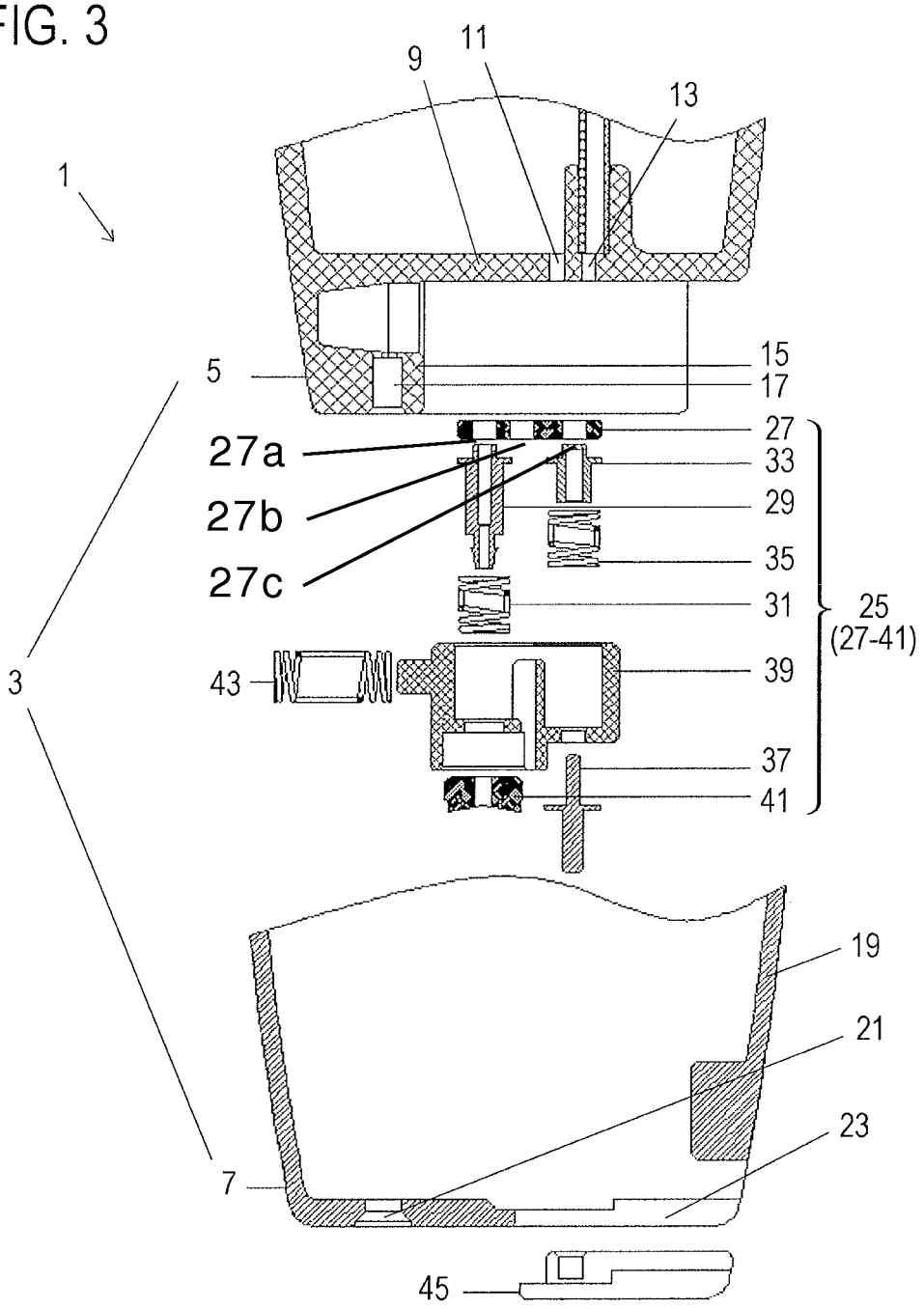

1
3
5
7
9
11
13
15
17
19
21
23
25
(27-41)
27
27a
27b
27c
29
31
33
35
37
39
41
43
45

FIG. 4

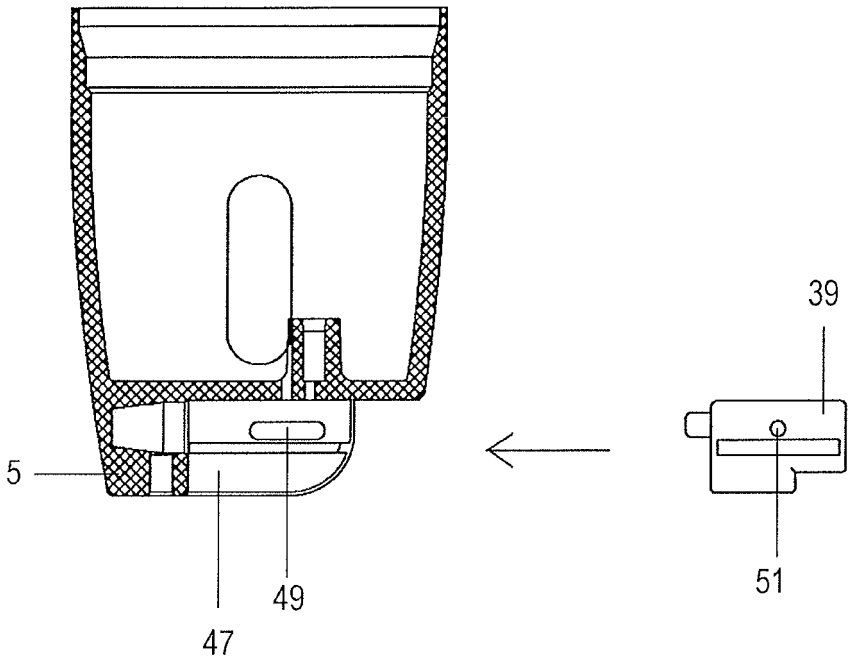
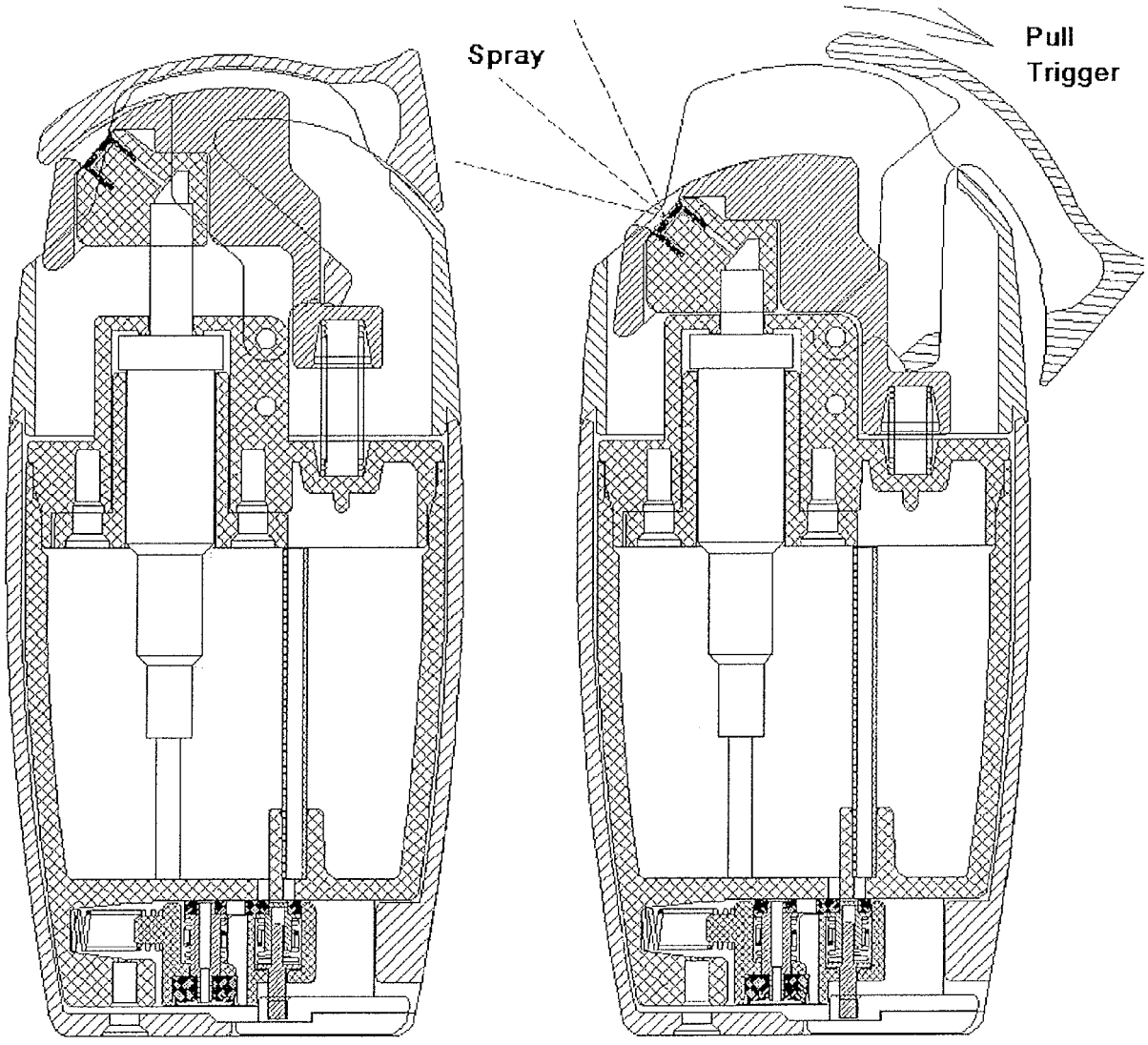


FIG. 5



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