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(54) **Dispenser button for dispensers**

Spenderknopf für eine Spendervorrichtung

Bouton pour un distributeur

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Description

[0001] The object of the present invention is a dispenser button to be applied to dispensers, which are applicable to bottles or the like, e.g. dispensers of liquid detergents.

[0002] In the context of the present invention, the term "dispenser button" means the slidably movable element positioned on the top of dispensers, applicable to bottles and the like, which is pressed downwards by a user to operate the dispenser and dispense the product contained in the container.

[0003] Dispenser buttons are largely known for their simplicity of use because the dispenser button, which operates together with a small pump positioned under it, directly dispenses a product as the immediate consequence of the downwards pressure on the dispensing button.

[0004] WO 02/43872 A2 discloses a dispenser button according to the preamble of claim 1.

[0005] In order to prevent accidental leaks of product, for example due to inadvertent operation of the dispenser, the dispenser buttons currently known may be enabled to reach a locking position in which they are prevented (e.g. by means of suitable undercuts) from moving downwards and hence, from operating the pump which returns the product from the container.

[0006] Said locking position is generally identified by a position of the dispenser button being angularly rotated about the lowering axis as compared to the position of normal dispensing.

[0007] If on the one hand said feature allows the risk of accidental leaks of product to be prevented, on the other, it is not at all effective should the integrity of the contents require being protected, e.g. prior to purchasing, because the simple positioning of the dispenser button in the closed configuration cannot exclude previous dispensing of product.

[0008] In other words, dispensers of known type are not capable of forming a "tamper-evident seal" designed to surely guarantee that the product has not been previously dispensed and hence that the container and its contents have not been tampered with. In this context, the technical task on which the present invention is based is to propose a dispenser button for dispensers, applicable to bottles or the like, which overcomes the above-mentioned drawbacks of the known art.

[0009] In particular, it is the object of the present invention to provide a dispenser button for dispensers, applicable to bottles or the like, capable of ensuring the integrity of the product contained in the container to which the dispenser is applied.

[0010] In particular, it is the object of the present invention to provide a dispenser button for dispensers, applicable to bottles or the like, capable of indicating previous use of the dispenser ("tamper-evident" function).

[0011] The technical task explained and the objects specified are substantially achieved by a dispenser button

for dispensers, applicable to bottles or the like, comprising the technical features detailed in one or more of the appended claims.

[0012] Further features and advantages of the present invention will become more apparent by the approximate, and thus non-limiting, description of a preferred but not exclusive embodiment of a dispenser button for dispensers, applicable to bottles or the like, as shown in the accompanying drawings, in which:

- figure 1 is a perspective view of a dispenser button according to the present invention;
- figure 2 is a sectional view, according to a vertical plane, of the dispenser button of figure 1 in a first configuration;
- figure 3 depicts the sectional view of figure 2, in which the dispenser button is in a second configuration;
- figure 4 depicts the sectional view of figure 2, in which the dispenser button is in a ready-to-use configuration;

[0013] In accordance with the accompanying drawings, the numeral 1 denotes in its entirety a dispenser button for dispensers, applicable to bottles or the like, in accordance with the present invention.

[0014] The dispenser button 1 comprises a dispensing body 2 formed by a central body 3 to the top of which a head 4 is connected.

[0015] As seen in figures 2 and 3, the central body 3 has a cylindrical outer shell 3a having an inlet opening 5 and extending about an axis "X" coinciding with the direction of movement of the dispenser button 1 when it is pressed by a user.

[0016] The head 4 has a spout 6 which extends in a plane which is transversal, preferably perpendicular, to the axis "X", moving away from axis "X" itself.

[0017] At the free end of the spout 6 is a dispensing opening 7, which is in fluid communication with the inlet opening 5 through an inner duct 8 which extends between the two openings 5, 7.

[0018] As shown in figures 2 and 3, the inner duct 8 extends for a first stretch 8a along the axis "X", preferably coaxial thereto, and for a second stretch 8b transversally to the axis "X" up to reaching the dispensing opening 7.

[0019] The first stretch 8a of the inner duct 8 is concentric to the cylindrical shell 3a and is connected to the latter by ribs 9 positioned on diametral lines of the central body 3. Said ribs 9 are engageable with specific portions receiving a pump (not shown because of known type) designed to suck the liquid product up from the container so that the liquid can be dispensed when the dispenser button 1 is pressed.

[0020] In particular, the first stretch 8a of the inner duct 8 has, in the lower part, holding means 10 which are engageable with the pump rod, e.g. with snap-on coupling, and in the top part, stopping ribs 11 for the pump rod, which, during assembly, unambiguously determine the position of the rod with respect to the central body 3,

since the top surface of the rod abuts on the lower surface of the stopping ribs 11. The head 4 offers on its top outer surface 4a a zone where the user may press to lower the dispenser button 1 and hence operate the pump.

[0021] The spout 6, which forms an extension of head 4 transversally to the axis "X", has, at the dispensing opening 7, a closing element 12 acting on the dispensing opening 7 to block it at least partly, preferably completely. Thus, the closing element 12 blocks, preferably prevents, the outflow of the liquid product from the dispensing opening 7.

[0022] The closing element 12 can be irreversibly separated from the spout 6 to allow a normal outflow of the liquid product from the dispensing opening 7. Preferably, the closing element 12 is at least partly made in one piece with the dispensing body 2, and even more preferably is completely made in one piece with the dispensing body 2.

[0023] In greater detail, as shown in figures 2 and 3, the closing element 12 has:

- a first portion 12a integral with the dispensing body 2 and equipped with an inlet opening 13, facing onto the dispensing opening 7 of the dispensing body 2, an outlet 14 and a duct 15 extending between the inlet opening and the outlet 13, 14 of the closing element, and
- a second portion 12b acting on the outlet 14 to form a flap for closing the latter.

[0024] The duct 15 of the closing element 12 forms an uninterrupted extension of the inner duct 8 of the dispensing body 2.

[0025] The closing element 12 is joined to the dispensing body 2 by means of a stretch having a reduced resistant section 16, the section (i.e. the thickness of the walls) being preferably less than resistant sections of the dispensing body 2 and of the closing element 12. This promotes the manual detachment of the closing element 12 from the dispensing body 2 by breaking the stretch having a reduced resistant section 16 in such a way as to uncover the dispensing opening 7. Preferably, the stretch having a reduced resistant section 16 is formed by at least one notch 17 made in an outer surface of the dispenser button 1 and positioned between the dispensing body 2 and the closing element 12. Therefore, the stretch having a reduced resistant section 16 forms a pre-weakened easy breaking section.

[0026] In accordance with the embodiment shown, the inner duct 8 of the dispensing body 2 and the outer surface of said dispensing body 2 have, at the dispensing opening 7, a cross-section that is substantially quadrilateral, preferably square or rectangular.

[0027] In this configuration, the stretch having a reduced resistant section 16 is formed by a series of notches 17, preferably four, being angularly oriented at about 90 degrees from each other and positioned in a plane substantially perpendicular to the axis of the inner duct 8 of the dispensing body 2 at the dispensing opening 7.

[0028] In an embodiment not shown, the notches 17 are equipped with small holes designed to further reduce the resistant section of the stretch having a reduced resistant section 16.

[0029] The second portion 12b (flap) of the closing element 12 is interfittingly connected to the first portion 12a of the closing element 12 to keep the outlet 14 of the closing element 12 at least partly, preferably completely, blocked.

[0030] In greater detail, the second portion 12b of the closing element 12 can be irreversibly connected to the first portion 12a in such a way that, once they have been connected to each other, the two portions cannot be separated without irreversibly and visibly damaging the closing element 12. This results in the closing element forming a "tamper-evident" element which requires being removed for the liquid product to be dispensed. However, this removal is irreversible because it requires breaking the above-mentioned stretch having a reduced section 16 and hence making actual tampering of the dispenser unambiguous (figure 4).

[0031] In accordance with the embodiment shown, the first portion 12a of the closing element 12 has a hole 18 positioned in a top part thereof, while the second portion 12b is applied, by means of hinging, to a lower part of the first portion 12a and is equipped with a stopping tooth 19, or more generally a projection, which can stably, and preferably irreversibly, be engaged in the hole 18.

[0032] As shown in figure 1, the first portion 12a of the closing element 12 is obtained by a top wall and by two side walls, and is open at the bottom, where it can be closed by the flap 12b. The top and side walls of the first portion 12a follow the curvilinear trajectory of the spout 6, so as to be joined to it in an aesthetically pleasing fashion. Approximately in the middle of the top wall is the hole 18, which is designed to receive the stopping tooth 19, which is in turn approximately positioned in the middle of the flap 12b. The reciprocal position of the hole 18 and the stopping tooth 19 is such that by closing the flap 12b by rotating it on its hinge, the stopping tooth 19 enters the hole 18. The coupling between the hole 18 and the stopping tooth 19 is such that an interference occurs between the walls of the stopping tooth 19 and the walls of the hole 18, so that once they are fixed to each other, it is impossible to open the flap 12b without tools or great difficulty, thus making tampering evident. Preferably, in the closed position, the side walls of the flap 12b interfere with the inner side walls of the first portion 12a of the closing element 12. This interference has the object of decreasing or zeroing the passage areas of the product in the event an attempt is made to operate the pump without first breaking the closing element 12.

[0033] Preferably, the dispenser button 1 is obtained by means of a single injection moulding process, with the flap 12b in the open position so as to allow the extraction of the moulding element (core) which creates the inner duct 8.

[0034] Hence the flap 12b is hinged to the first portion

12a by deforming a connecting portion between them, preferably a portion with reduced thickness with peculiar features of deformability.

[0035] The flap 12b is then closed by an automatic mechanism at the end of the moulding process but before the dispenser button 1 is expelled from the mould. Thus, the dispenser button 1 leaves the mould with the two portions 12a, 12b of the closing element already irreversibly fixed to each other and ready for assembly on the pump, without further operations being required.

[0036] In other words, the configuration in figure 2 only occurs at the moulding stage, in order to allow the extraction of the moulding element (core), and can no longer be achieved once moulding has been completed.

[0037] The present invention achieves the objects proposed and overcomes the drawbacks of the known art.

[0038] The dispenser button according to the present invention is indeed designed to provide the guarantee of "intact packaging" or of "product integrity", and the tamper-evident closing element performs the function of plugging the outlet opening of the product. This element is to be broken by the consumer before the first use, which is made easy by the stretch having a reduced section and by the notches, and may not be reapplied because it does not have a stable coupling portion with the spout of the dispenser button. The consumer must simply grasp the end of the dispenser and fold it downwards and then upwards to cause the detachment from the rest of the dispensing cap. At this point, the pump may be used as an ordinary dispenser.

Claims

1. A dispenser button for dispensers, applicable to bottles or the like, comprising a dispensing body (2) which can be operated directly by a user by pressing manually and comprising an inlet opening (5) which can be connected to a dispenser for a liquid product, a dispensing opening (7) and an inner duct (8) extending between the inlet opening and the dispensing opening (5, 7) for channelling the liquid product towards the dispensing opening (7);
a closing element (12) is at least partly made in one piece with the dispensing body (2), is applied to the dispensing body (2) at the dispensing opening (7) for obstructing, preferably preventing, the outflow of the liquid product from the dispensing opening (7), there being the possibility of irreversibly separating the closing element (12) from the dispensing body (2), thus allowing normal outflow of the liquid product from the dispensing opening (7); said closing element (12) being joined to the dispensing body (2) by means of a stretch having a reduced resistant section (16), formed by at least one notch (17) made in an outer surface of the dispenser button (1) and positioned between the dispensing body (2) and the closing element (12) for pro-

moting manual detachment of the closing element (12) from the dispensing body (2) by breaking the stretch with reduced resistant section (16), characterised in that said closing element (12) comprises:

- a first portion (12a) integral with the dispensing body (2) and comprising an inlet (13), facing onto the dispensing opening (7) of the dispensing body (2), an outlet (14) and a duct (15) extending between the inlet and the outlet (13, 14), and
- a second portion (12b) acting on the outlet (14) for at least partly, preferably completely, blocking the outlet (14).

2. The dispenser button according to claim 1, wherein the dispensing body (2) comprises, at the dispensing opening (7), a cross-section that is substantially quadrilateral, preferably square or rectangular, and wherein the stretch with reduced resistant section (16) is formed by a series of notches (17), preferably four, being positioned in a plane substantially perpendicular to the axis of the inner duct (8) of the dispensing body (2) at the dispensing opening (7).
3. The dispenser button according to claim 2, wherein the notches (17) comprise small holes designed to further reduce the resistant section of the stretch with reduced resistant section (16).
4. The dispenser button according to claim 1, wherein the second portion (12b) of the closing element (12) is hinged to the first portion (12a) of the closing element (12), preferably by means of a portion with reduced thickness, for forming a flap for closing the outlet of the closing element (12).
5. The dispenser button according to claim 4, wherein the second portion (12b) of the closing element (12) can be irreversibly connected to the first portion (12a) in such a way that, once they have been connected to each other, the two portions (12a, 12b) cannot be separated without irreversibly, and visibly damaging the closing element (12).
6. The dispenser button according to claim 4 or 5, wherein the first portion (12a) of the closing element (12) comprises a hole (18) positioned in a top portion of it, and wherein the second portion (12b) is applied to a lower part of the first portion (12a) and is equipped with a projection (19) which can stably, and preferably irreversibly, engage in the hole (18) in the first portion (12a).
7. The dispenser button according to any of the foregoing claims, wherein the dispensing body (2) comprises:

- a central body (3) comprising an inlet opening (5) and extending about an axis (X) coinciding with a direction of movement of the dispenser button (1) when it is pressed by a user, and
- a head (4), positioned on top of the central body (3) and comprising a spout (6) extending transversally to the axis (X) and ending at one end with the dispensing opening (7).

Patentansprüche

1. Spenderknopf für eine Spendervorrichtung, anzu-
bringen an Flaschen oder Ähnlichem, umfassend ei-
nen Spenderkörper (2), der direkt von einem Benut-
zer durch manuelles Drücken betätigt werden kann,
und umfassend eine Einlassöffnung (5), die an einen
Spender für flüssige Produkte angeschlossen wer-
den kann, eine Spenderöffnung (7) und eine interne
Leitung (8), die sich zwischen der Einlassöffnung
und der Spenderöffnung (5, 7) erstreckt, um das flüs-
sige Produkt zur Spenderöffnung (7) zu leiten;
ein Verschließelement (12) ist mindestens teilweise
in einem Stück mit dem Spenderkörper (2) gefertigt
und wird am Spenderkörper (2) an der Spenderöff-
nung (7) angebracht, um das Ausfließen des flüssi-
gen Produkts aus der Spenderöffnung (7) zu behin-
dern, vorzugsweise zu vermeiden, wobei die Mög-
lichkeit besteht, das Verschließelement (12) irrever-
sibel vom Spenderkörper (2) zu trennen und so das
normale Ausfließen des flüssigen Produkts aus der
Spenderöffnung (7) zu erlauben; das Verschließele-
ment (12) ist mit dem Spenderkörper (2) mittels eines
Teilstücks verbunden, das einen reduzierten Wider-
standsbereich (16) aufweist, gebildet durch minde-
stens eine Vertiefung (17), ausgebildet in einer äu-
ßeren Oberfläche des Spenderknopfs (1) und posi-
tioniert zwischen dem Spenderkörper (2) und dem
Verschließelement (12), um die manuelle Ablösung
des Verschließelements (12) vom Spenderkörper
(2) durch das Brechen des Teilstücks mit reduzier-
tem Widerstandsbereich (16) zu fördern, **dadurch
gekennzeichnet, dass** das Verschließelement (12)
umfasst:

- einen ersten Abschnitt (12a), der fest mit dem
Spenderkörper (2) verbunden ist, umfassend ei-
nen Einlass (13), der zur Spenderöffnung (7)
des Spenderkörpers (2) gerichtet ist, einen Aus-
lass (14) und eine Leitung (15), die sich zwis-
chen dem Einlass und dem Auslass (13, 14)
erstreckt, und
- einen zweiten Abschnitt (12b), der auf den Aus-
lass (14) wirkt, um den Auslass (14) zumindest
teilweise, vorzugsweise vollständig, zu sperren.

2. Spenderknopf nach Anspruch 1, wobei der Spen-
derkörper (2) an der Spenderöffnung (7) einen Quer-

schnitt umfasst, der im Wesentlichen vierseitig, vor-
zugsweise quadratisch oder rechteckig, ist, und wo-
bei das Teilstück mit dem reduzierten Widerstands-
bereich (16) durch eine Reihe von Vertiefungen (17)
gebildet ist, vorzugsweise vier, die auf einer im We-
sentlichen rechtwinklig zur Achse der internen Lei-
tung (8) des Spenderkörpers (2) an der Spenderöff-
nung (7) verlaufenden Ebene positioniert sind.

3. Spenderknopf nach Anspruch 2, wobei die Vertie-
fungen (17) kleine Löcher umfassen, die ausgelegt
sind, um den Widerstandsbereich des Teilstücks mit
reduziertem Widerstandsbereich (16) noch mehr zu
reduzieren.

4. Spenderknopf nach Anspruch 1, wobei der zweite
Abschnitt (12) des Verschließelements (12) mittels
eines Gelenks mit dem ersten Abschnitt (12a) des
Verschließelements (12) verbunden ist, vorzugswei-
se mittels eines Abschnitts mit reduzierter Dicke, um
eine Klappe zum Verschließen des Auslasses des
Verschließelements (12) zu bilden.

5. Spenderknopf nach Anspruch 4, wobei der zweite
Abschnitt (12b) des Verschließelements (12) irrever-
sibel mit dem ersten Abschnitt (12a) verbunden wer-
den kann, sodass die zwei Abschnitte (12a, 12b),
nachdem sie miteinander verbunden wurden, nicht
mehr getrennt werden können, ohne das Verschlie-
ßelement (12) irreversibel und sichtbar zu beschä-
digen.

6. Spenderknopf nach Anspruch 4 oder 5, wobei der
erste Abschnitt (12a) des Verschließelements (12)
ein Loch (18) umfasst, das in einem oberen Abschnitt
davon angeordnet ist, und wobei der zweite Ab-
schnitt (12b) an einem unteren Teil des ersten Ab-
schnitts (12a) angebracht und mit einem Vorsprung
(19) ausgestattet ist, der stabil und vorzugsweise ir-
reversibel mit dem Loch (18) im ersten Abschnitt
(12a) in Eingriff gelangen kann.

7. Spenderknopf nach einem der vorhergehenden An-
sprüche, wobei der Spenderkörper (2) umfasst:

- einen zentralen Körper (3), umfassend eine
Einlassöffnung (5) und sich erstreckend um eine
Achse (X), die mit einer Bewegungsrichtung des
Spenderknopfs (1) übereinstimmt, wenn dieser
von einem Benutzer gedrückt wird, und
- einen Kopf (4), positioniert an der Oberseite
des zentralen Körpers (3) und umfassend einen
Ausguss (6), der sich quer zur Achse (X) er-
streckt und an einem Ende mit der Spenderöff-
nung (7) endet.

Revendications

1. Bouton pour un distributeur, applicable aux bouteilles ou à des contenants similaires, comprenant un corps de distribution (2) pouvant être actionné directement par un utilisateur en appuyant dessus manuellement et comprenant une ouverture d'entrée (5) qui peut être reliée à un distributeur pour un produit liquide, une ouverture de distribution (7) et un conduit interne (8) se développant entre l'ouverture d'entrée et l'ouverture de distribution (5, 7) pour acheminer le produit liquide vers l'ouverture de distribution (7) ;
un élément de fermeture (12) formant au moins un seul tenant avec le corps de distribution (2), est appliqué au corps de distribution (2) au niveau de l'ouverture de distribution (7) afin d'obstruer, de préférence d'empêcher, l'écoulement du produit liquide de l'ouverture de distribution (7), avec la possibilité de séparer de façon irréversible l'élément de fermeture (12) du corps de distribution (2), permettant ainsi l'écoulement normal du produit liquide de l'ouverture de distribution (7) ; ledit élément de fermeture (12) étant raccordé au corps de distribution (2) au moyen d'un trait disposant d'une section résistante réduite (16) formée par au moins une encoche (17) réalisée sur une surface extérieure du bouton pour distributeur (1) et positionnée entre le corps de distribution (2) et l'élément de fermeture (12) pour favoriser le détachement manuel de l'élément de fermeture (12) du corps de distribution (2) en cassant le trait à section résistante réduite (16), **caractérisé en ce que** ledit élément de fermeture (12) comporte :
 - une première partie (12a) solidaire du corps de distribution (2) et comprenant une entrée (13), dirigée vers l'ouverture de distribution (7) du corps de distribution (2), une sortie (14) et un conduit (15) se développant entre l'entrée et la sortie (13, 14), et
 - une seconde partie (12b) agissant sur la sortie (14) pour au moins en partie, de préférence complètement, bloquer la sortie (14).
2. Bouton pour distributeur selon la revendication 1, dans lequel le corps de distribution (2) comprend, au niveau de l'ouverture de distribution (7), une section transversale étant substantiellement quadrilatérale, de préférence carrée ou rectangulaire, et dans lequel le trait à section résistante réduite (16) est formée par une série d'encoches (17), de préférence quatre, étant positionnées dans un plan substantiellement perpendiculaire par rapport à l'axe du conduit interne (8) du corps de distribution (2) au niveau de l'ouverture de distribution (7).
3. Bouton pour distributeur selon la revendication 2, dans lequel les encoches (17) comprennent de petits orifices conçus aussi pour réduire la section résistante du trait à section résistante réduite (16).
4. Bouton pour distributeur selon la revendication 1, dans lequel la seconde partie (12b) de l'élément de fermeture (12) est montée pivotante à la première partie (12a) de l'élément de fermeture (12), de préférence au moyen d'une partie comportant une épaisseur réduite, afin de former un rabat pour fermer la sortie de l'élément de fermeture (12).
5. Bouton de distributeur selon la revendication 4, dans lequel la seconde partie (12b) de l'élément de fermeture (12) peut être reliée de façon irréversible à la première partie (12a) de sorte qu'une fois reliées l'une à l'autre, les deux parties (12a, 12b) ne peuvent plus être séparées sans endommager de façon irréversible et visible l'élément de fermeture (12).
6. Bouton de distributeur selon la revendication 4 ou 5, dans lequel la première partie (12a) de l'élément de fermeture (12) comprend un orifice (18) positionné dans la partie supérieure de celle-ci, et dans lequel la seconde partie (12b) est appliquée à une partie inférieure de la première partie (12a) et est dotée d'une saillie (19) qui peut, de façon stable et de préférence de manière irréversible, s'engager dans l'orifice (18) dans la première partie (12a).
7. Bouton de distributeur selon l'une quelconque des revendications précédentes, dans lequel le corps de distribution (2) comprend :
 - un corps central (3) comprenant une ouverture d'entrée (5) et se développant autour d'un axe (X) coïncidant avec une direction de déplacement du bouton de distributeur (1) lorsqu'un utilisateur appuie dessus, et
 - une tête (4), positionnée au sommet du corps central (3) et comprenant un embout (6) se développant transversalement par rapport à l'axe (X) et se terminant à une extrémité de l'ouverture de distribution (7).

FIG 1

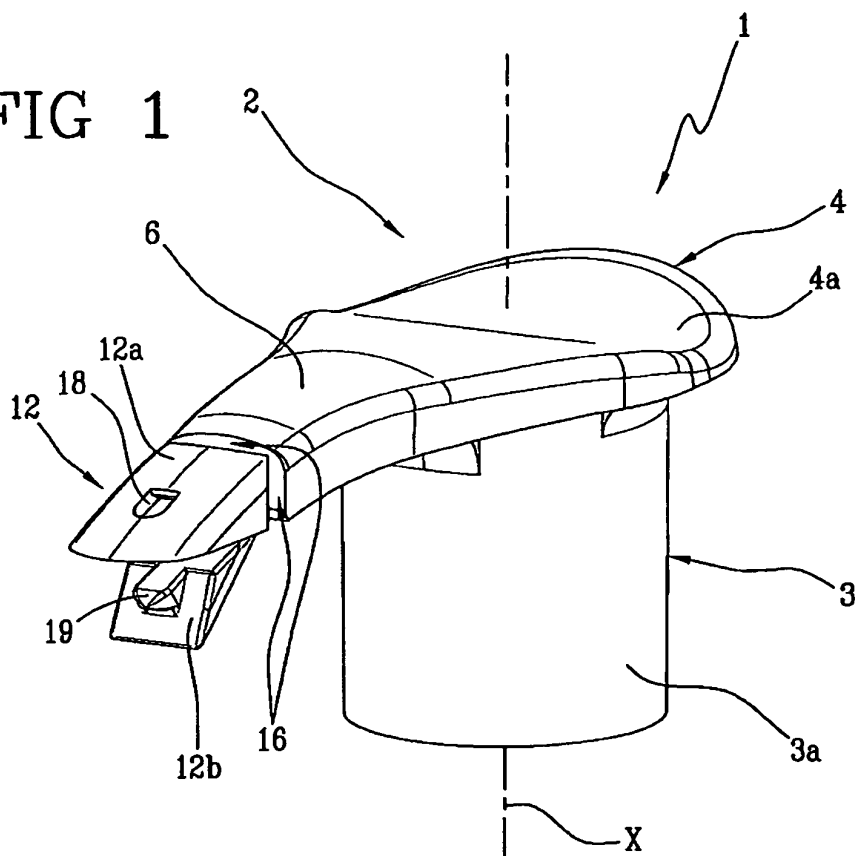
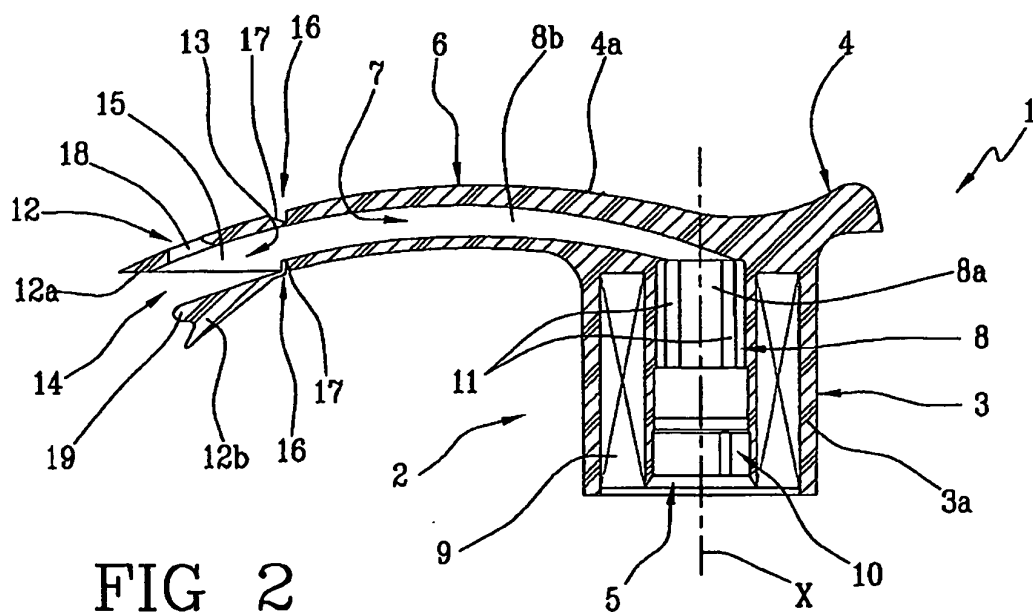
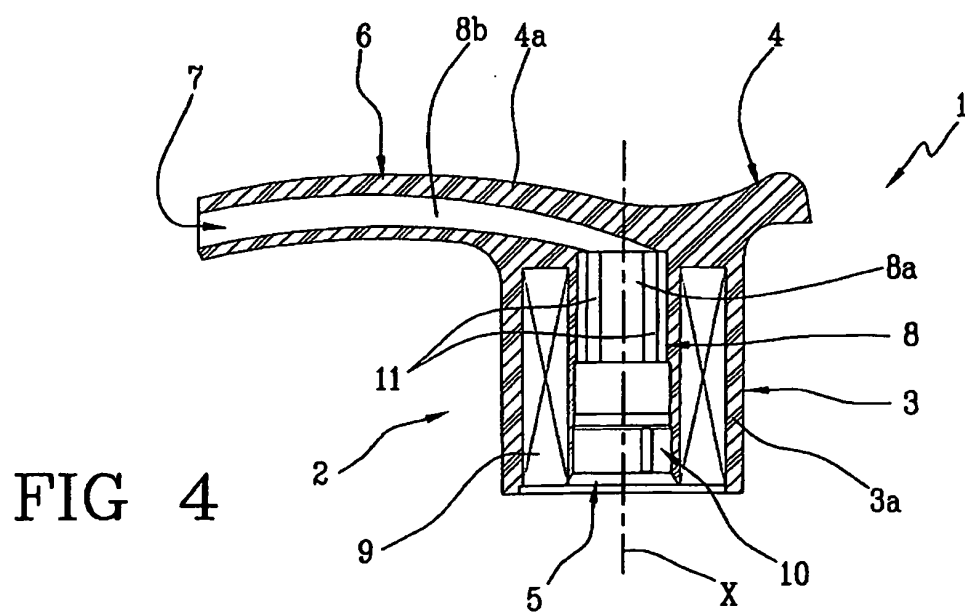
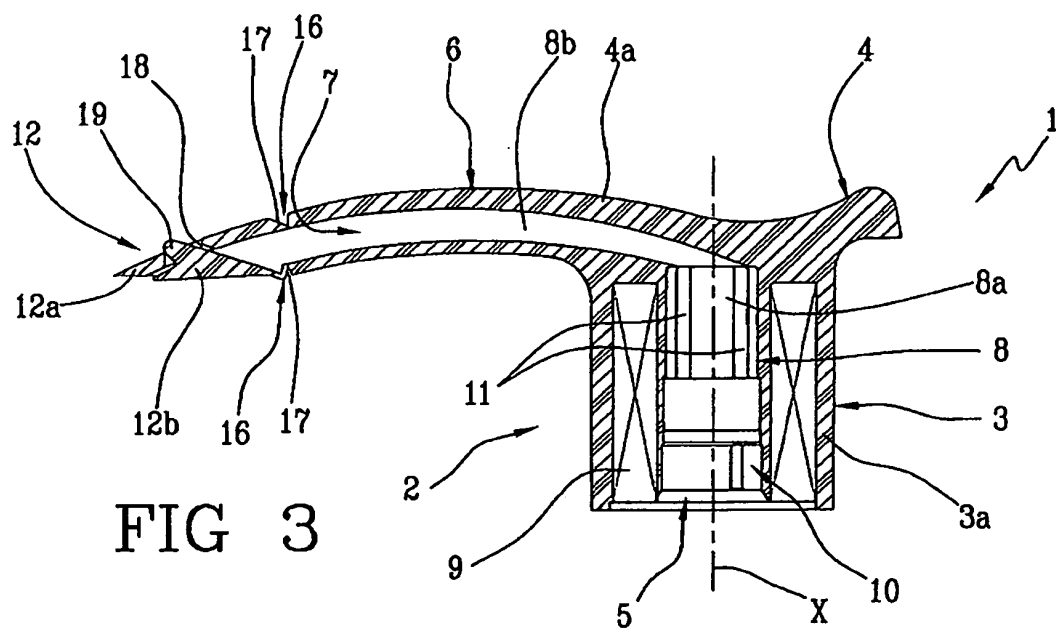


FIG 2





REFERENCES CITED IN THE DESCRIPTION

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