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(54) **HAND APPLICATOR TO BE FASTENED ONTO THE VALVE CONNECTION OF THE BOTTLE WITH THE ADAPTER OF THE GUN APPLICATOR**

HANDAPPLIKATOR ZUR BEFESTIGUNG AUF DEM VENTILANSCHLUSS EINER FLASCHE MIT DEM ADAPTER DES PISTOLENAPPLIKATORS

APPLICATEUR À MAIN À FIXER SUR LE RACCORD DE ROBINET DE LA BOUTEILLE À L'AIDE DE L'ADAPTATEUR DU PISTOLET APPLICATEUR

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Description

FIELD OF THE INVENTION

[0001] This technical solution belongs to the field of hand applicators.

BACKROUND OF THE INVENTION

[0002] There is known a hand applicator fastening (EE 05028 B1) or adapter that is meant to be used on the foam bottle equipped with the adapter of the gun applicator but is not connected to the adapter of the gun applicator. The known adapter of the hand applicator contains a cavity at the valve connection end and a cone-shaped tube protruding from the bottom of the cavity that is pressed into the channel of the valve connection when installed on the valve connection of the foam bottle (hereinafter the valve connection), whereby the gripping elements on the inner side of the cavity hook up behind the valve collar. A handle that contains two handle parts opposite each other with different lengths is designed for the adapter body, whereby the second finger is meant to rest on the shorter part of the handle and the third and the fourth fingers are meant to rest on the longer part of the handle, where the upper part of the adapter body continued by the foam straw remains between the longer part and the shorter part.

[0003] The weakness of the construction of this hand applicator is the fact that due to the position of the handle parts it is complicated or almost impossible to press both parts of the handle with different fingers simultaneously and with equal and constant force in order to ensure a vertical force acting on the valve connection necessary for the smooth adjustment of the foam jet and for the operation of the foam bottle. It is inconvenient to handle the known hand applicator. In practice, users often try to press the longer part of the handle down to the maximum extent and repeatedly without giving the adapter time to restore its correct position. In case the foam bottle has not been shaken before use, and the foam bottle is held in the upright position while the longer part of the handle is pressed, but non-vertical force is applied to the adapter by pressing down any part of the handle, the gas may leak from between the valve connection of the foam bottle and the adapter, the pressure may drop and the foam may not come out of the foam bottle at all.

[0004] There is also known an adapter of the hand applicator designed by the author of the given solution (EE 200800050 A) that is meant to be used on the foam bottle provided with the adapter of the gun applicator. The objective of this known solution is to ensure the non-obstructed exit of the foam from the channel of the valve connection into the hand applicator as well as the pressure resistant sealing between the adapter of the hand applicator and the valve connection. The above mentioned objectives have been achieved by the diameter of the adapter channel of the hand applicator being bigger than the diameter of the valve connection channel, the depth of the cavity of the adapter of the hand applicator having been increased with the extension of the cavity wall and a sealing ring having been fastened onto the bottom edge of the inner side of the cavity wall extension; if the adapter of the hand applicator in installed onto the valve connection of the foam bottle, the ring is supported by the elastic gland of the valve connection. Thereby the channel of the hand applicator channel is centred in relation to the valve connection channel owing to the interaction between the centring elements on the external surface of the hand applicator body and the adapter opening of the gun applicator (EE 200800050 A).

[0005] The weakness of this known solution is that it does not give any solution for the support surface of the hand applicator handle that has to play an important role ensuring that the force exerted onto the adapter of the hand applicator and onto the valve connection is as vertical as possible, neither does it give any solution for a smooth and simple regulation of the foam exit.

[0006] Beside the above mentioned aspects, there is known a fastening (EE 200800059 A) of the hand applicator designed by the owner of the given solution that is meant for hanging the hand applicator into the stand-by position onto the support of the adapter of the gun applicator on the foam bottle as well as for an easier installation of the adapter of the hand applicator onto the valve connection, whereby the fastening of the hand applicator contains an adapter, handle and the fastening element, the hook-shaped end of which is fixed onto the support of the adapter of the gun applicator, whereby the handle is designed to be on one side of the hand applicator adapter and the fastening element, on the other side of the adapter.

[0007] As the support surface of the handle of the hand applicator does not lie directly above the adapter, when the support surface of the hand applicator placed on the valve connection is pressed, the adapter bends and the force applied to the valve connection is not vertical. It is not convenient to work with the hand applicator with the named handle, and it is not possible to smoothly regulate the rate of flow.

SUBJECT MATTER OF THE INVENTION

[0008] The objective of the given invention is to design a hand applicator that, owing to its construction, enables to exert practically vertical force onto the valve connection, to smoothly regulate the rate of flow and to keep the bottle comfortably in hand in operating position.

[0009] To achieve the given objective, a hand applicator has been designed, the support surface of whose handle lies directly above the valve connection when the hand applicator is placed onto the valve connection, and the handle stem has at least one support surface to support the bottle in the operating position. Thereby the support surface of the hand applicator handle is formed either by one concavity or by two concavities and the elevation

between the concavities. If the support surface of the handle of the hand applicator is designed with one concavity, the bottom of the concavity is directly above the valve connection on the hand applicator placed onto the valve connection so that the centre axis of the adapter cavity and the centre axis of the valve connection run through the bottom of the concavity in such a way that the imaginary tangent of the lowest point of the concavity bottom is mainly perpendicular to the centre axis of the valve connection. In case of the hand applicator, where the support surface of the handle is formed by two concavities and the elevation between the concavities, the centre axis of the valve connection runs through the elevation between the concavities on the handle when the hand applicator is placed onto the valve connection. In case of both above described versions of the hand applicator, the handle of the hand applicator is formed in its entirety by the upper part of the adapter and the lower part of the straw.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The following figures are referenced to below in the description of the hand applicator corresponding to the invention:

Fig 1 The hand applicator where the support surface of the handle is formed with one concavity, whereby the bottom of the concavity lies directly above the valve connection if the hand applicator placed onto the valve connection.

Fig 2 The hand applicator where the support surface of the handle is formed with two concavities and with an elevation between the concavities, whereby the centre axis of the valve connection runs through the elevation between the concavities if the hand applicator placed onto the valve connection.

EXEMPLARY EMBODIMENT OF THE INVENTION

[0011] The hand applicator 3 (Fig 1) to be fastened onto the valve connection 2 of the bottle of the gun applicator with the adapter 1 contains the adapter 4 to be fastened onto the valve connection 2 of the bottle, where the adapter contains the extension 4.1 of the cavity wall at the end to be fastened onto the valve connection 2 and a sealing ring 4.2 close to the lower edge of the inner side of the extension of the cavity wall for sealing the adapter 4 on the valve connection 2; the handle 5 whose support surface is formed by a concavity 5.1, whereby the concavity 5.1 is positioned in such a way that the bottom of the concavity 5.1 is directly above the valve connection 2 in such a way that the centre axis of the cavity of the adapter 4 and the centre axis of the valve connection 2 run through the bottom of the concavity 5.1 so that the imaginary tangent of the lowest point of the concavity is mainly perpendicular to the centre axis of the valve connection 2 if the hand applicator 3 placed onto the valve connection 2; the support foot 6 formed on the handle 5 where on the top of the foot there are a spigot 6.1 to be fixed onto the support 1.1 of the adapter 1 of the gun applicator of the bottle and there is the handle stem 7 whose support surface is formed with two concavities 7.1.

[0012] The support surface of the handle 5 of the hand applicator 3 may also be formed with two concavities 5.1 and with the elevation 5.2 (Fig 2) between the concavities, where the centre axis of the valve connection 2 runs through the elevation 5.2 between the concavities on the handle 5 on the hand applicator 3 placed onto the valve connection 2.

[0013] Thereby the handle 5 of the hand applicator is formed in its entirety by the upper part 4.3 of the adapter 4 and by the lower part 8.1 of the straw 8, and the handle stem 7 of the hand applicator 3 contains a support surface that is formed with two concavities 7.1 (Fig 1, Fig 2).

[0014] Due to the fact that the bottom of the concavity 5.1 formed as a support surface of the handle 5 of the hand applicator 3 is directly above the valve connection 2 if the hand applicator 3 placed onto the valve connection 2 so that the centre axis of the cavity of the adapter 4 and the centre axis of the valve connection 2 run through the bottom of the concavity in such a way that the imaginary tangent of the lowest point of the bottom 5.1 of the concavity is mainly perpendicular to the centre axis of the valve connection 2, the direction of the force exerted on the valve connection 2 when the concavity 5.1 (Fig 1) is pressed is practically vertical, and it is possible to smoothly regulate the rate of flow of the jet according to the pressing strength.

[0015] Due to the fact that the support surface of the handle 5 of the hand applicator 3 is formed with two concavities 5.1 and the elevation 5.2 between the concavities, the support surface of the handle 5 is positioned in such a way that the centre axis of the valve connection 2 runs through the elevation 5.2 between the concavities if the hand applicator 3 placed onto the valve connection 2, whereby the direction of the force exerted to the valve connection 2 when the elevation 5.2 (Fig 2) between the concavities is pressed is practically vertical and it is possible to smoothly regulate the rate of flow of the jet according to the pressing strength.

[0016] To make holding the bottle more convenient and safer when operating the bottle, the handle stem 7 of the hand applicator 3 is meant to support with its concavities 7.1 on the third and the fourth finger. The handle stem 7 of the hand applicator is not meant to take part in the injection of the jet and in the regulation of the rate of flow. If a force in the direction of the bottle is exerted on the handle stem 7 of the hand applicator 3 placed onto the valve connection 2, then the support foot 6 of the hand applicator 3 with a spigot 4.1 fixed to the support 1.1 of the gun applicator adapter 1 of the bottle hinders the deviation of the adapter 4 installed onto the valve connection from the vertical position.

Claims

1. A hand applicator (3) to be fastened to the valve connection (2) of the bottle with the gun applicator adapter (1) where the hand applicator contains an adapter (4) to be fastened to the valve connection (2) of the bottle, a handle (5) and a support foot (6) to be formed on the handle (5); at the end of the support foot (6) a spigot (6.1) to be fixed to the support (1.1) of the gun applicator adapter (1); where the adapter (4) contains an extension (4.1) of the cavity wall at the end to be fastened to the valve connection (2) and a sealing ring (4.2) for sealing the adapter (4) on the valve connection (2) close to the lower edge of the inner side of the cavity wall extension (4.1) ***which differs in that*** a support surface is formed on the handle (5) of the hand applicator; the surface is positioned in such a way that the hand applicator (3) placed onto the valve connection (2) has a support surface of the handle (5) directly above to the valve connection (2), and a handle stem (7) with at least one further support surface.

2. A hand applicator (3) according to claim 1 ***which differs in that*** the support surface on the handle (5) of the hand applicator is formed with a concavity (5.1) that is positioned in such a way that the bottom of the concavity (5.1) of the handle is placed directly above the valve connection (2) of the hand applicator (3).

3. A hand applicator (3) according to claim 1 ***which differs in that*** the support surface on the handle (5) of the hand applicator is formed with a concavity (5.1) that is positioned in such a way that the bottom of the concavity (5.1) of the handle is placed directly above the valve connection (2) of the hand applicator (3) so that the centre axis of the adapter (4) cavity and the centre axis of the valve connection (2) run through the bottom of the concavity (5.1).

4. A hand applicator (3) according to claim 1 ***which differs in that*** the support surface on the handle (5) of the hand applicator is formed with a concavity (5.1) that is positioned in such a way that the bottom of the concavity (5.1) of the handle is placed directly above the valve connection (2) of the hand applicator (3) so that the imaginary tangent of the lowest point of the bottom of the concavity (5.1) is mainly perpendicular to the centre axis of the valve connection (2).

5. A hand applicator (3) according to claim 1 ***which differs in that*** the support surface on the handle (5) of the hand applicator is formed with two concavities (5.1) that are positioned in such a way that the centre axis of the valve connection (2) runs through the elevation (5.2) between the concavities (5.1) on the handle (5) on the hand applicator (3) placed onto the valve connection (2).

6. A hand applicator (3) according to one of the above claims 1 to 5 ***which differs in that*** the handle (5) is formed as an entirety containing the upper part (4.3) of the adapter (4) and the lower part (8.1) of the straw (8).

7. A hand applicator (3) according to one of the above claims 1 to 6 ***which differs in that*** the handle stem (7) contains a further support surface that is formed with two concavities (7.1).

Patentansprüche

1. Ein Handapplikator (3) zur Befestigung auf dem Ventilanschluss (2) einer Flasche mit dem Adapter des Pistolenäpplikators (1), wobei der Handapplikator einen Adapter (4) zur Befestigung auf dem Ventilanschluss (2) der Flasche, einen Haltegriff (5) und ein mit dem Haltegriff (5) integriertes Stützbein (6) umfasst; wobei sich am Ende des Stützbeins (6) ein Aufsetzzapfen (6.1) zum Fixieren auf dem Auflager (1,1) des Pistolenapplikatoradapters (1) befindet; wobei der Adapter (4) am Ende, das auf dem Ventilanschluss (2) angebracht wird, einen Hohlraumwandfortsatz (4.1) sowie einen Dichtring (4.2) an der unteren Kante der Innenseite des Hohlraumwandfortsatzes (4.1) zur Abdichtung des Adapters (4) auf dem Ventilanschluss (2) umfasst, ***dadurch gekennzeichnet, dass*** auf dem Haltegriff (5) des Handapplikators eine Abstützfläche geformt ist und diese Abstützfläche derart positioniert ist, dass der Handapplikator (3), wenn auf dem Ventilanschluss (2) angebracht, eine Abstützfläche auf dem Handgriff (5) direkt über dem Ventilanschluss (2) sowie einen Auslösegriff (7) mit mindestens einer [weiteren] Abstützfläche hat.

2. Ein Handapplikator (3) gemäß Anspruch 1, ***dadurch gekennzeichnet, dass*** die Abstützfläche auf dem Haltegriff (5) des Handapplikators mit einer Einhöhlung (5.1) geformt ist, wobei die Einhöhlung (5.1) des Haltegriffs direkt über dem Ventilanschluss (2) des Handapplikators (3) liegt.

3. Ein Handapplikator (3) gemäß Anspruch 1, ***dadurch gekennzeichnet, dass*** die Abstützfläche auf dem Haltegriff (5) des Handapplikators mit einer Einhöhlung (5.1) geformt ist, wobei die Einhöhlung (5.1) des Haltegriffs direkt über dem Ventilanschluss (2) des Handapplikators (3) liegt, so dass die Schwerpunktachse des Hohlraums des Adapters (4) und die Schwerpunktachse des Ventilanschlusses (2) durch die Mitte der Einhöhlung (5.1) laufen.

4. Ein Handapplikator (3) gemäß Anspruch 1, ***dadurch***

***gekennzeichnet,* dass** die Abstützfläche auf dem Haltegriff (5) des Handapplikators mit einer Einhöhlung (5.1) geformt ist, wobei die Einhöhlung (5.1.) des Haltegriffs direkt über dem Ventilanschluss (2) des Handapplikators (3) liegt, so dass der imaginäre Tangens des tiefsten Punktes der Einhöhlung (5.1) vorwiegend perpendikulär zur Schwerpunktachse des Ventilanschlusses (2) liegt.

5. Ein Handapplikator (3) gemäß Anspruch 1, ***dadurch gekennzeichnet, dass*** die Abstützfläche auf dem Haltegriff (5) des Handapplikators mit zwei Einhöhlungen (5.1) geformt ist, die so liegen, dass die Schwerpunktachse des Ventilanschlusses (2) durch die Erhöhung (5.2) zwischen den Einhöhlungen (5.1) des Haltegriffs (5) des Handapplikators (3) verläuft, wenn dieser auf dem Ventilanschluss (2) angebracht ist.

6. Ein Handapplikator (3) gemäß einem der Ansprüche 1 bis 5, ***dadurch gekennzeichnet, dass*** der Haltegriff (5) als eine Einheit geformt ist, in diese der obere Teil (4.3) des Adapters (4) und der untere Teil (8.1) des Rohres (8) integriert sind.

7. Ein Handapplikator (3) gemäß einem der Ansprüche 1 bis 6, ***dadurch gekennzeichnet, dass*** der Auslösegriff (7) eine [weitere] Abstützfläche umfasst, die mit zwei Einhöhlungen (7.1) geformt ist.

Revendications

1. Applicateur à main (3) destiné à être fixé sur le raccord de soupape (2) de la bombe, avec un adaptateur du pistolet d'applicateur (1), chez lequel l'applicateur à main comprend un adaptateur (4) destiné à être fixé sur le raccord de soupape (2) de la bombe, une poignée (5) et un pied de support (6), formé sur la poignée (5) ; un ergot (6.1) à l' extrémité du pied de support (6), destiné à être fixé sur le support (1.1) de l'adaptateur du pistolet d'application (1) ; chez lequel l'adaptateur (4) comprend à son extrémité un prolongement (4.1) de la paroi de la cavité, destiné à être fixé sur le raccord de soupape (2), et une bague d'étanchéité (4.2) pour assurer l'étanchéité de l'adaptateur (4) sur le raccord de soupape (2) à proximité de l'extrémité inférieure de la face intérieure du prolongement de la paroi de la cavité (4.1), *qui* ***diffère en ce qu***'une surface d'appui est formée sur la poignée (5) de l'applicateur à main ; la surface est positionnée de telle manière que l'applicateur à main (3), placé sur le raccord de soupape (2), présente une surface d'appui de la poignée (5) juste au-dessus du raccord de soupape (2), et une tige de la poignée (7) avec d'au moins une surface de support complémentaire.

2. L'applicateur à main (3) selon la revendication ***1, qui diffère en ce que*** la surface d'appui sur la poignée (5) de l'applicateur à main est formée avec une concavité (5.1) qui est positionnée de telle manière que le fond de la concavité (5.1) de la poignée se trouve juste au-dessus du raccord de soupape (2) de l'applicateur à main (3).

3. L'applicateur à main (3) selon la revendication ***1, qui diffère en ce que*** la surface d'appui sur la poignée (5) de l'applicateur à main est formée avec une concavité (5.1) qui est positionnée de telle manière que le fond de la concavité (5.1) de la poignée se trouve juste au-dessus du raccord de soupape (2) de l'applicateur à main (3), de sorte que l'axe central de la cavité de l'adaptateur (4) ainsi que l'axe central du raccord de la soupape (2) passent par le fond de l'concavité (5.1).

4. L'applicateur à main (3) selon la revendication ***1, qui diffère en ce que*** la surface d'appui sur la poignée (5) de l'applicateur à main est formée avec une concavité (5.1) qui est positionnée de telle manière que le fond de la concavité (5.1) de la poignée se trouve juste au-dessus du raccord de soupape (2) de l'applicateur à main (3), de sorte que la tangente imaginaire du niveau le plus bas de la concavité (5.1) soit éventuellement perpendiculaire

5. L'applicateur à main (3) selon la revendication ***1, qui diffère en ce que*** la surface d'appui sur la poignée (5) de l'applicateur à main est formée avec deux concavités (5.1) qui sont positionnées de telle manière que l'axe central de la du raccord de la soupape (2) passe à travers l'élévation (5.2) entre les concavités (5.1) sur la poignée (5) de l'applicateur à main (3) placé sur le raccord de la soupape (2).

6. L'applicateur à main (3) selon l'une quelconque des revendications précédentes 1 à 5, ***qui diffère en ce que*** la poignée (5) est formé en bloque contenant une partie supérieure (4.3) de l'adaptateur (4) et une partie inférieure (8.1) de la paille (8).

7. L'applicateur à main (3) selon l'une quelconque des revendications précédentes 1 à 6, ***qui diffère en ce que*** la tige de la poignée (7) comprend une surface de support complémentaire qui est formée avec deux concavités (7.1).

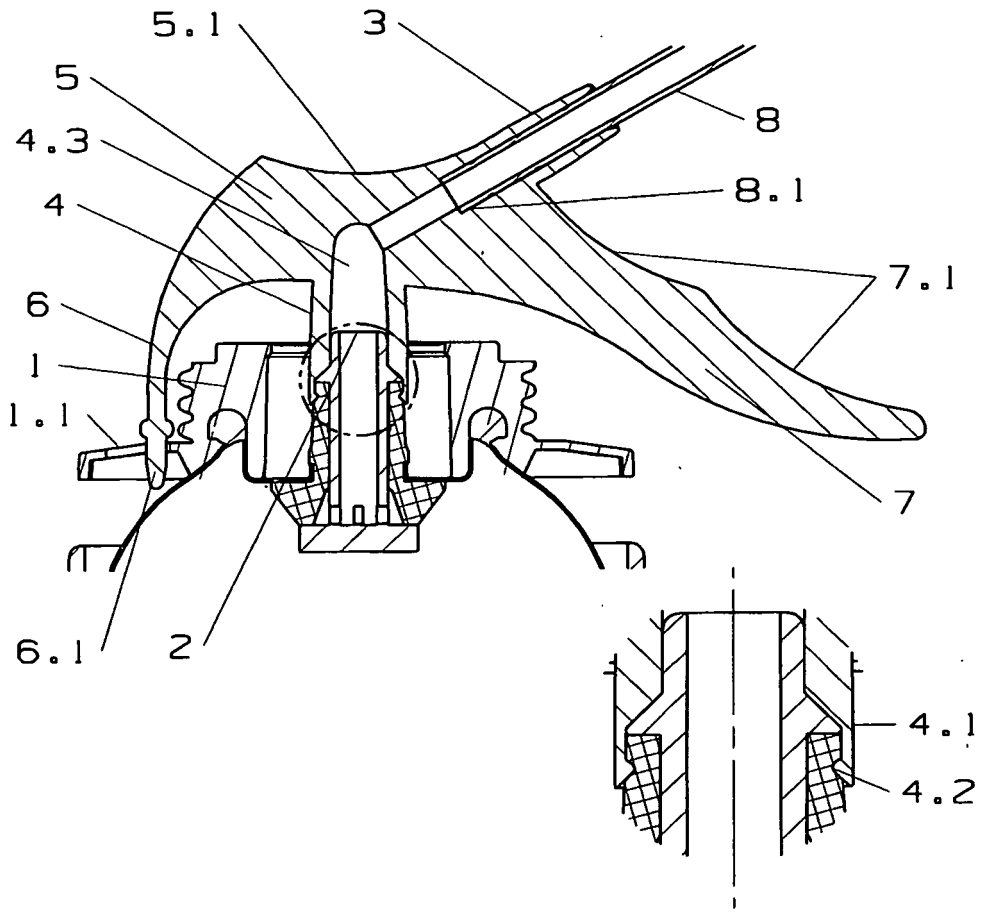

Fig 1

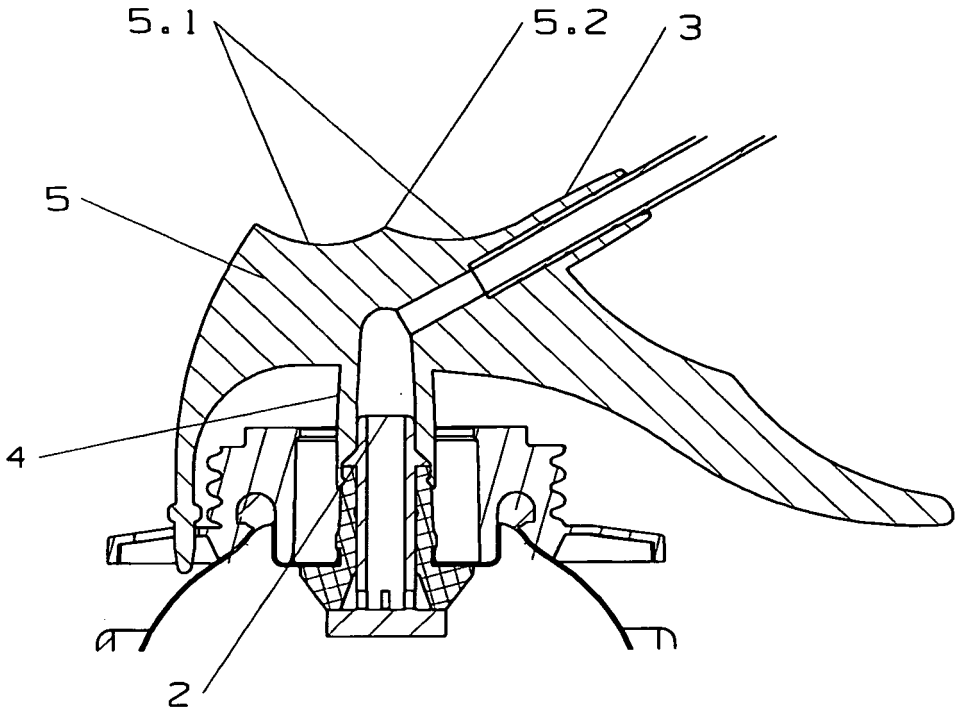

Fig 2

REFERENCES CITED IN THE DESCRIPTION

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